8-25-2023

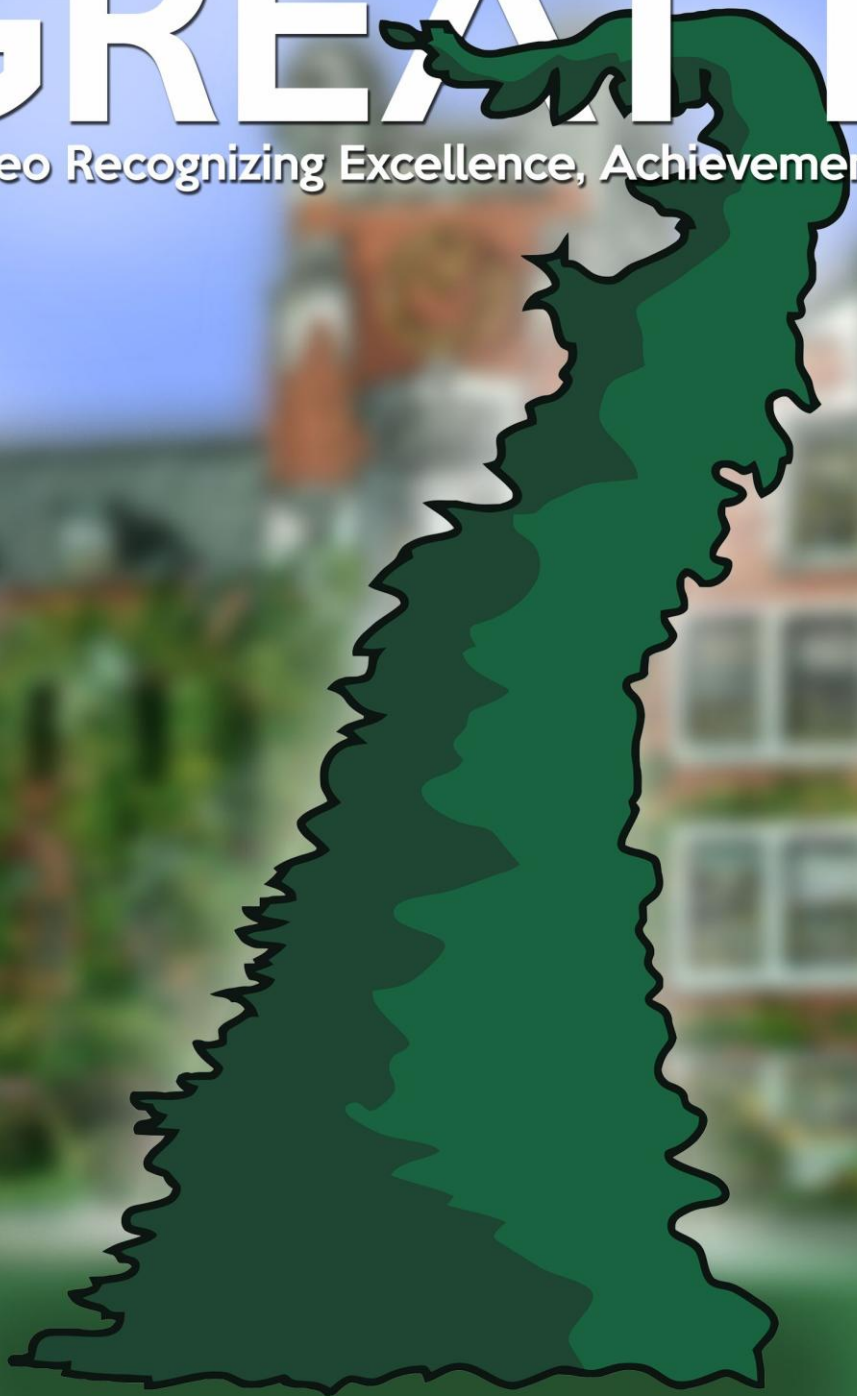
2013 GREAT Day Program

State University of New York at Geneseo

THE SEVENTH ANNUAL SUNY GENESEO

GREAT Day

Geneseo Recognizing Excellence, Achievement, and Talent



April 16, 2013

DESIGN BY PHILIP ROMANO

Welcome to SUNY Geneseo's Seventh Annual GREAT Day!

Geneseo Recognizing Excellence, Achievement & Talent Day is a college-wide symposium celebrating the creative and scholarly endeavors of our students. In addition to recognizing the achievements of our students, the purpose of GREAT Day is to help foster academic excellence, encourage professional development, and build connections within the community.

The GREAT Day Faculty Advisory Council:
Joan Ballard, Psychology
Sid Bosch, Biology
Patrice Case, Studio Art
Graham Drake, English
Jennifer Lofkrantz, History
Susan Salmon, School of Education
Aaron Steinhauer, Physics & Astronomy

The GREAT Day Committee:
Anne Baldwin, Sponsored Research
Tammy Hill, Campus Scheduling and Special Events
Andrea Klein, Campus Scheduling and Special Events
Jessica Shepard, GREAT Day Intern
Erin Pipe, Chamber Music Festival Coordinator
Chelsea Butkowski, Kinetic Gallery Coordinator
Tracy Paradis, Milne Library
Patty Hamilton-Rodgers, GREAT Day Coordinator

Thank You for staff contributions that make GREAT Day possible: Brian Bennett, Betsy Colon, Joe Dolce, Stephen Dresbach, Karie Frisiras, Jennifer Glieco, Becky Glass, Paul Jackson, Nancy Johncox, Minh Bui, Enrico Johnson, Laura Kenyon, Chip Matthews, Sean McGrath, Nicole Muraco, Traci Phillips, Mark Scott, Rio Takemura, Helen Thomas, Julie Rao, Katie Tierney and the SA Tech Services.

Thanks to Student volunteers: Abigail Golfo , Aja Guzman, Ama Acheampong, Anna Choo, Anna Tiburzi, Ayumi Yamazaki, Brieanna Cervoni, Brittany Gliboff, Bruno Villazhinay, Cameron Rinaldi, Camille Mackey, Casey Berg, Christopher Ecklund, Christy Agrawal, Cindy Trieu, Coli Bacharach, Daeun Noh, Dan Bender, Devin Geraghty, Devon Coulter, Emma Wang, Eugenie Ma, Gina Suriano, Hannah Parfitt, Hannah Wang, Ivy Wang, Jackie Nocita, Jane Coons, Jess Diefendorf, Jiwon Kim , Karlene Gallese, Kasey Cole, Katie Becker, Kelsey Colberg, Kristen Norrgard, Laura Sharpe, Nadia Abdulwahab, Rozina Portelli, Sarah Hooven, Sarah Kucharski, Sean McCarthy, Shannon Dempsey, Shannon Gallagher, Shannon Quinlivan, Staci Weiss, Steph Coffman, Steph Liotta, Tushara Surapaneni, Will Gladstone, William Jockers

Special Thank You:

President Christopher Dahl and **Provost Carol Long** for their support of GREAT Day.
Jack and Carol Kramer for their support of Geneseo and the Keynote address.
Dava Sobel for delivering the Keynote address.
Tom Fisher for the online submission form and web program design.
Erin Pipe for organizing the Chamber Music Festival.
Dara Gell for serving as liaison to the Student Association.
The Student Association for sponsoring the Luncheon.
Campus Auxiliary Services for sponsoring reception beverages.
Milne Library Staff for overseeing the proceedings.
Anne Baldwin, Andrea Klein, and Tammy Hill for their special expertise and many hours devoted to planning this event.

**GREAT Day is funded by the Office of the Provost,
the Student Association, Campus Auxiliary Service
and the Jack '76 and Carol '76 Kramer Endowed Lectureship.**

http://www.geneseo.edu/great_day

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Cover design by **PHILIP ROMANO**
For more information on the GREAT Day Program Cover design project, see back cover.

Publish your paper or poster!

Did you know that a publication is released every year containing a selection of the papers and posters presented at GREAT Day? To have your GREAT Day presentation or poster considered for the 2013 GREAT Day Proceedings, contact Sue Ann Brainard at Milne Library, brainard@geneseo.edu, x5062.

Check out Starbuck's new GREAT Day Latte
It is sweet, bold, and nutty – something for everyone, just like GREAT Day!

SCHEDULE

8:30 – 9:30 AM
Welcome College Union Ballroom
Remarks William Brower, Vice President for College Advancement
Alma Mater – Jessica Carl and Nick Ellsworth
Poster Presentations College Union Ballroom & 3rd Floor

8:30 – 6:30 pm
Artwork Exhibits
College Union Kinetic Gallery & Brodie Lederer Gallery

9:00 AM – 1:30 PM
Chamber Music Festival Part 1 College Union Fireside Lounge

9:40 – 10:55 AM
Concurrent Presentations • Session 1
ISC, Milne, South, Sturges, Welles

11:05 – 12:20 PM
Concurrent Presentations • Session 2
Brodie, Knightspot, Milne, South, Sturges, Welles

12:30 – 1:30 PM
Poster Presentations College Union Ballroom & 3rd Floor
Buffet Luncheon College Union Lobby
Sponsored by the Geneseo Student Association
Bhangra Performance 1:20 pm College Union Ballroom Stage

1:45 – 2:45 PM
The Jack '76 and Carol '76 Kramer Endowed Lectureship
Dava Sobel, author of popular expositions of scientific topics
Wadsworth Auditorium

2:55 – 4:10 PM
Concurrent Presentations • Session 3
College Union, ISC, Milne, South, Sturges, Welles,

3:00 – 4:30 PM
Chamber Music Festival Part 2 College Union Fireside Lounge

4:20 – 5:35 PM
Concurrent Presentations • Session 4
ISC, Milne, South, Sturges, Wadsworth, Welles

5:30 – 6:30 PM
Closing Remarks College Union Ballroom
Christopher Dahl, President
Poster Presentations & Reception
Sponsored in part by Campus Auxiliary Services
College Union Ballroom & 3rd Floor

7:00 PM
Geneseo Insomnia Film Festival *Sturges 219, Auditorium*

ARTWORK EXHIBITS

SPECIAL THANKS TO THE FOLLOWING STUDENTS FOR PREPARING THE EXHIBITS **KATELYN COLLINS, RAY FERREIRA, IAN GABRIEL, MOHAMMED HOSSAIN, SAMANTHA HUEBLER, MAYUKO KUBO, NATE LOEWENSTEIN, KYRA RHOADES, JOO YEON SHIN (JANE), ALEKSANDRA SZCZUREK**

MACVITTIE COLLEGE UNION KINETIC GALLERY

EMMA JACKSON
FACULTY SPONSOR: ELIZABETH FALK, SCHOOL OF EDUCATION

Look to the Sun: Painting of a flower using acrylics, on 30x30 canvas.

HOLLY KANDEL
FACULTY SPONSOR: NEAL BROOKS, RESIDENCE LIFE

Dorm Room Project: This was a photo project I decided to do at the end of spring semester, 2012. I went around all the residence halls throughout Geneseo, mainly Niagara and Onondaga, and knocked on all the doors and asked people to pose in front of their dorm room walls. The message from this project was to answer the question: what do people's dorm room walls say about them? Each wall is unique in character, symbolically like the people who created them.

IAN GABRIEL
FACULTY SPONSOR: PATRICE CASE, ART

The Adoration: It's a somewhat fantastical scene of the washing of the Indian Deity known as Ganesh by one of his handmaidens. It's purpose was to elicit a similar response of awe and sexual unease that one was to find in classical works depicting more western pantheon gods.

KYRA RHOADES
FACULTY SPONSOR: PATRICE CASE, ART
THOMAS MACPHERSON, ART

Tentacle Set: Sterling Silver set designed and created through Lost Wax Casting processes. Intended to explore the evolution of an idea based upon movement, texture, contrast and functionality.

The Silver Man: Sculptural figure formed and carved from moldable bees wax. Casted from sterling silver, 3 oz.

Memories of a Dream: Representational of places visited while taking a semester abroad to Rome, Italy.

MAYUKO KUBO
FACULTY SPONSOR: PATRICE CASE, ART

Untitled: From St. Patrick's Day Parade

Untitled: From St. Patrick's Day Parade

RAY FERREIRA
FACULTY SPONSOR: PATRICE CASE, ART

drip. ooze…dribble: honey and wax

JACLYN VETRANO
FACULTY SPONSOR: RIO TAKEMURA, ART

Ink with Ink: The challenge was to create the same tones as a brush freshly dripped in ink and dragged across clean white paper. The illusion from stippling, dashes, and line weight create a very different image standing two inches or two feet away. Created with permanent marker.

MEAGAN TURNER
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Brushstrokes: This piece is an enlargement of a section of ink brushstrokes. The enlargement was redrawn by hand using Sharpie.

TRICIA CREMO
FACULTY SPONSOR: RIO TAKEUMURA, ART

Brush Stroke Study: Magnified image of a series of brushstroke studying patterns.

Abstract Gridded Pig: Abstract scene studying foreground and background.

NATHAN LOEWENSTEIN
FACULTY SPONSOR: PATRICE CASE, ART

Crying: Watercolor painting of a girl crying.

Laughing: Watercolor of a girl laughing

MARGARET GERARDI
FACULTY SPONSOR: RIO TAKEMURA, ART

Brush Strokes: Picture is 9" by 11" with a 1.5" inch border. Medium: sharpie. Picture depicting brushstrokes drawn with sharpie.

CHRISTINE KIRKPATRICK
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Brushstrokes: A Sharpie drawing imitating artist's brushstrokes.

HEATHER MATTHEWS
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Brushstrokes: A sharpie drawing imitating artist's brushstrokes.

EMILY WALDMAN
FACULTY SPONSOR: PATRICE CASE, ART

What is it?: Is this painting meant to resemble an offering of drink, washed by waves on an ocean shore underneath a twilight sky? Or is it jugs of Roman drink being set up by a lavish host, who mixed slices of pizza to ironically transcend time between old and modern Italy? You decide.

CHELSEY BARKER
FACULTY SPONSOR: LESLIE STROZ, ART

Cornwall: Pen & Watercolor

GREG D'AIELLO
FACULTY SPONSOR: TZEKI HON, HISTORY

The Dollarback of the Globe: The effect and influence of the U.S dollarback in todays global economy cannot go unnoticed as being hegemonic in and of itself. My painting will abstractly represent the overwhelming influence of the dollarback and its encompassing influence on the rest of the globe.

KARA FINEGAN
FACULTY SPONSOR: PATRICE CASE, ART

Sterling Parrot Pendant: This pendant was made using a unique method called sand casting. To make this piece, I made a clay parrot to use as a positive. The positive was then pressed into a sand mold and removed. The sand mold was then filled with molten silver. Once it cooled, the metal bird was removed from the sand mold, followed by hours and hours of filing, and sanding to clean and shape the metal. Once the cleaning was finished, a texture was hammered onto the wing and a 2 millimeter cubic zirconia stone was flush set into the eye of the parrot to give it a sparkling finish!

BENJAMIN FREIMAN
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Steel Spider: Materials: 14, 16, 18, and 20 gauge steel wire. The intricate and creeping movements of arachnids and insects inspired me to choose a spider as my subject for a wire sculpture. Wire has both organic and mechanical qualities in the way it moves and bends, similar to the way a spider does. While building the body, I tried to keep the proportions somewhat anatomically accurate, although I'm no entomologist. My goal is to one day build a full-sized steel sculpture in the same vein as this one.

ALEKSANDRA SZCZUREK
FACULTY SPONSOR: THOMAS MACPHERSON, ART

Hand of God: 24"x36" Watercolor, ink, pastel, gouache and charcoal on paper

Golden: 18"x24" Pastel and gouache on paper

ERIN DONOVAN
FACULTY SPONSOR: PATRICE CASE, ART

7: The Book: This is a bound book made of 7 pages, each representing one of the seven deadly sins. Three of the pages are embossed; a mold was made and pressed into the pages. The other four pages feature the use of photography and the playing of black and white features with colored accents. The book had a cover made mostly of cardboard and paper, and the binding is that of the Japanese Book Binding style. Medium: paper, cardboard, photography.

HANNAH GLASER
FACULTY SPONSOR: LESLIE STROZ, ART

Master Copy of The Fruit Inspector by Morgan Weistling : 30 x 30 inch oil on stretched canvas. This painting was done as an instructional copy of Morgan Weistling's original "Fruit Inspector." Painted with water miscible oil paints, and using the same color palette as the master artist.

MICHAEL HARTMAN
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Wire Helmet

Inspired by Elven Helms seen in "The Lord of the Rings" film series, the piece guides the viewers eye with use of implied and contour lines.

JESSICA KIM
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Portrait

BIANCA BETTS
FACULTY SPONSOR: LESLIE STROZ, ART

Aqueduct

Aqueduct in Italy done in watercolor

EDITH ALAVEZ
FACULTY SPONSOR: LESLIE STROZ, ART

Monochromatic Interpretation of Sophie Anderson's Autumn Princess

It is a monochromatic interpretation of Sophie Anderson's Autumn Princess

BRODIE FINE ARTS – LEDERER GALLERY

JULIA ANDALORA
FACULTY SPONSOR: EUGENE DEZARN, ART

The Feast: A set of forks come alive to devour some fast food. Sculpture.

Apocalypse Steeds: A take on the four horsemen of the apocalypse. Small but detailed steel sculptures.

When You've Hit Rock Bottom: A plate steel sculpture depicting the inevitable.

LIURAN CHEN
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Portrait, Glory: A portrait of a girl in charcoal

The Studio at Night: A still life drawing of an art studio

ELIZABETH NEEVES
FACULTY SPONSOR: LESLIE STROZ, ART

"Portrait of Elinore": This work of my younger sister Elinore. This project was the second to last assignment of the semester and arguably one of my best.

MOHAMMED HOSSAIN
FACULTY SPONSOR: PATRICE CASE, ART

Sculpture 1: A head made of metal with wood placed in the center of the head.

Sculpture 2: A building blocks. made of metal sheets.

PAM HOWE
FACULTY SPONSOR: THOMAS MACPHERSON, ART

Grandiose Romanticism: Charcoal and watercolor on paper. The face of a sad old man.

Lenny Haunts You Haunt Me: Charcoal on paper A man seeing Lenny Bruce behind his own reflection

A Jar Fulla Butterflies: Acrylic on canvas weird man holding a jar of monarchs

EMILY DIPAULO
FACULTY SPONSOR: RIO TAKEMURA, ART

I'm Whaley Dreaming: Whales amidst swirls and lines... Sharpie.

JOO YEON SHIN
FACULTY SPONSOR: PATRICE CASE, ART

Untitled: Sculpture of 4 skulls

Untitled: Wood carving

Untitled: plaster statue

ALISON BROCKETT
FACULTY SPONSOR: RYOTA TAKEMURA, ART

A Little Slice of Peacock: A transformation from a lemon to a peacock.

KATELYN COLLINS
FACULTY SPONSOR: CASE PATRICE, ART

Cash Money: Cash died of Lyme's Disease at only 4 years old, last spring. This painting is for him.

ZOE VAN ORDEN
FACULTY SPONSOR: LESLIE STROZ, ART

Monochromatic Master Portrait: This is a monochromatic copy of an original portrait created in full color by a master artist.

Still Life: This still life was created with a limited palette with emphasis on the strategic use of color.

Geneseo Plein Air: This painting, completed in one sitting, was done outdoors in December with a view of the Geneseo Valley from the Saratoga Townhouses.

MARLEE CAVALLERO
FACULTY SPONSOR: LESLIE STROZ, ART

Zain: Line and wash portrait (ink and watercolor)

YULIYA MURADOVA
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Hand: A study of the artist's hand in a contorted position done in charcoal.

Charcoal portrait: A self portrait of the artist in charcoal from a black and white photograph.

BENJAMIN WOLF
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Still Life: When looking at the massive still life we were presented with the task of drawing, I decided that I would try to go a different route than others. By concentrating in on one part of the still life I was able to create a mood separate from the one denoted by the overall still life.

STEPHON LAWRENCE
FACULTY SPONSOR: LESLIE STROZ, ART

Still Life with Pear & Tomato: Oil Paint color study of a still life with a pear and tomato

Color Master Copy (Portrait): Color Master Copy of a work from a past painter

KEENAN TAYLOR
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Portrait of Tȟathȟáŋka Íyotake: A portrait of the famous Hunkpapa chief Tȟathȟáŋka Íyotake, or Sitting Bull.

Charcoal Landscape

ASHLEY FENIMORE
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Landscape: Mainly vine charcoal, but some compressed charcoal as well.

Charcoal Portrait: Portrait of Jacob Trost, a best friend at SUNY Geneseo.

Charcoal Still Life: Final project for the Drawing I class. Consisted of many objects found in our classroom and the room next door.

THOMAS MULHOLLAND
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Portrait: Portrait of David Lynch in charcoal.

Charcoal Hand: Charcoal drawing of hand.

SAMANTHA HUEBLER
FACULTY SPONSOR: THOMAS MACPHERSON, ART
PATRICE CASE, ART

Dance of the Kathakali: Watercolor painting that depicts an Indian dance known as Kathakali.

Crane Lake: Watercolor painting of a crane.

MICHELLE BAIER
FACULTY SPONSOR: LESLIE STROZ, ART

Plein Air Oil Painting: The Geneseo valley in the winter

BEVERLY HIRSCHMANN
FACULTY SPONSOR: LESLIE STROZ, ART

Still Life: My still life is a close up focusing on a pair of old boots thrown aside.

Charcoal Portrait: My charcoal portrait is a self portrait based on a picture of myself taken by Ashley Fenimore.

HANNAH MAISONET
FACULTY SPONSOR: LESLIE STROZ, ART

Perfection Portrait: This is probably my piece of work that I am most proud of. It is my first charcoal portrait from Drawing I. A variety of techniques were used in creating this, including painting with charcoal dust and drawing with tortillons. The original reference photo, titled "Perfection," can be found in the deviantart gallery of DarkVenusPersephonae.

HEATHER CHOI
FACULTY SPONSOR: LESLIE STROZ, ART

Portrait of Johnny Depp in Charcoal: This portrait was done as the last project for Drawing I class.

Still Life of a Painter's Studio in Charcoal: This still life was done as the final for Drawing I class.

LARA ELMAYAN
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Portrait: When initially assigned this project, I scoured the internet for a face that was interesting enough to draw. Almost everything was too low-resolution, too highly Photoshopped, or taken in too flattering and perfect light. I wanted to go into extreme detail with charcoals and convey beauty in imperfection. So I photographed my mother in harsh side lighting and tried to replicate every wrinkle, line, and imperfection. She still hates me for it.

Charcoal Still Life

EMILY SWEET
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Butterfly Effect: 14 x 17 , Medium: Sharpie

Cupid's Madness: 14 x 17, Medium: Sharpie and Watercolor, 2D Final Project

GINA ABRAHAM, MARISSA BENSON
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Box Project: This box project was for our second art studio project for 3 Dimensional Design. We have 3 people in our group, Michael, Marissa and Gina. Our task was to create a life size piece of art that followed criteria such as patterns, movement, line quality and more and project it on to our art piece while maintaining good craftsmanship and detail. We could tape or glue cardboard together. However, we can only use cardboard. We have the option to design with covering paper later on. Our idea was to make stairs that go up with a figure standing somewhere on the stairs. Since the project has to be taller than the tallest person in our group, our project has to be taller than 5"7 - Marissa. We decided on the height to be around 6 ft. After that we started cutting out strips of cardboard to make steps. Each step had to be about 8 inches and different inches long. We had different lengths because each step was going to get be descending or ascending in different sizes. We also had to plan where to put or point of contact-we decided to put it in the middle.

NICOLE CURTIS
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Perspective: This was a project for my 2D art class, our assignment was to create a drawing that had a focal perspective. The work includes a winding road and dice raining from the clouds.

AMY-LYNN HALLER
FACULTY SPONSOR: LESLIE STROZ, ART

Still Life: Vibrancy in Hue: This was the final project completed at the end of Oil Painting I. This piece was kind of an "aha!" moment for me. It was my first project that I really grasped the oil painting technique.

Master Copy: Renoir's Portrait of Jeanne Samary: The best way to learn is by copying a master artist. This painting is a copy of Renoir's "Portrait of Jeanne Samary."

AMBER RIED
FACULTY SPONSOR: LESLIE STROZ, ART

Youth: A Charcoal Perspective: Charcoal portrait of young child

MICHELLE MOSHON
FACULTY SPONSOR: LESLIE STROZ, ART

Monochromatic Master Copy (portrait): "Portrait of an Unknown Woman" by Ivan Kramskoi

Plein Air

ALEKSANDRA SZCZUREK
FACULTY SPONSOR: THOMAS MACPHERSON, ART

Self Portrait (Throne): 3'x5'5" Charcoal and pastel on tinted paper

ERIN DONOVAN
FACULTY SPONSOR: PATRICE CASE, ART

Mad Tea Party: An Object Study: An object study of cups featuring some abstract concept. Mainly using teacups and a top hat as my object, the abstract took form with Alice from Alice in Wonderland flying into the tea cups with help from the checkered band around the top hat. The scene lays a top a book meant to represent Lewis Carroll's books, paint medium used on pages. Colored pencil, blended, some sharpie marker used.

Notes on Fire: This project uses a mirrored pattern, with a tetrad color scheme. Created first was a 3"x3" square, which reflected off a point in the bottom right corner to create a larger 6"x6" square. From there the 6"x6" square was repeated three other times to create a 12"x12" square. A tetrad color scheme with the colors yellow orange, red orange, blue violet and blue green were used. They vary in each 6"x6" frame. Medium: Colored pencil - blended.

HANNAH GLASER
FACULTY SPONSOR: LESLIE STROZ, ART

Still Life with Yellow Pepper

MICHAEL HARTMAN
FACULTY SPONSOR: RYOTA TAKEMURA, ART

Abstract Cardboard Staircase: A cardboard structure that accentuates the use of contour and implied lines in an abstract portrayal of a staircase.

JESSICA KIM
FACULTY SPONSOR: LESLIE STROZ, ART

Monochromatic Master Copy: The Bather

Color Master Copy: Dusk

BIANCA BETTS
FACULTY SPONSOR: LESLIE STROZ, ART

Still Life: Still life containing a vase, pepper, and glass container done in oil paints.

Untitled: Monochromatic copy of Jules Joseph Lefebvre's "Young Woman with Morning Glories in her Hair" done in oil paints.

HANNAH CUMMINGS
FACULTY SPONSOR: LESLIE STROZ, ART

Landscape in Charcoal: An Italian villa in the countryside

STEVEN ROSENZWEIG
FACULTY SPONSOR: LESLIE STROZ, ART

Inside the Artist's Studio: A charcoal still life of a scene resembling an artist's studio.

Pre-angst Sunshine: A charcoal replica of a portrait of a child laying on the ground.

KELSEY COLBERG
FACULTY SPONSOR: LESLIE STROZ, ART

Charcoal Portrait: This is a piece done in Charcoal of a small child. The child's eyes and the foreshortening add to the piece's composition.

Charcoal Hand: This piece is done in charcoal of a hand. The lighting and shadows within the piece help add to the composition making it unique.

Still Life: This piece is done in charcoal depicting a still life image set up in a studio.

EDITH ALAVEZ
FACULTY SPONSOR: LESLIE STROZ, ART

Plein Air Painting: A landscape painting of Geneseo

Interpretation of Frank Cowper's Molly, Duchess of Nona: A color master copy painting of Frank Cowper's, Molly, Duchess of Nona painting

CHAMBER MUSIC FESTIVAL
FIRESIDE LOUNGE, MACVITTIE COLLEGE UNION

9:00-9:10 **Freshman Foundation**
Yasunori Three Ducks Went Wandering
CHRISTOPHER JONES, JAMES ARCIDIACONO, HOLLY DESMITT, PAUL GARING, STEPHANIE SCHECHTER

9:10-9:20 *Pedziwiatr Stranger Suite: Watch, Wait, Take*
Student composer: **PAUL PEDZIWIATR**
Piano: **EMI OKADA**

9:30-9:40 *Shostakovich String Quartet No. 8, Mvts 1, 2*
Violin: **BOB GAGLIONE** Violin: **REGINA CARRA**
Viola: **XINYUAN CHANG** Cello: **KEVIN HANSEN**

9:50-10:10 **Horn Quartet:** *Nikolai Tcherepnin Six Horn Quartets*
CHRIS JONES, HANNAH OSGOOD, KALYNN SMITH, PETER THOMPSON, ELIZABETH WAYE

10:20-10:40 **Flute Choir:** *Handel Water Music*
SAMANTHA YELLE, JAMIE JAQUAY, AMANDA THOMAS, MARY-MARGARET GALLUP, EMILIE SCHMELZER, KADY ROMIG, DEVIN GRAU

10:50-11:00**:** *SamulNori: Traditional Korean Drumming: Byeoldalgeori*
HEATHER CHOI, ERIC CHOO, JOANNE WOO, JESSICA MOODEY, JINBOK LEE
The name of this korean drumming, "SamulNori," means four objects (Samul) play (Nori). There are four types of instruments- Kkwaenggwari, a small metal instrument that typically leads the group; a Janggu, an hour-glass shaped drum, which provides the most complicated variations of the beats; Buk, which serves as the bassline, and typically carries the strongest and most basic beat; and the Jing, which is a large gong that provides a subtle undertone to the rhythm. SamulNori was traditionally performed in farming villages to ensure good harvest- it is therefore characterized by strong, accented beats and energetic spirits and body movement.

11:10-11:30 **Brodie Brass Quintet**
John Cheetam Scherzo
Henry Purcell Two Trumpet Tunes
Paul Dukas Fanfare from "La Peri"
Trumpet: **SAM DOLE** Trumpet: **RACHEL HARE**
Horn: **PETER THOMPSON** Trombone: **PHIL CHU**
Tuba: **COLLIN STILLMAN**

11:40-11:50 **Iris String Quartet**
Violin: **HANNAH GARFIELD** Violin: **MARIE KALET**
Viola: **MAGGIE MILANO** Cello: **ERIN PIPE**

12:00-12:30 **Saxophone Quartet**
Alto/soprano: **CHRIS MARTIN** Alto: **NICK ELLSWORTH**
Tenor: **JOE DITURSI** Baritone: **TRAVIS O'SULLIVAN**

12:30-12:50 **String Band** *Traditional American, Irish, and Scandinavian folk tunes*
LYDIA CURRAN, RHONDA DIPRONIO, KRISTEN DRUSE, KRISTEN HADLEY, MARIE KALET, LEANORA KARNATH, ABIGAIL KLUTTS, STEPHEN KOWALEWSKI, DANIEL LYNCH, CATHRYN MENARCHEM, JOSEPH NEJATHAIM, NICOLE RAHN, THOMAS ROBINSON, SALLY SCHAEFER, ISAAC SCHULTZ, CHARLES TURNER, RITA WHEELER, MICAH WIESNER

1:00-1:30 **Jazz Combo**
Cheesecake
Autumn Leaves
Strasbourg St. Denis
CHRISTOPHER PIKE, CHARLES TURNER, SAMUEL WEINSTEIN, ANDREW PATT, STEVEN ROSENZWEIG, DANIEL KROLIKOWSKI

1:45-2:45 **Break for Keynote Address**

3:00-4:00 **Thursday Night Jazz Ensemble**
Caravan
Passado
Michael
Stella By Starlight
I've Got You Under My Skin
STEPHEN BARRON, STEVEN COCHRANE, DEREK D'ARCY, JOSEPH DITURSI, KARL DIENER, SAMUEL DOLE, NICK ELLSWORTH, RACHEL HARE, NICK IANNARELLI, JUSTIN JOYCE, DOUGLAS KNOWLES, MATTHEW LAWNICZAK, ROBERT LEON, KAITLYN MORGAN, HANNAH OSGOOD, JOSEPH RACANELLI, TARA REBUCK, ANDREW ROBERTS, NATHAN TROMBLEY, ADAM ZACZEK

4:10-4:30 **Exit 8,** a cappella
Sopranos: **SHELLY MASSACHI, ALI NIEMIEC, EMILY RITTENHOUSE, MELISSA NIKNAM**
Altos: **JULIA MASOTTI, ALEX MENDES, ELYSSA RAMIREZ, NICOLE PEINKOFER, NICOLE SIMONS**
Tenors: **PATRICK DANIELS, JONATHAN MUSHOCK, RUSSELL ALLEN, SHAWN WARD**
Basses**: DAVE DUHAMEL, ANDRE HERRING, ERIK PERRY, BEN DURLAND, SAM WEINSTEIN**
Beat boxer: **PHIL LONGO**

DANCE PERFORMANCE
1:20 pm Union Ballroom Stage

Geneseo Bhangra
SHADMAN SINHA, ASHLEY BURKE, BILLY O'DONNELL, AMANDA SHAPIRO, DALE IGLESIA, CHAMODI RAJAPAKSE
FACULTY SPONSOR: RANDY KAPLAN, THEATRE/DANCE

Geneseo Bhangra is a competitive Indian dance team on campus. This genre of dance comes from the Punjabi culture from Pakistan and India. It is a high-energy dance that was originally a celebration of harvest and is now commonly performed at weddings and competitions.

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The Jack '76 and Carol '76 Kramer Endowed Lectureship

KEYNOTE ADDRESS

Wadsworth Auditorium • 1:45 – 2:45 PM

Introduction by Christopher Dahl, President

Dava Sobel
"Bringing Copernicus to Life in Prose and Script"

About Dava Sobel

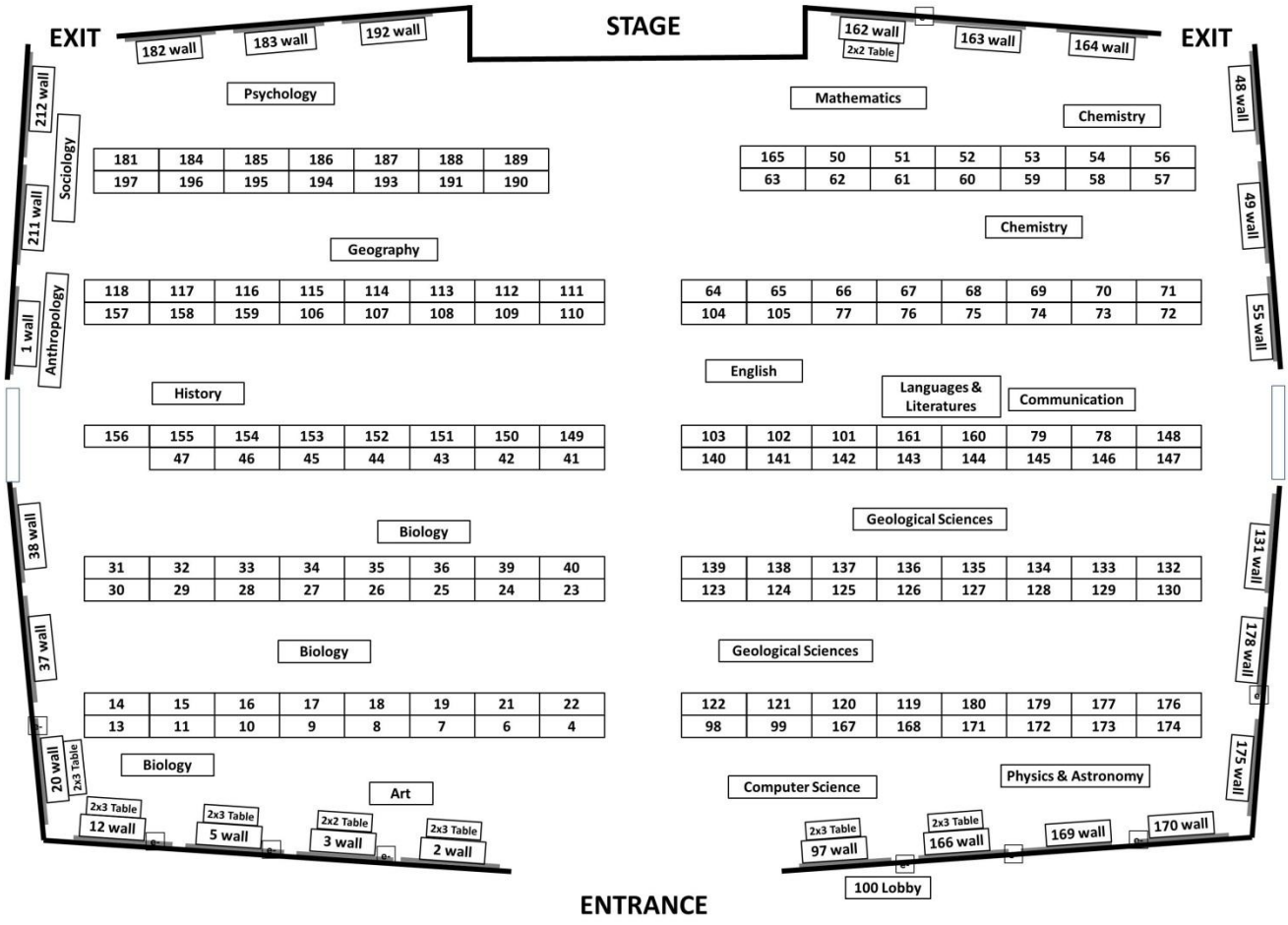
Dava Sobel, a former New York Times science reporter, is the author of *Longitude, Galileo's Daughter, The Planets,* and *A More Perfect Heaven.* In her forty years as a science journalist she has written for many magazines, including *Audubon, Discover, Life*, and *The New Yorker,* served as a contributing editor to *Harvard Magazine* and *Omni,* and co-authored five books, including Is *Anyone Out There?* with astronomer Frank Drake. Ms. Sobel received the 2001 Individual Public Service Award from the National Science Board "for fostering awareness of science and technology among broad segments of the general public." Also in 2001, the Boston Museum of Science gave her its prestigious Bradford Washburn Award for her "outstanding contribution toward public understanding of science, appreciation of its fascination, and the vital role it plays in all our lives." In October 2004, in London, Ms. Sobel received the Harrison Medal from the Worshipful Company of Clockmakers, in recognition of her contribution to increasing awareness of the science of horology by the general public, through her writing and lecturing. In 2008 the Astronomical Society of the Pacific gave her its Klumpke-Roberts Award for "increasing the public understanding and appreciation of astronomy."

Her GREAT Day keynote is entitled "Bringing Copernicus to Life in Prose and Script." In 2006 her stage play about sixteenth-century astronomer Nicolaus Copernicus, called *And the Sun Stood Still* was commissioned by the Manhattan Theatre Club through the Alfred P. Sloan Initiative, and was also supported by a Fellowship from the John Simon Guggenheim Memorial Foundation. Sobel stated that "My play about Copernicus, *And the Sun Stood Still,* portrays the events that made him buck common sense and received wisdom to defend the Earth's motion around the Sun. The theme of the piece is a familiar favorite of mine: the great transformation of humankind's worldview through science."

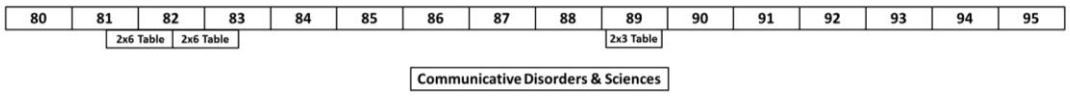
In May 2011, as the Elizabeth Kirkpatrick Doenges Visiting Artist/Scholar, Ms. Sobel taught a course called "Writing Creatively about Science" at Mary Baldwin College in Staunton, Virginia. Starting in 2013, she will begin a two-year appointment as the Joan Leiman Jacobson Writer-in-Residence at Smith College in Northampton, Massachusetts. Lecture engagements have taken Ms. Sobel to speak at The Smithsonian Institution, The Explorers' Club, NASA's Goddard Space Flight Center, The Folger Shakespeare Library, The New York Public Library, The Hayden Planetarium, The Royal Geographical Society (London), and the American Academy in Rome. She has been a frequent guest on National Public Radio programs, including "All Things Considered," "Fresh Air," and "The Diane Rheem Show." Her television appearances include CSPAN's "Booknotes" and "TODAY" on NBC. She contributes an occasional column to Discover Magazine called "Field Notes," describing what scientists actually do when they are "doing research." A 1964 graduate of the Bronx High School of Science, Ms. Sobel attended Antioch College and the City College of New York before receiving her bachelor of arts degree from the State University of New York at Binghamton in 1969. She holds honorary doctor of letters degrees from the University of Bath, in England, and Middlebury College, Vermont, both awarded in 2002.

GREAT Day College Union Poster Locations

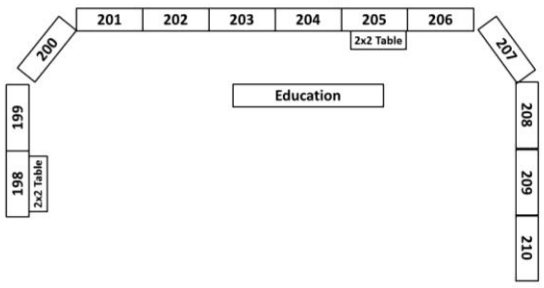
Ballroom



CU 3rd Floor Balcony Poster Locations



CU 3rd Floor East Lounge Poster Locations



Milne Library Video Loop

213 Theatre & Dance

POSTER ABSTRACTS

COLLEGE UNION 3RD FLOOR

COMMUNICATIVE DISORDERS & SCIENCES

80 • Is Geneseo Hazardous to Your Hearing? An Examination of Popular Places At Geneseo and Noise Levels through the Day

MARY-CLARE STOKES
FACULTY SPONSOR: CAROL IVSAN,
COMMUNICATIVE DISORDERS & SCIENCES
Using a sound level meter, the decibel level average will be taken at some of the most popular sites around campus when the space is empty and then again during peak hours. Sustained decibel levels of over 70dB can have harmful effects of a person's hearing and this study will examine the possibility of aural harm in the most visited locations around campus.

81 • When Your Brain Can't Hear: An Overview of (Central) Auditory Processing Disorders

SEAN FUSTER, JULIA GANGLOFF, SAMANTHA HARTNETT, PATRICK LANGAN, CAROLYN MAHON, KATHRYN MAKOWIEC, KRISTEN SCHULTZ, ASHLEY THORNTON
FACULTY SPONSOR: DOUGLAS MACKENZIE,
COMMUNICATIVE DISORDERS & SCIENCES
It is estimated that 2-3% of school-age children have significant difficulty processing auditory information, with even higher prevalence within the adult population. In most cases these individuals demonstrate normal hearing sensitivity. They can essentially hear sound at normal levels but the auditory signal somehow gets "jumbled" en route to the brain. This poster presents an overview of what are referred to as (Central) Auditory Processing Disorders including possible causes, behavioral/functional symptoms, methods for diagnosis, and treatment/management options.

82 • Speech and Language Therapy Materials: Original Student Works

ANNE HALSTEAD, KATHRYN MICHALEK, ASHLEY THORNTON, KAITLYN RAFFE, BRYNNE STURGE, MANDY OLEVNIK, MARY COBLE, CALLI RAINES, CHRISTINA DORNBUSH, JENNIFER WALPOLE, EMILY MECI
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
Displayed speech-language therapy materials were constructed by Communicative Disorders & Sciences students in their first semester of clinical experience for use with clients in the Geneseo Speech and Hearing Clinic and local school programs. The materials are highly individualized, based on each client's speech and language goals and interests. Students used these materials to motivate their clients during therapy sessions and teach new communicative skills. The materials on display were used with clients demonstrating articulation errors, language delays, fluency and autism, but could easily be adapted for use with any population.

83 • The Importance of Literature on Language Development

ANNE HALSTEAD, CALLI RAINES
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
Getting children to read is an important aspect of preparing them for success in school. While there are several variations of philosophies as to how children learn language, most agree that exposure to diverse usage of language is an important part of the developmental process. Children's literature is significant because it enhances development of language skills and other critical thinking skills that provide the foundation of learning.

84 • Traumatic Brain Injury: Rehabilitation and Role of the Speech-Language Pathologist

APRIL RUIZ, DANIELLE WILLIAMSON
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
Traumatic Brain Injury (TBI) is an acquired brain injury, occurs when a sudden trauma causes damage to the brain. This project explores the causes and effects of traumatic brain injury, as well as the role of the Speech-Language Pathologists in rehabilitation of TBI.

85 • Augmentative and Alternative Communication

BRIDGET MCGOVERN
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
Augmentative and Alternative Communication (AAC) are methods of communication that are used to replace speech or writing for those individuals who have severe speech and language problems. It is a form of communication that helps express needs, thoughts, wants and ideas. AAC can be used by a wide range of individuals with disabilities. Those with congenital impairments like cerebral palsy, autism, developmental dyspraxia, or those with acquired conditions like Parkinson's, multiple sclerosis, dementia, etc. There are two forms of AAC: Unaided communication which includes body language, gestures, or sign language and Aided communication that ranges from low-tech aids such as communication boards/books or high tech aids like electronic message boards.

86 • Picture Exchange Communication System: An Overview

BRIDGET MISKELL, KATELYNN IMAGNA
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
Picture Exchange Communication System (PECS) is an alternative communication system that uses pictures instead of words. It was originally designed to be used with children on the autism spectrum, though it may be used with any person who exhibits a delay in speech development. PECS is an easy, relatively low cost system of communication that can be implemented in a wide variety of environments.

87 • Swallowing Disorders in Relation to Speech Language Pathology

BRYNNE STURGE, EMILY MECI
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
Our presentation will explore the roles of Speech-Language Pathologists in swallowing and feeding disorders, including the causes, symptoms, prevention, and rehabilitation. We will include how swallowing disorders impact oral motor functions, specifically how they impact speech. One procedure that we will focus on is the barium swallow which helps the SLP determine the severity and cause of the swallowing disorder.

88 • Traumatic Brain Injuries

JENNIFER WALPOLE
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
This presentation will focus on different types of traumatic brain injuries, the detrimental effect they have on communication, and the role of the Speech-Language Pathologist in rehabilitation.

89 • Laryngectomy

JOANNA FINNERTY, CHRISTINA DORNBUSH
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
A laryngectomy is a procedure dealing with the removal of the larynx and separation of the airway from the nose, mouth, and esophagus. Post operation, patients must find a new way to communicate as well as adapt to changes in their lifestyle. Topics discussed include prevention, etiology, surgical procedure, modes of communication, and maintenance.

90 • Tourette's Syndrome

JULIA GANGLOFF, STACIANNE LESTER, BRIANNA SERFIO
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
The impact Tourette's syndrome has on the speech mechanisms and how it can affect someone's everyday life.

91 • Vocal Abuse in Children

KAITLYN RAFFE, AXITA VORA
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
This poster will contain information on vocal abuse in children. Specifically, it will address what causes

vocal abuse in children and situations to avoid or monitor. Overall, the poster will include causes of vocal abuse, signs/symptoms, long-term outcomes, and techniques that can help reduce abuse and increase vocal hygiene.

92 • Dysarthria in Parkinson's Disease

KATHRYN MICHALEK, MICHELLE CERVELLO
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
This poster will discuss the symptoms and treatment of hypokinetic dysarthria in Parkinson's disease.

93 • Common Misconceptions of Deaf Culture

MARY COBLE, NICOLE ZINGMAN
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
The purpose of this research project is to explore the common misconceptions that hearing persons have toward the deaf community. According to Gallaudet University, it is estimated that 2 to 4 of every 1000 people are "functionally" deaf. Since there is a significant deaf population in the United States, it is important to understand the culture and history behind the community. By making the effort to learn about deaf culture, we can break down the barriers between the hearing and non-hearing worlds.

94 • Cleft Lip Palate and the Role of the Speech-Language Pathologist

REBECCA LODI, EMILY LEPSKI
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
This poster highlights the role of a Speech-Language Pathologist with individuals born with cleft-lip palate. The characteristics that affect speech, voice and language will be emphasized. This will include the assessment and treatment options that a Speech-Language Pathologist can provide. Information will also be given on the etiology and incidence for cleft-lip.

95 • Augmentative Alternative Communication and Autism

SARA CARVER, LAUREN BOYCE
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
The poster will explain the type of augmentative alternative communication and its benefits for children with autism. One out of every 88 children are diagnosed with autism, and of these children, 60% are unable to communicate their wants and needs. ACC devices allow these children to communicate and interact with the people around them. There is both aided and unaided types of communication systems, we will explain both of these providing ample examples. We will also bring in an iPad so that people may observe the use of one these systems.

95 • The Speech-Language Pathologists Role in the Deaf Community

SAMANTHA HARTNETT, MEGAN ALI
FACULTY SPONSOR: LINDA HOUSE,
COMMUNICATIVE DISORDERS & SCIENCES
This poster will present an overview of how Speech-language pathologists work with deaf people. Both Speech-Language Pathologists and Audiologists play an important role in helping the deaf to learn to communicate with hearing people and to learn how to participate and function in every day activities. Speech-Language Pathologists work with the deaf on learning to lip read, read and write in English and sometimes even teaching deaf people how to speak. It is necessary for people entering into the communication disorders and sciences field to understand how crucial their role is to the deaf community.

SCHOOL OF EDUCATION

198 • Reading Comprehension Strategies for Primary Students with Autism

MARIAH MARIENFELD
FACULTY SPONSOR: ANNMARIE URSO, SCHOOL OF EDUCATION
This research focuses on the implementation of research-based strategies that can be used to instruct students with Autism, Asperger's Syndrome, Pervasive Developmental Disorder, and Pervasive Developmental Disorder-Not Otherwise Specified in reading comprehension. Students with these disabilities typically have difficulty with making meaning of texts. Being able to comprehend a text is critical, as it is the main reason why people read. Individuals must be able to draw on prior knowledge in order to make meaning of the texts that they read. In order to provide these students with the skills necessary to comprehend texts and draw key information from them, teachers should use specific research-based strategies. The strategies used in this case study/single subject research design include direct instruction, cloze procedures, computer-assisted instruction, and prompting and drawing attention towards vital information in texts and pictures. Research was conducted in a self-contained classroom setting, with students in grades K-3. Students were instructed with fiction books at or slightly above their reading levels.

199 • Speech Therapy and How it Helps People

ANDREW MACDONALD
FACULTY SPONSOR: ELIZABETH HALL, SCHOOL OF EDUCATION
I researched Speech Therapy and how it helps people. I have a disability, and I personally need speech therapy. It has helped me, and I want others to know how it can help them. I will look at the different types of speech therapy to explain how what I've learned has helped me in school and at my internship.

200 • Wrestling: It's More Complicated Than You Think

DUSTIN FREDERICY
FACULTY SPONSOR: ELIZABETH HALL, SCHOOL OF EDUCATION
I am interested in becoming a professional wrestler, so I chose to research wrestling. I will be talking about the history of wrestling, the different types of wrestling, and how it involves so much more than just wrestling itself. It includes teamwork, acting, physical skills, balance, and strength. I will talk about what I have learned from wrestling, and how I can use these skills in my everyday life.

201 • Heart Surgery: Look How Far We Have Come

ELLEN BEISHEIM
FACULTY SPONSOR: ELIZABETH HALL, SCHOOL OF EDUCATION
I have researched Heart Surgery, and the different types of heart surgery that exist today. I chose this topic because I had heart surgery. I wanted to learn more about it and how it has helped me become more independent today.

202 • Technology: How I Use it Daily

JOHN FEIDNER
FACULTY SPONSOR: ELIZABETH HALL, SCHOOL OF EDUCATION
I chose to research technology and how it impacts my daily life. I will look at the computer, cell phone, and digital camera to show how these different technologies impact our lives today, and how they have left a mark on society. I will look at how these technologies impact society, the environment, as well as my life.

203 • Alopecia: What It Is and Its Impact on Me

TYLER GERACI
FACULTY SPONSOR: ELIZABETH HALL, SCHOOL OF EDUCATION
I researched alopecia: what it is, how it happens, its symptoms, the different types, what causes it, is it genetic and/or life threatening, how many people have it and can it be treated. I chose this topic because it affects me and I wanted to know and wanted others to know how having it can affect people's lives.

204 • Active Learning Through Curriculum Design: Using Bilingual Books to Support Language Acquisition

ALEXIS RYTEL
FACULTY SPONSOR: MARIA PERPETUA LIWANAG, SCHOOL OF EDUCATION
As part of an undergraduate directed study, a faculty and an undergraduate education student collaboratively developed a Spanish language curriculum that is centered on the use of authentic children's literature. The goal of this student designed and faculty guided course is to document how using literature written in a culturally relevant bilingual language supports elementary students' Spanish language acquisition. Presentation of undergraduate student's active learning experiences in designing and implementing curriculum, resources and findings will be shared. ***Selected for presentation at 12th Annual Niagara University International Conference on Teaching and Learning, Niagara Falls, NY.***

205 • Multiculturalism in the Classroom

JOANNA SIMONE, ALANNA FAUSEL, CHRISTINE NASSAR, HANNAH TASHMAN, BRIEANNA CERVONI
FACULTY SPONSOR: MARIA PERPETUA LIWANAG, SCHOOL OF EDUCATION

Multiculturalism is often discussed as an important, yet relatively broad concept. Though an understanding of different cultures is an integral part of the well-rounded global perspective, how does one cultivate this understanding in others? This study explores how literature can provide information on various multicultural views, expressed using themes ranging from cultural traditions and the celebration of holidays to the struggle of immersion in a new culture. Resources for finding multicultural literature on campus, like those found at SUNY Geneseo's Teacher Education Resource Center (TERC) or the Office of Multicultural Programs (part of Geneseo's Center for Community) will be examined to contribute to a better understanding of multiculturalism. This study also aims to highlight the diverse range of literature that enables students of various ages and levels to learn more about themselves and the world.

206 • Collecting and Analyzing Eye-Tracking and Miscue Data to Examine What Readers Do When Reading

LAUREN FONTE, DEVEN COULTER, BREANNE RAFFERTY, MACKENZIE GRANT
FACULTY SPONSOR: MARIA PERPETUA LIWANAG, SCHOOL OF EDUCATION

The Common Core State Standards (CCSS) initiative has brought new demands and challenges for how teachers should teach reading. As a result, pre-service teachers need to better understand reading research and how readers read if they want to be co-constructors of future K-12 literacy curriculum. This study is our response to the CCSS comprehensive reform to equip ourselves with knowledge about how the reading process works. In this research, we present how we used eye movement miscue as a research methodology to investigate what the eyes do when people read. Six college readers who participated in the study were asked to read a short passage, a student-developed short passage with embedded errors, a short story, a fictional story, and a booktrailer video. After the readings, participants were asked to retell what they have read and also respond to questions about what they noticed about the texts and video they have read. This is an on-going research as we are still analyzing our eye tracking and miscue data. Nevertheless, we anticipate that we will be presenting our understanding of how reading works when reading print and video texts.

207 • Using Eye Movement Miscue Analysis to Study How Text Format and Genre Influence Reading Strategies

MAGGIE BOQUARD, ALYSSA SMITH
FACULTY SPONSOR: MARIA PERPETUA LIWANAG, SCHOOL OF EDUCATION

This experimental study using an eye movement miscue analysis methodology focuses on examining how a text's format influences reader strategies and comprehension. A fractured fairy tale and a college-level textbook were used to gain insight into the effects of page layout, font size, genre and content on how college readers navigate texts. Eight college readers who participated in the study read two separate texts while their eye movements and oral readings were recorded. Following the reading, the subjects were also asked questions regarding their reading strategies and approach to the text. This is an on-going research study so our process and results may change. However, we believe our study will demonstrate initial insights regarding effective reading habits of college students.

208 • The Basal Reading Approach: Where Did the Magic Go?

STEPHANIE WILLMARTH
FACULTY SPONSOR: MARIA PERPETUA LIWANAG, SCHOOL OF EDUCATION

The Basal Reading Program is designed to teach children to read, with a basis in vocabulary instruction, language skill, and grammatical structuring. Children learn to read by reading - it is the most effective way to understand the technicalities of language, to learn to comprehend a story, and to, most importantly, discover the magic of books. The Basal Program, created to support educators in providing readers with necessary language skills, has been criticized as a threat to the art of picture books and the adventures of reading. With controlled vocabulary, uninteresting stories, and scripted lessons, it is questionable as to whether the implementation of the Basal Program is beneficial for developing lifelong learners. Evidence will be provided, proving that the Basal Program's intention to instill structure in the art of literature threatens the magic and joy that excites young readers. With the objective of nurturing students who love to read, research and fact-based evidence will be delivered to support the use of authentic literature, as opposed to basalized picture books.

209 • Current Trends in Southeast Asian Refugee Education: Interdisciplinary Approaches to Addressing the Diverse Needs of English Language Learner Students at Maplewood

MELINDA KUWIK, JOHN BLANK, STEPHANIE TYREE
FACULTY SPONSOR: SUSAN NORMAN, SCHOOL OF EDUCATION

This poster will describe the SUNY Geneseo tutoring effort in the city of Rochester at the Maplewood Library called Rochester Young Scholars Academy Saturday School (RYSASS). RYSASS will provide fruitful educational experiences for ELL students at Maplewood through understanding the sociocultural history of Southeast Asian refugee populations as a foundational base for purposeful educational practices to meet the diverse needs of English Language Learners (ELL). The following four intercultural approaches will be utilized to break down language barriers, make content area connections, and provide safe educational spaces to foster an environment that encourages open communication and effective use of the English language. Multicultural literacy, vocabulary building, learning through play, and transcultural communication methods will be implemented by the RYSASS tutors with ELL student populations at the Maplewood Library. Pre-service teachers will gain teaching experience with refugee communities while broadening their own understanding of the students' unique cultural history. Through the RYSASS tutoring effort, ELL students will build confidence, increase social capital, and improve English language proficiency.

210 • RYSASS: Rochester Young Scholars Academy Saturday School

MELISSA TEMPLETON, KIM WILLEY, KELSEY CAREY
FACULTY SPONSOR: SUSAN NORMAN, SCHOOL OF EDUCATION

This poster will represent the Saturday School that Susan Norman runs with student volunteers called RYSASS. RYSASS work with inner-city youth to provide academic support to a range of students. We provide student volunteers to tutor students in all topics. In addition, this year we are running a college readiness curriculum to inform our students of the college admissions process, financial aid, and paths to careers. Over the years RYSASS has built a community of students who come every week for help and support, as well as opened the program to new students. Our student population represents a variety of Rochester City Schools. Our students come from a variety of backgrounds and needs and are paired with tutors who will help them meet these needs. The poster will include a description of the program, representations of student work, pictures of activities we have run, student testimonies, and an informative section on how the Rochester City School District works and how RYSASS is helping these students, and why what we do is so important.

COLLEGE UNION BALLROOM

ANTHROPOLOGY

1 • Middle Late Woodland/Jack's Reef Horizon Occupations on Brown's Bottom, Ross County, Ohio

ROBIN QUATAERT
FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

Excavations conducted during the Brown's Bottom project between 2005-2011, located on the Scioto River floodplain portion of the Harness Farm, 10 km south of Chillicothe, Ohio produced evidence of overlapping Woodland occupations. While the primary occupations at the investigated sites were Ohio Hopewell in origin, cultural remains dating to the Middle Late Woodland period which are affiliated with the poorly known Jack's Reef or Intrusive Mound Horizon in Central Ohio were also documented. This poster presents a synopsis of the Jack's Reef subsistence and settlement evidence collected during the Brown's Bottom project and then contextualizes and compares them with other Jack's Reef materials collected on the Harness Farm and in Central Ohio. ***Selected for presentation at Eastern States Archaeological Federation, Perrysburg, OH.***

ART

2 • The Harmon Collection: Pueblo Pottery from the Rio Grande Valley

BRIDGET KELLY
FACULTY SPONSOR: CYNTHIA HAWKINS, ART

Geneseo LLB Galleries received 34 ceramics from Lucy Harmon in 1976. They were purchased from the Zuni, Acoma, Isleta, Zia, Santo Domingo, Tesuque, San Ildefonso, Santa Clara, San Juan, Picuris and Taos Pueblos of the Rio Grande Valley. Maps of the area, photographs, a large number of news articles and a lecture written by Lucy Harmon accompanied the collection. I examined these resources to gain a better understanding of the cultural resources in Geneseo's possession. This poster matches the ceramics with the groups that produced them and looks at the historic and cultural circumstances under which they were produced and sold.

3 • 47 Years of Photography Research

CARLY FOWLER, LAUREN HANNEL
FACULTY SPONSOR: MICHAEL TERES, ART

Professor Teres has started a collection of student photography that dates back to his beginnings at SUNY Geneseo in 1967. The collection highlights the gradual transition from film to digital photography, black and white versus color, and various forms of matting and printing. Our mission is to make this collection accessible in te form of a searchable, visual database, so that this invaluable group of student-produced artwork can be used as both a learning tool and to in some small way display of our school's rich history. We are working on a process to make this as efficient as possible, and strive toward making this collection available for usage as soon as possible. This is the foundation for organizing a searchable, online database. People will be able to find photographs based on these four main categories (name, year, subject, medium). We believe that this will be the most efficient way to ensure that people can find what they are looking for.

BIOLOGY

4 • Role of Ubiquitination Genes *skr-2* and *skr-10* in *C. elegans* Intestinal Development

CLAUDIA CEDFELDT
FACULTY SPONSOR: ABBI PAULSON, BIOLOGY

Ubiquitination plays a wide spread role in the regulation of protein degradation, but how this affects tissue and organ development is largely unknown. An experiment was performed to assess the effects on *C. elegans* development when the ubiquitination genes *skr-2* and *skr-10* were knocked down with RNA interference (RNAi). *skr-10* is homologous to a gene that codes for a ubiquitin ligase protein that is part of the SCF complex, which degrades cellular material in humans. *skr-2* encodes an additional component of this degradation complex. Interestingly, RNAi for *skr-2* and *skr-10* resulted in a high percentage of embryonic ruptures, which are caused by failed gastrulation. Gastrulation is a developmental process in which the three germ layers (ectoderm, mesoderm, and endoderm) are established and properly positioned. In embryos that did gastrulate normally, *skr-2* and *skr-10(RNAi)* resulted in disrupted intestinal development in some cases. In initial experiments, the percentage of embryos with disrupted intestines was determined to be 40.8% for *skr-2(RNAi)* and 29.5% for *skr-10(RNAi)*, and this included both intact and ruptured embryos. In the future we will focus on examining properly gastrulated *skr-2* and *skr-10(RNAi)* embryos with disrupted intestines, and analyzing parameters such as lumen shape and number of intestinal cells present.

5 • Investigating the Role of Tropomodulins in *C. elegans* Intestinal Tubulogenesis Using RNA-Interference

DAVID NOVITZKI
FACULTY SPONSOR: ABBI PAULSON, BIOLOGY

Tropomodulins (Tmods) cap the pointed ends of actin filaments (F-actin) to regulate actin dynamics and turnover. *C. elegans* has two genes that encode Tmods; tropomodulin-1 (TMD-1) and tropomodulin-2 (TMD-2). Past work from our lab has shown that mutation of *tmd-1* results in a flattened, wider intestinal lumen, which could be attributed to a decreased concentration of F-actin in the terminal web that underlies the luminal membrane. Since *tmd-1* and *tmd-2* share 82% sequence similarity, the role of TMD-2 was analyzed via multi-generational RNA-interference (RNAi). Results suggest that TMD-2 does not perform a functional role in *C. elegans* intestinal tubulogenesis, whether alone or in collaboration with TMD-1. Like TMD-1, WAVE/GEX proteins, which regulate actin branching, are known to increase intestinal lumen diameter and to decrease terminal web F-actin levels when depleted. RNAi experiments were conducted to determine if TMD-1 and WAVE/GEX proteins work together or in parallel to regulate intestinal development. Preliminary data suggests that TMD-1 and WAVE/GEX proteins are need in parallel to maintain intestinal luminal width in this model organism. This provides new insights into actin regulation during tubulogenesis and emphasizes the importance of both minus-end F-actin capping and branching in this process.

6 • TMD-1/Tropomodulin Regulates Intestinal Morphology and Vesicle Trafficking in *C. elegans*

JAMIE ALBUCHER
FACULTY SPONSORS: ABBI PAULSON AND HAROLD HOOPS, BIOLOGY

The formation of tubes is not fully understood in te field of biology. Tubes are an essential to human development because many organs, including the heart and kidneys, develop as tubes. We use the intestine of the transparent soil nematode, *Caenorhabditis elegans*, as a model organism to study tube formation. The *C. elegans* intestine is comprised of 20 cells surrounding a fluid-filled lumen, which forms using a cord-hollowing mechanism that is likely to involve apical exocytosis. Tropomodulins are actin-regulatory proteins that control the slow-growing ends of actin filaments and nucleate the formation of new actin filaments. To examine the roles of TMD-1 in the intestine, I have been examining the structure of *tmd-1(tm724)* mutant intestines using transmission electron microscopy and characterizing and quantifying the intestinal vesicles using light microscopy and a tracker for acidified vesicles. We have found that worms that lose the function of the tropomodulin, TMD-1, have many intestinal defects, such as abnormal lumen shape, buildup of acidified vesicles, and decreased intestinal terminal web thickness. These mutant phenotypes may be caused by vesicle transport defects. These studies should provide new insight on the role of actin in the development of biological tubes.

7 • Role of the Actin Regulator MIG-10 in Tubulogenesis of the *C. elegans* Intestine

KATELYN LUDWIG
FACULTY SPONSOR: ABBI PAULSON, BIOLOGY

Tubulogenesis is a fundamental part of development in all organisms, but not all aspects of this mechanism are currently known. In the *C. elegans* intestine, many proteins regulate the cord hollowing mechanism that creates this tube. In this study, the role of the cytoskeleton actin regulator MIG-10 in the tubulogenesis of the *C. elegans* intestine was examined using feeding RNA interference (RNAi) studies. MIG-10 is homologous to vertebrate lamellopodin, RIAM, and Grb cytoplasmic adaptor proteins and is responsible for actin cytoskeleton organization by transferring

signals between external guidance cues and the actin cytoskeleton. The intestine contains a terminal web, which is a mesh of actin and intermediate filaments that underlies the apical membrane of the intestine, which borders the lumen. *Mig-10(RNAi)* produced lumen diameters that were wider than the control group, suggesting a role for MIG-10 in regulation of lumen shape during development. Interestingly, loss of TMD-1/tropomodulin, which regulates slow growing ends of actin filaments, also results in increased lumen diameter. Currently, an analysis of *tmd-1(RNAi)* in *mig-10* mutants is being performed to determine if the two genes act in the same or parallel pathways to regulate intestinal shape in *C. elegans.*

8 • Rab-11.1 Regulates Cell Polarity and Lumen Size in the *C. elegans* Intestine

KIRSTIN BARBER
FACULTY SPONSOR: ABBI PAULSON, BIOLOGY

Tubulogenesis, or the development of tubes, is a process very common in biology, although it is not fully understood. Tube formation in the *Caenorhabditis elegans* intestine occurs through cord hollowing, in which polarized cells assemble and produce vesicles at the apical surface to form the lumen. The *C. elegans* intestine is composed of only twenty cells, which makes it an excellent model to study tubulogenesis. Experiments were performed to determine the functions of Rab-11.1, a protein involved in vesicular trafficking, endocytosis, and membrane fusion, in intestinal development. Knocking down *rab-11.1* transcripts with RNA interference caused sterility in most worms. However, in the intestines of produced embryos we have been able to observe a narrowing of the lumen and mislocalization of ERM-1, an actin-binding protein that is usually restricted to the apical surface. This strengthens existing evidence that Rab-11.1 has a wide-spread role in regulating cell polarity in epithelia, including the *C. elegans* intestine (Winter et al., 2012, Nature Cell Biology 14:666-676). We are currently continuing our studies with Rab-11.1 using immunostaining, to determine if other structures such as adherens junctions are also being mislocalized. These experiments could provide new insights into how cell polarity is regulated during tube formation.

9 • The Role of the Microtubule Cytoskeleton in Tube Morphogenesis

SEAN COLLIGAN
FACULTY SPONSOR: ABBI PAULSON, BIOLOGY

Tube development plays an essential role in organogenesis of the human heart, lungs, and kidneys, however the mechanisms are not well understood by biologists. The *C. elegans* intestine, a simple tubular structure made up of 20 cells with a fluid filled lumen, serves as an excellent model system for studying these mechanisms. Microtubules are known to be essential for establishing cell polarity in the intestinal primordium, but how they do this and whether or not they have other roles in intestinal development is largely unknown. Worms that are homologous for the loss of function of *tmd-1*/tropomodulin allele, *tm274*, have been shown to exhibit decreased actin levels in the terminal web, and areas of expanded intestinal diameter. This mutation may increase intestinal susceptibility to more subtle means of mechanical disruption, including that of the microtubule cytoskeleton. To further understand the regulation of microtubules in the intestine, we have been investigating the roles of microtubule-associated proteins GIP-2, UNC-89, ELP-1, and PTL-1 by knocking down their function through feeding RNA interference experiments in both wild type and *tmd-1(tm724)* mutants. The results of these experiments could yield exciting insights into the role of microtubules in tube morphogenesis.

10 • A Role for Cell Adhesion in Regulation of Intestinal Morphogenesis in *Caenorhabditis elegans*

THOMAS DAVIS
FACULTY SPONSOR: ABBI PAULSON, BIOLOGY

The *C. elegans* intestine is a simple unbranched tube with twenty cells held together by cell-cell junctions containing the Cadherin Catenin Complex (CCC). The CCC links, via α-catenin, to actin in the intestinal terminal web, a structure that underlies the apical membrane bordering the fluid-filled lumen. We have examined the intestines of embryos possessing a homozygous mutation in the actin binding region of α-catenin (hmp-1), and have found that they exhibit a more serpentine intestine with a large number of invaginations and blind pouches. We believe that unmooring of the CCC from the actin cytoskeleton may permit the cell-cell junctions to diffuse basally, allowing fluid filled spaces to from between adjacent cells and are currently testing this hypothesis. This study also analyzed the role of the transmembrane protein, VAB-9, which is thought to regulate interactions between the CCC and the actin cytoskeleton at the level of α- or β-catenin. Preliminary data suggest that RNA interference of *vab-9*, results in a 37% reduction in terminal web actin levels compared to wild type worms. However, this decrease was not associated with any significant changes in lumen shape. This study will hopefully give new insights into the role of the CCC in tubulogenesis.

11 • Spatial Learning in Green Anoles With and Without Experience

ALYSSA SMITH, ERIN DORSET, TARYN CULLEN, JOSEPH BISCARDI, DANIELLE CLARK, JONATHAN MAREANE
FACULTY SPONSOR: DAVID HOLTZMAN, BIOLOGY

Seeking shelter is critical to the survival of squamates, and these reptiles can learn the location of shelter (Holtzman, 1998; Paulissen 2007). We predicted that green anoles could learn the position of an open shelter when exposed to a predatory simulation and learn it faster when experienced with the test arena. A 20-gallon aquarium was used as a testing arena, with shelters suspended by fishing line in each corner. Three shelters were closed off, and one shelter remained open as the goal. Five lizards had 48 hours of experience living in the test arena prior to testing, and six lizards were first tested without experience, with both groups exposed to a predatory simulation for 90 seconds during testing. Lizards that failed to find the goal were placed in the goal at the end of the trial. All lizards were left in the goal for five minutes to reinforce learning. Lizards were tested four times per day for four days. Using repeated measures ANOVAs, experienced lizards had shorter latencies to the goal than inexperienced lizards. This study gives new insight into green anoles' abilities to learn about their surroundings and will be used in subsequent comparative studies with an invasive species. ***Selected for presentation at National Conference for Undergraduate Research, La Crosse, WI.***

12 • Location Selection by Green Anoles *(Anolis carolinensis)*

ERIN DORSET, JOSEPH BISCARDI, DANIELLE CLARK, TARYN CULLEN, ALYSSA SMITH, JONATHAN MAREANE
FACULTY SPONSOR: DAVID HOLTZMAN, BIOLOGY

The green anole (*Anolis carolinensis*) is the only species native to the United States, typically found on bushes and tree trunks, and males are highly territorial (Losos, 2009). Anoles use spatial information to find mates, food, and shelter. The ecology of anoles suggests that spatial learning and memory is crucial to fitness and survival. Squamates (snakes and lizards) can learn how to find the location of shelter. When presented with a simulated predator attack, little brown skinks (*Scincella lateralis*) could learn to hide in cardboard shelters (Paulissen 2007). We hypothesized that anoles prefer elevated shelters. Male green anoles (N=12) were provided with both an elevated shelter on a dowel, a shelter on the substrate in their home cages, and artificial plants hung from the top of the dowel. Four observations a day were made over fourteen days for each lizard. Preferences of each lizard were determined using Chi-square tests. Ten of 12 lizards preferred exposed locations (i.e. on a plant, dowel, or wall) versus within a shelter. When shelters were used, 9 of 12 lizards preferred elevated locations, which parallel their natural ecology (Losos, 2009). These results form the basis for subsequent spatial learning experiments described in a companion abstract. ***Selected for presentation at National Conference on Undergraduate Research (NCUR), La Crosse, WI.***

13 • The Development of Electrical Field Enhanced NanoBondingTM: Investigation of Electrical Potential Application in a NanoBondingTM Stack to Enhance the Electrical Potential at the Interface To Be Bonded

HEATHER JOHNSTON
FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

Electrical Field Enhanced NanoBondingTM (E-NanoBondingTM) utilizes electrical potential in order to activate the electron transfer and chemical reaction that leads to the formation of molecular cross-bridges. This allows for a bonding interphase between two materials, allowing them to join. The two materials used were an insulating silicate glass piece and an active opto- electronic Gallium Arsenide (GaAs) wafer. To maximize the bonding interphase formation, the application of electrical potential must be optimized and the breakdown of

the potential must be controlled. Also, leakage currents, surface currents, and contact resistances must be restricted. We made measurements to develop an optimal electrical design that included all of the above elements and allowed for proper connection to the power supply, ground, and the NanoBondingTM stack. We measured electrical parameters through the use of a multitmeter. We then determined the amount of effective applied potential between the top surface of the silicate glass piece and the bottom of the GaAs wafer. Additionally, the threshold point when electrical breakdown occurs was pinpointed. At this potential, the photocathode (GaAs) becomes conducting and no longer can carry the applied potential. After optimizing these elements, a proper experimental design was constructed that would allow for the procedure of E- NanoBondingTM.

14 • Floral Production in *Brassica rapa*

MELISSA GRAHAM
FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

Seed formation follows floral development and pollination in flowering plants. Formation of the seed is the primary role of the flower before fruit production. In the present study, we studied the floral production of *Brassica rapa* plants. We removed flowers from half the plants to prevent developing fruits, and let the flowers remain on the other half to allow fruits to develop. We wanted to see if the plants that had their flowers removed would continue to try to produce more flowers in an attempt to eventually develop seeds. Our results demonstrated that there was no significant difference between floral production in the two groups of *Brassica rapa*.

15 • Stomatal Short Term Responses to Fluctuating CO_2 Concentrations

MICHAEL ARCURI, RAVIV KATZ
FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

Stomates, which are regulated pores in the epidermis of plants, allow for carbon dioxide entry into the plant and its subsequent assimilation in the process of photosynthesis. At the same time open stomates result in increased water loss (transpiration) by providing an easier pathway for water to escape the leaf. Consequently the regulation of stomatal opening (pore size) is significant to the plants as it balances carbon gain with water loss. Decreased light intensity decreases the ability to photosynthesize and plants typically close their stomates when light is eliminated, thereby saving water. We tested the hypothesis that stomatal response times to decreases in light intensity would be slower at high carbon dioxide concentrations than at low carbon dioxide concentrations because photosynthesis at the higher external carbon dioxide concentrations is less limited by stomata opening to begin with as stomates could be partially closed and still provide for adequate flux of carbon dioxide into the leaf. In contrast plants operating at much lower carbon dioxide levels must have more open stomates to provide for adequate supplies of carbon dioxide for photosynthesis.

16 • Bluebell Abundance and Wildflower Distribution in the Genesee Valley

MICHELLE MOSHON
FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

The Virginia Bluebell (*Mertensia virginica*) is an herbaceous perennial plant that grows throughout the eastern United States. In this area it is common and usually a minor component of the understory flora in forests. However, roughly a mile north of the village of Geneseo, bordering the Genesee River, there is a portion of the forest over a hectare in size has bluebells in a nearly monotypic stand, making a beautiful sight in the spring. Particularly curious is the fact that these bluebells remain within a particular area and have not spread up and down the river. The goal of this study is to determine the reason for the high density of bluebells. Several characteristics of the forest, including tree and shrub species composition, density and size, will be compared between the bluebell site and nearby forests. In addition to this, slope, soil pH, and nutrient levels will also be considered. Literary research is being conducted to obtain information on the preferred living conditions of plant species present and common in the area.

17 • Change of Growth Rate in *Brassica rapa* Plants upon Extraction of Cotyledons and Loss of Photosynthetic Surface Area

MITCHELL BURKE
FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

Photosynthesis provides plants with the matter and energy required for growth and one would expect that the amount of photosynthetic area (for most plants the leaf area) should affect the rate of plant growth. We examined this relationship by comparing growth rates of plants which had some of their leaves removed to the growth rate of intact plants. To study this question we utilized the Wisconsin Fast Plant *Brassica rapa* due to their quick life cycle and maturity within only a few weeks. Sixty-Four pots of *Brassica rapa* were planted at once and one week after germination, cotyledons were extracted. *B. rapa* has two evenly sized cotyledons which are the first embryonic leaves to emerge from the seedling. The pots were divided evenly into five groups with one group being harvested initially and weighed to provide a base weight for comparison. The rest of the *Brassica rapa* plants were split evenly into groups of three, six, nine and twelve days of growth post cotyledon removal. After each growth period, plants were harvested and allowed to dry in an oven for twenty-four hours upon which they were weighed and recorded. A plot was created to compare growth rate at different times after cotyledon extraction. With data still coming in, initial results appear to show that there is a noticeable trend in initial growth stunting followed by a period of recovery in which the *Brassica* plant compensates for lost resources. We conclude that the loss of cotyledons is initially detrimental to plant's growth rate, but the effect is diminished in plant growth over time.

18 • Influence of Light Intensity on Stomatal Response in *Raphanus sativus* Under Varying Drought Conditions

SAMANTHA WILLIAMS, BENJAMIN CONTI, GEOFFREY WONG, AUSTIN SIMMONS
FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

Plant stomata function primarily to regulate water vapor loss in varying environmental conditions, and to aid in the diffusion of carbon dioxide during photosynthesis. Drought conditions are thought to influence regulation of stomatal closure, due to the plant's physiological need to conserve water. Therefore, plants will typically function in a manner that maximizes carbon dioxide diffusion while minimizing water vapor loss across stomates during photosynthesis. In order to determine the stomatal response, we plan to examine leaf conductance. Leaf conductance is a measure of how porous the leaf is to movement of water vapor and carbon dioxide. We aim to study the affects of varying light intensity conditions on stomata response in *Raphanus sativus*, under varying conditions of drought and moisture.

19 • The Prevalence and Pattern of Readmissions at an Urban Community Hospital in the Philippines

DELFIN IGLESIA
FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

A common problem that hospitals world-wide constantly manage, particularly by those in developing nations, is the unplanned, and possibly preventable, admission of patients who have been previously admitted into the hospital and discharged in the past 30 days. At Mary Mediatrix Medical Center (MMMC), an urban hospital located in Lipa City, Philippines equipped with 150 beds serving residents of several high-growth tropical areas, the readmission of patients into the hospital has in part resulted in an increase in healthcare costs and a decrease in the efficiency of care provided. As a quality improvement effort, this study presents various data analytics for the readmission of patients at MMMC from 2009-2012, identifying some of the factors that contribute to the readmission of patients and examining patterns by which readmission occurs in order to determine possible solutions to reduce the readmission rate at MMMC. I have found that certain chief complaints by which patients present themselves correlate with readmissions at MMMC and temporal cyclical patterns of readmission emerge, marking potential areas for systematical improvement.

20 • Building a Homebrew EEG Device with ModularEEG and Arduino

NICHOLAS COLLISSON, HERB SUSMANN
FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Electroencephalogram (EEG) machines measure electrical voltages in the brain through electrodes positioned on the scalp. Such machines are useful for medical purposes as well as for hobbyists interested in such fields as biofeedback. EEG

machines consist of one or more electrodes, which measure electrical activity in the brain; an electronic amplifier, which amplifies these signals; and an analog to digital converter which converts the data into a digital signal analyzable by a computer. We built a custom EEG device by combining homemade silver electrodes with an amplifier built to these schematics and a low cost Arduino microcontroller for the analog to digital conversion. We used the open source BCI2000 software to analyze the signal from the EEG device.

21 • Intracellular cAMP Levels Rise in *Astrephomene Gubernaculifera* During a Chemoresponse

JILL SPERRAZZA, KEVIN FRODEY, EMILY REDINGTON
FACULTY SPONSOR: HAROLD HOOPS, BIOLOGY

Growth of the colonial green alga *Astrephomene gubernaculifera* depends on the presence of acetate, presumably because acetate is its primary carbon source. The alga also accumulates in regions of high acetate, a response that is exaggerated after the alga is starved of acetate. This implies that *A. gubernaculifera* detects acetate and that this initiates a signaling cascade that alters its flagellar behavior. cAMP is commonly involved in signaling cascades, including one connected to phototaxis in the closely related *Chlamydomonas reinhardtii*. We therefore hypothesize the signaling pathway in *A. gubernaculifera* involves alternation of cAMP levels in the cell. To test for changes in cAMP we first prepared a culture of *A. gubernaculifera* and starved it of acetate to maximize the chemoresponse. We then split it into two samples and treated one with 30 mM acetate and the other with acetate-free medium. We lysed the cells and measured the cAMP levels with an ELISA. We also measured the protein concentration with a detergent-compatible protein assay. We found that acetate induces a substantial increase of cAMP concentrations in chemoresponsive cells. This is consistent with the idea that cAMP-dependent cell signaling plays a role in the chemoresponse of *A. gubernaculifera*.

22 • Species Identification of North Atlantic Clonal Sea Star Larvae Involved in Symbiosis with Photosynthetic Bacteria

BRENT SANDERSON, PATRICK DITTMER, ANDREA JERABEK
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

The goal of this project is to determine the species identity of clonal sea star larvae found in the North Atlantic Ocean that are involved in an unusual symbiosis with subcuticular bacteria. Isolation of DNA and PCR amplification with echinoderm specific mitochondrial 16s- rDNA primers was carried out on field collected larvae and adult tissues. DNA amplification products were excised from agarose gels extracted using a QIAquick Gel Extraction Kit and cloned. DNA sequences of 650 bp amplicons were generated by the Univ. of Rochester Functional Genomics Center. These were compared to reference sequences using the NIH Basic Local Alignment Tool. The comparisons show that larvae best match the Caribbean cushion sea star *Oreaster reticulatus*, a species that is threatened due to harvesting in many parts of its range, from North Carolina to southern Brazil. We are currently trying to obtain adult DNA sequences that can be compared directly to corresponding larval sequences for more definitive species identification.

23 • Distribution and Host Occupation Patterns of Flamingo Tongues (*Cyphoma gibbosum*) on Gorgonians in San Salvador, Bahamas

EMILY WELLS
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

A study of the distribution and host occupation patterns of the flamingo tongue cowrie snail *Cyphoma gibbosum* on gorgonian coral hosts was conducted at four patch reefs on San Salvador Island, Bahamas. To determine if flamingo tongues exhibit host preference relative to host abundance, distribution of *C. gibbosum* on gorgonian hosts was tested for randomness and dependence on gorgonian family and species. Gregariousness was studied by observing if *C. gibbosum* was found in solitary, in pairs, or in larger groups more often than expected based on random distribution. Most *C. gibbosum* occurred individually (66%) or in pairs (29%) on gorgonians, indicating more gregariousness than expected based on random distribution. Fifty-seven flamingo tongues were counted on 41 gorgonians representing 3 families and 12 species. Most gorgonians were underoccupied, while a few species, *Eunicea spp.* (black), *P. flexuosa*, *G. ventalina*, and *P. americana*, were occupied in disproportion to their availability, indicating possible host preference. Only one gorgonian, *G. ventalina*, was found to be a commonly preferred host. Knowledge of the host preferences of *C. gibbosum* improves understanding of the snail's behavior, and may provide insights about unique characteristics possessed by certain gorgonian species that make them preferential food resources.

24 • The Effects of Fishing on Sex-Changing Parrotfish Populations in Reef Communities of San Salvador, The Bahamas

HARRY WEISBERG
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

Due to overfishing of more preferred fish, Bahamian parrotfish (*Scaridae*) are facing an unprecedented increase in fishing pressure, particularly larger individuals. Parrotfish are protogynous: they are born female (dubbed initial phase) and some transition into males (dubbed terminal phase) upon reaching sufficient size. Since not all individuals will follow this progression, low percentages of larger males on a reef may become precarious, so an assessment of potentially threatened species is a necessity. Point counts at four reefs on San Salvador were done to ascertain the average abundance and percent terminal-phase of seven parrotfish species indigenous to San Salvador and the Bahamas. Most species, especially stoplight (*Sp. Viride*) and redband (*Sp. Aurofrenatum*) parrotfish thrive on San Salvador and they are 4.4 to 5 times the Caribbean average of terminal phase fish. San Salvador has the highest diversity of species recorded in the literature, with all seven of the common species sighted, unlike the usual three to five of other islands. San Salvador has little to no excess fishing pressure ($p=0.003$) and requires no conservation efforts, thus it is the perfect model of comparison for other islands with parrotfish population declines.

25 • Emergency Medical Service (EMS) Trends

JASON LEW
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

This research project reports whether or not there are daily variations in ambulance calls, more specifically, an increased number of calls during particular days of the week. The data provided by Livingston County shows if there is a correlation between the number of calls and the day of the week.

26 • Identification of Bacterial Symbionts Living with Oceanic Sea Star Larvae

MARISA QUINLAN, KELSEA FLANNERY, BRENT SANDERSON, CHRISTIAN YOUNG
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

The goal of our research is to identify the abundace and types of bacteria living symbiotically in larvae and adults of the Bahamas sea star, *Oreaster reticulatus*. For species identification, DNA was extracted from alcohol-preserved larvae collected from the Gulf Stream, from bacterial cultures isolated from larvae, and from tube feet of juvenile stars. Bacterial 16s rDNA primers were used in PCR amplification of extracted DNA. Amplified DNA was detected by agarose gel electrophoresis and the 450 base pair amplicons were cloned in *E.coli* using T-Gem plasmid vectors. Sequencing analyses of purified amplicons were conducted by the Genomics center at the University of Rochester. Results were compared to available data on sea stars using the B.L.A.S.T. (alignment) tool. We have identified multiple samples of photosynthetic cyanobacteria most closely related to the genera *Synechococcus* and *Prochlorococcus*. Fluorescence analyses indicate that similar species may be present in juvenile tissue. Calculations of bacterial numbers based on transmission and scanning electron micrographs of larvae indicate that an individual may carry between 10-100 thousand bacterial cells. Ultimately we hope to better understand whether these large numbers of photosynthetic bacteria help the drifting larvae survive in open ocean environments and how this relationship continues into adulthood.

27 • Do Patch Reef Size and Population Density Determine Blue-Headed Wrasse Phase Ratio on Patch Reefs in San Salvador, Bahamas?

MARISA QUINLAN
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

The blue-headed wrasse (*Thalassoma bifasciatum*) is a protogynous sex changing fish common to Caribbean patch reefs. *T. bifasciatum* exhibits three

distinguishable phases including juvenile, male and female initial phase, and the terminal male. Female initial phase individuals are able to transform into terminal males (Warner, 1984). Munday, White, and Warner (2006) suggest that juveniles demonstrate developmental plasticity and grow into males or females depending on the population density. This study builds on this concept and asks whether the ratio of initial phase to terminal male *T. bifasciatum* on patch reefs is correlated to reef size and population density. Phase ratio data was collected from patch reefs of various sizes in San Salvador, Bahamas. The results show that adult population density and phase ratio are statistically correlated ($t = 7.781$, $df = 49$, $p = 4.136e-10$) but that patch reef size and phase ratio are not significantly correlated ($t = -0.4554$, $df = 7$, $p = 0.6626$) and ($\chi^2 = 1.5969$, $df = 3$, $p = 0.6601$). The results of this study suggest that an increase in adult population density limits the number of initial phase female *T. Bifasciatum* that undergo a sex change to terminal males.

28 • Coral Microhabitat Preferences of Territorial Damselfishes of San Salvador, the Bahamas

MEAGAN WHEATLEY
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

Damselfish are small, highly territorial herbivores of coral reefs, with several species cultivating algae, their primary food source, in well-defended algal farms. Damselfish have the potential to be highly influential in the structuring of a reef by markedly increasing its algal biomass while simultaneously causing significant coral damage if they are forced onto suboptimal coral habitat. Branching corals, acroporids, are preferred habitat better able to withstand the aggressive farming of the damselfish. However, the last few decades have witnessed the dramatic decline in the abundance of many acroporids in the Caribbean from a variety of factors, forcing damselfish to inhabit alternative microhabitat substrates. The goal of this study was to assess suboptimal microhabitat preference on reefs surrounding the Bahamian island of San Salvador. It was found that in the absence of acroporids, damselfish territories often included other hard corals and they preferentially selected territories within the center of a patch reef rather than along its edge ($\chi^2=7.44$, $df=1$, $p<0.01$). Further research can determine if this suggested hard coral preference is statistically supported, and more specifically if the damselfish of this Bahamian region pose the threat to coral diversity that has arisen elsewhere in the Caribbean.

29 • Determination of Pigment Characteristics and Cell Size in Cultured Bacteria

NICHOLAS PIEDMONTE, KELLY MCCARTHY
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

Larvae of the Bahamas sea star (*Oreaster reticulatus*) contain symbiotic photosynthetic cyanobacteria between their larval cuticle and epidermis. These symbionts are thought to provide the larvae with valuable nutrients that allow them to undergo cloning during larval development. Mixed cultures of the cyanobacteria were isolated from larvae collected during the summer of 2012 and reared in a liquid algal growth medium. Spectrofluorometric analyses were performed on each culture to determine the fluorescent characteristics of the pigments found in the dominant cyanobacteria in culture. The results show that the pigments found in our cultures closely resemble the published fluorescence spectra for the pigments phycocyanin and phycoerythrin that are characteristic of cyanobacteria. Fluorescent microscopy and flow cytometry observations of size and locomotion are consistent with descriptions of the genus *Synechococcus*, a dominant cyanobacterium in tropical oceans. These results agree with the DNA studies being performed in lab that confirm the presence of *Synechococcus* DNA signatures in larval samples.

30 • Differential Response of Vulvar Cancers to Treatment with the Ultrapotent Corticosteroid, Clobetasol

MEGAN SPELMAN, DOMINGUEZ TRAVIS, MEHEK MEHTA
FACULTY SPONSOR: JANI LEWIS, BIOLOGY

Vulvar cancer is an aggressive cancer often masked by diseases such as the vulvar rash known as lichen sclerosis (LS). Ultrapotent corticosteroids such as Clobetasol are commonly used to treat LS but there is debate over the safety of long-term Clobetasol use and development of vulvar cancer. Growing cells from LS biopsies has proven difficult, so our objective was to decipher if Clobetasol promotes changes in vulvar cancers in vitro that parallel the formation of more aggressive cancer types. We have shown that Clobetasol, actually promotes transformation of one vulvar cancer cell line into a more aggressive phenotype. Clobetasol treatment of additional vulvar cancer cell lines indicate that there are two broad catagories of vulvar cancers; one that shows robust growth and one that shows growth inhibition, in the presence of Clobetasol. Our results indicate some genes of interest related to this differential growth response as well as identifying the reversibility of Clobetasol treatment in each of these cell lines. ***Selected for presentation at Experimental Biology, Boston, MA.***

31 • Sequencing 5HT$_7$ Receptor Genes from Molluscan Species

FANGYUAN JIN, NICHOLAS COLLISSON, RAVIV KATZ
FACULTY SPONSORS: JANICE LOVETT AND DUANE MCPHERSON, BIOLOGY

Serotonin, 5-hydroxytryptamine (5-HT), is a neurotransmitter that plays an important role in muscle contraction. The 5-HT$_7$ receptor is a G-protein coupled receptor. Binding of serotonin has been shown to activate adenyl cyclase increasing the concentration of the cell signaling molecule cyclic AMP. The 5-HT$_7$ receptor is present in various animal tissues, including the central nervous system and foot muscle. Our project's objective is to find and compare 5-HT$_7$ receptor genes from different molluscan species. We designed several primers based on known 5-HT$_7$ receptor sequences. We tested these primers on a land snail and on mussels. Two primers, 6b and 8, successfully amplified a region from each species. The sequences of the amplified regions are very similar to the known *Aplysia* gene. This means that these two primers may be used to amplify the gene from many mollusc species. Using new primers derived from the exact sequence we hope to isolate the entire *Helix* gene. We also hope to show that release from the "catch state" in *Mytilis edulis* by serotonin is due to a 5-HT$_7$ receptor. The anterior byssal retractor muscle allows mussels to close their shells, and remain contracted in the "catch state" without expending significant amounts of energy.

32 • Do Invertebrates Have a 5-HT$_6$ Receptor Gene?

KARA FINEGAN, MEGHAN MOORE
FACULTY SPONSOR: JANICE LOVETT, BIOLOGY

The 5-HT$_6$ receptors are a class of proteins called G-protein coupled receptors. They bind serotonin causing the activation of adenyl cyclase and an increase in cellular cAMP. 5-HT$_6$ receptors are expressed in the human central Nnervous system and are important in cognition, memory, and learning. We identified an *Aplysia* DNA sequence in the NCBI database that we believe codes for a 5-HT$_6$ receptor. The amino acid sequence was compared with known proteins using BLAST software. Nineteen sequences that closely matched were recovered. All coded for a 5-HT$_6$ receptor in different organisms. Clustal was used to align the sequences. It showed that the sequence was missing the first two transmembrane regions. We have found another sequence that we believe contains those regions. This suggests an intron in the gene. We used seven primers to try and amplify different portions of the gene. We were successful in amplifying a fragment covering the 4th to the 7th transmembrane regions from cerebral cDNA. To obtain the entire coding region for the 5-HT$_6$ receptor full-length cDNA will be prepared. We will clone the two ends starting from sequences within the amplified region. If successful, this will be the first 5-HT$_6$ receptor identified in an invertebrate.

33 • Do Pitfall Traps Reflect Local Ant Colony Density?

ALEXA BRODSKY
FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

Pitfall traps often are used to estimate the diversity and species composition of ground-dwelling arthropods in an environment. Pitfall trap have been implemented to assess ant diversity in the 8-hectare Spencer J. Roemer Arboretum in Geneseo, NY, through recurrent pitfall trap sampling in 2011. Ants were collected from two transects spanning the research site. *Formica glacialis* was among the most common ant species in the Arboretum. *F. glacialis* is a mound-nesting ant species that is exploited by the slavemaking ants *Formica subintegra* and *F. pergandei* at this site. Slavemaking ants raid colonies of their host species to steal their brood, which become workers in the slavemaker nest. The goal of this study is to determine if pitfall trap samples reflect the local density of *Formica glacialis* ant colonies, which have

been mapped using ArcGIS. The abundances of *F. glacialis* in pitfall trap collections for each month were compared to colony counts within a set radius of each pitfall trap corresponding to typical foraging distances for this ant taxon. Additionally, we investigated the possibility that raiding activity of slavemaker ants may suppress host foraging activity by comparing pitfall trap samples taken before and during the slavemaker raiding season. ***Selected for presentation at Northeastern Natural History Conference, Springfield, MA.***

34 • Spatial Ecology of Slavemaking Ants and Their Hosts: A GIS Analysis

DIANA MCGRATH
FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

Slavemaking ants act as social parasites, raiding the colonies of other ant species to capture their brood, which are raised in the slavemaker colony and become its workforce. Within the 8-acre Spencer J. Roemer Arboretum located on the south part of the campus, there are fourteen slavemaking ant colonies (*Formica subintegra* and *Formica pergandei*) and over 600 colonies of their host species, *Formica glacialis*. Characteristics of the colonies' distributions were examined in ArcGIS by comparing different vegetation compositions mapped within the Arboretum to colony site selection and density. Characteristics of sites selected by slavemakers who moved colony location were assessed to see if preferences remain the same over time. Raids by slavemakers have been monitored over three seasons (summer 2009-2011). Circular distribution analyses were conducted in order to assess if the slavemakers expressed directionality biases when raiding host colonies. Directional distributions were used to calculate the mean centroid of raids for each slavemaker colony; the resulting polygons were used to determine if different slavemaker colonies maintain distinct non-overlapping raiding territories. Directional biases expressed by individual slavemaker colonies were analyzed over time to see if they exploit the same or different habitat from season to season. ***Selected for presentation at Northeast Natural History Conference, Springfield, MA.***

35 • Using Mitochondrial DNA to Infer Queen Relatedness Within Polygynous *Formica glacialis* Colonies

JOSEPH ALADEEN, JOANN LAM
FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

Formica glacialis is one of the most common ant species in the Spencer J. Roemer Arboretum on campus. Much remains to be learned about the reproductive behavior of this species. Based on microsatellite genetic markers, we know that *Formica glacialis* colonies can be either monogynous (containing one queen) or polygynous (containing multiple queens). Queens in polygynous colonies can either be recruited from within the nest or adopted from foreign colonies. Mitochondrial DNA is useful for investigating the origin of queens inside polygynous colonies because it is maternally inherited. By analyzing mitochondrial DNA from worker ants within a colony in combination with biparentally inherited microsatellite markers, we inferred whether or not a colony's queens are related. Understanding the colony structure of *F. glacialis* is important because it may affect their interactions with social parasites in the Arboretum. The slavemaking ants *Formica pergandei* and *Formica subintegra* raid the colonies of *F. glacialis* and abduct immature ants. These captured ants are then reared in the slavemaker colonies where they become a labor force to serve the slavemaking ants by gathering food and conducting nest maintenance. Formation of polygynous colonies may affect how *F. glacialis* responds to or tolerates pressure from these social parasites.

36 • Assays for Aggression and Activity in a Host Species of the Slavemaking Ants *Formica subintegra* and *Formica pergandei*

VINCENT STOWELL
FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

The slavemaking ant species *Formica subintegra* and *Formica pergandei* are social parasites that invade the nests of host ant species in order to steal host brood and incorporate them into the workforce of the slavemaker nest. The behavioral responses of individual host colonies may vary in ways that could influence the success of such raids and their impact on the victim colony. Assays were developed to rate behavioral traits such as the aggression and activity level of individual colonies of the host species *Formica glacialis* under the influence of this parasitic pressure. Assays included quantifying foraging activity using baits, scoring reactions to encounters with slavemakers vs. encounters with conspecific ants, and monitoring responses to nest disturbance. Lower rates of foraging activity were documented in colonies that were recently raided than in unraided colonies. The assays themselves were evaluated for consistency and refined with the intention of maximizing efficiency and accuracy while maintaining the integrity of the field setting. The results of these preliminary assays contribute to our understanding of the dynamics of host-parasite interactions; such assays can potentially illuminate both the causes and consequences of colony-level variation in host species behavior. ***Selected for presentation at Northeast Natural History Conference, Springfield, MA.***

37 • Cytosine DNA Methylation Influences Drug Sensitivity Through SugE Expression in *Escherichia coli*

ALEXANDRA MANDARANO
FACULTY SPONSOR: KEVIN MILITELLO, BIOLOGY

In *Escherichia coli*, the second cytosine in the sequence 5'CC(A/T)GG3' is methylated by the Dcm enzyme. Our laboratory has previously shown that DNA methylation represses expression of ribosomal proteins. The laboratory is currently investigating other targets of Dcm-mediated DNA methylation. The *sugE* gene has been shown to confer resistance to quaternary ammonium compounds and the *sugE* gene has one Dcm recognition site in its 5' flanking region, three in the open reading frame and one in the 3' flanking region. We used qPCR to measure *sugE* RNA levels at both log and stationary phases in wild-type and *dcm* knockout cells. Our data demonstrate that the *sugE* gene is overexpressed at both phases in *dcm* knockout cells. *SugE* expression also increased in the presence of 5-azacytidine, an inhibitor of cytosine DNA methylation. To determine if *dcm* influences sensitivity to different antibacterial compounds, the sensitivity to ethidium bromide (EtBr) in wild-type, *dcm* knockout, and *sugE* knockout strains was compared using Kirby-Bauer disc diffusions assays, MIC assays and growth curve analysis. Our data indicate that *sugE* knockout cells are hypersensitive to EtBr, whereas *dcm* knockout cells have increased resistance to EtBr. In summary, DNA methylation can influence the sensitivity to antibacterial compounds. ***Selected for presentation at Experimental Biology, Boston, MA.***

38 • The Detection of 5-hydroxymethylcytosine in *Trypanosoma brucei* DNA

ERIKA VALENTINE
FACULTY SPONSOR: KEVIN MILITELLO, BIOLOGY

The goal of this project is to determine whether or not the modified base 5-hydroxymethylcytosine is present in *T. brucei* nuclear DNA. *T. brucei* is the causative agent of African Sleeping Sickness, and has been previously shown to contain 5-methylcytosine, 5-hydroxymethyluracil, and base J. The *T. brucei* J-base binding proteins (JBPs) synthesize 5-hydroxymethyluracil, and are homologous to the mammalian TET (ten-eleven translocation) proteins which synthesize 5-hydroxymethylcytosine. Thus, we believe is it possible that the *T. brucei* JBPs synthesize 5-hydroxmethylcytosine in addition to 5-hydroxymethyluracil. To test this model, an immunoblot assay was developed to detect 5-hydroxymethylcytosine in DNAs spotted onto a nylon membrane. Our data indicate that both *T. brucei* bloodstream form and insect form DNA contain low but detectable levels of 5-hydroxymethylcytosine. The same results were also generated using ELISA assays specific for 5-hydroxymethylcytosine. We are currently using LC MS/MS to confirm the experiments above, and hydroxymethylated DNA immunoprecipitation experiments to determine the location of 5-hydroxymethylcytosine in the *T. brucei* genome. ***Selected for presentation at The American Society for Biochemistry and Molecular Biology Annual Meeting, Boston, MA.***

39 • Mapping Modified tRNA Cytosines in *Trypansoma brucei* Using Sodium Bisulfite Sequencing

SARAH ACKERMAN, LEANNE CHEN, ALEXANDRA MANDARANO
FACULTY SPONSOR: KEVIN MILITELLO, BIOLOGY

Methylated cytosine in DNA is a form of epigenetic regulation. Our laboratory is studying 5-methylcytosine in *Trypanosoma brucei,* the parasitic protozoan responsible for African sleeping sickness. In the *T.brucei* genome, the TbDMT gene may code for a methyltransferase that is responsible for cytosine DNA methylation. Recently, there has been evidence of methylation of tRNAasp, tRNAgly, tRNAval, and tRNAlys in humans and other organisms by DNMT2, a known DNA

methyltransferase. Thus we are curious to know if TbDMT is a tRNA methyltransferase. Isolated RNA was treated with bisulfite converting all non-methylated cytosines to uracil. The tRNA sequence was then amplified using RT-PCR and ligated into a vector for bacterial cloning. The recombinant plasmids were then isolated and sent for DNA sequencing. All *T.brucei* tRNAs to date have shown methylation to be present around C47, C48, and C49. Thus far the effect of TbDMT on tRNA methylation is unclear. TbDMT appears to have no effect on tRNAgly but there are lower levels of tRNAasp methylation at C46 in TbDMT RNAi cells. Future experiments will attempt to clarify this effect and examine other tRNAs. Methylation is an important regulator of gene expression and may have an important role in tRNA biology.

40 • 5' and 3' RACE cDNA Amplification of Disease Resistance Genes from *Vitis aestivalis cv. Cynthiana*

ANNA LI, LAURA BLUM
FACULTY SPONSOR: MING-MEI CHANG, BIOLOGY

Vitis aestivalis cv. Cynthiana, an American grape, is known to be tolerant to most grape pathogens. The tolerance may be partially due to the expression of its disease resistance (R) genes. Many of these R genes are found to encode nucleotide-binding site and leucine-rich repeat (NBS-LRR) proteins which are involved in detecting diverse pathogens. Our previous studies have shown that two NBS-LRR genes, *C2* and *M2*, are down-regulated in grape leaves infected with *Botrytis cinerea*, a necrotrophic fungus. Also, the NBS-containing sequences of *C2* and *M2* were cloned previously. The goal of our current study is to isolate and obtain cDNA clones corresponding to *C2* and *M2*. Total RNAs were isolated from *Cynthiana* grape leaves and reverse transcribed into cDNA using a SMARTer™ RACE cDNA Amplification Kit. The 5' and 3' RACE PCRs were carried out using gene specific primers corresponding to C2 and M2 and/or Universal Primer Mix (UPM). PCR products were separated on 1.2% agarose gel from which unique bands amplified by both primers were isolated and purified for further PCR amplifications. The results will be discussed.

41 • Expressions of Ribulose Bisphosphate Decarboxylase (Rubisco) Small Subunits in Dark-Treated *Arabidopsis thaliana*

ANNA LI, TALAL AHMAD
FACULTY SPONSORS: ROBERT FEISSNER AND MING MEI CHANG, BIOLOGY

Ribulose 1,5-bisphosphate carboxylase/oxygenase (Rubisco) which catalyzes photosynthetic CO_2 fixation and photorespiratory carbon oxidation is a rate-limiting factor in photosynthesis. Rubisco has eight small subunits (RBCS) encoded by an *rbcS* multigene family, and eight large subunits (RBCL) encoded by a single *rbcL* gene. The activity of Rubisco is known to be light dependent. Extensive study in a number of species shows that individual members of a gene family may be regulated differently. For example, all five *rbcS* genes are expressed in the leaves of tomato plants at different levels. To see if expressions of *rbcS* genes vary in dark-treated plants, *Arabidopsis thaliana* grown under a 14 hour light:10 hour dark photoperiod were subjected to a 96 hours dark treatment prior to leaf RNA isolation. Real time RT-qPCRs were performed using primers corresponding to *A. thaliana's rbcS1A*, *rbcS2B*, and *rbcS3B*. The expressions of *rbcS* genes were found to reduce to 0.015347 (1.53%), 0.078259 (7.83%), and 0.007561 (0.756%) for *rbcS1A*, *rbcS2B* and *rbcS3B*, respectively. This result indicates that like tomato's *rbsS*, the three *rbcS* genes tested are down-regulated to different extents in the dark.

42 • Sulforaphane is Cytotoxic and Able to Induce Apoptosis with Varying Efficacies in Three Tumor Cell Lines and One Normal Cell Line

FANGYUAN JIN
FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

Sulforaphane (SFN) is an isothiocyanate found largely in cruciferous vegetables, such as broccoli and cauliflower, which has been shown to have anti-cancer effects, including the induction of apoptosis and cell cycle arrest. We tested the effects of SFN on three different cancer cell lines: HTB-4 (human urinary bladder cancer), MDA-MB-435 (likely a human melanoma), and HL-60 (a human promyelocytic leukemia) and one normal fibroblast cell line, MRC-5. We found different abilities of SFN to induce apoptosis and arrest the cell cycle for the three cancer cell lines. HL- 60 cells were most sensitive to the SFN treatment, followed by HTB-4, while MDA- MB-435 were the least affected. Our results for the MRC-5 cells showed that SFN was less toxic to them compared to the other three cancer cell lines. To investigate whether the drug resistance could be induced, we are currently testing HL-60 cells exposed to SFN at a dose causing approximately 20% cytotoxicity. We conclude that the different sensitivities of these four cell lines to SFN are consistent with the heterogeneity of different cancers. SFN would have better therapeutic potential if we are unable to development SFN resistance in HL-60 or other tumor cell lines, especially if normal cells are more resistant. ***Selected for presentation at Experimental Biology , Boston, MA.***

43 • Antitumor Effects in HTB-4 Bladder Cancer Cells Under Long Term Low Dosage of 5-Azacytidine

JACLYN HELLREICH, JULIA SANGER
FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

Methyl transferase inhibitors such as 5-azacytidine have shown promise in cancer treatment because of the their ability to allow re-expression of tumor suppressor genes in cancer cells. Our research is investigating the possible anti-tumor effects of this drug on HTB-4 bladder cancer cells at a low dosage. Preliminary studies showed that high doses of 5-azacytidine are clearly cytotoxic to HTB-4 tumor cells. However, we have begun treating the HTB-4 cells to a low dose so that the majority of the cells survive. We then want to determine if cells grown in 5-azacytidine will lose their ability to grow in methylcellulose media, a characteristic possessed by cancer cells but not normal cells. Experimental HTB-4 cells grown in presence of low dose 5-azacytidine for several weeks will be compared to control cells to determine if long-term treatment will affect this phenotype of cancer cells suggesting a novel therapeutic approach for cancer.

44 • The Effects of 5-Azacytidine on 435 Cancer Cells

JENNIFER GASPAREK, JENNIFER HAWES
FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

A characteristic of cancer cells is that they are able to grow without adhering to substrate, whereas normal cells need to adhere to a substrate. Preliminary experiments show that MDA-MB 435 cancer cells, originally thought to be derived from a breast cancer tissue but current evidence suggests a melanoma origin, are able to grow without adherence in a methylcellulose tumor sphere assay. A cytotoxicity experiment of 5-azacytidine showed 96%-0% cell death at a range of doses. Based off of the cytotoxicity curve, a low dose of drug was chosen that would only kill 10% of cells. The cancer cells will now be treated with the low dose of 5-azacytidine over a four-week period, and the growth of these cells in the methylcellulose will be compared to the cells grown in methylcellulose in the absence of 5- azacytidine. We expect that the cells treated with 5-aza will show less growth than the control cells, indicating that 5- aza has caused the 435 cells to lose an important characteristic of in vitro tumor growth: to grow without adherence.

45 • Chemotherapeutic Effect of Sulforaphane on MCF-7 Breast Cancer Cell Line

JENNIFER GROM, PETER FIELDS
FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

The objective of this experiment is to determine the mechanism by which chemotherapeutic sulforaphane upregulates the transcription of genes that code for tumor-suppressor proteins. Long term effects of the drug will be studied by exposing MCF-7 cells to low doses of sulforaphane and gathering survival data. Investigation of sulforaphane's effects on the cell cycle through tubulin polymerization, will be achieved in the study of chromosomal mitotic spreads of MCF-7 breast cancer cells grown in the presence of sulforaphane.

46 • Using Carboxyfluorescein Succinimidyl Ester (CFSE) to Measure the Effects of Sulforaphane on Cell Division in a Human Leukemia Cell Line

KRISTEN LEHNER, OSCAR FELICIANO
FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

CFDA-SE is a non-permeable fluorescent molecule that can be used to measure the number of doublings in a population of cells in a given time. Once inside the membrane, cellular esterase cleaves off the acetate groups creating Carboxyfluorescein Succinimidyl Ester (CFSE). With each cell division the amount of CFSE is cut in half, which can be observed via flow cytometry. The preliminary experiment compared concentration of serum with number of cell divisions showing an increase of cell divisions with increased serum. The

first experiment compared the effect of serum concentration with cell division along with the drug sulforaphane's effect on cell division. Lastly, the second experiment showed decreased division with using higher concentrations of sulforaphane. Cells with 60% death due to sulforaphane exhibited fewer divisions. Future research will be done to uncover why the slow down of division. ***Selected for presentation at The American Society for Biochemistry and Molecular Biology, Boston, MA.***

47 • Behavioral Response of *Biomphalaria Glabrata* to Crushed Conspecifics

REBEKAH STEINKE, MATT MORSE
FACULTY SPONSOR: SUSAN MUENCH, BIOLOGY

Schistosomiasis is a neglected tropical disease that infects over 200 million people, and is caused by digenetic blood trematodes. Freshwater snails act as an intermediate host for the parasitic worm. Humans become infected through water contact. For the past 30 years, efforts to control schistosomiasis have focused on chemotherapy of infected individuals, but prevalence has not declined. Snail control measures have not been effective in the past, and a comprehensive approach is needed to control schistosomiasis. Although the snail is an obligate host, relatively little is known about these organisms. Understanding their behavior is essential to the implementation of effective control measures. Options for snail control include the use of molluscicides or predators for biological control. A challenge with the use of either chemicals or predators is that snails are air-breathing, and respond to these threats by leaving the water (escape response). A fuller understanding of the escape response will open new avenues for snail control. We propose to investigate alarm signals in *Biomphalaria glabrata*, host to the *Schistosoma mansoni*, by varying the form of the signal. Possible modifications include starting with dead snails, altering the interval between crushing and application, and chemical treatments of the crushed snail slurry.

CHEMISTRY

48 • Lignocellulose as an Alternative Non-Food Biofuel: The Triumph of Destiny Part I

RYAN PEERS
FACULTY SPONSOR: BARNABAS GIKONYO, CHEMISTRY

The increasing demand for energy in the World and the concomitant rise in pollution levels from the use of fossil fuels has led to an ever increasing demand for alternative sources of fuel. One such alternative is biofuels. Some of these biofuels however, require the use of food crops, and this has been linked to an increase in world food prices especially in poor countries where a large part of the populace rely on these very food crops for sustenance. This latter view requires developing biofuels that do not utilize food crops. Lignocellulosic biomass which consist mainly of cellulose, hemicellulose and lignin, represent one the most promising renewable, non-food and universally available feedstocks for the production biofuels. Nevertheless, the methods used in the conversion of this biomass into liquid fuel (i.e. development of an effective pretreatment process) have been cumbersome and/or expensive. An attractive substitute is the use of ionic liquids (IL) - a group of new organic salts that exist as liquids at relatively low temperatures, are non-flammable plus chemically and thermally stable. The results obtained from the use of two IL's 1-ethyl-3-methylimidazolium chloride ([Emim]Cl) and 1-butyl-3-methylimidazolium chloride ([C4mim]Cl) as pretreatment systems are presented and discussed.

49 • Lignocellulosic Biomass as an Alternative Non-Food Biofuel: The Triumph of Destiny Part II

CHRISTOPHER HEIMBURGER
FACULTY SPONSOR: BARNABAS GIKONYO, CHEMISTRY

Biomass is renewable organic matter and includes agricultural crops and residues, wood sources, animal waste, aquatic plants etc. Concerted efforts are currently being devoted into producing fuels (called biofuels) from these sources as they are renewable, cheap and more readily available than fossil fuels. Biofuels that utilize plants rich in carbohydrates (i.e. sugars and starch) in biodiesel production are called first generation. These, as global food prices show, compete with food sources. The use of fuels derived from inedible part of the plant; lignocellulose (which is made up of cellulose, hemicellulose and lignin) constitutes what are called second generation biofuels. Lignocellulosic biomass (specifically cellulose) is highly favored as a potential non-food source of mixed sugars for fermentation into biofuels. Cellulose is a polysaccharide made up of linear chains of glucose units plus the major component of the rigid cell walls in plants and is the most abundant biopolymer on the planet. However, its conversion into fermentable sugars (termed pretreatment) presents important challenges. A novel method involves the use of ionic liquids (IL's). The results obtained from the use of 1-ethyl-3-methylimidazolium chloride ([Emim]Cl) IL in the pretreatment of pure cellulose and raw biomass (rice hulls) are presented and discussed.

50 • Synthesis and Characterization of Novel Benzimidazole-Furan Derivatives

JARED DECK
FACULTY SPONSOR: CRISTINA GEIGER, CHEMISTRY

Substituted benzimidazoles have numerous pharmacological uses. Benzimidazolium salts have many important uses, including as room temperature ionic liquids and as antitumor and other pharmacological agents. Our work has focused on the synthesis and structural characterization of benzimidazole derivatives obtained from the reaction of 1,2-diaminobenzene with 2-furaldehyde. The benzimidazole derivatives synthesized were analyzed using 1-D and 2-D NMR spectroscopy and X-Ray crystallography. The major product as determined by NMR analysis is 2-(furan-2-yl)-1-(furan-2-ylmethyl)-benzimidazole, in which 2-furaldehyde reacts in a two to one ratio with 1,2-diaminobenzene to produce a benzimidazole derivative with two covalently attached furan rings. A minor product, 1,3- bis(2-furanylmethyl)-2-(2-furanyl)benzimidazolium chloride monohydrate, in which 2-furaldehyde reacts in a three to one ratio with 1,2-diaminobenzene to produce a benzimidazole derivative with three covalently attached furan rings, is also obtained. The latter compound has been fully characterized by X-ray crystallography. The synthetic and structural results of this and other benzimidazole derivatives will be presented.

51 • Effect of Strongly Electron Withdrawing Group on Schiff Base Formation

JOSEPH GERAGHTY, LAURA SZCZESNIAK
FACULTY SPONSOR: CRISTINA GEIGER, CHEMISTRY

Three novel Schiff based compounds were synthesized from1,2-diamino-4-nitrobenzene and 2-thiophene carboxaldehyde by varying reaction conditions, such as solvent, catalyst and temperature. 2-amino-5-nitro-N-[(E)- thiophen-2-yl-methylidene]amine, 6-nitro-2-(thiophen-2-yl)-1-(thiophen-2-ylmethyl)-1H-benzimidazole and thiophen-2-carbaldehyde azine were obtained. The purity of the compounds was ascertained by TLC analysis. All compounds were fully characterized by IR, 1H NMR, 13C NMR, DEPT, COSY and HETCOR spectroscopy. Single crystals of these three compounds have been analyzed by X-ray diffraction. A mechanism for the formation of these products is proposed.

52 • Synthesis and Structural Characterization of 2-Substituted Benzimidazoles Derivatives

CHRISTOPHER BOND
FACULTY SPONSOR: DAVID GEIGER, CHEMISTRY

Substituted benzimidazole derivatives are of interest because of their bioactivity. Pharmaceutical uses of this class of compounds include as fungicides, herbicides and pesticides. Our interests are in the area of synthesis and characterization of benzimdazoles bearing substituents capable of coordinating transition metal ions. To date, we have synthesized two derivatives: 2-(4-methylphenyl)-1H-benzimidazole and 2-(4-pyridyl)-1H-benzimidazole. These compounds have been characterized by 1- and 2-D NMR spectroscopy and single-crystal X-ray crystallography. We will present these and other findings.

53 • Synthesis and Structural Characterization Metal Organic Frameworks Based on Zinc Acetate

DYLAN PARSONS
FACULTY SPONSOR: DAVID GEIGER, CHEMISTRY

Metal organic frameworks (MOFs) are porous compounds with extended structures in which metal ions are linked by organic ligands. The structures can extend in one, two or three dimensions. MOFs have potential use in areas ranging from separation of mixtures to fuel storage. We are exploring compounds in which zinc acts as nodes linked by bridging acetate ligands and monodentate substituted 1,2-diaminobenzene ligands. To date, we have prepared two compounds and characterized them using single crystal X-ray diffraction. Each of the compounds has a two-dimensional layered structure with voids that

contain ethanol, the solvent used in the preparation. A subtle change in the substituent on the diimine ligand (i.e., nitrile vs. chloro) has a profound effect on the coordination geometry of the zinc and the overall structure of the layers. We will present synthetic details and the results from our crystallographic analyses.

54 • Synthesis and Structural Characterization of New Benzimidazole Derivatives

MICHAEL NELLIST, MATTHEW DESTEFANO
FACULTY SPONSOR: DAVID GEIGER, CHEMISTRY

Reaction of 4-bromo or 4-chloro-1,2-diaminobenzene with 2-thiophenecarboxaldehyde results in the formation of 1,2-disubstuted benzimidazole derivatives in good yield. Based on ^{1}H and ^{13}C NMR spectroscopic analysis, two isomers are formed as expected. The isomers can be separated effectively by column chromatography. The structures of 5-bromo and 5-chloro-2-(thiophene-2-yl)-1-(thiophene-2-ylmethyl)-1H-benzimidiazole and the corresponding 6-chloro derivative have been determined by X-ray crystallography. The chloro derivatives exhibit a proclivity to co-crystallize with minor amounts of the second isomer present. All of the compounds exhibit varying degrees of rotational disorder involving the 2-(thiophen-2-yl) substituent. The synthetic, spectroscopic and structural details will be reported. We will also present the results obtained using other carboxaldehydes. ***Selected for presentation at American Chemical Society Meeting, New Orleans, LA.***

55 • The Role of Myeloperoxidase in Apocynin-Mediated NADPH Oxidase Inhibition

CAROLYN LEVINN, MICHAEL AZZARO
FACULTY SPONSOR: DAVID JOHNSON, CHEMISTRY

Apocynin (4-hydroxy-3-methoxyacetophenone) and its dimer have been shown to be potent inhibitors of NADPH oxidase, an enzyme that produces harmful free radicals in a variety of cell types. The mechanism and efficiency of inhibition have been investigated. The dimers of apocynin and two structural analogs, vanillin and 4-methyl-2-methoxyphenol, have been synthesized, and their relative inhibitory effects analyzed using LCMS and enzymatic activity assays. It has been shown that there is a logarithmic relationship between the concentration of apocynin and the percentage of inhibition, characteristic of a classic inhibition plot. LCMS data indicates that the method of inhibition may involve the apocynin dimer preventing the formation of cysteine dimer link. This may hinder the migration of the p47-phox subunit, which would activate the NADPH oxidase enzyme. This mechanism and inhibition data suggest that apocynin and its analogs have potential in many pharmaceutical applications, including treatment for diabetic retinopathy and Alzheimer's. ***Selected for presentation at 245th National Meeting of the American Chemical Society, New Orleans, LA.***

56 • NMR Analysis of Triterpenoid Crystal from Cork

CAROLYN LEVINN
FACULTY SPONSOR: ERIC HELMS, CHEMISTRY

The polycyclic triterpenoid friedelin was extracted from cork, according to the procedure outlined by Lefevre et al. 31.493 g of ground laboratory cork was refluxed in hot ethyl acetate for two hours. The cork pieces were removed through gravity filtration. The filtrate was left uncapped in the vacuum hood for one week. Spiny needle-like crystal clusters formed, with a yield of 0.154 g. The crystals were collected and dissolved in hot deuterated chloroform. Using nuclear magnetic resonance spectroscopy, the crude friedelin was analyzed and the structure elucidated.

57 • Determining the Mechanism of the Addition of HCl to Atropic Acid Through Computational Chemistry and Molecular Modeling

JORDAN O'MALLEY, DIANA LI
FACULTY SPONSOR: ERIC HELMS, CHEMISTRY

According to literature, the addition of HCl to atropic acid produces a non-Markovnikov product, β-chlorotropic acid. Prior work completed in our lab supported the observation that β-chlorotropic acid is produced and not α-chlorotropic acid, the Markovnikov product. There are three proposed mechanisms for this reaction that can lead to the observed non-Markovnikov regiochemistry. These mechanisms include a 1,4 - addition of HCl, a non - Markovnikov 1,2 - addition of HCl, and the formation of an intramolecular bond that produces a β-lactone intermediate. Molecular modeling techniques and computational chemistry were applied to analyze equilibrium geometry energies of the four hypothetical transition states and intermediates. Energies of the products and reactants were also determined. The equilibrium optimization energies were calculated using the PM3 semi-empirical model, a Hartree-Fock model using a 6-31G* basis set, and a hybrid density functional model (B3LYP) with a 6-31G* basis set using the Spartan '10 program. The 1,4 - addition reaction cation intermediate has the lowest equilibrium optimization energy in comparison to the other three. This data suggests that the reaction of HCl to atropic acid follows a 1,4 - addition mechanism.

58 • Synthesis of 9-Hydroxyphenalenone and a Luminescent Platinum (II) Derivative

RITA WHEELER, WESTLEY TEAR
FACULTY SPONSORS: ERIC HELMS AND JAMES MCGARRAH, CHEMISTRY

We are investigating the synthesis of new luminescent square planar platinum(II) compounds. 9-Hydroxyphenalenone (Hpal) was synthesized from 2-methoxynaphthalene and cinnamoyl chloride with a 42.6% percent yield. Hpal was reacted with a cyclometalated platinum(II) chloro-bridged dimer, [Pt(thpy)Cl]2 (where thpy = 2-thienylpyridine), to yield Pt(thpy)(pal). The characterization of these compounds by 1D- and 2D-nuclear magnetic resonance spectroscopy and mass spectroscopy is reported. Preliminary investigations of their luminescent properties will also be reported.

59 • Zinc (II) Salicylaldehyde Complexes and Their Unexpected Luminescence Properties

ADAM PHILIPS
FACULTY SPONSOR: JAMES MCGARRAH, CHEMISTRY

There has been recent interest in luminescent zinc Schiff base compounds. While exploring metal-templated reactions in order to form the Schiff base compounds it was discovered that 3,5-dichlorosalicyladehyde and either zinc nitrate or zinc acetate yields a highly luminescent precipitate, the zinc(II) salicyladehyde complex. Although similar compounds have been previously reported the luminescent properties have not been reported. This compound is sparingly soluble in most solvents; the notable exceptions are DMSO and DMF. Crystals suitable for single crystal x-ray analysis were obtained by concentrating a saturated solution of DMSO. Various halogen substituted salicylaldehyde zinc compounds have been synthesized and their visible emission properties have been studied. The compounds are fluorescent with a maximum centered 495 nm and quantum yields for emission ranging from 0.21 - 0.73.

60 • Synthesis and Characterization of Luminescent Platinum Complexes

BENJAMIN NAGASING
FACULTY SPONSOR: JAMES MCGARRAH, CHEMISTRY

Luminescent platinum organometallic compounds are of great interest for their potential application as organic light-emitting diodes (OLEDs). Three new platinum compounds, Pt(ppy)Cl(PPh3), Pt(46dfppy)Cl(PPh3), and Pt(tpy)Cl(PPh3) (ppy = 2-phenylpyridine, 46dfppy = 2-(4,6-difluoro)-phenylpyridine, tpy = 2-thienylpyridine, PPh3 = triphenylphosphine), have been synthesized from the reaction of the corresponding μ-dichloro bridge platinum dimers with triphenylphosphine. These compounds are highly luminescent in the solid state. The compounds have been characterized by one-and two-dimensional nuclear magnetic resonance (NMR) spectroscopy, absorption and fluorescence spectroscopy, and x-ray crystallography. Continuation of work by William Nack '11.

61 • Simultaneous Measurements of Charge and Fluorescence from Single Quantum Dots

SARAH MIETZ, GAGE BATEMAN
FACULTY SPONSOR: JEFFREY PETERSON, CHEMISTRY

Quantum dots (QDs) are semiconductor nanoparticles that are helping revolutionize the field of nanotechnology. A major setback limiting the use of QDs, however, is the mysterious phenomenon of "blinking." Blinking refers to the random transition between a bright fluorescent state to a dark nonfluorescent state (sometimes called ON and OFF states, respectively). To study this theory, we have attempted to simultaneously measure the charge and fluorescence intensity of a single QD through the novel use of gel electrophoresis coupled with single molecule photoluminescence imaging. Such measurements have not been reported in the literature and could provide key data to help evaluate different theoretical models of fluorescence blinking.

62 • Effect of Temperature Jump on Protein Aggregation

CHRISTINA BERTI
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

In addition to studying the effects of both pH and solvent content on protein aggregation to gold colloids of multiple sizes, we have also studied how a temperature jump affects the behavior of protein. To test the effect of temperature jump on the reversibility of protein accumulation, we used TEM (Transmission Electron Microscopy) to observe a morphology of amyloid beta peptide (Aβ1-40) coated 30nm or 40 nm gold colloid in water before and after a temperature jump from 5° C to 45° C as well as from 45° C to 5° C. For the temperature jump from 5° C to 45° C, the morphology obtained at 5° C was altered to that of 45° C. For a temperature jump from 45° C to 5° C, a morphology created at 45° C was preserved even after the temperature change to 5° C. We conclude that the morphology was controlled by the structure of the Aβ1-40 at a given temperature, and the structure supported at 45° C is not reversible. ***Selected for presentation at Western NY American Chemical Society 2013, Buffalo, NY.***

63 • Solvent - Dependent Aggregation to Gold Colloids Investigated Under TEM

CHRISTINA BERTI
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The aggregation of amyloid beta peptide (Aβ) or albumin coated gold colloid is known to be sensitive to pH in an aqueous environment. While a majority of surface functionalized gold colloids are soluble in dimethyl sulfoxide (DMSO) but not in water, no detail studies of aggregation process was conducted. Using transmission electron microscopy, we directly observed the aggregation process of the Aβ- or albumin-coated gold colloids diluted in DMSO. We found that aggregation process in DMSO was irreversible after a change in pH from 7 to 4 for both albumin- and Aβ-coated gold colloids. We interpret that a weak interaction between protein and water enable the protein structure to undergo a reversible process. It clarified that the solvent environment significantly contributes to the reversibility of the aggregation process. ***Selected for presentation at Western NY American Chemical Society 2013, Buffalo, NY.***

64 • Diffusion Mechanism of Water Into Sol-Gel Matrix

CHRISTINA BERTI
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

A diffusion of water was spectroscopically monitored by a sequencial insertion of acid and base into sol gel matrix in which ethyl-violet dye was predoped. The ethyl-violet dye exhibits a pH dependent color change and exhibited a degree of diffusion of either acid or base. When an acid was introduced, the diffusion rate of acid into a sol-gel matrix was independent of temperature within a range between 15 and 75° C. By interpreting that a diffusion process of acid or base reaction, an Arrhenius plot-like analysis was conducted for the reaction rates. It was revealed that the parameter acting as an activation energy for acid penetration was negligible (i.e., ~0 kJ/mol), though the activation energy for the base penetration was found to be 34+4 kJ/mol. We executed an initial acid penetration by placement of a fluid into vacant cavities. The base penetration was considered to participate in a neutralization process with pre-existent acid in the cavities of the gel. ***Selected for presentation at Western NY American Chemical Society 2013, Buffalo, NY.***

65 • Reversible Self-assembly of Nitro-disulfide Functionalized Gold

EUN SOPHIA HWANGBO
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

In order to create a stable oligomer form of amyloid beta peptide (i.e. a key intermediate of the Alzheimer's disease), we modified the surface of gold colloids with nitro-dibenzyloxy disulfide. As the external pH was alternated between pH 4 and pH 10, a reversible color change was observed. This color change corresponds to a reversible self-assembly of the gold colloids. The self-assembly process was investigated over various sizes of gold nano-colloids ranging between 10 nm and 100 nm in diameter. The reversible process showed monotonic size dependence, in which better enhancement was given when relatively smaller sizes of gold were used. This indicates that the attachment of nitro-dibenzyloxy disulfide softens the surface-curvature-dependent metal surface potential.

66 • Property of Dialkoxy Disulfide Functionalized Nano Gold Colloidal Particles

EUN SOPHIA HWANGBO
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

Nanoscale gold colloids have been extensively studied as a physiologically safe biomaterial. However, due to a strong interaction from the gold metal surface, the molecular structure of an interacting protein is significantly altered and the protein loses its original biological function. We attempted to modify the surface of gold colloids to produce "softer" interaction to the adsorbing proteins so that its stability is enhanced and biofunctionality is maintained. As the best candidate for surface modification, we used nitro-, phenyl-, chloro-, methyl-, H-, and methoxy-, dibenzyloxy disulfide in a dimethyl sulfoxide (DMSO) environment. We obtained a strong evidence of disulfide being adsorbed on the colloidal surface. As a degree of binding was analyzed, methoxy-and nitro-dibenzyloxy disulfide were found to provide an optimum soft binding to a targeted protein.

67 • Size Dependence and Effect of Amyloid Beta Peptide Attachment to Nitro-Dialkoxy Disulfide Functionalized Gold Colloids

EUN SOPHIA HWANGBO
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

A modification of the gold colloidal nanoparticles has been extensively studied for applications in biomedical field. While a bare metal colloid limits the types of proteins or peptides that can interact, a proper functionalization of the gold surface enables interaction of a wide variety of proteins. Recently, our group found that functionalization of the gold colloidal surface with nitro-dibenzyloxy disulfide can not only adsorb amyloid beta peptide but also capture a key intermediate (oligomer) of fibrillogenesis which eventually leads to Alzheimer's disease. Since an intermediate is extremely difficult to detect under normal conditions, the surface potential created by nitro-dibenzyloxy disulfide is considered to be high enough to stabilize the intermediate. We explored the optimum surface condition for an intermediate by varying the size of gold colloids and investigated the conformation of attached amyloid beta peptide (hydrophilic Aβ1-40 and hydrophobic Aβ1-42) as the external pH was varied from pH 10 to pH 2. It was found that an oligomer was almost equally reproduced for the entire size ranges tested in this study.

68 • Reversible Self-assembly of Aβ 1-40 and Aβ 1-42 over Nitro-disulfide Functionalized Gold Colloid

EUN SOPHIA HWANGBO
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

It is known that a fiber formation of amyloid beta is a hallmark of the Alzheimer's disease. There are roughly two types of amyloid beta which are critically important in the mechanism of Alzheimer's disease. One is a water soluble amyloid beta peptide of sequences 1-40 (Aβ1-40) and the other is a water insoluble amyloid beta peptide of sequences 1-42 (Aβ1-42). Neither Aβ1-40 nor Aβ1-42 exhibited a reversible self-assembly in dimethyl sulfoxide when they were directly placed over the gold colloidal surfaces. However, both amyloid beta peptides exhibited a reversible self-assembly when they were attached over nitro-dibenzyloxy disulfide functionalized gold colloids. We investigated over various sizes of gold nano-colloids ranging between 10 nm and 100 nm in diameter. Although strong size dependence was not observed, nitro-dibenzyloxy disulfide enhanced the stability of the intermediate of self-assembly process.

69 • Kinetics and Dynamics of Protein on the Surface of Quantum Dots Encapsulated in Silica Gel

KENNETH SANTOS
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

A novel design for a drug delivery rate controlling capsule system was tested under acidic, stomach-like conditions using nanoparticle semi conductor (Quantum Dot - QD) contained gel material. The acid (pH 2 buffer) externally interacts with this material, resulting in optical information that allows us to observe how gel materials control the speed of acid breaking into the gel capsule. We expect that the protein enclosed QDs will behave differently than the QDs without the protein. The

protein, coated over the surface of the QDs, tends to protect the surface of the QDs as the acid breaks into the capsule. This allows us to evaluate how the capsule can be strengthened by adding protein coated QDs inside.

70 • Nanosize Effect on Diffusion Through a Silica Sol-Gel Matrix

KENNETH SANTOS
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

Effective drug delivery and direct injection to a targeted region of living cells is a challenging issue. In the acidic environment of the stomach, the efficiency of a drug can be significantly reduced by stomach acid. Therefore, it is becoming increasingly imperative to design an acid resistant drug-carrying device for such a harsh environment. Silica sol-gel was used, as it is an excellent material to use as a platform for the drug carrying substance. In order to design a capsule with a controlled rate of drug delivery at highly acidic condition, the diffusion rate of the acid reaching into the cavity of the silica based gel material was investigated. We utilized Quantum Dot (QD) as a "host" to observe the condition of the drug inside the cavity. The change in lifetime of the QDs was measured as the solvent penetrated into the gel. The dynamics of the host particle was sensitively changed as the size of the guest particles changed between 5 and 80 nm. The penetration rates and the guest particle sizes exhibited a non-linear relationship, and the rate was maximized at the guest particle size of 5 nm.

71 • Study of a Mechanism of Amyloid Beta Fibrillogenesis: The Self-assembly of Amyloid Beta 1-40 Peptides on Gold Nanoparticles

PATRICK MILLER-RHODES, QUEENY PAN
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The aggregation of soluble amyloid beta (Aβ) peptide oligomers is a key step in the formation of the insoluble fibrillar deposits observed in Alzheimer's Disease. However, little is known about the chemical intermediates formed as Aβ monomers aggregate into Aβ oligomers (i.e. the initial step in Aβ fibrillogenesis). Using absorption spectroscopy, a reversible self-assembly between the aggregate condition (pH 4) and the non-aggregate condition (pH 10) was observed and enhanced when temperature was lowered below 10 degrees Celsius. This reversibility is an important implication of the observation of a reversible step reported for fibrillogenesis. It was interpreted that the reversible process takes place when hydrophilic Aβ possesses a three-dimensional network containing both beta-sheet and alpha helices. ***Selected for presentation at American Chemical Society Local Conference, Brockport, NY.***

72 • Observation of Pre-Fibrillar Intermediates in Alzheimer's Disease: The Conjugation of Amyloid Beta 1-42 Peptides on the Surface of Gold Nanoparticles

PATRICK MILLER-RHODES, QUEENY PAN
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The amyloid beta (Aβ) 1-42 sequence is insoluble in water and is known to aggregate easily. This has prevented us from studying the reversible self-assembly process of Aβ1-42 monomers as well as the properties of an intermediate protein structure in this process. For the first time, our research group was able to capture the intermediate involved in the reversible self-assembly by placing the Aβ1-42 over the nanoscale gold colloid in dimethyl sulfoxide, in which Aβ 1-42 is soluble. However, the reversible self-assembly process did not repeat more than 10 cycles indicating that a denaturing process was going on simultaneously. Currently, absorption spectroscopy is being used to investigate temperature dependence in gold nanoparticles of various sizes. ***Selected for presentation at American Chemical Society Local Conference, Brockport, NY.***

73 • Controlling Reversible Self-Assembly Path of Amyloid Beta Peptide Over Gold Colloidal Nanoparticles' Surfaces

QUEENY PAN, PATRICK MILLER-RHODES
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

Self-assembly of amyloid beta peptide (Aβ) is a crucial step of fibrillogenesis, a hallmark mechanism of Alzheimer's disease. We discovered that a reversible assembly process of Aβ1-40 monomer can be controlled over 20 nm gold colloid, under an alternation of external pH, at room temperature. The observed reversible self-assembly is a reproduction of an initial reversible step of fibrillogenesis. It is notable that the conformation under pH 4 corresponds to an oligomer form, which is regarded as an intermediate of fibrillogenesis. Furthermore, there was reversible color change as temperature decreased lower than 5° C for Aβ1-40-coated 30 nm and 40 nm gold colloid. The unit constructs an oligomer over 20 nm gold colloid is a dimer, whereas a trimer is the main unit for an oligomer constructed over 30 or 40 nm gold colloids' surfaces. During the process of self-assembly, temperature was shifted up or down and an effect of an initial temperature was investigated. The Aβ1-40 monomers situated over 20 nm gold colloid tend to maintain the conformational feature constructed at an initial temperature even after the temperature was altered. This study exhibited that there are two distinctly different self-assembly paths existing in an initial stage of fibrillogenesis. ***Selected for presentation at American Chemical Society Local Conference, SUNY Brockport.***

74 • DNA Binding Properties of Therapeutic Compounds

KEVIN SIEGENTHALER
FACULTY SPONSOR: RUEL MCKNIGHT, CHEMISTRY

Many compounds of therapeutic significance, especially those in the anticancer and antibiotic classes, are known to bind to DNA non-covalently. Ongoing research into the therapeutic potential of these types of compounds is therefore essential to the development of novel, therapeutic drug candidates with improved efficacy and reduced side effects. Information on the exact DNA binding mode as well as the relative binding affinity have provided insights into understanding why and how these therapeutic drugs bind to DNA. The abietane diterpenes are a class of natural products isolated from a certain plant (*Hyptis verticillata*) known in Jamaican folklore for its medicinal benefits, including anti-microbial, anti-oxidants, anti-inflammatory as well as anti-cancer activities. To date, many aspects of the mode of action of these compounds are still unclear. One goal of this project is to carry out preliminary studies on selected members in the abietane diterpene class of compounds in order to determine whether these compounds bind to DNA, and if so, to characterize their preferred DNA binding mode and affinity. Fluorescence-based ethidium bromide displacement assays, topoisomerase I DNA unwinding assays and circular dichroism were all used to gather information on the DNA binding properties of these compounds.

75 • Drug Interactions of AT vs. GC Rich DNA Sequences

LUKE MARR
FACULTY SPONSOR: RUEL MCKNIGHT, CHEMISTRY

Therapeutically significant small molecules and their nucleic acid targets have been under investigation for many years. Information on the exact DNA binding mode as well as the relative binding affinity have provided insights into understanding why and how these therapeutic drugs bind to DNA. Our recent work has focused on finding robust but simple approaches to determine the preferred DNA binding mode (whether via intercalation or the DNA minor groove) of small molecules with therapeutic relevance. In order to validate our approach, we have carried out preliminary studies using primarily isothermal titration calorimetry (ITC) on several compounds known to bind DNA via intercalation and/or the minor groove. Our ITC studies have shown that compounds that are known to bind via intercalation (ethidium bromide, daunomycin, naphthalene diimides) show no significant preference for an AT- vs GC-rich DNA sequence, while compounds that are known minor groove binders (distamycin, berenil) do show a strong preference for the AT-rich sequence relative to the GC-rich sequence. Future work will involve using this approach to characterize a series of abietane diterpenes (*Hyptis verticillata*) natural products known in Jamaican folklore for thier medicinal benefits, including anti-microbial and as anti-cancer activities.

76 • Effect of X-Rays on Human Lymphoblasts with and without Elevated Levels of the 4977-bp Common Deletion

ALEXANDRA RIBAUDO, SHADMAN SINHA
FACULTY SPONSOR: WENDY POGOZELSKI, CHEMISTRY
ROBERT O'DONNELL, BIOLOGY

Human mitochondrial DNA (mtDNA) is subject to large-scale deletions. A deletion of 4977 base pairs, called the "common deletion," makes cells viable but energetically compromised. These deletions increase with aging and our lab has shown that they

can increase with gamma ray dose. We compared lymphoblast cell lines in which the deletion was either undetectable or at levels of ~7%. These cells were treated with X-rays and Gamma-rays with doses up to 5Gy. We compare cell growth and levels of the common deletion for these irradiated cell lines. ***Selected for presentation at Experimental Biology 2013, Boston, MA.***

77 • Development of Assays to Detect Effects of Gamma Rays and X Rays on Human Lymphoblast Cell Lines with and without the 4977-Base Pair Common Deletion

CHRISTIAN EVANS, SAM CHIAPPONE

FACULTY SPONSORS: WENDY POGOZELSKI, CHEMISTRY, AND ROBERT O'DONNELL, BIOLOGY

Human mitochondrial DNA (mtDNA) is subject to large-scale deletions. These deletions occur at low levels and are difficult to detect. We show efforts to develop assays, including a PCR assay, to amplify large sections of the mitochondrial genome, compare the lengths of the amplicons and thus detect the presence of deletions. We also show this technique can be used to determine the effect of insults such as ionizing radiation. ***Selected for presentation at Developmental Biology 2013, Boston, MA***

COMMUNICATION

78 • 3D Media Tech Research: Implementation of Technology Into Education

AMANDA SKINNER

FACULTY SPONSOR: ATSUSHI TAJIMA, COMMUNICATION

The implementation of technology into education for the past several decades has created a shift in the way students learn, and the way teachers teach. The technological shift that has occurred creates both advantages and disadvantages to teachers and students in education, depending on their willingness to adapt to the change. 3D technology is the newest addition to create a new world of learning possibilities that can only be adapted and understood if the current technology gap begins to diminish. Interviews and focus groups of both students and teachers in higher education provided valuable information for how this shift could effect the future generations, and how learners and educators have already been affected. By understanding the importance of closing the technology gap, and embracing the introduction of technology and the wealth it can provide in learning environments, it is possible to extend education to not only subjects that were not possible before, but also to people in all locations with varying degrees of education/learning abilities.

79 • Communicating About Donor Conception

MEGHAN SOVOCOOL, SHELLY MASSACHI, CHRISTINA PICCIOCHI, ALEXANDRIA PIORE, BRIDGET SOVOCOOL

FACULTY SPONSOR: MEREDITH HARRIGAN, COMMUNICATION

This study is grounded in a systemic investigation of communication in families formed through anonymous donor conception. Our study has evolved from looking at the communication-related experiences of donor-conceived offspring, to those of the parents of donor-conceived offspring, and currently to those of anonymous sperm donors. After analyzing the results of the interviews with the donor-conceived offspring, we found that donor-conceived offspring discursively engage in mean-making and identity construction. The analysis of the interviews with the parents revealed that parents use facework processes such as selective disclosure, strategic donor and language choices, and networking when communicating with their offspring and others. Important questions to address when studying communication-related experiences with donors include: (a) what makes a person decide to donate sperm anonymously, (b) how do donors communicatively construct themselves when discussing sperm donation, and (c) how do donors negotiate privacy and disclosure with others about their sperm donation. It is our hope that our findings will offer both theoretical implications for communication researchers as well as practical implications for those who choose to undergo the process of donating sperm, donor-conceived families, and individuals who communicate with donor-conceived families.

COMPUTER SCIENCE

97 • Parallel Processing of Computer Graphics with GLSL

MARCOS DAVILA

FACULTY SPONSOR: DOUG BALDWIN, COMPUTER SCIENCE

Constructive Solid Geometry (CSG) is a way to represent complicated three-dimensional geometric models for computer graphics. For example, IViPP is a computer graphics program that must display CSG models in order to draw the environments of particle physics simulations. Processing CSG entirely on the central processing unit (CPU) can slow performance to non-interactive frame rates for all but the simplest geometry. Harnessing a dedicated graphics processing unit (GPU) allows such geometry to quickly be rendered to the screen. In order to test this hypothesis, I created a version of IViPP's geometry renderer that uses a data structure known as a BList to enable rendering in the GPU. I measured frame rates, CPU and GPU utilization, and rendering times for several variants of this renderer, and compared them to each other and to CPU-only rendering. I intend to present the results of these measurements to show that GPU rendering leads to significant improvements over CPU-only rendering.

98 • Parallelization of Matrix Operations in C++

MARCOS DAVILA

FACULTY SPONSOR: HOMMA FARIAN, COMPUTER SCIENCE

Matrices remain one of the most widely used data structures in the computational sciences despite how expensive it is to compute common operations on them. Much progress has been made towards optimizing matrix operations, but working with large matrices or a large number of them remains challenging in terms of execution time. I will explore how matrix operations such as addition, transposition and multiplication can be optimized by using pointer arithmetic and threads over multiple cores. The results of my approach will be compared against the available and industry tested approaches. ***Selected for presentation at The Consortium for Computing Sciences in Colleges-Northeast Region, Loudonville, NY.***

99 • Comparison of High Performance Computing Storage Methods

WYATT GORMAN

FACULTY SPONSOR: HOMMA FARIAN, COMPUTER SCIENCE

Today's computing environment is consistently moving towards the cloud, in the form of cloud computing, cloud applications, and cloud storage. Cloud storage, in particular, is growing at an exorbitant rate amongst the general population and other organizations. The backbone of this technology is High Performance Computing Storage, a constantly evolving area of information technology which encompasses numerous methodologies and paradigms. I have taken up the task of comparing the most common ways that HPC storage is used, and the most effective distributed storage models to serve those needs. In this pursuit I have analyzed and compared the numerous available file systems, distribution archetypes, and software solutions that would suit those purposes. I have compiled the most advantageous configurations of software and hardware available today, while detailing statistics, benchmarks, and other reasoning that lead me to my conclusions. My goal for this project has been to clarify a field which is growing extremely rapidly, and which can be rather difficult to grasp. ***Selected for presentation at Consortium for Computing Sciences in Colleges - Northeastern Region 2013, Albany, NY.***

100 • Interactive Laptop Computing Cluster with Video Wall (located in College Union Lobby)

STEPHEN KOWALEWSKI, WYATT GORMAN, HERB SUSMANN

FACULTY SPONSOR: HOMMA FARIAN, COMPUTER SCIENCE

The WOPR Laptop Cluster is a portable computing environment made up of 16 laptops with corresponding displays arranged in a vertical 4x4 grid. The cluster is capable of displaying interactive media on the video wall including photos and video. We plan to use the wall to showcase student art, campus photos, and student research projects. Furthermore, it will be interactive through the display of a live twitter feed of all tweets with the hash-tag "GREATDay2013" and a live photo booth feature that will send out photo tweets with the same hash-tag.

ENGLISH

101 • Jane Austen and Religion

CHRISTOPHER CROCKER, BROOKE PEARLMAN, AMELIA SPADE, ANDREA SPRINGER

FACULTY SPONSOR: CELIA EASTON, ENGLISH

This poster represents diverse research on religious texts that influenced Jane Austen's novels, as well as her representation of religion and religious figures in her fiction, letters, and collected prayers.

102 • Jane Austen and the Military

CORINNE GREEN, STEPHANIE NAWROCKI, MICHAEL AUGELLO
FACULTY SPONSOR: CELIA EASTON, ENGLISH

Both the Army and the Navy play significant roles in Jane Austen's novels. This poster represents collective research on contemporary military practice, with a particular focus on Austen's interest in the Royal Navy and her two successful naval brothers.

103 • Jane Austen and Film

DIANIELLA INSALACO, EMILY OLMSTEAD, KARA PALLADINO, SHANNON WILLOUGHBY, MEGAN WAGNER-FLYNN
FACULTY SPONSOR: CELIA EASTON, ENGLISH

This presentation coordinates research and analysis done by students in ENGL 358 Major Authors: Jane Austen on representations of Jane Austen in film. The examples draw particularly from contrasting interpretations of *Pride and Prejudice* by recent film makers.

104 • Jane Austen and Popular Culture

KRISTEN ANDRYSHAK, RACHEL EISENMAN, EMMA GREENMAN, SAMANTHA MERGENTHALER, DANIELLE WARD
FACULTY SPONSOR: CELIA EASTON, ENGLISH

This poster represents collective research on the popular culture phenomenon that has arisen in regard to the English novelist, Jane Austen. From blogs to sequels to novelty items, the array of Austen popular culture objects and practices continues to grow.

105 • Jane Austen and Education

MEGAN EICHAS, TASMIA NAZ, MELANEY REBELLO, CHRISTIANE STELLRECHT
FACULTY SPONSOR: CELIA EASTON, ENGLISH

This poster represents collective research on educational attitudes during the Regency. Participants discuss Jane Austen's representation of attitudes about education, especially women's education, during the late 18th, early 19th centuries.

GEOGRAPHY

106 • Relationships Between Monthly Western U.S. Surface Hydrological Extremes and Upper-Level Winds

ADRIENNE TUCKER
FACULTY SPONSOR: COLLEEN GARRITY, GEOGRAPHY

In an effort to further examine surface hydrological extreme conditions in the western United States as volumetric phenomena, this research investigates relationships between surface drought and wet conditions and their corresponding upper-level winds on a monthly time scale for the period 1979-2012. Surface severe to extreme Palmer Drought Severity Index drought and wet conditions by climate division are used in a geographic information system to extract NCEP-DOE Reanalysis 2 u,v wind vectors at 4 pressure levels in the atmosphere: 850, 700, 500, and 300hPa. Results are presented for the entire region and subregions in the West, as well as annual and seasonal composites. ***Selected for presentation at Association of American Geographers Annual Meeting, Los Angeles, CA.***

107 • Spatial Analysis of Spending per Student in New York School Districts

CLAIRE COSTELLO
FACULTY SPONSOR: COLLEEN GARRITY, GEOGRAPHY

Using maps to visualize spatial distributions is helpful for identifying and understanding spatial patterns. In this research project, I compare school district spending per student across New York State. Every school district in New York produces a 'report card' that reports how much the district spends per pupil. This varies greatly between districts and especially between counties throughout the state. I use a geographic information system (GIS) to map and visualize the data as well as to conduct spatial analysis. Maps of different variables related to school district spending are displayed, including spending per pupil and total spending per district. Subsequent maps explore the connection between data spending by district and demographics by overlaying district spending data such as population of districts as well as with demographics of race and poverty levels to examine possible correlations.

108 • China's Missing Children

BETHANY FRIDAY
FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

By tomorrow this time, 190 more Chinese children will have been kidnapped. A cultural gender bias for males paired with China's 1978 "One-Child-Policy" have contributed to the abductions of thousands of young boys across the nation. My research seeks to identify and explain geographical patterns in kidnappings across Chinese provinces. I first extracted key variables from 400 reported kidnapping cases via a national missing child database. These variables include the child's gender, age, and province of abduction. I then analyzed these against provincial figures such as population and GDP per capita. Graphical representations of this data have confirmed the vastly disproportional abduction of boys over girls and has also revealed new findings such as a positive correlation between the rate of child kidnapping and both population and GDP. I have thus concluded that while it would not be incorrect to partially attribute China's child kidnappings to its traditional preference for male heirs, such trends can and should also be considered alongside geographical features–namely population and GDP per capita.

109 • Geography of Elite Cairo

EUGENIA TANG, ATOSA GHASRIPOOR
FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

A study of the demographic of wealth in Cairo, Egypt, and its correlation to luxury services and facilities. The locations and real estate information of the high-end villas and apartments are gathered and placed on a map along with the locations of goods and services that cater to the higher class residents. ***Selected for presentation at Middle States Geographer, Buffalo, NY.***

110 • The Rwandan Genocide: Prospect and Retrospect

JESSICA GILBERT
FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

This study of the Rwandan Genocide focuses primarily on the atrocities that occurred during the 100 days of murder from April 6 through late June 1994. It isolates three significant elements of the genocide and attempts to show both their individual importance and how they are connected. The first of these elements includes the major massacres that took place across the country, telling a story of when and where the genocide progressed. The second examines the progression of the Rwandan Patriotic Front (RPF) as it halted the genocide town by town. By mapping the RPF advancement and the location and date of the atrocities, one can assess why the killings were much more prevalent in some parts of the country than in others. The final element studies the term known as "gendercide," or the targeting of a specific gender. Discovering which gender was targeted when reveals a great deal about the Rwandan culture, the progression of the genocide, and some of the after effects that have continued through to the present. The push and pull of these three elements demonstrate how the legacy of catastrophe embraces much more than just the million lives lost and the survivors who mourn them.

111 • Geography of Twitter

PATRICK HEFFERNAN, ALLISON ROOSA
FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

Our poster will examine the global distribution of tweets. We collected data on the global distribution of tweets over two separate 24 hour periods. These were conducted on a Tuesday and Saturday so as to examine differences between weekday and weekend Twitter activity. We will compare and contrast our data sets in order to inspect the trends and patterns currently occurring on Twitter.

112 • In the Age of Cannon and Musket: Sackets Harbor's Military Geography during the War of 1812

ROBERT BRIWA
FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

During the War of 1812 the naval base at Sackets Harbor became a site of military significance. Naval control of the Great Lakes determined the success or failure of military operations and settlements with good anchorage were the focal points of military conflict. Sackets Harbor's strategic position relative to British lines of communications made it a target of British military action. The site came under direct assault by British forces of two occasions. Each outcome hinged upon the defenses of the harbor and contemporary military technology and tactics. This poster is a summary of a research project that examined the military significance of Sackets Harbor through a geographic lens that

identifies the relationship between geography and military technology and tactics so vital to waging effective warfare during the early nineteenth century. The tactics were fundamentally rooted in time and space, specifically the phased advance of densely packed infantry on a prepared defensive position. Sources include scholarly treatment of Napoleonic warfare, sources focused on Sackets Harbor, military databases, and an examination of local topography and ground conditions.

113 • Demographic Analysis of Geneseo Student Origins

RUSSELL ALDAVE
FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

This study focuses on investigating the reasons behind the students who apply, are admitted, and accepted to SUNY Geneseo. Data for the number of students admitted in 2011 was obtained from the Office of Admissions. On top of that, data from each county population as well as the number of high school graduates from each county was obtained from the census bureau and NYS Education department respectively. After analyzing the county population with the amount of students that end up in Geneseo, data for 'college bound' high school graduates was acquired. This ratio of students was then analyzed using Microsoft Excel and ArcGIS. After mapping and analyzing the data, the first hypothesis assumed driving distance had a negative correlation with the amount of students that come to Geneseo. This hypothesis was true for both students who applied and who were accepted, but it was not true for the number of students admitted. This project remains on-going and more hypotheses will be tested in attempt to explain the major reasons for students to attend this institution.

114 • InterVarsity: The Geography of a Christian Contemporary Campus Ministry in the United States

PAT GREGORY
FACULTY SPONSOR: DAVID ROBERTSON, GEOGRAPHY

Some have suggested that college campuses are localized reflections of the nation's level of spiritual curiosity. If a nation has higher rankings of church adherence rates, the colleges and universities should have more campus ministries. This study describes the geography of InterVarsity, one of the largest Christian campus ministries, serving over 34,000 students and faculty. The spatial distribution of InterVarsity is analyzed at the national level using ArcGIS 10, and data from InterVarsity, the Association of Religious Data Archives (ARDA), and the U.S. Census. The InterVarsity chapter locations will be mapped and their distribution interpreted with reference to religious adherence rates and other geographical data.

115 • Evaluating the Efficacy of Prescribed Fire in Rush Oak Opening, New York

DIANA MCGRATH, BRIAN WOLFF
FACULTY SPONSOR: JAMES KERNAN, GEOGRAPHY

Oak openings are a diverse and rare ecosystem characterized by savannah and savannah-like conditions. While oak openings were once widespread, the Rush Oak Opening is the only one in New York State today. Oak openings are dependent on fire as a natural disturbance that favors oaks and native grasses, and prevents woody encroachment. The Rush Oak Opening is managed by the New York State Department of Conservation through periodic prescribed burns. This study examines the effectiveness of the management system after a prescribed burn event on March 23rd 2012. We used a transect micro-plot sampling method in which shoots were measured to estimate growth rate, and burn marks were measured to estimate burn intensity. Plant and wildlife diversity were analyzed. Our study found that growth of new shoots and burn intensity varied significantly among transects. This can potentially be attributed to the fragmentation of habitat by burning small plots. There is evidence that some herbaceous invasive species were eliminated by the prescribed fire. A variety of wildlife was noted suggesting the importance of the ecosystem in conservation efforts. We concluded that prescribed burning is necessary to maintain the Rush Oak Openings and should remain an integral part of management efforts.

116 • The International Jew: The World's Problem: Anti-Semitism in Detroit

AYELET HAREL
FACULTY SPONSOR: JENNIFER ROGALSKY, GEOGRAPHY

Detroit, Michigan, in its heyday, was a booming industrial center filled with job opportunities and a popular entertainment scene. The city has seen an astounding level of economic and population decline since this peak, stemming from a multitude of factors. One of the biggest contributing aspects of the city's current situation is arguably racism and its effects on targeted groups, including Detroit's Jewish population, one of the most historically victimized Jewish communities in America. Infamous propagators of anti-Semitism such as Catholic minister Father Charles Coughlin, Henry Ford, and others were based in Detroit, adding to the significance of the city as a center for anti-Jewish sentiments. Today's Jewish Detroiters are still targeted through anti-Semitic acts, many of them violent hate crimes. This poster is a collection of research detailing the history of Detroit's Jewish population and ensuing anti-Semitism, including current information on anti-Jewish hate crimes. Looking forward, Detroit can benefit from implementing low- cost education and social programs to ease this tension.

117 • The Murder City: Crime in Detroit, Michigan

BONNIE BROWN
FACULTY SPONSOR: JENNIFER ROGALSKY, GEOGRAPHY

Crime rate is defined as the ratio between the number of crimes in an area and the population size in that area. Throughout history, it has continuously been influenced by a number of factors such as population size, demographics, poverty, unemployment, graduation rate, neighborhood environments, and police density. These factors, however, affect crime rate with varying significance. Detroit, Michigan is one city that exemplifies the causes and effects these factors have on the rate of crime. Throughout the 1900s, the crime rate in Detroit continuously increased. During the late 1900s, the homicide rate increased to the point where Detroit was called the Murder City. The 2000s, however, has seen a decrease in crime rate. The purpose of this study was to analyze the distribution of crime throughout Detroit, Michigan and the factors that may influence and contribute to the crime rate in order to formulate a plan to further reduce the rate of crime.

118 • Detroit Schoolchildren in Crisis: The Street Lamp Problem Facing Our Most Vulnerable

JOSEPH CORBIN
FACULTY SPONSOR: JENNIFER ROGALSKY, GEOGRAPHY

This poster is designed to illustrate the street lighting problem facing Detroit by focusing on the dangers it poses for school children. In some neighborhoods in Detroit, over half of the street lamps do not function. Additionally, an enormous percentage of houses in the city are vacant, attracting crime and clandestine behavior. With early sunsets during the winter months, many parents do not allow their children to go to school out of fear for their children's safety, because they know their children will have to walk home through a dark and dangerous neighborhood. Detroit has a plethora of issues as America's fastest declining city and there is much discussion regarding which issues to address first. This poster seeks to open people's eyes to the fact that society's most vulnerable group, children, are put in unnecessarily great danger because of such a simple problem as street lamps. I would argue that these simplest solutions ought to be enacted first.

GEOLOGICAL SCIENCES

119 • Data Compilation for the Characterization of Local Pre-Facing Groundwater Conditions

JENNIFER GEORGEK
FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

The potential health risks and environmental effects associated with hydrofracing of shales for natural gas extraction have been in the forefront of today's controversial issues among citizens and lawmakers in the Northeastern United States. Few studies, however, have collected the baseline data helpful in proving or disproving the validity of these concerns after hydrofracing has begun. This study compiles existing data relevant to characterizing the pre-fracing conditions in groundwater within Livingston, Alleghany, and Steuben Counties, New York. Included in the data are topographic and geologic features, and the occurrence of methane in groundwater. In addition, the locations of hypothetical hydrofracing wellsites compiled by Benjamin Wunder were included to assist in identifying regions potentially more susceptible to methane migration towards the surface. The computer program, ArcGIS, was used to organize the geographic, topographic, geologic, and

groundwater data to more effectively choose future groundwater sampling sites. In the future, samples will be collected throughout the study region and geochemically analyzed for the occurrence of naturally-occurring methane and other hydrocarbons related to geologic materials. If horizontal drilling occurs within New York State, this study will enable the identification of methane leaks from hydrofracing processes by identifying natural methane sources for comparison.

120 • Petrology of the Pillow Basalts of the Lapas Lava Formation, Puerto Rico

MICHAEL KEDENBURG, CHRISTA STELL
FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

This study seeks to investigate the petrology of the pillow basalts of the Lapas Lava Formation in Puerto Rico. By analyzing the chemical content and mineralogy of several sections of a selected pillow basalt, we hope to gain insight into the formation of these basalts as well as determine what alteration these basalts have been subjected to since their emplacement. We also hope to determine if any differences in cooling and alteration history exist between the rim and inner portions of the basalts by analyzing their mineralogy through thin section and x-ray diffraction analysis. Preliminary results suggest that the outer rim of the pillow under investigation has undergone rapid cooling, as indicated by the ubiquitous presence of amorphous glass in the crystal structure, and some degree of alteration as indicated by the presence of accessory minerals and pseudomorphs thought to be oxides or rutile. Alteration is further indicated by the ubiquitous presence of weathered plagioclase in the crystal structure of samples taken from the rim.

121 • Microstructural/Petrologic Analysis of the San Lorenzo Batholith and its Xenoliths

BRYAN STRESSLER, CARL BENO
FACULTY SPONSOR: BENJAMIN LAABS, GEOLOGICAL SCIENCES

The San Lorenzo Batholith is the largest batholith in Caribbean. This intrusion is granitic in composition and contains both pegmatitic veins and mafic inclusions. This study seeks to characterize the origin of the host granitic rock in relation to the mafic xenoliths. We hypothesize that the mafic xenoliths were included in the melt that eventually solidified into the San Lorenzo Batholith during emplacement in the Cretaceous. By comparison of the chemistry and microstructure of the San Lorenzo to that of the xenoliths we determine any differences in rock type and gain insight into the origin of the inclusions. Using the SEM and the XRD these differences are established and quantified. Thin section analysis also allows for the determination of microstructural differences as well as mineralogical signatures of the distinct species.

122 • Statistical Analysis of Boulder Height and Cosmogenic Exposure Age of Terminal Moraines in the Western United States

CLAIRE HUANG
FACULTY SPONSOR: BENJAMIN LAABS, GEOLOGICAL SCIENCES

In cosmogenic exposure dating of moraine boulders, numerous studies have emphasized the importance of sampling the tallest boulders. This is based on the assumption that tall boulders yield the most accurate ages because they have experienced continuous exposure since deposition. Exposure dating of shorter boulders atop moraine crests could possibly yield ages younger than the true age of a moraine because of the effects of burial and surface cover on the production of cosmogenic isotopes. Statistical analyses of 173 boulders from 25 moraines in the western US were completed to test for a correlation between boulder height and exposure age. For nearly all the moraines evaluated, no correlation between height and exposure age was found. This finding is significant because it implies that either the effects of burial and shielding are minimal on most sampled boulders, or that other processes affect the distribution of exposure ages. Current work is exploring the relationship between modern climate and the distribution of cosmogenic exposure ages of moraine boulders. This comparison may help to understand how the moraines have eroded over time, which could affect the accuracy of their exposure ages.

123 • An Investigation of Laterite Accretion Processes in Puerto Rican Soils

JORDAN BAKER, MATTHEW HILL
FACULTY SPONSOR: BENJAMIN LAABS, GEOLOGICAL SCIENCES

During the winter intercession trip to Puerto Rico, we investigated an outcrop of laterite soils on a road cut of PR 100, southwest Puerto Rico above the Bermeja Complex. We examined soils in the field, documenting their physical characteristics and collecting samples. Numerous features suggest that the laterite weathered directly from the bedrock. Evidence includes fracture patterns cross cutting both lithologies, as well as the abundance of mafic materials in the soil (magnetite bands, as well as records of attempts to mine the soil formation), and the similar textures evident, as well as the observable weathering gradient of the bedrock. To test this, we plan to measure mineralogical composition and compare the chemical makeup at various layers of weathering by examining soil and serpentine samples both in thin section and by electron microprobe. We will measure samples from the soil surface, the middle column, and the un-weathered bedrock. Soil mineralogy, including clay mineralogy will be determined via x-ray diffraction. Results will then be compared to test the degree of alteration in the soils relative to the serpentine, as well as the degree of chemical similarity. With this it should be possible to understand the degree of weathering during soil formation.

124 • Facies Changes Indicated by Marine Ostracode Fauna in a Flooding Sequence, San Sebastian Formation, Oligocene, Rio Guatemala, Puerto Rico

ALYSSA HYNES, RACHEL ATKINS
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The San Sebastian Formation exposed in the Rio Guatemala in northwestern Puerto Rico consists of a series of clastic marine and terrestrial sediments. A marine cycle overlying a distinct red-colored soil was collected at the bottom, middle, and top of a measured interval. Common to all three sections were echinoid spines, which indicate that the salinity during formation was normal marine (~3.5% salinity). Ostracods varied between the layers where the top and bottom layers contain *Cytherella* and *Actinocythereis*, both of which indicate a shallow shelf environment. From the middle layer *Haplocytheridea* was common, which signifies a middle shelf environment. In this 2 m interval the depositional environment changes following the marine flooding from shallow shelf to middle shelf back to shallow shelf.

125 • Comparative Analysis of the Lapa Lava Chert and the Mariquita Chert

CHRISTINE RAO, DAVID DUHAMEL
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Two suites of chert were collected from Puerto Rico. The Mariquita Chert from southwestern Puerto Rico is part of the Sierra Bermeja Ophiolite Complex; chert from the Lapa Lava Formation in eastern Puerto Rico is associated with pillow basalts. The Lapa Lava chert is red from hematite that is pervasive through the unit, and has distinct bedding with poorly preserved radiolarians. The Mariquita Chert is green, contains no biogenic remains and seems to have been highly altered and deformed.

126 • Shallow Shelf Conditions in the Oligocene Ocean Indicated by Clypeaster Concavus from the Lower Lares Limestone in Northwestern Puerto Rico

CHRISTOPHER CIERVO, JENNIFER KOHN
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The Lares Limestone consists of upper Oligocene to lower Miocene age carbonate rocks that overlie the San Sebastian Formation in northwestern Puerto Rico. The lower Lares contains high biodiversity including various gastropods, corals, and echinoderms which are most often preserved as internal molds, calcite replacements, or original material. The large irregular echinoderm, *Clypeaster concavus*, was abundant in the lowermost Lares at PR 10 km 67.1 and is indicative of warm shallow shelf conditions.

127 • Conodont Biostratigraphy of the Maplewood Formation, Silurian, Western New York

CHRISTOPHER WAID
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Conodonts were collected from the bottom and top of the Maplewood Formation at Densmore Creek,

near Rochester, and at Budd Road, near Lockport. The bottom bed is the Densmore Creek Phosphate Bed, and the top bed is the Budd Road Phosphate Bed. *Ozarkodina gullitensis*, *Panderodus unicostatus*, *Chirognathus sp.*, and all of the elements of the *Icriodella discreta* apparatus were recovered from the Densmore Creek Phosphate Bed, and are indicative of the *Icriodella discreta-deflecta* Assemblage Zone. *Icriodella discreta*, *Ozarkodina hadra*, *Apsidagnathus sp.*, and *Panderodus unicostatus* were recorded from the Budd Road Phosphate Bed, which overlies the Maplewood Formation. These species are also indicative of the *Icriodella discreta-deflecta* zone. *Icriodella discreta* specimens are much less abundant in the Budd Road Phosphate Bed, which is dominated by *Ozarkodina hadra* and *Panderodus unicostatus*.

128 • Foraminifera in Near-Shore Environments, Southwestern Puerto Rico

CHRISTOPHER WAID, JOANNA CLARK
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Sediment samples were collected from six localities in Southwest Puerto Rico in order to determine the variation in foraminifera populations in different near-shore environments; a minimum of 75 specimens were collected from each locality to ensure meaningful measurements. No foraminifera specimens were recorded from samples collected from a saline mudflat or from a beach at Caba Rojo. Foraminifera specimens were recorded from a lagoon near Caba Rojo, a muddy bay near Caba Rojo, the carbonate platform off the coast of La Parguera, and from Phosphorescent Bay. The foraminifera from Phosphorescent Bay are dominated by textularids, have a Shannon diversity index (H) of 0.66, and a Simpson Diversity Index (D) of 1.1. The foraminifera from a lagoon near Caba Rojo are dominated by rotalids, have an H of 1.2 and a D of 0.88. The foraminifera from the shelf sand off the coast of La Parguera are dominated by rotalids, have an H of 1.5 and a D of 0.52. The foraminifera from the muddy bay near Caba Rojo are dominated by miliolids, have an H of 0.85 and a D of 0.99. Sample analysis suggests that the specimens collected at the lagoon were transported from other locations, and therefore are not representative of the living foraminifera population. Based on both diversity index calculations and sample analysis, the most diverse locality was the shelf, followed by the muddy bay at Caba Rojo, and then the Phosphorescent Bay.

129 • Depositional Enviornment and Energy Changes Indicated by Foraminifera, Lares Formation, Puerto Rico

DOUGLAS STEEN, KEITH LINDABURY
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The Lares Formation is a massive Upper Oligocene-Lower Miocene limestone unit comprised mainly of fine to medium grained calcarenite containing marine fossil beds of varying thicknesses. The thickest exposure of the Lares occurs along road PR-111 at kilometer 27.5 in San Sebastian, Puerto Rico. This outcrop displays an overall marine transgressive sequence containing multiple parasequences. Four distinct stratigraphic layers within one 6-meter thick section were sampled for foraminifera. The layers sampled include a coral floatstone, a biograinstone, a clam-rich biowackestone, and a second biowackestone. The large foraminifera *Cyclorbiculina compress*a is present within the biocoral floatstone and abundant within the clam-rich biowackestone; *Quinqueloculina* or *Miliolinella* is present within the biograinstone. The biowackestone that caps the section is composed of unidentified fossil fragments. The abundance of miliolids suggests a shallow carbonate platform environment. Lack of diversity in foraminifera specimens suggests a minimal change in depositional facies. The lithologies coincide with an organic reef or platform edge environment and an overall decrease in depositional energy moving up the section.

130 • Ordovician-Silurian Conodonts from the Gobi Altai-Mandalovoo Terrane, Southern Mongolia

ERIKA DANIELSEN
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The geology of southern Mongolia, composed of a collage of exotic terranes, is poorly understood. In the Gobi Altai-Mandalovoo Terrane, the Zalaa and Sharchaluut formations contain Ordovician to Silurian strata. This boundary is marked by the second largest mass extinction in the Phanerozoic. The carbonate dominated Sharchaluut Formation is considered to be early Silurian based on brachiopod and coral remains, while the underlying clastic dominated Zalaa Formation has been considered Ordovician and possibly Silurian, although little research has been done to define the boundary. Ozarkodina, Oulodus, and Panderodus from the upper Zalaa Formation are indicative of the lower Silurian. ***Selected for presentation at 2013 Geological Society of America Annual Meeting, Denver, CO.***

131 • Upper Devonian Tentaculitids from the Alberta Platform in the Canadian Rocky Mountains, Alberta and British Columbia

JENNIFER KOHN
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Upper Devonian tentaculitids were collected and described for the first time from the Alberta Platform in the Canadian Rocky Mountains, in Alberta and British Columbia. Tentaculitids are small marine organisms with unknown affinities - possibly related to phoronids - that secreted a conical calcareous conch and thrived from the Ordovician through the Upper Devonian, going extinct shortly after the Frasnian-Famennian boundary. Tentaculitids have proven useful for biostratigraphy across Europe but have not yet been described in much of North America. The Alberta Platform contains a mix of carbonate and siliclastic sediment. Tentaculitids were recovered from the Mt. Hawk and Perdrix formations in relatively offshore strata, many preserved as inner molds or pyritized. Most specimens are thick shelled and have annulations, but some also possess longitudinal ribs.

132 • Offshore Deep Ocean Depositional Environment Indicated by Planktic and Benthic Foraminifera in the Parguera Limestone, Cretaceous, Southwestern Puerto Rico

JESSICA LAM, JILLIAN MCPHERSON
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The stratum of the Parguera Limestone at PR 122, San Germán, Puerto Rico, is composed of a dark grey bio-packstone that weathered to a light brownish-yellow. Foraminifera within the rock are mainly order Rotaliina, with biserial, triserial, and trochospiral test shapes. There are both planktic and benthic varieties found in the collected samples. Planktic foraminifera are found in the upper zones of the open ocean, and benthic foraminifera are considered "bottom dwellers," and are found in a wide variety of ocean zones. These have been preserved as calcite tests, some of which have been filled with pyrite, indicative of an anoxic substrate. The limestone was deposited in a neritic setting below storm wave base in a deep shelf to slope facies.

133 • Provenance of Beach Sand in Southern Puerto Rico

KRISTINA NELSON, CHRISTOPHER GAMBLE
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Beach sand, especially in short systems, is an indication of provenance - the bedrock source area of the sediment. Three sand samples from the southern shore of Puerto Rico and a fourth from the Rio Grande de Loiza within the San Lorenzo Batholith were collected to determine the sediment origin and influence of the granitic batholiths. Punta Tuna on the southeastern shore had large quantities of quartz and shell material; Salinas on the middle southern shore contained large quantities of magnetite and olivine; Cabo Rojo on the southwestern shore contained large amounts of quartz and shell fragments. Magnetite is an accessory mineral component of the San Lorenzo Batholith and a good indicator of provenance. 13% of the sand taken on the San Lorenzo Batholith was magnetite. The sample from Cabo Rojo was found to contain no magnetite. The sample taken at Salinas had 73% magnetite. The sample from Punta Tuna had 3% magnetite. The San Lorenzo Batholith was a primary source of the sands from Salinas and a contributor to the sand at Punta Tuna.

134 • The Nature, Range, and Utility of Stratigraphic Distributions of Morphotypes of *Polygnathus linguiformis linguiformis* (Hinde),

Middle Devonian, Northern Appalachian Basin

NICHOLAS HOGANCAMP
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The Hamilton Group is a package of marine shales, silts and limestones deposited during the Middle Devonian noted as a time of evolutionary stasis for ~5 million years. The Cherry Valley Limestone, Centerfield Limestone, Windom Shale, and North Evans Limestone in New York State, and the Hadrophyllum Bed of the Delaware Limestone in Ohio were analyzed to determine if there were detectable changes in *Polygnathus linguiformis linguiformis* (Hinde) through this interval. Morphometric analysis supports the ranges and differentiation between Walliser and Bultynck (2011) γ1a and γ1b morphotypes, and proposes two new γ morphologies in New York and Ohio, the Cherry Valley morph, and the Centerfield morph. Each of these four morphologies exhibit unique ranges of occurrence throughout the Hamilton Group, and prove to have stratigraphic utility within the Hamilton Group of western New York State. ***Selected for presentation at Subcommision on Devonian Stratigraphy, Morroco.***

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135 • The Depositional History, Mineralogical, and Trace Fossil Analysis of the Montserrat Formation, Southcentral Puerto Rico

NICHOLAS HOGANCAMP, AMANDA LANIK
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The Montserrat Formation of south-central Puerto Rico is an Eocene (~40 million years ago) package of marine sands, silts and muds interpreted to be deposited by turbidity flows. Sediment, mineral, and trace fossil analysis were conducted on collected samples to determine the depositional environment at the exposures along PR 139 near Ponce. The strata are composed of interbedded sands and silt with lenticular bedding and ripple cross lamination. Trace fossils include Chondrites, Planolites, and Thalassinoides. Mineralogical analysis of the whole rock as well as the Thalassinoides burrow fill were performed using an X-Ray Defractometer (XRD) indicate the whole rock is composed of calcite, albite, quartz, glauconite, and celadonite, while the burrow fill is composed primarily of celadonite. The presence of glauconite and celadonite suggest a low oxygen depositional setting and a proximity to weathering basaltic rocks, the sedimentary structures indicate deposition by turbidity flow, and the trace fossils are all deposit feeding traces and are indicative of a deep marine, nutrient poor, relatively dysoxic environment. All of these results agree with the previous interpretation of a turbidite deposit, in close proximity to the volcanic Puerto Rican island block.

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136 • Increase, Followed by a Decrease, in Predation on Microbivalves by Naticid Gastropods across the Pliocene-Pleistocene Boundary, Southeastern North Carolina

PAISLEY CERRO, JESSE CRUZ, BENJAMIN FREIMAN, MICHAEL JOHNSON, ERIC KOLAKOWSKI, BENJAMIN MCCRACKEN, KELLY O'SHAUGHNESSY, MICHAEL O'SHEA, JULIA SHEA, PETER THOMPSON, MARY BARROSO, THOMAS CLARK, MATTHEW HILL, MATTHEW KEYS, ZACHARY MARTIN, JAMES RICOTTA, CHRISTOPHER TURNER
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The Pliocene-Pleistocene boundary is characterized by a significant reduction in bivalves - including adult pelecypods - and predatory naticids in North America. Three sites, one in the Duplin Formation from the late Pliocene (3.0 Ma) and two from the early Pleistocene Waccamaw Formation (2.5-1.9 Ma) of the southeastern North Carolina coastal plain yielded 378 microbivalves assigned to 45 species. Natural Well produced 35 specimens within 12 species, with a Simpson diversity coefficient (D) of 6.8; the most abundant genera were *Rhynchonella*, *Codakia*, and *Crassattellites*. Register Quarry, at the base of the Pleistocene, yielded 25 specimens represented by 16 species, D = 7.7, dominated by Crassattellites and Codakia. Walkers Bluff, the youngest, contained 31 specimens within 17 species, D = 13.3, primarily *Crassattellites* and *Chione*. Faunal diversity across the Pliocene-Pleistocene boundary remained constant and was succeeded by an increase in diversity above the boundary. In addition, boreholes in the pelecypod valves indicate predation by naticid gastropods. Six valves (3.4%) were bored in Natural Well. Bored valves rose to 9.5% (nine valves) above the boundary in Register Quarry. Walkers Bluff contained four bored valves (3.7%). The increase in predation of adult pelecypods above the Pliocene-Pleistocene boundary is also found in juvenile pelecypods.

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137 • Analysis of Thin Recessive Eocene Stratigraphic Units from Central and Northeastern Puerto Rico

RICHARD FRIEMAN, MATTHEW THIES
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Five samples of fine grained sediment were collected from recessive beds within turbidite sequences in two locations in Puerto Rico, one from the Monserrate Formation in the south-central part of the island and the other from the Fajardo Formation in the northeastern part of the island. Samples were analyzed using x-ray diffraction and a flocculation procedure to get a better idea of their physical and chemical properties, since fine grained sediment is hard to properly identify in the field. X-ray diffraction--a process that measures the spacing between layers in the crystal structure of minerals--was used to identify the specific minerals that made up the collected samples. It was found that the samples from the Monserrate Formation contained quartz, albite, analcime, glauconite, diopside, montmorillonite, and illite--suggesting that it is a sample of bentonite clay. Samples from the Fajardo Formation contained muscovite, quartz, nontronite, kaolinite, anatase and Fe-Tapiolite. These minerals are typically found in smectitic clays. Both of these clays are formed from the weathering of volcanic ash deposits, suggesting that they are volcanic in origin.

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138 • Paleontological and Stratigraphic Analysis of Late Oligocene Corals of the Lares Formation, San Sebastian Quadrangle, Puerto Rico

SCOTT EVANS, ELIZABETH HAUSSNER
FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The Lares Formation represents a 25 km wide reef-dominated deposit on the northern coast of Puerto Rico during the late Oligocene. The Lares is a light grey limestone that contains abundant coral, foraminifera and other marine biota. It was deposited above the San Sebastian Formation and is overlain by the Montebello Member of the Cibao Formation. Outcrops of the Lares Formation have been documented between 270 and 301 meters thick and have been interpreted to represent a shallowing upward sequence. Within this larger sequence several repeating parasequences have been described as progressing from calcisiltstone to boundstone. We collected coral and other fossil samples from the lowermost Lares parasequence from an outcrop along PR-111. Analysis of stratigraphic and paleontological samples of different layers within this parasequence indicates a facies change from a quieter, further off-shore environment to a near-shore, reef dominated environment.

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139 • Analyzing Topography of Buttermilk Creek Near Western New York Nuclear Service Center, West Valley, NY

JENNIFER CRAMER, JEFFREY GREEN
FACULTY SPONSOR: RICHARD YOUNG, GEOLOGICAL SCIENCES

The Western New York Nuclear Service Center (WNYNSC) is located in the Buttermilk Creek drainage basin in West Valley. The site contains 660,000 gallons of radioactive byproducts in underground trenches and storage tanks. Two of the problems on site are: 1) a radioactive groundwater plume beneath the facility, and 2) leakage from unlined trenches containing low-level waste. The trenches are located at the top of slopes susceptible to erosion. The Department of Energy has been tasked with the maintenance and cleanup of the site, but without a clear plan, progress has been slow. Geologists have used fieldwork, topographic maps, and aerial photography to characterize the site. Recently, detailed Light Detection and Ranging (LiDAR) data has allowed researchers to study the site in much greater detail. LiDAR is a method of imaging in which lasers are beamed at the earth and bounce back to give detailed elevation information. The lasers can penetrate tree cover producing an extremely accurate map of the Earth's surface topography. We imported the LiDAR data into ArcGIS, a mapping software, in order to better characterize the surface geology of the site and to calculate stream erosion

rates. The studies will be used to determine future site management.

140 • The San Lorenzo Batholith: Timing of Emplacement of Pegmatite Veins

BRIANNA SOVAK, MELANIE BECK
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The San Lorenzo Batholith is located in the Central Igneous Province of Puerto Rico, on the great Puerto Rico Fault zone. This research looks at the mineralogy and petrology of the pegmatitic veins that appear through-out the San Lorenzo Batholith. From this research we will attempt to determine the timing of emplacement of the pegmatitic veins in reference to the granodiorite host rock. Thin sections were made from samples collected from the San Lorenzo Batholith to study the mineralogy on a microscopic level. X-ray diffraction (XRD) was also done on these samples to provide additional information about the mineralogy of the veins vs. that of the host rock. The XRD and thin section analysis gives insight into the geologic history of the pegmatitic veins and the San Lorenzo Batholith.

141 • Stress Analysis of Various Rocks from Puerto Rico

CLAIRE HUANG, KYLIE CAESAR
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

In construction aggregates (a type of rock particulate used for the foundation of roads and buildings), the strength of the rock is crucial to prevent differential settling under roads or buildings. This strength is determined by measuring the applied normal stress necessary to induce failure. Samples of limestone, siltstone, chert, and granite were obtained from various locations in Puerto Rico in order to test their individual strength. Each of the samples were cored and trimmed to ensure homogeneity and to avoid existing fractures. Fractures would inaccurately lower their differential stress because the rocks would be more prone to breakage on a previously formed plane. The samples were then placed in a rock press and the applied pressure was increased, which served as normal stress, until the point of failure was observed. Results showed chert samples to withstand the most stress and limestone to withstand the least.

142 • Metamorphic Facies Change Along the Arroyo Cajul Valley: Tectonic History of the Sierra Bermeja Complex in Southwestern Puerto Rico

JENNA LESKOVEC, MEGAN PUTNAM
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The unusual Sierra Bermeja Complex in southwestern Puerto Rico has a complicated tectonic history: it is significantly older and has a different composition than much of the surrounding island. Additional work on the metamorphosed rocks in this region could help to constrain its tectonic history. Samples were collected from a riverbed along the Arroyo Cajul valley in Cabo Rojo County, Puerto Rico at three 100 m intervals. For each of the three rock suites, thin-sections were created and analyzed for chemical and mineral composition using a Scanning Electron Microscope (SEM) and X-ray diffraction. In the field, rocks varied from a green phyllitic chert-like rock, to soft chlorite and actinolite-rich green-schist, and lastly a harder green schist. Characterization of the metamorphic facies using mineralogy and geochemistry provides constraints on the pressure and temperature gradient. Our results suggest that temperature increased from rock type 1 to rock type 3. This data, in combination with data from Montgomery et al. (1994), suggests that there is significant vertical displacement between each of these closely spaced outcrops.

143 • Quantifying Fracture Density as a Function of Distance from a Brittle Fault Zone, Puerto Rico

JENNIFER GEORGEK, JENNIFER CRAMER
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Strain analysis of individual grains is often used to determine the occurrence and extent of deformation at a ductile fault. Evidence of deformation at a brittle fault zone is present primarily in the form of fractures, and quantifying deformation at this setting is less common. In this study, fracture density within a brittle fault zone in Southwestern Puerto Rico was analyzed in an attempt to decipher a trend in the deformation resulting from a brittle fault. Five photographs of the rock unit were taken at increasing distances from this fault. Using Adobe Illustrator, fractures within each picture were traced, and the lengths of the fractures were obtained using the computer program Shape Preferred Orientation (SPO). Fracture density was calculated by dividing the sum of these lengths by the areal extent of each photograph. It was concluded that fracture density, and therefore deformation, is greatest closest to the fault, followed by an initial steep decrease. At greater distances from the fault, fracture density remains more constant. In order to more precisely quantify a trend in deformation additional data is necessary from a greater number of brittle fault zones.

144 • An Interpretation of Regional Karst Development from Fracture Sets in the Lares Limestone Formation

JOHNNY RAMUS, JEFF GREEN
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Fracture sets observed in the Lares limestone of northern Puerto Rico were measured and analyzed to determine whether or not they acted as a control on the formation of the regional karst topography. The strike of several fractures sets were photographed and measured in the field. Photographs were superposed on each other to form a complete mosaic of the outcrop. Fractures were then digitized and measured for their length and orientation relative to north. The orientation data was tabulated and used to construct a rose diagram. The rose diagram indicates two sets of fractures: (1) a major set oriented about 150 degrees east of north; and (2) a minor set oriented approximately 87 degrees east of north. These fracture data were then compared to a regional compilation of large sinkholes, features which are characteristic of karst topography. Analysis of these data indicates that the orientation of large sinkhole arrays near the outcrop are not aligned in orientations similar to the fractures observed at the outcrop. This suggests that the fractures sets observed in the Lares formation do not control the formation of large scale karst features in the region.

145 • Analysis of Metabasalts to Determine Origin of Protolith

KATHERINE TRUONG, MICHAEL GUDEMA
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

An outcrop located at kilometer 7.7 off Puerto Rico 303 is cut by a nearly vertical fault. Located within a meter are a series of serpentine belts, oriented parallel to the fault. A meter to the north of the serpentine belts was a semicircular patch of a green schist which we interpret to be metabasalt. A similar exposure of fine grained rock exists in arroyo just north of PR 303. Hand sample analysis of this green schist metabasalt yielded both amphibole and chlorite grains. Thin section analys using the Petrographic and Standard Electron Microscopes provides constraints on mineral compositions for both samples and will inform an attempt to identify the protolith of samples from each location. In addition to the geographic proximity of both localities, if both samples have similar composition and protolith then their formation may have took place at the same time under the same tectonic event.

146 • Comparison of the Magnetic Signatures of the San Lorenzo Batholith and its Enclaves

MARAH DAHN, THOMAS GLOSE
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The San Lorenzo Batholith, located in southeast Puerto Rico, is a granodiorite plutonic rock body with a surface outcrop area greater than 500 km^2. It also includes enclaves, volumes of rock within the granodiorite, that are of a similar but distinctly different composition. Through paleomagnetic techniques - i.e. measurement of the Earth's magnetic field preserved in the samples - the relationship between the host rock and the enclave were examined. The host rock was found to have a magnetic signature greatly affected by chemical weathering, rendering us unable to determine its origin. The enclave was found to have a strong, consistent magnetic signature, indicative of the sample acquiring the signature at the time of formation. The enclave had an average trend of 210° and an average plunge of 18.2°. This is 35° clockwise of the expected value. This could be accredited to ductile magma deformation or rotation by magma flow.

147 • Strain Analysis of Folded Strata, Southwest Puerto Rico

MOLLY MCEVOY, ALEC SPEARS
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Measurements of strike and dip were collected along limbs of folded strata of carbonate rocks located in Southwest Puerto Rico. These measurements were plotted on a stereonet program along with the poles to these planes. A cylindrical best fit was applied to the measured poles, which gave the fold axis. The fold axis of this anticline-syncline formation was found to have a strike of 121.5° and a dip of 78.7°. This implies that the movements which caused deformation were oriented 31.5° west of north. Photographs of the site were then compiled into a mosaic, allowing the bedding contacts to be outlined along the entire fold in Adobe Illustrator. The fold was then divided into five regions, each increasing in distance from a fault that truncated the fold at its northern edge. Percent shortening in each region was calculated and a relationship between percent shortening and distance from the fault was established. It was determined that the degree of deformation is greatest closest to the fault and decreased exponentially as distance from the fault increases, which suggests that faulting and folding occurred simultaneously.

148 • Xenolith Fabrics of the San Lorenzo Formation in Southeastern Puerto Rico

PAISLEY CERRO, MICHAEL BARBER
FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The San Lorenzo batholith in southeastern Puerto Rico is approximately 75 Ma. At more than 500 km2, it is the largest granitic batholith in the Caribbean. In this study, the preferred orientation of xenoliths in the formation was to be calculated using image analysis. Photographs of the mafic enclaves on a small portion of the one outcrop were taken in various orientations and then evaluated using an Rf-Phi analysis implemented by the program "GeoShear." Two dimensional, sectional data taken from GeoShear were then input into an Ellipsoid program to calculate the three dimensional shape preferential orientation. This information can potentially be used to relate the deformation of the batholith to the tectonic past of Puerto Rico. Our data show a shape preferred orientation of the mafic enclaves, with the long axis aligned southeast to northwest following a 345.5 degree trend and a 26 degree, northeast plunge. The short axis has an orientation of 200°, suggesting this granitic batholith has experienced NE-SW directed shortening along a plane parallel to the northern and southern Puerto Rican fault zones. To fully understand the implications of this relationship between the San Lorenzo batholith and the faulting of Puerto Rico, a larger portion of the formation must be studied.

HISTORY

149 • James Clerk Maxwell

BRIAN DWYER, GAGE BATEMAN, ISAAC SCHULTZ
FACULTY SPONSORS: JOSEPH COPE, HISTORY, AND JAMES MCLEAN, PHYSICS & ASTRONOMY

James Clerk Maxwell was born June 13th 1831 in Edinburgh, Scotland. Inspired by his late mother's advice to "look up through nature, to nature's God", Maxwell went on to become arguably the most prominent physicist of the 19th century. The most noteworthy of all of his scientific achievements was his development of electromagnetic theory, which he developed primarily while at King's College in London. This united a multitude of previously determined theories into one consistent theory that gave the world a much deeper understanding of electric and magnetic fields. Maxwell accepted that this required the previously accepted notion of a universal medium, which he called the "luminiferous ether". Maxwell's work inspired other physicists (most notably Michelson, Morley and Lorentz) to investigate the properties of this luminiferous ether. The null results of Michelson and Morley and related experiments puzzled physicists and challenged previously held beliefs regarding the nature of space and time. Einstein was the first to propose that the ether in fact did not exist, instead developing his theory of special relativity as the proper interpretation of Maxwell's results.

150 • History of Blood Circulation: Galen Through Harvey

JARED BIENSTOCK, MATTHEW MCNEILL
FACULTY SPONSORS: JOSEPH COPE, HISTORY, AND JAMES MCLEAN, PHYSICS & ASTRONOMY

This poster will explore the history behind the development of the theory of blood circulation in the human body. This history stretches back from the classical views of Galen, through the Islamic Golden Age, and concludes with William Harvey and his groundbreaking description of both pulmonary and systemic circulation. For almost 1500 years society followed Galenic teachings,which were a logical evolution from the teachings of Aristotle and other classical Greeks. People were skeptical about any new theories challenging Galenic thought. Contrary to popular beliefs, the first challenges to Galenic theory came about, not from 16th century figures like Andreas Vesalius and Michael Servetus, but rather by Ibn al-Nafis during the Islamic Golden Age. Harvey's accurate updates to the circulation theory incorporated the findings of these predecessors, but his work was still questioned for some time after his publication of *De Motu Cordis* ("On the Motion of the Heart and Blood") in 1628. His findings were finally given their due diligence during the 19th century.

151 • Age of the Earth

JARED JONES, JEFF GREEN, CHRISTOPHER TURNER
FACULTY SPONSORS: JOSEPH COPE, HISTORY, AND JAMES MCLEAN, PHYSICS & ASTRONOMY

We will examine the leading theories on the formation of the Earth and its features, from 1650 to 1900, in order to better understand the rise of modern geology. This project will focus research on four major theories; 1. Catastrophism (17th century), which says the Earth, was formed through short and cataclysmic events; 2. Plutonism (18th century), which says the Earth was formed over time through heat and pressure; 3. Neptunism (18th century), which puts forward that the land of the Earth settled out of a prehistoric ocean; 4. Continental drift (19th-20th century) which explains the movement of the continents. Together these theories have formed the principles of modern geology. Looking at these four theories is a way to see how the study of the Earth has evolved from geology based on biblical texts to the modern geological theories on the age of the Earth and Uniformitarianism.

152 • The Royal Society; The Incorporation of Science into a Religious World

REBECCA SMARCZ, ERIN MARBLE, BRIDGET JOYCE, CHRISTINE KIRKPATRICK
FACULTY SPONSORS: JOSEPH COPE, HISTORY, AND JAMES MCLEAN, PHYSICS & ASTRONOMY

The Royal Society was established in London in 1660 under the rule of Charles II. The society funded scientific experiments and promoted public access to scientific knowledge. During this time science was clearly becoming more influential in society, yet, rather than being at odds with the already social and political force, religion, the Royal Society attempted to disregard potential controversies between the two.

153 • Robert Boyle

REBECCA SMARCZ, ERIN MARBLE, CHRISTINE KIRKPATRICK, BRIDGET JOYCE
FACULTY SPONSORS: JOSEPH COPE, HISTORY, AND JAMES MCLEAN, PHYSICS & ASTRONOMY

Robert Boyle was a founding member of the Royal Society. He performed numerous scientific experiments that impacted society, including experiments with air pressure and experiments involved with mystical happenings, all while maintaining a very religious background. His experiments were driven not only by his scientific inquiries but by his religious interests as well.

154 • Nikola Tesla: The Forgotten Engineer

VICTORIA SILLIMAN, BRITTANY LAUDA, MICHAEL KEDENBURG
FACULTY SPONSORS: JOSEPH COPE, HISTORY, AND JAMES MCLEAN, PHYSICS & ASTRONOMY

Nikola Tesla was a Serbian-American inventor best known, but often forgotten, for his design of the alternating current (AC) electrical power supply. From his humble beginnings in modern day Croatia, Tesla rose to prominence as one of the premier engineers of the late nineteenth and early twentieth centuries, only to die penniless and forgotten in 1943. Tesla immigrated to the United States in 1884, to work in the laboratory of Thomas Edison, one of the leading electrical engineers of the time. Often Tesla and Edison were at odds over their different designs for electrical power supply. This is the background for what became known as the "War of the Currents" between electrical

engineers, Tesla and Edison, fighting for control over whose power supply design would prevail. With financial support from entrepreneur George Westinghouse, Tesla patented his AC power supply design and established his own laboratory independent of Edison. Tesla's eccentric ideas beyond electrical supply led to his exile from the scientific and engineering community, causing him to be forgotten by time.

155 • The Wadsworth Family's Homestead Papers

SARAH NAFIS
FACULTY SPONSORS: KATHLEEN MAPES, HISTORY, AND ELIZABETH ARGENTIERI, MILNE LIBRARY

In the age of email and digital media, letters and other written documents are becoming a thing of the past. These papers are an important means of preserving history for future generations. I am fortunate enough to be able to participate in the cataloging and preservation of Wadsworth family documents at the Homestead. These documents complement other collections of the Wadsworth family papers, including the collection at Milne Library. James and William Wadsworth came to the Genesee Valley in 1790 and the family has lived in Geneseo ever since. The Wadsworths have been prominent business people, politicians, and generals but above all else, they have been farmers and members in the local Geneseo Community. My job as an intern is reading, describing and inventorying letters, deeds, wills, military and legal documents from the 18th and 19th centuries that cover the lives of the Wadsworth family and their role in history.

156 • The Implications of Cultural Significance on Rapid Economic Growth in Southeast Asia Following the Asian Financial Crisis of 1997

AKANE ISHIBASHI
FACULTY SPONSOR: TZE-KI HON, HISTORY

This presentation will focus on the economic growth of countries in SEA following the financial crisis that affected Asia in 1997. Specifically, in South Korea, Thailand, and Indonesia, a severe mismanagement of finances and overseas investment with lenders and borrowers led to a burst in the economic bubble. A crash in the value of credit as well as a weakening of currency contributed to this financial crisis, during which many businesses went bankrupt and the stock market lost much of its value. In the next several years, these countries managed to rebuild their economies by making big changes in how their governments and businesses dealt with finances. A major problem cited in the financial crisis was the overemphasis of SEA countries on foreign investment, with developed nations, in particular the U.S. By reducing financial reliance on Western nations and building up more reserves of currency, countries were able to better maintain their growth internally, without relying too heavily on the West. The impressive economic growth stands out in how countries have learned to grow self-sufficiently, a characteristic shared by many SEA countries. By examining culturally significant standards of SEA countries, we can understand its unique economic growth following this crisis.

157 • The Education Industry

KATHLEEN HAIG
FACULTY SPONSOR: TZE-KI HON, HISTORY

For my presentation I would like to examine the effects of capitalism on the American educational system. Specifically, I would like to focus on the role of standardized testing and the market it has found in American education. I would separate this topic into two categories: Pearson Education (the largest producer of standardized exams) and the No Child Left Behind Act (legislature requiring standardized exams). Pearson Education has recently dominated the education market by becoming the sole provider of national school wide exams, state exams, teacher certification testing, and the new teacher performance assessments. Major stockholders in the company include legislators and other prominent figures in the educational field, who are often trying to promote their own capitalistic interests. The No Child Left Behind Act of 2001 was intended to increase standardized test scores and create responsible school districts, but instead resulted in withdrawal of funding for low-income neighborhoods and "failing" schools. Ultimately, the No Child Left Behind Act was a major failure, which resulted in lower test scores for students and decreases in school funding.

158 • Casino Capitalism in Macau

KEVIN DYER
FACULTY SPONSOR: TZE-KI HON, HISTORY

Macau is one of the People's Republic of China's two Special Administrative Regions. The proliferation of casino capitalism in Macau has fostered economic growth and created social problems.

159 • The Shocking History of Capitalism

THERESA BOYLE
FACULTY SPONSOR: TZE-KI HON, HISTORY

Shock theory economics will be defined and discussed, including how and why it is used, as well as some notable examples of its use throughout the world. A brief history of shock theory will be explained as well as where it might come up in the future.

LANGUAGES AND LITERATURES

160 • Chopsticks as a Global Ambassador: An Allegory

CHRISTINA LU
FACULTY SPONSOR: JASMINE TANG, LANGUAGES AND LITERATURES

Chopsticks: What are they to you? To most, chopsticks are simply an eating utensil used to pick up food, that originated in ancient China during the Shang dynasty. Chopsticks might seem simple at first glance, however there is more significance behind them than one might think. As ties between Eastern and Western cultures continue to grow stronger through industries including trade, tourism and cultural exchanges, it is of value to look at the two regions as a pair of chopsticks. One chopstick cannot function on its own; it depends on its counterpart in order to fulfill its true function. In this study we allow one stick to represent the Eastern culture and one to represent the Western culture. No matter the color, material or texture of the chopsticks, the only thing that affects their ability to operate is their dependence on one another. My research examines the economic and industrial relationship between this pair of chopsticks, and how it affects global markets. The competition between the East and West of the world is admired by developing countries across the world, and without the balance they have created, neither country would have reached the high level of development which they currently maintain. I believe this kind of research will educate people of these two differing cultures and bring a better understanding of global unity to the world.

161 • A Study of Personality and Second Language Learning: Do Personality Traits Motivate Us to Study a Particular Language?

COLLEEN HALBOHN
FACULTY SPONSOR: WESTON KENNISON, LANGUAGES AND LITERATURES

Studies have been conducted to examine the relationship between personality and proficiency in second language (L2) learning. This study, however, hopes to look at the personality traits that may be correlated to motivation for learning L2. Wes and I have noticed that Latin classes in particular are made up of mostly introverts. We hope to see if personality traits (more specifically, the Big Five) draw individuals to learning specific L2s. We would also like to look at a group of students who have studied Humanities abroad in order to see if a background in the language itself is a sufficient motivator to study abroad. This is one of the important implications of our study of L2. This poster will display the results.

MATHEMATICS

162 • Thermodynamic Chaos and Quasiperiodicity in Self-Repeating Vibrating Media

JACK JENKINS
FACULTY SPONSOR: ANDRZEJ KEDZIERAWSKI, MATHEMATICS

Given the couplings of a discrete mechanicalmodel and the initial conditions of its parts, it is a matter of effort to describe the dynamics of a "small" system - one with reasonably few discrete elements. However,when the system is arbitrarily large, it is important to take advantage of symmetries and regularities in the couplings that make the solution process less computationally expensive. Exploiting powerful theorems from Linear Algebra, recursive formulae for an eigen frequency polynomial with complex-valued roots can be determined in the case of self-similar (fractal) or self-repeating (coordinate invariant) coupling algorithms. These polynomials are interesting in their own right, since each interpolates a harmonic function near the origin, but elsewhere (due to chaos) appears to interpolate several phase-shifted harmonics all at once.

163 • Long-Term Sustainability of Cooperative-Wide Coffee Yields in San Miguel Escobar, Guatemala

MICHAEL PILOSOV

FACULTY SPONSOR: GARY TOWSLEY, MATHEMATICS

The overarching goal of this study was to investigate the long-term sustainability of the San Miguel Escobar coffee cooperative associated with the non-governmental organization *As Green As It Gets*. A computer simulation determined that while coffee yields are projected to increase at a positive rate over the next five years, long-term sustainability would be a challenge as a result of the timing of coffee tree growth cycles. The focus of the study was to analyze the efficacy of various strategies aimed at leveling major crop yield fluctuations projected by the simulation. This investigation was conducted to aid sustainable economic development for the Guatemalan coffee farmers in the cooperative.

164 • Are Government Initiatives Effective in the Fight Against Childhood Obesity?

ELISE NEYERLIN

FACULTY SPONSOR: LISA SMITH, MATHEMATICS

What are the primary factors contributing to the rise in childhood obesity in the United States? Is the increase in rates statistically significant or just hype? Are the increasing number of policies and public school physical education programs aimed at childhood obesity prevention having any effect on childhood obesity rates in America? Do some regions of the United States have statistically higher rates than others? Through data collection, analysis and statistical testing, I investigated these and several other, finding both answers and more unsolved issues.

165 • Calculating the Average Without Using Math

PAMELA RONEY

FACULTY SPONSOR: YUSUF BILGIC, MATHEMATICS

This research focuses on how to teach elementary students the concepts of mean (arithmetic average) without using any computations. I explored previous research and studies completed, and from this, I discovered needs and ideas necessary to be successful in teaching mean to young students. I then created activities based on the research that can be implemented within an elementary classroom to teach this concept. In teaching math, students need experiences that emphasize conceptual understanding, so by teaching mean without using math, students can engage in activities that are hands-on that develop the necessary understanding of mean before moving on to the computational aspect.

PHYSICS & ASTRONOMY

166 • Gravitational N-Body Simulations of the Trapezium Star Cluster

DANIEL GOLE

FACULTY SPONSORS: AARON STEINHAUER AND DAVID MEISEL, PHYSICS & ASTRONOMY

The Trapezium is a cluster of stars located in the constellation Orion. The interactions of these stars were modeled using numerical n-body simulations. The Hamiltonian formulation and the numerical differential equation solving package NDSolve within Mathematica was to be used to calculate the motion of the stars over a large number of time steps. Plots and videos were created to show the behavior of the cluster. Due to the inherently chaotic behavior of several-body systems, different sets of initial conditions will result in different results for the stability of the cluster. Sets of initial conditions were generated using two different statistical methods. Lyapunov coefficients were used to calculate the stability of the cluster based on the initial conditions, and the results of these calculations were compared to the behavior seen in the simulations.

167 • Determining the Age of the Cluster M103 by Measuring the Photometry of its Brightest Stars

PHILIP CHU, RYAN FORD, DANIEL KROLIKOWSKI

FACULTY SPONSOR: AARON STEINHAUER, PHYSICS & ASTRONOMY

We commissioned the 20-inch telescope on the roof of the ISC to obtain photometry of the brightest stars in the young open cluster M103. This cluster had already been studied by our group with the WIYN 0.9m telescope at Kitt Peak in Arizona, however the very brightest stars, which are crucial for determining the cluster age, are saturated in those images, and we were unable to obtain accurate photometry. We observed M103 with B and V Johnson filters. Using aperture photometry we determined their brightness' and calibrated them using other stars in the cluster. With these new measurements we were able to derive a new age for the cluster.

168 • Measurements of the Sensitivity and Spatial Resolution of Radiochromic Film Using Ion Beams

JUSTIN SHORTINO, COLLIN STILLMAN, MICHAEL SCHEPIS, KYLE CROMPTON

FACULTY SPONSOR: CHARLIE FREEMAN, PHYSICS & ASTRONOMY

Radiochromic film (RCF) is used to study protons and other ions that are accelerated from the rear side of targets illuminated with ultra-intense laser light. An experiment is underway to characterize the response of RCF to protons, and alpha particles of various energies using the 1.7 MV tandem Pelletron accelerator at SUNY Geneseo. A monoenergetic ion beam from the accelerator is incident on a thin gold foil placed in the center of a scattering chamber. A strip of RCF is positioned in a circular arc that is centered on the gold foil. The ion beam strikes the gold foil, causing the RCF to be exposed to elastically scattered ions. The scattered ion fluence on the RCF strip varies as a function of the scattering angle. After removal from the chamber, the RCF is scanned using an Epson 10000 XL flatbed scanner and the resulting image is analyzed to determine the optical density.

169 • Simultaneous Measurement of Proton and Electron Energy Spectra Using a Thomson Parabola Ion Spectrometer

KYLE CROMPTON

FACULTY SPONSOR: CHARLIE FREEMAN, PHYSICS & ASTRONOMY

Simultaneous measurements of the energy spectrum of protons and electrons accelerated from the rear side of thin targets illuminated with ultra-intense laser light have been carried out at the Multiterawatt (MTW) laser facility at the Laboratory for Laser Energetics. The particles enter a Thomson parabola ion spectrometer consisting of a permanent magnet and a pair of electrostatic deflector plates. A Fujifilm imaging plate mounted at the rear of the device was used to detect the protons. A thin tantalum foil was placed on top of the imaging plate to prevent all ions other than the protons from reaching the plate. Electrons, with a much smaller magnetic rigidity, are deflected strongly by the Thomson parabola permanent magnet and exit the magnet before entering the electrostatic deflector plates. Another imaging plate placed on top of the permanent magnet was used to detect these electrons. A computer program has been written to analyze the resulting data from the imaging plates. This enables the proton and electron energy spectrum to be determined simultaneously for a particular shot. ***Selected for presentation at 54th Annual American Physical Society Department of Plasma Physics Conference, Providence, RI.***

170 • Characterization of Pneumatic Transport System

JACOB FALLICA, ISAAC SCHULTZ

FACULTY SPONSOR: EDWARD POGOZELSKI, PHYSICS & ASTRONOMY

An experiment was performed in order to characterize the performance of a pneumatic tube transport system. The pneumatic tube system is designed to move radioactive material, contained in a cylindrical carrier, from a collection station to an analysis station. To characterize the system, the carrier was driven by air through a 100-foot linear track of PVC pipe. The air itself was moved by fans, set to push or pull. Sensors were placed along this track, which recorded a time when triggered by the passing carrier. This data was used to predict the air speed in the pipe, the terminal speed of the carrier, and the Reynolds number of the flow around the carrier. Carrier mass was varied from .85 kg to roughly 3.5 kg. Data was taken with two types of fans, large (set to push or pull) and small (set only to pull) in various combinations. Using three small fans, carrier speeds ranged from 8 to 16 m/s, and reached 90% of its terminal speed within 0.5 to 1.25 seconds.

171 • The Saturated Absorption Spectrum and Hyperfine Splitting of Rubidium Atoms

ANGELA PAOLUCCI

FACULTY SPONSOR: GEORGE MARCUS, PHYSICS & ASTRONOMY

Spectroscopy is a method used to learn more about atoms, molecules and their structures. With a diode laser spectroscopy apparatus from TeachSpin, both the hyperfine splitting and saturated absorption spectrum of rubidium atoms was measured. Initially an optical set up involving a 780 nm diode laser was assembled and used to saturate rubidium atoms in a vacuum, by overlapping a pump and probe beam.

This set up was than used to obtain a saturated absorption spectrum, showing the different energy states of the rubidium atoms. Finally, the hyperfine splitting of the atoms was measured by adding a Michelson interferometer to the optical layout. The addition of the interferometer allowed for calibration of frequencies, and calculation of the hyperfine splitting. The hyperfine splitting and saturated absorption spectrum help to give a better picture of the structure of rubidium atoms.

172 • Modeling the Extinction of Light from Aerosol Particles

SARA GEARHART
FACULTY SPONSOR: GEORGE MARCUS, PHYSICS & ASTRONOMY

A simulation program was created in order to model the extinction of light from aerosol particles due to both scattering and absorption. Aerosol particles that can contribute to climate change are comparable in size to the wavelengths of light present in the atmosphere. The scattering of incident light from these particles is dictated by Mie scattering, which depends on both the radius of the particle and the index of refraction relative to the medium. However, any absorption of light by the aerosol particle can change the index of refraction and alter the scattering. Kramers-Kronig relations were used to calculate the amount of change in the index of refraction for a given absorption feature. This change can then be applied to a Mie scattering calculation, and a theoretical extinction spectrum can be produced for any particle size distribution and any range of wavelengths. Measured extinction spectra for polystyrene beads suspended in water (representing aerosol particles) were fit with these theoretical spectra. From these fits, particle size and absorption information, such as the mean radius or the wavelength of peak absorption, can be extracted and used to better understand the optical properties of aerosols.

173 • Improving Student Understanding with Interactive Lecture Demonstration Methods

MIKE EISINGER, OLIVIA KAPLAN, CHRISTOPHER WEILBACHER
FACULTY SPONSOR: KURT FLETCHER, PHYSICS & ASTRONOMY

How can in-class physics demonstrations be made more effective? According to previous research, student learning can be enhanced if the students are required to make a written prediction of the outcome of the demonstration and discuss that prediction before observing the demonstration. Eight physics classes were selected from area high schools for the experiment. In all cases, the physical demonstration was first described by an instructor. Four classes were given a short written pre-assignment to complete before the actual demonstration. They recorded their individual predictions, discussed them in a small group, and then recorded a group prediction. The other four classes did not do the pre-assignment, and instead proceeded directly to the demonstration. After observing the demonstration and discussing the physics involved, all students completed a post-assignment with follow-up questions designed to test their understanding of the physics. The assignments were then graded and the individual scores were recorded. The classes that did the pre-assignment scored higher on average than the classes that did not, although the results are not statistically significant. Future work will focus on reducing the variability in instruction between the experimental and comparison groups.

174 • X-ray Enhancement of Etch Parameters of Nuclear Tracks in CR-39

MIKE GIORDANO, KRYSTALYN SADWICK
FACULTY SPONSOR: KURT FLETCHER, PHYSICS & ASTRONOMY

The nuclear track detector CR-39 is a polymer used to measure charged particles produced in inertial confinement fusion experiments. Alpha particles stopping in CR-39 produce nanometer-scale damage sites. When the CR-39 is etched in 6-N sodium hydroxide at 80° C for six hours, the difference in etch rates between the damage sites and the bulk material results in the formation of pits 20 to 25 microns in diameter. These can be characterized and counted using optical microscopy. A modest increase in the pit diameter is observed when the CR-39 detector is irradiated by x-rays from a tungsten cathode after exposure to charged particles and before etching. This enhancement of the diameter increases as the total x-ray dose increases, with enhancements of about 1.10 for 1000 Gy doses. Controlled experiments show that the effect is due to the x-ray dose rather than a difference in the handling or the environment. The ratio of the track-etch rate to bulk-etch rate seems to be independent of x-ray dose. The mechanism for this effect is currently under investigation. These results show that modest increases in pit diameters can be obtained through irradiation with x-rays. Funded by a grant from the US Department Of Energy and LLE. ***Selected for presentation at American Physical Society Division of Plasma Physics, Providence, RI.***

175 • *In Situ* Calibration of a Proton Particle Telescope Using the SUNY Geneseo 1.7 MV Tandem Pelletron Accelerator

COLLIN STILLMAN, DREW ELLISON
FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

Neutrons produced via the $^{3}H(^{2}H,n)^{4}He$ reaction at the Ohio University Accelerator Lab were used to activate a graphite sample via the $^{12}C(n,2n)^{11}C$ reaction in an attempt to measure the (n,2n) reaction cross section. Before striking the graphite, the neutrons struck a thin polyethylene foil and elastically scattered protons in to a surface barrier detector telescope. The recoiling protons were used to determine the energy and number of neutrons which struck the ^{12}C activation sample. To verify that the particle telescope's predicted response function for 15 to 27 MeV protons was correct, a calibration of the detector telescope was performed in air on the SUNY Geneseo tandem Pelletron accelerator. High energy protons were created via the $^{2}H(^{3}He, p)^{4}He$ reaction by bombarding a deuterated polyethylene target with 4.5 MeV ^{3}He ions. The high-energy protons then pass through a Kapton window from vacuum into air where they were detected by the particle telescope. The dependence of the detector response on various proton energies was then investigated for various detector geometries. This data was extremely useful when performing the graphite activation experiment at the Ohio University accelerator lab. Funded in part by a grant from the US Department Of Energy through the Laboratory for Laser Energetics. ***Selected for presentation at American Physical Society Division of Nuclear Physics and Lawrence Livermore National Lab's National Ignition Facility's User's Group Meeting, 2013, Livermore, CA.***

176 • Ballistic Drag Force in a Liquid Environment

CORY COX, AUSTIN REISS, TIMOTHY FILKINS, MARCUS ELIA
FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

The goal of this experiment was to examine the ballistic properties of a CO_2 powered air rifle using a high speed video camera capable of filming at up to 10,000 frames per second in order to observe the patterns of drag forces on pellets as a function of their geometry, composition and initial velocity. To magnify the effects of the drag force on the pellet, the rifle was discharged into various mediums which slowed the pellet to an observable velocity. The computer software Tracker was used to generate plots of the projectile's position versus the elapsed time.

177 • Cross Section of the (n, 2n) Reaction in ^{12}C in the Energy Interval 20-30 MeV

DANAE POLSIN, MOLLIE BIENSTOCK, DREW ELLISON, MICHAEL KRIEGER, MEGAN RUSS, ANGELA SIMONE, COLLIN STILLMAN
FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

The behavior of the (n, 2n) reaction in ^{12}C and other light nuclei is known with much less certainty than for heavy nuclei. The published cross section data for the $^{12}C(n, 2n)^{11}C$ reaction is bifurcated in the energy range of 20-30 MeV. An experiment to measure the $^{12}C(n, 2n)^{11}C$ cross section for these neutron energies has been performed using the Ohio University Tandem Accelerator. Deuterons from the accelerator struck a tritium foil releasing neutrons via the $T(d, n)^{4}He$ reaction. Deuteron bombarding energies between 3.3-8.7 MeV resulted in neutrons with energies between 20-26 MeV. The geometry of the experiment was chosen so that the incident neutron energy would not vary by more than 0.5 MeV across the graphite target. After neutron bombardment, the decay of the ^{11}C nuclei by positron emission was measured with an array of NaI detectors to determine the activity of the carbon sample. The neutron fluence through the carbon was measured using a particle telescope to detect protons from the $^{1}H(n, p)$ reaction in a polyethylene target, allowing the absolute cross section for the $^{12}C(n, 2n)^{11}C$ reaction to be determined. Funded in part by a grant from the DOE

through the Laboratory for Laser Energetics. ***Selected for presentation at American Physical Society Division of Nuclear Physics Meeting, Newport Beach, CA.***

178 • Equine Gait Analysis with PEGASYS

MARINA MASSARO, JARROD LAFOUNTAIN, MARIE KALET, SAVANAH RUSS, DAN MOORE, JACK JENKINS

FACULTY SPONSORS: STEPHEN PADALINO AND ED POGOZELSKI, PHYSICS & ASTRONOMY

The diagnostic force plate system, PEGASYS ("Portable Equine Gait Analysis SYStem"), is a 3-axis equine force plate developed to measure the hoof-ground reaction forces produced by an equine subject as it strides over it. The system is composed of a stainless steel plate, encased in a rectangular aluminum housing containing 10 piezoelectric force sensors. These sensors are capable of measuring forces up to 1,000 lbs in the vertical, forward, and lateral directions. Through additional analysis, hoof torque, impulse, center of force, resultant force magnitudes, and angles of impact are calculated. A healthy horse and an injured horse distribute their weight across their legs differently; those differences are what the force plate aims to quantify. After establishing a healthy gait pattern, any deviations from the normal are evaluated and suggest evidence of an injury, sometimes even before there are visible signs. The data acquired by the force plate system will be useful to equestrians and veterinarians in determining lameness and evaluating an animal's progress through medical treatment and recovery.

179 • Coincidence Efficiency Measurement Using $^{11}B(p,n)^{11}C$

MEGAN RUSS, MOLLIE BIENSTOCK, ANGELA SIMONE, DANAE POLSIN, COLLIN STILLMAN, KYLE CROMPTON, DREW ELLISON, MICHAEL KRIEGER

FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

An attempt to measure the $^{12}C(n,2n)^{11}C$ cross section for high energy neutrons in the range of 20-30 MeV was conducted using Ohio University's accelerator facility as a fast neutron source. The neutrons were incident on a graphite target and the β+ decay of the activated carbon-11 nuclei were observed in an on-axis gamma ray detector pair. To pre-determine the efficiency of this gamma ray detector system, a boron-11 activation experiment was performed. Using SUNY Geneseo's 1.7 MV tandem pelletron accelerator, 3.1 MeV protons were incident upon the ^{11}B foil inducing the $^{11}B(p,n)^{11}C$ reaction to occur at a high rate of activation. The ^{11}C decays via β+ emission, then upon annihilation with an electron creates characteristic 511-511 keV photon pairs which were counted using coincidence methods. Since the $^{11}B(p,n)$ cross section is well defined, a calculation was performed to determine the expected number of activations and later compared to the total number of decays observed in the counting system. Funded in part by a grant from the US Department Of Energy through the Laboratory for Laser Energetics. ***Selected for presentation at American Physical Society's Annual Meeting of the Division of Nuclear Physics 2012, NIF User's Group Meeting 2013, Newport Beach, CA and Lawrence Livermore National Laboratory, Livermore, CA.***

180 • Design and Characterization of a Collimated Neutron Beam User Facility at SUNY Geneseo

MICHAEL KRIEGER, MEGAN RUSS, DANAE POLSIN, DREW ELLISON, MOLLIE BIENSTOCK, ANGELA SIMONE, HOLLY DESMITT

FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

The Collimated Neutron Beam (CNB) Facility at SUNY Geneseo provides users an opportunity to perform neutron experiments that require a low neutron background. Neutrons with energies up to 10 MeV are produced by a Plutonium-Beryllium (Pu-Be) source and are collimated to form a well characterized beam. A six foot high, 18 inch thick shielding wall made of water-bricks was built to reduce neutron background in the target area. Neutron and gamma radiation were extensively mapped throughout the facility using a calibrated Bonner sphere, Geiger counter, plastic scintillator and an HPGe detector. Potential uses for the CNB include neutron activation, time-of-flight, attenuation and neutron detector calibration experiments. A detailed description and layout of the facility will be displayed on the poster. Funded in part by a grant from the DOE through the Laboratory for Laser Energetics. ***Selected for presentation at American Physical Society's Division of Nuclear Physics Meeting, 2012, Newport Beach, CA and Lawrence Livermore National Lab's National Ignition Facility's User's Group Meeting, 2013, Livermore, CA.***

PSYCHOLOGY

181 • Psychosocial Determinants of Activity Decision-Making Among Sedentary College Students

AMELIA TRAINOR

FACULTY SPONSOR: DOUGLAS RAYNOR, PSYCHOLOGY

Most Americans do not engage in sufficient physical activity (PA) to prevent chronic disease risk. The young adult population is particularly important because individuals who fail to adopt a physically active lifestyle during this critical developmental stage may be less likely to do so in the future. According to the displacement hypothesis, screen-based sedentary behavior is substituted for time spent being physically active. Therefore, the goal of the present study is to examine psychosocial factors influencing sedentary college students' choice to engage in PA during their discretionary leisure time. Participants were 90 healthy undergraduate students who did not meet PA recommendations and were regularly engaged in screen-based sedentary behavior. Participants attended two individual 45-minute sessions during which they had access to a range of activities typically available for college students. During the second session, participants could engage in any of the available physically active or sedentary options during a 25-minute free-choice period. Time spent engaging in the activities was observed and recorded by experimenters. Self-report measures included achievement goal orientation, Big Five personality factors, and social physique anxiety. Findings will be presented on the influence of these psychosocial characteristics on participants' activity decision-making and future exercise intentions.

182 • Assertive and Affiliative Language in 7-Year-Olds' Interactions with Siblings and Friends

GABRIELLE TIEDE, DEVIN MCGUEY, OLIVIA DERELLA, DANIEL VOLK, MEGAN MCLAFFERTY, LAUREN AULET

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

As part of a longitudinal study, we examined seven-year-olds' use of assertive, or goal-oriented, and affiliative, or socially-interactive, language during sibling and friend interactions. Our results suggest that specific gender-related patterns in assertive and affiliative language use are influenced by age and partner. Seven-year-olds were videotaped during free play sessions with a sibling and a friend. Videotapes were transcribed and coded for assertive and affiliative utterances. Assertive and affiliative utterances, either positive or negative, were further coded as mitigated or unmitigated; mitigated utterances were those that softened the impact of the utterance. Some aspects of past research results were supported. At age seven, boys used more assertive language than girls; however, this was only found to be true when interacting with peers. In sibling dyads, boys and girls used the same amount of assertive language. Further, target children used more negative and positive mitigated assertive language with friends than with siblings. This trend was also marginally significant for positive assertive language. Our results support past research indicating that boys use more assertive language with peers than do girls. Target children, regardless of gender, used more mitigated language in general with friends than siblings. ***Selected for presentation at Society for Research in Child Development Biennial Conference, Seattle, WA.***

183 • Conflict in Latino Immigrant and Anglo Children's Sibling Interactions

KARINA MORALES, CECIBEL MONTALBAN, SANNY PERALTA, CARLY MENDOZA

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

Research conducted on Latino immigrant children's family relationships has focused on parent-child relationships, with little attention to sibling relationships. In limited existing research, Latino parents have been found to encourage greater child responsibility for siblings than is commonly found in Anglo-American families. In a previous study, our research group found lower rates of aggression for Latino immigrant siblings than for a comparison group of Anglo siblings. To continue our exploration of Latino immigrant children's sibling relationships, we examined conflicts during sibling interactions in semi-structured play situations. Overall, Latino sibling pairs had fewer and shorter conflicts than Anglo pairs. Latino and Anglo sibling pairs were equally likely to argue about objects, but Latino siblings' conflicts were more likely to center on plans for play and less likely to involve objecting to sibling behavior or arguing about ideas or facts. Anglo siblings were more likely to use direct

strategies for ending conflicts, whereas Latino siblings were more likely to use indirect strategies. Gender composition of sibling dyads mattered more than ethnicity in some cases; conflicts of Latino and Anglo older sister/younger brother dyads looked remarkably similar, and Latino older sister/younger brother pairs had higher rates of conflict than other Latino sibling dyads. ***Selected for presentation at Society for Research in Child Development, Seattle, WA.***

184 • Sibling and Peer Aggression from Early Childhood Through Adolescence

MARYSABEL GOMEZ, ASHA UNNI, KATHLEEN TALBOT, DARIA SEIFERT, CARMELA TAYLOR, KATHRYN LEINUNG
FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

As part of an ongoing longitudinal study, we conducted an exploratory analysis of verbal, physical, and relational aggression during sibling and peer interactions. Aggression is defined as a behavior to intentionally hurt or bother the partner. Verbal aggression is characterized by the use of verbal utterances. Physical aggression is observed through physical acts or threats and relational aggression is defined by damaging or threatening to damage a relationship. We looked at groups of siblings and peers from 30 different families at ages 4, 7 and 17. They were recorded performing a series of tasks. Videotapes were transcribed, and transcripts were coded for the presence of relational, verbal, and physical aggression; episodes of aggression were further coded for duration, affective intensity, and interactional context. Our research focuses on the rates of physical, verbal and relational aggression. Our results indicate that with relational and physical aggression, children at age 4, regardless of gender, had higher rates of aggression towards their siblings than towards their friends, which then declined through ages 7 and 17. When comparing gender overall, girls engaged in more relational aggression than boys. ***Selected for presentation at Society for Research in Child Development, Seattle, WA.***

185 • Social Engagement and Relationship Quality in Preschoolers' Sibling and Friend Interactions

SARA HIRSCH, WHITNEY SALAMONE, CHEYENNE HIGGINS, JOANNA SANTOS, LAUREN WEISBERG
FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

The goal of this study was to assess how sibling and peer social engagement is related to qualitative aspects of their relationships. We videotaped 64 4-year-old children with siblings and friends during 15-minute free-play sessions. Videotapes were coded for social engagement using six interaction categories (Cooperative, Associative, Parallel, and Solitary Play, Onlooker, and Unoccupied). Mothers completed questionnaires to assess asymmetry, intimacy, harmony and conflict in their children's relationships. Sibling engagement was negatively correlated with mothers' assessment of sibling conflict. Friend engagement was positively correlated with positive relationship indicators. Sibling semi-engagement was positively correlated with mothers' assessments of asymmetry and harmony. Friend semi-engagement was negatively correlated with assessments of asymmetry and conflict. Sibling unengagement was positively correlated with mothers' assessments of relationship conflict, and negatively correlated with sibling asymmetry, intimacy, and harmony. Friend unengagement was negatively correlated with sibling symmetry and intimacy. These results illustrate a significant relationship between social engagement and relationship qualities. Siblings with positive relationships are likely to have better social skills and are therefore more engaged. Onlooker behavior is appropriate at this age as younger siblings watch their older siblings, revealing a healthy relationship. More conflict is likely to occur in siblings who are more unengaged. ***Selected for presentation at Association of Psychological Sciences, Washington, DC.***

186 • The Effectiveness of a Sexualized Pro-Environmental Public Service Announcement

JIM ALLEN, MATTHEW COUCH, SARA TONTARSKI, ASHLEY ANDERSON, JOANNA CASTROGIVANNI, JOANNA OSTROOT, ALLISON CROPSEY, MELISSA VETRANO, SHANNON SWIATEK, MING SHAN ZHU
FACULTY SPONSOR: JAMES ALLEN, PSYCHOLOGY

This research investigated the effectiveness of an eroticized pro-environmental message. Erotic and control Public Service Announcements, modeled on efforts of environmental groups, were compared. Consistent with findings from the consumer products marketing literature, results indicated that eroticization decreased energy conservation intentions if eroticization was not linked to the ad message. ***Selected for presentation at Association for Psychological Science, Washington, DC.***

187 • The Effect of an Eroticized Pro-Environmental Message: A Test of the Oily Cassandara Peak Oil Video

SARA TONTARSKI, MATTHEW COUCH, JOANNA CASTROGIVANNI, ASHLEY ANDERSON, MING SHAN ZHU, JOANNA OSTROOT, MELISSA VETRANO, SHANNON SWIATEK
FACULTY SPONSOR: JAMES ALLEN, PSYCHOLOGY

A popular video on the internet depicts an attractive and provocatively dressed young woman who dances seductively while speaking about the dangers of oil supply shortages. This study tested the effectiveness of this video. Specifically, do sexually suggestive videos such as this promote more positive attitudes toward environmentalism? Participants were randomly assigned to view either a control or a sexualized video in which an attractive young woman advocated on behalf of the environment.

188 • Money Affects Social Affiliation

SARA TONTARSKI, MATTHEW COUCH, ASHLEY ANDERSON, JOANNA CASTROGIVANNI, MELISSA VETRANO, JOANNA OSTROOT, MING SHAN ZHU, ALLISON CROPSEY, SHANNON SWIATEK
FACULTY SPONSOR: JAMES ALLEN, PSYCHOLOGY

Recent research indicates that money primes lower affiliation motivation. This study investigated the money prime/affiliation relation in social situations that are either high or low in affiliative tendencies. We also measured participants' materialism levels. Results indicated that when participants were reminded of money within a high affiliation situation, low materialists were more affiliative than high materialists.

189 • The Effects of Victim Gender and Group Status on Bystander Responses to a Potential Party Rape

LIANE COLANGELO
FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY

The present research examined whether group size affects bystander responses to a potential party rape involving either a male or female victim. Undergraduates (N = 178) were randomly assigned to read one of four scenarios in which they attend a party (either alone or with three friends) and watch a sober man lead an intoxicated potential victim into a bedroom. Results showed that lone bystanders were more likely to offer help than bystanders in groups. Bystanders also were more likely to offer help to a female victim than a male victim, especially when in groups. These differences in help offered could not be explained by differences in risk identification; participants were just as likely to identify risk for sexual assault when they were in a group and when the victim was male. Results suggest that the classic bystander effect inhibits bystander helping behavior but not risk identification when men are at risk for assault. Because situational influences affect bystander behavior, bystander education may not be sufficient to promote campus safety. To the degree possible, bystander education might focus on enhancing feelings of personal accountability, even in group situations and even when men are at risk for same-sex assault.

190 • Social Self-Identification and Responses to Sexual Assault Prevention Posters

RACHEL OLIN
FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY

Media campaigns are a method for preventing campus sexual assault, but research is needed to identify effective prevention messages. The Know Your Power posters depict students responding proactively to risky situations. Exposure to these bystander posters may encourage prosocial attitudes and behaviors, especially among students perceiving poster content as self-relevant. Certain types of posters may foster social self-identification more than others. Students may be more likely to identify with Know Your Power posters than Don't Be THAT Guy provocative posters featuring graphic images of risky situations. This study assessed students' social self-identification and willingness to help after exposure to either bystander or provocative posters. Students (N = 69; 58% men) responded to self-report measures of exposure to posters, social self-identification with poster content, and willingness to help. Although provocative posters were more likely to be noticed, exposure to provocative posters was unrelated to willingness to help. Students identified more with bystander posters. Students who saw and identified with bystander posters reported greater willingness

to help. Overall, results suggest bystander posters encourage bystander intervention and students personally identify with bystander-themed content. Such posters visibly communicate prosocial messages encouraging helping behaviors that may help reduce incidents of sexual assault, improving campus climate. ***Selected for presentation at Association for Behavioral and Cognitive Therapies (ABCT), Nashville, TN.***

191 • Predicting Bystander Response to a Potential Party Rape: Who is Helped, and Under What Conditions?

SAM COLBERT
FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY

Increasingly, college campuses offer bystander education to encourage students to help prevent rape. This study examined situational factors (group size, victim sex, and victim sexuality) expected to affect willingness to help potential victims. Due to the "bystander effect," bystanders in groups may be less likely than lone bystanders to help someone at risk. In addition, bystanders may be less willing to help men than women at risk; men are expected to be self-sufficient and less in need of help. Furthermore, because sexual assaults are often minimized as "just sex," men at risk for male-perpetrated rape may be perceived as gay and may be less likely to receive help than other potential victims. Undergraduates (N = 178) were randomly assigned to read one of four party rape scenarios in an experimental analogue design. Participants imagined attending a party (either alone or with three friends) in which they see a sober man lead an intoxicated (male or female) potential victim into a bedroom. Perceived victim sexual orientation and attempt to help were assessed. Bystanders were less likely to help male victims perceived to be gay than all other victims. Results suggest the need for explicitly inclusive rape prevention education on college campuses. ***Selected for presentation at Morgan State Intersections Symposium, Baltimore, MD.***

192 • Presenting a False Academic Self: Effects on Adolescent Popularity and Self-Esteem

KEVIN CLEARY, PETER KEARNS, STACI WEISS
FACULTY SPONSOR: JOAN ZOOK, PSYCHOLOGY

In this longitudinal study, we investigated early adolescents' (N = 101) use of a variety of self-presentation strategies to manage how peers perceive them academically. We were interested in the effects of these strategies on participants' popularity and self-esteem. Data was collected twice, initially from sixth-and eighth-grade students, and again from the same students one year later. At both times, participants rated how often they used 16 academic self-presentation strategies (e.g., "try to hide a poor test score," "avoid doing homework at school") around popular peers and completed a self-esteem scale. Popularity was assessed by asking peers to nominate three popular classmates and summing the nominations. Hierarchical regression analyses indicated that adolescents who initially used self-presentation strategies that involved claiming to get a lower grade or claiming to study less had higher popularity one year later. However, the adolescents who most frequently used self-presentation strategies overall were more likely to decrease in self-esteem. Together these findings suggest that hiding academic achievement and effort from peers may be effective strategies for improving one's social standing, but that the social benefits associated with presenting a false self to peers may come at a cost to one's self-esteem. ***Selected for presentation at Association for Psychological Science , Washington, DC.***

193 • The Effectiveness of Coping Flexibility in Managing Daily Stressors

MARY BETH PANDOLFINO, EVAN ROONEY, JENNIFER PARR, JULE DEREN, EMILY BOLAN, ALEXIS BRIEANT
FACULTY SPONSOR: MICHAEL LYNCH, PSYCHOLOGY

The current study examines how people cope with daily stressors. The goal is to determine whether coping flexibility is associated with effective management of daily hassles and contributes to individual well-being. Coping flexibility represents an individual's ability to assess a situation and deploy appropriate coping strategies (Cheng, 2001). The current study examines coping with daily hassles in a sample of 78 undergraduate students. Participants were asked to identify and rank-order five stressors for that particular day. Participants' usage of various coping styles, their flexibility in coping with daily hassles, and their effectiveness in achieving coping goals are assessed. Results from the study reveal significant correlations among coping flexibility, coping styles, and effectiveness of coping. Specifically, coping flexibility is positively correlated with effectiveness. Additionally, flexible coping is associated with increased use of problem-focused coping styles. Finally, participants who employ avoidant coping are significantly less effective in meeting their goals than those who use problem-focused coping. These results demonstrate the value of a novel and multi- layered assessment of coping with daily hassles. The data highlight the importance of problem-focused and flexible coping. Given the efficacy of these coping styles, it is expected that they will be associated with better mental health outcomes. ***Selected for presentation at Association for Psychological Science, Washington DC.***

194 • Associations Among Callous-Unemotional Traits, Bullying, Hazing, and Well-Being

NETTA ADMONI, BRIGID HEENAN, LESLIE SHELTON
FACULTY SPONSOR: MICHAEL LYNCH, PSYCHOLOGY

The purpose of this study is to examine the role of previous victimization on the development of callous-unemotional traits and future victimizing behaviors. Callous-unemotional traits are characterized by an absence of guilt, constricted displays of emotion, lack of empathy, disregard for others, and a callous use of others for one's own gain, and may be a precursor to future psychopathology (Frick & Viding, 2009). This study assesses the presence of callous-unemotional traits, previous bullying victimization and perpetration, current hazing victimization and perpetration, and a variety of mental health variables. We hypothesize that callous-unemotional traits are associated with prior experiences of bullying victimization and perpetration. In addition, we examine whether callous-unemotional traits and previous bullying experiences are associated with hazing perpetration and victimization in college. We hypothesize that a combination of victimization experiences and callous-unemotional traits are associated with poor mental health. The data-collected from self-report questionnaires-reveal that callous-unemotional traits are positively associated with prior bullying perpetration, and that the combination of these traits and bullying experiences are negatively associated with mental health. However, callous-unemotional traits are not associated with hazing experiences, and prior bullying perpetration is inversely associated with current hazing experiences. ***Selected for presentation at 25th Annual Association for Psychological Sciences Convention, Washington, DC.***

195 • Defensive Self-Esteem and Narcissism as Predictors of College Students' Reactions to Threat

ANDREW CHRISTY, LAURA O'BRIEN, GENEVIEVE MARTIN, RACHEL BOWEN, NICOLE JELONEK
FACULTY SPONSOR: MONICA SCHNEIDER, PSYCHOLOGY

Recent research in self-esteem has distinguished between secure and defensive self-esteem types. Compared to secure individuals, those with defensive self-esteem exhibit greater sensitivity to threat, and are more likely to respond to threats with avoidant strategies such as suppression of threatening thoughts and self-handicapping behavior. Given that these subtypes of self-esteem predict differential use of coping strategies, it is reasonable to speculate that coping strategies may mediate the relationship between defensive and secure subtypes and more distal outcomes. To address these issues, we conducted a study that assessed students' self-esteem, defensive self-esteem, level of narcissism, the coping strategies they use when facing various threatening academic and social situations at college, and their college adjustment. In addition, we asked students to bring a friend (who attends SUNY Geneseo and knows them well) to the session. The friend was asked to complete a survey about the participant who brought him/her to the session. Self-esteem and overt narcissism predicted positive coping strategies and adjustment; covert narcissism predicted lower self-esteem, increased threat, negative coping strategies, and lower adjustment. Students' overt and covert narcissism were not linked. Friends' perceptions of students mirrored students' self-reports regarding self-esteem, overt narcissism, and threat perceptions, but not covert narcissism. ***Selected for presentation at Association for Psychological Science 25th Annual Convention, Washington, DC.***

196 • Prenatal Exposure to the Brominated Flame Retardant Hexabromocyclododecane (HBCD) Produces Long-term Reductions in

Measures of Response Inhibition in Rats

PATRICK MILLER-RHODES, CALLIE GOEKE, SAMANTHA HOCHHEIMER, VINCENT PECORARO
FACULTY SPONSOR: VINCENT MARKOWSKI, PSYCHOLOGY

Hexabromocyclododecane (HBCD) is a brominated chemical used as a flame retardant in many commercial and residential construction materials. Although HBCD and its metabolites are widely distributed in the environment, little is known about their health effects following exposure. This study was undertaken to determine if prenatal exposure to HBCD can produce developmental neurotoxicity. Pregnant rats were administered a daily oral dose of 0, 3, 10, or 30 mg/kg HBCD throughout gestation. Offspring bodyweights and other measurements were examined during the lactation period for evidence of developmental delay. A behavioral observation battery was used to detect sensorimotor deficits. After offspring reached adulthood, their learning and attention behaviors were assessed with random ratio and go/no go operant schedules of reinforcement. A second group of offspring were assessed in senescence with the same procedures to gauge latent toxicity. Prenatal exposure to HBCD had no effects on early growth and developmental milestones although it did lengthen the gestation period. However in adulthood, exposed animals in both age groups showed a reduction of response inhibition, an effect that significantly impaired their performance in the go/no go procedure. Impaired response inhibition is a key component of impulsivity, a clinical symptom of attention deficit hyperactivity disorder.

197 • Developmental Exposure to the Flame Retardant DecaBDE Impairs Osteogenesis, Body Growth, and Measures of Strength and Motor Control

RANDY CHEUNG, TARA PHILLIPS, GIDEON COHEN, MING SHAN ZHU, LARRY BELLOMO
FACULTY SPONSOR: VINCENT MARKOWSKI, PSYCHOLOGY

Polybrominated diphenyl ethers (PBDEs) are ubiquitous environmental toxicants that are added as flame retardants to a variety of products, including plastics and foam. They have been shown to bioaccumulate in fatty tissues in numerous terrestrial and aquatic species. DecaBDE is the most abundant congener found in house dust in the U.S. and continues to be used worldwide, despite accumulating evidence that developmental exposure impairs thyroid function. The objective of the present study was to determine if developmental decaBDE exposure impairs grip strength and motor coordination due to underlying effects on skeletal development. C57BL/6 mice were bred and their offspring were exposed to 0 or 20 mg/kg/day decaBDE from postnatal day (PND) 1-21. Calvarial bone was collected on PND5-7 for osteoblast culture. Grip strength was measured on PND15, 17, 19, 21, at puberty onset, and in adulthood. Tibias were collected on PND22 for microCT analysis. Exposed animals showed a reduction of osteogenic progenitor cells. Grip strength was impaired at multiple ages in the exposed males but not the females. MicroCT indicated that exposed males had reduced cell counts and increased trabecular spacing on PND22. These findings suggest that young males may be more sensitive than females to the developmental effects of decaBDE.

SOCIOLOGY

211 • Comparative Study of Medicinal Practices in Vietnam

AMY TRAN
FACULTY SPONSOR: ELAINE CLEETON, SOCIOLOGY

Through December 2011 and January 2012, I traveled to Vietnam to investigate the healthcare system and its implementation within Vietnamese society. Despite my expectations of supportive institutions, some of the institutions I tried to work with were unwilling to cooperate and restricted me from conducting research in their facilities. Despite constant opposition from Ben Tre's established chiefs, I researched patients and their experiences in different medical practices. This study shows the different perspectives on medicinal practices of people who reside in both rural and urban areas of Ben Tre, Vietnam.

212 • Analysis of the Relationship Between the Geneseo Student Body and Patrolling Police Forces

SOCIOLOGY CLUB
FACULTY SPONSOR: WILLIAM LOFQUIST, SOCIOLOGY

The Sociology Club looks at the relationship between the SUNY Geneseo student body and the various police forces that patrol the campus and village through the use of collected surveys and individual interviews. The Sociology Club aimed to characterize the relationship by looking at the number as well as type of interactions had by students with the police. In order to do so we analyzed whether any particular subsets of the Geneseo student body (such as Residence Assistants or those involved with Greek organizations) had higher incidence rates, and looked to understand what was the cause of these occurrences. This study was built directly out of student concerns with over-policing of the Geneseo community and hopes to serve as a resource that may improve the relationship between students and the police who serve the community.

SPECIAL POSTER PRESENTATION ON THE MILNE LIBRARY VIDEO LOOP

THEATRE & DANCE

213 • A Dramaturgical Study of Parade and the Life of Leo Frank

KIMBERLY OLSEN
FACULTY SPONSOR: RANDY KAPLAN, THEATRE & DANCE

An abridged version of the informational exhibit displayed in conjunction with the Fall 2012 Main Stage Musical, "Parade" (book by Alfred Uhry and music and lyrics by Jason Robert Brown). The intent of the exhibit was to contextualize the production and provide a historical background about the lynching of Leo Frank.

CONCURRENT PRESENTATIONS QUICK VIEW GUIDE

SESSION 1 CONCURRENT PRESENTATIONS
9:40 – 10:55 AM

1A • ACCESS OPPORTUNITY PROGRAMS MILNE 105
Rights versus Reality: Girls and Education Around the World

1B • ANTHROPOLOGY moved to 4Y

1C • BIOLOGY & MATHEMATICS WELLES 24

1D • EDGAR FELLOWS MISCELLANY I WELLES 121

1E • EDGAR FELLOWS MISCELLANY II WELLES 123

1F • EDGAR FELLOWS MISCELLANY III WELLES 119

1G • ENGLISH WELLES 115
Interdisciplinary Connections to Humanities II in Concord

1H • ENGLISH WELLES 131
Words, Words, Words: History of the English Language I

1I • ENGLISH WELLES 138

1J • GEOGRAPHY STURGES 104

1K • GEOLOGICAL SCIENCES, HONORS DEFENSE ISC 115

1L • HISTORY STURGES 112
Perspectives on Culture and Capitalism

1M • HISTORY *History Honors Theses* STURGES 109

1N • MATHEMATICS *Math Miscellany I* SOUTH 338

1O • MATHEMATICS SOUTH 336

1P • MILNE LIBRARY SOUTH 235
Geneseo Storytelling Institute Panel of Tellers

1Q • PHILOSOPHY STURGES 114
Augustine and the Problem of Evil

1R • SCHOOL OF BUSINESS SOUTH 340
Research in the Real World

1S • SCHOOL OF EDUCATION SOUTH 328
Keeping Kids in School Year 7

1T • SOCIOLOGY WELLES 133
Learning While Doing Good: Service Learning and Sustainable Development in Nicaragua and Uganda

1U • SOCIOLOGY STURGES 108
Common American Beliefs about China

1V • CENTER FOR COMMUNITY WELLES 26
Student and Campus Life

SESSION 2 CONCURRENT PRESENTATIONS
11:05 – 12:20 PM

2A • ANTHROPOLOGY STURGES 106

2B • ART HISTORY WELLES 115
Theory to Practice: The 2nd Annual Museum Studies Symposium

2C • BIOLOGY KNIGHTSPOT
Healthcare Disparities Monologues

2D • BIOLOGY & MATHEMATICS WELLES 24

2E • COMPUTER SCIENCE SOUTH 235

2F • EDGAR FELLOWS MISCELLANY IV WELLES 121

2G • EDGAR FELLOWS MISCELLANY V WELLES 123

2H • EDGAR FELLOWS MISCELLANY VI WELLES 119

2I • ENGLISH, *Humanities: The Soundtrack* WELLES 128

2J • ENGLISH BLACK BOX THEATRE
Student Directed Productions in Theatre and Musical Theatre

2K • ENGLISH WELLES 133
Virtue or Desire? Medieval and Renaissance Literature

2L • ENGLISH WELLES 131
Words, Words, Words: The History of the English Language II

2M • OFFICE OF THE PROVOST SOUTH 328
Geneseo Ambassadors

2N • SCHOOL OF EDUCATION SOUTH 244
Haiti and Nicaragua

2O • HISTORY
US Corporations and Global Capitalism STURGES 104

2P • HISTORY MILNE 109
Wal-Mart: A Case Study of the 21st Century Retailer

2Q • MATHEMATICS *Math Miscellany II* SOUTH 338

2R • SCHOOL OF BUSINESS WELLES 26

2S • SCHOOL OF EDUCATION SOUTH 340
Pre-service and Graduate Education Students' Research on Literacy

2T • SCHOOL OF EDUCATION NEWTON 204
Geneseo LIVES Program

2U • SOCIOLOGY STURGES 108
US Health Care in Transition

2V • SOCIOLOGY MOVED TO 3W

SESSION 3 CONCURRENT PRESENTATIONS
2:55 – 4:10 PM

3A • ANTHROPOLOGY *Anthropoplgy 1* STURGES 106

3B • ANTHROPOLOGY *Anthropology 2* STURGES 109

3C • EDGAR FELLOWS MISCELLANY VII WELLES 121

3D • EDGAR FELLOWS MISCELLANY VIII WELLES 123

3E • EDGAR FELLOWS MISCELLANY IX WELLES 119

3F • ENGLISH WELLES 133
The Bible Begets Literature: Biblical Influences on Literary Texts

3G • ENGLISH *Voices from ENG 201* WELLES 131

3H • GEOGRAPHY STURGES 108

3I • INTERDISCIPLINARY *Health Care* WELLES 128

3J • HISTORY *Capitalism and the European Union* STURGES 104

3K • HISTORY STURGES 112

3L • INTERDISCIPLINARY *Pot Pourrie* ISC 115

3M • INTERNATIONAL PROGRAM MILNE 105
Speech Buddies Go Dutch - and Other Languages

3N • LANGUAGES AND LITERATURES STURGES AUDITORIUM
En un dos por tres: Three One-Act Comedies

3O • MATHEMATICS SOUTH 338
Mathematical problem solving.

3P • MATHEMATICS SOUTH 328

3Q • POLITICAL SCIENCE & INTERNATIONAL RELATIONS
Research on American and Russian Politics WELLES 24

3R • SCHOOL OF BUSINESS *Fed Challenge* SOUTH 340

3S • SCHOOL OF EDUCATION SOUTH 233
Join the Adventure Aboard the Titanic

3T • MILNE LIBRARY & GOLD MCU 114 (GOLD CENTER)
Session on Service

3U • SOCIOLOGY MILNE 109
Sociological Studies of Well Being

3V • WOMEN'S STUDIES WELLES 115
Senior Capstone Projects in Women's Studies 1

3W• SOCIOLOGY STURGES 111
WHO AM I?: Identity Issues

SESSION 4 CONCURRENT PRESENTATIONS
4:20 – 5:35 PM

4A • ANTHROPOLOGY STURGES 106

4B • BIOLOGY MILNE 105

4C • BIOLOGY *Honors Thesis in Biology* WELLES 26

4D • CHEMISTRY ISC 115

4E • ENGLISH WELLES 133
Grace and Deceit in Ancient Texts

4F • ENGLISH *Screening Othello* WELLES 134

4G • ENGLISH WELLES 131

4H • GEOGRAPHY STURGES 108

4I • MOVED

4J • HISTORY STURGES 104
Terror, Territory, and Technology

4K • HISTORY STURGES 112

4L • LANGUAGES AND LITERATURES WELLES 121
Literary, Scientific, and Cultural Studies: Spain and Latin America

4M • MATHEMATICS SOUTH 338
Math tricks for simplifying music, magic, games, and randomness.

4N • MATHEMATICS SOUTH 328

4O • PHYSICS & ASTRONOMY ISC 131

4P • POLITICAL SCIENCE & INTERNATIONAL RELATIONS
International Relations Honors Theses WELLES 24

4Q • SCHOOL OF BUSINESS SOUTH 233

4R • SCHOOL OF EDUCATION SOUTH 340

4S • SOCIOLOGY MILNE 109
Sociological Studies of Well Being and Emotion

4T • STUDY ABROAD WELLES 123
Lessons in Development: El Sauce, Nicaragua

4U • THEATRE/DANCE WADSWORTH AUDITORIUM
An Overview of the Pioneers of American Modern Dance

4V • WOMENS STUDIES WELLES 119
Breaking the Stereotype: Activist Muslim Women in Religion, Politics, and Culture

4W • WOMEN'S STUDIES WELLES 115
Capstone Projects in Women's Studies 2

4W • HISTORY *MYTH OF THE BRICS* STURGES 114

4Y • ANTHROPOLOGY STURGES 109

CONCURRENT PRESENTATIONS 1 • 9:40-10:55AM

1A • ACCESS OPPORTUNITY PROGRAMS MILNE 105

FACULTY SPONSORS AND SESSION CHAIR: PATRICIA GONZALEZ, ACCESS OPPORTUNITY PROGRAMS, AND KRISTIN WYLIE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Rights Versus Reality: Girls and Education Around the World

KAWAI JANA WONG, JENNIPHER COLAS, YANYING LIN, ALYSSA MORALES, SHEILA RAMIREZ, ALEXANDRA SALERNO, SHAINA SMITH, DIANA EDOUARD, KLARISSA GARCIA, NIA GUMBS, KARINA MORALES, MARIA-GRATIAS SINON, PAMELA ZAITER

One of the United Nations Millennium Development Goals is to close the gender gap through means of education by 2015. The significance of education is especially critical to girls and women. Education serves as an entry point to opportunities and can have a ripple effect within families from generation to generation. For example, girls who have been educated are likely to marry later and to have smaller and healthier families. Educated women can recognize the importance of health care and know how to seek it for themselves and their children. Education helps girls and women to know their rights and to gain the confidence to claim them. Most importantly, education is one of the most effective ways to reduce poverty. The Women's Leadership Institute (WLI) advocates for women and girls locally and globally, and has chosen education as its advocacy issue for this year. WLI will present information in a multimedia format to create awareness about girls and education around the world.

1B • ANTHROPOLOGY MOVED TO 4Y

1C • BIOLOGY & MATHEMATICS WELLES 24

FACULTY SPONSORS AND SESSION CHAIR: CHRISTOPHER LEARY, MATHEMATICS, AND GREGG HARTVIGSEN, BIOLOGY

Zombies: Preventing the Apocalypse Through Mathematical Modeling

ALEXANDER CLARK, JOSEPH BOYCE

The modern zombie, according to pop culture, is a human that has become infected with a virus that alters the infected individual's mental state, inhibiting their intelligence while increasing their aggression. This is similar to the effect that rabies has on other mammals. If a similar virus mutated to infect humans, the resulting infection would be extremely dangerous. In order to simulate a zombie infection in humans, a differential equations model and a lattice model were constructed to test the dynamics of such a disease. Our results suggest that increasing the rate that humans kill zombies, decreasing the likelihood of getting bit by a zombie, or increasing the rate at which zombies die all increase the chances for human survival. We demonstrate that initial population density and the speed of zombie movement affect the spread of the virus. Although a zombie disease, like rabies, does not yet exist in humans, it's helpful to have a model of how it might spread in case this kind of disease does mutate and spreads to humans, so that we know how to better react to such a dangerous outbreak.

Optimal Intervention Following a Smallpox Bioterrorism Attack

OLIVIA PANEPINTO, JONATHAN MAREANE, GREGORY KETCHUM, MAXWELL EISENBAUM

Smallpox is a contagious virus that plagued humanity before its eradication in 1980. The weaponization of smallpox has been of concern to the public due to the pathogen's airborne mode of transmission. We created a differential equations model and used it to test for the most effective vaccination and quarantine strategy in order to contain a smallpox outbreak. In comparing various strategies we calculated the time to eradication and how many deaths resulted due to the disease. The model shows a combination of vaccination and quarantine to be the most effective strategy in limiting the outbreak. This study aims to shed light on the importance of emergency preparedness policies in the event of smallpox bioterrorism event.

Diabesity: A Nation Forever Growing

RACHAEL BURGANOWSKI, PATRICIA CALLAHAN, EILEEN HAYES, ARA KIM

Diabesity, obesity-dependent diabetes, is a major health epidemic plaguing America in the 21st century, affecting 100 million Americans and 50% of those over 65. A differential equations model was used to examine the socio-environmental transmission of Type 2 diabetes in three different weight classes: normal, overweight, and obese. We also used a network model to compare the effects of locally implemented intervention strategies on diabesity to the results obtained from the differential equations model. We estimate that by 2030 one in four Americans will have diabesity if trends of weight gain continue at the rate observed from 2000 to 2010. We also found that increasing educational programs targeting the overweight class is the most effective way to slow the spread of diabesity. These results should motivate Americans to implement proactive measures to reduce the population of both diabetic and obese individuals, leading to a healthier America.

Effects of Highly Active Antiretroviral Therapy on HIV Patients in South Africa

ROBERT PAYEA, NICK PIEDMONTE, CELIA SOTO, JULI GIACOMINI

Sub-Saharan Africa has the highest incidence rates of HIV in the world, making the region a primary location for aggressive treatment efforts. One of the most effective treatments for HIV worldwide is Highly Active Antiretroviral Therapy (HAART). This aggressive treatment uses three or more antiretroviral drugs and has been shown to decrease viral loads, which are associated with a decrease in the overall transmissibility as well as increased life expectancy. A differential equations model and a network model were developed to reflect the progression of HIV in the country of South Africa. The models demonstrate how various levels of treatment affect transmission and mortality rates. As the number of infected individuals taking HAART increased, the overall transmission rate of HIV decreased. Over time mortality caused by HIV related secondary infections in the population decreases, therefore the overall life expectancy of the population is expected to increase. Widespread implementation of HAART programs in South Africa is a vital strategy that would significantly decrease the time it takes HIV to reach an endemic state.

1D • EDGAR FELLOWS MISCELLANY I WELLES 121

SESSION CHAIR: MELANIE BLOOD, ENGLISH

Music, Sex, and Politics: Researching and Producing the Musical Cabaret

JULIA MASOTTI, KATELYN HEARFIELD

FACULTY SPONSOR: MELANIE BLOOD, ENGLISH, AND ANNE-MARIE REYNOLDS, MUSIC

This presentation will be a discussion of the production of Kander & Ebb's *Cabaret* directed by Julia Masotti and musically directed by Katelyn Hearfield. As students of the arts, Julia and Katelyn have long felt that a nontraditional capstone, based around performance, would be a better representation of their college experience than a traditional academic paper. Julia spent the fall semester doing research on the growth of the cabaret movement from its birth in the cafes of Paris through its peak in Weimar Germany, as well as doing intensive textual research and analysis on the libretto and score of *Cabaret*. She also put together a student production team of designers and stage managers to assist on the production. In three weeks during winter break, Julia staged the entirety of *Cabaret*, resulting in a full production at the end of January. During this process, Katelyn taught the music, worked with the pit musicians, and eventually conducted in performance. Her research compares the musical score of Kander & Ebb's *Cabaret* to the cabaret music of the time period, focusing on the influences of Klezmer, jazz, and the fusion of "classical" and "popular" musical styles.

What Happened to the Sixth?: A Comparative Study Between the First Edition and Critical Edition of Bruckner's Sixth Symphony

LOUIS LOHRASEB

FACULTY SPONSOR: ANNE-MARIE REYNOLDS, MUSIC

Often considered the "ugly duckling" of the nine epic symphonies by the German composer Anton Bruckner, the Sixth symphony has suffered from a lack of proper research and analysis. Never performed during the composer's lifetime, the manuscript of the symphony is lacking in necessary markings to ensure a fruitful performance of the piece. However, the solutions to many of these problems can be found in the first edition of the symphony, published posthumously by Bruckner's students. Previously neglected by musicologists as unauthentic and fraudulent, tit posses many clues as to how the symphony was originally conceived. This presentation will touch on the major issues present in the symphony, and how the modern performer can grapple with them to make informed musical decisions.

1E • EDGAR FELLOWS MISCELLANY II

WELLES 123

SESSION CHAIR: DAVID LEVY, PHILOSOPHY

Anxiety and Dominance in Adolescents

PETER KEARNS

FACULTY SPONSOR: JOAN ZOOK, PSYCHOLOGY

Aggression, particularly bullying, in schools is an important issue with a host of negative related outcomes for both the victim and the aggressor. One particular outcome that is inconsistently related to perpetrating aggression is anxiety. This research seeks to explain that inconsistency by illuminating the different causes and motivations for aggression. Some kids are hostile to gain control over their peers by bullying them. Some kids are aggressive to establish themselves in the social pecking order. Other kids act aggressively because they don't know how to cope otherwise with uncertain and potentially threatening situations. This presentation will present evidence regarding these motivations in the hopes of illuminating the origins and incentives of aggression as well as suggest practical methods for applying this research toward the betterment of school social environments.

Test Anxiety in College Students: A Self-Determination Theory Perspective

KRISTIN RABB

FACULTY SPONSOR: JOAN ZOOK, PSYCHOLOGY

This presentation details the results of a psychology study measuring test anxiety through the framework of the self-determination theory, which focuses on three factors that foster intrinsic motivation: competence, autonomy, and relatedness. Competence is how successful a student feels at an activity, autonomy is how free a student feels to perform an activity, and relatedness is how close a student feels to the other people involved in the activity. The researcher attempted to manipulate, by either increasing or decreasing, students' feelings of competence, autonomy and relatedness about math. The students in this study then tried to solve a series of complex math problems and were asked to reflect on their feelings of motivation and anxiety. The results of these two experimental groups were compared with a control group that received no intervention. This talk will include a discussion of the self-determination theory and its' history and also discuss this specific study's methodology, the results, and the implications of this research for college students in Geneseo.

Factors of Fear Among Targets of Obsessional Pursuit

HILLARY RICH

FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY

Stalking is a relatively recent and conceptually nebulous legal issue. Anti-stalking legislation was initially instituted to address concerns regarding celebrity stalking; this foundation, despite its misrepresentation of the most common forms of stalking, continues to shape legal decisions and societal reactions. New York State's legal requirements of stalking are contrasted with research on the actual experiences of targets of obsessional pursuit with a particular focus on the requirement that targets exhibit reasonable fear. As the only crime in which the legality of a behavior is dependent on a victim's reaction, it is important to understand which factors of target experiences are predictive of fear. Preliminary results of campus surveys of participants' experience of obsessional pursuit and stalking after the breakup of a romantic relationship are discussed. Additionally, the legal implications of these findings are addressed.

1F • EDGAR FELLOWS MISCELLANY III

WELLES 119

SESSION CHAIR: ROSE-MARIE CHIERICI, ANTHROPOLOGY

Curriculum Design for English Language Learners

ALLISON BARCLAY

FACULTY SPONSOR: IRENE BELYAKOV, COMMUNICATIVE DISORDERS & SCIENCES

The education of English Language Learners, including immigrants and their children, has been a controversial subject, defined as much by politics and practicality as by educational science. The most common method of supporting these students (although perhaps not most effective) is to place them in age-appropriate classes. They then work with a TESOL (teaching English to speakers of other languages) certified specialist, either during regular classes or in "pull out" sessions. These teachers help them to develop their social and academic vocabulary, as well as providing whatever support and adaptations are needed for them to succeed in school. TESOL teachers work by collaborating closely with grade-level teachers. My project consisted of developing unit plans with the materials and adaptations necessary to support students at the second grade level. I based my research on this school because they use a scripted curriculum wherein each unit of study is mapped out. I used this curriculum and the included materials to design the lessons and materials (such as modified readings and assignments) that a TESOL teacher would need in order to support a statistically typical caseload for a school of this description.

A Multicultural Approach to Speech and Language Disorders and Disabilities

DIAHANN CUEVO

FACULTY SPONSOR: LINDA HOUSE, COMMUNICATIVE DISORDERS & SCIENCES

Due to a dramatic and steady growth in the Spanish speaking population in the United States, it is becoming increasingly important that Speech-Language pathologists are able to approach therapy sessions with a multicultural mindset. Due to a lack of comprehensive knowledge of the bilingual population, many SLPs tend to misdiagnose and ineffectively treat various language and phonological disorders. This presentation discusses the phases of typical and disordered monolingual (English and Spanish) and bilingual (English-Spanish) language and phonological development. By being understanding and sensitive of cultural differences, SLPs will be able to deliver more effective therapy services. Extensive research was done in current techniques and suggested improvements in the profession of Speech-Language pathology.

Historical Perspectives in Speech-Language Pathology: A Look at the History of the SUNY Geneseo Communication Disorders and Sciences Program

KATIE KREIDLER

FACULTY SPONSOR: LINDA HOUSE, COMMUNICATIVE DISORDERS & SCIENCES

The Communication Disorders and Sciences Program at SUNY Geneseo has undergone vast changes and developments from its founding in 1939, to its deactivation in 2010. Before it is scheduled to close in June of 2014, it is appropriate and necessary to document these changes and developments. This project examines the history of the department, known previously as the department of Speech Pathology and Audiology, with a focus on three of the major areas that came to characterize it. These include: An emphasis on Speech-Language Pathology in the schools, a world-renowned summer program in stuttering intervention, and child language sample analysis research. The broader focus of this project is to examine the historical precursors to the interdisciplinary field of Speech-Language Pathology. These two goals intertwine to form the body of this project, as the history of a varied and unique field is examined in concert with that of an equally varied and unique academic and clinical program.

1G • ENGLISH Interdisciplinary Connections to Humanities II in Concord

WELLES 115

FACULTY SPONSOR: WESTON KENNISON, ENGLISH

SESSION CHAIR: GREGORY PALERMO

The Succession of Literary Criticism

GREGORY PALERMO

In his book Falling into Theory, critic David Richter uses Thomas Kuhn's paradigms of scientific knowledge to make sense of the crisis in the humanities--the loss, since the 1970s, of a "consensus" on "what," "why," and "how" we read. Richter, following the scientific philosopher's model of tension and synthesis, offers the possibility that the literary community will reach another new and better "consensus." The brand of reception history that expects this synthesized interpretive community--that is, in the words of Charles Darwin, "as perfect as, or slightly more perfect than" what it succeeds--is analogous to the linear "March of Progress" illustration of evolution: it is a representation that biologist Stephen J. Gould has condemned as a poor, if not wholly inaccurate, interpretation of Darwin's theory. Darwinian evolution, Gould says, builds "a copiously branching bush...not a ladder of predictable progress." This paper examines the current crisis in the context of Darwin's theory and what it might suggest about the not-so-neat future of literary criticism. ***Selected for presentation at Sigma Tau Delta 2013 Convention, Portland, Oregon.***

Synthesis through Symbiosis: The Human Narrative's Necessity for Disciplinary Confluence

JEFF HANDY

At the Thoreau Society's Annual Gathering in the summer of 2012, speaker Ty Reeb presented a paper titled "A Philosophy of Narrative Synthesis: Uniting 21st Century Scholars Through Narrative." Reeb argued that a full human narrative--a from-all-angles look at humanity's place in the universe--can be arrived at only when the work wrought by the different disciplines (i.e., generally speaking, "the Sciences" and "the Humanities) are synthesized. My paper is in many ways a recapitulation of the ideas expressed first by Reeb. I look closely at what exactly a "narrative" is and what it means for one to be "synthesized" in this context. I argue, along with Reeb, that a human narrative is necessarily reliant on the synthesis of the Sciences and the Humanities. Where I move forward from Reeb, however, is in the inspection of the consequences of the modal operator "necessarily" in this instance; this examination will be the focal point from which my thesis emerges: a human narrative indeed cannot be obtained without a disciplinary synthesis, as Reeb argues, but the obstruction of this synthesis is, thankfully, nearly impossible due to the way humans are constituted to be self-interested agents.

Mary Shelley's Depiction of Slavery of Frankenstein

TONI OVIEDO

Mary Shelly's novel *Frankenstein*, in its portrayal of the uncontrollable creations of science, technological advancements, and of societal pressure to progress, also illustrates conditions of the slavery sentiment that was so vividly expressed by Henry David Thoreau and abolitionist John Brown. Shelly intelligently shapes Frankenstein's creation, not only with biblical similarities, but also with the social, gender and racial issues that plagued society. Mary Shelly brilliantly describes the condition of the monster as similar to the visual and literary depictions of African American slaves in Antebellum culture. The monster describes himself as "not of the same nature as man. I was more agile than they and could subsist upon coarser diet; I bore the extremes of heat and cold with less injury to my frame; my stature far exceeded theirs." This paper discusses the extent to which Frankenstein's creation is the representation of a holistic symbol of society's ills, particularly the enslavement of blacks.

1H • ENGLISH WELLES 131

Words, Words, Words: History of the English Language I

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH
SESSION CHAIR: SEAN FISCHER

Waltzing Into Obsolescence

JOHN BOSELLI

Using the *Oxford English Dictionary* as a cultural framework, this paper unpacks the term waltz's linguistic history, surveying its bawdy beginnings, adoption (in toothless form) by Jane Austen's aristocracy, and its emigration to Mark Twain's America.

Becoming "Blue in the Face": Exploring the Word "Blue"

ELIZABETH RECK

Each of the myriad words in the English language has a unique history and the word "blue" is no exception - it is much more than just a color that we see everyday. Analyzing the history of the forms and senses of "blue" as an adjective, substantive, verb, and basis for many phrases listed in the *Oxford English Dictionary*, an invaluable resource to anyone interested in the development of words and language, it becomes clear that "blue" has found its way into many corners of the English language. The *Oxford English Dictionary* allows the chronological history of "blue" to come to life in the words of writers, such as Shakespeare, who crafted the phrases that we know to be so familiar today, and it also records those expressions and senses that have fallen out of regular common usage. As this pattern continues and more slang phrases appear "out of the blue," while others leave the idiom, becoming aware of the twists and turns of word history can shed light on the seemingly insignificant but certainly integral building blocks of our language.

Stomach: A Word of Considerable Lingual Girth

MARGARET CRAFT

Now the source of our hunger pangs or a measure of tolerance, once the seat of passions and secret thoughts, stomach has gone through many permutations of usage and meaning since its adoption to Middle English. By tracing its history through now obsolete spellings and lingual senses, stomach's past reflects various time periods' changing social connotations of the word as well as common language trends that altered its pronunciation and spelling; what remain are today's multiple lexical usages of stomach that have survived such influences, rendering it still relevant to Modern English speakers on more than just an gluttonous level.

1I • ENGLISH WELLES 138

SESSION CHAIR: MICHAEL HERMAN, ENGLISH

SUPERNOVA: A Screenplay by Joseph Scott O'Connor

JOSEPH O'CONNOR

FACULTY SPONSOR: MICHAEL HERMAN, ENGLISH

Joseph O'Connor spent the Fall 2012 semester writing (and rewriting) the screenplay to a short film with heated topics at its heart such as sexuality and internalized homophobia. This project has truly been a labor of love; *Supernova* takes on the mythology of star-crossed lovers but with a completely modern twist. The play traces the tragic relationship between childhood friends turned lovers, Charlie and Derek, as they are torn apart, not by two opposing households, but by themselves in our heteronormative society. Drawing on classic literary allusions such as the works of the famously flamboyant Oscar Wilde, the film opens with the oft-quoted line from Lady Windermere's Fan: "We are all in the gutter, but some of us are looking at the stars" (Act III, Scene I). His screenplay seeks to give textual space to the issues surrounding queer teens that are all too often left unexamined in the media.

35MM: A Musical Exhibition

PHILIP ROMANO, SALLY SCHAEFER, MARTY ROGACHEFSKY, ELYSSA RAMIREZ, ERIN DONOVAN, JONATHAN MUSHOCK, CJ ROCHE, CHRIS MCLAUCHLIN, MEGAN KILLEA

FACULTY SPONSOR: MELANIE BLOOD, ENGLISH

35MM is a multimedia "musical exhibition" in which photographic images inspire music and lyrics, and inversely music and lyrics inspire photographs. The piece is made up of seventeen songs by composer Ryan Scott Oliver and 35 images by photographer Matthew Murphy. Philip Romano is directing and producing the first college production of the musical, April 25-27 in the KnightSpot. He has worked directly with the creators to ensure a great production, along with Melanie Blood as advisor, Marty Rogachefsky as executive producer, Megan Killea as choreographer, and Sally Schaefer as musical director. They were also awarded an Undergraduate Research grant to aid financially. The cast consists of Elyssa Ramirez, Erin Donovan, CJ Roche, Chris McLauchlin, and Jonathan Mushock. This presentation will consist of a few performances of songs from the show, as well as discussion regarding the challenge, benefits, and intricacies of putting up a full-scale show as a completely independent project from start to finish.

1J • GEOGRAPHY STURGES 104

SESSION CHAIR: DAVE ROBERTSON, GEOGRAPHY

Permaculture Regenerative Design: Reflections from Goias, Brazil

KRISTEN BALSCHUNAT, SHELBY TOMPKINS

FACULTY SPONSOR: DAVE ROBERTSON, GEOGRAPHY

We know that humans degrade the environment. We exploit resources and destroy ecosystems. But

what if our impact could instead be positive? What if our design techniques were regenerative instead of harmful? Permaculture design is a practical framework for ecological community design that works congruently with nature to provide for human abundance while at the same time respecting and remaining interconnected to nature. The presenters took a Permaculture Design Course at the Ecocentro IPEC ecovillage, Brazil in the summer of 2011. This presentation reflects on that experience and describes how permaculture principles apply to everyday life including life on the campus of SUNY-Geneseo.

A Visual Analysis of a 4-Dimensional Data Set Using R

PATRICK HAMILTON, ASA WHALEN

FACULTY SPONSOR: YUSUF BILGIC, MATHEMATICS

We visualized 4-D data and built a predictive linear model for the sale price of thousands of houses, given three predictors along with some dummy variables. Using the R statistical software package, we were able to use multivariate data structure to explore the visual relationship and, thus, build a linear model that would accurately predict the price of a house. To aid us in this, we needed a special R package that allows making interactive applets in visualization of 4-D data structure. To do this, we plotted three of the variables along 3 axes and had them dependent on the fourth, thus, with the tools of this package, the continuously changing 3-D representation would be obtained.

1K • GEOLOGICAL SCIENCES, HONORS DEFENSE

ISC 115

FACULTY SPONSORS AND SESSION CHAIRS: BENJAMIN LAABS AND SCOTT GIORGIS, GEOLOGICAL SCIENCES

New Limits on Timing and Climate Change During the Last Deglaciation in the Ruby Mountains, Northeastern Nevada

JESSICA LAM

The Ruby Mountains of northeastern Nevada hosted the largest system of valley glaciers in the Central Great Basin during the last glaciation, which occurred approximately 20,000 to 15,000 years ago. The precise timing of the subsequent deglaciation is not completely understood because of a lack of numerical ages of recessional moraines and other glacial features exposed during ice retreat. To address this problem, samples of erratic boulders atop a recessional moraine in North Furlong Canyon and samples of glacially polished bedrock near Angel Lake, the type locale for the last glaciations in the Great Basin, were collected for cosmogenic ^{10}Be exposure dating. Additionally, numerical models of mass balance and ice flow were applied to North Furlong Canyon to simulate both the maximum and recessional extents of the glacier in this valley. This research will set important new limits on the timing of the last deglaciation and the pace and magnitude of climate change that accompanied this event. Moreover, this research will quantify the decline of snowpack from a glacial valley during the last interval of major global warming.

Cosmogenic Exposure Dating and Numerical Modeling of South Fork Deep Creek Valley Glacier, Montana, during the Last Glacial Maximum

ALEC SPEARS

During the Last Glacial Maximum (LGM) numerous ranges in the Northern Rocky Mountains were occupied by valley glaciers. Geologic dating of the record of these glaciers provides new insight on the timing of glaciation and allows for comparisons of paleoclimate across the Northern Rocky Mountains. Nine boulder samples were collected for cosmogenic ^{10}Be exposure dating along the left lateral sector of the terminal moraine in South Fork Deep Creek Canyon, Absaroka Mountains, Montana. These exposure ages will provide important new limits on the timing of the local LGM. In addition to the exposure dating of moraines, a 2-D, physically based, numerical glacier model was applied to the study area and to the adjacent Pine Creek and Cascade Canyons. The goals of the glacier modeling are to simulate the known extent of glaciers in these canyons during the LGM and to limit temperature and precipitation that accompanied glaciation. Glacier modeling experiments indicate that a temperature depression of 7.9° C with modern precipitation may have accompanied the LGM in the Northern Rocky Mountains.

Conodont Biostratigraphy and Zircon Age Dates of the Belpre Ashes, and a Possible Belpre Equivalent from the Lower Portion of the Rhinestreet Shale, Upper Devonian, Eastern North America

AMANDA LANIK

FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

A collaborative effort between SUNY-Geneseo and Boise State University has been undertaken to refine the Late Devonian timescale using high-resolution U/Pb dating and conodont biostratigraphy. As a part of this effort, two ash suites are being compared, the Belpre Ashes found in the Chattanooga Shale at Little War Gap, Tennessee, and an unnamed ash, possibly the Belpre, found in the Rhinestreet Shale along Eighteenmile Creek, western New York. Conodonts from Little War Gap include *Palmatolepis punctata*, *P. housei*, and *Ancyrodella nodosa*, and indicate placement in MN Zone 8. Conodonts from Eighteenmile Creek include *Palmatolepis ljaschenkoae*, *Polygnathus dubius*, *A. nodosa*, and *Icriodus symmetricus*, which indicate MN Zone 7 or MN Zone 8. However, this bed is also associated with the goniatite *Naplesites iynx*, which indicates MN Zone 7. The Eighteenmile Creek ash has yielded an absolute date of 375.32 +/- 0.14 Ma, the Tennessee ash dates are pending. ***Selected for presentation at 2013 Geological Society of America Annual Meeting and Exposition, Denver, CO.***

Thermochronologic Constraints on Miocene Transpressional Exhumation Along the Central Range Fault Zone, Trinidad

CARL BENO

FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The Central Range fault zone records transpressional kinematics and accommodates most of the slip between the Caribbean and South American Plates in Trinidad. Global Positioning System data suggest this zone is active today and has been active for at least the past several thousand years. Thermochronology data from Eocene and Oligocene sandstones in the Central Range were collected to constrain the thermal history associated with exhumation driven by transpression. Previously collected apatite fission-track (AFT) data yielded mixed results. AFT cooling ages range from 30 to 15 Ma, however most sites fail the chi-squared test suggesting multiple age populations. Pooled AFT ages tentatively suggest that rocks presently at the surface were exhumed through part of the apatite fission-track partial annealing zone in response to Miocene contraction. Unfortunately, apatite grains >50 microns in diameter are not present, therefore we were unable to collect apatite (U-Th)/He data. In this contribution we present the results of (U-Th)/He analysis on zircons collected from eight samples, and look towards a future project using monazite as a thermochronometer. These data provide insight into the Miocene tectonic history of the Central Range and constrain the total amount of exhumation due to Miocene to recent deformation.

1L • HISTORY

STURGES 112

Perspectives on Culture and Capitalism

FACULTY SPONSOR: TZE-KI HON, HISTORY

SESSION CHAIR: EMILY JENNINGS

The Origin of a Stereotype: Capitalism, the Media, and the Materialistic Woman

EMILY JENNINGS

This presentation will examine the if women's social position as "the other" leads to negative stereotypes of women appearing in the media, especially the depiction of women as materialistic. The theories of Guy Debord, David Harvey, and Simone de Beauvoir will be used to examine this trend in the media portrayal of women within the last half-decade.

The Fetish with Football in the United States

NATHANAEL GERACI

There is no need to argue how popular the NFL is in the United States. But why is professional football such a big deal? Karl Marx's concept of commodity fetishism helps explain the United States' obsession with the NFL. The National Footbal League is the product of a capitalist system. A closer look at this industry will give insight into how capitalism works in the United States. I will use the work of Karl Marx, Theodor Adorno, Guy Debord, George Lukacs, etc. to expand on the idea of commodity fetishism.

An Excerpt from Alan Ginsberg's *Howl*

EMILY MCDEVITT

This will be a reading an excerpt of Alan Ginsberg's poem *Howl* that expresses aggression toward the capitalism's grip and influence of society.

1M • HISTORY STURGES 109

Jefferson, the Underground Railroad, and Irish Drinking Culture: History Honors Theses

SESSION CHAIR: JUSTIN BEHREND, HISTORY

For Family Use: Slavery, the Monticello Plantation, and the Letters of Thomas Jefferson

CORY YOUNG

FACULTY SPONSOR: JUSTIN BEHREND, HISTORY

The controversy surrounding Thomas Jefferson's peculiar relationship with plantation slavery has expanded now that we know, thanks to DNA evidence, that he fathered slaves. As such, his commitment to antislavery seems all the more tepid. Joseph Ellis, a Jefferson biographer, described the statesman as an "American Everyman for our more permissive era," suggesting a legacy that is as every bit as benevolent as it is national. Although contemporary historians are beginning to push back against decades of hero-worship, the public at large shows little sign of modifying the "Declaration-first" construction of its great father of liberty. This paper considers Jefferson's evolving opinions on slavery and blackness through the lens of his private correspondence during his first retirement to Monticello in 1794. By analyzing the language the founding father used to discuss slavery in this period, I hope to demonstrate that by the mid-1790s, Jefferson had abandoned any sincere abolitionist convictions he may have once harbored in favor of the mild, philosophical opposition that now characterizes America's most famous slaveholder. ***Selected for presentation at Phi Alpha Theta, West/Central New York Regional Conference, Geneseo, NY.***

The Mystery of the Underground Railroad: How Race has Muddled the Examination of the Institution

MATTHEW MCNEILL

FACULTY SPONSOR: CATHERINE ADAMS, HISTORY

This paper examines the Underground Railroad as it has so far been understood and the role race has played in the discussion, with special attention paid to the Western New York area. This place in the 19th century, now sometimes referred to as the "Burned-Over District" for its religious zeal and social activism, became one of the most important areas of the Underground Railroad. Despite this liberal atmosphere, however, activist leadership and New York State as a whole remained divided on issues involving slavery and race, a reality indicative of the entire institution of the Underground Railroad.

Selected for presentation at Phi Alpha Theta, West/Central New York Regional Conference, Geneseo, NY.

Contextualizing "Drunken Paddy": Origins and Influence in Great Britain and Ireland

LILA CHAMBERS

FACULTY SPONSOR: JOSEPH COPE, HISTORY

My talk deals with the pervasive and complex history of the "Drunken Paddy" formulation within Great Britain, Ireland, and to some degree the United States. Although the association between Irishness and excessive drinking is now commonly regarded as harmless aspect of St. Patrick's Day celebrations, the roots and dispersal of the stereotype had and continue to have serious implications. While there is almost limitless material on the subject to draw from, I will focus on primarily English articulations of, and reactions to, real and imagined Irish drinking culture. ***Selected for presentation at Phi Alpha Theta, West/Central New York Regional Conference, Geneseo, NY.***

1N • MATHEMATICS SOUTH 338

Math Miscellany I

FACULTY SPONSOR AND SESSION CHAIR: OLYMPIA NICODEMI, MATHEMATICS

Counting with Catalan Numbers

MEGAN REED, MICHELLE BRECHUE, CHARLES DACHS

Catalan numbers count the number of ways a set of *n* balanced pairs of parentheses can be arranged. Surprisingly, they also count diagonal-avoiding paths, multiplication orderings, and the number of ways in which one can shake hands across a circular table without crossing arms. Along with these examples, we will discuss the recursive definition of Catalan numbers and how that can be used to gain a better understanding o four examples. In contrast, we will use our examples to formulate a closed formula for the Catalan numbers.

The Cycloid Before Calculus

ESTHER MENEZES-PINTO, JULIA ADDEO

We know how to find the area under a curve using integrals, and tangent lines using derivatives. But how do we solve for these geometrically? Before the discovery of calculus, the cycloid curve was the target of these calculations. Galileo named the cycloid and guessed its area; Roberval, Cavalieri,and Descartes each contributed to the understanding the cycloid. In this talk, we will explore their methods.

Do Dogs Know Calculus?

RYAN KLIMEK, MARCUS HOY

The question we are after is obviously not whether dogs can figure out calculus problems. Rather, on some level, can dogs subconsciously optimize travel time between two points in a way that would suggest they have calculus like accuracy? Tim Pennings wrote a paper on exactly this topic. While playing fetch on the beach with his dog he noticed that it would very efficiently run along the beach before jumping into the water to retrieve the ball. He wanted to put it to the test and compare his dog's times to the optimum times using calculus. The results he found were surprising. Has nature really hardwired the brains of animals to be able to solve certain "calculus" like problems?

1O • MATHEMATICS SOUTH 336

SESSION CHAIR: YUSUF BILGIC, MATHEMATICS

Now Trending

JEFFREY MAGGIO

FACULTY SPONSOR: CHI-MING TANG, MATHEMATICS

This presentation outlines the general procedure for modeling trends in a particular stock price (Google) with a multivariable time series. Topics covered include: identifying possible variables and selecting only those of statistical relevance, modeling the data with multiple regression using Minitab, identifying possible issues with multicollinearity, and adding an autoregressive when appropriate. Finally, the model obtained is used to predict a future price of Google stock. Anyone with a basic knowledge of linear regression should be able to follow the procedure. Disclaimer: Invest at your own risk!

The Statistical Analyses of Website Pageviews Using a Robust Poisson Regression

GREGGORY LESTER

FACULTY SPONSOR: YUSUF BILGIC, MATHEMATICS

Page view statistics are beneficial for describing and predicting behavior of clients on Internet websites. From a theoretical point of view, the number of page views during a day should follow a Poisson distribution. In this study, we will begin by reviewing the traditional Poisson Regression and its applications. We will then retrieve and analyze the data set from my website statistics as well as a well-known data set found in the literature. We will compare the results of the traditional data analyses with a robust Poisson regression, which will be developed using a rank-based regression approach. Through the validation of our cooperative data results, the efficiency and coverage of the proposed Robust Poisson Regression will be tested in with Monte Carlo Simulations. In particular, attention will be paid to the occurrence probabilities of large numbers of page views on different types of slightly correlated websites in addition to the number of page views on my single website. Our study will furthermore present models for the forecasting on the number of page views for potential users.

The Growth of Nations Compared to China

LESLYE BURLESON, BINGJIE WANG

FACULTY SPONSOR: CHI-MING TANG, MATHEMATICS

The rate of natural increase of a nation is the crude birth rate minus the crude death rate of a population. If there are more births than deaths, the population grows, but if there are more deaths than births, the population decreases. We will specifically look at the population of China, a growing developing nation. The aspects of the population that will be examined are the urban to rural ratios, the male to female ratios, and the age distribution. After this information is gathered, we will examine the growth rate and death rate, as well

as the rate of natural increase. We will be using time series and regression to estimate what the rate of natural increase will be for the next year in China. Finally we will be observing the rate of natural increase of other nations. We will compare the rate of natural increase of China to the United States and to Japan because the United States is a developed growing nation and Japan is a developed shrinking nation.

1P • MILNE LIBRARY & SCHOOL OF EDUCATION SOUTH 235

Geneseo Storytelling Institute Panel of Tellers - Participants in the Geneseo Story Telling Institute Will Share Their Stories

FACULTY SPONSOR: MICHELLE COSTELLO, MILNE LIBRARY & SCHOOL OF EDUCATION
SESSION CHAIR: MICHELLE COSTELLO, MILNE LIBRARY

Each participant has learned a personal story or a fable.

Three Days From Chatham

ANNA HOYLER
FACULTY SPONSOR: MICHELLE COSTELLO, MILNE LIBRARY
Anna will tell an original family tall tale about an an experience that her Great Grandfather had many years ago involving taking a cow on a box car.

The Helpful Raccoon

MICHELLE MOSHON
FACULTY SPONSOR: SHARON PECK, SCHOOL OF EDUCATION
Michelle will share a Native American porquoi tail about a helpful, or not so helpful, raccoon.

Once Upon a Time

DANIEL COUGHLIN
FACULTY SPONSOR: MARK SULLIVAN, MILNE LIBRARY
Daniel will share an original story that he wrote to amuse his many younger siblings.

1Q • PHILOSOPHY STURGES 114

Augustine and the Problem of Evil

FACULTY SPONSOR: CARLO FILICE, PHILOSOPHY
SESSION CHAIR: CHARLOTTE HERN

See No Evil: Morality, Mortality, and Value in Augustinian Theology

SAMUEL PREMINGER
What's good about evil? In this presentation, we will explore a tenebrous side of Christian theology, drawing on the works of Augustine to reconcile the existence of evil with that of a benevolent, omnipotent deity. This will necessarily entail discussion of free-will, sin, and mortality, but will further consider biblical possibilities of divine intention, misrepresentations of evil, and the true elegance of our universe.

The Problem of Evil: A Question of Presuppositions?

NICHOLAS KREUDER
The Problem of Evil has been one of the great issues which believers of the traditional theistic of God must contend with. Augustine offers a rather unique solution to this problem, which denies that evil exists as a positive substance. However, even his conception of evil still seems less than compatible with the attributes of God as all knowing, all powerful and all good. Perhaps, if we are willing to reconsider commitments to the nature of the afterlife, a solution to this problem can be reached.

1R • SCHOOL OF BUSINESS SOUTH 340

Research in the Real World

FACULTY SPONSOR AND SESSION CHAIR: PAUL SCIPIONE, SCHOOL OF BUSINESS

Measuring the Effectiveness of CSBG Programs and Agencies that Serve At-Risk Populations: the Poor, Disabled and Elderly

LANDON HURLEY, LEANDRA GRIFFITH, MICHAEL STOIANOFF, BRIANNA VANSOEST
These students worked with Dr. Scipione on federally-funded evaluation research of six social programs/agencies in Livingston County. They will present methodologies and key study findings.

How High School Seniors and Their Parents View SUNY Geneseo vs. Competitive Colleges

MARY ALDRIDGE, AARON DORFMAN
In addition to describing the process by which HS seniors and their parents select an Undergraduate College, the students who worked with Dr. Scipione on this research for the Geneseo Admissions Office, will also describe their innovative use of MultiDimensional Scaling (MDS) and Conjoint Analysis to measure the Mental Maps of prospective students and their parents.

Expanding Wadsworth (Geneseo Public) Library: Public Opinions and Suggestions

LANDON HURLEY, ELIZABETH PATRICK, CASEY QUINN
These students worked on a community survey of Geneseo residents to get their reactions and suggestions about the planned expansion of Geneseo's public library and how to finance the expansion of facilities and services.

1S • SCHOOL OF EDUCATION SOUTH 328

Keeping Kids in School Year 7

FACULTY SPONSORS AND SESSION CHAIR: JANE MORSE AND BRIAN MORGAN, SCHOOL OF EDUCATION

External Influences on Students' Success in School

GRIFFIN MERVINE, ALEXANDRA LIONETTI, CHRISTINA HEIM, CAMILLE ARTER, KATHERINE BAUM, KATHERINE LOMAZZO
As preservice teachers, it is our responsibility to ensure the success and progress of school-aged children. Neighborhood effects impact a child's development and school success (Berliner, 2009). Specifically, participants in our study have stressed the importance of the proximity of role models both inside and outside school. It appears that the presence of a single role model in a neighborhood is enough to encourage a child to stay in school, thereby increasing his or her opportunities for future success. Role models can come from many places in both the school and community; what is important is not their career but their expression of interest and continued dedication to the student (Van Etten, 2011). The child's environment is very influential in shaping his or her identity in regards to both school and social life (Kling, Liebman, and Katz, 2007; Keels, 2008). We have examined the impact of role models within other neighborhood effects, such as friends, family, culture, racism, and participation in activities, sports, and work. This presentation will be of particular interest to education, psychology, anthropology, sociology and human development majors, and anyone else concerned with the education of our children.

Students' Assessment of School: Teachers' Methods, Testing, and Discipline

MEGAN DIBARTOLOMEO, CHELSEY BARKER, ALISON PAYNE, APRIL MEYER, ERICA GIORDANO
The voices of inner-city youths are too often absent in discourse on school reform. In a seven-year longitudinal project, a research team of pre-service teachers explores the urban school environment from the perspective of inner- city youths. Using biannual interviews and focus groups, we asked participants to reflect on their experiences in school, commenting on how teaching methods, curriculum, and discipline affect college readiness. For example, as a discussion prompt, we showed participants a newspaper clipping which stated that, in 2010, the Rochester City School District admitted that only 5% of its students graduated prepared for career or college (Lankes, 2010). This came as a surprise to our participants. In other interviews, we found that participants overwhelmingly preferred hands-on activities to lectures, benefitted from teachers' high expectations (Beverley, James, and Keyona, 2010), and appreciated attention from their teachers. We coded various responses as "narratives of success" and found many stories that might be missed by research that omits student voices. The narratives of our student participants reflect and amplify findings in current research.

Role of Agency and Locus of Control in Students' Success in School

STEVEN BENNETT, JOSEPH CERIELLO, MICHAEL EISINGER
The longitudinal study, Keeping Kids in School, focuses on the social, emotional, academic, and environmental factors affecting a cohort of students, mainly in the Rochester City School District, who are succeeding despite the odds

against them. Researchers asked students questions about their beliefs and perceptions of "agency" and "locus of control." Agency is the capacity of a person to act in the world and alter their experience; locus of control is the extent to which individuals believe that they can control events that affect them. Our participants, for example, gave instances of feeling a lack of control over choosing their courses while maintaining a sense of agency in determining their future. These students demonstrate persistence by staying in school and focusing on their education. Our conversations with these students provide a unique look at how self-motivated action can afford students greater success in school.

1T • SOCIOLOGY WELLES 133

Learning While Doing Good: Service Learning and Sustainable Development in Nicaragua and Uganda

FACULTY SPONSOR AND SESSION CHAIR: DENISE SCOTT, SOCIOLOGY

Poverty's Flown The Coop: Microfinance Project in Rural Uganda

DARA GELL, ALLISON HOPPE, ANDREW PERRY

In the summer of 2012 the presenters traveledto Uganda and, for a period of two months,worked as interns for the Foundation for Sustainable Development, a San Francisco based NGO. As interns, they were placed at Mukisa SACCO, a small savings and creditcooperative servicing primarily widows and single mothers, a majority of whom had HIV/AIDS. In an attempt to ameliorate the dual deficiencies of insufficient organizational capital and low individual profit margins, their project sought to increase individuals' income generating capacity while bolstering Mukisa SACCO'scapital base by providing an initial, sustainable investment. To this end, members were provided with broiler chickens - used for meat - along with sufficient feeds, vaccines, and professional supervision. Ovet he course of an eight-month period, the value of all elements of the loan is paid back to the SACCO at a 1% monthly interest rate. In this way, participants are provided access to a sustainable income generating activity, as profits generated may be used to buy more chickens, and Mukisa SACCO gains an additional source of capital which may refinance similar product-based loans. Overthe course of the program's initiation both Mukisa SACCO's manager and loan committee played important roles in the loan's implementation. This program is sustainable on two fronts: expanding the organization's service delivery capacity; and increasing individuals' income generation potential.

Sustainable Development Initiative for Parents of Children with Learning Disabilities

EFTHIMIA BARBAGIANNIS, SANDRA LEE, MARIA SIGALAS

Uganda Parents of Children with Learning Disabilities (UPACLED) works to support intellectually disabled children in educationand health needs. As such, UPACLED organizes Parent Support Groups (PSGs) to create a communal savings fund to assist withschool and medical fees. The presenters worked with the PSG of the Kilowa community. In an open forum discussion, the PSG informed them of the need to expand thecommunal savings fund. Several members had tailoring skills and were inclined to the idea of creating a tailoring business. Creating the Kilowa Women Development Group tailoring business required several workshops and the provision of start up kits. All twenty members were given business training through two weekly workshops to increase their marketing, record keeping, and savings skills. A tailoring workshop was held to train five community members to become Trainers of Trainees (TOTs). This creates sustainability because the TOTs within the community are able to further train other community members in tailoring. This project also includes the provision of start-up kits, which were initial capital investments. These consisted of sewing machines, threads, fabrics, scissors, tape measures, buttons, zippers, elastics, and needles. Additionally, a business plan was created to outline their role allocation and profit management. During the course of the project, an additional need arose. Registering the PSG as a Community Based Organization (CBO) at the sub-county and district levels allows them to apply for grants and other funding, creating a higher standard of legitimacy for their microfinance endeavors. The Kilowa CBO hopes to serve as a pilot project for other communities. Future participants and donors can support this project by advertising the business, providing seed grants for more capital materials, and by purchasing products from the Kilowa Women Development Group.

Microfinance in El Sauce, Nicaragua: Combining Education and Financial Opportunity

MEGAN STAUDENRAUS

In January 2013 the presenter participated in SUNY Geneseo's study abroad and service learning experience in El Sauce, Nicaragua. For two weeks, she worked alongside Enlace, a New York based non-profit organization that offers comprehensive training for businesses and individuals, provides microloans to stimulate economic growth, and to strengthenthe economic capacity of the community. As a microloan institution, Enlace seeks not only to increase availability and access to capital amongst local business owners, but to also improve the capacity of lenders to make optimal fiscal decisions, both personally and professionally. The Enlace microloan program has eliminated hindering requirements from its lending model, like cosigners and high interest rates, which have been recognized as barriers to loan access. Instead, the potential loaners undergo a screening process and then complete financial education classes. Upon successful completion of the classes and the drafting of a business plan, recipients are granted a $200 loan over 6 months to be paid back at a low 5% interest rate. The interest fee profits supply funding for future loans. The program has primarily involved women, and has seen a successful repayment rate of 97% since its initiation. By offering financial education units focused on investing and spending, the Microloan program dually increases small businessowner's capacity to produce capital.

1U • SOCIOLOGY STURGES 108

Common American Beliefs about China

FACULTY SPONSOR AND SESSION CHAIR: ELAINE CLEETON, SOCIOLOGY

Common American Beliefs about China

KATHRIN GALLO, KIRSTYN APPLIN, JAMES BAE, CHEYENNE CALLERAME, LINDSAY CROCETTI, COLLEEN GAVIN, SARAH KOHLER, NICOLE LEMASTER, XERIUS LEWIS, SASKIA TALAY, MOSSAMMAT AKTER, JOBINA ALEXANDER, ALEXANDER BEIDECK, KRISTEN BIERSBACH, LAURA BULGER, CHARLES CAPLAN, PATRICE CUMMINGS, RACHEL FRIEDMAN, AVA ISAAC, AVERY KRAFFT, JENNIFER KYNE, ADAM LASHINSKY, STEPHANY ROMERO, CHELSEA SKINNER, JOSHUA TOBIAS, SOFIA WEBB, REGINA WHYTE

Ten college students, their parents, and grandparents were interviewed regarding their beliefs about China, and the sources of these beliefs and interests. Informants reported similar beliefs regarding China's one-child population policy, manufacturing, the 2008 Beijing Olympics, government organization, and censorship. Varying across generations was the extent to which China is viewed to be a threat to the US, with the lowest level of concern being reported by the college students. Prospects for challenging persistent stereotypes about Chinese/American relations will be discussed.

1V • STUDENT AND CAMPUS LIFE WELLES 26

SESSION CHAIR: KIM HARVEY, CENTER FOR COMMUNITY

#RAProblems: Social Media in the RA Role and Professional Settings

JACLYN VETRANO

FACULTY SPONSOR: ELLIOT ZENILMAN, RESIDENCE LIFE

As students, we use social media sites to interact with our friends and family on a constant basis. It has also become popular within professional settings, which means that our social media pages require more careful maintenance. Students who are Resident Assistants at Geneseo also face the added responsibility of properly representing themselves online to residents, along with potential employers. This presentation will highlight the challenges of social media use in the RA position, along with helpful tactics when maintaining social media sites in a professional light.

Real World Geneseo: Students Getting Real About the Oops and Ouches

MAYA SHAH, MICHAEL AUGELLO, OBIEFUNA NWAEDOZIE, AMANDA SPENCE

FACULTY SPONSORS: FATIMA JOHNSON, CENTER FOR COMMUNITY AND SUSAN NORMAN, SCHOOL OF EDUCATION

The planning of Real World Geneseo started in 2007 and was implemented in 2009. This program incorporates individuals across all different identities and walks of life. Its focus is to provide awareness about individuals and ideas that students may have previously not been exposed to, including classism, racism, ableism, sexual orientation, gender, etc. During this panel presentation four students will offer their unique experiences of having gone through the program as well as helping to facilitate the four day living retreat. This award winning program has proven to increase cultural competency as well as change in attitudes and behaviors around difference among the students who have attended the program. The purpose of the program is to further promote understanding, respect and acceptance of diversity within the Geneseo campus community. ***Selected for presentation at IMPACT Conference, Albuquerque, New Mexico.***

CONCURRENT PRESENTATIONS 2 • 11:05AM – 12:20PM

2A • Anthropology STURGES 106

SESSION CHAIR: PAUL PACHECO, ANTHROPOLOGY

Bronze Age Burials in the Altai Mountains

KATELYN BRAYMER

FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

I will present and analyze data from four burials I helped excavate during my experience in the Altai Mountains in Bayan-Olgii aimag, Mongolia this summer. I researched general anthropological/ archaeological theories surrounding death and burial and will attempt to apply these theories into the cultural context of the burials.

A Spatial Analysis of Datum H

ERIN STEINWACHS

FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

Datum H was originally located by the Hopewell Site Catchment Survey, conducted by Dr. William Dancey in 1994. It is a small site, situated just outside Hopewell Mound Group on a terrace of Anderson Run. The archaeological record at Datum H produced a large proportion of Hopewellian diagnostic lithic artifacts, including 299 bladelets. Spatially, the main concentration of artifacts occurs in a ring shaped pattern located in the northern part of the research area within an area of a little bit less than 1000 m^2 (Pacheco et al 2012: 6). Combined, these archaeological and the use of spatial analysis programs suggest that Datum H may represent an example of a specialized camp, which are part of the vacant center ceremonial model created first by Olaf Prufer and modified by William Dancey and Paul Pacheco. In addition predictive spatial analysis techniques in ArcGIS were utilized in order to identify other potential specialized camp site locations such as Datum H.

Extending Beyond the Binaries: Implications of Embodied Cognition for Archaeology and Sexuality

LAUREN AULET

FACULTY SPONSOR: JAMES AIMERS, ANTHROPOLOGY

Extended Mind Theory, a recent controversial theory in the philosophy of mind, established by Andy Clark and David Chalmers (2000), is not only important to philosophy, but also provides new and interesting framework for many other fields, specifically studies of archaeology and sexuality. Extended Mind Theory proposes the possibility of embodied cognition: the assertion that external objects can literally be active parts of our minds. Of course, acceptance of the most extreme version of externalism, the belief that the things in the external world are a literal part of the mind, would result in a revolution, is almost all fields of thought. I argue, however, that even the rejection of the literal externalism still allows for Extended Mind theory to greatly influence our views of archaeology and sexuality. Objects can be recognized not just for their symbolic purpose in a society, but for their effects on the cognitive ability of those who used them. In addition, by blurring the divisions within commonly accepted binaries: internal and external, nature and nurture, it becomes necessary then to question our beliefs about the innateness, or lack thereof, of gender and sexuality.

2B • ART HISTORY WELLES 115

Theory to Practice: The 2nd Annual Museum Studies Symposium

FACULTY SPONSOR: LYNETTE BOSCH, ART HISTORY

SESSION CHAIR: BRANDON ENG

19th Century Porcelain in the Collection of the Livingston County Historical Society

LINDSAY MANAS

The Livingston County Historical Society is making a major push towards inventorying their collections. Spurred by a group interest in American decorative arts and material culture, three students began an independent study supervised by Professor Dr. Bosch at the Historical Society. Their work will have several components, the first will explore the history of porcelain and its development into major industries in England particularly production of Staffordshire and Wedgwood porcelains, the second will examine the material conditions and production methods of Western porcelains, and the last will involve specific examples from the collection.

Museum Studies at SUNY Geneseo

CHELSEA BUKOWSKI

Chelsea Bukowski, Student Association Arts and Exhibitions Coordinator and Curator of the Kinetic Gallery at the MacVittie College Union will discuss her work in the ARTH 388: Museum Studies Theory to Practice class. She will introduce the work of the three artists the class will be showing in an exhibition at the library and draw on her experience as Curator of the Kinetic to talk about public programming, and the behind-the-scenes work of museum studies and exhibition design.

Student Support in the Lockhart, Lederer, and Bridge Galleries

MARY MARGARET SODERQUIST

The Lockhart, Lederer, and Bridge Galleries are critical components of the arts on campus particularly with the waning of the Studio Art Major. These galleries along with the Kinetic will ensure the continuation of arts programming on campus. As one of a team of students interning and working for Cynthia Hawkins, Mary Margaret will discuss the role of the galleries on campus, as well as the work that she and other students do promote and install exhibitions for the campus gallery system. This work includes preparing graphics and editing promotional material, installing labels and hanging work.

Collections Work at the Livingston County Historical Society

KALA DESTEFANO

The Livingston County Historical Society is an important local institution and repository of regional history. Two students including an Americorps worker and an Intern will discuss their work in collections management, research, and education. The experience of inventorying, cataloguing, and transferring records into the PastPerfect system combined with forays into object conservation synthesized a multifaceted work environment. The size and community education focus of the institution allowed involvement in public programming that exemplifies the goal of Strategic Community Partnerships. Such visitor outreach programs have brought Geneseo students in contact with the local community and educated them about their college town. By bringing History, Anthropology, and Interdepartmental classes into the museum we've worked to promote local history, museum studies, and use and presence of the museum as a resource for academic research.

2C • BIOLOGY KNIGHTSPOT

Healthcare Disparities Monologues

FACULTY SPONSOR: SUSAN BANDONI, BIOLOGY

SESSION CHAIR: QUEENY PAN

Healthcare Disparities Monologue

QUEENY PAN, HANNAH CIVITA, SEAN ENDRESS, JOANN LAM, MARIANNE MACALOSO, ALEJANDRA ROMERO, BRYAN ALERTE, JENNIFER BROODY

Geneseo's Minority Association of Pre-health students is holding a program on healthcare disparities in a series of vignettes. Healthcare disparities refers to the gap in the quality of health and healthcare due to socioeconomic status, ethnicity, and education level. By performing the lives of those directly affected by the gaps in healthcare, we hope to raise awareness of the situations caused by a healthcare system that can be improved. In this theatrical performance, we hope to not only raise awareness but provoke thought, evoke discussion, and incite action in regards to eliminating these disparities.

2D • BIOLOGY & MATHEMATICS

WELLES 24

FACULTY SPONSORS AND SESSION CHAIR: CHRISTOPHER LEARY, MATHEMATICS AND GREGG HARTVIGSEN, BIOLOGY

Strategies for Controlling Poliomyelitis in Pakistan

MICHAEL COOPER, MEGAN SMITH, DANIEL PAYNE, RACHAEL RUTLEDGE

Poliomyelitis is a viral disease that is contracted when an individual is infected by the poliovirus. The wild poliovirus was eradicated from the United States in 1979 (Strebel *et al.* 1992), but it is still endemic in Pakistan, Afghanistan, and Nigeria (The Global Polio Eradication Initiative 2010). We studied the dynamics of poliovirus in Pakistan using a differential equation model. We examined how vaccination strategies and efforts, levels of dehydration, and public sanitation affect the spread of the virus. The model shows that there is a need for vaccination in order to eradicate poliomyelitis in Pakistan. High levels of dehydration in the population increase the length and severity of epidemics. We found that better systems of public sanitation decrease the rate of contact with the poliovirus at a young age, therefore increasing the number of susceptible individuals. The disease remains endemic in the population unless the number of people in a population who have acquired immunity through infection or vaccination reaches a certain threshold. Our results suggest the best approach to limit the spread of polio is to focus vaccination efforts on younger individuals.

A Model to Evaluate the Effectiveness of Random, Ring, and Hub Vaccinations as a Countermeasure Against Influenza Epidemics

STEPHEN RUSWICK, ELIZABETH WAYE, TARABETH GERRITY, WALTER SOJDA

Influenza is one of the most widely spread diseases in developed countries. Although influenza vaccinations are commonly available, further research into viable vaccination strategies could be applied to prevent future epidemics. We used data from a paper from Samzuzzoha et al. and developed a network based model of influenza epidemic dynamics. We tested three vaccination strategies: vaccinating random individuals, vaccinating all the contacts of infected individuals in a ring, and vaccinating highly connected individuals, called hub vaccination. We have also allowed for variation in government response time to the epidemic by delaying the onset of vaccination. Our model suggests that ring vaccination is the most effective at limiting the total number of individuals infected, the number of individuals infected at the peak of the epidemic, and length of the epidemic. These results are of interest to epidemiologists, especially those working in government, because they can be used to hinder the severity of epidemics.

Modeling the Effect of Temperature on the Spread of Chikungunya

NICOLAS PETERSON, MATTHEW SALHAB, MARK BURGESS, YALE LEE

Chikungunya is a vector-borne viral disease transmitted to humans by Aedes spp. mosquitoes. Originating in central Africa, Chikungunya emerged in several Indian Ocean islands and southeast Asia in 2006. Chikungunya virus has undergone a genetic mutation that has allowed it to emerge in more temperate Europe and pose a greater threat among susceptible populations. We have modified a differential equations model of Chikungunya transmission between mosquitoes and humans to incorporate the effect of temperature on the mosquito population. We investigated the effects of temperature shifts and temperature variability on the spread of Chikungunya. Higher temperatures are correlated with increased larval survival and a reduction in larval development time. Our model suggests that a temperature-driven increase in the susceptible mosquito population will result in a greater number of infectious humans. Many models of mosquito-borne diseases do not incorporate temperature despite its effect on mosquito population dynamics. Consequently, our model is of interest to epidemiologists modeling Chikungunya and other mosquito-borne diseases because of predicted increases in temperature due to global climate change.

Modeling the Spread of Disease on Small-World Networks with Adaptive Host Behaviors

NOAH DUKLER

Individuals exhibit the behavior best suited to preserve their well-being in a given situation. During an epidemic an individual may change their behavior to reduce the chance of infection based upon how severe they perceive the risk of infection to be. This model examines the consequences of individual's dynamic adoption of disease avoidance strategies based upon knowledge of their neighborhood's conditions. Our work suggests that behavior is important solely when hosts are highly aware and little rewiring of the network has occurred under condition in which the hosts have a short memory. We suggest this occurs because the rewired edges normally act as shortcuts for the disease to cross the network and under conditions of high host-sensitivity and low rewiring enough of the bridges are effectively "shut down" to return the network to a circulant-like state which is naturally unfavorable for disease transmission. This has implications for determining how strictly self-imposed disease avoidant behaviors must be adhered to in order to prevent the systemic spread of disease and in what types of communities educating individuals to encourage them to alter their behavior will ever be an effective use of resources.

2E • COMPUTER SCIENCE SOUTH 235

Computer Science

FACULTY SPONSOR AND SESSION CHAIR: HOMMA FARIAN, COMPUTER SCIENCE

Investigating Optimal Beer Pong Strategies through Stochastic Computational Modeling

HERB SUSMANN

Monte Carlo algorithms are a class of computational techniques that use randomized simulations to investigate the behavior of complex systems. Such an approach has been used to investigate the best strategies for board games including Chess and Go. We applied a randomized algorithm to the problem of finding the optimal strategies for the popular game of "Beer Pong", in which two teams of two players each take turns throwing a Ping-Pong ball at a pyramidal arrangement of circular receivers. Strategies are determined by the order in which receivers are targeted and when special rules are invoked. The game was modeled as a series of throws in which each throw's probability of successfully landing in a target was sampled from a random distribution. Data was collected for the number of throws required to win the game if played by a specific strategy. The data was analyzed in order to determine the optimal strategy within statistical significance.

A Distributed Evolutionary Approach to Image Approximation and Compression

HERB SUSMANN, STEPHEN KOWALEWSKI

Genetic Algorithms find optimal solutions to problems by modeling the biological processes of natural selection, mutation, and genetic recombination. We used genetic algorithms to find a set of overlapping colored polygons that closely approximate a raster image in order to investigate the value of such a method for image compression and scaling. As this approach takes a large amount of memory and processing, we developed a more advanced algorithm that runs in parallel on a computing cluster. Each node in the cluster evolves its own subpopulation and periodically shares its best results with the nodes. Our presentation will contain an overview of genetic algorithms, a discussion of how they apply to our project, and will conclude with a demonstration of our results. ***Selected for presentation at Consortium for Computing Sciences in Colleges — Northeastern Region 2013, Albany, NY***

2F • EDGAR FELLOWS MISCELLANY IV

WELLES 121

SESSION CHAIR: JOE COPE, HISTORY

From Eggs to Aardvarks: A Cross Cultural Study on Factors that Affect How We Eat

AVERY KRAFFT
FACULTY SPONSOR: ELAINE CLEETON, SOCIOLOGY
An exploration into how religion, gender, ethics, and culture influence dietary practices. The study compares eating practices common to the United States, France and Japan.

Eating Disorders in Literature

LOGAN MAHLUM
FACULTY SPONSOR: KEN COOPER, ENGLISH
In the past several decades, eating disorders have become a familiar concept to Americans. Anorexia nervosa and bulimia nervosa in particular have become iconic in celebrity culture, but are also a growing medical concern primarily for young women in their teens and twenties, but increasingly other demographics as well. My presentation will focus specifically on how this growing awareness of eating disorders is reflected and perpetuated in literature from the late 1970's to the present day. I will look specifically to changing patterns of genre, agency, and the glorification of eating disorders in particular texts in an attempt to analyze how anorexia nervosa and bulimia nervous are treated differently over the decades. The ultimate goal of my research is to establish trends in eating disorder literature from the past fifty years and attempt to determine how these trends reflect or influence the perceptions of eating disorders in American culture.

The Blame Game: How Cholera Discourse Relates to Relief Efforts

KAITLIN WILCOXEN
FACULTY SPONSOR: JOSEPH COPE, HISTORY
In the modern era, cholera is a highly treatable disease and yet outbreaks routinely kill thousands of people a year. Most of these outbreaks occur in countries that do not have well organized and institutionalized health care systems, therefore treating and containing the disease is difficult. Once a cholera epidemic begins both internal and external relief efforts are influenced by societies' perception of the epidemic, especially who is to blame. Therefore, it is important to analyze the kinds of meaning attributed to outbreaks of cholera in order to understand the relationship between how we discuss the disease and how we respond to it. I will be discussing these issues as related to historical cholera outbreaks in India and Great Britain and more modern epidemics, including the outbreak in Haiti.

2G • EDGAR FELLOWS MISCELLANY V

WELLES 123

SESSION CHAIR: DAVID LEVY, PHILOSOPHY

Justice Beliefs and Existential Motivations

ANDREW CHRISTY
FACULTY SPONSOR: JIM ALLEN, PSYCHOLOGY
Social psychological theory has suggested that we are motivated to believe that the world is a just, fair place. This belief is psychologically adaptive; it enables confidence that our efforts and sacrifices in the present will be rewarded in the future, and more generally supports our understanding of the world as orderly and understandable. The purpose of this project is to determine whether justice beliefs also function to protect us from anxiety related to death. Specifically, I am investigating whether reminders of mortality cause participants to react more negatively to an innocent victim, and whether these negative reactions reduce participants' awareness of death and mortality. Offering negative evaluations of an innocent victim's personality is a way of preserving justice in the world; if the victim is a worse person, they are more deserving of their victimhood. A measure of individual differences in just-world beliefs is also included, to determine whether these effects are limited to participants who explicitly endorse justice beliefs. If mortality reminders do cause an increase in victim derogation, this suggests that justice beliefs are at least partially motivated by our concern with death, and that perceiving justice in the world is a way of alleviating existential anxiety.

Examining Behavioral and Social Outcomes Among Maltreated Children in Therapeutic Group Homes

OLIVIA DERELLA
FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY
As an introduction to my Capstone project, I will provide a brief background on the field of developmental psychopathology, a discipline focused on the understanding of the development of problem behaviors and psychological disorders not as a function of simple cause and effect, but as reciprocal processes between the individual and the environment that over time may lead to pervasive dysfunction. The primary focus of my presentation will be the results of my independent exploration into this topic, within a population of children with diverse maltreatment histories and high levels of problem behaviors. While all of the children in the study have experienced trauma, most have been placed in therapeutic group homes because of failure to integrate well in typical foster care settings, due to disruptive behaviors, psychopathology, or unhealthy attachment patterns. My research provides an opportunity to examine whether various types of maltreatment or other developmental traumas are related to certain clusters of problematic outcomes. I will discuss how differences in risk factors for developmental trauma may be connected to psychopathology, specific types of maladaptive behaviors (e.g., anxiety, depression, aggression), and social competence. My findings suggest that age, gender, and number of previous foster placements also influence outcomes.

De Facto Segregation in New York State Public Schools

ANNIE O'NEILL
FACULTY SPONSOR: JANE FOWLER MORSE, SCHOOL OF EDUCATION
This capstone project explores the current reality of *de facto* segregation in public schools in New York State. It evaluates the Brown v. Board of Education decision as well as other Supreme Court cases that have dramatically impacted schools throughout the United States. Additionally, it focuses specifically on New York State legislation and court decisions that have influenced the educational opportunities available for students of varying racial and socioeconomic backgrounds, such as the Campaign for Fiscal Equity and Amber Paynter decisions. This investigation seeks the root of the indisputable educational disparities in New York, including housing policies and school funding methods that resulted in segregation, and hopes to offer plausible solutions to provide a better education to students affected by these disparities.

2H • EDGAR FELLOWS MISCELLANY VI

WELLES 119

SESSION CHAIR: RON HERZMAN, ENGLISH

Narrating 9/11

CONNOR BURGEVIN
FACULTY SPONSOR: BETH MCCOY, ENGLISH
How does one both interpret and reconcile a disaster such as 9/11? Having lived through such an event, I remember the following weeks only as a blur of newspaper clippings and TV reports. In my talk, I will examine the role that the media plays in the reporting of such events to the public, and I will touch on how we as various societies form our own narratives about events that break the predictable routine of our modern day lives. Do such events provide us with a momentary glimpse at the underlying structural inconsistencies of our nation, or do they bring us together, or both? What I find most fascinating is the role that the media plays in our interpretation of such events, and I hope you will take a few minutes on April 16th to come engage in a discussion of these issues.

Environmental Scanning in Small Local Businesses

SAMANTHA CATRON
FACULTY SPONSOR: PETER MARKULIS, SCHOOL OF BUSINESS
In my presentation I will be discussing the effects of "environmental scanning", a strategic planning tool, on small businesses in Geneseo and the surrounding towns. Environmental scanning, which basically amounts to keeping an eye on trends that affect your business operations and reacting accordingly, is a topic that few scholars have researched. However, it is an important tool for small business owners, and that is why I want to understand it and share my understanding with anyone who cares to listen.

The Media, Political Talk and Debate Programs, and Public Opinion

SAMUEL WHITE
FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
Since the founding of our country, media has played a role in public opinion. Through written word, politicians rose and fell as public opinion formed based on the stories printed about them. With the advent of television, a new type of journalism began to form as, for the first time, people could watch politicians and pundits debate and discuss the issues. Some would use this new medium for electoral purposes, others to seriously discuss the problems facing our country. Some would yell and scream at each other, others would spout their own views to an audience willing to receive them. And

still others would use the new medium for political comedy and satire. The one thing all had in common was that they shaped and changed public opinion. This talk will cover all of the above, while also illuminating some of the challenges in the creation and production of a political television program here at SUNY Geneseo. Come by for an informative, engaging, and fun presentation on the intersection of media and public opinion.

2I • ENGLISH WELLES 128

Humanities: The Soundtrack

FACULTY SPONSOR AND SESSION CHAIR: GLENN MCCLURE, ENGLISH

The Humanities Soundtrack: Vincenzo Galilei, Bach, and Mozart

LOIS LOHRASEB

This session will explore the alignment of classical, music with the major themes and authors of Humanities II. Just as the visual arts reflect the enduring questions of Philosophy, History and Literature, we also find that music offers key insights into our study of the Humanities. In this session we will see how both scientists and musicians make the transition from royal servants to self-made "rock stars" during the 16th - 18th centuries. This session will unveil a prototype web-based tool for Humanities faculty and students that provides easy access to video, audio, and other online resources for the inclusion of music in the study of the Humanities at Geneseo.

The Humanities Soundtrack: Beethoven, Dvorak and Shoenberg

SARAH DEMARCO

This session will explore the alignment of classical, popular, and folk music with the major themes of Humanities II. Just as the visual arts reflect the enduring questions of Philosophy, History and Literature, we also find that music offers key insights into our study of the Humanities. Beethoven music reflects many of the same trends we find in 19th c. Romantic authors. Just as Alexis de Tocqueville found inspiration in American democracy for the first French Constitution, Antonin Dvorak found inspiration in American folk music for his New World Symphony. Arnold Shoenberg's break from the standard tonality reflects the loss of first principles in the mid 20th c. This session will unveil a prototype web-based tool for Humanities faculty and students that provides easy access to video, audio, and other online resources for the inclusion of music in the study of the Humanities at Geneseo.

2J • ENGLISH

BRODIE BLACK BOX THEATRE

Student Directed Productions in Theatre and Musical Theatre

FACULTY SPONSOR AND SESSION CHAIR: MELANIE BLOOD, ENGLISH

William Shakespeare and the Lesbian Continuum

KATE ROYAL, JULIA MASOTTI, GABBY FORMICA, RUSSELL ALLEN

This presentation is an excerpt from a lecture given last semester analyzing key female relationships from the works of Shakespeare through the lens of Adrienne Rich's "Compulsory Heterosexuality and Lesbian Existence." The presentation will focus on the portion of the lecture discussing Rosalind and Celia in *As You Like It* and will be accompanied by a scene study analysis (with Masotti, Formica, and Allen) to illustrate how these feminist theories impact a director's choices in developing a production of the play.

Bringing Berlin to Geneseo: Vocal Miscellany's Cabaret

KATIE KELLER, JULIA MASOTTI, KATELYN HEARFIELD

This panel will be a discussion by Julia Masotti, Katelyn Hearfield, and Katie Keller, who directed, musically directed, and choreographed this year's Vocal Miscellany production of *Cabaret*, respectively. The production was part of an Edgar Fellows capstone project for Masotti and Hearfield, who immediately brought Keller on board to join them in this venture. Additionally, their entire team of designers, cast, and crew was comprised of students who worked over the course of winter break to stage a full production in three weeks. The three students who spearheaded this process will be discussing the challenges of the process, including collaboration and teamwork, followed by excerpted performances from the show.

2K • ENGLISH WELLES 133

Virtue or Desire? Medieval and Renaissance Literature

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH
SESSION CHAIR: SARAH LAWSON

Gender Roles in Elizabeth Cary's Tragedy of Mariam, the Fair Queen of Jewry

CASEY STILLER

My paper argues that Elizabeth Cary's play, *The Tragedy of Mariam, the Fair Queen of Jewry*, challenges the traditional gender roles of Cary's time, where women had to be obedient and loyal to the men in their lives. This is shown through Mariam's main speeches, the strong characterization of the women in the play, and the genre of the play as a closet drama. It also demonstrates how Cary's own life influenced the play and its theme. In my essay, I show how the play demonstrates the hypocrisy of the idea of how a woman was supposed to act in this time period versus how she was treated if she actually did hold onto the virtues that were expected of her.

Finding Balance: Inner Conflict and Frame Narrative in Gower's *Confessio Amantis*

JAMES RYAN

In *Confessio Amantis*, John Gower makes use of frame narrative to examine two conflicting sides of his personality: the pious and the sexually obsessed. Through an exploration of the seven deadly sins and how they pertain to the state of being a lover, Gower is able to discover a balance between these seemingly opposite sides of his psyche. By finding this balance, Gower reaches a sort of self-realization in his work, as Amans finally recognizes his name to be John Gower.

The Beloved to Her Poets: Femininity in Early Modern Poetics

SAM PREMINGER

This presentation will examine progenitors of femininity in English poetry to trace its evolution throughout the 16th and 17th centuries, considering applications of androgyny, gender inversion, and the crafting of a distinctly female depiction of desire. Works by Queen Elizabeth I, Lady Mary Wroth, and Katherine Phillips will be discussed within the framework of the English poetic tradition and the cultures from which their writing emerged in order to realize the historic role these women played by promoting egalitarianism of sex in our own literary heritage.

2L • ENGLISH WELLES 131

Words, Words, Words: The History of the English Language II

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH
SESSION CHAIR: JENNA CECCHINI

Etymological Crafting: Handiwork

EMILY OBERDORF

Handiwork's handiwork is a contested etymological mystery. Its evolution is often set into three separate avenues of possible explanations. By analyzing the past of the English language, discovery of the lineage behind "handiwork" becomes apparent through word appearance and grammar conventions. The likelihood of the creation of "handiwork" through hand, a conjunctive, and work; handy and work; or as a backformation is explained through word dating. The shifts from Old to Middle English and from Middle to Modern English explain the uncertainty of a commonplace word.

Jungle: From Sanskrit to Semen

REBECCA MILLER

This paper describes the origins of the word "jungle," from its beginning as the Sanskrit jangal to the modern jungle juice, meaning mixed drinks or seminal fluid. The word has changed over time, and is used in settings as varied as the military and the stock market. However, "jungle" has continued to describe those things the societies who use it find most confusing, tangled, or untamed.

2M • GENESEO AMBASSADORS

SOUTH 328

SESSION CHAIR: CAROL LONG, OFFICE OF THE PROVOST

Provost Ambassador in Diversity – Street Stories - The Narrative Shleter Project

KEVIN CASTANEDA

FACULTY SPONSOR: CAROL LONG, OFFICE OF THE PROVOST

Through a grant from the Center for Inquiry, Discovery and Leadership, I was given the opportunity to listen to the life experiences of homeless individuals in New York City. With the resources given to me by the center, I was able to collect interviews from a diverse and unique spectrum of humans who have experienced a view of society many of us never have to encounter. Through their recollections, recorded outside of churches and shelters and in subway stations, these individuals shared their life stories to be read by others.

Gérard Gouvernet Ambassador in French Language and Culture – Studying Abroad in Quebec

ERIN O'BRIEN

FACULTY SPONSOR: CAROL LONG, OFFICE OF THE PROVOST

This presentation will seek to share my experiences as a Study Abroad Student in Quebec as part of the group presentation to be made by the Geneseo Student Ambassadors on their various experiences and projects.

Frank Vafier '74 Ambassador in Leadership – Improving Clinical Care for the Uninsured: A Community Partnership for Social Justice and Transformational Learning

GRACE TROMPETER, STEPHANIE KELLY, HAYLEY MARTIN, MICHAEL MATTIUCCI

FACULTY SPONSOR: ROSE-MARIE CHIERICI, OFFICE OF THE PROVOST

The Community Health Alliance (CHA), a student-led service organization committed to promoting healthful lifestyles in our local and global communities, partnered with the Geneseo Parish Outreach Center (POC) to purchase an electronic medical records system for the Center. This system will allow the POC to better serve its clients, while allowing CHA members to gain experience with a technology they are likely to see in future careers, participate in data analysis, recognize health disparities, and apply the skills learned in the Geneseo classroom to a problem in need of a solution. This presentation will show the sustainable benefits afforded to CHA members and the clients of the Parish Outreach Center through the opportunity of the Student Ambassador Program with funds provided by the Center for Inquiry, Discovery, and Leadership.

2N • HAITI AND NICARAGUA

SOUTH 244

SESSION CHAIR: BETSY COLON, GRANTS MANAGEMENT

Service Learning Project: Addressing Bullying in Haiti

MAYA SHAH, DALYA KEFI

FACULTY SPONSORS: BECKY GLASS, OFFICE OF THE PRESIDENT AND FATIMA JOHNSON CENTER FOR COMMUNITY

The Union School in Port-au-Prince Haiti strives to empower all their students to become successful and lifelong learners who are creative, engaged, empathetic, and productive global citizens. In the wake of natural disasters and the rise of technology, there has been a steadily increase in bullying amongst students. By applying the best practices model from the University of Arkansas Clinton School of Public Service, we have been able to address the issues of bullying by teaching the students how to identify behaviors, and how to be an upstander in their efforts to combat bullying.

Projects Benefiting Haiti and Nicaragua

GINA VILLAZHINAY

FACULTY SPONSOR: WESTON KENNISON, SCHOOL OF EDUCATION

Organizing projects through the Community Heath Alliance club, such as the school supply drive, handmade picture books, International Night Dinner will benefit Geneseo students and communities in Haiti

2O • HISTORY

STURGES 104

US Corporations and Global Capitalism

FACULTY SPONSOR AND SESSION CHAIR: TZE-KI HON, HISTORY

NICHOLAS SIMMONS, REBECCA BARBER, ANDREW KIRK, JERRY LEE, JESSICA STEUBING

This presentation will deal with the supply chains and other key aspects of various corporations including Samsung, Apple, SONY, and Wal-Mart. Supply chain will be analyzed and compared with overall business efficiency. A question session will follow.

2P • HISTORY

MILNE 109

Wal-Mart: A Case Study of the 21st Century Retailer

FACULTY SPONSOR: TZE-KI HON, HISTORY
SESSION CHAIR: KATHLEEN MAPES, HISTORY

CHRIS MATEER, KATHRYN GEEN, BEN MILLER, JOHN OTRUBA

This will be an abstract examination of the current, 21st century capitalistic template, as reflected in the retail business model. We will introduce Wal-Mart as the primary case study. We will ask the audience to identify with their opinions BEFORE we present, and then the first presenter will begin. Following the presenter, we will have a brief Q&A session. Audience members will thus have to be circumspect in their opinions, evaluating their perspective after each segment. We don't want this to be cut & dry; we want the audience to feel involved, because this presentation is relevant to their lives. This topic broadens on a national and global scale, and affects every student's local economy.We will juxtapose the contrasting contemporary viewpoints on the retail business model, through the critical lens of Wal-Mart. We will compare perspectives that highlight suppposed benefits of such a business model with a Marxist contention.The two schools of thought will be brought to bear: Do we laud the model, for the discount consumer products it affords us, or do we revile it for it's deconstruction of the Fordist labor model and dismantling of local economies?

2Q • MATHEMATICS

SOUTH 338

Math Miscellany II

FACULTY SPONSOR AND SESSION CHAIR: OLYMPIA NICODEMI, MATHEMATICS

Net-Present Value of a Wind Turbine Purchase at SUNY Geneseo

JAMES MCLOUGHLIN

In the past decade, wind energy has emerged as a popular source of renewable energy in both the United States and Europe. In many areas of the United States wind energy has proven to be an extremely clean and cheap energy source. In my talk I will analyze whether or not it will be beneficial for SUNY Geneseo to purchase and operate a wind turbine. The analysis makes use of the Net-Present Value technique to determine the current value of a wind turbine purchase and installation over a twenty year timeframe. We will delve into the various costs and benefits of providing energy with a wind turbine, and touch upon what variables would affect the value of a wind turbine to Geneseo.

Statistical Analysis for Soleo Communications Inc.

BRENDAN MURPHY, ZARINA QUANDT

We will discuss the use of data analysis as an effective tool for improving the business strategies of Soleo Communications Inc. Using principles of conditional probability on data compiled by the company we will illustrate the most successful methods for the company's Direct Merchant Referral service.

Approximations of Pi: A Modern Day Approach Contrasted with Biblical Explanations

MATTHEW SEDAGHATFAR

I will be explaining the Monte Carlo method and how one could use it to approximate Pi. I will then contrast with ancient ideas about the value of Pi. From a cursory reading of Kings, one might lead one to believe that the ancient Israelites believed that Pi equals 3. Perhaps the ancient Israelis believed Pi to be 3 but perhaps a hidden different answer is found in the script.

2R • SCHOOL OF BUSINESS

WELLES 26

School of Business

FACULTY SPONSOR AND SESSION CHAIR: AVAN JASSAWALLA, SCHOOL OF BUSINESS

Differences in Conflict Management Across Cultures

CASEY QUINN, JACOB BLISS, HOLLY GARY, MARY ALDERIDGE, CHARLES CAPLAN

Techniques for handling workplace conflict vary amongst workers across the globe. There are five basic styles of conflict management that are depicted with regard to assertiveness and

cooperativeness: avoiding (unassertive, uncooperative), accommodating (unassertive, cooperative), competing (assertive, uncooperative), compromising (partially assertive, partially cooperative) and collaborating (assertive, cooperative). This presentation will detail the differences in conflict management between the United States, India, China, Turkey, and Brazil. In light of these findings, recommendations will be provided to American managers at home, as well as expatriate managers traveling from the United States to each of these countries.

The Impact of Impression Management on the Supervisor-Subordinate Relationship

JENNY KELLER, CASEY NEELS, RYAN BURNS, IRIS HUANG, JASON SNOOK

Impression management (IM) is the process whereby a person attempts to influence the way they are observed and perceived by others. Virtually all people engage in some level of IM; it is an instinctive habit we take part in when we join a group or an organization. For managers, IM is an inescapable reality of the business world. Therefore, it is critical that supervisors and subordinates alike understand how IM can be used effectively. Workers at all levels in an organization use IM to influence how they are perceived by bosses, colleagues and underlings. In many cases IM can play a crucial role in establishing and maintaining office relations. Though IM can be a powerful tool of influence for supervisors and subordinates within an organization, excessive use can create a highly political work environment and can even hinder motivation. IM, if used appropriately, can build trust between supervisors and subordinates, but the use of too many harmful IM tactics can lead to a workplace where cultural and gender differences become issues of concern between managers and their employees.

Work-Family Conflict in Relation to Human Resources

ROBERT KAHRS, KERRI REUTER

Work-family conflict is defined as a discord in which the responsibilities and stress of work affect the daily non-work life of employees of an organization. Our study on work-family conflict helps conclude why it is important for a Human Resource Department to be concerned about the levels of work-family conflict their employees face and provides some recommendations to HR managers to prevent instances of this conflict. In this presentation, we will share our research findings on the main causes, coping strategies, and long-term effects of work- family conflict.

2S • SCHOOL OF EDUCATION

SOUTH 340

Pre-Service and Graduate Education Students' Research on Literacy

FACULTY SPONSOR: MARIA PERPETUA LIWANAG, SCHOOL OF EDUCATION

SESSION CHAIR: ALYSSA SMITH

Influence of Text Genre and Format in Reader Strategies: An Eye Movement Miscue Study

ALYSSA SMITH, MAGGIE BOQUARD

This graduate course study on eye movementmiscue analysis as literacy research explores readers' strategies and comprehension. Findings regarding effective reading habits of college students will be shared. Implications of these findings will also bediscussed.

Challenging the Use of Basals in Teaching Literacy

STEPHANIE WILLMARTH

This presentation will highlight evidences on why basal reading programs are not the best option for teaching reading. An alternative approach using authentic children's literature will be shared and discussed.

Using Bilingual Children's Literature to Teach Spanish to Grades 4-6 Students

ALEXIS RYTEL

This undergraduate directed study focuses on examining the use of authentic children's literature to teach Grades 4-6 students Spanish. Findings regarding how using literature written in a culturally relevant bilingual language supports elementary students' Spanish language acquisition will be presented. Discussions about the implications of active learning experiences in an undergraduate program will be shared. ***Selected for presentation at 12the Annual Niagara University International Conference on Teaching and Learning, Niagara University, New York.***

2T • SCHOOL OF EDUCATION

NEWTON 204

Geneseo LIVES Program

FACULTY SPONSOR AND SESSION CHAIR: ELIZABETH HALL, SCHOOL OF EDUCATION

The *LIVES Program* is a four-year transition that provides students with intellectual and/or other developmental disabilities the opportunity to learn independence, vocational skills, and functional educational (academic) skills within an inclusive educational community supported by university students, educators, administrators, and community leaders. Students in the program complete a specialized course of study, audit college classes, complete internships on campus, participate in clubs and activities on campus, and present at state level special education conferences.

Comparison and Contrast: First Year College Students with and without Disabilities

ROBERT MAPLESDEN, TYLER BUSH, KRISTA COBURN, JONATHAN KEE, MATTHEW KLEIN, EMILY COOK, JENNA DISKIN, BEATRICE RHOADS, ELIMARY VAZQUEZ

Student in the LIVES (Learning Independence, Vocation, and Education Skills) Program (a program for students with intellectual and/or other developmental disabilities on campus) examined their strengths and struggles as first year students on campus. We wanted to know if anyone had the same strengths and struggles. We surveyed approximately 75 Geneseo college students on "What were your strengths and struggles when you were freshman?" The students in the LIVES Program then compared their strengths and struggles to those of Geneseo's college students and will tell what they learned from this survey. The results of the survey showed that the both populations of students had many of the same struggles and strengths. The results of the survey will be shared.

The Next Step in College - Advocating for One's Self and Selecting the Right Path Program

PATRICK CHMELA, ANDREW SASS, MARIELY VAZQUEZ, LAUREN DALY, KEITH HOLMES

The Next Step in College - Advocating for One's Self and Selecting the Right Path Program Students in the LIVES (Learning Independence, Vocation, and Education Skills) Program (a program for students with intellectual and/or other developmental disabilities on campus), surveyed approximately 75 Geneseo college students on "What are the Next Step in College". The students developed a survey about advocating for oneself, how to determine the next step in college, what classes to take, how to be successful in college classes, what strategies helped them to be successful learners, etc. The students will share the results of their survey and tell what are some of the strategies they use(d) as they audited classes for the first time and what were strategies that college students use when taking classes. The sophomores will share their experiences with auditing Geneseo's college classes, how they selected the classes and strategies that were successful for them.

What the Future Holds: Looking Ahead to Life After Graduation

MELISSA PRICE, CHRISTOPHER SCHEIB, FRED YOUNG

Students in the LIVES (Learning Independence, Vocation, and Education Skills) Program, (a program for students with intellectual and/or other developmental disabilities on campus), surveyed Geneseo's college students on their views about "Employment and Advocacy". The students will discuss employment opportunities available to them both on and off campus, their hopes and dreams for future employment, and how the LIVES Program has enabled them to expand job opportunities to them. The students surveyed their internship college students as to what skills and behaviors do they think employers are looking for in new hires and they surveyed their internship supervisors to determine what they are looking for in new hires. The LIVES students will provide tips and suggestions based on their experiences and what they gathered from their research. They will also share how they have advocated for their choices, strengths and struggles in their employment decisions and that the future holds for them job wise.

How to be an Effective Role Model

JEWLEY SPENCER

Why do people look up to some people and not others? Why do people try to copy other people? I am a role model to others and people look up to me for help, friendship, and leadership. I researched how to be an effective role model, why be a role model, the benefits and problems with being a role model, characteristics of good role models, and famous role models. I surveyed college students to see who is their role model and why? I surveyed LIVES Program students to see who is their role model and why? I surveyed professors to see who is their role model and why. I will share what I found and give tips on how you can be a role model.

2U • SOCIOLOGY STURGES 108

US Health Care in Transition

FACULTY SPONSORS AND SESSION CHAIR: ELAINE CLEETON, SOCIOLOGY AND
SUE ANN BRAINARD, MILNE LIBRARY

US Health Care in Transition

SADIE BAKER, DONTE BOTHEL, JASON CHON, THOMAS COLLINS, JOON MIN CHUN, MATTHEW COUCH, DEIRDRE CROKE, LENETTA DAZZELL, SARAH DEWEY, RHONDA DIPRONIO, AARON DORFMAN, RACHEL FRIEDMAN, KLARISSA GARCIA, AMANDA GARCIA, JENNIFER GHIO, ANNA GOYZUETA, JILLIAN HALPERN, BRIGID HALPERN, EUN HWANGBO, MUKARRAM ISMAIL, FANGYUAN JIN, JONATHAN JOSEPH, MATEUSZ KASZA, CHELSEA KROTJE, ANGELA MARESCA, MATTHEW MASON, PHILLIP MASTERS, MATTHEW MORSE, GEDNEY MOSHER, KATHERINE MOYNIHAN, JOHN NAGEL, CHRISTOPHER PREZIO, FORREST REGAN, MARY ROSS, JACQUELINE ROULETTE, RHEA RUBIN, MICHAEL SCHOLE, MICHAEL SKROUPA, BRIAN SULLIVAN, JOSEPH TERESI, JOSHUA TOBIAS, ZOE VAN ORDEN, KRISTIN VICECONTE, ZACHARY VICK

During the 2012 US Presidential election, American health care became a political issue dividing personal responsibility voters from supporters of a social safety net. A study of shifts in beliefs about the Affordable Care Act, as influenced by campaign and PAC ads, reveals limited understanding of existing health insurance coverage as well as of prospects for change with the implementation of "Obama Care."

2V • SOCIOLOGY MOVED T0 3W

CONCURRENT PRESENTATIONS 3 • 2:55 - 4:10PM

3A • ANTHROPOLOGY STURGES 106

Anthropolgy 1

FACULTY SPONSOR AND SESSION CHAIR: DENICE SZAFRAN, ANTHROPOLOGY

What Does a Liberal Arts Education Mean?

CARLY ANNABLE

While there has been a significant amount of quantitative research on higher education, there has not been as much qualitative research on the liberal arts. This presentation will be on original research dealing with what students are looking for in a liberal arts education, interspersed with data on professors' view of the curriculum.

The Effectiveness of Indirectness

GREGORY PALERMO

A paper I wrote for last semester's Dante and African American Literature course linked the practice of signifying in African American culture with the poetics of Dante in his *Divine Comedy*. Signifying, a practice that the *Oxford Companion to African American* Literature calls a "culturally-specific form of irony," relies on indirection and social context in order to insult. While writing the paper, I came upon an idea that I wanted to further explore: that type of linguistic indirectness is more effective than directness as a mode of discourse--or, in the case of Dante's poem, political protest--because of the resourceful use of community. Using a combination of formalism, speech act theory, and a little quantum mechanics, this paper examines the effectiveness of indirect language and camaraderie in present-day mass media satire like *The Colbert Report*.

Political Discourse in the Media

BRANDON SHUFELT

There is a complex relationship that exists between the media, political candidates, and the electorate. Especially during election seasons, these three groups influence each other in different ways, and for different reasons, in order to achieve certain ends. This session will use a sociolinguistic perspective to analyze this complex relationship, touching on accommodation theory, agenda setting and media bias, and will end with a brief summary of a research project done on the 2012 Presidential Election.

3B • ANTHROPOLOGY STURGES 109

Anthropology 2

FACULTY SPONSOR AND SESSION CHAIR: ROSE-MARIE CHIERICI, ANTHROPOLOGY

Cross Cultural Exploration of Patient Perception and Experience in Borgne, Haiti and the Geneseo Parish Outreach Center

GRACE TROMPETER

Each illness we experience is an individual journey. We first recognize undesirable symptoms, question their origin, and then seek care to ameliorate our suffering. Once we have recovered, we share our story with others. Depending on the culture one lives in, different societal forces contribute to and control perceptions of illness and healing, as well as access to health care. The goal of my research is to identify similarities and differences in patient experiences cross-culturally, including what brings patients to the doctor, what are the boundaries that prevent patients from seeking care, and what are the expectations patients have for their visit. In this presentation I will report on the results of my fieldwork, which I carried out through patient interviews and participant observation both at a hospital in rural Haiti and at the Geneseo Parish Outreach Center in rural Livingston County. I hope to show that although patients in both the developed and developing worlds face barriers when seeking care, they persevere with the hope that their health can be restored and their suffering put to an end.

Female Genital Cutting in Somalia

ERIN GIRARD, DANA FITZPATRICK, HAYLEY MARTIN

Somalia has a rich cultural history. A patriarchal social structure and stratified gender roles, augmented by conservative religious beliefs create an oppressive environment for Somali women. The female genital mutilation practice reflects the male dominated power structure in Somali society, and is perpetuated by traditional myths and lack of education. Devastating physical and psychological complications following the procedure are amplified by a lack of access to medical care due to a "quasi-irrelevant" health care system. This tradition has lasted for generations and continues today despite international outcry. Misconceptions based on religious grounds, economic status, social stigma, and arguments in support of FGM as a cultural practice has continued this tradition in Somalia, and today, globalization has led to the spread of FGM onto a global scale. However, despite the practice's persistence, in recent years there has been a growing movement to outlaw and eradicate the cutting of young girls. Actions have been taken not only by non-governmental, multilateral, and international organizations, but also by individuals like Edna Adan. Global awareness of the issue, the promotion of women's health rights, and the education of Somali women will be essential to the abandonment of this tradition.

3C • EDGAR FELLOWS MISCELLANY VII WELLES 121

SESSION CHAIR: JOE COPE, HISTORY

Yeats as Bard: Poetry and Performance

TIMOTHY CAUGHLIN

FACULTY SPONSOR: ROB DOGGETT, ENGLISH

Often dismissed as an eccentricity, in the first decade of the 20th century, William Butler Yeats experimented with, and championed a new style of poetic performance. He and his colleague Florence Farr gave lectures explaining and demonstrating chanted poetry accompanied by a lyre-harp, or

"psaltery." Their goal was for a poetic experience that was accessible, enchanting, and aurally stimulating. This presentation will include a discussion of the historical significance, and implications of these ventures, their applicability, and a demonstration of this style of performance. For his senior capstone project, Timothy Caughlin has attempted to construct a lyre-harp akin to the unique and customized "psaltery" that Yeats and Farr used. Please join and enjoy a re-creation of a lost art.

Monoliths: A Work in Progress

RAY FERREIRA

FACULTY SPONSORS: DAN DEZARN, STUDIO ART, AND CRYSTAL FERRELL, THEATRE & DANCE

In *Monoliths*, I attempt to create two 20 ft tall sculptures and 7 performance pieces. I will be discussing the theoretical framework surrounding the production of this project. In addition, I will be discussing the physical construction of the project, the problems that have arisen, and the current state of the project.

Behavioral Plasticity: The Responses of Non-Human Primates to Human Encroachment

BENJAMIN SAPADIN

FACULTY SPONSOR: BARBARA WELKER, ANTHROPOLOGY

As human populations expand and inhabit new areas, the alteration of the existing habitats can have a profound effect on indigenous wildlife. Nonhuman primates, with an uncommon degree of behavioral diversity and flexibility, exhibit a wide range of behavioral responses to human encroachment, which can potentially allow some species to thrive in altered environments. The purpose of the present study is to investigate the relationship between instances of habitat alteration caused by human encroachment and the development of novel or altered behaviors in nonhuman primate populations. Although individual instances of alterations in nonhuman primate behavior are well documented, the connection between these behavioral changes and human action is not fully understood. The hope is that an understanding of the plasticity of primate behavior in the face of human expansion can prove to be a valuable asset for future primate conservation efforts.

3D • EDGAR FELLOWS MISCELLANY VIII

WELLES 123

SESSION CHAIR: OLYMPIA NICODEMI, MATHEMATICS

The Role of Pathway Complexity in Visual Working Memory

MADELINE KRAUTSAK

FACULTY SPONSOR: KEN KALLIO, PSYCHOLOGY

Visual working memory is an important component of human cognition; it helps control the type and amount of information that we can process and use over short periods of time. Researchers are still trying to clarify abilities and limitations of this system. This study addresses the way in which various pathways affect people's abilities to detect change in sequences of stimuli. A pathway is simply the imaginary line that connects each stimulus as it appears in a sequence. In particular, this study examined the differences in change recognition in pathways that crossed versus pathways that did not cross.

Synthetic Optical Spectra of Active Galactic Nuclei with Derivations of Physical Parameters from BOSS Data

EVAN LOSH

FACULTY SPONSOR: AARON STEINHAUER, PHYSICS & ASTRONOMY

Active galactic nuclei (AGN) are the most luminous objects in the universe, and AGN spectra studies can provide information about extreme astrophysical processes and the early universe. We present model spectra from 370 nm to 1000 nm of AGN that are synthesized with physical parameters fit to calibrated spectra from the Baryon Oscillation Spectroscopic Survey (BOSS), yielding results for central black hole mass and other quantities, using redshifts from the BOSS calibrations. The physical processes considered in the synthesized spectra include thermal emission from an accretion disk at Local Thermal Equilibrium, synchrotron radiation, atomic emission, and reddening. The BOSS spectra were selected to fill the parameter space of black hole mass, inclination, and redshift up to 3.6. We compare our measured parameters to parameters derived independently.

Characterizing the Role of the Actin-binding protein, Tropomodulin, in *C. elegans* Excretory Cell Morphogenesis

SAMANTHA SMITH

FACULTY SPONSOR: ELISABETH PAULSON, BIOLOGY

Tropomodulins are proteins widely expressed in all complex animals that help to regulate the shape of cells by modifying the cytoskeletal filament actin. *C. elegans* worms lacking the tropomodulin TMD-1 show defects in development of the excretory cell, which acts as a kidney for the worm. The excretory cell extends four canals out from the cell body so that the entire cell looks like a great letter H stretching the length of the worm. In *tmd-1* mutants, canals extend partially or not at all, and develop a dramatic crinkled appearance. The mechanism for this interference is unknown; however several possibilities are being explored. Excretory canals are often affected by mutations in genes also needed in neuronal axon guidance. Knocking down one of these guidance proteins, *mig-10*, produced a similar phenotype to that of the *tmd-1* mutants. However, further experiments did not uncover any neuronal guidance defects in *tmd-1* mutants. Instead, it is more likely that TMD-1 is essential for structural support or an adhesion complex that anchors the canals as they extend. Insight into tropomodulin's role in single-celled tube formation can further our understanding of how these tubes form in many organisms, including the smallest capillaries in humans.

3E • EDGAR FELLOWS MISCELLANY IX

WELLES 119

SESSION CHAIR: ALICE RUTKOWSKI, ENGLISH

An Experiment in Artificial Language Creation

JOE FLYNN

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH

Artificial languages, colloquially called "conlangs," have sprung up in recent history for a variety of reasons. L. L. Zamenhof's Esperanto is an attempt at a universal lingua franca to break cultural boundaries; John Quijada's Ithkuil is a language so precise and logical that certain nationalist groups learn it to sharpen their minds; and J. R. R. Tolkien's Elvish colors The Hobbit for millions of readers and moviegoers. My project has been to create a conlang, called Vedh, for artistic use in fiction. Vedh explores what could happen if a creole arose from the pidgin (makeshift crossover) between a synthetic language, which can express a whole sentence in a single word and which does not distinguish between an object and the action it performs; and a proto-Germanic language, which relies on word order and structure. More than just a compromise between these two forms of language, Vedh associates concepts in new ways that call attention to patterns that speakers of English may take for granted.

Muso Jikiden Eishin Ryu Iaido

CALLA GOEKE

FACULTY SPONSOR: VINCENT MARKOWSKI, PSYCHOLOGY

Martial arts are very well known throughout the world as methods of learning how to fight in different manners. However, what many people do not know is that martial arts as a collective, as well as individually, have a rich history and a full philosophical background. Iaido is one such art, being the art of the sword that was popular among samurai. I have experience in one ryu, or school, of Iaido in particular; Muso Jikiden Eishin Ryu Iaido. And yet, despite my 4 ½ years of experience, I am still a raw beginner, simply due to the sheer amount of information and philosophies that lie lurking behind Iaido's deceptively simple surface. With this in mind, I set about researching everything I could find for this thesis project. It is very limited, as there is enough information to fill a lifetime, but it is a good basis for a beginner like me.

Philosophy and Theory of Chinese Music

SALLY SCHAEFER

FACULTY SPONSOR: JIM KIMBALL, MUSIC

Eastern music theory is a topic traditionally unaddressed not only by undergraduate music programs in the United States and all of the Western world, but also by most students enrolled in university music programs in East Asia. The apparent lack of student study in Chinese music theory makes it an appealing area for undergraduate ethnomusicological research. Many aspects of Chinese music theory, from scale systems to types of instrumental ensembles, are based on Asian philosophy; therefore, it is largely through a philosophical lens that we interpret Chinese music. Although Chinese music cannot be analyzed in

terms of chords and progressions, as is common practice in Western music theory, there are certain aspects of Western music theory that are applicable to the study of Chinese music and music theory. In this presentation, we will consider the philosophical background from which Chinese music theory developed, analyze elements of the music from the perspectives of both East Asian and Western music theories, and trace Chinese music theory from its historical beginnings to its presence in contemporary compositions.

3F • ENGLISH WELLES 133

The Bible Begets Literature: Biblical Influences on Literary Texts

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH
SESSION CHAIR: NICOLE HAZLETT

Anne Sexton, Poet off the Cross

JOHN BOSELLI

This paper evaluates Anne Sexton's poetry volume *All My Pretty Ones*, exploring its preoccupation with inheritance and its ambiguity in the context of the Christian faith. A series of close readings charts Sexton's quest for a relationship with God outside of Roman Catholic orthodoxy. It is argued that Sexton's meditation on God's presence in the poetic word stems from her inability to find affirmation in the biblical Word. Built on the clash between guilt and love, truth and falsehood, rigidity and fluidity, and sickness and vitality, the poems are biblical in their symmetry and their formation of a holy constellation of images.

The Modern Teachings of Noah's Flood: Accepting Diversity

CLARISSE BIRKBY

Author Timothy Findley changes the well-known biblical story of Noah's flood by shifting the theme of salvation to the theme of disaster in his retelling, *Not Wanted on the Voyage*, in order to comment on the acceptance of diversity in modern society. In this paper, I will analyze Findley's use of characterization of the protagonists of the biblical version of the flood, Yahweh and Noah, the characterization of Mrs. Noyes and Lucy, and finally, the conclusion of the novel, which depicts Findley's overriding concern which suggests the danger of being incapable accept diversity or the incapability of having compassion for others. Findley's parody, *Not Wanted on the Voyage* suggests the dangerous outcomes of not simply religion, but also the inability to accept change. The inability to accept changes or diversity in our world today will result in the same hopelessness that is suggested throughout Findley's novel.

The Carnivalized Gospel: Jesus, Barabbas, and the Exceptional Body

SEAN NEILL

Barabbas is the prisoner who, in the Gospels, is acquitted and released in place of Jesus. Reading the Barabban narrative alongside Par Lagerkvist's novel, *Barabbas*, and drawing on the work of Agamben, Bakhtin, and Foucault, I hope to carnivalize the Gospels, to intervene in their spaces of indeterminacy and inversion. I aim to tease out the elements of disorder, upheaval, and exception at work in the crucifixion narrative and central to the character of Jesus. Barabbas, the criminal, is Jesus' necessary other. There is no Jesus without Barabbas. Barabbas is Jesus' Jesus, except his punishment is his acquittal (a punishment, Lagerkvist shows us, in its own right). They are radically different, but some scholars have gone so far as to argue that they are one and the same. Jesus as savior, then, is indistinct from Jesus as criminal. He is the extralegal, the exceptional body, *homo sacer*, that which exists beyond the Word and thereby defines and becomes it.

3G • ENGLISH WELLES 131

Voices from ENG 201

FACULTY SPONSOR AND SESSION CHAIR: CHRIS PERRI, ENGLISH

Eye of the Beholder

JANE MCGOWAN

I will be reading a creative non-fiction piece that portrays my life experiences growing up and living with a condition called Hemifacial Microsomia. Through this compelling and humorous piece, I hope to give the audience a glimpse of what it's like to be the girl who looks different from everyone else. As the story unfolds through uncomfortable and exposing situations the prevailing message remains that acceptance and love can come from the most unexpected places.

Model A Father

MEGHAN BARRETT

A creative non-fiction piece featuring a series of vignettes about a young girl growing up in her father's automobile-dominated world. Through the girl's eyes we watch the father build confidence and independence through lug nuts and triangle braces. The piece is about father-daughter relationships and how passion, when focused, leads to success.

Don't Kill a Grasshopper

AARON WEINTRAUB

Don't Kill a Grasshopper explores the idea of cause and effect. The story centers in the belief that our actions determine our life's sequence of events. Each of these actions or decisions lead us to the next moment in our lives, causing a chain reaction similar to the idea of the domino effect. It also questions the perception that life was preordained from the beginning of time. It revolves around the idea that life is not laid out from a divine scheme, and turns away from the notions of fate and destiny. 'Grasshopper' is a progressive work that follows the story of Jason and how his various decisions affect his life. The piece is divided into sections, defined by year. Each section contains a significant event that impacts Jason later in life. Jason's life is defined by his decisions, and through his example, 'Grasshopper' instills within us, the aspiration to be ever aware of our actions and their consequences.

3H • GEOGRAPHY STURGES 108

FACULTY SPONSOR AND SESSION CHAIR: DARRELL NORRIS, GEOGRAPHY

The Geography of Bigfoot Sightings

ANDREW MOWRER

Claimed North American sightings of Bigfoot can be traced as far back as the nineteenth century and have proliferated in the Internet Era. This presentation explores the pattern and typology of sightings. These reports are undeniably questionable, owing to problems of eyewitness reliability, lack of physical evidence, and outright fabrication. Nonetheless, alleged sightings are open to categorization by type, chronology, and location. Analysis based on 4000 claimed sightings reveals distinct clusters in space and time. Are such clusters "real" (based, for example, on ecological niches and spiking populations) or are they driven exclusively by the magnetism of local lore and the coverage of the myth by mass media? While sighting concentrations in states like Ohio and Florida appear to rest primarily on the power of local lore, clusters in the Pacific Northwest and California are certainly suggestive of observer geography. Many trends suggest something of a Bigfoot ecological norm worthy of further investigation. Legitimately or otherwise, interest in Bigfoot has survived for centuries, and similarities among alleged sightings paint a surprisingly distinctive map of the spread of lore and tradition through time.

The Arak Dilemma

APRIL LENHARD

Exploring arak, a type of liquor commonly made by the disadvantaged socioeconomic classes in India, which has found itself with a mixed bag of provinces which ban liquor and carry heavy social stigma, and provinces where alcohol is legal and openly accepted in the community. Through studying the history and cultural norms of India and comparing both sides of the prohibition argument, the drinking patterns and grassroots organization of rural Indians will be uncovered. Then, by examining arak, a fuller perspective of the sociological stigmas and political effects can be addressed when the question of total alcohol "liquidation" arises. In uncovering the secrets of this beverage, we are able to follow its narration from the geographical influences, its metamorphosis into a liquor made and consumed primarily from the "lower classes", and examine what it means to drink in a traditionally dry society. The analysis of this paper and presentation comes down to the crucial question of the state India is currently in and what, given the history and unique culture of this area, would be the best way to proceed in the future.

A World We Have Lost: The Lost Villages of the St. Lawrence Seaway Project

BRIDGET KELLY

Plans for bilateral Canadian-American development of the St. Lawrence Seaway and International Hydroelectric Project began in 1924. Resistance from the United States Senate and Congress hindered progress on the project and negotiations between the two countries continued until 1952. On July 1, 1958, the flooding began and a portion of the St. Lawrence River became Lake St. Lawrence, displacing over 6,500 people. Nationalism and pride over the seaway is still evident in Canadian recollections that refer to the displaced as heroes and their displacement as a sacrifice. This study will

discuss and analyze the attachment to place that has let the villages of Aultsville, Dickinson's Landing, Farran's Point, Maple Grove, Mille Roches, Moulinette, Santa Cruz, Sheek Island, Wales and Woodlands persist in local memory more than fifty years after their submersion. Grassroots resistance to the project and the conflict between nationalism and attachment to place is examined through contemporary newspapers and interviews.

3I • HEALTH CARE WELLES 128

SESSION CHAIR: MELINDA DUBOIS, HEALTH & COUNSELING

You Have To Pay For That: How Insurance Artificially Inflates the Cost of Health Care

RICK BARTON

FACULTY SPONSOR: EDWARD DRACHMAN, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Health care costs in the United States are significantly higher than those in other industrialized countries. These high costs have created a barrier access to health care and were a major factor in the passage of the Affordable Care Act. However, the Affordable Care Act does not address the problems of inflated costs in the health sector. These inflated costs are due to hidden costs, the methodology of health insurance and the methods of negotiations and billing between health insurance companies, doctors and hospitals.

Assessing Respiratory Status in the Pre-Hospital Setting

CAROLINE SCHWARTZ, GIDEON COHEN

FACULTY SPONSOR: JOSEPH VANREMMEN, UNIVERSITY POLICE DEPARTMENT

A critical part of an Emergency Medical Technician's (EMT) duties involves assessing vital signs (pulse, blood pressure, respirations). Unfortunately, current research suggests that EMS providers do a poor job analyzing respiratory rate and accurately recognizing abnormal lung sounds, both of which are critical in assessing respiratory status. In the absence of concerning chief complaints or relevant medical history, EMS providers quickly overlook respirations and focus on the more "popular" pulse and blood pressure vital signs. Many factors play a role in our ability of accurately assessing both rate and quality including ambulance noise, environmental conditions, and inexperience in recognizing the different types, rates and presence or absence of breath sounds. This lecture will highlight research on current issues with respiration analysis, review abnormal lung sounds and when to expect them, and highlight current strategies for improving accuracy. ***Selected for presentation at National Collegiate Emergency Medical Services Foundation (NCEMSF) Conference, Washington D.C..***

3J • HISTORY STURGES 104

Capitalism and the European Union

FACULTY SPONSOR AND SESSION CHAIR: TZE-KI HON, HISTORY

CHLOE FERNANDEZ, JOSEPH CORBIN, KERRYANN CUDDLIPP

This presentation will be a panel describing three countries in the European Union. We will focus on Spain, Germany and another country and emphasize what type of capitalism they use, i.e. neoliberalism, Keynesian economics, etc.

3K • HISTORY STURGES 112

SESSION CHAIR: JORDAN KLEIMAN, HISTORY

Buried in the Record: Resurrecting Hooker Chemical's Love Canal Legacy

JUSTIN SHAPIRO

FACULTY SPONSOR: JORDAN KLEIMAN, HISTORY

Undoubtedly the Love Canal disaster was integral to the emergence of the environmental justice movement. Historians writing about this disaster frequently accept a traditional narrative that understates Hooker Chemical Corporation's true contribution to Love Canal. In attempting to understand Love Canal's meaning and importance in the context of the environmental justice movement, historians and other authors have entrenched this traditional narrative in contemporary American environmental history. This paper will attempt to provide a detailed analysis of Hooker's actions at Love Canal in order to better describe the origins of the Love Canal disaster. Of specific focus in this presentation will be the question of condemnation proceedings at Love Canal and the history of environmental degradation at the Canal site. ***This submission was selected for presentation at Phi Alpha Theta Conference, Geneseo, NY***

The War on Women: The Ongoing Struggle

DANIELLE FERRANTE

FACULTY SPONSOR: CATHERINE ADAMS, HISTORY

My PowerPoint will compare the struggle of suffragettes in the 19th and 20th century and compare it to the struggle women have now. I will show the tribulations women faced back then are the same as those modern women face today. I will use selected quotes and works from famous suffragettes such as the Grimke sisters, Alice Paul, and Elizabeth Cady Stanton and compare them to modern footage of Bill O'Reilly, Rush Limbaugh, and others who are waging the war on women. This will illuminate the strength of this war on women as well as prove it has been waged since the suffragettes began their fight. I will use PowerPoint, and an array of different medias to display this point thoroughly and clearly. I hope to have many questions from the audience as the topic will have many differing opinions.

"Oh, Lord, Don't Let 'Em Drop That PCB on Me": African Americans, Religion, and the Origins of the Environmental Justice Movement

ELIZABETH DIERENFIELD

FACULTY SPONSOR: JORDAN KLEIMAN, HISTORY

The environmental justice movement had its origins in the dramatic 1982 fight against a state-sanctioned toxic waste dump in rural Warren County, North Carolina. This paper argues that without the leadership and support of African Americans, especially clergymen and civil rights activists, these protests would have failed. Because local blacks tended to interpret the toxic landfill in racial and biblical terms, and because they believed that God was on their side, they were willing to enter the environmental fight in large numbers and to stay the course until victory was won a quarter century later.

3L • INTERDISCIPLINARY ISC 115

SESSION CHAIR: HELEN THOMAS, SPONSORED RESEARCH

Up All Night: The Geneseo Insomnia Film Festival Experience

AARON TOMASSINI, JESSALYN MEEHAN

FACULTY SPONSOR: JOE DOLCE, COMPUTING AND INFORMATION TECHNOLOGY

Participants of the 2012 and 2013 Geneseo Insomnia Film Festival will share their experiences. This 24 hour competition tested the participants time-management and creative thinking skills as well as their nocturnal aptitude. Presenters will discuss the challenges, triumphs and lessons learned through this 24 hour mad dash to the finish line. Presentation will include a short discussion, a presentation of some of the winning films and some quirky anecdotes.

Restoration of Past Artworks

JOO YEON SHIN

FACULTY SPONSOR: LYNETTE BOSCH, ART HISTORY

This presentation will be about the restoration of past artworks, which is mainly focused on Renaissance art. I will be talking about controversies on these artworks that have been previously restored.

The Gentleman is not a Vassal: Confucius, Aristotle, and the Ruler Exemplar

EMILY JENNINGS

FACULTY SPONSOR: STEVE BEIN, PHILOSOPHY

This paper uses Aristotle's *Politics* and *Nicomachean Ethics* as well as Confucius' *Analects* to compare the philosophers' visions of the best state. The paper finds that Aristotle's and Confucius' political philosophies are very similar--both philosophers conclude that the best state is led by an enlightened individual who shapes the behavior of the populace by setting a virtuous example. ***Selected for presentation at 18th Annual Undergraduate Philosophy Conference at SUNY Oneonta.***

3M • INTERNATIONAL PROGRAM MILNE 105

Speech Buddies Go Dutch - and Other Languages: Lessons Learned from Teaching English and American Culture to International Students

FACULTY SPONSOR AND SESSION CHAIR: IRENE BELYAKOV, INTERNATIONAL PROGRAM

Speech Buddies Go Dutch: Student Teaches English via Skype

MICHELLE WALPOLE, SHELBY TOMPKINS

The student will present results of her work/ teaching English to her "ESL Speech Buddy" via Skype. Her speech buddy is a Dutch exchange student who requested "a speech buddy" again - after he returned home to the Netherlands after a semester in Geneseo. She will comment on her methods of teaching English via Skype, and her cultural and linguistic experiences.

Geneseo Speech Buddies Teach English and American Culture to International Students

EVAN PALMER, SHERRY LEUNG, CLARE FLYNN

Students from INTD 388, "Methods of Teaching English to Speakers of Other Languages," will present results of their service learning: being Speech Buddies who teach English to their Japanese, Korean, and French-speaking counterparts. The presenters will analyze their methods of teaching English, as well as share their cultural and linguistic experiences.

Geneseo Speech Buddies Teach English and American Culture to International Students (cont.)

KIMBERLY SHERMAN, ALICE HYEIN KIM, JESSICA GILBERT

Students from INTD 388, "Methods of Teaching English to Speakers of Other Languages," will present results of their service learning: being Speech Buddies who teach English to their Korean and Chinese-speaking counterparts. The presenters will analyze their methods of teaching English, as well as share their cultural and linguistic experiences. One presenter will discuss her own experiences in learning English as a s second language and now applying them to teaching her international speech buddy.

3N • LANGUAGES AND LITERATURES

STURGES AUDITORIUM

En Un Dos Por Tres: Three One-Act Comedies by Mexican Playwright Emilio Carballido. A Spanish performance acted and directed by students and faculty of the Department of Languages and Literatures.

FACULTY SPONSORS AND SESSION CHAIR: ROSE MCEWEN AND FELISA BREA, LANGUAGES AND LITERATURES

El Censo (The Census)

SCARLET NÚÑEZ, MARINA FABRE, AMELIA YOUSEY, SIMONE MASON, SEBASTIÁN GUTIÉRREZ, KEVIN ÁLVAREZ

The owners and the employee of an unlicensed seamstress shop receive the unexpected visit of a state census-taker (el empadronador). Fearing that this state "authority" figure may turn them in to the Treasury Department (el Fisco), which would be entitled to reclaim unpaid taxes and fines, the seamstresses fashion a web of lies that end in a surprising set of events.

El Espejo (The Mirror)

SEBASTIÁN MUNN

What at first glance appears to be two different takes, from a woman's point of view, of men's "infidelity," turns out to be the humorous and satiric stance of the author (a man) regarding the prototypical, "victimized" female.

Sueldo Según Capacidades (Salary Based on Experience)

In response to an ad for an attractive office clerk, a young woman walks into the "shop" of her prospective employer, a "seasoned" woman of the world who immediately proceeds to interview the young candidate by subjecting her to a battery of secretarial tests. Will the applicant get the clerical position, or will she need to assume a different poise?

3O • MATHEMATICS

SOUTH 338

Mathematical Problem Solving

FACULTY SPONSOR AND SESSION CHAIR: PATRICK RAULT, MATHEMATICS

How Matrices Can Paint Pictures

JACOB PASANEN

If you've ever taken a linear algebra course, you've seen matrices, and many of them. A square matrix has a property called a "numerical range," which can be illustratedby a 2-dimensional shape in the complex plane. These shapes can be extremely different based on the entries of the original matrix. Under certain conditions,the shape produced is an ellipse, where the two foci are the eigen values of the matrix. An n-ellipse is defined to be the set of points such that the sum of the distances from n foci is constant. We'll list the four possible shapes of the numerical range of a 3-by-3 matrix and the situations in which they arise. One of the shapes that the numerical range can take is a poorly understood "ovular shape," which looks strikingly similar to the 3-ellipse. We will discuss the possible relationship between the"ovular shape" and the 3-ellipse. This talk will be accessible to anyone currently enrolled in Math 233.

Double Trouble with Summations

AIDAN BELL, SHANE CLARK

Throughout the world of mathematics, summations appear in unexpected places. Pi Mu Epsilon, an undergraduate mathematics journal, publishes challenging problems everysemester. During an attempt to solve such aproblem we encountered a double summation in an infinite series. One of the main difficulties of solving the problem came from the "limits of summation" being dependent. (An example of limits of a summation is the pair of numbers 1 and 100 in Gauss's famous formula 1 + 2+ 3+... +100 = 100(101)/2.) Due to the unique nature of the problem we were led to explore many mathematical techniquesfor streamlining summations. We used Sterling's approximation to simplify the binomial expansion. In a similar way to how the Jacobian is used to change coordinates in multivariable integration, we learned how to apply changes of coordinate systems to limits of summations. We will discuss which methodswere useful when determining whether ourdouble summation series converges. This talk will be accessible to students who are currently enrolled in Math 223.

A Finger Between Any Two Fingers

ALEXANDER CHICHESTER, PATRICK DANIELS

Mathematics Magazine, a publication for undergraduate mathematics students, poses challenging problems at the end of each issue. We attacked a problem involving strictly increasing bijections between countably infinite subsets of the interval(0,1). Further, we studied the effect that the concept of "density" had on our results. An intuitive example of a dense set would be the set of infinitely many fingers such that there is a finger between any two fingers. Tackling this particular problem goes beyond the scope of the mathematics curriculum at SUNY Geneseo; recursion, algorithms, and advanced techniques in mathematical proof areutilized. We will present key definitionsand include examples that illustrate thedefinitions of dense and strictly increasing before discussing the progress we have made towards solving the problem. This talk will be accessible to students who are taking MATH239.

3P • APPLIED MATHEMATICS

SOUTH 328

Mathematics

FACULTY SPONSOR AND SESSION CHAIR: CAROLINE HADDAD, MATHEMATICS

Math Madness: Using Mathematical Methods to Examine Sports Rankings and Predict Basketball Outcomes

GREG SPITZ, VICTORIA SILLIMAN

Sports ranking algorithms have used statistics for years, however, more and more analysts in the sports community are finding that mathematical techniques and models using least squares and eigenvectors may be used to effectively rank sports teams. Many are at least as effective as those of professional pundits. We will present several different methods for ranking teams starting with some very basic techniques and working up to more advanced algorithms. A background in linear algebra will be helpful, but not necessary to understand our presentation. Come see if our predictions beat the bracketologists!

Linear Programming and the Assignment Problem

ANH TRAN

The assignment problem is one of the fundamental optimization problems in a branch of applied mathematics known as operations research. The solution has many practical applications, especially in business and production management. In this talk we will introduce a way to formulate the problem mathematically as a linear program, and taking advantage of its special structure, present an

algorithm known as the Hungarian method to solve it.

3Q • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 24

Research on American and Russian Politics

SESSION CHAIR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The Economy and Citizens' Vote Choice

LAURA RAHEB

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This presentation examines research on economic voting, defined as citizens' assessment of the state of the economy and how these judgments translate into vote choice. This research will include a review of political science literature on the topic. The presentation will also include data analysis as a means to support an argument for trends in economic voting and voting behavior in American politics.

The Affordable Care Act as a Case Study of Major Policy Change

SAMUEL WHITE

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

When major pieces of legislation are pushed through Congress and become law, we often look at the result as opposed to the process. The fact is, with every piece of major legislation that passes through Congress, several conditions must be present for major legislation to be introduced, debated, and passed. In the United States, healthcare has been among the most difficult areas to achieve major policy change. It invokes deep divides on the role of government, directly impacts the profit margins of billion dollar companies, and is, quite literally, a life and death issue for many Americans. Yet, for the first time in decades, major healthcare legislation did pass in the form of the Patient Protection and Affordable Care Act. This presentation will focus on the factors that made this major reform possible.

Russian Labor Camps, Continuities and Changes Since the Stalin Era

MATTHEW ANDREWS

FACULTY SPONSOR: ROBERT GOECKEL, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Since the GULAGs birth in the 1920s, they have been associated with the repressive policies of Joseph Stalin. Although Stalin's death in 1953 lead to a shrinking of the GULAG system, successive Soviet administrations continued to use there maining labor camps as a means to silence discontent with their authoritarian regime. In addition, memoirs published by dissidents imprisoned within the GULAG in the post-1953 era show readers that although changes took place within these camps following Stalin's death, new and traditional methods were used to make the life of the imprisoned politicals as tough as possible. Finally, despite the Soviet Union's dissolution in 1991, labor camps continued to be used to punish ordinary criminal in the Russian Federation. Despite their stated purpose, as the jailing and imprisonment of Mikhail Khodorkovsky and the members of "Pussy Riot" in these prison camps show the reader, these camps could once again be used as a means to silence opposition to the ever more authoritarian Putin regime.

Lenin's Life After Death: An Analysis of the Politics Surrounding the Lenin Mausoleum as a Symbol of Power Throughout History

MARTIN ROGACHEFSKY

FACULTY SPONSOR: ROBERT GOECKEL, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This presentation will cover the history ofpolitics surrounding the Mausoleum of Vladimir Lenin, which sits below the Kremlin wall in the Red Square of Moscow, Russia. In it, I explore the question of whether Lenin's death, embalmment, and placement within the mausoleum was used for political gain by leaders in the Soviet and post-Soviet era of Russian history. I also note that the mausoleum started as and continues to be seen as a symbol of power in accordance with Marxist-Leninist ideology and the Soviet Union as a whole. The paper covers contemporary debates about Lenin's final burial as well.

3R • SCHOOL OF BUSINESS

SOUTH 340

Prospects for the U.S. Economy, Spring 2013, with the Fed Challenge Team!

FACULTY SPONSOR: LEONIE STONE, SCHOOL OF BUSINESS

SESSION CHAIR: ANDREW HESSLER

Macroeconomic Analysis of the U.S. Economy

ANDREW HESSLER, RAJAN BURATHOKI, KATRINA STEINLEY, OLIVIA SLUZAR, NOAH SEIFERT, DAVID CEELY, TYLER DERUBIO, DANIEL COUGHLIN, ZACHARY CAVALLINI, JASE STAHLECKER, MADELINE SMITH

The Geneseo Fed Challenge team discusses the prospects for the U.S. economy. Sequestration! Fiscal cliffs! Debtceilings! And much, much more….

3S • SCHOOL OF EDUCATION

SOUTH 233

Join the Adventure Aboard the *Titanic*, Across Westward Expansion, and through PEACES of Religion: Ambitious Social Studies Units for the Elementary Grades

FACULTY SPONSOR: ANN MARIE LAURICELLA, SCHOOL OF EDUCATION

SESSION CHAIR: LAUREN FONTE

The Sinking of the "Unsinkable" A Unit Plan Designed to Explore the Question: Who is Responsible for the Sinking of the R.M.S. *Titanic*

LAUREN FONTE, ROSE HENDERSON, DEVEN COULTER, BREANNE RAFFERTY

Washington Times columnist Seth Borenstein writes, "epic disasters, the anguished cries, the stories of heroism, are the central narratives of our age, both enthralling and horrifying. And our obsession began [over] a century ago, unfolding in just 160 terrifying minutes, on a supposedly unsinkable ship, as more than 1,500 souls slipped into the icy water of the North Atlantic." At 11:40 p.m. on the fourteenth of April, 1912, the fate of the so-called "unsinkable" ship was sealed when the lookout on the RMS *Titanic* spotted an iceberg directly in the ship's path amidst the North Atlantic. From the moment the tragedy captured the globe's attention it was more than news. To this day, the sinking of the *Titanic* remains a legacy, a macabre form of fascination. Still, the history of the sinking of the *Titanic* and the ethical and controversial questions this historical event poses often go untaught in elementary school classrooms. This presentation is designed to offer an overview of a unit plan that focuses on the *Titanic* legacy as a staple of both cultural and ethical literacy and encourages students to question who or what is responsible for the tragedy that was the sinking of the *Titanic*? ***This submission was selected for presentation at New York State Council for the Social Studies/New York State Social Studies Supervisors Association Conference, Rye Brook, NY.***

A Road Trip Through Westward Expansion

CHRISTIE FREYER, BRITTANY HACKBARTH

As a key assignment for our Social Studies curriculum class, we developed a comprehensive unit plan on Westward Expansion. This unit plan includes three interactive lesson plans, a Document Based Question assessment and a fifteen-lesson synopsis of the month-long unit. We believe it is extremely important for students, as citizens of the Unites States, to comprehend how their nation became so large and diverse. Understanding both, what motivated Westward Expansion and the positive and negative outcomes of this time period is crucial to grasping United States history. Our goal was to create lessons that do not just teach our students about history but lessons that allow our students to do history. It is important for students to be actively engaged in their learning and to work together as a community to explore and discover who and what made our world how it is today. This presentation will consist of a brief overview of the contents of our unit plan, please join us on A Road Trip Through Westward Expansion. ***Selected for presentation at New York State Council for the Social Studies/New York State Social Studies Supervisors Association Conference, Rye Brook, NY.***

PEACES of Religion

YASMINE QAZI

This presentation will consist of an overview of a unit plan focused on the topic of "Religions." This

unit was created because I feel that in our globalized society, the issues regarding differences between people comes down, almost always, to the over dramatization and fanaticism of their religious differences. Religion, for some, plays very strongly within their culture itself. It can dictate what language you speak, where you live, values you hold, dietary choices, customs, clothing, jewelry, music, etc. Through my unit, I hope to challenge the "automatic" thinking within my students when it comes to the topic of religion. Stereotypes, generalizations, wrong information as shown or heard from various sources, as well as interactions the students engage in are all things that can be the result of restrictive, "automatic" thinking. In our ever shrinking world, as a future teacher, I feel it is my duty to prepare my students for the inevitability that they will be interacting with people not only from other places, but who also hold to different belief systems. By including this unit in the school year, I hope to promote acceptance and a better understanding of other belief systems within my students. ***Selected for presentation at New York State Council for the Social Studies/New York State Social Studies Supervisors Association Conference, Rye Brook, NY.***

3T • SESSION ON SERVICE MCU 114

SESSION CHAIR: THOMAS MATTHEWS, GOLD

Imagine It: A Community Recycling Initiative (GOLD Diamond Project)

SAIF RATUL, LINDSAY GIACALONE, NIKOLAY CLARK

FACULTY SPONSOR: THOMAS MATTHEWS, GOLD

Printer and copier cartridges are recycled through a variety of methods. Chi Alpha Epsilon National Honor Society (affiliated with Access Opportunity Programs) has been working with a private recycling program called "Imagine It" based in Rochester. The program provides a campus-wide structural recycling system. Although this partnership with Imagine It organization and Chi Alpha Epsilon National Honor Society has been in place for over ten years, it was extremely limited. By collaborating with the SUNY Geneseo Environmental Health and Safety Department, we recently helped to expand the program throughout the campus. This PowerPoint presentation seeks to explore how we utilized local organizations to achieve our recycling initiative and promote long-standing relationships for the Geneseo Opportunity for Leadership Development Diamond (Community Engagement and Social Justice) Certificate program. We will be addressing our progress with "Imagine It" program and how it is benefitting both the campus community and local organizations.

Give Kids the World Village Volunteer Trip

JOSEPHINE CHAMPLIN, AMY MALSEGNA, BRANDI MARTIN, CARA HALLAHAN, CASSANDRA SAROLI, CASSIDY LESTER, DAVID BAKER, EMILY ZSCHOCHE, FELICIA VANACORE, JENNIFER LEVY, KAITLYN MAMAY, NICOLE EMBT, SHANNON GRUENAUER

FACULTY SPONSOR: DAVID PARFITT, MILNE LIBRARY

Give Kids the World is a nonprofit village located in Kissimmee, Florida where children with life-threatening illnesses and their families can stay for a weeklong, cost-free vacation. For the past 4 years Dr. David Parfitt has taken a group of 12-13 Geneseo students down to the village to volunteer for a week. Students work two shifts/day and help with various activities including serving meals, entertainment, participating in the evening activities, and doing service projects around the village. They help with weekly Village events such as the Winter Wonderland and Halloween party, scoop ice cream, serve breakfast at the Gingerbread house, and run the carousel. In this presentation, students will discuss the history of the Village, what it means to volunteer there, and their personal experiences. An emphasis will be placed on how the Village has affected each student and what they have gained from the trip, as well as on how others can be involved and help the cause.

Send a Smile to Cystic Fibrosis

LAUREN SMITH

FACULTY SPONSOR: TOM MATTHEWS, GOLD

Send a Smile to Cystic Fibrosis aims to recruit student organizations to send smiles to children with Cystic Fibrosis who are currently hospitalized at Buffalo Children's Hospital by creating greeting cards for them.

3U • SOCIOLOGY MILNE 109

Sociological Studies of Well Being

FACULTY SPONSOR AND SESSION CHAIR: STEVE DERNE, SOCIOLOGY

Not What, But Why?: The Importance of Emotions in Understanding Subjective Wellbeing

MICHAEL COOKE

Research suggests that it is an individual's personal biography that shapes the sources of their wellbeing. According to wellbeing scholar Ed Diener's definition, wellbeing stresses the experience of pleasant emotions, but little is known about the relationship of positive and negative affect to the individual's sources of wellbeing. Through analysis of thirty qualitative interviews I suggest that biographical experiences are fundamentally emotional experiences and that it is the experience of emotions, not simply of biographical events, that shapes the sources of one's wellbeing. Investigation of the emotional aspect of wellbeing promises to expand the discipline by asking not what activities and relationships produce a subjective sense of wellbeing in an individual, but why these relationships and activities produce such feelings.

Does Consumerism Lead to an Increased Sense of Well-Being?

ROSEMARY MARTILOTTA

While Clive Hamilton suggests that advertisements lead people to believe that taking part in our consumer-based culture will lead to a heightened sense of well-being, he concludes that people do not have increasingly elevated levels of happiness as they have more money, and therefore ability to consume. He neglects that taking part in consumerism may give people a sense of well-being because they feel more involved with their cultural practices, and therefore more accepted. Twenty-seven interviews were conducted for Sociology 376, a course devoted to subjective well-being, that help to address whether or not future oriented people are more likely to mention consumption as a source of well-being. By looking at the data collected it is clear that consumerism, in many cases, does lead to an increased sense of well-being. The interviews further show that well-being is multifaceted, and rather hard to quantify, as it largely differs from person to person. Furthermore, each person draws well-being from numerous sources, and their understanding of well-being is ever changing.

Well-Being: The Past, The Present and The Future

JENNY LIU

Studies on well-being are essential to help individuals find self-satisfaction in their lives. Research has suggested that the young, the middle aged and the elderly find their well-being in the future, present and past respectively. However it fails to consider that perhaps individuals can find well-being in the past, present and future regardless of age. This study attempts to examine this suggestion more thoroughly. People can perhaps reflect how their personal circumstances in the past, present and future will contribute to their well-being in the present and into the future. The study reviews 30 interviews in which any reference to time was first recorded and later the individual's age was reflected upon. The results suggest that age does not necessarily dictate where one might find their well-being or lack of well-being rather; the individual personal circumstances affects when in time a person finds his or her well-being.

The Multiplicity of the "Self" = The Cause of Ever-Changing Conceptions of Well-Being

LYN CRUZ

The purpose of this study is to focus on the multiplicity of the self and its intricate underpinnings. More specifically, I will be linking how the self's ability to change over time affects one's own conception of well-being. Previous studies on well-being including an important cross-cultural study by Gordon Mattews have tied the self with well-being but have not developed and directly tied the ever-changing nature of the self with well-being. So what Mathews neglects and fails to acknowledge in his work is not the fact that the self be tied with well-being but that the self is intrinsic to change which in turn would affect any preceding conceptions of well-being. In other words what I call the multiplicity of the self usually goes hand in hand with how one defines his or her own well-being at any given period in time. My proposition was supported by some in-depth interviews taken from Mathews's work *What Makes Life Worth Living? How Japanese and Americans Make Sense of Their Worlds* as well as from a compilation of interview transcripts collected from my Subjective Well-being course.

3V • WOMEN'S STUDIES WELLES 115

Senior Capstone Projects in Women's Studies 1

FACULTY SPONSORS AND SESSION CHAIR: MELANIE BLOOD, ENGLISH, AND JENNY KATZ, PSYCHOLOGY

Heterosexual Women's Responses to Lesbian Adoption: Moderating Effects of Homonegativity

BRIDGET STITH

Lesbian couples face numerous legal and other institutional barriers to parenting children. Compared to heterosexual couples, lesbian couples who adopt may elicit negative affect and parenting disapproval,especially among heterosexual women with prejudicial attitudes about lesbians. The current study compared observers' responses to lesbian versus heterosexual adoptive parents among women across levels of homonegative attitudes and social dominance orientation.

Planned Parenthood and Its Impact of the Lives of Low Income Women

JOBINA ALEXANDER

This presentation is the culmination of an internship experience at Planned Parenthood. Alexander will explore the importance of affordable health care for low income women and how Planned Parenthood is effectivly delivering health care to low income women.

Reproductive Rights and the Intellectually Disabled in the United States – The Importance of Sex Education

LAUREN WEISBERG

This presentation will cover reproductive rights, sex education, and how it affects those with intellectual disabilities in the United States. Intellectual disabilities are becoming increasingly more visible, and with the acknowledgement of the need for resources for the disabled comes the question of "Whatresources?". Understanding our bodies is animportant part of development, especially sexual development. Sex education programs that are developmentally appropriate, educational, and effective for people with intellectual disabilities is critical to the healthy development of all people, especially those with intellectual disabilities. The argument for sex education for intellectually disabled individuals is based on reviews ofpast programs, the expressed needs of the intellectually disabled themselves, and other related research.

3W • SOCIOLOGY STURGES 111

WHO AM I?: Identity Issues

FACULTY SPONSOR AND SESSION CHAIR: ANNE EISENBERG, SOCIOLOGY

Children of Parents with Cancer and Its Impact on Their Identity

RACHEL FRIEDMAN

Children look to their parents as a role model and the main source of where they learn vital norms, rules and values. When a child's parent is diagnosed with cancer, their attitude and outlook on life will directly impact on their children's development.

The Effect of Divorce on the Generation that is the Product of the 1970's to Present

KAYLA MARKEL

This paper draws attention to the fact that the high divorce rate from the 1970's to the present has affected the children of today. My paper draws attention to the fact that the tradition of marriage is being lost and that this divorce culture will become the current and next generation's history.

Homosexual Identity Formation in a Heteronormative World

KATIE CARDINAL

In a society that assumes each individual to be attracted to the opposite sex, it is crucial to the formation of homosexual identity that the individual be exposed to positive interactions regarding homosexuality in order for him or her to be comfortable in the acceptance of that identity. This paper presents an in-depth analysis of research on the formation of homosexual identities.

We Have to Fight for our Right to be Who We Are: Being Gay and in High School

KRISTIN BIERSBACH

This paper explores the ever present issue of the mistreatment and confusion that LGBTQ youths have to endure during their primary education years. Through an examination of key social issues framed through personal experiences, this paper examines how the treatment of LGBTQ students has had a significant role in whether or not adolescents decide to "come out."

CONCURRENT PRESENTATIONS 4 • 4:20 - 5:35PM

4A • ANTHROPOLOGY STURGES 106

FACULTY SPONSOR AND SESSION CHAIR: JAMES AIMERS, ANTHROPOLOGY

The Rise of the Hemline: An Examination of Female Sexuality in America Since 1900

GINNY TATE

As hemlines rise and necklines fall, female sexuality has come under fire. This presentation is an examination of the relationship between skirt length and female sexuality in the United States from 1900 to present day. Looking at dress patterns and advertisements from the various decades shows that skirt lengths have changed drastically over the last one hundred years. We are in an age where photos on the internet can change one's reputation drastically, especially for females. Never before has skirt length been so closely linked to female sexuality. Examining the rise and fall of the hemline leads to an interesting question: Do shorter skirt lengths reflect a more sexualized woman?

The Effects of British Colonialism on Sexual Values in the Indian Subcontinent

JESSICA KROENERT

This presentation will show how Indian cultural opinion of sex and sexuality was drastically changed by the presence of British colonialism. It will observe Indian sexuality in pre-colonial times, focusing on the influence of material culture, Hinduism, and Kamasutra on Indian sexual values. The attitudes towards homosexuality and "deviant" sexual behavior among both men and women during pre-colonial times will compared to the less open sexual culture found post-colonization. It will show how British Victorians' reserved sexual ideals were imposed on India during colonization, and had changed Indian sexual culture by the time the British left. An in depth look will be taken into modern Indian sexual culture in an attempt to find where British values permeated Indian culture most significantly. The presentation will also look at how hijras (third gendered persons) were treated and what role they played in society both pre and post colonialism.

Sex and Sexuality in Aztec Culture

KIMBERLY AEBLI

This paper is an overview and analysis of the sex and sexuality of the Aztecs, with a specific focus on visual representations of sex and sexuality such as figurines and paintings. How did the Aztecs portray sex and reproduction in art, and what do these suggest about Aztec society? I will also discuss the relationship between sacrifice and sexuality, and Aztec views toward body modification and sexuality.

4B • BIOLOGY MILNE 105

SESSION CHAIR: GREGG HARTVIGSEN, BIOLOGY

Network Analysis of Influenza Spread in SUNY Geneseo 2012-2013

MICHAEL ARCURI

FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Prevention against influenza is best through flu vaccinations, either through injection or nasal spray, which cause antibodies to develop and allow individuals to fight an infection. However, during the 2012-2013 influenza season, the vaccine was shown to be only 62% (CI:51%-71%) effective for adults >18 years old and as low as 9% effective for those >65 years old. In Geneseo, a total of 781

students were inoculated and 84 were diagnosed with the flu on campus throughout this season. I developed a variation of a Watts-Strogatz small-world SIR network model to investigate this spread of influenza in the SUNY Geneseo student population. This model will help predict how influenza will pass through the population using different vaccination efforts.

Elucidating the Action of Specifier Proteins in *Brassica rapa*

MAX MACBARB, NOAH DUKLER
FACULTY SPONSORS: JANICE LOVETT AND GEORGE BRIGGS, BIOLOGY

Brassica rapa is an important model plant that is closely related to important functional food plants such as kohlrabi, cauliflower, and broccoli. Specifier proteins (SPs) are an important component in the myrosinase-glucosinolate pathway, which produce different secondary metabolites. These biologically active compounds are used primarily in plant defense and also contribute to the plant's nutritional benefits hence, "functional plants." In this project we found two putative SPs in *Brassica rapa* genome by comparing known SPs in the *Arabidopsis thaliana* sequenced genome. The gene was cloned into an expression vector for *E. coli* from which epithiospecifier proteins (ESPs) were harvested to assess their directing effects on the myrosinase-glucosinolate pathway via gas chromatography and mass spectroscopy. Collecting this data will allow future research to find out if nitriles/epithionitriles have protecting properties in plants, or if they possibly play a role as a transcription factor. Finally we can test the relationship between up regulation of these genes and stressful conditions of the plant.

Modeling Pneumonia Using R

CARSEN SULZER
FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Epidemiological researchers are often hindered by ethics in the study of disease spread because it is immoral to inoculate a population with an infectious disease. However, modeling the spread of diseases eliminates this concern. Using R, I have modeled the spread of bacterial pneumonia, which is the leading cause of death in children worldwide (WHO), in two different ways. I created a differential equation model that represents the rates at which individuals enter and leave each of seven separate classes. This model makes use of a mass-action assumption where susceptible individuals come into contact with infectious individuals. A second model was created using a Watts-Strogatz small-world network that represents the actual contact between neighbors by which the pneumonia bacterium can be transmitted directly. This model takes into account individual characteristics (e.g., whether they are susceptible, exposed, recovered, deceased or have pneumonia versus walking pneumonia). The results given by the two models are similar in that epidemics can occur. The network model, however, suggests ways to specifically target individuals to minimize the number of people infected.

4C • BIOLOGY & ANTHROPOLOGY

WELLES 26

Honors Thesis in Biology: Combating Cholera and Cardiovascular Disease in Rural Haiti

FACULTY SPONSORS: GREGG HARTVIGSEN, BIOLOGY AND ROSE-MARIE CHIERICI, ANTHROPOLOGY
SESSION CHAIR: HAYLEY MARTIN

An Investigation of Cardiovascular Disease: Prevalence, Perception, and the Potential to Reduce Suffering in Rural Haiti

HAYLEY MARTIN
FACULTY SPONSORS: GREGG HARTVIGSEN, BIOLOGY, AND ROSE-MARIE CHIERICI, ANTHROPOLOGY

According to the World Health Organization, cardiovascular disease is the number one killer across the globe, with over 80% of these deaths occurring in low- and middle-income countries. As the poorest country in the western hemisphere, Haiti is expected to have a high proportion of cardiovascular disease and attributed deaths. A differential equations model was created in order to test the efficacy of potential cardiovascular intervention strategies targeted at different age groups. My model is based on cardiovascular disease data that I collected in Borgne, a rural region in northern Haiti, in addition to rural demographic data from Demographic Health Surveys. I have found that a higher than expected proportion of the population is hypertensive, a major risk factor for cardiovascular disease. Interviews have shown that hypertensive patients' conditions are often exacerbated by limited access to healthcare, high salt intake, and other behavioral factors. The model shows that the effectiveness of an intervention strategy depends on which age group is targeted. This information was integrated with relevant cultural data to provide a set of targeted recommendations for community.

Cholera in Borgne, Haiti: An Analysis of a Grassroots Community Response

MICHAEL MATTIUCCI
FACULTY SPONSORS: ROSE-MARIE CHIERICI, ANTHROPOLOGY, AND GREGG HARTVIGSEN, BIOLOGY

The region of Borgne, Haiti currently faces a cholera outbreak that continues to infectand kill its inhabitants. Located on the northern peninsula of Haiti, the community has mounted a grassroots response against the diarrheal disease, which seeks to provide treatment and prevention resources that are appropriate to the region's isolation caused by mountainous terrain and lack of basic infrastructure. My research evaluated the efforts of H.O.P.E., a grassroots community development organization, who uses a three-tiered system to bring the populationof Borgne access to the necessary resourcesto fight cholera. My analysis included quantitative data on use of these resources, and qualitative data on knowledge, attitudes and behavior towards the disease and methods of intervention. The data came from H.O.P.E. workers and also from my own collection through formal interviews, observation and conversation. I specifically examined questions regarding water purification, handwashing and sanitation practices. My analysis found that the health system has empowered change in water purification and hand washing practices, while sanitation practices have been more difficult to improve.The response's grassroots approach, through the use of resources and personnel on different levels throughout the community has helped it to achieve this change.

4D • CHEMISTRY

ISC 115

SESSION CHAIR: DAVE JOHNSON, CHEMISTRY

Low Temperature PLE Spectroscopy of PbSe Quantum Dots

WILLIAM STEPHANS
FACULTY SPONSOR: JEFFREY PETERSON, CHEMISTRY

The electronic structure of lead selenide (PbSe) quantum dots (QDs) has been investigated via low temperature photoluminescence excitation (PLE) spectroscopy. PLE spectroscopy only samples QDs in a narrow spectral range (<5 meV) and can provide critical information about the QDs' electronic structure that is not seen in traditional absorption measurements (peak widths ~50 meV) which look at an entire ensemble. PLE spectra were collected at 77 K for PbSe QDs with a first (room temperature) absorption peak between 1000-1600 nm (corresponding to particle diameters of ~2.5-5.5 nm). The low temperature PLE spectra exhibit distinct features compared to room temperature absorption measurements. The difference in Stokes shifts between low and room temperatures was also examined. ***Selected for presentation at American Chemical Society National Meeting, New Orleans, LA.***

The Role of Myeloperoxidase in Apocynin-Mediated NADPH Oxidase Inhibition

MICHAEL AZZARO
FACULTY SPONSOR: DAVE JOHNSON, CHEMISTRY

Current experimental evidence suggests that oxidative stress, or reactive oxygen species (ROS), play a major role in the genesis of many inflammatory diseases. These include asthma, diabetic retinopathy, and atherosclerosis. Nicotinamide Adenine Disphosphonucleotide (NADPH) oxidase has been confirmed as the predominant source of ROS within endothelial cells, as well as other cells that are affected by inflammatory processes. High levels of ROS can cause problems within the endothelial wall, particularly the formation of lesions and increased permeability. From these studies it was hypothesized that compounds that inhibit NADPH Oxidase may be of potential pharmaceutical value. ***Selected for presentation at American Chemical Society National Meeting, New Orleans, LA.***

4E • ENGLISH

WELLES 133

Grace and Deceit in Ancient Texts

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH

SESSION CHAIR: DEVIN STABLEY-CONDE

From Jerusalem to the Human Heart: Psalms and Jeremiah Predict Grace

REBECCA MILLER

This paper concerns the use of Jerusalem as a literary element in the books of Psalms and Jeremiah. Throughout these books, the Israelites' fluid and precarious relationship with Jerusalem parallels the relationship between God and his chosen people. This paper argues that the destruction of Jerusalem in Jeremiah predicts the coming of grace in the New Testament, and the difference in the Israelites relationship with God that will bring.

Rhetoric and Demagoguery in Thucydides' *History of the Peloponnesian War*

ADAM WAGE

Thucydides' *History of the Peloponnesian War* demonstrates how ancient Athenian leaders would use disparaging oratory in order to belittle their opposition and bring the Athenian assembly to their side. Careful examination of the dialogue between Nicias and Alcibiades in the "Sicilian Expedition" reveals that this belittlement of one's opposition does not serve as an effective tool to garner support for one's arguments. The reason for this is that Nicias focuses on belittling the young military leader Alcibiades, instead of providing logical rationale for avoiding an invasion of Sicily. Alcibiades, however, successfully panders to the nationalism of the Athenian assembly. Similar discourse occurs between Cleon and Diodotus during the "Mytilenian Debate." Diodotus manages to use reason to garner support from the assembly in his stance against military aggression. In both of these debates, the Athenian assembly supports the orator that seems most concerned about the best interests of Athens, whether these interests involve glory or mercy. Belittlement of one's opponent can be used to discredit the other side, but it fails to convince others of the credibility of one's own argument.

4F • ENGLISH WELLES 134

FACULTY SPONSOR: JULIA WALKER, ENGLISH
SESSION CHAIR: MELANEY REBELLO

Screening *Othello*

Race? Revenge? Reality/Appearance? What is this play about? Love? Hate? Envy? We examine three film versions of Shakespeare's play, coming up with more than three answers. The 1965 *Othello* with Laurence Olivier, the 1981 BBC production with Anthony Hopkins, and Laurence Fishburne's 1995 *Othello* are the heart of this analysis, but we also work with Orson Welles 1952 film, Janet Suzman's 1987 filmed stage play in South Africa under Apartheid, and the teen film *O* from 2001. Besides the issues Shakespeare places on the table, we find that 21st century evaluations of the play must engage the problematic stage history of the work, most importantly the traditional casting of white actors in the title role. Yes, race matters. The question is, what matters most?

Laurence Olivier's *Othello*, 1965

JANEANNE LEPAGE, HANNAH KINGSLEY, PATRICK FRANCE, CHELSEA PULLANO, SHAMFA TITTLE, MARIAH RUF

BBC's *Othello*, Anthony Hopkins, 1981

MEAGHAN CASTLE, ERIKA SILVA, JUSTIN QUINTERO, CHRISTA LUBANSKI, MEGAN TURNER

Laurence Fishburne or Kenneth Branagh? *Othello* 1995

KIMBERLY PAULIN, ANNA HOYLER, ROBERT LAWTON, ADAM LASHINSKY, ADAM SOUZA

4G • ENGLISH WELLES 131

SESSION CHAIR: RACHEL HALL, ENGLISH

The Truth Chair

PAM HOWE

FACULTY SPONSOR: RACHEL HALL, ENGLISH

Literary short fiction about a group of friends struggling to function within a world of dysfunction. Set in Los Angeles and told from the second-person point of view, three friends participate in an obvious lie in order to fix what is always broken--the truth.

Chart Your Body from the Seafloor Up

LUCIA LOTEMPIO

FACULTY SPONSOR: CORI WINROCK, ENGLISH

I would like to present a selection of poetry from my ever-growing portfolio. My series focuses on the development of self through the exploration of the physical in order to understand the psychological and emotional. As the title of this collection suggests, I endeavor to assess how one may seek to attain sense of self from the bottom up; the external must be understood before the internal can be analyzed. My collection also focuses on the social meaning of what it means to "become a woman" and how one defines his or herself through others.

4H • GEOGRAPHY STURGES 108

SESSION CHAIR: JENNIFER ROGALSKY, GEOGRAPHY

The Jane Olevolos Orphanage: Enabling Children to Plant Their Own Future

LUCAS JOHNSON

FACULTY SPONSOR: JENNIFER ROGALSKY, GEOGRAPHY

Last semester I traveled to Tanzania through the SUNY Albany HIV/AIDS and Sustainable Agriculture Integrated Course. While there I was introduced to a woman who started one of the many orphanages in the area. The next day I helped her and her children move all of their belongings to a new facility 20 miles away. During those 8 hours I was a witness to the madness, love, and fulfillment that working with orphans has to offer; I was caught in their world. Because of this experience, I launched a sustainable farming mission at the same orphanage/school, which attempted to increase the nutritional yield of the meals that were being given out to over 100 children daily. The goal of this initiative was to enable the children at the orphanage to take responsibility and action for their own nutrition. I will also be talking about a fundraising project that I started for the orphanage, which raised over 2,000 dollars. My presentation will rely heavily on images and personal testimony from my trip, as I was truly able to learn and experience so much through working with Jane and her children, and the lessons I learned are best shared.

New York's Craig Colony for Epileptics: Tracing the Deepest Roots of Deinstitutionalization

GRACE TROMPETER

FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

Under the encouragement and guidance of William Prior Letchworth, the Craig Colony for Epileptics was established by the State Board of Charities on the site of a former Shaker colony in Sonyea, NY in 1894. Following an idealistic model of colony life popular in Europe, the Craig Colony was the first and only New York State institution specifically designed "to secure the human, curative, scientific, and economical care and treatment of epileptics, exclusive of insane epileptics." Originally built to house 800 patients, the colony was home to nearly 2,600 epileptics at its peak in 1939. The Colony's goal was to serve the State's epileptic population without regard to distance from the facility, but distance decay was in fact a factor in Craig's catchment. Eventually, an aging population, and a therefore less productive and increasingly dependent workforce, exposed the problems of institutionalization and the flaws of the State's mission. Using data from the Colony's detailed annual reports, as well as the Colony Daybook, this paper explores the challenges of demographic management and the ultimate failures of institutionalization experienced in Sonyea, "the Valley of the Eternal Sun". ***Selected for presentation at Association of American Geographers Middle States Division Geography Conference Fall 2012 Meeting, Shippensburg, PA.***

4J • HISTORY STURGES 104

Terror, Territory, and Technology

FACULTY SPONSOR AND SESSION CHAIR: TZE-KI HON, HISTORY

Redefining Violence: The Spectacles of Terror in Contemporary Capitalism

NIKITA RUMSEY

In this paper, I intend to explore the complexities of "violence" as manifestation, conception, and spectacle as they interweave within the contemporary stage of neoliberal capitalism. In order to do so, I shall reframe Frantz Fanon's anticolonial dialectics of violence through the strategic processes of globalization as it repositions geo-economic centers/peripheries as well as mediates social relations internal to the capitalist structure through fearful representations and the creation of terroristic "monsters". My goal is to explore how violence, as representation and concrete subjective terror, serves to reaffirm the institutional relations between states (or

communities) as well as defines our collective unconscious, thereby negating any critical engagement with the material/ physical and exploitative realities of neoliberal capitalism. However, in using Fanon, it may be possible to develop a critical notion of violence that is relevant to the globalized subject, that allows for a structural, transformative step toward the achievement of agency and self-determination.

Territory, Transport, and Terracentrism: Intermodal Shipping and the (Im)Mobile Geographies of Consumption

NATHAN KAHN

Much of the processes and systems that comprise neoliberal capitalism result in a patchwork global landscape, concealed and dematerialized. This is especially true in relation to the networks of global trade: the technologies of trade that have developed in the last thirty years for the most part pass through spaces largely ignored during discussions of modern capitalism. Intermodal shipping is an intrinsic part of our global culture. Unfortunately, shipping and shipping's secondary processes' physical situation on the boundaries of our visual landscapes and the innocuous language that is currently used to describe the movement of capitalism do little justice to the scope and scale of the global transport system, precariously supported by the various shipping industries that rely on intermodal shipping. These capitalist global transports system exist in tandem with systems of socioeconomic disenfranchisement, violence, and marginalization. Through a multi-media research presentation I will reconceptualize the spaces and processes that intermodal shipping systems produce (cargo yards, megaships, and docks, for example) are places of large-scale (re)production of capitalist violence and marginalization. Furthermore, I will attempt to prove that intermodal shipping profits and supports the processes of forced deterritorialization and reterritorialziation that result from neoliberal capitalist enterprise.

Simulating the Landscape, Visualizing the Vertical: Drones, Google Maps, and Geography's Z-Axis

SEAN NEILL

I aim in this paper to look critically at the intersections between visuality and territoriality, between landscape and topography, particularly in the context of what Eyal Weizman calls "the politics of verticality." How do aerial and satellite technologies (GPS devices, Google Maps, drones, etc.) activate geography's z-axis and the power of three-dimensional space? How do these "borderless" technologies simultaneously deterritorialize and reterritorialize the landscape? In what ways do they work to selectively erase certain borders, while forcefully (re)inscribing others? I will be reading these state-of-the-art imaging technologies not only for their radical new-ness, but also for their contiguity within a genealogy of occularcentric discourses: e.g., the pictorial tradition of landscape painting (and its relationship with imperialism), in which the land is set up as a discrete, bounded (and boundable), delimited (and delimitable), framed (and frameable) terrain. I will look at the ways in which Google Maps, for example, creates a certain visual relationship with the world, in which the world, as discrete entity, becomes ultimately knowable, ultimately seeable. This ability to know and see is never innocent but is always bound up with the ability to control, even to kill. What happens, then, when we see the world from above?

4K • HISTORY

STURGES 112

SESSION CHAIR: JOE COPE, HISTORY

18th Century Political, Economical, and Social Problems in France and England as Revealed Through Popular Literature

KALA DESTEFANO

FACULTY SPONSOR: JOE COPE, HISTORY

Eighteenth century literature from England and France can be used as a window into a very significant time period for these two countries. The popular literature from this period was often of a satirical or a libelous nature. These books were either completely censored, as in France, or an attempt at censorship was made, as in England. Censorship did not discourage readers, so they found various ways to access the material that was interesting to them. Through an analysis of some of the most popular literature from this period this paper will prove that, despite the many different genres, each book tried to educate the public on problems in their respective countries. By addressing specific problems in society, the economy, and politics each author promoted the importance of freedom and liberty in addressing and solving problems in France and England. ***Selected for presentation at Phi Alpha Theta History Conference, Geneseo, NY.***

Saladin and the Holy Jihad: An Analysis of the Motivations Behind Islam's Most Famous Conqueror and the Road to Jerusalem

ADAM CAMIOLO

FACULTY SPONSOR: MICHAEL OBERG, HISTORY

As one of the most iconic figures of the Midle Ages, Salah al-Din Yusuf, or Saladin as he is more commonly known, played a key role in the Crusades and ultimately recaptured Jerusalem from the Crusader Kingdoms in 1187. Since then, his life has been depicted countless times as the subject of scholarly work and propaganda. He has been described as a paragon of virtue, a merciless and brutal dictator and the ideal Religious warrior throughout history. This presentation attempts to analyze Saladin's primary motivations in his early career starting in 1169 to his triumph in Jerusalem in 1187 and determine if he was as dedicated to holy war as his legend implies. By examining sources ranging from Saladin's commissioned biography by Baha al-Din Ibn Shaddad to his depiction in the Ridley Scott movie *Kingdom of Heaven*, we can not only better understand the mindset of the participants of the Crusades in the twelfth century, but also how the Crusades continue to impact our world today.

4L • LANGUAGES & LITERATURES

WELLES 121

Literary, Scientific, and Cultural Studies: Spain and Latin America

FACULTY SPONSOR: LORI BERNARD, LANGUAGES AND LITERATURES

SESSION CHAIR: MEGAN DIBARTOLOMEO

Perspectivism and *Don Quijote*

BRANDON SHUFELT

FACULTY SPONSOR: LORI BERNARD, LANGUAGES & LITERATURES

Considered by many the first modern novel, *Don Quijote de La Mancha* by Miguel deCervantes chronicles the adventures a man driven into madness from reading too much, who traverses the Spanish countryside looking for adventures with his sidekick, Sancho Panza. Written in the early seventeenth century, *Don Quijote* touches on many important Renaissance and Baroque literary themes and topics, and does so in a humorous fashion. One important framework for analyzing *Don Quijote* is perspectivism, the idea that one's perception of reality is different from others' as a consequence of being derived from variouspoints of view. In fact, perspectivism is the driving force for the humoristic nature of the work, as can be seen through a number of different situations throughout the story, such as the infamous windmill scene, among others. This presentation will be in both Spanish and English.

The Jewish Legacy in Spain

MELISSA HILL

FACULTY SPONSOR: LORI BERNARD, LANGUAGES & LITERATURES

This presentation will study the history of the Sephardic Jews before, during and after the Spanish Reconquest (8th-15th Centuries). By exploring their daily living situations, religious persecution, and ultimate exile from Spain, this study will attempt to analyze the lasting legacy that the Jews have had on Spanish culture and history as well as their continued involvement in contemporary society. This presentation will be in bothSpanish and English.

Medicine and Scientific Research in Spain

JOSEPH GERAGHTY

FACULTY SPONSOR: LORI BERNARD, LANGUAGES & LITERATURES

This two-part study will explore the development of medicine and scientific research in Spain before and after the Second Spanish Republic (1931-1939) and the dictatorship of Francisco Franco (1939-1975). The first part will analyze the history of medicine and scientific research leading up to the stagnation of such research under the dictatorship of Francisco Franco; while the second part will explore how Spanish scientists have had to compensate for this stagnation and will discuss the current status of scientific research in Spain. This presentation will be in both Spanish and English.

Historical Memory and the 1932 Massacre in El Salvador

KATHERINE MENJIVAR

FACULTY SPONSOR: ROCÍO VALLEJO, LANGUAGES & LITERATURES

Philosophers, historians and practitioners have long debated what exactly constitutes historical memory and whether history and memory can authentically coexist with each other in historical discourse. This study will analyze the different practices that have helped preserve the memories of the 1932 Massacre in El Salvador. Through extensive research and document analysis we hope to shed light on the importance of revisiting and maintaining the past and its role on the present. This presentation will be in both Spanish and English.

4M • MATHEMATICS SOUTH 338

Math Tricks for Simplifying Music, Magic, Games, and Randomness

FACULTY SPONSOR AND SESSION CHAIR: PATRICK RAULT, MATHEMATICS

Symphony of Sines and Cosines

CHRIS COFFEY

Have you ever wondered about the transition which music takes from when it is first recorded in the studio to what you hear through your head phones? Did you know that every sound can be broken down into a sum of sines and cosines? We will provide an exampleof the role mathematics takes in this process and how it can be used to alter music files. We will focus on how the Fourier transform can reduce the size of audio files without loss in quality. We will make an original recording using LOGIC and import and alter the file with methods in the mathematics program MATLAB. This talk will be accessibleto students in MATH 239.

It's not Magic, It's Mathematics!

KATELYNN GILLETTE

Taking a deeper look into "magic" tricks, one would be surprised to find out that most can be solved based off mathematical reasoning alone. We will explain how the "21 card trick" works and discuss how it can be generalized to use a larger number of cards. Another trick relies on the "nine principle, "which states that for any number between 10 and 19, the sum of the two digits subtracted from the number itself will always equal nine. Simple math is behind most magical hoaxes, but presentation and "wow factors" can distract the audience from understanding why they work. We will describe various mathematical ruses and will reveal their secrets. We will include interesting tricks that the audience can take home and use. This talk will be accessible to students in Math 239.

So You Want to Count Cards?

MICHAEL PILOSOV

The use of card counting in Blackjack has received considerable media attention in the past decade. Basic strategy is simple to understand but the reasoning behind the probabilistic advantage is full of nuance and complications. We will provide a conceptual understanding of the mathematics underlying the advantage of counting cards in Blackjack. Multiple strategies will be discussed with attention to their relative benefits and efficacy of shifting the probability of winning towards the player and away from the casino. We will explain analytical approaches such as the Monte Carlo Method, a simulation method dependent on randomness; and the Kelly Criterion, a popular formula for scaling bet sizes. This talk will be accessible to students in Math 239, but is open to anyone interested in the subject.

Making Sense of Randomness

CHRIS MOORE

The flight of a projectile can be exactly determined using the gravity formula and its initial position and velocity, but flipping a coin 10 times will not always have the same outcome. The latter is an example of a stochastic process, because the end result is not wholly determined by initial conditions but is instead determined by chance. These stochastic processes span from simple discrete cases like coin flips, to complicated continuous processes like random walks. Models of these processes can range from basic calculations to complicated computer simulations. We will look at useful applications of modeling real world problems stochastically, as well as discuss computational methods for approximating solutions that could require excessive effort to solve explicitly. Stochastic scenarios around us include stock prices and movement of particles. We will explore stochastic situations and use specific techniques such as Monte-Carlo simulations to gain insight into their tendencies. This talk will beaccessible to students who have taken Math221 and have experience with basic probability.

4N • MATHEMATICS SOUTH 328

FACULTY SPONSOR AND SESSION CHAIR: GARY TOWSLEY, MATHEMATICS

Origin of Zero: A History of Nothing

SAIF RATUL

"How can nothing be something?" was the pivotal question that raised many philosophical arguments regarding the idea of existence in the ancient world. For centuries, many renowned ancient Greek mathematicians used symbols similar to zero as just a placeholder. Later, it was an Indian Mathematician, Bramhagupta, who first developed the notion of zero as a number. It was denoted as 'sunya', a Sanskrit word for void or nothing. Soon after, the concept of the number zero not only reached the Arab world, and profoundly influenced modern day algebra, but also became the driving force of developing calculus. We seek to explore the formulation of zero and how the number zero influenced the development of modern day mathematics.

An Introduction to K-Ellipses

JIAN CONG ZENG, DEVIN SMITH, ROBERT MAGNUS, DREW ELLISON

K-ellipses are generalizations of the standard ellipses in the plane except that they posses more than two foci. Given k distinct points in the plane and a positive real number d, the k-ellipse is the set of all points in the plane the sum of whose distances to the k given points is equal to d. Several interesting results about these curves will be presented along with pictures of k-ellipses as the value of d is varied. Applications of the k-ellipses to unexpected problems will be shown.

The Genus of a K-Ellipse

DEVIN SMITH, JIAN CONG ZENG, ROBERT MAGNUS, DREW ELLISON

While k-ellipses are most easily viewed as one-dimensional plane curves, their equations also define compact Riemann surfaces, two dimensional objects. This talk presents the work so far on the problem of finding the genus of the resulting k-ellipses when k = 5. The genus is known for k = 2, 3, and 4 but for more than 4 points the genus is unknown.

4O • PHYSICS & ASTRONOMY ISC 131

SESSION CHAIR: AARON STEINHAUER, PHYSICS & ASTRONOMY

Light Pollution on the SUNY Geneseo Campus

JORDAN POTTER, KUNAL DATTA, LUCA BEALE

FACULTY SPONSOR: AARON STEINHAUER, PHYSICS & ASTRONOMY, AND REN VASILIEV, GEOGRAPHY

We have performed a systematic study of the light pollution on and around campus. Using a sky quality meter, we have measured the brightness of the night-time sky at thirty pre-determined points. We will present a map of this brightness and its relation to the varied environments on campus. We also studied the effects of cloud cover, moon phase, and altitude on the brightness. We will conclude by placing our results in the context of astronomical data gathering and discuss strategies for minimizing the impact of light pollution.

Equine Gait Analysis using the PEGASYS Force Plate

MARIE KALET, JARROD LAFOUNTAIN

FACULTY SPONSOR: STEVE PADALINO AND ED POGOZELSKI, PHYSICS & ASTRONOMY

The PEGASYS (Pressurized Equine Gait Analysis SYStem) diagnostic force plate was developed to measure hoof-ground reaction forces exerted by horses as it strides over the apparatus. The system consists of a steel plate mounted in a rectangular aluminum frame and ten sensors which measure forces along three axes: forward, lateral, and vertical. From these force time series, calculations of torque, impulse, total force, and angle of application can be used to analyze the horse's stride. Correlations between the data series may yield insight into the nature and manifestation of specific equine injuries. Data acquired by this force plate and information inferred through analysis will guide the treatment process and allow equestrians and veterinarians to determine possible injuries in horses. ***Selected for presentation at Cornell Vetrenarian School Equine Seminar, Ithaca, NY.***

UV Enhancement of Track Signal in CR-39

GRAHAM JENSEN, DANTE TUFANO

FACULTY SPONSOR: JAMES MCLEAN, PHYSICS & ASTRONOMY

The use of CR-39 plastic as a nuclear particle track detector is an effective technique for recovering data in high energy particle experiments including inertial confinement nuclear fusion. To analyze particle track data after irradiation, CR-39 is chemically etched at elevated temperatures with sodium hydroxide. Because etching proceeds more quickly along the particle tracks than for the bulk, pits at the nuclear track sites that are visible under a microscope are produced. When CR-39 is exposed to ultraviolet light below 320 nm between nuclear irradiation and chemical etching, an increase in pit diameter occurs. This is due to either an enhancement in the track etch rate relative to the bulk etch rate or an overall increase in etch rate. By viewing the cone-shaped pits from the side (through the clear CR-39), we can determine the contribution from these two possible effects. If the track etch rate is increased relative to the bulk rate, the signal to noise ratio may be improved.

4P • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 24

International Relations Honors Theses

FACULTY SPONSOR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

SESSION CHAIR: VICKY FARMER, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Chinese and Indian Military Modernization: An Asian Arms Race?

ERIC GOMEZ

FACULTY SPONSOR: VICTORIA FARMER, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This thesis examines the military modernization programs of China and India. Both states have used their rising economic status and power to rapidly modernize their militaries. Recent acquisitions have been aimed at increasing the strategic reach of both countries, allowing them to project force far from home. China and India's history of armed conflict and mutual distrust combined with more advanced and powerful weapons systems could result in a devastating military conflict. Fortunately, it does not appear that India and China are engaged in an arms race with one another. The two countries have serious security concerns driving their military modernization programs, but they do not view one another as their primary security rivals. Both countries have become more assertive and aggressive in their foreign policies since beginning their modernization programs. As both states become great powers, the question of if they will use their power responsibly and in accordance with international law will determine whether or not Asia experiences a peaceful twenty-first century.

China's Economic Policy and the US-China Relationship

EMILY JENNINGS

FACULTY SPONSOR: CHANG KUK JUNG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The relationship between the world's two largest economies is often fraught. By analyzing both government documents and contemporary scholarly works, this paper describes the impact of the People's Republic of China's economic policies on the United States. This paper also discusses the relative merit of the policy responses available to the US, concluding that policymakers should resist domestic political pressure to implement punitive measures against the PRC.

Colonial Origins of the Developmental State: Ideology, Contingency, and Institutions in East Asia and Africa

ANDREW PERRY

FACULTY SPONSOR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Since World War II, a small group of East Asian newly industrialized countries (NICs) has been almost singularly successful in closing the income gap between highly developed Western states and underdeveloped countries, bringing rapid standard-of-living improvements to their citizens. This success is largely attributable to the exceptional stability and efficiency of these states' politics and to a set of inventive policies designed to spur exports in internationally lucrative economic sectors. Such development would have been impossible had the politics of the NICs become corrupt and dominated by elite extraction of wealth, as happened across the developing world after the wave of decolonization in the 1950s and 60s. This lack of harmful political intrusion and generally high quality of governance is the result of the evolution of political institutions within colonialism, which provided the political economic frameworks for post-colonial success. While colonialism is necessarily designed in the interests of the colonizer, to the detriment of the colonized, the colonial relations in these countries were highly atypical and governed by unique ideologies and interests. In this way, the economic success of NICs is inextricable with their uncommon colonial experiences.

State Legitimacy in Africa: The Doctrine of *Uti Possidetis Juris* and its Role in Relation to Ethnic Conflict and National Identity

CHRISTOPHER CAGGIANO

FACULTY SPONSOR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The colonial borders of Africa, drawn at the Berlin Conference of 1884, were constructed by the European powers with little to no consideration for the territorial distribution of existing political entities and ethnic groups. As a result, the international community and the first set of pragmatic African leaders found it easier to maintain the existing borders than to risk protracted negotiations and possibly even interstate conflict over the new borders. The doctrine of *Uti Possidetis Juris* was was invoked in an African context, and made law by the Organization of African Unity, to assert the legality and infallibility of the colonial borders. This paper explores whether doctrine has had a negative effect on African states' prospect for success. Did *Uti Possidetis* in Africa hinder the process of state centralization, resulting in quasi-states instead of consolidated, functional, and viable nations? Furthermore, have the borders contributed to the propensity of civil wars, and non-self-sufficiency among African states. I will my hypotheses through case studies, including the Biafra, Katanga, Mali, Burkina Faso, Eritrea, South Sudan, Somaliland, and Western Sahara.

4Q • SCHOOL OF BUSINESS

SOUTH 233

SESSION CHAIR: PETER MARKULIS, SCHOOL OF BUSINESS

Free Ice Cream! An Analysis of the Endowment Effect on Food

MATTHEW HAYES

FACULTY SPONSOR: LEONIE STONE, SCHOOL OF BUSINESS

Abstract: In behavioral economics, the endowment effect is the phenomenon in which individuals value goods and services they own higher than those they do not. My research will analyze food consumption, how "nudges" can effect our valuation, and how they relate to the endowment effect.

Diverse Teams: The Impact of Diversity on Team Performance

LINDSEY BULMAN, ANDREW MAUNG, AARON DORFMAN, JESSICA CRAIG, XIAOYING ZHAO

FACULTY SPONSOR: AVAN JASSAWALLA, SCHOOL OF BUSINESS

We discuss what diversity is and the impact it has on group dynamics. Our presentation talks about our research on the topic and the impact it has on team effectiveness. Within the presentation, we discuss recommendations to enhance performance and diversity.

Bringing the Working World to the Classroom: Developing an Organizational Behavior Simulation

CHRISTOPHER PIKE, KRISTEN CORBISIERO, CATHERINE BYRNE, NATALIA BAGNOWSKA

FACULTY SPONSOR: PETER MARKULIS, SCHOOL OF BUSINESS

In order to bridge the gap between the theory learned in MGMT 300: Organizational Behavior and the working world, Dr. Peter Markulis and a team of students developed a realistic organizational behavior (OB) simulation. The simulation operates as a series of interconnected episodes, each covering an OB topic and having a decision focus. Each episode presents the manager with a series of choices, called decisions options, related to the OB topic at hand. Students are expected to make OB decisions within the context of a small organization. When the students use the actual simulation they must make a choice and justify it, usually by doing some additional research. The presentation will cover the development of the simulation from conception to implementation in the classroom. Presenters will discuss the character and scene

development process. Time permitting, the audience will experience the simulation through a student perspective by participating in a "mini-scenario."

4R • SCHOOL OF EDUCATION

SOUTH 340

SESSION CHAIR: ANNMARIE URSO, SCHOOL OF EDUCATION

No Child Left Behind: Its Impact of the United States Education System

JOANNA ROSE-GROSS

FACULTY SPONSOR: ANNMARIE URSO, SCHOOL OF EDUCATION

My presentation will explore the current legislation of No Child Left Behind and its effects in the classroom. The discussion will also include the Common Core Standards and how they do not work for every student due to various environmental and academic factors. I will also hold a panel discussion at the end of my presentation of current teachers and administrators to discuss how the current legislation is affecting their districts and the decisions they face every day.

Assessment of the Interdisciplinary Approaches to Addressing the Diverse Needs of English Language Learner Students at Maplewood

ALEXANDRA NIEMIEC, HANNAH RODY-WRIGHT, JORDEN STRAPP

FACULTY SPONSOR: SUSAN NORMAN, SCHOOL OF EDUCATION

This powerpoint presentation will describe and display the impact of the SUNY Geneseo tutoring effort in the city of Rochester at the Maplewood Library called Rochester Young Scholars Academy Saturday School (RYSASS). We'd like to conduct an informal analysis of the effectiveness of the methods mentioned in the Maplewood RYSASS poster session. We plan on doing this by giving the students pre and post content area and attitudinal tests during each tutoring session. We will combine these qualitative pre-post assessments with a second qualitative assessment based on what we have observed over the 10-week program. Ultimately, we will be able to create a visual representation of the students' progress as a result of the methods utilized by the RYSASS tutors.

4S • SOCIOLOGY

MILNE 109

Sociological Studies of Well Being and Emotion

FACULTY SPONSOR AND SESSION CHAIR: STEVE DERNE, SOCIOLOGY

Differentiation in Sources of Well Being According to Age

ALEX HIPOLITO

Well being is defined by many scholars as an enduring sense of life satisfaction. Gordon Mathews makes the claim in *What Makes Life Worth Living* that the sources of well being differ among age groups. He claims the young people gain well being from looking ahead to future lifestages, while old people gain well being from looking to the past. After collectively interviewing more than 30 people both young (17-25) and old (25 or above) age ranges, a senior seminar class analyzed the results. From these results it can be determined that Mathews's conception of the sources of well being for each age group is incorrect. Interview results reveal that young people find well being in transient physical pleasures such as being with friends, eating, sports, or exercise while older people find well being in lasting relationships such as with children or spouses, altruistic activities, or religion.

Well Being: A Force Found Only Within Oneself or the Product of Material Forces?

REBECCA STORKE

While Gordon Mathews believes that individuals do not find well being outside of the self, it is evident that people do in fact find well being from material forces. In the senior seminar class on well being at SUNY Geneseo, 41 interviews were analyzed to see if people do in truth find well being from material forces. Out of the 41 interviews that were conducted there were 6 strong representations of individuals who mention material forces as a source of well being. From this analysis it was perceived that people do mention material forces as sources of well being.

Emotional Gifts in Romantic Relationships

MEGAN MCPHILLIPS

American culture socializes women to feel that they should have as few sexual partners as possible and try to maintain monogamous relationships. For this reason women will give their partners gifts in the form of emotion work in order to keep the relationship stable. In *The Managed Heart*, Arlie Russell Hochschild explains the concept of emotional gifts in this passage: "To sum up, the display and emotion work are not matters of chance. They come into play, back and forth. The come to mean payment or nonpayment of latent dues." This means that people will behave a certain way in order to give off the impression they have feelings they do not and make another person happy. In order to find out if women do more emotional work, I looked at the relationship advice website "thelasthonestguy.com." I read different problems women face to see if they are giving emotional gifts to their partner because they have been socialized to desire a long-term relationship. I found that women are more likely to give emotional gifts to stay in a relationship.

Virtual Solidarity Movement: Women's Reproductive Health Rights Advances Due to the New Age of Multi Media

JANA WONG

Interaction rituals are what provoke either low or high emotional energy. Collins states that in order for an interaction ritual to generate emotional energy there needs to be the following: face-to-face focus, attention on the same activity, and a common mood shared amongst the group. Collins says there needs to be a group minimum of two assembled face-to-face interactions in order for there to be emotional energy; however, he neglects to acknowledge that even without a co-presence there can still be high emotional energy. The new age of multi-media paved way for the emergence of webinar trainings and virtual marches allowing for high emotional energies of unification in the field of Women's Reproductive Rights Movement. To identify high emotional energy I looked for "up" feeling tones, positive solidarity feelings, feelings of confidence, and enthusiasm for social interaction by examining blogs of the Silver Ribbon Campaign: Trust Women Week, a coalition of pro-choice organizations dedicated in fighting for women's reproductive health rights. My study shows that emotional energy occurs without the need of physical co-presence due to the new technological era.

4T • STUDY ABROAD

WELLES 123

Lessons in Development: El Sauce, Nicaragua

FACULTY SPONSOR AND SESSION CHAIR: SAMUEL CARDAMONE, STUDY ABROAD

Micro-loan in Action: El Sauce, Nicaragua

ERIN CORCORAN, CHIKAMSO ODUME

Microcredit/Microloan programs have played an interesting role in the world. The contemporary version is credited to Nobel prize winner Muhammad Yunus, founder of the Grameen Bank. This option was created as a better alternative to "loan-sharks", who often took advantage of the people borrowing money. Not only does this program support entrepreneurship and help alleviate poverty, but in many cases empowers women and enriches entire communities by extension. In the case of El Sauce, Nicaragua, the Enlace Project kicked off its Microloan Program in 2012. Similar to other Microloan programs, they provide individuals of El Sauce with small business loans of $50.00 - $200.00. However, what sets them apart are the basic financial education classes the borrowers are mandated to attend. This presentation examines the degree to which this has made a difference in the success rate of this program.

Idioma de Señas de Nicaragua: A Nicaraguan Sign Language Experience

NICOLE KENNEY

Nicaragua's revolution, ending in 1979, impacted deaf Nicaraguan individuals in a profound way. Before the revolution, deaf individuals depended on an undeveloped communication form: home signs. These are gestures developed by deaf children when they lack a visual language model. An outcome of the revolution was an educational reform movement that brought deaf individuals together. The materialization of deaf schools provided a foundation for home signs to emerge into a new and sustainable language: Nicaraguan Sign Language (NSL). The language's unique development fascinated linguists for years and me

as I packed for my two-month stay in Nicaragua. My service-learning project was to teach NSL to a twelve- year old girl, Carla who had no basis of language in a town devoid of NSL. She cannot speak words, sign, read, nor write. I proudly anticipated that I would get to play Anne Sullivan, Helen Keller's teacher, introducing language for the first time. However, I was cynically aware that language couldn't be learned in one month. Despite my doubts, my goal deepened; I realized that with a lot of help from the right people, advocating for the deaf could lead to sustaining NSL education for Carla and other deaf children in her town.

Rural Health Care in El Sauce, Nicaragua

LAURA SZCZESNIAK, STEPHANIE CLOOKEY

Health care in Nicaragua has seen many improvements in the past several decades. While the nation is still considered deeply impoverished, there are several advancements being made in its health care system that have extended beyond the capital city of Manauga, namely in the city of El Sauce, Leon, and its surrounding rural communities. During our time spent in El Sauce, we traveled to several rural health posts where we observed that free health care was provided even to the Saucenos living miles away from the city center of El Sauce. It was noted that emphasis was placed on infant vaccinations as well as birth control. These are important indicators of development, as even Saucenos living in isolated locations make regular check-ups starting at birth. While the extent of the health care system seems promising, there are still several key aspects that are in need of improvement before the entire health care system can be considered successful.

Understanding Global Community Through Humanities and Service Learning in Nicaragua

ANNA CASTONGUAY, MANDRACCHIA FRANCIS

Globalization has caused conflicts of coexistence not only on an international level, but even at the intergenerational level. In our time in Nicaragua, we experienced a growing disparity in the way people relate, both at the community level and globally. This presentation will attempt to understand the forces behind the economic and social changes that have become apparent in Nicaragua, United States and the world. By studying humanities and participating in service learning, we had an interesting vantage point to consider our position as Americans in an increasingly global community. The discussion will draw parallels between the United States and Nicaragua and observe that through establishing ties with the people we met during our time abroad, we may understand that the forces at work in either country are not so different. Through this we may see possibility for forming significant relationships with Nicaraguans and reconciliation.

4U • THEATRE & DANCE

WADSWORTH AUDITORIUM

FACULTY SPONSOR AND SESSION CHAIR: JONETTE LANCOS, THEATRE & DANCE

An Overview of the Pioneers of American Modern Dance and Their Contributions to Dance History

MEGAN KILLEA, CHRISTINA TSANG, MEGAN ROBERTS, JUSTINE LAZATIN, JACQUELINE DILUGLIO

This presentation will focus on the pioneers of modern dance Loie Fuller and Isadora Duncan and how they influenced a generation of modern dancers, specifically Mary Wigman, Lester Horton and Alvin Ailey, who developed their own techniques and companies. The first section will discuss Loie Fuller and Isadora Duncan. These women became the figureheads of American modern dance by incorporating new theatrical, production and movement style aspects to their works. The second portion of our presentation will focus on Mary Wigman, a prominent modern dancer in Germany during the 1920's and 1930's. The third presentation will discuss and focus on *Cry* by Alvin Ailey and *The Beloved* by Lester Horton. Both of these master works address social issues, specifically issues that deal with the struggles of women. The choreographers use specific movement technique, style, staging, and costuming to address these issues. The fourth section will be a reflection and analysis of the social issue of domestic violence embodied in Lester Horton's piece, *The Beloved*, and this work's continued influence in modern day dance. The final portion will provide an analysis of Alvin Ailey's work *Cry*, depicting the hardships of slavery and its universal message of empowerment.

4V • WOMEN'S STUDIES WELLES 119

FACULTY SPONSOR AND SESSION CHAIR: LINDA STEET, WOMENS STUDIES

Breaking the Stereotype: Activist Muslim Women in Religion, Politics, and Culture

JOBINA ALEXANDER, JENNIFER BURDEN, MELANIE CERRA, KATHERINE DUKARM, LAUREN WEISBERG

Muslim women in past and present Muslim majority societies have played significant roles as leaders and change agents in Islam, political rights, and cultural progress. The panel will present biographies of Muslim women that they have selected as worthy of recognition and celebration, and whose stories break Western stereotypical images of passive Muslim women. The profiles highlight women's contributions in fields including sports, the arts, gender equity, and religious interpretation. Their work, interests, and talents demonstrate women's activism and full engagement in Muslim majority societies. These notable Muslim women helped shape their worlds, and their biographies re-frame the way Muslim women have been presented in the West. The subject choices were made by WMST students and reflect their perspectives as American college students with no firsthand experience in Muslim majority societies. This, therefore, also says something about how they gauge what counts as important contributions of women. Panel subjects cover a wide range from Prophet Mohammed's wife Aisha; to contemporary royalty, Princess Haya; to feminist Nawal el Saadawi and more.

4W • WOMEN'S STUDIES WELLES 115

Capstone Projects in Women's Studies 2

FACULTY SPONSORS AND SESSION CHAIR: ALICE RUTKOWSKI AND MELANIE BLOOD, ENGLISH

Feminism and Social Media: the Dilemma of Pro-Ana Websites

SASKIA TALAY

Talay studies feminist blogs' use of commenting, anonymous support, and open conversations between women. She discovered an article detailing the foundation of "pro ana" groups; they are online sites and groups, apparently led by young women, dedicated to supporting other young women to continue their anorexia. These groups use many of the same devices necessary for the creation of a feminist community. From this discover spring the questions that focus her research. How is this troubling trend similar to feminist communities online? How do we address this without belittling the experience and opinions of participants? Especially considering that cyberfeminists hoped gender would be left behind in cyberspace, how does gender function in both communities?

Critical Pedagogy Across Disciplines

MARY GRACE EGLOFF

Egloff's project combines research about critical pedagogy with being a TA for Intro Women's Studies. Her research uncovers different classroom methods and assists reflection on the way that the class functions. Finally, she considers the role critical/feminist pedagogy could serve in a philosophy classroom, her major field of study.

Writing Unapologetically: Creating a Theatrical Representation of My Personal Story

RACHEL TAMARIN

Tamarin will discuss the process of creating a theatrical, one-woman show based on life experiences. Specifically, she will address challenges she encountered, such as how to represent herself and the subjects of her anecdotes from a feminist perspective, in a manner people would find entertaining, educational, and relatable.

4X • HISTORY STURGES 114

FACULTY SPONSOR: TZE-KI HON, HISTORY
SESSION CHAIR: MATTHEW ANDREWS

The Myth of the BRICs

MATTHEW ANDREWS, ERIC GRATIEN, LAURA RAHEB, THOMAS KEEGAN

FACULTY SPONSOR: TZE-KI HON, HISTORY

There is speculation among many international scholars that a group of nations, commonly known as the BRICs, will soon be able to challenge United States hegemony. This panel will discuss the viability of these nations to actually overcome the current international system.

4Y • ANTHROPOLOGY STURGES 111

SESSION CHAIR: DENICE SZAFRAN, ANTHROPOLOGY

Migrant Farmworker Health in Western New York

MARIA SIGALAS, STEPHANIE KELLY, DANNIELLA DOWNIE
FACULTY SPONSOR: ROSE-MARIE CHIERICI, ANTHROPOLOGY

Migrant farm workers are a community of people, largely from abroad, that do agricultural work within the United States. The health needs of this population often go unattended as their lifestyle as mobile, manual laborers and lack of access to health care facilities leaves this population at risk. Our research is centered on three areas: analyzing the current status of farm workers, barriers to health care access, and farm worker perceptions on health. The current status of farm workers entails analyzing demographics, policies and preexisting programs suited to meet this community's needs. The focus then shifts to the barriers to healthcare access and the health issues amongst migrant populations, such as occupational hazards and mental illness. We will also touch upon the differential power hierarchy involved in health care access for this population. Perceptions on health have been devised through interviews with farmers, farm workers, and service providers in order to collect a more holistic understanding of the issues at hand. By studying these facets of migrant farm worker health we hope to bring more light to the situation of farm workers within the United States.

The English (Dis)Connection: Refugees and English Language Rates in Upstate New York

VICTORIA HAFNER
FACULTY SPONSOR: DENICE SZAFRAN, ANTHROPOLOGY

This paper looks at two refugee organizations, Mary's Place Outreach in Rochester, NY and Journey's End Refugee Services, Inc. in Buffalo, NY, with regard to their English language programs. This study is part one in a larger project that centers on the question of first language retention rates among refugees in these two organizations. The first step in examining how closely they hold their first languages is to determine how English is finding its way into their lives. Through informal interviews with employees at each organization, and eventually an observational visit at Mary's Place, this paper observes how two refugee organizations teach their clients English. This information is then used to posit how that may or may not affect integration into the community, as well as the connection between the English language training and first-language retention rates.

SPECIAL PRESENTATIONS

SPECIAL SESSION • WATCH FOR IT

FACULTY SPONSOR: DEBORAH SCODESE FRENCH

EMILY ANDREWS, MARGARET ARLINGTON, BREANNE BLAZEVIC, EMILY BRESSNER, CAROLYN GREENWOOD, JOSHUA HOROWITZ, KATRINA KAASIK, ZAHRA KAMILLA, AIME MABELO, KAITLYN MAMAY, ANTONIA MARIC, JESSICA MUNNINGS, SHEA NAJUCH, MELISSA NIKNAM, QWEST O'REILLY, EMILY OSWALD, ASHLEY PALACIOS, MARY PANDOLFINO, CHRISTINE PICCIONE, SHAYRA REYES, MEGAN RUSS, CASSANDRA SAROLI, ALEXIS SKILL, JENNA-MARIE THEOFIELD

Students will be presenting a special program created just for GREAT Day.

The second annual Geneseo Insomnia Film Festival took place on April 5th-6th. Participants had 24 hours to write, shoot, edit, and post a 3-minute video using a set of elements provided. Teams competed for prizes against other SUNY Geneseo students in an attempt to create the wittiest, interesting, and creative video. This was a chance for students of all talents to flex their creative muscles and demonstrate their skills, whether they be writers, actors, videographers, or editors. Submissions were judged blindly by a panel of Geneseo faculty and staff as well as through social media. All videos were shown during a special award event the week after qualifying submissions were submitted. Now we're inviting you to come see the videos during this special GREAT Day screening in Sturges 219 (Auditorium) at 7:00 pm!

Index of Student Participants

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GREAT Day 2013
Cover Design Project

PHILIP ROMANO, AMY KUEHNERT, DUSTIN FREDERICY, JIHEE LEE, JOANIE DRAKE, JOSEPH SCHWARTZ, JUSTIN LEVITT, MICHELLE DODGE, ROOHULLAH MAQSOODI, SKYE CARDONA

FACULTY SPONSOR: MICHAEL TERES

The ARTS 204 Graphic Design Class developed cover designs for the GREAT Day Program. The colver selected was created by Philip Romano The work submitted by the remainder of the class is featured here.