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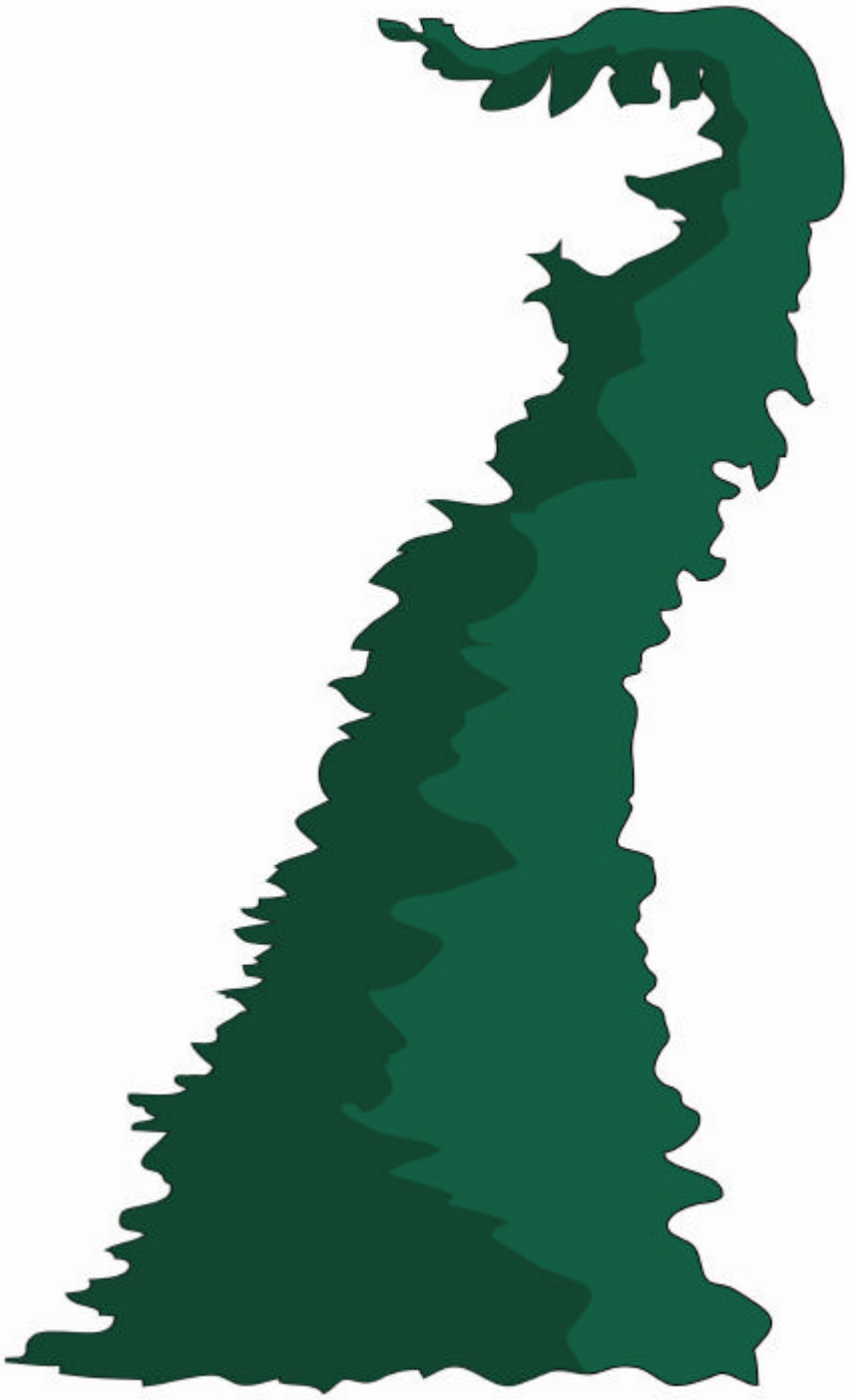

2nd Annual

GREAT Day

A day-long, college-wide celebration of student creativity, research , and scholarship

Welcome to SUNY Geneseo's Second 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 G.R.E.A.T. Day Planning Committee:

Doug Anderson, School of the Arts
Anne Baldwin, Sponsored Research
Joan Ballard, Department of Psychology
Aaron Steinhauer and Charlie Freeman, Department of Physics & Astronomy
Graham Drake, Departmentof English
Walter Freed, Department of English
Michael Rozalski, School of Education
Andrea Klein, Scheduling and Special Events
Stephen F. West, GREAT Day Coordinator

The Planning Committee would like to thank: Stacie Anekstein, Ed Antkoviak, Brian Bennett, Cassie Brown, Michael Caputo, Sue Chichester, Betsy Colon, Laura Cook, Ann Crandall, Joe Dolce, Tammy Farrell, Karie Frisiras, Kristen Fuest, Chip Matthews, Ginny Geer-Mentry, Becky Glass, Corey Ha, John Haley, Doug Harke, Tony Hoppa, Paul Jackson, Nancy Johncox, Enrico Johnson, Jo Kirk, Sue Mallaber, Tracy Paradis, Jennifer Perry, Ed Rivenburgh, Linda Shepard, Bonnie Swoger, Helen Thomas, Pam Thomas, and Taryn Thompson.

Special thank you to Anne Baldwin, Andrea Klein, and Doug Anderson.

Thank you to President Christopher Dahl and Provost Katherine Conway-Turner for their support of G.R.E.A.T. Day.

Thank you to Steven Squyres for delivering our keynote address.

G.R.E.A.T. Day is funded by the Office of the Provost.

The G.R.E.A.T. Day Web Site • http://great.geneseo.edu

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Second Annual

G.R.E.A.T. Day

Geneseo Recognizing Excellence, Achievement & Talent

Schedule at a Glance

8:00 – 8:30 AM	***Registration and Continental Breakfast***	MacVittie College Union Lobby
	Poster Presentation Setup	Milne Library First Floor Common Area and MacVittie College Union Ballroom
8:30 – 9:30 AM	***Welcoming Remarks by Katherine Conway-Turner, Provost***	Union Ballroom
	Artwork Exhibits	Kinetic Gallery, Union
	Poster Presentations	Milne Library and Union Ballroom
9:40 – 10:55 AM	**Concurrent Presentations • Session 1**	
	Session 1-A • Anthropology	Milne 105
	Session 1-B • English From Hiroshima to Munich to Kabul: Is State-Sponsored Revenge Moral?	Welles 128
	Session 1-C • English Genesee Valley Agri/Culture	Welles 121
	Session 1-D • English Calling Back the Poets: The British Literature I Recitation Project	Welles 131
	Session 1-E • History	Newton 201
	Session 1-F • Honors Capstone Projects: Session I	Newton 203
	Session 1-G• Honors Capstone Projects: Session II	Newton 204
	Session 1-H • Mathematics Twisted Mathematics and Its Uses	South Hall 338
	Session 1-I • Philosophy Atheism and Society	Welles 119
	Session 1-J • Philosophy The Philosophy of Friedrich Nietzsche	Welles 138
	Session 1-K • Political Science and International Relations: Issues in American Politics	Welles 123
	Session 1–L • Psychology Examining Multiple Factors Affecting How Individuals Cope with Stress	Milne 104
	Session 1-M • Women's Studies Research and Creative Projects in Women's Studies	Welles 133
9:45 – 12:15 PM	**Extended Session** • School of Business Business Plan Competition Final Presentations	South Hall 340
10:00 – 12:15 PM	**Chamber Music Festival Part 1**	The Grind Stage, Union
11:05 – 12:20 PM	**Concurrent Presentations • Session 2**	
	Session 2-A • Anthropology and Sociology	Milne 105
	Session 2-B • Biology	Newton 201
	Session 2-C • Communication	Milne 104
	Session 2-D • English Literature of Medieval England: Chaucer and Malory	Welles 131

	Session 2-E • English Claiming Space: Geneseo Students and the African American Migration Narrative	Welles 121
	Session 2-F • History Music, Philosophy, and Medicine in the Third	Welles 128
	Session 2-G • History Conflicted Histories: Geneseo and the Struggle for Justice	Newton 214
	Session 2-H • Honors Capstone Projects: Session III	Newton 203
	Session 2-I • Honors Capstone Projects: Session IV	Newton 204
	Session 2-J • Philosophy The Philosophy of Thomas Kuhn	Welles 119
	Session 2-K • Political Science and International Relations: Managing Diverse Populations in the Developing World	Welles 123
	Session 2–L • Psychology College Women's Perceptions and Experiences of Unwanted or Forcible Sex	South Hall 338
	Session 2-M • School of Education	Welles 138
	Session 2–N • Women's Studies Taking Women's Studies out from the Classroom: Senior Internship Project Presentations	Welles 133
12:30 – 1:30 PM	**Artwork Exhibits**	Kinetic Gallery, Union
	Dance Performance: Geneseo Bhangra	Union Ballroom
	Poster Presentations	Milne Library and Union Ballroom
	Buffet Luncheon	Union Ballroom
1:45 – 2:45 PM	**Keynote Address** ***Introduction by Christopher Dahl, President*** **Dr. Steven Squyres** ***Roving Mars: Spirit, Opportunity and the Exploration of the Red Planet***	Wadsworth Auditorium
2:55 – 4:10 PM	**Concurrent Presentations • Session 3**	
	Session 3-A • Anthropology The Stigma of AIDS: Anthropological and Economic Perspectives	Milne 105
	Session 3-B • Biology Malaria: Attacking the Disease with Mathematics	Newton 201
	Session 3-C • Communication, Education, Multicultural Affairs, and Service Learning	Milne 104
	Session 3-D • English Lessons in Love and Loss: A Prose Reading	Welles 128
	Session 3-E • English Interpreting D.H. Lawrence's *Women in Love*	Welles 131
	Session 3-F • History and Geography	Newton 214
	Session 3-G • Honors Capstone Projects: Session V	Newton 203
	Session 3-H • Honors Capstone Projects: Session VI	Newton 204
	Session 3-I • Mathematics Mathematical Explorations I	South Hall 338

	Session 3-J • Philosophy The Philosophy of W.V.O. Quine	Welles 119
	Session 3-K • Political Science and International Relations: Gender and Migration in International Politics	Welles 123
	Session 3-L • Sociology Sociology Student Research Project Panel	Welles 121
	Session 3-M • School of the Arts Senior Projects in Theatre	Welles 133
	Session 3-N • School of Business	South Hall 340
	Session 3-O • FARI Documentary	Welles 138
3:00 – 5:15 PM	**Chamber Music Festival Part 2**	The Grind Stage, Union
4:20 – 5:35 PM	**Concurrent Presentations • Session 4**	
	Session 4-A • Biology	Newton 201
	Session 4-B • Chemistry, Physics and Astronomy	Newton 203
	Session 4-C • Communication	Milne 104
	Session 4-D • Communicative Disorders and Sciences: The Effects of Training On Language Sample Quality	Welles 123
	Session 4-E • English Shakespeare and Centrifugal Forces	Welles 128
	Session 4-F • English "The Very Best is the Old": Modernism, Domesticity and Tradition across Cultures in Willa Cather's Later Novels	Welles 131
	Session 4-G • English and Foreign Language and Literatures	Newton 204
	Session 4-H • Mathematics	South Hall 338
	Session 4-I • Mathematics Mathematical Explorations II	Welles 121
	Session 4-J • Philosophy Women in the New Testament and the Aeneid	Welles 138
	Session 4-K • Philosophy Plato and Aristotle on Universals	Welles 119
	Session 4-L • Theater Shakespeare in Performance	Welles 133
	Session 4-M • School of Business Applying Business Research Skills to Real-World Problems	South Hall 340
	Session 4-N • Anthropology Field Research Projects in Madagascar: Assessing the Unique Flora and Fauna in an Ecological Hotspot	Welles 140
5:30 – 6:30 PM	***Reception*** ***Remarks by Katherine Conway-Turner, Provost***	Union Ballroom
	Artwork Exhibits	Kinetic Gallery, Union
	Poster Presentations	Milne Library and Union Ballroom
6:30PM - 8:30PM	**Second Annual SUNY Geneseo Bio-Olympics**	Integrated Sciences Center
7:00PM - 8:00PM	**School of Business Annual Spring Lecture**	Newton 202

ARTWORK EXHIBITS
MacVittie College Union, Kinetic Gallery

Ryan Ashlaw
Faculty Sponsor: Douglas Anderson, School of the Arts
Untitled Number 7

Jason Dorofy
Faculty Sponsor: Douglas Anderson, School of the Arts
It's Britney...Bitch!
Renaissance Inspired Critique on Pop Culture "Icons"

Emily Gibbons
Faculty Sponsor: Douglas Anderson, School of the Arts
Window 1
This piece is about 3'X 4' and is canvas stretched behind a 2 pained old window. It is two oil paintings, each of a woman looking at themselves in the window, and focuses on self-perception and self-consciousness

Window 2
This is the second window, also 2 pained, and canvas stretched behind it and also oil paint. It is 2 paintings of 2 girls each getting ready for an event. It continues with the themes of beauty and perceptions, but with two girls each and shift away from self-consciousness, and more toward enjoyment of the process of primping.

Monica Hamm
Faculty Sponsor: Douglas Anderson, School of the Arts
Portrait of a Man
Oil paint on canvas, a man looking left with dark hair.

Chris Held
Faculty Sponsor: Douglas Anderson, School of the Arts
Road to Freedom
This is an image near the spot where the Gettysburg Address was given on November 19th 1863. I took the image on November 19th 2007 and then converted it into a serigraph (silkscreen).

Mary Jemison Statue
This is a serigraph (silkscreen) of the Mary Jemison Statue. I felt that this image and the colors selected captured the essence of who Mary Jemison was.

Yuki Kawae
Faculty Sponsors: Douglas Anderson, School of the Arts and Dan DeZarn, School of the Arts
Fiber in the Ocean
Trees have characteristics that only nature can create- fibers. Trees have unique texture that plastic, plaster, and other synthetic objects don't have. I focused on this texture to create a wooden sculpture piece to complete my first 3-D project in SUNY Geneseo. Important Elements and Principles that these pieces have are Texture, Direction, and Contrast. The broken pieces of wood carefully assembled together comprise the focal point. This feature is the most intricate design in the piece. The eye follows the direction of the fibers, which eventually flow into the long oak in the background with burn marks. The eye follows one burn mark to another, and makes a trip from the top to bottom of the piece to eventually get to pine wood. White curved pine wood contrasts the rugged fiber texture and leads back to the fibers. The flow of the various wooden elements represents the ocean waves and the fibers embody an aspect of wood.

Leo
The lion is my Favorite Animal. The lion is at the top of the food chain, or the king of all animals. This painting of the king has the facial expression of calm yet powerful paternal figure, which embodies several other qualities: intimidation, power, warmth, confidence, etc. The wavy figures and circles represent the potential aspects of the lion and the actions available to it. The big circle on the lower left represents earth covered in clouds and also as the Lion's kingly status. When people look at this painting, I want them to feel strong about themselves by seeing the potential of the lion's strength within.

Painting for Mark Uzunian's Mind
One of my best friends, Mark Uzunian, has seen my pieces and has wanted me to paint for him. However, every time I painted for him, I learned something new in the following art classes which made the old painting seem worthless, so I kept telling him to wait. But finally, after taking two Oil painting classes with Professor Julie Cardillo and Professor Doug Anderson, I have learned a lot and was able to paint something very surreal with variation of brilliant colors that I think he would relate to. Mark

Uzunian is a unique character; his mind wanders a lot and therefore this painting lacks a strong focal point. He appreciated the effort I put into the painting, and I am looking forward to painting more pictures for people who I care about as well as important people in my future.

Greg Kraus
Faculty Sponsor: Douglas Anderson, School of the Arts
Acrylic on Canvas (Untitled)
This piece was done after researching Jackson Pollock for an art history project. I was so intrigued by the way he had done his famous action painting technique's, incorporating his own emotions and letting his body create the work, that I decided to do one of my own.

Matthew Long
Faculty Sponsor: Douglas Anderson, School of the Arts
'Matthew'
Acrylic on Wood.

Andrea Marshall
Faculty Sponsor: Douglas Anderson, School of the Arts
Andrea's Space
In this piece I have created an organized and intimate space for growth and thought. The viewer may feel a sense of closeness or distance from the subject taking up the space in the confined case. This is a self portrait.

Justine Meccio
Faculty Sponsor: Douglas Anderson, School of the Arts
You Could Finally Get a Word In (Aunt Mary)
Graphite on bristol board - a framed and matted graphite portrait.

Maureen Peer
Faculty Sponsor: Douglas Anderson, School of the Arts
Rt 63 Barn
Water Color painting.

Main St. Geneseo
Watercolor Painting.

Jeff Pyo
Faculty Sponsor: Douglas Anderson, School of the Arts
The Push
A visual representation of a person who holds in emotion and bursts.

Trisha Roblee
Faculty Sponsor: Douglas Anderson, School of the Arts
Untitled digital photograph #1
Untitled digital photograph

Untitled digital photograph #2
Untitled digital photograph

Chris Sato
Faculty Sponsor: Douglas Anderson, School of the Arts
Nude #15
A graphite nude figure.

Tiffany Scriven
Faculty Sponsor: Douglas Anderson, School of the Arts
The Stream
An 11 x 18" black and white ink wash of a girl dipping her foot into a stream.

Mme. Gouvey
A 9 x 7" screen print of a woman sitting on scenic stone wall. Impressionistic in style.

AJ
A 16 x 21" watercolor painting of a cat looking into a mirror.

Amy van Saun
Faculty Sponsor: Douglas Anderson, School of the Arts
In the Window
An 8 x 10" painting on mounted clayboard in egg tempera of a model posing as a window prostitute. Part of a larger series about window prostitution in Amsterdam, Netherlands. Egg tempera is a medium in which paints are mixed by hand by the artist by combining egg yolk medium and color pigments.

Steve Vollo
Faculty Sponsor: Douglas Anderson, School of the Arts
Odd Nerdrum Study
Head study of a painting by Odd Nerdrum. Oil paint on canvas board.

Wenqi Zhang
Faculty Sponsor: Douglas Anderson, School of the Arts
Untitled #1
Watercolor painting, white still-life

Untitled #2
Watercolor painting, cityscape with figure

Untitled #3
Watercolor painting, multi-perspective

John Zolna
Faculty Sponsor: Douglas Anderson, School of the Arts
Automobile
This work is a digital photograph. The scale is approximately 8”x10”. This photograph is an image of a car that has been sitting in one place for a long period of time and is overgrown by various plants. The texture and color range of the piece gives it a very dynamic quality. In addition, the juxtaposition of the two main subjects (the plants and car), along with the plants overgrowing and concealing the car evoke thoughts relating to the approaching obsolescence of conventional, fossil fuel driven vehicles.

Wind
This work is a digital photograph. The scale is approximately 8”x10”. This photograph is a landscape image. In the foreground there is a cow standing innocent, docile, and ignorant. In the background there is large, imposing wind turbine. The photograph employs the use of a range of textures and colors to initially catch the viewer’s attention. The juxtaposition of the organic, natural setting with the harsh, geometric shape of the turbine conjures thoughts related to our dependence on energy, the impact that has on the environment, and how we are to cope with dwindling resources.

Falls at Letchworth
This work is a digital photograph. The scale is approximately 8”x10”. This photograph is an image of the magnificent and powerful waterfalls at Letchworth State Park. The image has been digitally edited and enhanced to stylize and enhance the texture of the picture.

Dance Performance: Geneseo Bhangra Union Ballroom Stage 12:30PM

Geneseo Bhangra
Session Chair: Heather Jones
Faculty Sponsor: Randy Kaplan, Theater
A six-minute bhangra performance by the members of Geneseo's competitive South Asian dance team.

The other members of the team include:

Poonam Bhatt
Vivian Chiu
Courtni Clarke
Lauren Crispino
Donat De La Cruz
Chiara Guardo
Sangeeta Jakayar
Tina Jensen
Adam Kroopnic
Andre McDuffie
Yumi Neese
Shivani Polasani
Andrew Sewnauth
Jon Teixeira
Derek Wang

POSTER PRESENTATIONS
Milne Library, First Floor Common Area

Anthropology

1 • Chiapas, Mexico: Land Ownership, Environmental Degradation, and the Zapatista Movement

Stephanie Aquilina, Casey Rampe, Manuel Karam, and Toshio Murakami
Faculty Sponsor: Rose-Marie Chierici, Anthropology

Motivated by oppressed indigenous landowners, the Zapatista movement currently underway in Chiapas, Mexico has strong ties to issues of native land ownership and environmental degradation. Changing political and economic policies, along with the introduction of the North American Free Trade Agreement, have damaged small-scale indigenous farming operations and forced countless people off of their lands. In addition, commercial interests in the global market have significantly degraded Chiapas' environment through deforestation, oil and mineral extraction, bio-piracy, and ecotourism. This land privatization has forced the indigenous communities into unsustainable lifestyles in ecologically sensitive areas without compensating for their losses, resulting in compromised livelihoods and violent conflicts. Our project investigates the interrelationships between these issues and identifies key organizations working to alleviate these problems. We will critique the methods and accomplishments of these groups, ultimately offering our insights on how to more effectively address the land ownership and environmental concerns of the Zapatistas.

2 • Infra-structural Development in Nicaragua

Heather Caiola, Seth Solomon, Daisy Heartberg, and Joel Sovie
Faculty Sponsor: Rose-Marie Chierici, Anthropology

Nicaragua is a small country located in Central America between Honduras and Costa Rica. It is characterized by a long history of political instability and civil unrest, and has only achieved political stability over the past 20 years. It has one of the highest degrees of income inequality in the world, and the third lowest per capita income in the Western Hemisphere. In addition, the low unemployment rate masks the fact that much of the human capital in the country is being under-utilized with a 46.5% underemployment rate. Ciudad Sandino, the poorest city in Nicaragua, is currently home to more than 150,000 people. Many of these people are refugees displaced from during natural disasters which include a flood in 1968, and earthquake in 1972, and most notably Hurricane Mitch in 1998 which submerged Lake Managua and displaced 12,000 of the poorest residents living there. This is far more than the 40,000 inhabitants that Ciudad Sandino's infrastructure is capable of supporting. In addition, 80% of the population is currently unemployed, which leads to an annual tax base of only US$2.30 per person and little funding for infrastructure improvements. Three important issues related to poor infrastructure in Ciudad Sandino are a shortage of housing, and a lack of safe drinking water and sanitation. The Center for Development in Central America or (CDCA) is a NGO which has had a longstanding presence in Ciudad Sandino and works with other smaller scale organizations. Another, OPIC (Overseas Private Investment Corporation) has recently funded a large housing project in Ciudad Sandino. Also, there are many religious affiliated organizations making an impact in this region such as The Rainbow Network, Verbo, and the Hope House Ministries. These NGO's provide development projects that range from immediate relief efforts to long term projects.

3 • We Have Food, You Have Medicine: NGO Collaboration as a Means to Maximize the Benefits to Refugees in Africa's Great Lakes Region

Thomas Cardot, Heather Warren, Koji Arisawa, and Michael Pollock
Faculty Sponsor: Rose-Marie Chierici, Anthropology

Civil war, drought, political instability and ethnic conflict are contributing factors to the high population of refugees in the Great Lakes region of Central Africa. Refugees are in a precarious situation, due not only to the struggles and conflicts within their own nation, but also those within the nations in which they seek asylum. They live in refugee camps across the region. In these camps, they must contend with additional issues of inadequate shelter as well as food and water shortages. Access to health care is also problematic. Many refugees, having left areas of conflict, facing emotional issues stemming from their traumatic experiences, require counseling. Exposure to disease and physical injury require medical attention. However, access to needed healthcare is hindered by a lack of resources. Nongovernmental organizations provide medical supplies and personnel in an effort to alleviate these conditions, such as CARE, Red Cross, Operation Blessing, etc. An improved network of communication between NGOs would enhance the ability to distribute resources, working in tandem to provide better access and maximizing the benefits to the refugees.

4 • "El Fin de Venezuela": Health and Development in Delta Amacuro, Venezuela

Larkin Kimmerer, Laura Kraft, Dominic Donato, and Charlie Genao
Faculty Sponsor: Rose-Marie Chierici, Anthropology

Delta Amacuro State is the poorest and most remote area of Venezuela. The area is predominantly inhabited by the Warao Indians, a marginalized indigenous population with limited access to modern technology or health care. As a result, the Warao lag behind the rest of the country in the areas of health and development. This poster looks at the issues of access to health care, sanitation, and disease prevalence. A number of development initiatives funded by both governmental and non-governmental agencies are currently in place to address these problems. The government's Bolivarian Mission Barrio

Adentro seeks to implement free community healthcare for all, while the Pan-American Health Organization is trying to increase healthcare availability in poor rural areas. Despite these initiatives, the problems persist. The poster presents demographic and health information as well as an evaluation of current initiatives and highlights possible solutions to the problems that face Delta Amacuro. Although this poster offers area-specific solutions, health disparities and marginalization are common in most under-developed regions of the world.

5 • Cite Soleil: A Microcosm of Haiti's Underdevelopment

Megan Lee, Katie Grow, Nabil Vargha, and Luella Rasquinha
Faculty Sponsor: Rose-Marie Chierici, Anthropology

Population density and strained resources as a result of hyper urbanization are the primary causes of urban poverty. As the poorest country in the Western hemisphere, the Republic of Haiti is an example of this global phenomena. Plagued by violence, unemployment, and lack of basic infrastructure and public services, the shantytown Cite Soleil is Haiti's most notorious slum. The efforts and resources of multinational organizations such as the United Nations and the International Red Cross, although deeply involved in aid within the slum, have in the past been more focused on containing violent conflicts. Because their efforts are consumed by conflict resolution, sustainable development initiatives fall short. Gangs and violence are often symptoms of an over-all lack of security and low quality of life. Development programs that improve the basic quality of life need to be implemented in order to create a more secure environment. Concentrating on unemployment, sanitation, and other basic infrastructure, we will formulate a proposition to ameliorate the standard of living by addressing all three at once.

6 • From the Steppe to the Streets: The Impact of Urbanization on Mongolia's Youth

Adam Malinowski, Marie Puccio, Patrick Geraghty, and Jennifer Ritzenthaler
Faculty Sponsor: Rose-Marie Chierici, Anthropology

Mongolia is a landlocked nation located in central Asia, with China and Russia on its borders. In the past, the majority of the population lived a pastoral life relying on grazing animals for their livelihood. The rapid and haphazard growth of cities like the capital Ulaanbaatar, brought many social problems and led to a fast outpacing of existing infrastructures. This poster looks into providing services to one of the most desperate populations in cities, the children. Children in urban areas are neglected and this neglect has caused an increase in school drop-out, homelessness, working children, commercial sexual exploitation of children. Poverty and lack of available social services, leaves many of these children vulnerable to disease and illness. This poster evaluates possible solutions, analyzes the work of both non-governmental organizations and aid agencies, and puts forth recommendations to address the needs of children in urban settings through a grassroots approach.

7 • The Economic and Social Cost of Development: Building Block Houses in a Peasant Community in Southern Mexico

Dilek Canakci and Bethan Maher
Faculty Sponsor: Ellen Kintz, Anthropology

In summer and fall 2005, category four hurricane Emily and category five hurricane Wilma hit Mexico's Caribbean coast and severely impacted the small inland community Cobá, Quintana Roo. In the past decade, a grassroots project operated to enhance resources on the household level. The development project was designed to assist in the construction of block housing. New research focuses on the assessment of the effect of natural disasters on peasant communities and the strategies utilized by households to recover and resume their lives. This research targets the economic and social costs involved in the building of block housing in this small village. Following the arguments of Jeffrey Sachs (2005), data analysis and recommendations outline conditions that create hope for the amelioration of poverty. Development partnerships between the village and outside donors operate to lift the extremely poor out of a spiral of poverty and despair. Minor investments in adequate housing significantly contribute to the economic and social well being of isolated villagers in Cobá and provide a model for assistance elsewhere.

8 • Compelled Heteronormitivity: Ex-Gay Movements and Reparative Therapy

Trisha Davies
Faculty Sponsor: Ellen Kintz, Anthropology

Anti-gay sentiments and pressure to follow sexual norms are well-established traits of western society, which many individuals internalize. In the United States, some gay, lesbian, and bisexual individuals seek to change their sexual orientation and/or to stop acting on homosexual feelings through religiously based ex-gay programs and pseudo-psychological Reparative (or Conversion) therapy. This project discusses the motivations of queer individuals who to seek to alter their sexuality and those who run the programs. Also, the ex-gay and Reparative programs are addressed according to the methods used, prevalent outcomes, and the effects on participants. Key Words: ex-gay; reparative therapy; queer studies; religion; ideology; structural violence.

9 • An Analysis of the Transformational Uay as told by the Yucatec Maya: Oral Literature and Social Relations

Patrick Geraghty
Faculty Sponsor: Ellen Kintz, Anthropology

Folklore is an essential element in human culture and reveals much about a culture's world view. Indigenous cultures express their social norms in a rich oral history. This oral history has been recorded by anthropologists and folklorists for centuries. This research has identified 12 stories focused on the transformational being known to the Yucatec Maya as the uay. The

analysis focuses on use of folktales pertaining to the uay in determining Maya views on social relationships and acceptable social norms. The uay, a transformational being that appears in many forms, dates to the pre-Columbian period in art and hieroglyphic writing. One significant manifestation of the uay is as Water Lily Jaguar, a representation of the animal spirit of a Maya king. In the contemporary oral traditions of the Yucatec Maya, the uay appears in the rainforest, in other secluded places, and can be in the form of a dog, a bouncing head, or another animal or creature. The story of the uay told today in Yucatec Maya communities has implications, expressing fears and anxieties of village residents. This research explores the literature on the nagual, a similar transformational being, associated with Central Mexico. Analysis of folktales reveals social relationships in the Maya world and elsewhere in Mexico.

10 • The Supernatural World in Mayan Hieroglyphs

Heather Warren

Faculty Sponsor: Ellen Kintz, Anthropology

In ancient Maya culture, the supernatural realm played a vital role in their everyday lives, influencing their perception of the world around them. The myths surrounding the creation of the world were not perceived as myths, but rather an actual part of history. Furthermore, in the Maya world a myriad of deities ruled over nearly everything natural and supernatural. It was essential that these deities were appeased to assure the survival of the Mayan people and their way of life. These deities could be transformed into many spirits, animate and inanimate, animal and humanoid. However, transformation and separate spirits were not just a trait of the gods, but could be found in humans as well. These spirits that an individual had were referred to as uay. Through the study of Maya books, ceramic vessels, and stone monuments and stelae, Maya hieroglyphs and associated iconographic images reveal the various elements of the supernatural world that pervaded Maya life including their perception of history, the Maya pantheon, and the uay, helping us to understand the world as it was seen by the ancient Maya.

11 • Interpreting the Maya Folktale of Ixtabai

Kathryn Young

Faculty Sponsor: Ellen Kintz, Anthropology

The Yucatec Maya folktale of Ixtabai serves to uphold and enforce the norms, acceptable social behavior, and moral code in Maya society. Through a formal analysis of the functions of the folktale, along with a structural analysis based on binary oppositions and the mediation of these, Ixtabai can be understood on a universal level in which folktales are used to explicate the natural world and maintain societal structure.

12 • Secondary Refuse Deposits: Implications for a Sedentary Lifestyle among the Ohio Hopewell

Laura D'Amico

Faculty Sponsor: Paul Pacheco, Anthropology

My project focuses on the secondary refuse deposit partially excavated in summer 2007 by the SUNY Geneseo and Bloomsburg University Field Schools at the Lady's Run (33Ro1105) site, located outside of Chillicothe, Ohio. A qualitative analysis of the artifacts from the Lady's Run deposit and the secondary refuse deposit excavated at the McGraw site in the summer of 1963 is the basis of my comparison. My poster shows results from the overall analysis and provides evidence for sedentism among the Ohio Hopewell.

13 • Within- and Between-Species Variability in Tannin Content in Relation to Howler Monkey Feeding Selectivity

Kiersten Wallace

Faculty Sponsor: Barbara Welker, Anthropology

The objective of this study is to show that tannin content affects the leaf choice of mantled howler monkeys. Mantled howler monkeys are highly selective of the plant parts and developmental stages that they include in their diets, especially in relation to the protein-to-fiber ratio. However, it has been suggested that tannin content also has an effect on leaf selection in this species. Twelve plant species, which are included in the howler monkeys' diet, will be analyzed for both hydrolysable and condensed tannin content. Of the twelve plant species, six are fed on for both young and mature developmental stages, while the monkeys feed on young leaves only in the other six. Comparing the tannin content of the leaves with the monkey's dietary patterns will hopefully provide threshold levels for consumption of tannins. It is predicted that the six species, in which the monkeys feed on young leaves only, will have higher tannin content, compared to the other six species in the experimental group, supporting the hypothesis of selection based on tannin content. The findings of this experiment will shed light on the differences in frequency of consumption based on leaf stage.

Geography

14 • Potential Wind Energy at SUNY Geneseo: A Preliminary Study

James Baumann

Faculty Sponsor: Colleen Garrity, Geography

Wind energy, one of the most promising renewable resources in the Genesee Valley region, may provide SUNY-Geneseo a tremendous opportunity to diversify its energy portfolio and reduce the size of its ecological footprint. Knowledge of local wind climatology is an integral component of site selection for wind turbines. This pilot study investigates campus wind speeds to determine the feasibility of wind energy production using small, rooftop-mounted vertical-axis wind turbines.

Using eight months of archived wind speed data provided by the Weather Meterics TurfWatchTM weather station on Newton Hall, wind speeds were catalogued and analyzed using Microsoft Excel to compare daily average wind speed with the start-up speed of 3.64 mph for the PacWind AeolianTM Vertical Axis Wind Turbine. Daily average wind speeds were also used to determine average available wind power by multiplying wind speed to the third power. The results of this pilot study indicate that Geneseo does have potential for wind energy production using these turbines. Data analysis from this initial study shows that wind energy production was feasible for nearly 50% of the days surveyed. These results demonstrate the potential for the Geneseo campus to harness an important renewable energy resource, while providing an example of sustainable energy production that other institutions of higher learning could emulate.

15 • Dust Storms

Katherine Hogle

Faculty Sponsor: Colleen Garrity, Geography

Dust storms result from the combination of wind and dust particles, whether naturally occurring or anthropogenically produced. Dust and other particulate matter suspended in the atmosphere negatively impact human health and the environment, suppress rainfall and exacerbate drought conditions. With the increase in dust storms, particulate matter may soon rival many greenhouse gases as a leading cause of climate change. Although dust storms are not a new phenomenon, they have increased in intensity in recent years as improper land use increases. This pilot study creates a preliminary dust storm classification system based on a real extent and quantity of matter as identified in remotely sensed imagery. This research incorporates satellite imagery (GOES, LandsatMSS, LandsatTM, WiFS, and SeaWiFiS) and Total Ozone Mapping Spectrometer (TOMS) to determine the severity of Asian dust storms by noting where the dust is traveling and the approximate speed at which it is traveling. The satellite imagery also serves to identify plant cover in China to identify potential sources of particulate matter that may contribute to the increased severity of the dust storms. Written records such as weather reports and newspapers articles from Korea, Japan, China, and the Western United States provide historical data about weather conditions during dust storms and the amount of dust received. This research will help facilitate future classification as well as a better understanding of human impact on dust storms.

16 • Applications of Dendrochronology

Steve Tulowiecki

Faculty Sponsors: Jim Kernan, Geography, and David Robertson, Geography

Dendrochronology is a scientific methodology involving the precise dating and analysis of the patterns of annual growth rings in trees. This methodology is applied in many fields, including archaeology, biogeography, biology, ecology, and climatology. Dendrochronology is useful for evaluating past responses to environmental conditions, as the annual growth of many tree species is linked to a single limiting factor, such as temperature or precipitation. This project involves learning dendrochronological methods through the preparation of tree samples and the dating of the annual growth rings. A prepared and dated *Quercus alba* (white oak) sample will be displayed, illustrating significant dates and notable patterns of growth variation. Further, a review of the literature on the application of dendrochronology to biogeographic and climate change research is presented. It will be demonstrated that the method provides a useful approach for monitoring change in subalpine and boreal treeline growth and dynamics, in conjunction with tradition field surveys and remote sensing data.

17 • The Mapping of an Historic District: A Morphology of Architectural Styles in the Village of Geneseo

Patrick Oberle and Kyle Souhrada

Faculty Sponsors: Jennifer Rogalsky, Geography, and David Robertson, Geography

The Village of Geneseo is of great architectural and historical importance as exemplified by its status as a National Historic Landmark. This research attempts to catalog all contributing and non-contributing structures in the Landmark district in order to provide the first complete map of the historic district and the distributions of various architectural styles therein. Tools used include database creation software for cataloging structures with their respective architectural styles, and a combination of ArcGIS and Adobe Illustrator to produce a series of maps displaying both spatial and relational patterns of these styles throughout the Landmark district. Further, using a combination of existing and original research (of historic photographs and maps of the historic district), additional maps were produced depicting the evolution of Geneseo's street morphology from the earliest known records to present day. This research and analysis will provide the Association for the Preservation of Geneseo (the Landmark's steward organization) with a complete and accurate catalog and morphology of the historic district and its many significant structures in order to better plan for and protect its existence in light of increasing commercial development.

History

18 • Environmental Costs of Chinese Modernization

Humza Arshad, Chris Bannister, Mike Case, Amy Lafleur, Daly McCormick, and Austin Olney

Faculty Sponsor: Tze-ki Hon, History

We will study the negative effects of Chinese modernization and industrialization on the environment.

19 • Taiwan: Politics of Independence

Hannah Canary, Brendan Quinn, Cassandra Stiokas, and Nick Tchurekow

Faculty Sponsor: Tze-ki Hon, History

Our poster will focus on Taiwan and the politics of independence. The poster will focus mainly on the last 8 years in Taiwan's history. The poster will look at the price Taiwan has to ultimately pay for its freedom, especially regarding its economic status.

20 • Logos of the 2008 Beijing Olympic Games

Michael Caputo, Lindsey Snyder, Macy Eickbush, Nicole Menarchem, and Sean Gradowitz

Faculty Sponsor: Tze-ki Hon, History

The origin, problems, souvenirs, lawsuits, and global capitalism associated with the Beijing 2008 Olympic Games.

21 • Disparities between the Proposed Ideology of the Red Guards and the Actual Implementation

Jenna Deegan, Bryan Conway, and Richard Olson

Faculty Sponsor: Tze-ki Hon, History

For the poster we will concentrate on describing the proposed goals and ideology of the Red Guards during the Cultural Revolution. Using both primary documents of the Red Guards, as well as memoirs, we will concentrate on analyzing the gaps between the aims of the group and what actually transpired. The poster will consist of describing the goals of the mobilization of the Red Guards, as well as what Mao hoped to accomplish, and more personal accounts of those directly affected by their mobilization.

22 • Education in China Today

Maura Ricigliano, Mary-Grace Dixon, Doug Thomas, Shannon Seyboth, and Luke Schenkel

Faculty Sponsor: Tze-ki Hon, History

This poster will display the system of Education as it exists in China today. We will be researching the school system, content and curricula, subject area emphasis, and options for higher education and/or vocations.

23 • 2008 Peking Olympics

Stephen Seefried, John Mast, James Bryant, Randy Wellington, and Thomas Cooke

Faculty Sponsor: Tze-ki Hon, History

A grande look at Chinese cultural and athletic experiences during the 2008 Olympics. We will demonstrate the centrality of China in today's globalizing world and how it has evolved in its relation to the non-Chinese world.

24 • The True Costs of China's Economic Boom

Shawn Sullivan, Travis Brennan, Victoria Washkau, Jessica Restivo, and Terry Russell

Faculty Sponsor: Tzi-ke Hon, History

Our group will be taking a look into China's recent economic boom. The underlying social and environmental costs are often ignored by contemporary historians. We seek to weigh these hidden costs against the apparent economic benefits.

POSTER PRESENTATIONS

MacVittie College Union, Ballroom

Biology

25 • The Effects of *Brassica rapa* Trichomes on Feeding Choice and Growth in Cabbage White Butterfly Larvae

Aspen Ainsworth

Faculty Sponsor: Jennifer Apple, Biology

Trichomes are hair-like structures found on the leaves of many plants, and one of their proposed functions is an anti-herbivore defense. We investigated the effects of trichomes in rapid-cycling *Brassica rapa* on feeding choice and growth rate of cabbage white butterfly larvae (*Pieris rapae*). We used artificial directional selection to produce plants with either high or low trichome number, which we estimated by counting the trichomes on leaf margins and petioles. To examine feeding choice in *P. rapae*, we presented third-instar larvae with one high-trichome leaf and one low-trichome leaf and assessed leaf area consumed after 25 hours. We also compared the growth rate of third- and fourth-instar larvae on high- and low-trichome plants. Many plants raise their production of anti-herbivore defenses following herbivore damage, thus we also tested if early herbivore feeding induces elevated trichome production in subsequently produced leaves.

26 • Locomotion in *Bulinus truncatus* is Altered by Infection with *Schistosoma haematobium*

Kian Bichoupan
Faculty Sponsor: Susan Bandoni Muench, Biology

Schistosomiasis is a parasitic disease that affects 200 million people globally. An experiment was conducted to better understand the effect of infection with *Schistosoma haematobium* on locomotion in the intermediate host *B. truncatus*. Parasitized and unparasitized snails were placed in clear plastic aquarium which was placed over a grid. A video camera was placed above the aquarium to record the movements of the snails over a ten minute interval. Movement trials for each snail were done independently. After the data were collected, infected and uninfected snails were tested for differences in rate of travel, total distance traveled, and rotation. Uninfected snails traveled at faster rates and rotated a greater amount than infected snails. The total distances traveled and time in rest phases were not significantly different between the infected and uninfected snails. Our results support alteration of the behavior of the snail host by the parasite as a result of infection. The results from this experiment are consistent with previous studies of another human schistosome, *Schistosoma mansoni* and its intermediate host, *Biomphalaria glabrata*. It is still under investigation whether or not this altered behavior is adaptive for the parasite.

27 • Response of *Bulinus truncatus* to Simulated Predation Threats is Affected by Trematode Infection

Jessie Lake
Faculty Sponsor: Susan Bandoni Muench, Biology

Parasites are known to influence the behavior, life cycle, and physiology of the host, usually in a manner that maximizes the probability of transfer and survival. *Bulinus truncatus*, native to equatorial regions of Africa, acts as an intermediate host for *Schistosoma haemotobium*, the causative agent of urinary schistosomiasis. The behavioral effects of *S. haemotobium* on *Bulinus* are unknown. We studied the effects of parasitism on the response to a simulated predation threat applied in a laboratory setting. Infected and uninfected snails showed no significant difference in the use of shelter when exposed to crushed conspecifics. However, significantly more snails were found under cover in the control snails whether infected or uninfected. Infected snails were more likely to crawl out from under the shelter following treatment with crushed conspecifics than either uninfected snails or control infected snails. More uninfected than infected snails were located in a vulnerable position during the observational period following application of treatment, while no difference was observed for untreated snails. These findings support our hypothesis that snails of the genus *Bulinus*, infected with *S. haemotobium*, exhibit distinctive avoidance behaviors in the presence of a perceived predatory threat and that these behaviors may be mediated by the parasite's presence.

28 • The National SolarBee Test: Pooling the Results of SolarBee Water Turbine

Lindsey Campana
Faculty Sponsor: Isidro Bosch, Biology

Conesus Lake is one of many national sites where the effects of Solarbee water turbines on water quality of large lakes have been tested. SolarBee is a patented near-laminar radial flow technology that has been used to oxygenate water in ponds and reservoirs, creating an inhospitable environment for blue green algae and unwanted weeds. The Conesus Lake Association and Livingston County hoped to apply this technology to combat shoreline algae and invasive macrophytes. However, pilot studies in Conesus Lake during 2006 and 2007 indicate that these solar powered water turbines had very limited impact on water quality. Similar conclusions are being reached for other large lakes, indicating that, while environmentally friendly, SolarBee turbines may not be effective in reversing poor water conditions in greater bodies of water.

29 • Mass-Dependent Feeding in Echinoderm Larvae

Parth Mewar, Brad Cohen, and Joy Sutera
Faculty Sponsor: Isidro Bosch, Biology

Larvae of sea urchins use a single band of cilia to clear particles from seawater. Previous studies have shown that many temperate larvae feed most efficiently on microscopic single-celled algae that range in size from 4-6 microns. This project examines the feeding capabilities of sea urchin larvae from several species to determine if they are able to ingest bacteria size particles (1 micron). Experiments on four species of sea urchin larvae showed that 1 micron fluorescent polystyrene beads were readily ingested, while fluorescently labeled *Vibrio fischeri* bacteria were not. Despite being approximately the same size, the beads and the bacteria have different masses. We propose that temperate echinoderm larvae feed via a mass-dependent mechanism, since they are able to detect and capture the heavier beads, but not the lighter bacteria.

30 • Alternatives in Pain Therapy

Joseph Kling
Faculty Sponsor: Cindy Briggs, Biology

Chronic pain is the reason for more than 80% of all physician visits, and the majority of these health care providers have little training in specific pain medicine and management. In this presentation I will try to educate on the alternative methods of pain management and use information from several articles to compile an informative study. It will compare corrective care vs. relief care and show different techniques used to relieve and correct chronic pain. The therapies discussed are; Acupuncture, Hydrotherapy, Prolotherapy, electromagnetic therapy, TENS (Transcutaneous Electrical Nerve Stimulation) therapy and spinal manipulation (chiropractors) Each one offers something different to help people deal with and correct chronic pain. This will go through the pros and cons of each method and suggest when they should be used. It is important to learn about other ways to eliminate pain other then drugs, which can often have serious side effects.

31 • *Brassica rapa* Allelopathy

Thomas Suchy and Will Bossard
Faculty Sponsor: George Briggs, Biology

Brassica rapa, a plant known for its ability to go through one reproductive cycle in twenty eight days, was observed to have an allelopathic effect upon members of the same species. This effect was witnessed when *B. rapa* seeds were planted in soil which had already been used to grow *B. rapa*. To test these effects, the *B. rapa* was grown in agar culture, then after one week of growth, data concerning germination and plant morphology was collected. Then additional seeds were planted in the used agar and grown for one week. We observed that the seeds grown on agar which had previously had *B. rapa* in it showed significantly lower germination rates and altered plant morphology. We hypothesize that this result is from the enzymatic activity of myrinase on glucosinolate, both common biological components of other members of the genus *Brassica*. Using GC/MS and NMR spectroscopy, we are attempting to identify the composition and structure of the chemicals responsible for the effect.

32 • Determination of the Presence of the Myrosinase Gene and mRNA in *Brassica rapa*

Katherine Weber
Faculty Sponsor: George Briggs, Biology

Myrosinases are enzymes found in certain members of the Brassicaceae family. These enzymes are known to break down a group of plant chemicals called glucosinolates forming isothiocyanates and nitriles, compounds that are toxic to a variety of organisms, including many herbivores. Plants segregate the myrosinases from the glucosinolates and the toxic chemicals are only produced when treatments, such as tissue damage, brings them into contact. Our laboratory has observed a marked reduction in the growth of plants grown in medium that previously contained Brassica rapa, a member of the Brassicaceae family. We are hypothesizing that this allelopathic effect of *B. rapa* is due to isothiocyanates or nitriles produced by the action of myrosinase. To support this hypothesis we are testing for the presence of the myrosinase gene in *B. rapa*. Using published sequences of the myrosinase gene we developed primers for the gene and will use these to perform PCR on *B. rapa* extracts. If the gene is found then we will be using northern blots to examine when and where myrosinase is expressed and if the patterns are consistent with our hypothesis that the allelopathic effects of *B. rapa* are due to the actions of myrosinase.

33 • Photosynthetic Contributions of Developing Fruits in *Brassica rapa*

Kristin Wolbert and Erin Murphy
Faculty Sponsor: George Briggs, Biology

It is generally thought that fruits develop using carbon that has been fixed by the leaves and subsequently transported to the developing fruit. However, many fruits contain photosynthetic tissues and are able to contribute to their own weight gain by fixing carbon themselves. We are studying the extent to which developing fruits contribute to their own growth by measuring carbon gain in developing fruits of Wisconsin Fast Plants *(Brassica rapa)*. Using a cuvette based photosynthesis system we are observing the photosynthetic and respiration rates of *B. rapa* fruits from the time of petal drop until the fruit is mature and comparing it to the rates found in leaf tissue.

34 • The Presence of NBS-Containing DNA Sequences in Grapes

Samuel Hykin
Faculty Sponsor: Ming-Mei Chang, Biology

Nucleotide binding sites (NBS) and leucine rich repeats (LRR) are DNA sequences commonly found in plant disease resistant genes. In previous studies, degenerate primers corresponding to the known NBS sequences from other plant species were used to PCR clone disease resistant genes from grapes. Two partial DNA clones, Cy2 and Cy6, were obtained from the resistant American grape, Cynthiana (*Vitis aestivalis*). To confirm their presence in the resistant cultivars but not the susceptible ones, genomic DNA isolation followed by Southern blot analysis was conducted using leaves from five grape cultivars with various degrees of disease susceptibility. When Cy2 was used as a probe, two DNA fragments of ~1.6kb and ~1.3kb in size were present in Aurora and Concord (hybrids) and Cynthiana (resistant cultivar) but not the Cabernet Sauvignon or Riesling (susceptible cultivars). When the Cy6 was used as a probe, a single ~1.4 kb DNA fragment was observed in Aurora (hybrid) and Cynthiana (resistant) but not in Cabernet Sauvignon or Riesling (susceptible). These findings suggest that both Cy2 and Cy6 might be present as single copy genes in resistant/hybrid grapes. The DNA fragment from each clone can be used as a disease resistance selection marker for marker-assisted selection in the breeding program.

35 • The Role of Tropomodulin in Actin Regulation in Epithelial Tissue

Thomas Gallagher and Sarah Murtaza
Faculty Sponsor: Abbi Cox, Biology

Epithelial tubes are a central architectural feature of many human tissues, including glands, kidneys, lungs, and the vascular system. Despite their importance, how biological tubes are constructed is still poorly understood. The intestine of the nematode, *C. elegans*, is a simple system for studying tubulogenesis; consisting of twenty cells that organize into an optically transparent epithelial tube. Specifically, we have been investigating the role of the actin regulator tropomodulin in intestinal development. Actin forms the cytoskeletal filaments that have several roles in a wide range of organisms. In the *C. elegans* intestine, actin is present in the terminal web, a structure that underlies the membrane that faces the fluid filled lumen. Tropomodulins bind to and cap actin filaments, regulating their growth and stability. Although the role of tropomodulins in regulating actin lengths in muscle is well documented, their role in epithelial tissues is not well understood. Using confocal microscopy, we have determined that *C. elegans* with mutation in the tmd-1/tropomodulin gene have areas of their intestines

that become cystic, or grossly expanded. We propose that tropomodulin is regulating actin in the terminal web of the *C. elegans* intestine and are currently investigating the molecular mechanisms involved.

36 • Changes in Nestling Vocalizations throughout Early Development

Amanda Gajewski

Faculty Sponsor: Kristina Hannam, Biology

The House Wren (*Troglodytes aedon*), which nest in boxes, typically raise a brood of between five and seven nestlings. With such a large brood, the vocal behaviors are a critical form of communication with parents and competition between nestlings for food provided by the parents. Other work in the lab suggests signaling by nestlings becomes increasingly important to food distribution decisions as the nestlings get older. We are interested in the differences in the vocalization patterns between four day old nestlings, seven day old nestlings and ten day old nestlings, and how they change and increase in complexity between these three stages. Vocal recordings were made at our nest boxes in the Geneseo area for each individual nestling in a brood for 20-30 minutes each. These sound patterns were analyzed in the lab both quantitatively, looking at the frequencies and duration of each vocalization, as well as qualitatively, the shape and complexity of each vocalization, to evaluate potential developmental changes between the nestlings at different ages. Our preliminary results suggest an increase in complexity of the begging call as age increases; however the frequency of the sound does not change.

37 • Effect of Size on Begging Behavior and Success in House Wrens

David Gurbacki

Faculty Sponsor: Kristina Hannam, Biology

House wrens (*Troglodytes aedon*) nest in nest boxes, and in New York raise one or two broods of up to 7 young each breeding season. The altricial young require intensive parental care, and parents spend daylight hours delivering food to the nest. Begging is a form of competition between siblings over food allocated by the parents. Nestlings compete with one another using vocal and non-vocal signals for access to food resources. In the summer of 2007, a House Wren population in Geneseo, NY, was studied to determine whether nestling begging behavior was associated with size of individuals, and whether these variables predicted success at obtaining food from parents. Chicks were marked, measured, weighed and videotaped over the span of development in the nest. Videos taken during two developmental stages were analyzed to determine begging behavior and parental food distribution as related to nestling size. We will present results examining whether differences in size among nestlings within a brood decreased with nestling age, indicating brood reduction or increasing size uniformity of broodmates. We will also examine the frequency of begging and of feeding by the smallest nestling. Our results will illuminate how size differences among siblings affects behavior and resource acquisition.

38 • Is "All Clear" Signaled by a Specific Song in House Wrens?

Michael Nemeth

Faculty Sponsor: Kristina Hannam, Biology

The two primary functions of male song in birds are mate attraction and territory defense. In House Wrens (*Troglodytes aedon*), there is evidence that a third function of male song may be communication with the female to coordinate nest entrances/exits during incubation, defined as the "all clear" signal (Johnson and Kermott 1991). It is unknown whether the song used in a particular context is random or specifically chosen by the male to indicate "all clear." Male House Wren song was recorded during the pre-incubation and incubation periods of 6 mated pairs in a nestbox population in Geneseo, NY. Female activity was noted during the recording, and songs were analyzed using the computer program Raven. To characterize song a type, each syllable was designated a letter (AABBDDGGDD). Song types were distinguished by the placement of each syllable within the pattern (Platt 1987). We examined whether a specific song type was associated with female activity (entrance/exit) at the nest. We will present the results of our analyses testing whether song patterns suggest that the male is using a particular song type to signal "all clear" to the female, or if all song types signal "all clear" equally well.

39 • Modeling a Vector-Borne Disease in Horses

Caitlin Ryan

Faculty Sponsors: Gregg Hartvigsen, Biology, and Chris Leary, Mathematics

Potomac horse fever (PHF) is a potentially fatal, acute intestinal disease that is observed in horses during the summer months across the United States. PHF is a complex, vector-borne disease that is caused by *Neorickettsia risticii*, an obligate intracellular bacterium harbored by a trematode host, *Acanthatrium oregonense* which reproduces only within freshwater snails. Mayfly larvae then consume the immature trematodes released from the snail. Horses come in contact with *N. risticii* when they accidentally consume deceased adult mayflies. We create a mathematical model of infected *A. oregonense* populations in different host stages and conduct a sensitivity analysis to determine which segments of the vector pathway might be most susceptible to intervention efforts targeted at preventing PHF. Results suggest that the immature fluke population may be the most influential stage of the *A. oregonense* life cycle for the prevention of PHF.

40 • Protein Imaging for Transmission Electron Microscopy

Laura DePouli

Faculty Sponsor: Harold Hoops, Biology

Electron microscopy is used to explore cell ultrastructure and has many applications over a broad range of samples. The rotary shadowing technique, combined with transmission electron microscopy (TEM) is used to visualize macromolecules too small to see using light microscopy. Macromolecules are coated with metal evaporated under high vacuum on a rotating stage. The metal casts a shadow of the molecule, which when viewed in the TEM, produces an image of the molecule of

interest. We have successfully applied this technique to visualize nucleic acids and proteins. In our most successful technique, we sprayed a glycerol solution of the motor protein myosin onto a mica surface, prepared carbon-platinum replicas of the droplets, and collected them on carbon-coated mesh grids. The resulting images match published images of myosin. We are now planning to examine the structure of Bik1p, a plus-end microtubule binding protein in budding yeast. An understanding of Bik1p structure and function in yeast mitosis is significant because this protein almost certainly has similar functions in mammals. If we are successful in imaging wild-type Bik1p, we will compare the structures of Bik1 mutants with wild-type and will attempt to correlate structural differences in Bik1 mutants with differences in molecular function.

41 • Does Sumoylation Affect Spindle Positioning in Yeast?

Nathan Kaplan and Emily Carroll
Faculty Sponsor: Harold Hoops, Biology

Attachment of the small protein SUMO results in altered protein localization in a variety of systems. The Miller lab (University of Rochester) has obtained genetic and biochemical evidence that the enzymes involved in sumoylation interact with proteins known to be involved with spindle positioning in yeast. However the biological function(s) and relevance of these interactions are not understood. We are taking two approaches to look for such interactions. In the first, we are comparing the distribution of the spindle-positioning protein Bik1p in cells with and without the sumoylation pathway protein Wss1p. In preliminary results Bik1p was localized on spindle pole bodies and in the bud directed and mother-directed cytoplasmic microtubules in both strains. In the second, we are comparing the position and angle of the mitotic spindle of yeast strains with temperature sensitive alleles of the SUMO protein under permissive and non-permissive conditions. In preliminary results, we found no difference in spindle positioning between the mutant and wild-type under either restrictive or non-restrictive conditions. However, the spindle angle was higher in one of the sumo mutants than in the wild-type under restrictive, but not permissive temperatures. These findings suggest that SUMO may be important in aligning the spindle with mother-bud axis.

42 • Is Sumolyation Involved in Escape from G0 in budding yeast?

Christina Szalinski
Faculty Sponsor: Harold Hoops, Biology

Attachment of the Small Ubiquitin-related Modifier (SUMO) protein controls target protein localization in a variety of systems. The Miller laboratory (University of Rochester) has both genetic and biochemical evidence that proteins involved in sumoylation interact with proteins involved in positioning of the mitotic spindle. However, neither our lab nor the Miller lab has been able to assign a clear function to this interaction in populations of rapidly-cycling, log-phase cells. It is therefore conceivable that the interactions function in another part of the life cycle. A candidate stage involves the escape of cell from quiescence. Quiescence (G0) is the stage where the cells withdraw from the cell cycle and stop growing or dividing. We are attempting to discover if strains with altered sumoylation proteins have difficulty escaping from G0. We have purified G0 yeast cells by density gradient centrifugation and are developing techniques to analyze the DNA content of propidium iodide stained cells using flow cytometry. We will then compare the kinetics of escape of normal cells to cells defective in sumoylation pathway proteins.

43 • Deciphering Cancer Progression of Vulvar Tissue: Histone Deacetylation Does Not Appear to Play a Role in Loss of E-Cadherin in the Vulvar Carcinoma Line, A431

Masaki Bannai
Faculty Sponsor: Jani Lewis, Biology

One common sign of an aggressive epithelial cancer is the absence of the cell to cell junction protein, Epithelial (E)-cadherin. The mechanism of E-cadherin loss is varied ranging from gain of transcription factors that suppress E-cadherin expression to methylation of the E-cadherin gene and/or histone deacetylation. The vulvar cancer cell line A431 has many characteristics of normal epithelial cells, including expression of E-cadherin. A431 cells experience loss of E-cadherin when treated with the glucocorticoid, dexamethasome (dex). Our hypothesis was that downregulation of E-cadherin by dex is caused by histone deacetylation. A431 cells that had experienced dex-induced loss E-cadherin (A431D) expression were treated with an inhibitor of deacetylase, Tricostatin A (TSA). The A431D cells did not show reexpression of E-cadherin after TSA treatment. Our study suggests that dex-induced loss of E-cadherin in the A431 cells is not due solely to histone deacetylation but does not rule out the possibility that histone deacetylation may play a part in silencing E-cadherin in conjunction with a second mechanism. This possibility is being explored.

44 • Examination of the Effect of N-Cadherin and Vimentin Expression on Cell Motility

Jessica Capasso, Colleen Foley, Uday Mukhlis, and Erin Strobl
Faculty Sponsor: Jani Lewis, Biology

Cadherins are glycoproteins that are crucial in the maintenance of cellular organization through calcium dependent mediation of cell-cell interactions. In many types of cancer downregulation of Epithelial cadherin (E-cad) leads to decreased cellular adhesion, loss of contact inhibition, and increased proliferation, which are observed characteristics of carcinogenesis. Similarly, an upregulation of Neural cadherin (N-cad) leads to increased cell motility and invasiveness. Loss of E-cad and gain of N-cad expression are biological markers of carcinogenesis in some cancer types. In addition to N-cad, vimentin expression is another biomarker signaling poor prognosis in some types of cancers. While N-cad expression has been shown to increase cell motility, it is unclear if vimentin expression plays a part in this increased motility as well. Using a scratch assay to compare cell motility over a period of twenty-four hours, we were able to determine the motility rate in six cell lines. Each cell line had varying levels of expression of N-cad and vimentin protein. We hypothesized that N-cad and vimentin would have a higher rate of motility than N-cad or vimentin alone or cells expressing E-cad but no N-cad or vimentin. Our preliminary results, however, suggest the opposite trend.

45 • The Effect of D, L- Sulforaphane on Cells Derived from the Breast Cancer Cell Line, MDA MB-435

Ashley Adams and Cory Higley

Faculty Sponsor: Robert O'Donnell, Biology

Sulforaphane is a chemical that is found in cruciferous vegetables that has been found to activate phase II enzymes, part of the body's first line of defense against cancer. We have begun testing the direct effects of Sulforaphane on cell proliferation in vitro using MDA MB 435 cells. These cells are grown in 90% DMEM and10% serum at 37º Celsius and are split weekly at 1:6. A cytotoxicity assay yielded effective killing of the cells at the highest doses tested. Cells were exposed to a constant amount of drug for 24 hrs, 7.5 hrs and 4.5 hrs to see the effect of Sulforphane on the cell cycle using flow cytometry. Effective blockade of the cell cycle in the G2 phase was seen as early as 4.5 hrs as well as evidence of apoptosis after 24 hrs. Further analysis of the data will be done as well as a second experiment varying doses over a constant exposure time. We also plan on testing a non tumor cell line to determine if the effects observed are tumor specific. If the Sulforaphane is effective and selective for tumor cells, it could possibly be used as a chemopreventative agent for cancer.

46 • Effects of PARP Inhibition on Treatment of MDA MB 435 Breast Cancer Cells with Etoposide

Chris Bishop and Adam Biedny

Faculty Sponsor: Robert O'Donnell, Biology

Poly (ADP-Ribose) polymerase (PARP) is involved in repairing damage done to the chromosomal DNA. The use of PARP inhibitors, like 3-Aminobenzamide, have been shown to enhance both the in vitro and in vivo cytotoxicity of various chemotherapeutic drugs and ionizing radiation by preventing DNA strand repair, thereby increases genomic instability. This instability can cause cells to enter apoptosis, or programmed cell death. We have begun to look at the combination of etoposide, a topoisomerase II inhibitor, with 3-Aminobenzamide by first testing the cytotoxicity of each drug alone. We tested the effects etoposide on MDA MB 435 breast cancer cells using serial dilutions of 25 µM etoposide in a 96 well plate assay for 48, 72 and 120 hrs. The dose of 25 µM etoposide treatment killed nearly 88% of the cancer cells but only after 120 hrs. Surprisingly, shorter exposures resulted in little cytotoxicity, even at the highest dose. Experiments are planned to expose the cells to etoposide for 120 hrs in the presence and absence of 3-Aminobenzamide.

47 • Poly (ADP-ribose) Polymerase (PARP) Activity and Inhibition in Response to DNA Damage

Ben Povinelli

Faculty Sponsor: Robert O'Donnell, Biology

Poly (ADP-ribose) polymerase is responsible for repairing single and some double stranded breaks in DNA. A preliminary study into PARP activity and inhibition is underway. Breast cancer cell lines were first incubated with hydrogen peroxide to induce oxidative stress to determine a reliable method of inducing apoptosis and PARP activity. This was measured through Annexin IV staining using FACS-Calibur flow cytometric analysis and a microcytotoxicity assay. The best method for inducing reliable oxidative stress was determined to be a short exposure (4-6 hours). The second part of this study will be to determine the effect of two PARP inhibitors, 3-aminobenzamide and 4-Amino-1,8-naphthalimide in conjunction with oxidative stress. The results of this study will provide a basis for further studies using PARP inhibitions as standalone agents or in combination with other chemotherapeutic drugs.

48 • Sulphoraphane's Effect on the Cell Cycle of MDA MB435 Breast Cancer Cells

Christopher Schaefer

Faculty Sponsor: Robert O'Donnell, Biology

Isothiocyanates, present in cruciferous vegetables such as broccoli, watercress, and cabbage, have been shown to have anti-cancer properties including cell cycle arrest. Using a breast cancer cell line MDA MB435, sulphoraphane (the isothiocyanate), and flow cytometry, it is possible to assess the cell cycle distribution of exposed cells. In a preliminary experiment, the MDA MB435 cells were incubated with 15 µmol/L sulphoraphane for 24 hours. The results showed an increased accumulation of cells in the G2/M phase in comparison to ETOH-treated control cells and cells exposed for four hours. It is unclear from the analysis of the sulphoraphane treated cells at 24 hours whether the cells are actually blocked in G2 or M. Experiments are planned to determine if the block is actually in G2 or M by also doing a cytogenetic analysis of exposed cells to determine if the cells reach the prophase/metaphase portion of mitosis.

49 • The Analysis of C-Methylation in a Diverse Collection of *Escherichia coli* – The ECOR Set

Robert Maines and Sarah Pounder

Faculty Sponsor: Robert Simon, Biology

DNA methylation is a regulating mechanism which is catalyzed by the enzyme DNA methyltransferase and plays a variety of roles in bacterial molecular biology. In *Escherichia coli* bacteria the occurrence and role of *dcm*-regulated cytosine (C)-methylation remains unclear. Previous work from students in Dr. Militello's lab showed that most *E. coli* isolated from local sources exhibited C-methylation. In this study we looked for the presence of this DNA modification in a more diverse collection of 72 *E. coli* strains from around the world that make up the ECOR (*E. coli* Reference Collection). We isolated DNA from the ECOR set and analyzed the occurrence of C-methylation by means of specific digestion via restriction enzymes followed by gel electrophoresis. Our results showed that all of the ECOR strains demonstrated C-methylation. Previous studies have shown that the knock-out of the *dcm* gene does not affect the viability or function of the organism. This strongly implies that in *E. coli*, there must be evolutionary selection for the maintenance of the *dcm* gene. The next challenge will be determining the nature of this selective advantage.

Chemistry

50 • SPME Fibers for the Extraction of Trans-Resveratrol from Red Wines

Nita Norasethaporn and Elizabeth Over
Faculty Sponsor: James Boiani, Chemistry

The purpose of this research is to devise a reproducible and quantitative method of extracting trans-Resveratrol from red wines using Solid-Phase MicroExtraction (SPME) for subsequent High-Pressure Liquid Chromatography (HPLC) analysis. Trans-Resveratrol (or t-Resveratrol) has become a chemical of interest because of its possible health benefits. It has been identified as a potential anti-carcinogen as well as providing health benefits. Developing this type of technique will be worthwhile as the benefits of trans-Resveratrol become more widely researched. Since t-Resveratrol can be found in the skins of red grapes it is important to investigate quantitatively how much is contained in normal servings of red wine. Known t-Resveratrol standards will be used to generate a calibration curve which allows the interpolation of data points. We used a synthetic wine to study the most efficient extraction techniques. In the future we hope to employ these techniques in extractions from actual red wine samples.

51 • Alternate Techniques of Extraction and Possible Applications of Trans-Resveratrol

Elizabeth Over and Nita Norasethaporn
Faculty Sponsor: James Boiani, Chemistry

With the increase in health concerns in America, trans-resveratrol's many potential benefits are being investigated. Trans-resveratrol is potentially linked to the "French paradox" which refers to the low incidence of heart disease among the French who consume a relatively high fat diet but typically drink red wine with meals. Alternate techniques of extraction of trans-resveratrol in red wine and juices have been researched for quantification. Such techniques include stir bar sorptive extraction (SBSE), direct immersion solid-phase microextraction (DI-SPME), solid-phase extraction (SPE), and solid-phase microextraction interfaced with a gas chromatrograph, which will be discussed and compared. Trans-reseveratrol's other potential benefits will be discussed as well.

52 • Development of an Environmentally Friendly, Inquiry-Based Organic Chemistry Experiment

Katie Braymiller and Nicole Emiliano
Faculty Sponsors: H. Cristina Geiger, Chemistry, and David Geiger, Chemistry

The development of an inquiry-based experiment for possible use in the organic chemistry curriculum is being investigated. We are exploring a reaction involving the acid-catalyzed amination of aldehydes and ketones under solvent-free conditions. The method involves the intermediate production of an imine that is subsequently reduced with sodium borohydride to a secondary amine. The reaction is monitored using thin-layer chromatography and purification of the crude product is accomplished using column chromatography. The purified products are identified by proton and carbon-13 NMR spectroscopy. If implemented at Geneseo, organic chemistry students will gain experience in an environmentally friendly synthetic procedure, purification and identification techniques, and critical thinking. The progress to date will be reported.

53 • Synthesis of 5-Phenanthryl-4-Methylbenzylamine

Derman Ozdemir
Faculty Sponsor: David Geiger, Chemistry

Our work involves the development of a procedure for the synthesis of 5-phenanthryl-4-methylbenzylamine. Our work to date will be discussed. The synthetic strategy involves the production of the intermediate 5-nitrophenanthroline by reacting phenanthroline with fuming sulfuric acid and nitric acid. Hydrazine, ethanol, and the 5-nitrophenanthroline are then reacted to produce the second intermediate, 5-aminophenanthroline. The 5-aminophenanthroline is reacted with p-tolualdehyde by a solventless, acid-catalyzed procedure for reductive amination of aldehydes and ketones. This results in the formation of 5-phenanthryl-4methylbenzylamine. The intermediates along with the amination product are characterized by 1H NMR spectroscopy. Details of the synthesis will be reported.

54 • Investigation of an Electrophilic Addition that Contravenes Markovnikov's Rule

Dennis Buckley
Faculty Sponsor: Eric Helms, Chemistry

The electrophilic addition of HCl to an alkene is often one of the first reactions learned in an organic chemistry class. It is also taught that this reaction follows Markovnikov's rule, which states that the hydrogen will attach to the carbon with fewer substituents while the chlorine will attach to the carbon with more substituents. However, according to the literature the reaction of HCl with atropic acid, an a,ß-unsaturated carboxylic acid, does not follow this rule. We suggest that the reaction follows an alternate mechanism that involves a 1,4-addition of HCl across the conjugated alkene and carboxyl group as opposed to the normal 1,2-addition across the alkene. AM1 semi-empirical molecular orbital calculations were used to determine the energies of the two possible carbocations of the 1,2-addition and of the carbocation of the 1,4-addition. Our data suggests that carbocation produced by the 1,4-addition is the most stable. We also carried out the reaction using DCl. The product was analyzed using 1H NMR spectroscopy to determine the location of the deuteration. By determining the amount of deuterium incorporation at the a position, the mechanistic pathway suggested by the molecular modeling can be supported.

55 • Isolation of a Halogenated Polyacetylene Found in Pearly Everlasting (*Anaphalis Margaritacea*) and Investigation of its Root Culture Potential

Wanda Lam

Faculty Sponsors Eric Helms, Chemistry, and George Briggs, Biology

More than 4500 halogenated compounds have been described in the literature, with several examples where research has been directed at the enzymes responsible for the halogenation. Information on the halogenases interrestrial plants, however, is lacking. The potential value of *Anaphalis margaritacea*, whose roots contain a thirteen-carbon, halogenated polyacetylene, urges a detailed study—a similar natural polyacetylene found in Stony Coral Montipora that shows cytotoxic activity against human solid tumor cell lines. The goal of this project is to isolate the halogenated polyacetylene from the roots of *Anaphalis margaritacea* in order to refine its structure. The isolated mixture from the roots was analyzed by NMR, IR, and TLC. The data reveal convincing evidence of the presence of the halogenated polyacetylene. Further separation techniques will be employed to purify the halogenated polyacetylene from the mixture. To bypass the plant growing stage, the root culture was conducted as a means to supply more roots for further studies. A growth of callus was not observed in the dormant tissues from the first set of culture, and more experiments will be performed to examine its potential growth.

56 • NADPH Oxidase Inhibition by Apocynin

Vincent Sica and Basil Sarantis

Faculty Sponsor: David Johnson, Chemistry

Reactive oxygen species can be a main source of diseases involving oxidative stress such as atherosclerosis and diabetic retinopathy. NADPH oxidase is one of the main enzymes that catalyzes the creation of these reactive oxygen species. NADPH oxidase is made up of two membrane bound components and three components in the cytosol. Apocynin, the molecule of study, is believed to inhibit NADPH oxidase assembly by preventing the translocation of one of the cytosolic subunits from docking with the membrane components. One of the three components in the cytosol is p47phox, which has four cysteine residues (C98, C111, C198, and C378). Through previous studies, it is believed that C111 and C378 are the major binding sites for inhibition. Apocynin undergoes this inhibition inside the body through dimerization to form diapocynin, by way of a catalyzed reaction with hydrogen peroxide in horseradish peroxidase (HRP). This research involves trying to further understand the mechanism that takes place during the inhibition of NADPH oxidase assembly by diapocynin. High performance liquid chromatography (HPLC) was used to monitor different samples and will hopefully provide insight on the mechanism behind this inhibition.

57 • Studying the Binding Efficacy of Chalcogenoxanthylium Photosensitizers with DNA via Isothermal Titration Calorimetry

Bilgehan Onogul

Faculty Sponsor: Ruel McKnight, Chemistry

Although the concept of using photosensitizers in a photodynamic approach to decreasing pathogens from “blood supply” samples have been considered, many of these attempts have been unsuccessful. (1) The reasons for failure in previous experiments were mainly due to: the insufficient activity of the compounds and their negative side-effect (hemolysis) on red blood cells (RBC) after being exposed to the required light. (1,2) In order to protect RBC from these side effects, our research has been based on photosensitzers that target DNA, for the reason that mature RBC lack nucleic acids, and thus reduces the risk of hemolysis. (3) In the current study, the DNA binding affinity of five possible candidates (chalcogenoxanthylium derivatives) for ridding blood samples of pathogens are being studied by measuring the binding constants via isothermal titration calorimetry (ITC). ITC is a proven quantitative technique for measuring the interaction of small molecules to macromolecules. (3) Early data in our lab have shown a strong relationship between the anti-pathogenic activity of the chalcogenoxanthylium derivatives (4) and their binding constants for DNA. The results of this research will undoubtedly inspire many other studies that are based on the anti-pathogenic activity of the chalcogenoxanthylium class of compounds.

58 • Effect of Gamma Rays on the Induction of Large Deletions in Human Mitochondrial DNA

Scott Vrooman

Faculty Sponsors: Wendy Pogozelski, Chemistry, and Robert O'Donnell, Biology

Human mitochondrial DNA (mtDNA) is a double-stranded circle of 16,459 base pairs found in multiple copies in cells. MtDNA acquires large-scale deletions that increase with conditions that involve free-radical damage, such as aging. Our lab has been investigating the effect of gamma radiation on deletion formation. Since the mtDNAs that bear these deletions are usually at low abundance in rapidly-growing cells, we focused on a white blood cell line derived from a patient who already had elevated levels of a 4977-bp deletion called the "common deletion". Using real-time PCR and cell lines derived from the patient's mother and sister as normal controls, we measured levels of the common deletion and total mtDNA. In addition, we used long-extension PCR and gel electrophoresis to investigate the presence of additional deletion events in mtDNA extracted from irradiated human blood samples.

59 • The Sequence Dependence of Conjugation of the Amyloid Beta Protein on the Surface of Metal Colloidal Nanoparticles

Nicole Briglio, Hyunah Cho, and Sophia Hahn

Faculty Sponsor: Kazushige Yokoyama, Chemistry

Proteins immobilized at an interface are expected to behave differently from their counterparts in bulk solutions, and understanding their interactions on an interfacial surface is crucial to designing a bio-composite device. Our particular interest is in the Amyloid Beta protein (A-Beta) involved in the process of fibrillogenesis, a key hallmark of Alzheimer’s

disease. Studying the conjugation of the protein on the surface of gold colloidal nanoparticles will give insight into the proteins conformation at the interface. Various sequences of the amino acids in A-Beta (A-Beta1-42, A-Beta1-40, A-Beta1-11, A-Beta12-28, and A-Beta32-35) with 20nm gold colloid were studied. As pH varied from pH 2 to pH 10, absorption spectroscopy was utilized to identify changes in the colloids optical properties. All tested A-Beta sequences exhibited color changes around pH 5.0, except for A-Beta1-42 which constantly exhibited clear precipitants for all pH's lower than 7. Gold solutions without protein showed color change at a significantly lower pH of 3.09. Interestingly, only the A-Beta1-40 solution exhibited a reversible color change from blue to pink as the pH was externally altered between pH 4 and 10, respectively. This reversibility is an important implication of the observation of the reversible step reported for the fibrillogenesis of the protein.

60 • Ethyl-Violet Dye as a Tool to Study Diffusion Rate of Acid and Base in Sol-Gel Matrix

Liwen Chen and Duo Duo Chen

Faculty Sponsor: Kazushige Yokoyama, Chemistry

Ethyl-violet dye exhibits a color change according to the pH condition and was used to investigate the diffusion process of acid and base inside a silica-based sol-gel matrix. The ethyl violet was encapsulated in a silica sol gel sample, and the buffer was added to monitor the change of the color. As the buffer solution penetrates into the location of the dye, the color became violet under basic condition and light blue under an acidic condition. This color change was monitored by absorption spectroscopy. Quite interestingly, the pH dependence color change was found to be a reversible process. From this study, acid and base diffusion rate in sol-gel matrix was extracted.

61 • The Nanoscale Description of Acid Penetration to the Gold Colloids Encapsulated in Silica Sol-Gel Matrix

Tonya Gilbert and Colleen Clark

Faculty Sponsor: Kazushige Yokoyama, Chemistry

Gold colloidal nanoparticles of sizes ranging from 5 nm to 100 nm were embedded in a silica based sol-gel matrix. They were then exposed to 0.1M HCl and the gold colloid aggregation reaction was observed. This aggregation can be visually shown through a color change from red to blue. The corresponding absorption spectra were monitored in real time. Mean peak position at each given time was then extracted and the rate of gold aggregation was investigated with a first order reaction rate model. A clear increase in the rate of aggregation as a function of gold colloid size was seen up to the size of 40 nm. However, the reaction rate above 50 nm decreased drastically, implying the aggregation process was interrupted above this size. The rate was especially slow for 60 and 80 nm gold colloid sizes, which preserved their original color showing no aggregation. It was speculated that the surface of gold colloids of this size were homogeneously covered by the silica gel layer, preventing direct contact between the acid and the surface of the gold colloid. The close matching of the average size of the cavity with the size of the gold colloids was considered to hinder acid penetration.

62 • Investigation of Surface Plasmon Resonance of Albumin-Coated Gold Metal Surface

Matthew Kowalik

Faculty Sponsor: Kazushige Yokoyama, Chemistry

We have been establishing a Surface Plasmon Resonance (SPR) measurement in our laboratory by using a portable SPR analytical sensor. SPR is the excitation of the electrons of a surface plasmon (SP) by light at the interface between a conductor and an insulator. Through SPR measurements, the thickness of the film and/or interaction at the interface can be studied. Our interest is in the interaction of light with SPs in thin-gold films coated with the protein albumin. The use of this interaction has applications in optical modulators and sensors and as a means to characterize the properties of dielectric over-layers on the metal. Recently, we succeeded in obtaining the SPR signals for water, the calibration of the instrumentation, and the characterization of albumin SPR signals as they compare to water. The next step will be to characterize the SPR signal of the gold surface coated in albumin in different environments such as pH and solute concentration. The characteristics of the SP reflectivity minimum will be analyzed to find the dielectric properties of thin over-layers of albumin, which may indicate structural properties of the protein or its interaction with the thin-gold film.

63 • Reversibility of Conformational Change of Albumin Conjugated Gold Nanoparticles

Nick Miravalle and Dan Hower

Faculty Sponsor: Kazushige Yokoyama, Chemistry

Proteins in solution exhibit different chemistry when immobilized at an interface as opposed to simply being immersed in solution. An understanding of the reactivity of the proteins at the interface may provide information crucial for designing a bio-composite device. Albumin in aqueous solution undergoes a conformational change on the surface of gold colloidal nanoparticles. Various sizes of the gold nanoparticle were examined for their interactions with albumin. Analysis consisted of treatment of the albumin and gold colloid solution with acid and/or base to manipulate the pH back and forth across a range from pH 2 to pH 10. Absorption spectroscopy was utilized to examine the effects of the pH manipulation upon the gold conjugated albumin. Changes in color were observed around pH 5 for all gold particle sizes in this study, although 80nm gold colloid behaved aberrantly. It was also determined that the albumin conjugated gold solutions possess a reversible conformational shift when alternating between pH 2 and pH 10. This reversibility is apparent as the color changes back and forth from blue to red.

Communication

64 • The Influences on Self-Esteem for Young Men and Women

Amanda Hamilton

Faculty Sponsor: Meredith Harrigan, Communication

The purpose of this research is to explore what factors, communicative messages, and relationships influence young men and women's self-esteem or feelings about self. Preliminary results conclude the following: (a) factors, including but not limited to, body image, depression, family cohesion, number of siblings, and life satisfaction impact self-esteem in young men and women, (b) hurtful and aggressive messages, as well as, positive and affirming messages influence self-esteem in young men and women, and (c) relationships, including but not limited to, the father-daughter relationship, parent-child relationship, marital friendships, friendships, fraternity brother relationship, and sorority sister relationship impact self-esteem in men and women.

65 • Newly Employed Professional Women

Katie McLean

Faculty Sponsor: Meredith Harrigan, Communication

The present research involves explorations of the process of newly employed professional women's experiences organizing work. Specifically, I am in the process of conducting an interpretive study investigating how newly employed professional women communicatively negotiate their working experience. Four semi-structured interviews have been conducted so far. Initial findings include: (a) young professional women feeling as though they are treated based on gender and age, (b) young professional women recognize the importance of co-worker relationships, and (c) young professional women struggle with balancing work and personal life.

66 • Constructing Identities in the All-Female Household

Sara Rusick

Faculty Sponsor: Meredith Harrigan, Communication

Grounded in the interpretive paradigm and framed by current literature on symbolic interactionism (Leeds-Hurwitz, 2006), the present study addressed the questions: what, if any, identities do mothers in all-female households attempt to construct when interacting with their daughters? And how do mothers in all-female households communicatively manage their identities? Using qualitative methods of data collection and analysis, the researchers conducted 4 semi-structured interviews with 4 single mothers in all-female households and concluded that mothers experience a dialectical tension between intergroup (i.e., mother father to daughter) and interpersonal communication (i.e., friend to friend). On one hand, mothers find it important to establish their identities as both traditional mothers and traditional fathers. Thus, they communicate with their daughters in ways consistent with these roles. However, mothers also expressed their desire to establish a more personal relationship with their daughters, akin to a friendship, and communicate in ways consistent to this identity.

67 • Faculty Communication with Immigrant/International Students

Julia Perriello

Faculty Sponsor: Andrew Herman, Communication

A study of the perceptions faculty have of students who are recent immigrants or international students and how these perceptions affect student/faculty interactions and communication.

68 • Politics and the Web

Denyel Beiter

Faculty Sponsor: Ginni Jurkowski, Communication

An easy way to learn about a political group is to visit their official website. With a click of the mouse you can learn about their platforms and beliefs. My Space, You Tube, Political TV, Social Networking, and Blog Talk radio are also being used to connect with a voter who likes to receive information when THEY want it.

69 • The Net Works

Shannon Cox

Faculty Sponsor: Ginni Jurkowski, Communication

The web has developed into a useful tool for businesses and organizations. Websites and blogging are now becoming routine. Instant messaging used to be an activity for teenagers but businesses are utilizing it. Conference calls have been updated to include video conferencing. And entrepreneurs can find workshops, wikis, alternatives to traditional banking and marketing tools to help their newly formed businesses.

70 • Obscure Game

Nick Haanschoten

Faculty Sponsor: Ginni Jurkowski, Communication

Video games aren't just for the very young anymore. They are used for military recruitment, by churches to spread God's word, for people who need help using Food Stamps, by surgeons who want to perform better surgeries and by retirement homes as part of physical therapy.

71 • Web Philanthropy

Rachel Kingston

Faculty Sponsor: Ginni Jurkowski, Communication

Charitable causes have been able to expand their operations by utilizing the Internet. Non-profits recruit volunteers, solicit donations, petition for political change, support political candidates. Does the value of face-to-face activity still exist for non-profit agencies?

72 • The Mating Game

Amanda Konopa

Faculty Sponsor: Ginni Jurkowski, Communication

One online site identifies itself as "the world's largest and most trusted network of integrated online communities." Is it the best? There are social networking sites for people from different religions, ages, marital status, hearing abilities, likes and dislikes. They use personal video chats, photo contests, and online speed dating as new methods to meet that perfect someone. Are there advantages?

73 • The Social Networker

Rebecca Lovell

Faculty Sponsor: Ginni Jurkowski, Communication

Who uses a social networking site? There are sites for children, for workers, for baby boomers, for dogs, and a cyber-cemetery called MyDeathSpace. Each one attracts a specific audience. Then why are people being drawn to a virtual world like Second Life?

74 • Lend a Cyber Hand

Rachael Peskanov

Faculty Sponsor: Ginni Jurkowski, Communication

How do non-profit organizations around the world use the web to their advantage? Volunteers and staff use blogs to communicate or through fundraising blogathons. Some gather donations through YouTube public service announcements. Podcasts are used to portray the emotions of a recipient of services offered through an agency. The collaborative Wiki allows volunteers to actively be involved in communications.

75 • Political Parsnip

Ashley Saltzman

Faculty Sponsor: Ginni Jurkowski, Communication

How do political groups use the web to communicate? Some use a traditional website, while others use electronic cartoons. Some use wikis and others use videos. Some use entertainers to speak on their behalf and some candidates speak for themselves. Depending on the intended audience, some politicians are very creative in their use of the Internet.

76 • Using Blogging for Class Assignments

Faculty Sponsors: Ginni Jurkowski, Communication, and Kate Pitcher, Milne Library

This is a collaboration between the library and the classroom. Library instruction was embedded into the course with workshops held during class time and designed to teach students practical skills for completing classroom assignments. Library skills are now tied to classroom applications to meet the goals of increasing the students' technology and information literacy. At the same time, students increased their online writing and research abilities. *(This is a faculty poster which is the basis for the research done by students in Com 275.)*

77 • Live Magazine - The Journey from Creative Vision to Final Production

Mike A. Baker (Project Coordinator), Ivan Cash (Graphic Team Leader), Beth Farmer (Sales Team Leader), Chris Boyce, Meri Teasdale, Ashley Coon, and Liz Levy (Team Members)

Faculty Sponsors: Mary Mohan, Communication, Louise Wadsworth (Program Director), Alliance for Business Growth - Downtown Revitalization Program, and Maureen Palumbo (Program Administrator), Alliance for Business Growth - Downtown Revitalization Program

This poster chronicles the creation of a public relations magazine designed to inform youth about events and businesses in the Genesee Valley. The initial concept for this creative project was "hatched" in a public relations course and grew into subsequent Communication Internships. The magazine was conceived by Senior Mike Baker and produced by student teams that focused on writing/editing, graphic design, and business sales. Baker led the student teams sponsored by the Downtown Revitalization Program, Louise Wadsworth, Director. Dr. Mary Mohan, Department of Communication supervised internships for the magazine's production.

78 • Working with a Client to Produce a TV Program

Jessica Domres and Kristin Maki

Faculty Sponsor: Chris Pruszynski, Communication

The video production proc ess starts long before you pick up a camcorder or go into the editing suite. This presentation shows you the process for producing a purposeful video program. It includes the planning steps, draft scripts, story broads, and out takes, as well as samples of completed program segments of a current work-in-progress. Producers Kristin Maki and Jessica Domres will be on hand to give their personal perspectives.

Communicative Disorders and Sciences

79 • What's That in my Ear? The Role of Video-Otoscopy in Audiological Evaluations

Alexandra Becker, Rebecca Berger, Anastasia Emerson, Laura Mazurkiewicz, and Cathleen Ringer

Faculty Sponsor: Douglas MacKenzie, Communicative Disorders and Sciences

Otoscopic examination of the outer ear is a critical component of a comprehensive audiological evaluation. Visual inspection of the external auditory canal and tympanic membrane enables the clinician to identify risk factors for outer and middle ear disease, and ensure that no contraindications exist for administering additional audiometric tests. Recent advances in fiber-optic technology have led to the development of the video-otoscope which provides high-resolution images of the ear with exceptional detail and clarity. This poster will present images of various outer and middle ear disorders and conditions identified through video-otoscopy.

80 • Listen up, Baby!

Dana Dodrill

Faculty Sponsor: Douglas MacKenzie, Communicative Disorders and Sciences

Over the past decade there has been significant progress made in efforts to screen all newborns in the U.S. for hearing loss. Otoacoustic Emissions (OAEs) testing is one method commonly used by hospitals to objectively screen newborn infants. This poster provides information on the anatomical and physiological origin of OAEs, how they are measured, and what the results reveal. Test results for normal hearing persons are compared to test results of those with hearing impairment. Standard follow up procedures for parents of infants who fail the newborn hearing screening will also be addressed.

81 • Original Fluency Intervention Brochures Created by Students in CDSC 243 (Fall 2007)

Caroline Cahalan, Nicole Cunetta, Michelle Frankino, Andrew Kanuck, Stephanie Loccisano, Colleen Rogan, Casey Rovinski, and Laura Waldron

Faculty Sponsors: Linda House, Communicative Disorders and Sciences, and Linda Deats, Communicative Disorders and Sciences

Student prepared original brochures suitable for use with clients, families, educators, and /or medical personnel in the area of fluency disorders.

82 • Original Fluency Intervention Brochures Created by Students in CDSC 243 (Spring 2008)

Jamie Abreu, Larissa Bainbridge, Lisa Balistreri, Alexandra Becker, Francesca Crobak, Samantha Cunningham, Josinnia Dudley, Erin Filippini, Meghan Furner, Emily Gigon, Ronnia Girgis, Megan Griffin, Molly Hanford, Cathryn Hayes, Jillian Healey, Elizabeth Hironimus, Gabriele Johnson, Laura Kitts, Angela Mendez, Tara Murphy, Emily Racitano, and Megan Stetzel

Faculty Sponsors: Linda House, Communicative Disorders and Sciences, and Linda Deats, Communicative Disorders and Sciences

Student prepared original brochures suitable for use with clients, families, educators, and /or medical personnel in the area of fluency disorders.

83 • Speech and Language Therapy Materials: Original Student Works

Allison Barrette, Rachel Brower, Nicole Carbuto, Katherine Dechert, Elizabeth Fear, Melissa Galvin, Megan Gerych, Sarah Guth, Ashley Hoffman, Amy Hunt, Brooks Jamison, Alexandra Knight, Meaghan Kopko, Meghan Levy, Ashley Moran, Christina Moriarty, Joelle Muller, Lynda Peterson, Tanya Riesbeck, Monica Savedoff, Lauren Spero, Christie Surace, Annie Verdino, Krista Vincent, Kristen White, Kathryn Wind, Joanne Yen, and Jaclynn Zampino

Faculty Sponsors: Linda House, Communicative Disorders and Sciences, and Linda Deats, Communicative Disorders and Sciences

Displayed speech-language therapy materials were constructed by CDSc students in their second semester of clinical experience for use with clients in the Geneseo Speech and Hearing Clinic. 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 and autism, but could easily be adapted for use with any population.

84 • Speech and Language Therapy Materials: Original Student Works

Stephanie Bauer, Eleanor Fichtelman, Jessica Kroecker, Jennifer Mann, Sheryl Nichols, and Cathleen Ringer

Faculty Sponsors: Carolyn MacTurk, Communicative Disorders and Sciences, and Linda Deats, Communicative Disorders and Sciences

Displayed speech-language therapy materials have been constructed by CDSc students in their first semester of clinical experience for use with clients in the Geneseo Speech and Hearing Clinic. 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 and autism, but could easily be adapted for use with any population.

85 • CDSC 150: Exercises in Phonetic Transcription

Lauren Baumert, Amy Dunn, Erin Filippini, Elizabeth Hironimus, Roxanne Kohilakis, Emily Racitano, Stephanie Reid, and Daria Reilly

Faculty Sponsor: Carolyn MacTurk, Communicative Disorders and Sciences

Students in CDSc 150 were asked to phonetically transcribe either an original work of children's literature or a compilation of facts from the year of their birth. Under examination was their ability to use consonant and vowel symbols from the IPA, as well as primary and secondary stress markers to represent their spoken dialect of American English. Students displaying works demonstrated mastery of broad transcription and superior creativity in their presentation.

86 • Acoustic Characteristics of Vowels Produced by Inexperienced Signers during Simultaneous Communication: A Systematic Replication

Rachel Brower, Morgan Fay, and Lauren Szpakowski

Faculty Sponsors: Dale Metz, Communicative Disorders and Sciences, and Doug MacKenzie, Communicative Disorders and Sciences

This study is systematic replication that investigated the acoustical characteristics of vowels in speech produced during simultaneous communication (SC). Ten normal hearing undergraduate students who had recently completed a sign language course (inexperienced signers) were recorded under SC and speech alone (SA) experimental conditions. Each participant spoke a set of sentences containing monosyllabic words designed for measurement of vowel duration, formant frequencies, and fundamental frequency in consonant-vowel-consonant (CVC) syllables under both experimental conditions. Although results indicated longer sentence and vowel durations for SC than SA, the data showed no difference in spectral characteristics of vowels produced during SC versus SA, indicating no degradation of vowel spectrum by rate alteration during SC. These conclusions are consistent with previous research on experienced signers indicating that temporal alterations produced by SC do not produce degradation of segmental acoustical characteristics of spoken English.

Computer Science

87 • Backyard Supercomputing: BITS Here and There

Philip Stachowski and Pressly Dowler

Faculty Sponsors: Homma Farian, Computer Science, and Matthew Haas, Computer and Information Science, Corning Community College

Collaboration is at the very core of what High-Performance Computing is all about- the sharing of resources, information, and accomplishing impressive feats of cooperation, performance, and efficiency in solving or tackling larger problems plays an ever-increasing role in today's world. In light of this, the notion of inter-institutional collaboration also holds significant value, as we can pool together resources from geographically separate locations to share information, knowledge, and build new relationships and experience that was previously only limited to the local environment at a particular school. BITS (Bunch of Interconnected Technology Stuff) is the present name for a collaboration established between the SUNY Geneseo DSLAB (Distributed Systems Laboratory), Corning Community College's LAIR (Location for Abstract and Innovative Resources), and High-Performance Computing efforts at SUNY IT. It is an exploration and establishment of a shared access to computer and information resources, for use in research, class work, and general exploration. Faculty, students, staff, and volunteers at the various locations benefit from increased resource availability. Here we will explore some of the technologies and facilities that make this collaboration possible, from the network design to information resources that allow individuals to benefit from a virtual environment that is physically in separate locations.

88 • Tries and Distributed Hash Tables

Mathew Rex

Faculty Sponsor: Gahyun Park, Computer Science

Tries are one of the most popular data structures on words. They are often used to store a set of strings so that future retrieval can be made efficient. Due to their simplicity and efficiency, tries have found diverse applications in IP address lookup, Lempel-Ziv compression schemes, conflict resolution algorithms, leader election algorithms, and DHTs (distributed hash tables). In this project, we consider the load balance problems in DHTs. We study a variant of a trie, called a multiple choice trie. Multiple choice tries are highly balanced trees that in turn have implications for a randomized ID management algorithm in DHTs such that, with high probability, the ratio between the maximum and minimum load of a processor is O(1). Finally, we

propose a simple protocol based on trie data structure that can be used to decrease or eliminate the occurrence of hot spots in such network.

89 • Development of the Textbook Exchange System Using Web and Database Technologies

Dave Gordon and Justin Hagstrom

Faculty Sponsor: Christian Shin, Computer Science

As e-commerce has grown and expanded, so has the use and availability of the database technology necessary to support it. While large businesses such as Amazon and Ebay utilize server farms that require entire buildings and warehouses for storage, even small, localized businesses rely on single servers set up to maintain sales data, employee records, and the like. An electronic database exceeds its paper alternative in nearly every aspect, allowing searchability, easier maintenance, a smaller volumetric footprint, as well as a simpler means of duplication, backup, preservation, and security. Many students at SUNY Geneseo's campus have sought alternative methods each semester to purchasing and selling their books conventionally - that is, to the local textbook vendor. However, these methods have often met with little success due to a lack of customization or scalability, or security issues. Using the freely available MySQL database software, as well as the open-source PHP programming language, we have constructed a system that not only meets these requirements, but is easily accessible and easily modified for future adaptations. By linking students, teachers, textbooks, and schools together in a central database, we have provided an alternative method that can compete with current solutions.

Education

90 • Teacher Development and Documentation of Children's Learning: A Case Study

Elisabeth Bennett

Faculty Sponsor: Mary Jensen, School of Education

Ways to document children's learning have emerged from the Project Approach (Helm, 2003), Project Zero (Project Zero, 2003), and particularly programs inspired by the Reggio Emilia philosophy (Malaguzzi, 1998). Photographs of children's learning actions, records of children's words and ideas that may further their inquiry or exploration of a topic, records of dramatic play, or child artifacts from learning experiences are all documentation pieces that teachers might gather and use to engage children and to extend learning and meaning making. Building on a previous study of documentation in the same classroom, this case study examines the effects of documentation on a teacher's development over time. My research questions are: 1. Have this teacher's questions about children's inquiries and learning influenced or informed her use of documentation? 2. Has this teacher's collaboration with colleagues affected her use of documentation? 3. Has revisiting of documentation with the children changed over time for this teacher? 4. Has the effort and thought that this teacher invests in the use and revisiting of documentation affected her professional development over time? Data were collected via classroom observations, teacher interviews, and records of professional development meetings. Findings were triangulated and patterns distilled that address the research questions.

91 • Teachers as Researchers: Understanding Children's Learning Through Documentation

Megen Glass and Melissa Gardner

Faculty Sponsor: Mary Jensen, School of Education

Documentation is an important kind of teacher research that sharpens and focuses teachers' attention on the intentions and understandings of the children as well as their own role in children's experiences. It invites inquiry about children's thinking and predictions about effective teaching strategies. The goal of documentation is to explain the depth of children's learning and the educational rationale for activities. A teacher's commentary is necessary to frame data collected as examples of a general principle that can be applied to new contexts. A documentation panel (research report) for a particular project walks viewers through an explanation of how learning evolved. It contains sufficient detail to help others understand the behavior recorded and is used to enhance discourse (with children, parents, and other educators). Viewing these panels, parents can become acutely aware of their children's school experiences (Forman, 1998). While enrolled in an early childhood curriculum course, two teacher candidates developed documentation panels based on implementation of an inquiry activity that lasted for several days. One activity took place in a 4-year-old classroom and focused on the topic of crickets. The other took place in a classroom serving 3-year-olds from low-income, immigrant families and focused on the topic of laundry.

92 • Examining the Reading Process through Eye Movement and Miscue Analysis (EMMA)

Kimberly Skeggs and Justin Mirsky

Faculty Sponsor: Maria Perpetua Liwanag, School of Education

In examining eye movement and miscue analysis (EMMA) data, we want to understand further how the reading process works. In this research, we plan to examine: 1. What readers do when they read? Research by Peter Duckett (2002) showed that first grade beginning readers did not look at every word they read. We would like to examine EMMA (Kim and others 2007; Liwanag 2007) data on older readers and see if this is also true for them. 2. Other research on EMMA (Duckett 2003; Just and Carpenter 1980; Liwanag 2007; Paulson and others 2003) also showed that reader's fixations (length of time a reader looks at the words) varied in duration. We would also like to examine EMMA data on older readers and analyze fixation durations. 3. When listening to children read, teachers often interrupt when a student is stuck on a word, but future teachers must learn how to use wait time effectively and let the student use strategies themselves to figure out a word. In the same study, we would like to explore how teacher wait time affects student's use of reading strategies. 4. From constructivists theory (Goodman 2004), we have known that students are empowered to evaluate their own processes when given the opportunity, we would like to analyze EMMA data on readers and see how readers are able to evaluate their own reading process and identify the role teachers play in this metacognitive process. 5. Comparing EMMA data of older readers, we

would also like to examine struggling readers' use of strategies when reading. How do proficient and non-proficient readers differ in their use of strategies when reading?

93 • Emotional Responses in Reading: Strategies for Struggling Readers

Michelle Zambuto

Faculty Sponsor: Maria Perpetua Liwanag, School of Education

This presentation examines instructional strategies that integrate emotion as an important aspect in helping readers in trouble revalue themselves as readers and revalue reading as a sense making process. Miscue analysis data is used to generate conversations that help readers identify emotions affecting development of reading proficiency. Results from miscue processes combined with literature review are used to share research experiences indicating how student emotions affect reading proficiency and how readers in trouble are engaged in reading conversations. The miscue data is then used to develop and create literacy strategies for use with readers in trouble. Pre-service teachers learn that engaging students to talk about reading and their own views about literacy will help students meet the demands of literacy for the 21st century.

94 • Keep Kids In School: A Longitudinal Study of a Cohort of Rochester City School Students

Katie Wryk, Katie Brown, Laura Van Etten, and Nick Toscano

Faculty Sponsors: Jane Morse, School of Education, and Brian Morgan, School of Education

This presentation will describe a project, Keeping Kids in School (KKIS), investigating the reasons that a cohort of Rochester City School District students stay in school. The cohort attended a summer camp sponsored by SUNY-Geneseo in collaboration with the Rochester After School Academy. They also attend a Saturday School staffed by the Xerox Multicultural Center and student volunteers. The research team interviews participants every semester until they matriculate in college. The research team will also have access to academic records and other school-related information such as attendance records. Previous research has focused on what contributes to students' dropping out of school: poverty, large class sizes, inadequate counseling staff resulting in poor advising, too much emphasis on high stakes testing, test-prep curriculum, at-grade retention, and more (Fine, 1991; Jones, Jones, and Hargrove, 2003; Kozol, 2006). The students in this study experience many of these factors, yet, some of the cohort will stay in school. By interviewing these subjects each semester until they graduate or leave the study for some ascertainable reason, the research team hopes to shed some light on what keeps kids in school, rather than what makes them drop out.

95 • Speaking Our Selves: The Intersections of Women Educators' Personal and Professional Lives

Megen Glass

Faculty Sponsor: Leigh O'Brien, School of Education

This poster presentation summarizes the findings from interviews conducted with 33 women educators working at varying levels of education and in diverse fields, and who varied in terms of age, ethnicity, race, family structure, geographic location, and sexual orientation. The faculty sponsor conducted semi-structured interviews based on variants of this question: "Does who you are as person influence what you do as an educator and are there ways being an educator influences your life outside of work?" After the interviews were taped recorded and transcribed, the faculty member and student coded them, then analyzed them for emerging categories from which we constructed a theoretical framework. The themes we uncovered suggest women educators function as whole persons, aware of multiple intersections between their personal and professional lives. Many women noted that, in fact, they could not separate their personal lives from their work lives, but they differed in terms of degree and kind of integration. This research may help women educators realize the importance of their personal/professional approaches to pedagogy and the value of living an undivided life. Further, in a time of "teacher-proof," scripted curriculum, these findings remind us that teaching cannot be reduced to mandated curricular guidelines and texts.

96 • Second Step: A Program Evaluation

Jason Miller and Christina Finke

Faculty Sponsor: Michael Rozalski, School of Education

Second Step is a primary prevention program that has been developed to provide alternative ways for dealing with childhood aggression and has been used in Livingston county schools since 2002. Dr. Rozalski, Jason Miler, Cristina Finke along with a team of Geneseo students have been working with the Genesee Valley Health Partnership to evaluate the effectiveness of the programs implementation. We have looked at the effectiveness of the program in specific schools along with looking at the differential effects of the curriculum according to grade. This session will present the results we have found in relation to these two areas and also highlight some of our current research which is looking at how the program is implemented at three Livingston County schools to determine why some of these schools report higher success rates than others.

97 • A Multicultural Investigation of Societal Values and Issues through Dance

Amanda Cotrupi

Faculty Sponsor: Sherry Schwartz, School of Education

This poster will present a multicultural social studies unit for the sixth grade classroom. The unit will expose students to several diverse and unique cultures from around the world that all practice a common form of expression: dance. Throughout this unit students learn that dance is much more than just a form of artistic expression. While discovering the many functions of dance, students will also identify that particular culture's values, as well as some of the political, social, and economic events and issues that the dancing reflects. Students will investigate the dance traditions of Native American Indians, Africans, and the Irish. It will then be up to the students to research and uncover how dance in America has been influenced by any of the

aforementioned cultures, and identify the political, economic, or social circumstances surrounding these dances to determine what function it served (or still serves) for the American people. This unit not only exposes students to the individual aspects of a culture's dance practices, but takes it a step further to examine the function dance plays for a particular group of people, and how their dance traditions reflect their cultural values and circumstances.

98 • The Classroom is the Ideal Place for Diversity (Grades 4-6)

Morgan Byrne, Katie Duffy, Mike J. Baker, and Holly Dedoszak Mistark
Faculty Sponsor: Linda Steet, School of Education

The goal of our presentation is to introduce ways to incorporate diversity in elementary classrooms. It is extremely important to incorporate diversity into the curriculum to broaden children's scope of the world in which they live. The poster gives a wide expanse of ideas in which to include diversity, from snack time to plays. Not only does our presentation include an extensive array of ways to include diversity, but in different subjects as well. Multiculturalism is an immense part of America today, and it is vital that our students learn not only to accept diversity, but to embrace it. Our poster can help give teachers ideas and techniques to include the many different facets of the America we live in today.

99 • Embracing Diversity for a Multicultural Classroom: Grades 7-9

Sarah Castiglione, Tiffany Lamprecht, and Lauren Sholette
Faculty Sponsor: Linda Steet, School of Education

Our presentation is a poster that describes the incorporation of multiculturalism into adolescent education, specifically for grade levels 7, 8, and 9. It will include a number of subtopics elaborating on ways to diversify learning through various aspects of the school experience including the curriculum, field trips, extracurricular activities, etcetera. We will also explore ways to incorporate various academic disciplines in alongside the multicultural learning experience.

100 • Education for All of Us: A Multicultural Approach to Diversity in the High School Classroom (Grades 10-12)

James Clark and Amanda Kurtis
Faculty Sponsor: Linda Steet, School of Education

Our poster is a presentation of activities and materials that a teacher can introduce into the classroom to promote an understanding of diverse cultures, particularly those historically underrepresented in schools. The poster covers incorporating diversity into high school subject matter, teaching methods, community projects, extracurricular activities, field trips, and multicultural websites. We will give examples and suggestions for multicultural education that will be well researched and at the same time user-friendly. The poster's content is geared towards grades ten through twelve and covers many aspects of the high school experience.

101 • Celebrating Cultural Diversity in Schools from Grades 1 – 3

Kelly Folaron, Emily Wagenhauser, and Rianna Travers
Faculty Sponsor: Linda Steet, School of Education

The poster deals with different ways of integrating cultural diversity in the classroom from first grade to third grade. It has detailed descriptions, visuals, and citations dealing with new, creative methods of bringing diversity to lunch, recreation, and curriculum.

102 • Embracing Diversity: A Step in the Right Direction

Jessica Marsello, Cassandra Hoffman, and Chelsea Singer
Faculty Sponsor: Linda Steet, School of Education

Our presentation will be exploring ways to incorporate multiculturalism and diversity into the education system in new and creative ways that will benefit students. We will be focusing on students in grades one, two, and three. We will address our ideas for inclusion in not only curriculum, but also in aspects such as community relations, and the environment of the school. Many factors contribute to the school experience, and just because they are not officially a part of the curriculum does not mean they are not important. We will be incorporating multiculturalism into the numerous aspects education, in order to help students fully understand and care for others. We will include descriptions of activities, and how they can be carried out effectively.

103 • Striving for Diversity: A Change in Schools (Grades 1-3)

Ellen Mattison, Kelly McCoy, Rachel Giza, and Katherine Staulters
Faculty Sponsor: Linda Steet, School of Education

In this poster, we will create a perspective that will incorporate many aspects of multicultural education. This includes academic disciplines, the classroom environment, extracurricular activities, and even the bus ride. We plan to introduce new and different methods of education that create a more diverse classroom environment. By creating this poster and presenting it in G.R.E.A.T. Day, we hope to spread the importance of multicultural education.

104 • Multiculturalism in Early Education

Steve Nelson, Julie Butler, Molly Scheifflee, and Tess Leverenz

Faculty Sponsor: Linda Steet, School of Education

The poster is a presentation on the incorporation of ideals of multiculturalism into the American education system. The addition of multicultural ideals to the curriculum exposes students to a wide variety of ideas and beliefs from an early age. The poster will take a look at various new approaches to incorporating ideas of multiculturalism into the curriculum.

105 • Breaking through the Barriers of Standard Education Multiculturalism and Diversity in Schools (Grades 1-3)

Brittany Phillips, Amanda Moon, Lauren Forget, and Josh Nilsen

Faculty Sponsor: Linda Steet, School of Education

This Poster is designed to highlight aspects of cultural diversity and multiculturalism throughout the Elementary School years. Through various activities such as field trips to riding the bus, students are exposed to a variety of new and inviting ideas.

106 • Be the Change You Want to See in the World

Christine Walsh, Leah Delecki, and Alyssa Delach

Faculty Sponsor: Linda Steet, School of Education

Our poster is going to encompass various activities that promote diversity in schools, at the elementary school level (grades 1-3). We will have the poster divided up into various sections, each of which will be devoted to promoting diversity and acceptance of students of all different ethnicities and backgrounds. Some of these activities include a multi-cultural week, show and tell (to promote cultural diversity) as well as group discussions on how to make the school a better place for all the students who go there.

Foreign Languages and Literatures

107 • The Legends and Stories of Hunahpú and Xbalanqué: The Hero Twins of the Ancient Mayan Civilization

Katie Freeman

Faculty Sponsor: Rose McEwen, Foreign Languages and Literatures

This poster will cover the different legends of the Hero Twins that are part of the written and oral history of the Mayas. I will explain why oral and literary traditions are so important in understanding the worldview of cultures of the past but also in understanding the transformation and roots of the Mayan community that still exists today. I will introduce and explain the importance of the Popol Vuh, the Mayan bible, and tell three different legends involving the Hero Twins Hunahpú and Xbalanqué. I will have 4 or 5 images that depict the textual descriptions on the poster as well.

108 • Evolution of Chinese Characters

Maggie Wen, Trudy Li, Warren Niu, Won Choe, and Janny Liu

Faculty Sponsor: Jasmine Tang, Foreign Languages and Literatures

Chinese culture is an extremely complex one with a rich and highly developed language system. The progression of the Chinese language is a fascinating one. Therefore for the purpose of our G.R.E.A.T Day Poster, our group will research the so-called “Evolution” of Chinese Characters (or Chinese writing). For our focus, we will discuss how Chinese writing evolved from ancient Chinese (Jiao-Gu-Wen/Oracle Bones) to Traditional Chinese writing and to Simplified Chinese writing. In addition, we will discuss how calligraphy is both a form of Chinese writing and an art form. The Chinese language is vastly different from the familiar Western languages that are based on alphabets. Instead, Chinese language is made up of characters that act as pictographs. Each pictograph alone represents a meaning and when the characters are combined they form phrases and sentences that make up expressions. It is very difficult to place an exact beginning to Chinese writing, but we will place oracle bones as the “beginning” because it is developed as early pictographs. Our group will use knowledge we have learned in Chinese class (Chi201) as well as information from research to understand how this progression of Chinese writing occurred.

Geological Sciences

109 • Mineralogical and Geochemical Study of Ancient Cypriot Slag

Kelly Howe

Faculty Sponsor: Dori Farthing, Geological Sciences

Samples of Cypriot slag were collected from a large slag pile at the Skouritossa mine for in-depth investigation into their mineralogy and geochemistry. Slag is the solidified remnants of the smelting process, which separates impurities from metal ores. Copper ore smelting is an ancient process and has been occurring on the island of Cyprus since the Bronze Age; consequently, slag piles have since been accumulating. Collected samples have the superficial appearance of basalt but microscopic and geochemical investigation revealed distinct differences. There is an abundance of olivine in the slag, which is similar to basalts, but there is a lack of plagioclase. The olivine in these samples also forms dendrites and blade-like crystals, which is unlike rocks from basaltic melts. Komatiites may be a better model for slag, as they share the spinifex texture of olivine crystals. Similarities between the komatiites and slag may indicate under which temperature conditions the

slag melt reached. Another unique characteristic of these slag samples is the lack of expected glassy material within the lattice structure. Understanding the formation of the slag will improve knowledge of igneous and Cypriot copper smelting processes.

110 • Understanding Martian Gullies

Kelly Howe

Faculty Sponsor: Dori Farthing, Geological Sciences

Landforms consistent with terrestrial fluid movement in images from Mars Orbital Camera (MOC) were analyzed in 2000 by Malin and Edgett and it has since been termed as "gullies." Since the gullies form in areas typically considered places where liquid is unstable at the surface, questions regarding their formation arose. The objective of this study was to simulate gully formation with morphologies similar to those observed by Mailn and Edgett as a step towards identifying a potential transporting fluid. To do this, simulations were run under terrestrial conditions at different slopes and flow rates in a sand filled wooden flume. Multiple parts of the gully were measured and sand samples were taken for sand saturation analysis. Simulations produced gully forms that were similar, but not exact, to those observed and resulted in significant relationships between parameters and both flow rate and slope. Difference between observed and simulated gullies was due to sand not being a good simulate for martian soil. Issues of scale and Martian environmental conditions will also have to be dealt with before this study can be applied to better understanding martian gully formation.

111 • Catch the Rainbow: Geochemical Analysis of Colored Slag from Ironville, Adirondack State Park, New York

Irene Rizza

Faculty Sponsor: Dori Farthing, Geological Sciences

Iron was extensively mined and smelted in the Adirondack Mountain Region during the 19th century. Smelting resulted in multiple slag piles in upstate New York. Smelting for the Crown Point Iron Company began in Ironville, located on the eastern margin of Adirondack state park, in 1844 and continued until the 1890's. The current slag pile at Ironville covers ~ 4,000 square feet. The slag is highly variegated in color, has a vesicular to ropey appearance and is primarily glassy. Ironville slag is macroscopically unlike any other slag found in this area of the Adirondack region. Samples of blue, green and purple slag were collected and analyzed with XRD, XRF and, transmitted light microscopy. Soil samples were also analyzed to determine the degree of chemical interaction between the slag pile and its immediate surroundings. Initial findings indicate little chemical difference in major element concentrations for the slag samples. All slag regardless of color show high concentrations of SiO2 and CaO. Trace element concentrations have similar trends, although there is some variation between colors. This chemical data is essential to understanding the impact of a historical industrial waste site on this region of New York.

112 • Rheology of Play Doh: Simple Experiments to Demonstrate the Effect of Viscosity Contrast on Strain Analysis Results

Henry Adams

Faculty Sponsor: Scott Giorgis, Geological Sciences

The rate at which ductile materials deform under stress is a function of the effective viscosity of the material. To better understand this relationship reproducible experiments were conducted utilizing simple materials to quantify the relationship between measured strain and viscosity. Five sets of Play Doh with different viscosities were used in these experiments. The viscosity of each sample of Play Doh varied due to age and relative desiccation. Older Play Doh is generally more viscous. The rheology of each was quantified by determining the strain rate dependent on stress. Strain was then calculated after running experiments using four different age Play Doh strain markers within the fifth as a matrix. The matrix vs. marker Rf (strain) ratio was plotted versus their respective effective viscosity ratios. The four data points show a general linear relationship with an R2 value of 0.89, indicating that materials with higher viscosities record lower strain. These simple experiments can be used as a teaching tool in the context of a structural geology class to help students understand: (1) the methods for quantitatively determining the rheology of ductile materials; and (2) the potential effect of marker vs. matrix heterogeneity on strain analysis results.

113 • GPS vs. Geologic Evidence of South American-Caribbean Plate Motion, Central Range Fault Zone, Trinidad

Jenna Hojnowski

Faculty Sponsor: Scott Giorgis, Geological Sciences

The Central Range fault system of Trinidad is part of an active zone of deformation within the South American-Caribbean plate boundary. It is uncertain whether most of the deformation recorded in the Central Range is due to recent fault motion or from the plates colliding 5-20 million years ago. Recent studies using GPS show the Central Range fault zone accounts for ~12 mm/yr of the total ~20 mm/yr of movement between the South American-Caribbean plates. The GPS data also yields a current angle of oblique convergence of ~20°. Comparison of GPS data to geologic data gives some insight into the consistency of plate motion along the Central Range fault system through time. Geologic data characterizes the kinematics of the tectonic-scale deformation occurring over long-term time scales. A fold analysis, based on map measurements, constrains the angle of oblique convergence over a longer time frame. Determination of the total displacement along the Central Range fault zone may give some indication as to whether modern plate motion rates determined by GPS could have accommodated the total movement since collision 5-20 million years ago, or whether rates of plate motion have varied along the South American-Caribbean plate boundary through time.

114 • Paleomagnetic Constraints on the Timing and Magnitude of Neotectonic Deformation in the Central Range Fault Zone, Trinidad

Kathleen Sharman

Faculty Sponsor: Scott Giorgis, Geological Sciences

Trinidad, an island off the northeast coast of Venezuela, is located on the Caribbean-South American plate boundary. Previous studies using GPS data show the Caribbean plate moving eastward at 20 mm/yr with respect to a fixed South American plate. The Central Range fault zone in central Trinidad is accommodating 12 ± 3 mm/yr of this movement. The folding and faulting in the Central Range can be accounted for by Miocene collision and/or modern transpression. Paleomagnetic data were collected to constrain the amount of block rotation in the Central Range since the Miocene. An understanding of the total amount of strain may give insight into how much deformation is due to neotectonic activity vs. Miocene contraction. Paleomagnetic samples were collected from the Tamana, Chaudiere, and Point-a-Pierre Formations across the Central Range fault zone. Due to poor outcrop most sites were collected in quarries where continuous stratigraphic sections were clearly visible. Five to ten cores were collected at each site and were analyzed using the alternating field demagnetization process. In most samples demagnetization revealed a weak, single component magnetization. A failed fold test and a failed statistical conglomerate test reveal that the formations have been remagnetized post deformation. If remagnetization occurred in a reverse polarity interval, the rocks have undergone a maximum of 9° of vertical axis rotation. If they were remagnetized in a normal polarity interval, the rocks would show about 180° of rotation. The latter suggests that there is large of amount of modern deformation recorded in the Central Range, which is inconsistent with the low topography of this mountain range. Using the determined degree of rotation in a reverse polarity interval and a time constraint of 760,000 years since the last pole reversal, maximum plate motion and total displacement on the fault zone can be determined.

115 • Middle Devonian Tentaculitids of the Oatka Creek Type Locality

Patrick Donohue

Faculty Sponsor: D. Jeffrey Over, Geological Sciences

Based on conodonts the Eifelian-Givetian (E-G) Stage boundary in the northern Appalachian Basin is within the lower Hamilton Group between the Cherry Valley Member of the Union Springs Formation and the Stafford Member of the Skaneateles Formation. The E-G boundary corresponds to the end of the Kacák Event, but has not been precisely placed in the northern Appalachian Basin. The Chittenango Shale of the Oatka Creek Formation at the type locality along Oatka Creek is one of three possible strata for the Otamari Shale equivalent and E-G boundary. The tentaculitids Nowakia (Dmitriella) sulcata postsulcata? n.n. ALBERTI 1993 and Viriatellina fortistriata? LÜTKE 1985 were recovered from the lower Chittenango Member, approximately 2 m above the Hallihan Hill Bed. These taxa are not known to range into the Givetian and suggest that the boundary is higher in the Chittenango.

116 • Proposed Location of Eifelian-Givetain Middle Devonian Boundary in Western New York Using Magnetic Susceptibility

Shannon Rabideau

Faculty Sponsor: D. Jeffrey Over, Geological Sciences

The Middle Devonian Eifelian-Givetian Boundary was a time of great change associated with the end of the Kacák Event which occurred along with a global rise in sea level and extinction characterized by organic-rich black shale interval, the end of a magnetic susceptibility low as well as changes in ammonoid, brachiopod, conodont, and trilobite faunas. The boundary is defined by the appearance of the conodont species Polygnathus hemiansatus. Magnetic Susceptibility can be used as proxy for sea level curves which can be used to find boundaries that are associated with changes in sea level. The Eifelian-Givetian Boundary has not been previously identified in western New York due to constraints in the fossil record. New MS data shows that the boundary could be located between the Cherry Valley Limestone and the Chittenango Shale within the Oatka Creek Member.

117 • Late Holocene Climate Variability and Implications for the Onset of Arroyo Incision along the Little Dolores River, Western Colorado

Patrick Morgan

Faculty Sponsor: Richard Young, Geological Sciences

The influence of climate fluctuations on the Holocene arroyo (i.e. gully) history of the Little Dolores River, a tributary of the Colorado River in the northern Uncompahgre Plateau of western CO, was analyzed using geologic mapping, stratigraphic sections, 14C dating, and GPS transects. Although arroyos have been studied extensively in the southwestern U.S., western CO arroyos have received little attention. As evidenced by the historic period of arroyo cutting, which occurred between ~1880 and 1920, arroyos are prone to rapid and devastating change, and can have major impacts on agriculture. Geologic mapping reveals a deeply incised arroyo with two Holocene fill terraces bounded upstream and downstream by Precambrian bedrock valleys. The presence of two fill terraces suggests that the arroyo was cut in two phases. Using 14C dating, initial arroyo incision (up to 10 m) began between 1310 and 1430 AD. Age estimates suggest that incision was rapid, similar to the 1880 to 1920 event. Subsequent arroyo incision of up to 9 m most likely occurred in the historic era. Since faults do not displace Holocene fill terraces and bedrock canyons buffer the river from downstream influences such as base-level change, climate fluctuations may have triggered arroyo incision.

Mathematics

118 • How Small Is a Unit Ball?

Zach Stoll

Faculty Sponsor: Andrzej Kedzierawski, Mathematics

We present several ways of computing the volume of the unit ball in the n-dimensional Euclidean vector space. Surprisingly, the volume of unit ball increases for n =< 5, decreases for n > 5 and approaches zero as n goes to infinity.

119 • Estimation and Testing: Food Expenditures of Off-Campus SUNY Geneseo Students

Patricia Hackett

Faculty Sponsor: Lisa Smith, Mathematics

This study evaluates the amount of money off-campus SUNY Geneseo students spend on food per week. One-hundred off-campus students were sampled at three locations: Milne Library, the MacVittie Union, and the student gym. The subjects were separated into two strata: male and female students. Fifty students of each gender were polled, and twenty-three of each strata were randomly selected using simple random sampling, yielding a sample of size forty-six. The sampling method involved going up to students and asking whether or not they lived off-campus. If they were off-campus students, they were then asked how much money they spent on food per week. It was explained to the subjects that "food" constituted groceries, prepared food bought off-campus, and prepared food bought on-campus. Response bias is not a likely problem for this study, as there is not a particular price people think they should spend per week. Non-response was not an issue either, but rather, lack of accuracy of students' answers is a lurking variable. While some students carefully chart their spending and could quickly and confidently report their spending per week, other students provided more of a rough estimate.

120 • Who is More Cautious While Driving?

Michael Wheeler

Faculty Sponsor: Lisa Smith, Mathematics

An observational study was performed in order to measure which of the two sexes is more cautious while driving. The experimental setup consisted of an intersection (the corner of 2nd and Center Street in the village of Geneseo) with a stop sign and a fixed object (street sign) approximately 15 feet before the stop sign. Every other vehicle was counted for this study. The drivers were then timed to see how long it took them to come to a complete stop. The time and the gender of the drivers were recorded.

Physics and Astronomy

121 • Geometry, Thermodynamics and Black Holes

Aric Hackebill

Faculty Sponsor: Savitri Iyer, Physics and Astronomy

We present here the four laws of black hole thermodynamics and how they relate to the usual laws of thermodynamics. The black hole is an example of a system which is completely described by a small set of parameters; the only parameter needed to describe a spherically symmetric static uncharged black hole, for example, is its mass. Even when rotation and charge are included, only a small number of extra parameters are needed. In this respect the black hole is not unlike an ideal gas, which can be fully described by specifying just a few thermodynamical parameters like temperature, pressure and volume. We extend this connection to thermodynamics by comparing the geometry associated with thermodynamic coordinates to that of the black hole.

122 • WIYN Open Cluster Study: UBVRI Photometry of the Open Cluster 1817

Scott Ciampa and Dan Gettings

Faculty Sponsor: Aaron Steinhauer, Physics and Astronomy

We present UBVRI CCD photometry of the open cluster NGC 1817. Data were taken with the WIYN 0.9m telescope on a photometric night and were calibrated using Landolt fields taken on the same night. We present revised cluster parameters of reddening, metallicity, distance and age. This is part of the ongoing WOCS photometric survey of this cluster. Our results include new photometric members and provide an independent calibration of the magnitude scale reducing the systematic errors in the stellar magnitudes and cluster parameters.

123 • Simulation and Optimization of Ceramic Armor Under Impact from Bullets

Robert Dabek, Eli Hibit, and Chris Murphy

Faculty Sponsor: James McLean, Physics and Astronomy

The company Armor Dynamics has recently developed a new type of protection against high speed projectiles. To find ways to optimize the design, this armor is being analyzed using a computer simulation to determine its behavior under impact from bullets. Simulations are run using the finite element program, LS-DYNA run on a computer cluster at SUNY Geneseo's Distributed Systems Laboratory. Geometric parameters of the bullet core, filler and jacket were incorporated to create a realistic meshed model of the bullet. The armor consists of small ceramic cylinders, which have also been meshed. Recent simulations have focused on three areas. (1) What happens to the mass that is missing from the system after impact? Simulations show elements "eroding" away, but not necessarily in a realistic fashion. (2) What are the dynamics of the

ceramic's fragmentation? Tied nodal failure constraints have been added to simulate the propagation of cracking through a material upon impact. Nodal failure is set slightly lower than element failure ensuring that the elements separate rather than erode. (3) How does temperature influence the impact? Using equation of state and thermal materials, we have managed to get thermal plots to show the temperature and pressure change during impact.

124 • Preparation of Deuterated Polymer Targets for the OMEGA Magnetic Recoil Spectrometer

Jacqueline Strain, Gerald Rawcliffe, and Joseph Katz
Johan Frenje, Plasma Science and Fusion Center, Massachusetts Institute of Technology, and Sean MacMullin, Physics and Astronomy, University of North Carolina - Chapel Hill
Faculty Sponsor: Kurt Fletcher, Physics and Astronomy

Uniform deuterated polymer films on tantalum substrates are used as targets for the new Magnetic Recoil Spectrometer (MRS) at the OMEGA laser system at the University of Rochester's Laboratory for Laser Energetics. The MRS is designed to measure the neutron energy spectrum produced in inertial confinement fusion (ICF) experiments by detection of deuterons elastically scattered from the polymer target. The goal of our project is to produce circular films with areas ranging from 2 to 15 cm^2 and thicknesses ranging from 40 to 300 microns. Design parameters stipulate that the polymer thicknesses must be characterized to within 5% with less than 5% variation throughout the sample. Methods for preparing and characterizing these films will be discussed. Supported in part by the US Department of Energy through the Laboratory for Laser Energetics at the University of Rochester.

125 • Noble Gas Analysis for the OMEGA Gas Sampling System

Steve Hupcher and Geoff Young
Mark Stoyer, Lawrence Livermore National Laboratory, and T. Craig Sangster, Laboratory for Laser Energetics, University of Rochester
Faculty Sponsor: Charlie Freeman, Physics and Astronomy

The OMEGA Gas Sampling System (OGSS) at the Laboratory for Laser Energetics can be used to study a wide variety of implosion parameters in inertial confinement fusion. By doping a target capsule with carefully chosen detector nuclei, nuclear reactions between fusion products and detector nuclei can produce noble gas isotopes. Following a capsule implosion, these gases are pumped out of the target chamber and are collected into sample bottles. We have developed a bench-top analysis station at Geneseo capable of determining the number of noble gas atoms present in the sample bottles. A needle valve is used to admit gas from the sample bottles into a vacuum chamber at a controlled rate. The conductance of the needle valve is a function of pressure and gas type. A residual gas analyzer (RGA) is used to measure the partial pressures of each type of noble gas in the vacuum chamber. The RGA is calibrated with a calibrated leak, which allows known amounts of different gases into the chamber at a constant rate. Analysis of the gasses collected following a D^3He implosion is currently underway. Supported in part by the US Department of Energy through the Laboratory for Laser Energetics.

126 • Measuring Positron Annihilation in NaI(Tl) Detectors Measuring Positron Annihilation in NaI(Tl) Detectors as the Final Stage in a Carbon Diagnostic

Cassie Brown, Melissa Cummings, and Melissa Braaten
Vladimir Glebov, T. Craig Sangster, and Timothy Duffy, Laboratory for Laser Energetics, University of Rochester
Faculty Sponsor: Stephen Padalino, Physics and Astronomy

This study was performed to increase the detection efficiency of 511 keV annihilation radiation from decaying C-11 by indentifying and eliminating different forms of background radiation originating from the source and the ambient background in the gamma ray coincidence spectrum. Cu-64 was substituted for C-11 in this investigation since it could be easily made from Cu-63 via neutron capture using a PuBe neutron source. Using Cu-64, the effect of ambient background and source induced radiation in the NaI detectors was examined in three coincidence spectra. The spectra were generated by pairing the output signals of the three NaI(Tl) detectors and displaying them as two dimensional spectra. Different gamma ray background contributions to the coincidence spectrum were studied, including annihilation radiation from pair production in the detectors and the lead shielding. Detector geometries and source materials which modified the Compton scattering background were also investigated. Supported in part by the US Department of Energy through the Laboratory for Laser Energetics.

127 • Elemental Analysis of Carbon Disks using Proton Induced X-ray Emission

Melissa Cummings and Kelly Donovan
Vladimir Glebov and T. Craig Sangster, Laboratory for Laser Energetics, University of Rochester
Faculty Sponsor: Stephen Padalino, Physics and Astronomy

An experimental method for determining the ?R and $(?R)^2$ of high energy density inertial confinement fusion targets has been developed, which involves measuring the yield of tertiary neutrons with energies higher than 20 MeV. Carbon activation is a suitable technique for this measurement due to its high energy neutron reaction threshold and the availability of ultra high-purity samples at a relatively low cost. The tertiary neutron yield is more than six orders of magnitude lower than the primary neutron yield, so ultra pure carbon samples that are free from any positron-emitting contaminants are essential to this diagnostic. The goal of this project was to use proton induced x-ray emission (PIXE) as a technique for determining trace amounts of contaminant elements in the carbon disks. Supported in part by the US Department of Energy through the Laboratory for Laser Energetics.

128 • VELoCiRaPTORS

John Lundgren and Babatunde Anjorin
Vladimir Glebov and T. Craig Sangster, Laboratory for Laser Energetics, University of Rochester
Faculty Sponsors: Stephen Padalino, Physics and Astronomy, Ed Pogozelski, Physics and Astronomy, and Benjamin Esham, Mathematics

The Venting and Exhausting of Low Level Air Contaminants in the Rapid Pneumatic Transport of Radioactive Samples (VELoCiRaPTORS) system is constructed to transport radioactive materials quickly and safely at the NIF. A radioactive sample will be placed inside a carrier that is transported via an airflow system produced by controlled differential pressure. Midway through the transportation process, the carrier will be stopped and vented by a powered exhaust blower which will remove radioactive gases within the transport carrier. A Geiger counter will monitor the activity of the exhaust gas to ensure that it is below acceptable levels. If the radiation level is sufficient, the carrier will pass through the remainder of the system, pneumatically braking at the counting station. The complete design will run manually or automatically with control software. Tests were performed using an inactive carrier to determine possible transportation problems. The system underwent many consecutive trials without failure. VELoCiRaPTORS is a prototype of a system that could be installed at both the Laboratory for Laser Energetics at the University of Rochester and the National Ignition Facility at LLNL. Supported in part by the US Department of Energy through the Laboratory for Laser Energetics.

129 • Impact of Cryogenic Temperatures on the Mechanical Properties of *Steatoda triangulosa* Spider Silk

Brendan See, Christina Kieffer, and William Becker
T. Craig Sangster, Laboratory for Laser Energetics, University of Rochester
Faculty Sponsors: Ed Pogozelski, Physics and Astronomy, and Stephen Padalino, Physics and Astronomy

The mechanical properties of dragline spider silk from the species *Steatoda triangulosa* are examined at 77K. Dragline silk is used as a structural material to support deuterium - tritium laser fusion targets at the Laboratory for Laser Energetics (LLE) in Rochester, NY. As the targets are filled, the dragline is exposed to cryogenic temperatures. To simulate this environment, silk is dipped into liquid nitrogen. The strength, toughness, and modulus of elasticity of silk in liquid nitrogen are compared to these properties in air. Cryogenic dragline is 200% as strong, 125% as tough, and has an elastic modulus of 300% compared to silk in air at room temperature. Supported in part by the US Department of Energy through the Laboratory for Laser Energetics.

130 • Excel Data Uncertainty Analysis Plug-in Development

Lee Papasergi
Faculty Sponsor: Ed Pogozelski, Physics and Astronomy

A Microsoft Excel Plug-In is under development that will determine the uncertainty in the parameters in a formula fit to a data set. The algorithm takes advantage of a property of the chi-squared goodness of fit test along with other statistical properties to find the uncertainty in each parameter. The algorithm relies on the Solver add-in included with Microsoft Excel. The plug-in is intended for use by undergraduates and can be used for any combination of mathematical functions supported by Microsoft Excel.

Political Science and International Relations

131 • The Development and Nutrition Index: A Measure of Economic and Civil Capabilities

Jeffery Patterson and Andrew Smith
Faculty Sponsor: Victoria Farmer, Political Science and International Relations

Every second, roughly three individuals perish as a result of malnutrition and absolute poverty. These deaths occur overwhelmingly in the developing world. In order to effectively analyze and compare the crisis of poverty in conjunction with the economic needs of emerging countries, economists and political scientists alike use indices such as Gross Domestic Product (GDP) and the Human Development Index (HDI). One area of concern among these indices is the large disparity between a country's respective GDP and HDI. This difference often leads to the unsuccessful distribution of loans and improper strategies for development, creating a myriad of problems for developing countries. In order to correct this imbalance, we purpose that a different index be used to measure a more specific channel of development. Our measure, entitled The Development and Nutrition Index (DNI) will analyze the levels of nutrition, equality, and capabilities within a given country's population, in essence providing a unique developmental prospective.

Psychology

132 • Perceived Parental Support and TV Viewing as Interactive Predictors of Materialism: A Test of the Buffering Hypothesis

Dan Friedenberg
Faculty Sponsor: Jim Allen, Psychology

Previous research (see Kasser, 2002) indicates that TV viewing and unmet emotional needs predict higher levels of materialism, which is negatively associated with psychological well-being. However, there has been little research

investigating how these variables might interact to predict materialism. Participants completed a questionnaire assessing perceived parental support (an indicator of unmet emotional needs), commitment to TV watching and materialism. Results indicated that TV commitment and perceived parental support interacted to predict materialism. Specifically, TV commitment was positively associated with materialism for participants who perceived low levels of parental support. However, there was no relation between TV commitment and materialism for participants who perceived high levels of parental support. Similar patterns were found when measures of well-being were substituted for materialism. The one exception to this pattern was for a measure of vitality. These results are generally consistent with a buffering hypothesis such that perceived parental support protects individuals from some of the negativity normally associated with television watching.

133 • Time-related fMRI-BOLD Signal Changes During Sustained Attention Tasks

Ryan Marker, Madison Pilato, Peter Kang, Kaye Robinson, and Rachelle Findley-Lester
Faculty Sponsor: Joan Ballard, Psychology

We tested the feasibility of using fMRI to compare BOLD signal changes across long time blocks during continuous performance (CPT) and response-inhibition (RI) tests. We hypothesized that BOLD responses would change due to a vigilance decrement, particularly in cingulate and prefrontal regions. Because the tasks require different responses, we expected differences in time-related BOLD changes. Nine adults completed four 9-minute tasks. During CPT, BOLD signal changed from first to ninth minute in left middle cingulate. Changes during RI were in right anterior/middle cingulate, right anterior insula, and right frontal gyri. Follow-up analyses compared three 3-minute blocks. Similar regions as in previous analyses were involved. However, during CPT, change occurred in the last block, while changes during RI occurred in the second block. Cingulate and frontal regions were involved in attention task performance. Results suggest that BOLD signal in these regions changed across time, serving as a neural substrate for vigilance decrement. Involvement of different brain regions supports the view that the two tasks measure different components of attention. Although time-blocks were long, significant BOLD signal differences were found in regions previously shown to be involved in attention, suggesting that changes cannot be explained solely by scanner drift or motion artifact.

134 • Interaction Effects of Subject Anxiety and Task Type on BOLD Signal during Functional Magnetic Resonance Imaging

Madison Pilato, Kaye Robinson, Ryan Marker, Peter Kang, and Rachelle Findley-Lester
Faculty Sponsor: Joan Ballard, Psychology

Functional magnetic resonance imaging (fMRI) was used to investigate Blood Oxygen-Level Dependent (BOLD) signal during Continuous Performance (CPT) and Response Inhibition (RI) attention tasks. Previous research has shown that differences in task characteristics yield differences in post-test anxiety (e.g., Ballard, 1996; 2001) and regions of increased BOLD signal (Ballard et al., 2007). Thus, the present study focused on BOLD signal differences as a function of anxiety level and task type. Fifteen subjects completed two nine-minute tasks while in an fMRI scanner. Participants were dichotomized by anxiety change, calculated as differences between pre- and post-test state anxiety. During the CPT, subjects with increased anxiety showed greater BOLD signal in left middle temporal and left inferior occipital gyri, but lower signal in the right cuneus region. No differences were found between anxiety groups during the RI task suggesting that the RI may be difficult for all subjects. Anxiety may have affected the perception of difficulty during the CPT, yielding the observed differences in BOLD signal. The lateralization of BOLD differences suggests hemispheric differences in response to task demands. Further research is needed to clarify the interactive effects of task and anxiety on the BOLD response.

135 • Patterns of Response-Inhibition and Vigilance Performance during fMRI Scanning

Kaye Robinson, Ryan Marker, Peter Kang, Madison Pilato, and Rachelle Findley-Lester
Faculty Sponsor: Joan Ballard, Psychology

Both accuracy and response speed decrease during lengthy, boring attention tests. Task variations and subject characteristics affect this decrement. Two commonly used attention tasks are the Continuous Performance Test (CPT) and the Response Inhibition (RI) task. The two tasks are identical except for response requirements. In CPT, subjects watch for and respond to infrequent target stimuli while in RI subjects must withhold an ongoing prepared motor response for targets. We examined task performance during fMRI scanning. We expected faster responses and more errors in the RI than in the CPT, as well as different performance patterns across task duration. Results showed a vigilance decrement, with increased reaction times and diminished accuracy across time. Consistent with prior studies, reaction times were greater and errors were fewer in the traditional CPT than the RI task. This finding in conjunction with the different patterns of change found between the two tasks supports the view that the CPT and RI measure different forms of attention. Furthermore, the similarity of our present findings to previous research implies that the constraints of an MRI scanner setting do not alter the underlying mechanisms of attention.

136 • Cohort Differences in 7-Year-Olds' Pretend Play with Siblings and Friends

Rebekah Keegan, Maria Korogodsky, and Kristen Dombek
Faculty Sponsor: Ganie DeHart, Psychology

Social interaction researchers do not often note changes over time in children's reactions to materials used in observational research. Nonetheless, there is reason to suspect that increasing exposure to video games and technology in early/middle childhood may be substantially altering play behavior. As part of a longitudinal study of sibling and friend relationships, we videotaped pretend play episodes of 79 sets of siblings and friends in which 7-year-old target children played with one other child. Data were collected in two waves: the first in the mid-1990s, the second approximately seven years later (the same sets of toys and procedures were used). The videotapes were transcribed and coded for pretend play episodes as well as theme and duration. Results indicated that the second wave pretended approximately half as often as the first, regardless of whether children were playing with siblings or friends. Episodes were also longer, contained more joint pretending, and a higher

proportion involved enactment. Children in the later cohort pretended less on an individual level and seemed less interested in pretending overall. Most worrisome is the possibility that the later cohort may be more passive in its approach to play and more dependent on toys/games to structure playing.

137 • Testing the Ability of Children to Simultaneously Track Two Kinds of Information

Alix Dusel

Faculty Sponsor: Kenneth Kallio, Psychology

Kindergarten, second, and fourth grade children completed a double span task designed to assess their ability to track two kinds of information at once. The results showed substantial improvement in memory performance and in particular in the ability to keep track of both location and object name information simultaneously.

138 • Parentification, Imposter Feelings, and Depressive Symptoms in College Students

Alyssa Infantino

Faculty Sponsor: Jennifer Katz, Psychology

Parentification occurs when youth sacrifice their own developmental needs to provide assistance and comfort to their parents and other family members. Two types of parentification are instrumental caregiving (e.g., cooking dinner) and expressive caregiving (e.g., mediating conflict). These responsibilities may disrupt the youth's sense of self and may create negative affect. Accordingly, the present research examined the effects of parentification from past and present on feelings of imposterism and depression. Undergraduates (N= 98) completed a battery of self-report measures to assess the study constructs. Results revealed that expressive but not instrumental caregiving was related to feelings of imposterism and depression. More specifically, past expressive caregiving was related to imposterism, and current expressive caregiving was related to both imposterism and depressive symptoms. Our results are consistent with past research regarding imposterism, indicating that parentified youth form schemas of themselves as being inauthentic because they were unable to fulfill others' demands. In addition, current parentification may promote depressive feelings because the ongoing pressure to provide for family members is stressful. These findings suggest that expressive caregiving may affect college students' emotional well-being, especially when they experience continuous, ongoing pressure to emotionally provide for family members even after they are at college.

139 • Parental Divorce and Peer Functioning in College Students

Erika van der Kloet

Faculty Sponsor: Jennifer Katz, Psychology

Although past research of divorce has primarily focused on romantic relationship functioning of adult children of divorce (ACOD), parental divorce may also disrupt peer functioning more generally. We compared ACOD in college with those from intact homes in terms of their emotional role reversal with parents and attachment tendencies, both of which may negatively predict overall peer satisfaction and support. Specifically, we hypothesized that parental divorce would be associated with greater role reversal, attachment insecurity, less satisfaction with peer relationships, and patterns of frequent giving but not receiving peer support. Undergraduates from intact homes (n = 200) were compared to ACOD (n= 52) on self-reports of these constructs. As expected, ACOD reported greater emotional role reversal with parents, greater attachment anxiety, but comparable attachment avoidance. Also as expected, ACOD reported giving, but not receiving, more peer support than participants from intact homes; this most likely reflects the re-enactment of past family role reversal, including relationships dependent on providing support. However, ACOD did not differ from other participants in terms of peer satisfaction. Overall, these results suggest parental divorce has limited long term negative effects on college students' peer functioning.

140 • Examining Multiple Factors Affecting How Individuals Cope with Stress

Kristen Paczkowski, Jenn Ruocco, Daniel Tylee, Danielle Gelormini, and Alex Cortese

Faculty Sponsor: Michael Lynch, Psychology

Prior research suggests that people display individual differences in their response to stress. The primary purpose of the current project was to examine individual differences in personality, environmental experience, threat detection, and coping processes and their cumulative impact on personal well-being and physical health. It was expected that both external factors (e.g., stressful life events and social support) and internal factors (personality and self-esteem) would be associated with individual differences in well-being. Moreover, it was expected that the use of different coping strategies in response to stress would influence the relationship among these variables. Stress responses were unpacked to examine behavioral, cognitive, and physiological components. As part of our study, participants filled out a survey packet, performed a modified Stoop Task, and had his/her heart rate measured with an EKG device during the Stroop Task (which served as a cognitive stressor). A self-report questionnaire was used to assess information about the participant, his/her experiences, and the people in his/her life. To examine styles of cognitive processing, we assessed the extent to which subjects attended to potentially threatening stimuli, using a modified version of the Stroop Task. Also, participants' heart rate (HR) and inter-beat interval (IBI) were measured using a non-invasive cardiovascular monitor. Individual differences can be seen with respect to physiological arousal in response to threat and the autonomic regulation of arousal. Therefore we expected to find individual differences in participants' cardiac regulation during a cognitive stressor. Patterns of association among physiological, cognitive, and behavioral responses to stress were examined, and their association with subsequent well-being was explored.

141 • Spatially-Mediated Capacity Limitations in Visual Processing

Claire Littlefield, Elizabeth Merrigan, Christine Kemp, and Jeffrey Thomson
Faculty Sponsor: Jeffrey Mounts, Psychology

Human visual processing is known to be capacity limited. In other words, there is too much incoming visual information for all of it to be fully processed. A series of visual search experiments examine whether these capacity limitations are local or global in nature. These experiments manipulated the spatial proximity of items and the visual load within a given search display. The results from these experiments suggest that certain types of visual discriminations (based on simple feature differences) are subject to local capacity limitations. Specifically, processing capacity is limited for visual objects in close spatial proximity, while processing capacity is unlimited for objects with a greater spatial separation. In contrast, other types of visual discriminations (i.e., those based on the relative spatial arrangement of features) are subject to global capacity limitations. Processing capacity is uniformly limited, irrespective of the relative spatial locations of the stimuli in the display. These results have implications for our understanding of visual attention and its role in the allocation of visual processing resources.

142 • Limitations in Awareness in Color and Shape Perception

Yusuke Yamani
Faculty Sponsor: Jeffrey Mounts, Psychology

This research was conducted to investigate whether multiple features of distinct targets at various locations can be processed simultaneously. On each trial, a pair of target items was presented either simultaneously or successively. Targets were immediately masked after their presentation. Reported features of the target items were color or shape. Recent theories of visual attention propose that people cannot process more than one feature value at one time. Our data suggest that people perform better when the stimuli were presented one at a time (successive presentation), compared to when they were presented at the same time (simultaneous presentation). The data also suggest that there is an attentional capacity difference between right and left visual hemifields.

143 • Row, Row, (Row?) a Boat: The Effect of Prime Repetition on Semantic Priming

Matthew Gormley and Salvatore Cieri
Faculty Sponsor: Matthew Pastizzo, Psychology

Participants are faster to recognize words (e.g., PEPPER) after a related word (e.g., SALT) relative to an unrelated word (e.g., LOAN). This effect is referred to as semantic priming, and is thought to be attributable to automatic spreading activation. Balota and Paul (1996) reported that the priming effect for a target (e.g., METAL) preceded by two related primes (e.g., BRONZE and COPPER) was equivalent to the summed priming effects with a single related prime. Based on source activation models, the first related prime raises activation of the second related prime to a higher level, which facilitates target recognition. Neely, VerWys, and Kahan (1998) presented the related prime twice, predicting an over-additive effect of multiple primes relative to individual priming effects. Surprisingly, they observed that SALT-SALT-PEPPER produced less priming than SALT-PEPPER. To test the limits of this effect, we presented prime-target pairs with a whole-to-part or functional relationship in Experiment 1 (e.g., CASTLE-TOWER, ROCKET-LAUNCH). Priming was equivalent after single and repeated-related primes. In Experiment 2, related primes were repeated 1, 2, or 3 times. Although priming effects were equivalent after 1 or 2 related primes, we observed significantly more facilitation after 3 repetitions of the related prime (e.g., VINE-VINE-VINE-GRAPE).

144 • Rates and Personality Correlates of Dietary, Physical and Sedentary Activities among College Students

Emily Hurley, John Pilosi, Taryn Hand, and Noelle Jankowiak
Faculty Sponsor: Douglas Raynor, Psychology

College students often fail to adhere to dietary and physical activity guidelines, placing them at risk for weight gain and a variety of other deleterious health consequences. Understanding the relationship between these health behaviors, as well as their shared or unique psychosocial predictors, may facilitate the development of preventive interventions for this vulnerable population. The present study reports findings from an observational study of 205 undergraduate Geneseo students. Physical and sedentary behaviors were assessed via a lab-constructed self-report questionnaire and seven consecutive days of objective accelerometry measurement. The Five Factor Model of Personality was assessed via the NEO-PI, and dietary intake was measured with the Block Brief Food Questionnaire. It is hypothesized that a significant proportion of students will fail to achieve recommended dietary and physical activity guidelines. Moreover, it is hypothesized that individuals with low levels of conscientiousness and extraversion will engage in higher levels of sedentary behavior and lower levels of physical activity, respectively. Individuals high in conscientiousness and openness are also predicted to consume a healthier diet than individuals lower in these traits.

145 • The Role of Acculturation, English Language Proficiency, Contact and Perceived Discrimination in the College Adjustment of International and Immigrant Students

Ashley Alton, Hideaki Imai, and Lindsay Ciancetta
Faculty Sponsor: Monica Schneider, Psychology

Research addressing counseling and adjustment issues for international students has focused on acculturation, English language proficiency, and contact with faculty and students. Moreover, studies indicate that international students report being the target of discrimination, which has been linked with negative emotional outcomes like depression. Although these studies provide important insight into the kinds of issues faced by international students, few studies have directly assessed college adjustment or have systematically tested models of how these predictors relate to one another. Our study examines

the predictors of college adjustment for immigrant and international students. Specifically, we assess the role of demographic variables, language and cultural identification issues (i.e., English language proficiency, acculturation), variables assessing how the institution is negotiated (i.e., ease of daily living, quality and quantity of contact with students, faculty, staff), as well as perceptions of the institution (i.e., perceived support, perceived discrimination) in college adjustment. Emphasis is placed on examining the mediating role of institutional variables in the relationship between language and cultural identification as predictors of adjustment. In addition, the coping mechanisms and academic-related behaviors that students use to adjust to college are addressed, with an emphasis on understanding how these strategies and behaviors are related to adjustment.

146 • Academic Identification and Academic-Related Behaviors as Predictors of Ethnic Minority Students' College Adjustment

Peter Kang and Eileen Bosso

Faculty Sponsor: Monica Schneider, Psychology

Academic Identification (AI) and specific academic-related behaviors (ARB) have been identified as important factors in students' academic performance. However, the relationship between AI, ARB and college adjustment has never been examined for different ethnic minority groups. Additionally, the literature on stereotype threat has emphasized the negative effects of academic disidentification, which may be influenced by perceived support. The current study examined the role of AI and ARB in the college adjustment of ethnic minority students. We also examined the predictors of AI, including demographic variables, ethnic identification, and perceived social support. Thus, 493 ethnic minority students from three SUNY campuses completed a survey assessing students': 1) demographic information, 2) AI, 3) ARB, 4) ethnic identification, 5) five domains of perceived support, and 6) academic, social, and emotional adjustment as well as their attachment to the institution. ARB mediated the relationship between AI and students' college adjustment, with AI predicting academic adjustment for Latinos and Asians, and all adjustment measures for Blacks. Ethnic identity positively predicted AI for Asians and Blacks, with all types of perceived support predicting higher academic identification in Blacks. Combined, this suggests that ethnic identification and/or perceived support play an important role in AI and college adjustment.

147 • Trying to Look Smart without Working Hard: Popularity and Self Esteem Effects on Adolescents' Self Presentation Strategies

Justin Russotti and Jonathan Noftsier

Faculty Sponsor: Joan Zook, Psychology

The purpose of the study was to examine adolescents' beliefs in the efficacy of academic self-presentation strategies to increase popularity among seventh and eighth graders. Our study focused on adolescents' beliefs in the effectiveness of the particular strategy of enhancing performance and downplaying effort (EPDE). We examined how these beliefs differ as a function of grade, popularity, gender, and self-esteem. A self-report measure was administered to 312 male and female students from a rural area middle school. The most likely students to endorse an EPDE strategy were less popular seventh-graders and more popular eighth-graders. These beliefs were highest among eighth-grade boys with low self-esteem.

Sociology

148 • Does Income Effect Happiness?

Marissa Carter, Katherine Gailey, and Michelle Santoro

Faculty Sponsor: James Bearden, Sociology

We are interested in researching whether higher or lower income families have an affect on people's happiness and what happiness means to those people questioned. We are assuming that higher income persons may be more happy, according to their definition of happiness. We can begin finding information relevant to our topic based on prior studies and will do so by creating a poster to display our results.

149 • Socioeconomic Status and Military Personnel

Richard Chen and Darrin Barry

Faculty Sponsor: James Bearden, Sociology

The purpose of our research is to determine if there is any trend or pattern concerning the socioeconomic status of men and women who join the United States Military. Military service in the eyes of many is not necessarily the most desirable vocation in our modern society. In some respects the general public has come to believe that many men and women enlist in the United States Military because they have no choice; their socioeconomic status prevents them from pursuing other jobs, and the military the best job in which they are qualified for. What is the validity of this assumption about military personnel? What about Special Forces Personnel whom are more often than not college educated and are qualified for higher paying civilian jobs? Or United States Military Officers whom are required to have college degrees? We plan research the validity of the assumption that socioeconomic status plays some role in people's decision to join the military; that in some respects the military has become a last resort for men and women of limited resources, opportunities and status.

150 • Gender and Career Aspirations

Alissa Herman, Jessica Gilmore, Melis Kural, and Kathryn Maitoza
Faculty Sponsor: James Bearden, Sociology

The presenters are conducting a study that will examine the relationship between gender and career aspirations. We will present a survey to a randomly selected group of Geneseo students. Included in the survey are questions regarding career goals, family life and marriage goals. The survey is modeled after one given in a 2005 study conducted at Yale.

Chamber Music Festival
The Grind

MacVittie College Union, Ballroom

Chamber music is a form of classical music, written for a small group of instruments that traditionally could be accommodated in a palace chamber. Most broadly, it includes any "art music" that is performed by a small number of performers with one performer to a part. The word "chamber" signifies that the music can be performed in a small room, often in a private salon with an intimate atmosphere. The art-form originally gained fashion as an intimate activity among friends and today it has been elevated to the more formal concert hall.

The 2008 SUNY Geneseo Chamber Music Festival seeks to re-create the original intimate atmosphere of early chamber performances. Happening all day in the **College Union at the stage in the Grind** the Festival hopes to provide a welcoming atmosphere for those who are going to and from poster presentations.

Each group represents student performers from the School of the Arts who will display a wide array of different musical styles. This year's event will include **string quartets, a flute choir, a wind ensemble, brass quintet, jazz combo, and a few a cappella groups**. Music selections will be from all music periods spanning from traditional classical string quartets to arrangements of today's popular tunes.

Please see the *insert* to this year's GREAT Day program for a complete listing of the groups, the pieces being performed and the times of the performances. Feel free to stop by for a whole performance or only for a few numbers, we just ask that you be respectful to the performers and those listening by conducting your conversations quietly. Thank you and enjoy!

CONCURRENT PRESENTATIONS

SESSION 1 • 9:40 – 10:55

Session 1- A • Anthropology — Milne 105

Session Chair and Faculty Sponsor: Rose-Marie Chierici, Anthropology

In Her Shoes
Mateh Kamsutchom, Lauren Fox, Mekal Ogbeab, Rejoyce Owusu, and Andrea Gilgeous

The theme of this experience is to make women aware that although there are numerous circumstances that divide us on an individual level, we are connected because of the mere fact that we are women and basically want the same things. We want the audience to be more mindful of the women in their lives and more conscious of how we treat one another. During a mock fashion show five models wearing different shoes symbolize specific qualities and personalities of women common in American culture. We'll highlight their personas, what may be their positive and negative traits as well as the "baggage" they may carry from past experiences. The goal in the end is to establish a better understanding and appreciation of the variety of women we encounter, which offers a means to achieve a higher level of respect for one another in both our professional and social endeavors.

Health Disparities in an Inner City Neighborhood: A Critical Medical Anthropology Approach
Tarik Kitson

This presentation is based on ethnographic research conducted during the summer of 2006 and fall 2007 in an inner city neighborhood that explored the cultural, social, and economic factors that contribute to ill health. The data supports that low-level access to health insurance, physician care, and difficulties in accessing government sponsored social programs are serious barriers; it also suggests that addressing concepts of health through education programs about healthy life styles, access to healthy foods, prevention and health maintenance would have a significant impact on the high rates of obesity, vascular disease, and diabetes. An analysis using Critical Medical Anthropology highlights that risk factors are but symptoms of structural violence and systemic inequality.

Shooting Africa: Vision, Race, and Power
Seth Palmer

Many Americans are informed about African issues only through the images that they see in the media. These images are used to mobilize public opinion, take political action, and define the cultures of an entire continent. Using visual anthropological methodologies, I will analyze colonial postcards from Francophone Africa. My interest in les cartes postales lies in the fact that these photographs are also imperial objects, used to promote the French colonial agenda. My study of visuality in African anthropology then moves to slum safaris, particularly those outside of Nairobi, Kenya. Known also as slum tours, poverty tours, reality tours and pity tours, these tourist spots prove to be problematic institutions in Post-Colonial Africa, especially when applying Susan Sontag's metaphor linking the camera to the gun. By deconstructing the language and images used to sell this experience to the interested tourist, I will reveal the ultimate functions that these institutions play. My goal in this paper is to bring together the disciplines of photography, anthropology, and post-colonial studies in an attempt to understand the visual creation of "the other" in an African context and the larger power structure that dominates contemporary visual analysis.

Session 1-B • English — Welles 128

From Hiroshima to Munich to Kabul: Is State-Sponsored Revenge Moral?

Session Chair: Hannah Burley
Faculty Sponsor: Julia Walker, English

For the first Humanities I paper, the class considered the question of state-sponsored revenge, taking the example of Operation Wrath of God – Israel's response to the murders at the Munich Olympics – and other 20th/21st-century events. Most of the class concluded, albeit sometimes reluctantly, that state-sponsored revenge is not a moral choice.

The Cuban Missile Crisis, Operation Wrath of God, Bombing Libya: The Immorality of State-Sponsored Revenge
Annie Gruenwald

Revenge: A Moral Assessment of Human Action -- Wrath of God, Shock and Awe
Joseph Ricco

Japan, America, Israel: A Study in State-Sponsored Revenge
Allison Hodges

A View from the Other Side
Respondent: Harrison Sollog
Harrison will respond to the three papers, taking the view that state-sponsored revenge is moral and necessary

Session 1-C • English — Welles 121

Genesee Valley Agri/Culture

Session Chair: Casey Carrigan
Faculty Sponsor: Kenneth Cooper, English

Memorials and Memory: The Scorched Earth of the Seneca, Revisited
Tim Adams
Over 200 years later, the most violent campaign ever launched against Native Americans continues to be twisted in favor of the white man, by the white man.

One Meal a Day Keeps the Doctor Away.
Tyler Baker
Haudenosaunee food practices and how they apply towards contemporary America.

The Square Meal
Casey Carrigan
How Americans revert to the stability and the logic of the Cartesian square when they are confronted with an arena, either physical or conceptual, in which they are separated from a meaningful history.

We'll Make the Best of What's Around: Looking Back at Cookery in the Genesee Valley
Mary Rosch
Using cookbooks from the Genesee Valley Collection at Milne Library, I discuss a new way of seeing the land around SUNY-Geneseo and looking forward to how we can return to simpler ways of eating.

Mcfadden's Diets: A Forgotten Miracle of Medicine
Sean Soper
A short examination of some of the diets of early twentieth-century health guru Bernarr Macfadden.

Pasta with a Side of Cool Whip: What you should know about the Industrial Food Complex of Livingston County
Joseph Norman

One of the Most Interesting Places You Probably Haven't Bothered to Visit
John Zubler
A brief exploration of a local trappist monastery in Piffard, NY.

A 'Discomfiting Fact' in Local Agriculture: Migrant Farmers of the Genesee Valley
Molly Kerker
Consciousness of agriculture's impact on one's health and environment is in many ways positive, but we often continue to overlook the poor social conditions of those who actually physically labor over our food.

The Folklore of Livingston County: People of the Genesee Valley (1943-2008)
Kristin Demaree
A look back on Arch Merrill's "A River Ramble" and his description of the people of the Genesee as being a part of the land; what do we look like today?

Session 1-D • English — Welles 131

Calling Back the Poets: The British Literature I Recitation Project

Session Chair: Ryan Quinn
Faculty Sponsor: Graham Drake, English

The three members of this panel will recite the poems that they memorized for British Literature I in the fall of 2007. In addition to preparing a dramatic recitation of a literary passage of approximately two pages, they also wrote research papers on their passages and presented them to the class at the end of the semester. After the recitations, the panel members will reflect on

the challenge and meaning of memorizing in a culture that relies mostly on external, artificial memory and in which poetry is no longer a part of common discourse.

Panelists:
Selections from John Donne's *Holy Sonnets*
Lisa Bonanni

Selections from Sir Philip Sidney's *Astrophil and Stella*
Meghan Gleason

Selections from Samuel Daniel's *Delia* and Richard Barnfield's *Cynthia*
Sarah Parker

Session 1-E • History — Newton 201

Session Chair and Faculty Sponsor: James Williams, History

Macedonian Weapons and Tactics Under Phillip II and Alexander

Aaron Smith

The paper and power point I wish to submit are a comparative study on the Macedonian weaponry and battle tactics used by Phillip II and Alexander the Great. It compiles the views of ancient historians and contemporary authorities on the subject, and offers a worthwhile and insightful look into the details of ancient warfare of two of the greatest conquerors the world has ever known.

History Macedonian Constitutionalism

Mark Schuber

There is a debate among modern scholars on the state of the Macedonian constitution during the time of Alexander the Great. Some believe there was a specific written constitution with a set of guaranteed rights that the king was forced to abide by. Others however, argue that the relationship between the king and his people was a simple one, where the king made decisions and his subjects obeyed them. I will attempt to prove, with the help of many scholars, that there is no reason to believe there was ever any written set of laws to protect the people. The Macedonian king's power was absolute.

Alexander's Stepping Stone: The Battle of the Granicus and the Beginning of Alexander the Great

Brendan Chella

The paper discusses Alexander's first major battle in Asia against the Persian Empire. The main points of the paper are describing the battle and how the strategies developed at the battle and the eventually victory itself propelled Alexander to further conquests beyond Asia Minor.

The Killings of Cleitus and Callisthenes: The Dark Side of Alexander the Great

Alexander Couchman

This paper deals with the episodes surrounding the deaths of Cleitus (one of Alexander's marshals, killed personally by Alexander) and Callisthenes (a Greek historian who was implicated and executed by Alexander). The emphasis of the paper deals with Alexander's vicious side and calls into question his 'greatness.' The paper draws extensively from ancient primary sources which vary slightly in their depictions of the events, and also from scholarly secondary sources.

Session 1-F • Honors Capstone Projects: Session I — Newton 203

Session Chair: Emily Upham
Faculty Sponsor: Olympia Nicodemi, Mathematics

Degree-correlated Scale-free Networks and Epidemics

Eamon O'Dea
Faculty Mentor: Christopher Leary, Mathematics

Mathematical models provide insight into the way a disease spreads through a population. The structure of the contact network can dramatically affect the dynamics of these models. We investigate scale-free networks in which negative correlations in the connectivity of certain classes of hosts leads to more hosts becoming infected. We will discuss how such results follow from the discrete time stochastic and percolation models used, as well as the practical significance of the results.

Living together: Sea Star Bacterial Symbiont

Erika St. James

Faculty Mentor: Robert O'Donnell, Biology

Sea Stars reproduce through a larval stage. In some species this stage is able to undergo clonal budding, producing an identical larva. Past analysis of the cloning larvae revealed bacteria living on the larvae. In this talk, I will be discussing possible insights into the nature of the relationship between the sea stars and their bacterial symbionts.

West Nile Virus: A Case Study In 1999

Constance Vernetti

Faculty Mentor: Susan Bandoni Muench, Biology

The West Nile Virus (WNV) appeared in New York State, traversing both geographical and biological boundaries to instill panic in the populace. Now, years later, the panic has dissipated and the number of West Nile cases has slowed to a trickle, but the biological, medical and administrative issues raised by the outbreak still linger. In this talk, the difficulties of controlling a zoonotic affliction in today's globalized society and the problematic nature of the West Nile bureaucratic response will be addressed through a written case study of the WNV.

Session 1-G • Honors Capstone Projects: Session II — Newton 204

Session Chair: Ganie DeHart, Psychology

Faculty Sponsor: Olympia Nicodemi, Mathematics

Determining Arsenic Concentrations in Conesus Lake Using Particle Induced X-ray Emission (PIXE) Spectroscopy

Nathan Lauffenburger

Faculty Mentor: Kurt Fletcher, Physics and Astronomy

Determining Arsenic Concentrations in Lake Conesus Using Particle Induced X-ray Emission (PIXE) Spectroscopy The concentration of arsenic in Conesus Lake has been consistently higher than that in other NYS finger lakes. The source of this elevated arsenic level is not completely understood; arsenic could be naturally abundant in the region or it could have been induced by anthropogenic means. To investigate this question, a sediment core sample has been extracted from Conesus Lake and was dated by examining the pollen record at regular intervals. Sediment samples have been prepared using established techniques, and examined using particle induced x-ray emission spectroscopy with Geneseo's 1.7 MV tandem Pelletron accelerator. By measuring arsenic concentration in pre-settlement and post-settlement layers of the sediment core, we hope to establish whether the high arsenic concentration is caused by made-made pollutants, such as pesticides from the surrounding agricultural regions or whether it is natural in origin.

Conservation of Dcm-mediated Cytosine DNA Methylation in *Escherichia coli* Field Isolates

Mehr Qureshi

Faculty Mentor: Kevin Militello, Biology

In prokaryotes, methylation of DNA is associated with the ability to recognize foreign DNA and prevent its incorporation. In *Escherichia coli*, cytosine methylation of DNA occurs at the second C in the sequence CCA/TGG. This process is catalyzed by the Dcm (DNA cytosine methylation) protein. Laboratory strains that have a deletion or a disruption of the *dcm* locus are still viable. Strains without this pathway may allow the uptake of foreign DNA, which is often associated with drug resistance and pathogenesis. In order to determine whether non-laboratory strains have this pathway and if there is a correlation with pathogenecity, field strains were screened for the presence of the *dcm* gene via PCR, and the presence of the active pathway using restriction enzyme isoschisomers that are differentially affected by DNA methylation. Results indicate that *dcm* methylation pathway is present in all field strains including 4 pathogenic strains tested. Five of the samples were negative for the *dcm* gene. The ubiquitous presence of the *dcm* pathway indicates that it may play an important role in *E. coli* biology.

The Past, Present, and Future of Human Immunodeficiency Virus: How HIV Evades the Immune System and Recent Attempts to Reverse this Process

Toni Melville

Faculty Mentor: Robert O'Donnell, Biology

The first reported cases of Acquired Immune Deficiency Syndrome (AIDS) occurred in 1981, and it was not long after that the HIV virus was discovered as the cause of AIDS. Currently, AIDS is a global epidemic, with 33.2 million people infected with HIV. Although there are therapies available for HIV, there is no cure. The high rate of viral mutation and viral genome recombination leads to resistance to drug treatments. In addition, the virus has evolved a number of ways to evade the immune system. During this talk, we will discuss how HIV is able to cause infected cells to become undetectable by the host's immune system. We will also discuss recent developments in treatment and new therapeutic approaches that are being tested to attack the virus. Finally, we will go over the challenges of creating a vaccine against HIV, and why a vaccine is expected to be unavailable for at least ten years.

Session 1-H • Mathematics — South Hall 338

Twisted Mathematics and Its Uses

Session Chair: Sufyan Shahin

Faculty Sponsor: Caroline Haddad, Mathematics

This session will present some findings that will interest even students who "hate math."

Twisted Mathematics and Its Uses

Sufyan Shahin

The Mobius Strip is a strange and delightful creature in the world of mathematics. It contains some very unique and very bizarre qualities which have become very useful in everyday life (even if we don't necessarily realize it). This presentation will include a brief understanding of what a Mobius strip is, as well as where we see it in the past and present. It will take a look at the Six-Color problem (the Four-Color problem as it applies to the Mobius strip), and give a brief glance into the equally strange Klein bottle. The concepts within this presentation will be simple enough for non-mathematicians to understand and enjoy while still presenting a new and interesting figure to mathematicians who know little of the Mobius strip.

Session 1-I • Philosophy — Welles 119

Atheism and Society

Session Chair: Charise Whitt

Faculty Sponsor: Larry Blackman, Philosophy

Secularism and the Founding of the United States

Janna Cisterino

Student Commentator: Matthew Meyers

In this paper, I will examine various possible understandings of what is meant when the United States is termed a "Christian nation" to determine the most logical interpretation of this concept. Drawing upon Richard Dawkins' 2006 book The God Delusion, I will then argue that the United States was created as a secular entity and, further, that a secular nation is preferable to a theocratic one. Finally, I will question Dawkins' assertion that the Founding Fathers of the United States were atheists and argue that the religious attachments or lack thereof of these men is irrelevant to the question of whether this nation was intended to be secular.

An Atheist Perspective on Christianity and Human Sexuality

Matthew Tompkins

Matthew Tompkins' paper will be read by, Joseph Diaz

Student Commentator: Ellen Thompson

"An Atheist Perspective on Christianity and Human Sexuality" is written with the intention of briefly addressing contemporary social and political controversies regarding human sexuality from a secular consequentialist perspective. This style of reasoning examines moral arguments from a simple rational standpoint, which considers relative degrees of human suffering. Arguments are presented in response to assertions by radical Christian religionists regarding "deviant" sexual behavior, condom use, stem cell research, and abortion. This paper is particularly concerned with the idea of legislative activity that is driven purely by the desire to enforce arbitrary religious values upon the general population. Many of these ideas are a reaction to the concepts presented in Sam Harris' recent best-selling book, Letter to a Christian Nation.

Naturalistic Religion vs. Supernaturalistic Religion

Samantha Mackie

Student Commentator: Corey Zutz

Richard Dawkins, well-known atheist and author of *The God Delusion*, makes multiple claims in his book that Naturalistic religions are much more valid than the average Supernaturalistic religions we think of every day, such as Christianity, Judaism, and Islam, and therefore should be more respected than the monotheistic average religions. I argue that not only are supernaturalistic religions not really religions, but they should be as equally disregarded as other religions. All religions have their flaws and yet all have strong believers. How do you choose one religious way of thinking over another?

Session 1-J • Philosophy — Welles 138

The Philosophy of Friedrich Nietzsche

Session Chair: Marc Johnson
Faculty Sponsor: Walter Soffer, Philosophy

The Eternal Return and Its Limits

Hideaki Imai

Student Commentators: Marc Johnson and Kevin Cunningham

In this essay, I will introduce and criticize three possible interpretations of Nietzsche's doctrine of the eternal return. The doctrine states that every occurrence that happens in this life has happened in the past an infinite number of times and will repeat happening in the same way for all eternity. The first interpretation is the literal interpretation whose basis is explained by Nietzsche as a scientific argument. The argument goes that in infinite time, possible combinations of limited forces must have been realized an infinite number of times. This argument is problematic, for the infinite realizations of the possible combinations do not denote that every event recurs in an identical way. The second interpretation states that the purpose of the doctrine is merely to adapt the most affirmative attitude to the world. This interpretation, however, is not plausible either, for its ultimate basis is the flawed literal interpretation. The third interpretation is that the "eternity" refers to the eternity within one's finite life. Although this interpretation escapes the implausibility of the literal interpretation, it lacks support, as it is distant from Nietzsche's own statements. The conclusion seems to be that Nietzsche is not successful in arguing for his doctrine.

Nietzsche and the Will to Power

Marc Johnson

Student Commentators: Kevin Cunningham and Hideaki Imai

The will to power is the basic principle of Nietzsche's mature philosophy. Not only are all human actions reduced to this drive, but everything within the cosmos can be explained by it. This doctrine is the basis for Nietzsche's conception of the superman and the Eternal Return. The purpose of this paper is to explicate this important principle. Criticisms will also be supplied. Firstly, since no ego is present, there is no superman, but only superwills. Secondly, Nietzsche cannot adequately justify the claim that the will to power is both an interpretation and the truth. Finally, the will to power only possesses explanatory power when it is contrasted with other drives

Truth at All Costs: The Role of the Will To Power in Nietzsche's Thought

Kevin Cunningham

Student Commentators: Hideaki Imai and Marc Johnson

In his published works, Nietzsche poses few doctrines as slippery or important as that of the will to power. Some interpreters, foremost among them Maudemarie Clark, argue that we ought to interpret the will to power as a perspectival doctrine that makes no claim to any sort of metaphysical or objective truth. For them, the will to power is best understood as an interpretation of the world brought about by a creative self. In this paper, I argue that the perspectival account of the will to power is defective because it ignores many of Nietzsche's other claims, such as the nature of truth, the process of intellectual knowledge and the threat of nihilism. An adequate examination of these other claims, I argue, yields the interpretation that the will to power is a limited claim to objective truth. This shift from subjectivity to objectivity is effected by the shift from power over nature to power over the self.

Session 1-K • Political Science and International Relations — Welles 123

Issues in American Politics

Session Chair: Marilyn Klotz, Political Science and International Relations
Faculty Sponsor: Jeffrey Koch, Political Science and International Relations

Political Campaigns and American Presidential Elections

Jeff Beadnell

The goal of this thesis will be to examine the American presidential campaign process, compare the presidential campaign process of the United States with that of other economically developed democracies, and determine which reforms would increase the importance of the presidential campaigns. Campaigns provide an invaluable opportunity for citizens to learn about the important choices before them. I expect to identify reforms that will strengthen the importance of the campaign process.

Social Security Reform: Will Politicians Choose the Right Economic Strategy?

Ryan Larose

Our current pay-as-you-go social security system is doomed. Our population is progressively becoming older. There will be more people retiring and fewer people supporting those retirees. This will result in either decreased benefits for the elderly or increased taxes for the work force. Although this is not an imminent problem, it is important to reform social security sooner rather than later. If we wait until the program becomes insolvent, we will need drastic reforms to fix the system. To truly understand the problem, one must study the basic economic solutions to our financial problem. Upon gaining a full understanding of the economic aspect, it is important to examine various plans recommended by influential politicians. The

plan's implications are then examined for possible economic, political, and social effects based on our economy and the effectiveness of similar plans in other nations. Upon doing this research, it becomes clear that the problem will not be quickly solved. It is important that politicians put aside their political motivations and come up with a bi-partisan agreement that combines aspects from both major Democrat and Republican plans to solve this problem.

Religion and American Political Behavior: What is the "Religious Right"?

Andrew Sewnauth

What role does denominational preference and religion more broadly play in shaping citizens political preferences? In addressing this question, I examine how religiosity has affected the modern American ¬ whether he or she is Roman Catholic, Baptist, Pentecostal, secular, or otherwise.

The Steel Seizure Case and the Ruling's Applicability to the Establishment of Military Tribunals for Enemy Combatants

Diana Snyder

My project analyzes the powers of the President and Congress in foreign policy. One of the few Supreme Court cases directly involving the relative powers of Congress and the president is Youngstown Sheet & Tube Co. v. Sawyer (1952). My presentation focuses on Justice Jackson's concurring opinion, which established when presidential authority is at its highest and lowest ebb. Jackson argued that presidential authority depends upon an action's consistency or inconsistency with Congress's will. I analyze the modern issue of military tribunals for enemy combatants detained in the War on Terror and the applicability of Justice Jackson's test to this issue. I will attempt to define with what level of constitutional authority President Bush acted in establishing military tribunals for enemy combatants based, while also considering related Supreme Court rulings on this topic.

Session 1–L • Psychology — Milne 104

Examining Multiple Factors Affecting How Individuals Cope with Stress

Session Chair and Faculty Sponsor: Michael Lynch, Psychology

Behavioral Coping: External and Internal Factors that Affect Stress and Coping

Kristen Paczkowski

Coping strategies and their role in the relationships between environmental experiences, individual characteristics, and personal well-being were examined. A sample of 172 undergraduate college students was recruited. Well-validated measures of life events, social support, personality, self-esteem, and coping were included among the assessments. In addition, self-report measures of physical health and emotional well being were administered. Finally, participants were asked a number of questions about their college course work and their involvement in extracurricular and employment activities as a measure of their behavioral engagement. It was expected that both external factors (e.g., stressful life events and social support) and internal factors (personality and self-esteem) would be associated with individual differences in well-being. Based on prior research, we expected coping strategies to mediate the relationship between external and internal factors and well-being. Contrary to our expectations, coping strategies were found to moderate the effects of stressful life events on physical health, well-being, and behavioral engagement. Additionally, our results suggest that cognitive processing styles were a stronger predictor of physical outcome measures.

Cognitive Processes in Coping: Emotional Stroop Task and Incidental Recall

Melissa Bak

To assess the extent to which subjects attend to potentially threatening stimuli, a modified version of the Stroop Task was implemented. Participants were presented with a series of potentially threatening and non-threatening words in different colored fonts on a computer screen. They were asked to respond to the color of the word by pressing a button a response pad. This was an attempt to assess the degree to which participants were distracted by the semantic meaning of the words. Specifically, we are comparing individual differences in response times across threatening and non-threatening words. An increased latency in responding would indicate attention allocated to the meaning of the presented word as opposed to its color. Individuals with longer average response times for threatening stimuli are employing vigilant syles of cognitive processing. Similarly, individuals with shorter average response times for threatening stimuli are employing avoidant cognitive processing. Following the Stroop Task, participants performed a distracter task and were subsequently asked to recall words used in the computer task. We believe there will be individual differences in response latency and recall rates for emotionally threatening stimuli. Our model predicts that "hypervigilant" and "avoidant" patterns of processing may be associated with different coping styles, patterns of physiological arousal, and outcomes in health and well-being.

Physiological Components of Coping: Cardiovascular Arousal and Regulation

Daniel Tylee

Regulation As part of our procedure, we measured participants' heart rate (HR) and inter-beat interval (IBI) using a non-invasive cardiovascular monitor across baseline and challenge conditions. This data is used to calculate vagal tone, which is an indicator of parasympathetic nervous system activity on the heart. Research suggests vagal tone may play a role in individual differences coping behaviors or strategies. Within each participant, we examine change in vagal tone between the baseline and challenge task. Preliminary analyses of our data will include mean heart rate and mean vagal tone for each condition, as well as the average change in each measure between the baseline and challenge task. By comparing the change in vagal tone across participants, we hope to identify individual patterns of heart rate regulation in the student population.

Pending more thorough analyses of the data, we expect that different physiological patterns will be associated with specific coping strategies, as well as indicators of physical health, emotional well-being, and behavioral engagement.

Session 1-M • Women's Studies — Welles 133

Research and Creative Projects in Women's Studies

Session Chair and Faculty Sponsor: Melanie Blood, SOTA/Women's Studies

Subjectivity and Reproduction

Jennifer Conroy

Jennifer will present her research with Sociology Professor Elaine Cleeton in Subjectivity and Reproduction. This work fulfills the capstone requirement of the Women's Studies Minor.

To Stop the Violence Against Woman-Going Beyond the Performance

Dana LePage

Dana will discuss her research and rehearsal process for the WAC production of Eve Ensler's play A Memory, A Monologue, A Rant, A Prayer. This is a collection of monologues on violence against women. She will work present parts of the performance and discuss the impact of the performance. Dana's work on the play fulfilled the senior capstone project requirement for the Women's Studies minor.

Performance of Monologue from A Memory, A Monologue, A Rant, A Prayer

Sheila McGrane

Sheila will perform her monologue from Eve Ensler's play; this monologue was omitted from the WAC production because Sheila was ill. Sheila will also put the monologue in the context of her research, conducted in the fall, on violence in the lesbian dyad. This research was conducted in fulfillment of the senior capstone project in Women's Studies.

EXTENDED SESSION • 9:45 – 12:15

Business Plan Competition Final Presentations — South Hall 340

Faculty Sponsor: Mary Ellen Zuckerman, School of Business

The Business School's Business Plan Competition is an eight week activity, which culminates in a paper and an oral presentation in front of 5-6 judges. This year's business problem is "Dress for Success." Students were asked to come up with a business plan for educating the college students at Geneseo (and possibly elsewhere) in appropriate ways of professional dressing. This included developing partnerships with retailers, identifying the obstacles to appropriate dressing (income, lack of knowledge, etc.) and devising solutions that will enable to students to overcome the obstacles. Judges will select the winning teams based on these 20 minute oral presentations.

Genesee Marketing Team

Erik Larson, Daniel Back, Michael Lynch, and Alexandra Farnsworth

LandSharks

Sarah Doster, Dan Spada, Elena Jovkovska, and Shaun Walker

Team S.U.I.T.E.D.

Bethany Morrow, Amy Valenti, Scott Baron, Jennifer Ogrodowski

W.O.R.K.

Terry Burns, Luke Homerin, Kyle Sarbou, Sarah Bain-Lucey, and Marissa Lewis

Geneseo Advocates for Professional Development

Stephen Allen, Jared Chester, Caitlin Barone, and Heather Horton

Sensible Style

Emmett Henry, Jed Hamouche, Craig Korth, and Jennifer Alex

Team Paragon

Kurt Jameson, Carly Tesler, Joe Mort, Sean Bardenett, and Tyler Ellis

CONCURRENT PRESENTATIONS

SESSION 2 • 11:05 – 12:20

Session 2-A • Anthropology and Sociology — Milne 105

Session Chair: Paul Pacheco, Anthropology

Serpent Iconography at Chichen Itza

Megan Lee, Kevin Palmowski, and Ryan Levy

Faculty Sponsor: Ellen Kintz, Anthropology

The information presented explores the serpent iconography at Chichen Itza, a result and a reflection of settlement patterns at this Yucatan site. Serpent iconography was a direct consequence of the intertwined social, cultural and political influences at this major architectural site. The iconography exists largely on the Toltec side of the site; however, some scholars do not divide the site into distinctly Toltec and Maya areas, or even acknowledge a Toltec presence at Chichen Itza. The serpent iconography is thought to symbolize either the ruling class, or connection to the netherworld through bloodletting ceremonies, concepts related due to the high status of the rituals' participants.

Variation in Lithic Strategies Exhibited by Ohio Hopewell Households

Aaron Comstock

Faculty Sponsor: Paul Pacheco, Anthropology

The study of settlement patterns is a 'hot' topic in Ohio Hopewell archaeology. Continuing this trend, this paper seeks to expand knowledge on Hopewell settlement patterns by producing a site report of the Murphy III site (33Li311) located in Licking County, Ohio. The report is based on an analysis of the lithic assemblage from the site, presenting interpretations in terms of a macroscopic view of Ohio Hopewell life. I then compare the assemblage to the lithic assemblage recovered from the Brown's Bottom #1site (33Ro1104) located in Ross County, Ohio. My comparison elucidates variation in lithic strategies by Ohio Hopewell domestic sites. A foundation for this analysis was partially derived from Flannery and Winter's classic definition of 'possible regional specialization' in their study of Oaxacan villages. My research suggests Murphy III represents a household which acted as a primary producer and exporter of lithic tools while Brown's Bottom #1 represents a household which acted as a consumer and importer of these materials.

Misogyny of Women in Hip Hop Culture

Scott Snowden

Faculty Sponsor: Elaine Cleeton, Sociology

In today's society, hip-hop culture has morphed from being a very influential and empowering culture to one of the most talked about, controversial cultures in America. One of the biggest criticisms of hip-hop is how it directly degrades and objectifies women. Many people believe that hip-hop culture is slowly starting to destroy itself because of something like misogyny. As a fan of hip-hop, this is the one part of it I completely despise. My presentation motivated by research for a paper that I am writing about this specific topic. It will include handouts, video, analysis, and allow for some time for question. The one thing I would like to do is provide life lessons and make people think about what is really wrong with hip-hop culture and why it is the people who are part of the culture choose to participate.

Student Beliefs About Food and Health

Masako Kinoshita

Faculty Sponsor: Elaine Cleeton, Sociology

This study explores eating habits of SUNY Geneseo students. The purpose is to identify factors influencing decisions made regarding food choices. Field research methods employed to collect data included observations of public gathering spaces where students eat on campus and conversations with students about their food choices. The research examines differences between eating at home and eating on campus. These distinctions are related to food preferences and beliefs about health of U.S. college students. Persons working in student food services discuss their efforts to provide tasty and healthy food choices. Influences on student attempts to be healthy in everyday life are identified.

Session 2-B • Biology — Newton 201

Session Chair: Isidro Bosch, Biology

The *Trypanosoma brucei* cytosine DNA Methyltransferase Gene is Expressed in Both the Procyclic and Bloodstream Forms

Rebecca Pietrasik and Kristi Dodd

Faculty Sponsor: Kevin Militello, Biology

Trypanosoma brucei is the protozoan parasite that causes African Sleeping Sickness. The complex life cycle of the parasite is related to changes in gene expression which includes transcriptional regulation. Our laboratory has detected low levels of 5-methylcytosine and a gene homologous to known cytosine-5 DNA methyltransferases (TbDMT gene) in *T. brucei*. The

modified base 5-methylcytosine is correlated to transcriptional silencing in other organisms. In order to determine if the TbDMT gene is expressed and correlates with 5-methylcytosine levels, TbDMT RNA was analyzed by quantitative PCR. Primers were made for the TbDMT gene and for controls β-tubulin and 18S rRNA. RNA from the procyclic and bloodstream forms were isolated and converted to cDNA before analysis. Our results show that there is approximately 3.08 fold more RNA in the bloodstream form than in the procyclic form. This shows that there is a mathematical difference between the procyclic and bloodstream form, but it is not certain if this is biologically significant. The expression of TbDMT in both stages of the life cycle mirrors the level of 5-methylcytosine in both stages. The simplest model is that TbDMT is the enzyme responsible for the cytosine DNA methylation in *T. brucei*.

Purification and Analysis of P-glycoprotein, an ABC Transporter Implicated in the Failure of Cancer Chemotherapy

Arunima Ray and Brandy Verhalen
Faculty Sponsor: Isidro Bosch, Biology

P-glycoprotein (Pgp), also called ABCB1 or mdr1 (multi drug resistance 1), is an ABC transporter found in various organisms fulfilling multiple functions. There has been evidence to show that Pgp is involved in multi drug resistance, and it has been implicated in the failure of cancer chemotherapy and protease inhibitors used in AIDS treatment. Individual nucleotide-binding domains (NBDs) of an analog of Pgp were purified and analyzed. Enzymatic activity was observed in purified oligomers and specific associations were obtained depending on incubation conditions. Cross-linking analysis of the domains revealed that terminal alpha helices of C-terminal and N-terminal NBDs in Pgp lie in close proximity.

A Role for Tropomodulin in Regulation of Intestinal Microvillar Morphology

Joseph Vollo
Faculty Sponsors: Abbi Cox, Biology and Harold Hoops, Biology

Microvilli are small stick-like structures found on the surface of some epithelial cells. Microvilli have several important functions including promoting nutrient absorption. Their disruption results in diseases including microvillar atrophy and microvillus inclusion disease. Actin bundles form the core of microvilli, but the mechanism regulating the lengths of these bundles is poorly understood. We are investigating the role of tropomodulin, an actin capping protein, in regulation of intestinal microvillar morphology in the nematode *Caenorhabditis elegans*, using transmission electron microscopy (TEM). Wild type (normal) *C. elegans* and several *tmd-1* mutants were used in these studies. Staged *C. elegans* larvae were prepared for TEM through a primary fixation containing 2.5% glutaraldehyde and 1% paraformaldehyde. A secondary fixation was performed containing 1% osmium tetroxide and 0.5% potassium ferricyanide. Larvae were dehydrated through a graded ethanol series and embedded in Epon-Araldite embedding medium. Preliminary results suggest that loss of tropomodulin function results in microvilli that are shorter and wider than those found in wild type larvae. This suggests that tropomodulin plays a role in actin stabilization, facilitating the development of longer microvilli when functioning properly.

The Science of Speed: Exploring the Physiology of Running

Robert Taylor and Ryan Mulcahy
Faculty Sponsor: David Prevosti, Athletics and Recreation

Have you ever wondered about what is actually going on when you head out for a run? Why does your body ache afterwards? Why do some runners get injured all the time and others don't? How can you get faster? This presentation will answer these questions and more, focusing on the following aspects of running: biomechanics, muscle physiology, energy dynamics, and heart, lung, and blood adaptations. Remember: "No brain, no gain."

Session 2-C • Communication — Milne 104

Session Chair and Faculty Sponsor: Atsushi Tajima, Communication

Disjuncture and Difference in the Global Cultural Economy

Megan English, Hailey Miller, and Justine Diaz

The world is slowly but constantly evolving into a global village. Although this effectively ties the world's cultures together, it also causes an gradual homogenization of the individuality that defines these cultures. Arjun Appadurai argues that five specific aspects of contemporary global cultural diversity contribute to both the global village and its homogenization. He refers to these aspects as "scapes". They intertwine, constructing many of our everyday interactions. Together all five represent an exchange of media, ideas, finance, people, and technology, affecting practically everything we do from reading a weekly gossip magazine to studying abroad.

The Globalization of American Advertising

Erin Gryniak and Sara Chellam

The focus of our Powerpoint Presentation is the globalization of American advertising. We will introduce the Global Sell Theory, explaining that the same commercials produced in America can be translated into many languages and easily broadcasted in other countries. Then we will discuss how American ads create homogenization and the fact that popular American food corporations focus on three different aspects when advertising overseas: the American "look", incorporating the English language in advertisements and promoting the "Western elite". We will then transition into how the English language has become the leading language and most of the content of mass culture that moves across the globe is in English. Finally, we will explain how American advertisements promote American popular culture by displaying American actors and

musicians and celebrities. We will also display some advertisements and commercials in our Powerpoint Presentation and explain whether or not these advertisements are effective.

Social Inequality & The Media: Inequality in Sports

Nick Haanschoten, Kendall Shultes, and Lindsay Joy

This presentation examines the topic of sexualization versus feminization. Many famous female athletes are shown as both feminine and athletic to show the contr ast between identities. Also famous female athletes that have not been sexualized by the media, and are successful in their sport are shown. Finally the topic of how male athletes are also subject to sexualization by the media is discussed. One particular male athlete is highlighted.

The Threat to Journalism in the Digital Age

Daniel Skahen

As the Internet becomes an increasingly dominant medium in the digital age, it absorbs traditional media in new forms such as online radio, streaming video and electronic books. Each of these "new" media carries different implications, and has caught on with varying degrees of success. The e-book, for instance, currently presents no serious competition to publishing industries. Online videos have gained more popularity but also cultivated a more symbiotic relationship with television, with programs that can be viewed on T.V. and on the company site. On the other hand, web logs (which have been compressed to the term "blogs" in today's jargon) have entered the scene with a more threatening presence than most other online media. This threat exists on several levels, and as of now it exists only beneath the surface of research, speculation and analysis. Kinsley (2006) has referred to this threat as "the blog terror," in which, "People are getting their understanding of the world from random lunatics riffing in their underwear." On perhaps the most imminent level, print newspapers, which have reigned until now among the most fundamental, secure and trustable media in society, may face extinction in a matter of years.

Session 2-D • English — Welles 131

Literature of Medieval England: Chaucer and Malory

Session Chair and Commentator: Patrick Gilchriest

Faculty Sponsor: Graham Drake, English

Sexuality as a Concept of the "Other" in the *Wife of Bath* and the *Pardoner*

Elena Kurz

Most current critics of Chaucer's literature have a fairly split view on what sexuality can be viewed as in medieval history, if it can be viewed in that context at all. There is no question that there was a concept of normative gendered behavior, sexual or not, and conversely a concept of non-normative, or "other," that accompanied it. *The Wife of Bath* and *The Pardoner* both exemplify characters within the Canterbury Tales that portray the "other." Neither is what they are meant to be within their gender, or sexual roles, and instead seem to possess what is "other" than they should. The Wife is the slightly less controversial figure of the two. Her portrayal, although definitively "other" than what she should be, is more obvious as to how she is "other," and how it illuminates the normative in various ways. There are two ways of viewing the Pardoner within the tales. This character is generally viewed either as a self-conscious sexual deviant, a "homosexual," or as a strictly "heterosexual" character whose very masculinity is defined through his "courtly" and effeminate qualities. The "other," whether viewed through the questionable sexual orientation of the Pardoner or the subversion of gendered roles of the Wife of Bath, is not only what opposes the normative but is also the medium through which the normative exists. Their aberration from what is normal, no matter the terms, really intends to speak to an undercurrent of discussion of what it is to be an individual: a development of the true "normative," which is a combination of both the "other" and the normative.

Paternity in *Le Morte Darthur*

Megan Marcantonio

In Sir Thomas Malory's *Le Morte Darthur*, relationships between fathers and sons are an unavoidable motif. The question at hand is whether Malory remains as consistent to the genre of romance in his paternity as he does in chivalry, damsels, etc., including the various romances that he adapted his tale from. The two most prominent ideas surrounding paternity in Malory's text include sons sworn to avenge their fathers, and fathers surprised to meet sons they never knew they had. Character s such as Alysaundir, La Cote Mal Tayle portray characters prepared to fight in the name of their father, while Mordred and others show the reader instances of absent fathers. It is difficult to construct a consistent idea that these characters portray about the book and its author, as the text follows suit in terms of its reflection of romance trends concerning themes on only some kind of a superficial level.

Unique Imitation: The Perfect Paradox

Margaret Wedge

When you think of a knight, what do you see? Probably a fairy tale, yes? Perhaps you see some sort of shining armor, a damsel in distress, a battle, a joust, or some sort of quest made valiantly. These are common images drawn up in association with knights in general, and it is difficult not to picture such things. Actually, there is a reason for this. René Girard's theory of Mimesis states that as individuals exist in a group, they come to resemble each other more and more closely. Sir Thomas Malory's *Le Morte Darthur* illustrates the Knights of the Round Table and others that are often so similar they cannot be distinguished. Girard also argues that as 'mimesis,' or imitation, escalates, a cycle of violence ensues. He posits that historically Christ was the one to break the cycle. *Le Morte Darthur* produces a Christ-like figure to do it as well, and this is the

knight Galahad. *Le Morte Darthur* then becomes an artifact of culture that supports Girard's theory, and shows through numerous examples that anthropological theory can and does exist in literature.

Session 2-E • English — Welles 121

Claiming Space: Geneseo Students and the African American Migration Narrative

Session Chair and Faculty Sponsor: Beth McCoy, English

From Red Dirt to Gray Cement

Cortez Jones

This is a project that I did for Eng. 237/ African American Migration Narrative. These are the narratives of my family's migration from the south, and their experiences in the north as an African American family.

Mapped by the Heterosexual Hierarchy

Leigh Kleinklaus

This reading is a commentary on the implications of the hierarchy that a heterosexually dominant society has on those who do not belong to that cultural; those who are gay. It speaks to the prejudices that are experienced by a local college student who is a lesbian. It serves to make people aware of the spaces and divisions that are present in our society today and are the unconscious product of heterosexism.

African American Migration and How My Family is Connected

Allison Hodges

This presentation is the result of a semester-long study about the history and literature surrounding African American migration, and by using my own family as an example, explaining how every American family is connected to African American migration in some form.

Class and the Glass Ceiling: A family narrative of the African-American

Perry Hull

My presentation deals with the migration of my family from Tennessee to New York, their reasons for leaving, their experiences working in the North, and the relation of their narrative to that of the larger migration of African-Americans to the northern portion of the United States. Hopes of class mobility and a more tolerant environment sent millions of African-Americans on a journey from the racial tension of the south to the rapidly industrializing cities of the North. For many, what they found was equally exploitative, with new developments such as urban renewal and gentrification threatening to send them on another migration. Most recently, this movement has been back to the South. For others, able to attain a level of success via education and hard work, their new situation is slightly less accepting than they pictured. My story relates the experiences of my parents, born and raised Southerners, as they deal with an environment which is both liberating and deceptively familiar.

Mental Illness and African American Migration

Jordan Raymond

Through my presentation I explored the consequences of hiding parts of yourself while attempting to explore the personal worlds of other people. Specifically I address the problems I have had ignoring my mental illness in the classroom and how that limited my ability to understand the work in African American Migration Narrative class.

Session 2-F • History — Welles 128

Music, Philosophy, and Medicine in the Third Reich

Session Chair and Faculty Sponsor: Anne-Marie Reynolds, School of the Arts

Carl Orff in the Nazi Era: Victim or Villain?

Katherine Schwartz

In this presentation I will examine the various conflicting interpretations of composer Carl Orff's actions in the Third Reich in Germany. Over the years, Carl Orff, most widely known as the composer of "Carmina Burana," has been labeled a Nazi, a Nazi sympathizer, a victim of the Nazis, and an apolitical neutral entity. The positions taken by Hans Jorg Jans and the Orff-Zentrum Munchen (a society dedicated to the preservation of Orff's works) will be explored, as well as those of several authors including Michal Kater, Kim Kowalke, Pamela Potter, and Erik Levi. I will attempt to track patterns in the ways Orff's life has been reported, and, ultimately, to analyze the practice of placing political and moral value judgments on creators of art.

Only a God Can Still Save Us: Martin Heidegger and the National Socialists

Meghan Barner

Martin Heidegger is best-known in the world of continental philosophy for his positive contributions to the field of phenomenology, but his character is tainted by one of his personal choices: his support of the National Socialists under Adolf Hitler. This paper explores the tense and sometimes contradictory relationship between Heidegger's philosophy and his involvement with the Nazi Party. It explores the question of whether it was Heidegger's philosophy that spurred him to support such an obviously morally defunct party, and if so, whether an objective study of Heidegger's philosophy should continue.

Medicine During the Third Reich

Toni Melville

Some of the strongest supporters of the Nazi party were physicians, who joined earlier and in greater number than members of any other profession. They played an important role in administering the Nazi racial hygiene plan. During this presentation, I will discuss three important phases of the Nazi racial hygiene plan, focusing on the 1933 Sterilization Laws, the unofficial Euthanasia law of 1940, and experiments that were carried out on human subjects in the concentration camps of Auschwitz and Dachau. I will further consider what the data from these experiments mean to us today, and what can be learned from the atrocities that Nazi physicians perpetrated.

Session 2-G • Geneseo History Project — Newton 214

Conflicted Histories: Geneseo and the Struggle for Justice

Session Chair: Emilye Crosby, History

Faculty Sponsor: Emilye Crosby, History, Sue Ann Brainard, History, and Joseph Cope, History

Students working with the Geneseo History Project will make a presentation that places the Fall 2007 Halloween blackface incident in the larger context of Geneseo's history. The presentation will focus on the late 1960s/ early 1970s era of change and racial conflict, along with several ongoing themes, including structural diversity, curriculum, and student experiences. This focus on local history offers important insight into our institutional struggle to deal with race and social justice. This presentation was created for and presented at the March 2008 Race and Campus Culture Teach-In. It is based on the collaborative work of students and faculty as part of the ongoing Geneseo History Project.

Presenters: Laurin Akin, David Callaway, Alexandria Coubertier, Anna Delaney, Brian Hartle, Ryne Kitzrow, Jasmine Montgomery, and Hannah Prescott-Eberle

Session 2-H • Honors Capstone Projects: Session III — Newton 203

Session Chair: Ronald Herzman, English

Faculty Sponsor: Olympia Nicodemi, Mathematics

Curvature, Einstein's Equations and the Universe

Jacqueline Strain

Faculty Mentor: Jeff Johannes, Mathematics

Different methods for determining the curvature of our universe are in the process of being created and tested. Which manifolds become possible candidates of our universe depend on the topological and geometrical properties of each shape? Using Einstein's equations I will investigate what isotropy and homogeneity imply about our universe. Finally, I will discuss how these particular solutions to Einstein's equations predict black holes and the big bang.

Determining the Velocity Profile for Channels with Laminar Flow

Gerald Rawcliffe

Faculty Mentor: Edward Pogozelski, Physics and Astronomy

The flow of water in rivers or channels is of particular importanc e to engineers today. The velocity of water in channels is needed to model the transport and deposition of sediment and chemicals. A study was conducted to determine the velocity profile of a channel with rectangular cross-section and laminar flow. Three methods were used. The velocity profile was numerically determined using a second order finite differencing technique. Also, the differential equation for the flow was solved analytically for the relevant boundary conditions. Finally, the flow was measured experimentally in a 40cm x 30cm flume, using a low speed velocimeter. The flow rate of the flume was set to 3.45 l/s, which although slightly turbulent, was shown to be in relatively good agreement with the laminar predictions.

Interface Transfer and Diffusion Limited Atomic Motion

Daniel Mardit

Faculty Mentor: James McLean, Physics and Astronomy

An important aspect of the microscopic processes involved in the formation and growth of solids is described by the Gibbs-Thomson relation. The thermodynamics behind the Gibbs-Thomson relation explains Ostwald ripening–wherein larger clusters of atoms grow in size at the expense of smaller shrinking ones. Many factors control the rate of island growth and shrinkage which when studied can lead to a better understanding of nanoscale growth as a whole. We have used a pre-

existing two dimensional computer simulation to allow an island of clumped adatoms to evolve, thereby shrinking in size. Two limiting factors explored were(1) the diffusion of atoms though space and (2) the transfer to and from surfaces. By comparing these 'ideal' experimental results with predicted theory, a test of the theory and its approximations was made. Furthermore, knowing how well the theory applies in the 'ideal' experimental simulation will help others know how to apply the theory to real physical experiments.

Session 2-I • Honors Capstone Projects: Session IV — Newton 204

Session Chair: Rose-Marie Chierici, Anthropology
Faculty Sponsor: Olympia Nicodemi, Mathematics

FMRI Region of Interest Analysis: Methods and Applications in Studies of Attention, Anxiety, and the Anterior Cingulate Cortex

Ryan Marker
Faculty Mentor: Joan Ballard, Psychology

The first half of this presentation will focus on methods of performing a functional magnetic resonance imaging (fMRI) analysis, including how to conduct region-of-interest analyses and determine significant results. Methods include pre-processing of raw data, calculating statistics, and creating computer scripts to accomplish these tasks. Region-of-interest analyses allow data from only one area of the brain to be examined instead of the whole brain, allowing for observation of more minute changes. Methods used to determine significant results include the use of a program which calculates the significance of different cluster sizes, instead of individual voxels. The second half of the presentation will show an application of these methods in a region-of-interest analysis on the anterior cingulate cortex (ACC) during two sustained attention tasks. This region has been implicated in both attention and anxiety. Analyses will compare Blood Oxygen Level Dependent (BOLD) signal in the ACC between two different sustained attention tasks as well as between high and low anxiety participants. Results are expected to show differences in the cognitive and affective divisions of the ACC, which have previously been shown to differ between purely cognitive tasks and those involving emotion.

Civil Liberties during the Civil War: Lincoln's War Policies and the Fate of Freedom

Cara McPhilmy
Faculty Mentor: Justin Behrend, History

To the average American, the Civil War and its effects on civil liberties may be summed up in one work: emancipation. The freeing of the slaves and the eventual passage of the thirteenth, fourteenth, and fifteenth amendments were indeed milestones in American history. However, most American historians know that civil liberties were not the Lincoln administration's true concern; preservation of the Union, at all costs, was the be all end all of Lincoln's politics. Some have dubbed "Honest Abe" a tyrant and a dictator who abused his executive authority and trampled on the rights of American citizens. In this talk I will deal with the declaration of martial law, the suspension of habeas corpus, and the trying of civilians by military tribunal. I will demonstrate how the actions of the administration, though not always expressly legal, were uncontested during the war and, in the end, perpetrated not by a dictator but by a representative leader who found himself in unprecedented.

Session 2-J • Philosophy — Welles 119

The Philosophy of Thomas Kuhn

Session Chair: Igor Fishman
Faculty Sponsor: Larry Blackman, Philosophy

Realism/Anti-Realism in Kuhn's Incommensurability Thesis

Kevin Cunningham
Student Commentator: Bradley Reiss

In The Structure of Scientific Revolutions, Thomas Kuhn argues for a fundamental reevaluation of the scientific process. Moving away from a traditional conception of science as a gradual accumulation of facts that correspond to the world, Kuhn holds that science is best understood as an enterprise that aims at filling in the bounds of a paradigm, an agreed-upon framework of method and theory. Thus, the scientist is no longer observing an objective world; rather, she is perceiving the flux of data through various conceptual categories, resulting in a paradigm-created world. In this paper, I examine Kuhn's conception of scientific paradigms, particularly in regard to his Incommensurability Thesis (IT), which holds that the findings of different paradigms are incommensurable. I also analyze Harold Brown's reevaluation of Kuhn, in which he attempts to render the IT into a form of realism. He attempts to undo the disconnect between science and the external world that Kuhn assumes. Thus, I argue that Kuhn's anti-realism cannot account for the limitations imposed by the external world; our theories and data are shaped by our interactions with the world outside of any paradigm-induced conceptual categories.

Kuhn's Philosophical Science

Melissa Braaten
Student Commentator: Jared Chester

Thomas Kuhn's controversial book The Structure of Scientific Revolutions introduced the concept of paradigms, normal science and paradigm shifts to the philosophy of science. Although it is questionable how 'philosophical' Kuhn's descriptive and empirical methods really are, his description of theory change in science is sympathetic to several forms of anti-realism,

and challenges the commonly held view of science as a rationally progressive enterprise. With respect to scientific knowledge, Kuhn's ideas challenge what we can claim to know of objective truth, since everything, even observation, is heavily theory-laden, and different paradigms are to some extent incommensurable. Kuhn is aware of the challenges he poses to the traditional conception of science and tries to show how science can still be "progressive" in a practical sense.

Session 2-K • Political Science and International Relations — Welles 123

Managing Diverse Populations in the Developing World

Session Chair and Faculty Sponsor: Rebecca Root, Political Science and International Relations

Gendered Quota Systems in Developing World Democracies: Shattering Glass Ceilings

Marie Puccio

Gendered quota systems are electoral or political party mechanisms put in place to facilitate the election of women to national representative bodies at greater levels. The use of gendered quotas in national parliaments or national representative bodies is an intervention in the political system to offset the electoral consequences of structural inequities. A complex understanding of gendered quota systems is important since they are an increasingly global phenomenon that directly impacts both the governing of states and the lives of citizens. This study seeks to determine the impact of gendered quota systems in the developing world as they are applied in various electoral, regional, and social contexts. If applied effectively, gendered quota systems can potentially engage women in the political process and encourage the provision of social goods that align with the interests of female constituencies. Gendered quotas are particularly useful in providing stability and legitimacy for developing world countries undergoing democratization. However, as opponents of quotas argue, gendered quotas systems may distort the electoral process in a way that allows less popular or less experienced candidates to assume office. In the aggregate, however, a careful exploration of gender quota systems indicates that their merits greatly outweigh their downfalls.

Population Control in India and China: The Unresolved Issues

Lisa Robbins

This paper examines the need for population control, as well as the problems inherent in any effort to control such growth, with a focus on issues of effectiveness, human rights violations, and changes in demography. China and India will be used as specific case studies to highlight these problems. Discussions of the policies implemented in both countries will be followed by an analysis of the problems within each system, as well as a comparison of the methods used. Possible suggestions for future policy changes will be discussed, again making reference to the case studies of China and India and extrapolating to other developing countries.

Internally Displaced Persons (IDPs) and the Guiding Principles on Internal Displacement: The Implementation of National Policy in Northern Uganda

Ari Renoni

This thesis examines how the 1998 Guiding Principles on Internal Displacement are adopted and then implemented at the national level. Internally displaced persons (IDPs) are those that have been uprooted from their original places of residence but have not crossed an internationally recognized border. This population suffers from grave physical, emotional, and mental adversity and the purpose of the Principles is to provide a policy framework for protecting and assisting these persons. Uganda, Georgia, and Colombia serve as case studies for understanding and analyzing the extent to which the Principles can be effective in a national context. This paper looks specifically at the 2004 IDP Policy in Uganda as determined by how both international humanitarian organizations and national authorities respond to document. Considered in this analysis are the implementation's successes and challenges vis-à-vis the IDPs' access to adequate protection, food, water, sanitation, health care, education, and economic opportunities. Additional surveys of how the Guiding Principles translate into national policy and are then implemented in Georgia and Colombia will augment this study.

Session 2–L • Psychology — South Hall 338

College Women's Perceptions and Experiences of Unwanted or Forcible Sex

Session Chair and Faculty Sponsor: Jennifer Katz, Psychology

Father-Daughter Relationships and College Women's Sexual Refusal Behaviors

Jill Rabinowitz

Much anecdotal evidence suggests that adolescent relationships with fathers may affect daughter's later sexual functioning. We expected that father emotional responsiveness would promote greater refusals of unwanted sex by increasing daughters' self-esteem. In contrast, we expected father expressions of conventional ideas about femininity and sexuality to exert mixed effects on daughters' sexual refusal behaviors. Conventionality may compel daughters to base self-worth on being virtuous but also on obtaining others' approval, the latter of which may inhibit refusal behavior. Female undergraduates (N = 125) completed measures of father behavior, self-esteem, gender conformity, self-worth contingencies, sexual refusal assertiveness, and sexual compliance (i.e., willing engagement in unwanted sex). As expected, father responsiveness positively predicted daughters' sexual refusal behaviors, which was partially mediated by self-esteem. Father conventionality negatively predicted sexual compliance. Adolescent interactions with fathers appear to promote daughters' sexual refusal behaviors. Implications are discussed.

Mechanisms for Revictimization Among First Year College Student Women

Jill DelTosta

Sexual assault can be a traumatic life event that affects women's well-being and risk for subsequent revictimization experiences. The present study examined feelings of self-blame and sexual refusal assertiveness (SRA) as possible mechanisms for revictimization during the first year of college. We hypothesized that 1) past adolescent sexual assault would predict college victimization during the first year of college, 2) past adolescent sexual assault would be related to high self-blame and low SRA at the start of college, and 3) high self-blame and low SRA would mediate the effect of past adolescent sexual assault on college victimization. Data were collected at the start and end of an academic year from first year college student women (N = 39). As expected, past adolescent sexual assault positively predicted college victimization and behavioral self-blame at the start of college. Unexpectedly, self-blame did not account for the increased risk of victimization among women with histories of adolescent sexual assault. For the sample as a whole, as expected, high behavioral self-blame, high characterological self-blame, and low SRA at baseline each predicted later college victimization. Our findings suggest that high self-blame and low levels of SRA are risk factors for victimization among college women generally.

The Effect of Romantic Fiction Narratives on Women's Perceptions of Sexual Force

Hillary McShea

Perceptions of the acceptability of rape are often promoted by the popular media, including romance fiction. Romance novels use narrative devices to describe a man's forceful actions in terms of passion, and a woman's reaction to them as submission to her own desire. Our purpose was to examine the effects of a romantic fiction narrative on women's perceptions of men's sexual force. It was hypothesized that passages describing sexual force using these narrative devices would be viewed as more benign than non-romantic passages. Participants' prior exposure to the romance genre was included as a possible moderating characteristic. Data are currently being collected for a single-factor, between-subjects design. Female undergraduates (expected N = 80) will be providing anonymous feedback about their perceptions of the passages, as well as information about the frequency with which they typically read romance fiction. We expect that participants who read a romantic narrative description will view the woman in the scenario as experiencing more pleasure, less distress, more token resistance, and less control over the situation than participants who read a scenario omitting romantic narrative language. Additionally, we expect that these results will be intensified for participants who indicated that they regularly read romance novels.

Session 2-M • School of Education — Welles 138

Session Chair: Linda Ware, School of Education

Social Reconstruction in the School of Education

Michael Milillo and Andrew Reiser

Faculty Sponsors: Sherry Schwartz, School of Education and Susan Salmon, School of Education

Pre-service candidates come to higher education with years of social and cultural education from their home community. They then join the higher education community and receive a different message. The college community, generally liberal in nature, influences pre-service candidates in different ways. Anxious to succeed in the classroom and to please their professors, future teachers will respond positively to these new ideas and philosophies. During student teaching and after graduation, pre-service teachers will become part of yet another community, the ones in which they teach. How do teacher education programs help pre-service teachers to internalize and come to grips with the voices from these diverse communities? How do we help pre-service teachers find their own voice? How can teacher education programs prepare new educators to positively affect community, promote social justice, and move beyond their familiar world?

Other Disability Affirming Children's Literature

Ashley Claypoole, Mary Zelasko, and Megan Longman

Faculty Sponsor: Linda Ware, School of Education

As an undergraduate research team, along with the help of our professor, launched a partnership with the Geneseo Town Library to explore children's literature that [re]produces negative disability stereotypes. We will take a different approachs to explore the literature facilitate more textured understandings of the lived experience of disability. We borrowed from Solis (2007) to identify disability-affirming representations. Our study is characterized by a disability studies/critical literacy orientation rooted to a constructivist paradigm.

Arts Integration: Cultural Exploration in the Curriculum Cultural Explorations: Central and South America

Rachel Coleman-Gridley and Shawna Smith

Faculty Sponsor: Linda Ware, School of Education

The overall goal is to provide a well-rounded view of culture(s) within Central and South America so as to understand that there are distinctions as well as similarities in all cultures. The first lesson, Culture through Cameras will provide disposable cameras to students who will be instructed to take photos of themselves, family members, pets, favorite objects, etc. Once the pictures are developed, students will categorize the photos (group work). Through large class and small group discussions, the students will consider the similarities/differences that contribute to the complexity of "American" culture. Second, the students will complete a geography lesson to map out the locations and features of the countries in Central and South America that our unit covers. Third, students will learn about a variety of dances informed by themes of liberation and resistance.

Fourth, SUNY Geneseo students will direct a Merengue dance lesson for all fifth grade students. Study will culminate with a celebration of the Mexican independence day, Cinco de Mayo where students will participate in a dance assembly.

Arts Integration: Cultural Exploration in the Curriculum

Liz Squairs, Mike Cosimano, Maria Allen, Jason Livernois, Jenna Curry, Samantha Hessney, Jocelyn Hullar, Alysse Ouimet, Ashley Vanscooter, Anthony Vitale, Stephanie Yorio, Caitlyn Redmond, Jen McNulty, and Kelli Rees

Faculty Sponsor: Linda Ware, School of Education

SUNY Geneseo childhood/childhood special education majors enrolled in CURR 320 (Spring 08) were invited to participate in a semester long project to integrate the arts in an exploration of multicultural awareness and inclusion in the curriculum at Geneseo Elementary School. Working directly with Geneseo physical education teachers and one lead instructor (a SUNY Geneseo dance major) CURR 320 students developed and implemented a Merengue dance unit with all 5th grade students at the elementary school. CURR 320 is an arts integration course designed to provide meaningful and community-enriching content that addresses cultural diversity issues. This dance unit has provided the students to work in pairs as dance partners that change with each gym class, they have worked alone in line dance configurations, and they have been partnered with SUNY Geneseo students. In each instance the focus has attempted to underscore the multiple levels of "inclusion" that the arts can inspire. This component of the session will feature SUNY Geneseo students demonstrating the dances. We hope to invite six elementary students (three pairs) to join in this presentation.

Session 2–N • Women's Studies — Welles 133

Taking Women's Studies out from the Classroom: Senior Internship Project Presentations

Session Chair and Faculty Sponsor: Melanie Blood, SOTA/Women's Studies

Internship at Bethany House

Danielle Santoro

Danielle will discuss her internship work at Bethany House, including a description of her role there and some of the important experiences.

Hospice Care at Teresa House and the Role of Gender in Hospice Care

Katie Kelley

Katie will present her work at Teresa House and the results of preliminary research into end of life care and the high percentage of women in this field. She will discuss her responsibilities, some experiences, and what she has learned at Teresa House.

Lessons from the Sojourner House

Lisa Parisio

Discussion of Lisa's work at Sojourner House in Rochester. Lisa will describe her duties there, what she has learned from the experiences, and how she might use this experience in her future life and career.

KEYNOTE ADDRESS

Wadsworth Auditorium • 1:45 – 2:45 PM

Introduction by Christopher Dahl, President

Steven Squyres, Ph.D.

Roving Mars: Spirit, Opportunity and the Exploration of the Red Planet

Steven W. Squyres is Goldwin Smith Professor of Astronomy at Cornell University, and is the Principal Investigator for the science payload on the Mars Exploration Rover Project. He received his Ph.D. from Cornell in 1981 and spent five years as a postdoctoral associate and research scientist at NASA's Ames Research Center before returning to Cornell as a faculty member. His main areas of scientific interest have been Mars and the moons of the outer planets. Research for which he is best known includes study of the history and distribution of water on Mars and of the possible existence and habitability of a liquid water ocean on Europa.

Dr. Squyres has participated in many of NASA's planetary exploration missions, including the Voyager mission to Jupiter and Saturn, the Magellan mission to Venus, and the Near Earth Asteroid Rendezvous mission. Along with his current work on MER, he is also a co-investigator on the 2003 Mars Express, 2005 Mars Reconnaissance Orbiter and 2009 Mars Science Laboratory missions, a member of the Gamma-Ray Spectrometer Flight Investigation Team for the Mars Odyssey mission, and a member of the imaging team for the Cassini mission to Saturn.

Dr. Squyres has served as Chair of the NASA Space Science Advisory Committee and as a member of the NASA Advisory Council. His awards include the American Astronomical Society's Harold C. Urey Prize, the Space Science Award of the American Institute of Aeronautics and Astronautics, the American Astronautical Society's Carl Sagan Award, the National Space Society's Wernher von Braun Award, and the Benjamin Franklin Medal of the Franklin Institute. He is a fellow of the American Academy of Arts and Sciences.

Abstract of Keynote Address:

In January of 2004, twin robotic explorers named *Spirit* and *Opportunity* landed on Mars. Expected to last for 90 days, the two rovers have now been exploring the martian surface for more than three years. Their objective is to search for evidence of past water on Mars, and to determine if Mars ever had conditions that would have been suitable for life.

Spirit landed in Gusev Crater, a large impact crater in the southern highlands of Mars. Finding only ancient lava on the crater floor, *Spirit* drove a mile and a half to the base of the Columbia Hills, a mountain range near the landing site. There *Spirit* ascended Husband Hill, the highest summit in the range, finding strong evidence that the rocks were modified long ago by water.

Opportunity landed on Meridiani Planum, a smooth plateau near the martian equator. In the first few weeks after landing, *Opportunity* found compelling evidence for long-ago water on Mars. This evidence included thick deposits of sulfate salts, concretions that precipitated from liquid water, and rocks that preserve ancient ripples formed when water flowed over sand. *Opportunity* has driven nearly six miles across the martian surface, and is now exploring Victoria Crater, a spectacular impact crater half a mile in diameter.

To develop *Spirit* and *Opportunity*, a team of more than 4,000 highly motivated engineers and scientists overcame a host of technical challenges. The challenges were multiplied by an extraordinarily tight schedule that was driven by the motions of the planets. The talk will provide an up-to-date summary of the missions of *Spirit* and *Opportunity*, from their initial conception through their development, launch, landing, and operations on the surface of Mars.

CONCURRENT PRESENTATIONS

SESSION 3 • 2:55 – 4:10 PM

Session 3-A • Anthropology — Milne 105

The Stigma of AIDS: Anthropological and Economic Perspectives

Session Chair and Faculty Sponsor: Rose-Marie Chierici Anthropology

The Emergence of Target Groups: Cultural Perceptions of AIDS and the Construction of Stigma

Jennifer Ritzenthaler

In this presentation, I focus on how cultural perceptions of AIDS are used to target specific groups of people by looking at cross-cultural studies of stigma. AIDS stigma occurs when someone who has AIDS is perceived as tainted by disease and falls short of public expectations. This occurs with AIDS more than other incurable diseases, since many feel that people with AIDS must have contracted the disease because they engaged in risky behaviors or lifestyles related to their sexual orientation, practice of unsafe sex, or use of intravenous drugs. Factors such as sexuality, gender, race, ethnicity, and class affect AIDS stigma and the discrimination that occurs with it. Stigma is articulated in legal, institutional, community, family, and individual contexts. Prejudices against people with AIDS stem from fear of contracting the disease and preexisting prejudices against the groups that are traditionally linked to AIDS. This presentation uses data, scholarly journals, and case studies from the countries under examination in order to provide a thorough understanding of the construction of stigma.

Responsibility and the "Other": American and African discourses and the stigma of HIV/AIDS

Thomas Cardot

This presentation explores the emergence of the HIV/AIDS discourse in the United States and specifically how this discourse characterizes HIV/AIDS sufferers as "other." It traces similarities between the American discourse and the HIV/AIDS discourses in three African cultures, Zimbabwe, Malawi, and South Africa. This discourse shapes how individuals use language in their culture and their society to discuss the disease and the stigma associated with it. Two manifestations of the discourse can be identified; a scientific discourse that reflects the biomedical understanding of the disease and how it is spread, and a cultural discourse that reflects how a group understands the disease, its etiology, and the ways it is experienced and spread. The discourses vary between social and cultural groups. One similarity revolves around the concept of the "other", an individual or group that is not the "self". "Others" are often blamed for and perceived to be responsible for HIV/AIDS. This stigma is articulated in language use and affects primarily those who are culturally marginalized, such as women and homosexuals.

The Economic impact of AIDS Stigma on the Developing World: A statistical and Analytical Approach

Kaitlyn Cahill

This presentation focuses on how the AIDS stigma is related to and affected by various economic indicators. Developed countries have the resources to help marginalized people suffering from AIDS to fight this preventable and treatable disease, but they lack the economic incentive to do so. Because the rate of HIV/AIDS is higher among marginalized groups, there is less likely to be intervention from those who have the economic resources to do so. Data will be collected on 8 randomly selected countries from each of the following regions; Latin America, Middle East, Africa, Western Europe, and Asia. Prevalence rates will be calculated using selected indicators such as poverty, literacy rate, fertility rate, life expectancy at birth, GDP per capita, immunization of measles, and the unemployment rate. Analysis of this data will show the correlation between prevalence of HIV/AIDS, economic underdevelopment, and the stigma of AIDS.

Challenging Stigma: Gay Activist Movements and HIV/AIDS

Seth Palmer

My paper explores the prejudice directed towards acts considered to be "homosexual" cross-culturally. In doing so, I keep in mind that according to Oliver Phillips, it becomes difficult to define what is "homosexual" in cultures "not steeped in Western sexological epistemology." The strict homosexual/heterosexual binary that structures Western understandings does not exist in many non-Western cultures and is often used to argue that homosexuality is a Western construct. I focus on the stigma that men who engage in same-sex interactions face, and how this stigma works against efforts to eradicate HIV/AIDS. Finally, I discuss how localized gay rights movements are working to enact policy changes and help end social suffering through new programming and legislation.

Session 3-B • Biology — Newton 201

Malaria: Attacking the Disease with Mathematics

Session Chair: Gregg Hartvigsen, Biology

Modeling the Success of a Single Sporozoite Invading a Hepatocyte

Deborah Alessi, Nick Prosser, and Jillian Rozanski

Faculty Sponsor: Gregg Hartvigsen, Biology

Malaria, a disease affecting millions worldwide, is transmitted by the parasite Plasmodium falciparum. While much is known about the parasite's life cycle, more work is needed to understand the detailed processes and interactions of the Plasmodium, specifically in the human liver stage. Plasmodium falciparum relies on circumsporozoite proteins (CSP) on their surface membrane to invade hepatocytes, a necessary step to avoid the human immune system. One potential treatment is to create monovalent fragments of antibodies (Fabs) to inhibit CSP, reducing the parasite's ability to bind to and enter the hepatocytes. We created a stochastic difference equation model of the success of a single sporozoite in invading a hepatocyte, based on the concentration and binding affinity of the Fab molecules for CSP. This model allows us to test the effectiveness of using a Fab vaccine to block sporozoite invasions, preventing malaria. We expect to determine the threshold level of Fab that will minimize the amount of CSP able to bind to the hepatocyte. Ideally this should block the Plasmodium's ability to invade and proliferate in the liver cells so that the parasite remains in the bloodstream and is phagocytized by the body's immune system.

Mathematics: A spatial model of Anopheles Population Dynamics

Jordan Gross, Dillon Meier, Nate Cornish, and Dave Kent

Faculty Sponsors: Gregg Hartvigsen, Biology and Christopher Leary, Mathematics

Malaria is a vector-borne disease caused by the parasite Plasmodium that is transmitted to approximately 515 million people and kills between one and three million people, the majority of whom are young children in Sub-Saharan Africa. The vector for transmission is the Anopheles genus of mosquitoes. We focused on Anopheles gambiae, because it is responsible for transmission of the particularly dangerous Plasmodium falciparum. In this study we constructed a compartment model of Anopheles population dynamics as a function of temperature and rainfall. Our model will display the geographic distribution of Anopheles, with each compartment dependent on the environmental parameters and the population density of contiguous compartments in discrete time and space. We plan to create a model that can be used as a management and planning tool to more effectively distribute interventions and funding to help solve this problem.

Biology Plasmodium Life Cycle in Human Hosts

Dennis Ruppe, Christopher Ryczek, and Mathieu Cyr

Faculty Sponsor: Gregg Hartvigsen, Biology

Malaria is a disease that causes millions of human deaths every year and debilitates over 300 million more. We have created a model which simulates the life stages in the human body of *Plasmodium falciparum*, the parasite responsible for malaria. Utilizing sensitivity testing we discovered how best to alter designated growth rates and their respective time steps so as to decrease the Plasmodium's prevalence. Using the program MATLAB and previous research on malaria we have modeled the different stages of the lifecycle of the Plasmodium in human hosts. We simulated the effects of bite frequency, human immune response and DNA vaccination to analyze their impact on the life stages, resulting in a model which represents the rate of Plasmodium replication. We found that limiting multiple stages of the life cycle by small percentages, which would represent preventative measures such as DNA vaccines, medications that improve the immune response and the utilization of bednets, could ultimately drive the Plasmodium population to extinction.

Controlling Malaria: The Effect of DNA Vaccines on a Susceptible Population.

Marc Hurst, Kelly Nelson, and Joshua Wolosz

Faculty Sponsors: Gregg Hartvigsen, Biology and Christopher Leary, Mathematics

Every year the disease malaria results in a mortality of two to three million and a morbity of 300-500 million people throughout the world. We created a model to simulate the individual response individual to the DNA vaccine for malaria and the overall effect of introducing a DNA vaccine into a susceptible population. This model was created using a computer programming software, MatLab, and is based on a modified Susceptible-Infectious-Recovered system of equations. Using current population statistics of the malaria disease and data from experimental trials using DNA vaccines the rates of infection and resistance are predicted over time. The results from the model of the DNA vaccine show lower rates of infection and a higher rate of resistant individuals through time compared to a current susceptible population not exposed to the DNA vaccine.

Session 3-C • Communication, Education, Multicultural Affairs, and Service Learning — Milne 104

Session Chair: Atsushi Tajima, Communication

Active Audiences and Media: Music, Films and Fashion

Erin Redden, Lindsay Parker, and Jennifer Phillips

It is obvious that media have such potential to influence, both for good and for bad. Although advertisements are out to earn money, effects span farther than their own pockets: emotionally, mentally and physically they have the power to mold consumers and their values. In our presentation we will explore three different types of active audience and how each is affected by media. First, we will discuss the effect music and various artists have on young males, as seen in the controversy of Marilyn Manson's link to the Columbine shootings. Next we will discuss the active audience of women: we will concentrate on the media's obsession with thinness, exhibited in advertisements and popular films such as Pretty Woman. We will continue by exploring the effect fashion advertisements have on the early sexualization and abnormal maturation of young girls. As a society we often focus on the negative psychological effects the media has on active audiences, so lastly we will discuss the positive strides and progressions being made to promote a more censored and healthy media for today's world.

Multicultural Greek Life What is it like to be a minority AND a Greek on Geneseo's campus?

Vivian Cheung and Betty Chan

Faculty Sponsors: Fatima Johnson, Office of Multicultural Affairs and Randy Kaplan, School of the Arts

How is being a multicultural Greek different from other campuses? There are currently 3 multicultural Greek organizations at Geneseo--Alpha Phi Alpha Fraternity Inc., Lambda Pi Upsilon Sorority Inc., and Sigma Psi Zeta Sorority Inc. They are all national organizations. Learn about the history and present of multicultural Greeks and what we do. We constantly try to dispel stereotypes of our cultures and being Greek. Vivian Cheung and Betty Chan are both sisters from Sigma Psi Zeta Sorority Inc.

ADA: On the Decline?

Genevieve Bernier, Daniel Koch, Christina Meyer, and Catherine Urban

Faculty Sponsor: Linda Ware, School of Education

The American Disabilities Act of 1990 (ADA) is the most recent civil rights legislation enacted by Congress to prevent discrimination on the basis of disability in public accommodations, commercial facilities, transportation, telecommunications, employment, and State and Local government. In many ways SUNY Geneseo can be described as "technically in compliance" with the ADA. The campus features accessible entrances to selected buildings, accessible parking spaces, and an administrative office charged to support students with identified accommodations. However, we intend to research whether such minimum accommodations fall short of the "spirit" of the law. This research explores issues of access on campus posed by geography, architecture, and attitudes toward disability. We hope that our research will find that when disability is viewed as a diversity concern, administrators, faculty, and students alike will recognize the problems people with disabilities face on a daily basis on this campus. We hope to call attention to the few opportunities on campus that encourage understanding issues related to living with disability. Finally, we hope to encourage the college to recognize that if we want to recruit a more diverse student population we should include disability in that campaign.

Service Learning in El Sauce

Aaron Stephan

Faculty Sponsor: Rose McEwen, Foreign Language and Literatures

This is a short video about El Sauce, Nicaragua, a is small, welcoming farming community that faces poverty, high unemployment and geographic hardships, as recently seen with the insightful and compassionate eyes of a SUNY Geneseo student.

Session 3-D • English — Welles 128

Lessons in Love and Loss: A Prose Reading

Session Chair and Faculty Sponsor: Rachel Hall, English

"Them Boys"

Sara Germaine

This is a personal essay about the writer's life. It examines among other things, the fear of men, gender roles, death of a parent and relationships.

"Almost"

Lisa Parisio

Almost is a short story about a college student who learns she is pregnant. The story gracefully handles this complex and difficult subject matter.

"Dishwashing"
Matt Bukowski
This is a short story about a young man's first job and all that entails.

Session 3-E • English — Welles 131
Interpreting D.H. Lawrence's *Women in Love*
Session Chair: Eleanor Bryan
Faculty Sponsor: Eugene Stelzig, English

The Nature of the Beast: External, Internal, and Interpersonal Animality in *Women in Love*
Petra Clark
In D. H. Lawrence's novel *Women In Love*, animals and animal imagery play a pivotal role in lending deeper meaning and significance to the human characters and their actions. This idea is embodied in the two couples that represent the novel's protagonists: Gerald and Gudrun, and Ursula and Birkin, and their attitudes, behaviors, and relationships with each other. Gerald and Gudrun's affair is shaped by a sadomasochistic fixation which uses animals as the vessels through which they physically and spiritually feed off each other's cruelty and passion, thus being reduced to bestiality themselves. The romance between Ursula and Birkin focuses more on an ideological struggle to come to terms with the man-woman interconnection as it relates to the various examples of the man-animal relationship presented in the novel. In the case of both pairs, these insertions of animal imagery and presence not only spur on the animality of the characters' own thoughts and actions, but also become the tangible manifestations of the suppressed desires and flaws in each character's interpersonal relationships and within him or herself.

Like Father, Unlike Son: A Look at the Paternal Issues in *Women in Love*
James Bedard
This paper looks at the characters of Thomas and Gerald Crich in *Women in Love*, and compares their attitudes to love, life, and their fellow humans. By comparing the two—father and son—and analyzing their actions and beliefs, we see how strikingly different they are. We see the old-school, religious, rich father who still has a soft spot for his employees and the son who represents the inhumane drive toward industrial efficiency that dominated Lawrence's time (the early twentieth century). Lawrence's portraits of Thomas and Gerald are microcosms of their philosophies on life, death, and the divine.

The Decay of Humanity in *Women in Love*
Matthew Dunham
From an End to a Beginning an apocalyptic tone pervades *Women in Love*, and especially so in the urban and industrial scenes. The end of the world as Lawrence portrays it is an internal process, coming from within humanity—a kind of rotting of the mind. Societal degradation is, at the same time, the focus of the novel and its argument. Lawrence suggests a burnt image, though more so from the figurative fires of moral and political ruin than from literal flames. The apex of civilization, according to Lawrence, has already passed and now the world is in decline. However, by writing *Women in Love*, the author also seems to have found some ultimate sense of hope—and from the very ruin he provocatively imagines.

Session 3-F • History and Geography — Newton 214
Session Chair: Tze-ki Hon, History

The Impact of the Beijing Olympics on Chinese Society
Nathan Lockett and Shane Zanetti
Faculty Sponsor: Tze-ki Hon, History
This presentation will highlight the impact of bringing the 2008 Olympics to China on Chinese society, politics and government and environment. The impact of bringing such a large amount of attention to China will bring about change because any environmental or human rights violations will be examined and scrutinized by the world. A major priority of China during the Olympics is to project a positive, advanced and enlightened view of China to the world.

WWII Combat: Expectations, Encounters, & Reactions
Craig Herbst
Faculty Sponsors: Jordan Kleiman, History and Kathleen Mapes, History
My presentation will focus on the experiences of WWII ground and aerial combat veterans. Drawing from my primary research for my History Senior Honors Thesis, I will use memoirs, journals, and personal interviews to identify what soldiers expected combat would be, what they encountered and experienced in combat, and their reactions to that experience both in, and after, combat. The presentation will largely focus on the psychological impact of World War II on individuals and to an extent, how their experiences shaped them. Examples of experiences will highlight the sense of camaraderie, being under fire, experience of the elements, experiences as a POW, sense of fatalism, death of a friend, coping with combat, view of enemy, and other potential subtopics.

A Voice among the Indigenous: Chief Deskaheh and the Six Nations Quest for World Recognition

Andrew Reiser

Faculty Sponsor: Michael Oberg, History

Chief Deskaheh along with a lawyer based in Rochester, George Palmer Decker traveled to Geneva in 1923 to present their case to the League of Nations. The Dominion of Canada was passing laws that aimed to assimilate their native population in particular the Grand River Iroquois reservation. The Canadians sent troops onto the reservation to enforce these laws. Deskaheh and Decker came up with a plan to present their views of these actions to the League of Nations. Even though the League of Nations ended up favoring the Canadians; the fact that an Iroquois Chief made it to Geneva and made it into many newspaper headlines was a symbolic victory for the Six Nations. Unfortunately, historians have mostly ignored this journey. There are no books or articles about this special time.

The Global Water Crisis: Australia as a Case Study

Yoshimasa Takahashi

Faculty Sponsor: David Aagesen, Geography

Water is a crucial natural resource for human beings, not only because two-thirds of the human body consists of water, but also because many human activities, such as agriculture and manufacturing, require water. Many countries, however, are currently facing water scarcity, and more people will suffer from a shortage of water resources in the near future as the world's population grows. Although globally many people lack access to water resources due to geographical disadvantages, it is largely socially and economically marginalized people who are faced with water scarcity. Their agricultural, environmental, political, and economic hardships have resulted in inaccessibility to water resources. In spite of many negative impacts on Third World countries, water scarcity will potentially affect countries with adequate water resources as well. In Australia, where large parts of its lands are arid or semi-arid, water management and security are important national concerns. In response to a severe drought, the Australian government is promoting new technologies and policies that would save water reserves and secure water supplies for its citizens. This presentation provides an overview of the world's water crisis. It also analyzes Australian water policies and strategies, which contain important lessons for other countries about water security.

Session 3-G • Honors Capstone Projects: Session V — Newton 203

Session Chair: Ronald Herzman, English

Faculty Sponsor: Olympia Nicodemi, Mathematics

Apollo, Dionysus, and the Christ: The Violence of Modernity and Post-modernity from a Theological Perspective

Melissa Braaten

Faculty Mentor: Ronald Herzman

What does philosophy have to do with violence? This talk will explore different ways in which the violence of order (symbolized by Apollo) and the violence of chaos (symbolized by Dionysus) are written into modern and postmodern thought, from the perspective of contemporary theologians, who believe that Christianity truly escapes this violence.

Anxiety to Assertion: Theories of African American Power

Katie Pearce

Faculty Mentor: Beth McCoy, English

Throughout history, stereotypes and images of African Americans have been systematically constructed to maintain a system of oppression in America. Through an examination of the presence of these images, white privilege, and an offensive theory of African American power in Ralph Ellison's Invisible Man, Ishmael Reed's *Japanese by Spring*, and other works, it is clear that power inequities still exist today. With specific focus on higher education, I will discuss what I have learned, not only about my presumed object of study, but also what I have learned about myself and what I am entangled in.

A Memoir of Florence in the Spring of 2007

Alexandra Egan

Faculty Mentor: Ronald Herzman, English

I studied abroad for a semester in Florence, Italy. Based on that experience, I have written an extended non-fiction travel account in the tradition of American travel literature. In my account, I discuss my experience of living and studying in Florence and explore how the experience of living in a different culture has changed my perspective of the world as well as of myself. In this talk, I will read excerpts from my written account as well as discuss overlying themes that have emerged through the process of writing this piece.

Session 3-H • Honors Capstone Projects: Session VI — Newton 204

Session Chair: Gary Towsley, Mathematics
Faculty Sponsor: Olympia Nicodemi, Mathematics

An Ecology of Images: Looking at Cinematic Representations of Global Warming

Leah Sopchak

Faculty Mentor: Kenneth Cooper, English

This talk will begin by addressing the benefits film as a communicative medium holds in depicting and distributing messages about global warming. From there, focusing on documentaries about global warming and paying special attention to An Inconvenient Truth, I will try to identify notable visual trends and strategies employed by these films in their quests to transmit certain messages and/or impact audiences in particular ways. Looking at these trends, I will address the impacts these films have upon the encoded meanings of the visual signs they frequently and repeatedly use, as well as the impacts upon the ways in which audiences read these signs. Lastly, I will touch upon the direct relation between the production, distribution, and consumption of these cinematic images and climate change.

Social Capital, Communication and Undergraduate Success

Jared Chester

Faculty Mentor: Andrew Herman, Communication

This paper explores the role of communication in the development and utilization of social capital by undergraduate students on a college campus. Numerous studies have explored the role of social capital in a variety of contexts. One context that researchers have not studied is the college campus. Also, research is often silent on the effect of communication on social capital. This study addresses both these shortcoming by looking at undergraduate students' communication, social capital and various forms of collegiate success. Following Herman's (2005) model, the study looks at social capital through the lens of relational interpersonal communication. This study will attempt to apply his measures of social capital to collegiate undergraduate students to assess their overall level of success, as defined by student GPA, overall happiness, and overall hopefulness for the future.

The VIP Profiles: How I Add Value

Joseph Norman

Faculty Mentor: Mary Ellen Zuckerman, School of Business

What is with the phrase, "It's not what you know, it's who you know?" The VIP Profiles is an eZine co-founded by Joseph Norman and Benjamin DeGeorge. They have used this publication to connect with leaders in a variety of industries and organizations and stay in front of thousands of people on a weekly basis. Come learn how this eZine came to be, how it has impacted the community, what it can teach you, and what it truly means to follow the publication's core principle, "Add value first."

Session 3-I • Mathematics — South Hall 338

Mathematical Explorations I

Session Chair and Faculty Sponsor: Olympia Nicodemi, Mathematics

Cryptology in World War II: The Breaking of the Enigma Machine

Kathleen Raulli

The Enigma Machine was a device that encrypted messages for the Germans during the Second World War. The deciphering of the Enigma messages by mathematicians for the Allied forces was a major contribution to the Allied victory in the war. This presentation will start with an introduction to cryptography, the way in which messages are translated into secret code which is unreadable by outside parties, and then go into the specific mathematical techniques used by the Allied forces to break the Enigma Machine.

The Inner Workings of PageRank: How Google Finds What You're Looking For

Darryl Eychner

This presentation takes a deep, rigorous look at the mathematics behind Google's famous and successful PageRank search algorithm. In today's world, search engines need to be able to process tens of millions of queries per day, and at an efficient rate. PageRank works by assessing the similarities of one page to others, creating a network of millions of similar and dissimilar web pages. Using the principles of linear algebra, matrices, and probabilities, PageRank is able to achieve faster search times, reaching above and beyond previous search engine models.

Some Mathematical Advice before Planning Your Next Trip to the Moon

Andrew Knight and Devin Brennan

A pursuit curve is the path a predator will take when chasing down its prey, with the restriction that the predator is always moving directly toward the prey. As early as the 15th century, mathematicians like Leonardo da Vinci pondered what the solution to this type of problem would look like. A true solution couldn't be found until the development of calculus centuries later. The most basic type of pursuit curve problem is one in which the prey is moving in a straight line. Another variation is when the prey is travelling in a circle. Imagine that the moon is the prey and a rocket is the predator. Depending on the

rocket's speed, how long will it take to reach the moon, if ever? This talk will solve this problem and discuss the factors that will determine the success of the rocket's pursuit.

Josephus and Permutations
Jason Scott and Brandon Joa

Our presentation will explore how Josephus Flavius was able to save himself by solving a mathematical problem involving abstract algebra and combinatorics. Josephus and 40 of his fellow soldiers, trapped in a cave by Roman soldiers and preferring suicide to capture, made a circle and eliminated every 3rd man in the circle, until only Josephus was left. By illustrating directly, we will find where Josephus would have had to stand to be the last man left. Then, using more modern mathematical techniques, we will solve the same problem for various numbers of men starting off in the circle, and various values for how many men are skipped before one is eliminated.

Session 3-J • Philosophy — Welles 119
The Philosophy of W.V.O. Quine
Session Chair: Jerry Emmanuel
Faculty Sponsor: Larry Blackman, Philosophy

Quine on Possibility and the Laws of Logic
Jordan Rogers
Student Commenator: Alan Losh

In this paper, I offer a critique of the metaphysics of Willard Van Orman Quine, as exemplified in his classic papers "On What There Is" and "Two Dogmas of Empiricism". I begin with Quine's treatment of possibility in "On What There Is" and argue that Quine is too quick to dispense with unactualized possibility. I then move to his claims about the status of the laws of logic in "Two Dogmas", and argue that the laws of logic cannot be beliefs that are merely more central to our "web" than ordinary beliefs. That is, I argue that the laws of logic must have some special status. My arguments about the laws of logic lead me to some more general criticisms of Quine's coherence theory of truth.

Quine
Marc Johnson
Student Commentator: Hideaki Imai

In this paper I will examine some major elements of Quine's philosophy, namely his rejection of the analytic/synthetic distinction and his naturalization of epistemology. These positions reflect Quine's radical scientism. I will argue against both. First, I will propose that Quine's position on the analytic/synthetic distinction is ambiguous, and that his criticism fails to adequately support his outright rejection of the distinction. Secondly, I will argue against Quine's naturalized epistemology because of its rejection of normativity and justification.

Session 3-K • Political Science and International Relations — Welles 123
Gender and Migration in International Politics
Session Chair and Faculty Sponsor: Victoria Farmer, Political Science and International Relations

Resurgence of Slavery in the West: Analyzing Counter–Human Trafficking Policies in Europe
Kseniya Popov

Human trafficking is one of the most widespread human rights violations of the twenty-first century. Often described as modern-day slavery, it is the process of forcing, defrauding, or coercing individuals to perform labor for which they are not compensated. Human trafficking includes elements of kidnapping, sexual exploitation, labor exploitation, and migration. Trafficking in human beings is an egregious crime that often goes unnoticed; statistics on trafficked persons are difficult to obtain, and the trafficked individuals often perform work as farm laborers, house maids, and prostitutes—jobs that are invisible to mainstream society. Governments can take many steps to combat human trafficking within their own borders. However, the lack of concrete data about the issue, in addition to conflicting best practices provided by nongovernmental and intergovernmental organizations, lead decision makers to misidentify the issue as one of state sovereignty, leaving the burden of proof on the trafficked victim. This paper explores reasons for government reluctance to enact broad measures to identify and prosecute human trafficking within their borders. Counter–human trafficking policies in a number of Western countries are analyzed in order to identify the cultural and legal impediments to prevention, protection of victims, and prosecution of traffickers.

Reconciling Feminist International Relations Theory and Methodology: Can There Be Knowledge about "Women"?
Marie Puccio

Feminist international relations is a vibrant and diverse family of theories that uses gender as a category of analysis and questions the assumptions of conventional IR theories. Feminist IR scholars critique the tendency in conventional IR to essentialize—that is, to characterize a particular group of people as homogenous when in reality it contains a great deal of diversity, for example in age, race, and gender. Feminist IR scholars criticize mainstream IR theory for failing to account for divisions such as ethnicity, gender, and socioeconomic status. This presentation first explains core feminist IR theories. It then

examines the debates over the appropriate methodology for feminist IR theorists. While methodological approaches can take many different forms, this study compares two broad classifications, quantitative and qualitative. The challenge that faces feminist IR theorists today is to conduct their research and present their findings in a way deemed valid by scholars of different theoretical strands without making assumptions that violate their theories. Ultimately, this essay argues for a mix of quantitative and qualitative in feminist IR research.

Session 3-L • Sociology — Welles 121

Sociology Student Research Project Panel

Session Chair and Faculty Sponsor: James Bearden, Sociology

Student Voting Attitudes

Katherine Gerber

Additional students working on the project: **Danny Che, Caryn Doyle, Marie Ostrander, and Katherine Zale.**

Before every election, student voters are encouraged to "get out the vote!" Because there is an important presidential election this November, special attention is being paid to the "DotNet" generation, people in the age group of 18-29 (Who Votes, Who Doesn't, and Why). Research has shown that student voting patterns change with each generation, and we want to find out what pattern this November will bring. By looking at interests in specific issues, past voting trends, what type of candidates the "DotNet" generation prefers, how we express our political views, and what sort of media coverage affects our voting, we can better understand future voting patterns. We will present the results of a short survey of Geneseo student attitudes about voting.

Spiritual Change among College Students

Amy Callahan

***Additional students working on the project*: Shannon Doody, Stephen Genett, Lucas Groth and David Youhess**

How do college life and college experiences affect students' spirituality and faith? If college has had an effect on student's spirituality and faith, in what way does it do so? Are there specific differences between gender, major, and areas of study? We will report the results of a survey using questions from a subset of questions included on the *College Students' Beliefs and Values Survey* conducted by the Higher Education Research Institute at UCLA.

Technology & Social Relationships

Maria Chiarmonte

***Additional students working on the project*: Vivian Chiu, Maggie Mayer, Hannah McKee Laura Phonharath, and Daniel Sullivan**

How does modern technology influence and affect interactions among college students. Modern technology involves cell phone usage and internet communication, with consideration given to the use of other technology such as portable music players. One of the main focuses of our research is on the methods of communication used in the modern world to create and maintain social relationships. We've focused largely on research concerning use of the internet, instant messaging and cell phones. We will report the results of a survey of Geneseo student attitudes about the use of this technology and their social relationships.

The Social Experience of HIV/AIDS

Sabrina Schermerhorn

***Additional students working on the project*: Gabriella Cascone, Marilyn Hucks, and Trevor Kalman**

Based on interviews with clients at AIDS Rochester, we explore how the stigma associated with HIV-positive individuals affects their decisions and relationships within different social spheres (specifically: family, work, and friends). We describe how these decisions and relationships vary in regard to gender, sexuality, and race?

Session 3-M • School of the Arts — Welles 133

Senior Projects in Theatre

Session Chair and Faculty Sponsor: Melanie Blood, School of the Arts

Performing Trigorin in Chekhov's Seagull

Daniel Fenaughty

Dan will present his research and discuss his process in preparing the role of Trigorin. He will discuss the specific demands of this role and contrast it with other roles he has prepared this year. He will perform part of the end of Act 2.

Set Design for a Day in the Death of Joe Egg
Abby Kraai
Abby will analyze the play and present her renderings and discuss the process of production for the VegSOUP play A Day in the Death of Joe Egg.

The Real Fighting Irish: Playwrights vs. the World
Jonathan Davis
The lecture will be an opportunity for SUNY Geneseo to come and learn about the effects of Irish Dramatic Literature on our perceptions of drama and story. I will discuss the concept of the Irish playwright as a social critic, a trend setter, and trend breaker. I will discuss the common stylistic elements of the "cottage kitchen" (a famed setting distinctive of early Irish playwrights) I also plan to cover relevant social history surrounding Samuel Beckett and John Millington Synge and how their works are a reaction to the Ireland around them.

Session 3-N • School of Business — South Hall 340
Session Chair: Shuo Chen, School of Business

Open Access Journals: A Market Solution to Intellectual Property
Mariya Petrova
Faculty Sponsor: Shuo Chen, School of Business
The project applies economic analysis to a recent move towards providing readers free access to academic journals. New knowledge and scientific innovation have the characteristics of a public good, because there are spillover benefits that accrue to society rather than to the owners of the discoveries. Thus economic theory predicts that these goods will be underprovided. Intellectual property law is created to stimulate the creation of new knowledge, but it inevitably restricts access and increases the tendency for under-provision. However, in academic journals, there has been a move towards open access, a mechanism that coordinates the creation of and free access to the latest research results. This study will show that more efficient market and scientific outcomes will be reached through this mechanism of contribution.

Value vs. Growth and Small vs. Large: The Semiconductor Stocks
Jennifer Alex
Faculty Sponsor: Anthony Gu, School of Business
Understanding stock price movements is important to investors in the stock markets. The purpose of this project is to determine which, if any stocks, lead or signal market trends. To accomplish this purpose the relative performance of stocks with different features, such as value and growth, small and large, are examined along major market trends. Because stocks of different industries and sectors behave differently in terms of timing and growth rates, product and market conditions differ within each industry. In order to avoid misrepresentation, we chose one sector, the semiconductor sector, which may have the smallest difference in operation and market conditions, of stocks in each test for our purpose. We compare the performances of large against small, and value against growth stocks. The stocks are analyzed in two groups, size, measured by total assets, and value or growth, measured by the price to book value ratio. Then each group is divided into five quintiles, the first quintile in the size group includes the 20 percent smallest stocks…, the fifth quintile includes the 20 percent largest stocks. Then we conduct Granger causality test to identify which group leads the trend.

Fed Challenge Macroeconomic Analysis: It's April 2008; Where is the US Economy?
David Murphy
Faculty Sponsor: Leonie Stone, School of Business
Geneseo's 2008 Fed Challenge team will analyze the macroeconomic situation in the United States as of mid-April 2008. The team will consider the major economic indicators, GDP growth, inflation, unemployment, oil prices, the value of the dollar, and related factors. The analysis of this data will then be used to forecast both Fed policy and economic performance for the next quarter.

Session 3-O • FARI Documentary — Welles 138
FARI (Fighting Against Racial Injustice) Documentary
Session Chair: Tarik Kitson
Faculty Sponsor: Ellen Kintz, Anthropology
Tarik Kitson, Cortez Jones, Maurice Brown, Scott Snowden and Donte Ray
This session will show a documentary on Geneseo's curriculum, racial/bias Incidents, ghetto theme parties and black face.

CONCURRENT PRESENTATIONS
SESSION 4 • 4:20-5:35 PM

Session 4-A • Biology — Newton 201
Session Chair: Greg Hartvisen, Biology

Identifying Dexamethasone-Induced Changes in Clonal Populations of A431 Vulvar Carcinoma Cells through the use of Two-color DNA Microarray Analysis
Erwin Rusli
Faculty Sponsor: Jani Lewis, Biology

The down regulation or loss of E-cadherin has been shown to correlate with metastasis in many epithelial cancers. The vulvar carcinoma cell line, A431, is an example of an epithelial cell line that loses E-cadherin expression in response to treatment with dexamethasone (dex). Dex is a glucocorticoid used commonly as an immunosuppressant but has not been associated with carcinogenesis. In this talk I will be presenting data from our two-color DNA microarray analysis showing the modification E-cadherin as well as several other important genes such as Vimentin, STAT5b, and P63. DNA microarrays are a powerful tool because of their ability to monitor expression levels of potentially tens of thousands of genes simultaneously. Furthermore, the use of two-color analysis has allowed us to compare dex and non-dex treated A431 cells on one microarray chip as opposed to one-color analysis, which would not be able to show differential gene expression without the comparison of multiple chips. Statistical analysis of these microarrays was done with Agilent's Genespring GX program. Future work includes real time PCR to explore the involvement of these genes in the dex-related changes in the A431 cell line.

Detecting Mechanisms Driving Species Diversity Patterns: A Modeling Approach
Colin Kremer and E. Binney Girdler, Biology, Kalamazoo College
Faculty Sponsor: Greg Hartvigsen, Biology and Christopher Leary, Mathematics

Community ecologists seek to understand the forces driving patterns of species diversity within ecological communities. Traditional niche theory suggests that diversity patterns are explained by the adaptation of species to best fill a particular ecological niche. A different theory explaining diversity patterns, called neutral theory, has arisen in the last decade, and suggests that many diversity patterns can be reproduced entirely as the result of dispersal and chance mortality, with the assumption that all species have identical competitive abilities. To compare these two theories, a variety of new multivariate statistical methods have been developed to estimate the relative contributions of niche and neutral processes to determining spatial patterns of species diversity. To verify these methods, I have created an individual-based computer model in which plant species compete for resources on a grid and reproduce and colonize new habitats via dispersal. By controlling the shape of the dispersal kernels, as well as the species' competitive abilities, I can control the relative strength of niche and neutral forces driving diversity patterns within my model. Simulation data are then subjected to these new statistical methods to determine how well niche and neutral patterns are detected.

Chaos and Spatial Structure influence metapopulations' resistance to extinction
Dennis Ruppe
Faculty Sponsor: Greg Hartvigsen, Biology

Metapopulations are collections of small subpopulations of organisms where individuals move between patches. A pressing question within ecology is the stability of metapopulations in the face of extinction. Using a computer model, we investigate a metapopulation on a small-world ring lattice in which subpopulations grow according to the logistic growth equation. We introduce stochastic extinction events that wipe out the population of individual subpopulations, and then examine the ability of the metapopulation to resist total extinction at varying extinction rates. We create different metapopulations by varying dispersal levels, using a range of chaotic and nonchaotic growth rates, and manipulating the spatial structure. The extinction resistance is measured as the proportion of trials in which metapopulations become extinct. We find that small-world structures and chaotic growth rates each positively affect the ability of a metapopulation to resist extinction.

Modeling Invasive Plant Species
Joshua Wolosz
Faculty Sponsor: Greg Hartvigsen, Biology

An important contributor to the destruction of ecosystems is non-native invasive plant species. It has been estimated that 80% of the endangered species in the world today will be adversely affected by both invasive plant and animal species. I created a model using the C programming language to simulate the spread of a plant species based on one- and two- dimensional random walks. Diffusion constants were obtained and then used to try and better understand the characteristics of invasive plant species. I also found the optimal conditions for minimizing the diffusion of an invasive species.

Session 4-B • Chemistry, Physics and Astronomy — Newton 203

Session Chair: David Geiger, Chemistry

Toward the Synthesis of Pt(II) Diimine Complexes in Restricted Media

Phuong Dau

Faculty Sponsor: David Geiger, Chemistry

Pt(II) complexes are of interest in a number of rapidly developing areas. Square planar Pt(II) complexes which have a diimine ligand (phenanthroline or bipyridine analogues) or triimine (terpyridine analogues) in which the remainder of the coordination sphere is completed by a good sigma-donor ligand possess properties which make them good candidates for use in solar energy capturing devices, chemical sensors, photocatalysts, optical displays, and as probes of DNA structure. These properties include a long-lived, photoemissive excited state with good photostability. Interaction between two complexes at close distance results in excimer formation upon photoexcitation for many different Pt(II) diimine complexes. We wish to explore the effect of constraining the chromophore to an environment in which its motion is restricted and the interaction between complexes is maximized in the chosen medium. We plan to take advantage of the known gel-forming ability of cholesterol to prepare such a system. We will present our synthetic strategy and progress to date.

Solar System Perturbation

Scott Hopkins

Faculty Sponsors: Aaron Steinhauer, Physics and Astronomy and David Meisel, Physics and Astronomy

Using the computer program Mathematica 6.0 and its numerical solvers, a model of the solar system was created and examined for stability when perturbed by a close encounter with a passing star. The orbits, linear and angular momentums, and total energy of the system are plotted and analyzed to visually represent the perturbation's effects over many centuries. The chaos of the system is investigated using Lyapunov coefficients and other techniques.

The Trapezium: A Star Cluster Dominated by Four Very Massive Stars

Eli Hibit

Faculty Sponsors: Aaron Steinhauer, Physics and Astronomy and David Meisel, Physics and Astronomy

Using the numerical differential equation solvers included in Mathematica 6.0, I have modeled the dynamical behavior of the Orion Trapezium Cluster. Using current data as initial conditions, the most massive members of the star cluster are set into motion and modeled back 1000+ centuries and forward 1000+ centuries to cover the expected lifetimes of the most massive stars involved. Using the Lyapunov coefficients and results from other more complex methods, the stability of the cluster system and its individual stars will be determined.

Astronomical Photometry – A study of the Open Cluster NGC 2423

Dan Gettings

Faculty Sponsor: Aaron Steinhauer, Physics and Astronomy

This paper will present overview of the process of obtaining photometric data from raw telescopic images, and present the results of a photometric survey of the open cluster NGC 2423. Revised parameters of cluster age and distance were derived, and additional photometric members outside the previously reported central region were identified. This study is a part of the ongoing WIYN Open Cluster Study survey of this cluster.

Session 4-C • Communication — Milne 104

Session Chair and Faculty Sponsor: Atsushi Tajima, Communication

Japanese Animation: Lost in Translation What is Anime?

Alyxandra Vanderweel

Known as Japanese animation and Japanimation, anime has had a big impact on international thought. The term anime is derived from the French translation for animation. Anime has quickly become one of the most innovative sites of multinational video culture since it emerged in Japan's postwar media boom of the 1960s. Manga and anime are approached not only as a reflection of culture but as a part of the dynamic reproduction of culture in Japan and elsewhere. Different series range from the light-hearted Chobits to the search to the meaning of life in Ghost in the Shell. Anime is a multi-dimensional medium that goes beyond the Disney realm of good and evil. It explores the values and goals behind each character and the more adult nature of its content. The style and ideas behind the animation reflect contemporary Japanese culture. When anime is translated, or dubbed, into English for American audiences, some of the cultural values are not only dropped, but adapted to American values. This paper investigates the history of anime and how large corporations have 'Americanized' the content of anime in order to market it to the largest consumer base in the United States.

Cultural Control: America's Domination of the Mass Media

Jennifer Wrobel

No one doubts that America is the strongest global media force today. Hollywood films, American pop music, and even US-produced reality shows are everywhere. While researchers have attempted to provide reasons for this overwhelming presence, this research proposes an alternative reason: an environment that allows dominant America media to create a lack of American culture. This research argues how this structure uniquely benefits America. America is in the position to assert

assumed cultures onto other places, but no other country can rival that power and assert a cultural identity onto America. Many countries experience stereotypical backlash from unfair representation often by American media, but the reverse does not exist. Antiquated or false ideas often harm these countries from trying to rise above media stereotypes, and this creates a vicious cycle that is nearly unbreakable. However, America enjoys the contrary – America does not allow others to assert stereotypical unfair images. This "lack of peculiar culture" benefits America because America has an almost unlimited range of images which affords numerous different types of media commodities. All of this points to the fierce imbalance in the media today, and the importance of righting it.

Walt Disney or How I Learned to Stop Worrying and Love the Mouse

Jennifer Wrobel, Tim Garback, and Lauren Sonnenberg

In the world today, Disney characters are more recognizable than the world's leading political figures. Children are more apt to recognize Cinderella than Kofi Annan. Disney has succeeded at this by building a media empire that encompasses everything from television networks, movie studios, publishing companies and theme parks, only a small portion of the true Disney Empire. While introducing this successful industrial practice, this project also explores some crucial nature of Disney's cultural production, particularly its entertainment contents. For example, Disney's influence has spread worldwide by a variety of factors, including tailoring their outlets to cultural specifications (i.e. EuroDisney, Disneyland Tokyo, dubbed films). Here, the very notion of localization matters. Many Disney characters, such as Mickey Mouse, are ever-lasting characters across generations and geographies. To do so, Disney strategically utilizes their channels, from a printed logo to theme parks, to promote them to the widest audience possible across genders, generations, and geographies. By presenting such analyses, this project concludes that Disney is "the only one unique media conglomerate of this kind" in the current world. It proposes a new look at this iconic company, which we are all too familiar with.

Session 4-D • Communicative Disorders and Sciences — Welles 123

The Effects of Training on Language Sample Quality

Session Chair and Faculty Sponsor: Robert Owens, Communicative Disorders and Sciences

Katie Allen, Melissa Galvin, Katie Lyle, Lauren Szpakowski, and Kathryn Wind

Additional students involved in this research project: Erin Filippini, Marc Johnson, Andrew Kanuck, Jessica Kroecker, Stephanie Loccisano, Catherine Manoni, Jordan Nieto, Lynda Peterson, Catherine Sligar, Sara Starowicz, and Sara Young

Language sampling is a descriptive technique used to analyze the language of children and adults in both developmental and disordered language studies. Speech-language pathology students are instructed in both collection and analysis of non-standardized spontaneous language samples as part of their professional development throughout Communicative Disorders curriculums. The goal of the current study was to observe the effects of peer role-playing and an informative handout as classroom teaching techniques. After collecting language samples with only minimal guidance, students were given the experimental instruction and collected a second sample. The results showed significant change in some measures of language and no change in others. Results will be discussed in light of the teaching methods and the language analysis methods used.

Session 4-E • English — Welles 128

Shakespeare and Centrifugal Forces

Session Chair and Faculty Sponsor: Richard Finkelstein, English

Figures of Disconnect and Control: The Attitude towards Law inShakespeare's *Much Ado About Nothing* as Seen Through Dogberry, Don Pedro, and Leonato

Molly Kerker

In *Much Ado About Nothing*, law is not described explicitly. As a result, our most accurate judgments of law may come from studying characters who closely associate with it: Dogberry, Don Pedro, and Leonato. Whether upholding social law by controlling women, or serving as an agent of governmental law, these characters elicit an attitude towards law itself. Law is disconnected from and unable to communicate with its people, and can be obsessively controlling –attributes that invariably cause trouble.

Theatricality in the Taming of the Shrew

Elizabeth Celso

The paper discusses the element of theater in the formation of the characters Kate and Petruchio, and their lack of an essential core from which their actions flow. I sought to give evidence of the ambiguity present in these characters, and the contradictory conclusions that could be arrived at if their 'true' self was judged based on their actions. In summation, I arrived at decision that their construction was primarily theatrical, and that no "true" Kate or Petruchio exist at all.

Film Noir Archetypes in Shakespearean Appropriations

Michael Milillo

The essay demonstrates that Polanski makes use of the film noir tradition in reinterpreting Shakespeare's *Macbeth* for the screen. In addition to creating a spectacle of violence, as in film noir, he stages Macbeth's sequence of murders by borrowing visual techniques from that genre. The compatibility between the play and the 20th-century filmic tradition derives in part from film's reliance on Shakespearean conceptions when marketing itself to a popular audience.

Respondent: Patrick Gilchriest

Session 4-F • English — Welles 131

"The Very Best is the Old": Modernism, Domesticity and Tradition across Cultures in Willa Cather's Later Novels

Session Chair: Rebekah Weiler

Faculty Sponsor: Caroline Woidat English

Modernist Fluidities of Gender and Economics: Willa Cather's A Lost Lady and Virginia Woolf's Mrs. Dalloway

Ann Nicodemi

It is hard to imagine authors more variant in style than Willa Cather and Virginia Woolf. Cather's novels and short stories are typically linear, highly polished, and are usually from a single point of view; while Woolf's work is temporally irregular, at times purposefully rough, and written from multiple narrative perspectives. However, in their essays, "The Novel Démeublé," and "Modern Fiction," Cather and Woolf converge on several key ideas about how fiction should be written. Cather writes with concern about how the concepts of realism and materialism seem to be merging in literary criticism, and in "Modern Fiction", Woolf is equally concerned with the role that economics seems to have in current literature. In this essay, I will explore how for Cather and Woolf, in many ways, the economics of gender, are, in fact, fluid with the economics of wealth. Through examining two of their novels, A Lost Lady and Mrs. Dalloway, we can see how women's roles in modern society, as they become more adaptable, are parallel to the fluctuation of wealth that we see in modern times.

A Domestic Affair: The Value of Housekeeping In the novel Shadows on the Rock

Danielle Santoro

Willa Cather portrays housekeeping as a means to maintain culture and identity. As colonists in the new world, Cecile and her father work to perverse their French culture through domestic means. Cecile's dedication to domestic art creates order and regularity for her family and friends, which serves as a form of survival in Quebec's harsh conditions. While Cather views housekeeping as connected to art, during the period when she published the novel in 1931, housekeeping was also discussed in more scientific terms. Cather's dissatisfaction with such modern views of housekeeping stems from what critic Tricia Currans-Sheehan calls her "philosophy on art," as in 1927 Cather stated, "'art must spring out of the very stuff that life is made of'" (ctd. in The World of Willa Cather 46). While Cather regards housekeeping as a means to create a way of life, domestic art is not cultivated by scientific practices. Due to her value and emphasis on art, in Shadows on the Rock Cather emphasizes the value of domestic art to repudiate modern scientific ideas that discourage such artistic development.

"[Their] Way": Willa Cather's French Living

Mary Rosch

The 'How-To-Be-A-French-Woman' category of self-help books is becoming increasingly popular. There are many books out on how to live a better life by become elegant and stylish and fit without giving up sweets. Interestingly enough, there seems to be an early example of French how-to influence in early 20th century American literature by Willa Cather. Her novels display how-to qualities directly in Shadows on the Rock and The Professor's House. Cather holds the French up as a standard of living well in these novels, during a time when American culture was greatly changing. This draw to practice French culture instead of the American attitude of the 1920s can be seen as a Cather's response to the change. America has always tried to establish its identity as separate from the rest of the world, but it would seem, without the centuries of older, influential countries, American culture could not be what it is today. Through examining the connections between Cather and France, her novels, and today's French-How-To books it becomes obvious that American writers, Cather, and French-American writers, those who are penning today's 'How-To's,' look to the French as a source of social guidance.

Session 4-G • English and Foreign Languages and Literatures — Newton 204

Session Chair: Gary Towsley, Mathematics

This Is What We Do

Steven Shon and Jill Capewell

Faculty Sponsor: Kristen Gentry, English

Jill and I are both writers; we share a creative writing class and would like to do readings of some of our work. Nothing too fancy; give us a stool to sit on and a place to put it and we'll give a reading to anyone willing to lend an ear. Right now I have one piece in particular I'd like to read, tentatively titled "Underneath the Hangman's Tree". It's told as an account of an old

urban legend. Jill hasn't picked her piece for certain yet, but she has one, "Coffee and Catholicism", that's funny and endearing and all of that good stuff. We'll just be a couple of low-tech storytellers spinning our yarns.

Mathematics The Myth and Science of Shakespeare

Patrick Morgan

Faculty Sponsor: Gary Towsley, Mathematics

Although it is tempting to brand Shakespeare as a solitary genius who, through some over-fed muse, pulls beautiful words out of thin air, beneath all of his life-like characters and parallel plots, there lies something that is, more or less, concrete: cosmology. Certain assumptions about science and mythology act as the foundation of his works. In the realm of myth, Giorgio de Santillana, in Hamlet's Mill, proposes that the origin of the Hamlet myth, which has roots in Norse mythology, is akin to the sun's motion through the zodiac: One power wanes as another waxes. In the realm of science, Lucretius propounds his anatomist perspective, which holds such ideas as the impossibility of getting something out of nothing. I argue that these two fundamental concepts – the myth and the science – do more than just inform Shakespeare's work: They can be used as frameworks in literary theory that yield fruitful interpretations of Shakespeare. Although I will briefly mention Hamlet, my focus is on King Lear. More specifically, I will examine the interplay of the myth and science that informs Shakespeare's text, seeing these two facets as lenses that allow new perspectives on a much-read author.

The Critique of the Church and the Anonymous Author in The Life of Lazarillo de Tormes

Andrea Paulman

Faculty Sponsor: Lori Bernard, Foreign Languages and Literatures

My paper is about the critique of the church and the anonymous author's perspective in The Life of Lazarillo de Tormes. First, I explain that the work is considered the first picaresque novel and address a summary of The Life of Lazarillo de Tormes, which is about Lazarillo and his many owners that he learned valuable life lessons from, (including immoral ways of survival.) Though the author of the novel is anonymous, many critics agree that the person is a religious figure. The author of Lazarillo de Tormes illustrates religious members in an immoral manner by representing the clergy as violent, abusive, and greedy in contrast to the lower class, who were seen as the most caring people. This critique of the church influences the question, why would the author, a religious figure, write of the clergy in this negative light? The most likely answer to this question would be that the author wanted to voice their opinion on the sacerdotal class without receiving negative criticism and consequences from society at the time, such as from the church or the inquisition.

Session 4-H • Mathematics — South 338

Session Chair: Caroline Haddad, Mathematics

Image Compression and the Haar Wavelet Transform

Nicole Kingsley and Kevin Murphy

Faculty Sponsor: Caroline Haddad, Mathematics

The mathematical study of wavelets has many practical applications, including image compression, de-noising of audio files, and the analysis of seismic data. Using the Haar Wavelet Transform is a way to compress digital images so that they can be stored more efficiently, meaning that it will take less information to represent them while maintaining visually acceptable results. This process is as simple as averaging and differencing each string of data in a matrix representation of the image, namely the rows of that matrix, to form a new matrix. [At this step, all data can be completely recovered.] Any detail coefficient less than e, a nonnegative threshold chosen with regard to the ultimately desired compression ratio and to visual acceptability, is replaced by zero, thereby enabling further compression. After transmission, the inverse wavelet transform is applied to this altered data, and from the results, we are able to build an approximation of the original image. Our presentation will be based on the work done by Dr. Colm Mulcahy, a Professor at Spelman College in Atlanta, Georgia.

Investigation of inversions in Spherical and Hyperbolic Geometries

Arunima Ray

Faculty Sponsor: Jeff Johannes, Mathematics

In the Euclidean plane it is possible to reflect points across lines, and invert points inside a circle to the exterior and vice versa. An interesting property of inversions in the Euclidean plane is the preservation of angles: namely the angle between two curves is equal to the angle between the curves after they have been transformed. While inversions in Euclidean geometry have been studied widely, there has not been much analysis of them in non-euclidean geometries. We present the analogs of Euclidean inversions in the spherical and hyperbolic geometries, in addition to investigations of their respective properties.

Group Testing to Identify Cross-hybridized Duplexes of DNA Within Pools

Sarah Orbesen and Ellen Schmidt

Faculty Sponsor: Anthony Macula, Mathematics

Watson-Crick (WC) duplexes, joining complementary sequences of DNA in opposite orientations, are stable, energetically favorable double stranded segments of nucleic acid. The presence of non-WC, or cross-hybridized (CH) duplexes, produces less favorable, or more positive free energies (delta G). CH duplexes can be detected within a pool of hybridized DNA using the fluorescent dye SYBR Green I. By binding to the minor groove of the DNA helical structure, fluorescent emission is increased in the presence of CH duplexes. This separates pools into two groups that are distinguished by the presence or

absence of a positive fluorescent signal, and are labeled positive and negative, respectively. We determine a systematic method to determine whether pools are positive or negative, based on the relationship between temperature and absorbance. Using R-Squared to determine linearity, we can analytically predict the presence of CH duplexes within pools. We then use a group testing method to identify CH duplexes from the information gained from the pooling experiment.

Session 4-I • Mathematics — Welles 121

Mathematical Explorations II

Session Chair and Faculty Sponsor: Olympia Nicodemi, Mathematics

Mathematics and Voting Power

Sean Bergman

In our current system of electing the President, the Electoral College produces a disparity in voting power, that is, the probability that one's vote is decisive. Small groups of voters can have dramatic effects on the outcome of an election. This talk will explore the voting power of Florida in the 2000 election, as compared to the voting power in the other states using the Bhanzaf Power Index and Shapley-Shubik Power Index. Changes to the current system to equalize voting power will be proposed.

Fair Division

Sara Ryan and Jeff Johnson

You and a few friends are at a birthday party and it's time for cake and ice cream! But how do you make sure everyone gets a fair slice? Naturally, you would assume that the birthday girl or boy gets the biggest piece, but not in the world of mathematics…. This presentation will describe different situations of fair division and the theorems, formulas, and protocols involved in maintaining the peace. These protocols address whether the division is between two people or any arbitrary n people where everyone feels they received a fair piece; and these rules become more complicated depending on whether more than two people are involved in the division. We will use an edible demonstration to show how a cake can get divided fairly.

Insurance, Genetics, & Actuarial Ethics: A Twenty First Century Moral Dilemma

Liz Wrubel and Mary Charles

The future is here. We now have the ability to test for genetic diseases that may not show symptoms for years to come. This advance in technology brings about many issues pertaining to insurance. Should an individual who is predisposed to a costly genetic disease be charged significantly higher amounts for health and life insurance? Many solutions to these problems have been proposed, but few fully address the problems. This talk will discuss these issues and show actuarial models for various solutions that have been proposed, including an idea for a type of genetic insurance that will solve the moral issues in a way that is actuarially sound.

Session 4-J • Philosophy — Welles 138

Women in the New Testament and the Aeneid

Session Chair: Amy Druhm

Faculty Sponsor: Carlo Filice, Philosophy

Ashley Buffomante, Anna Mellace, and Alissa Race

It is evident in both works, the New Testament of the Bible and Virgil's Aeneid, that women are treated as inferior, although in different ways. The New Testament shows how while most in society perceived women as inferior, Jesus did not and was trying to preach that just by setting an example, while it also shows the narrow expectations of women in Paul's letters. Both relate to the Aeneid in the way that women are not treated like men, besides with Jesus. According to Paul, women are responsible to their husbands, they must remain under a man's authority, they must be quiet and submissive, and they must act in the way of Paul's interpretations of how God would want women to act. In the Aeneid, women are shown to be inferior for being irrational and almost silly, especially when it comes to love and beauty. I believe the inferiority that exists in the New Testament is more seriously taken than in the Aeneid. Although this may be the case, it is important to realize that women have been treated unfairly and inferior across time, for whatever reason, which is clearly portrayed in these two works.

Session 4-K • Philosophy — Welles 119

Plato and Aristotle on Universals

Session Chair: Matthew Rooks
Faculty Sponsor Larry Blackman, Philosophy

A Most Marvelous Sophist: Forms and the Craftsman in *Republic X*

John Slater
Student Commentator: Justin Hagstrom

In Book X of his *Republic*, in a passage that has exerted a great influence on the imagination of the West, Plato speaks of art as a merely 'imitative' endeavor and expels dramatic poets from his ideal City. Philosophy alone, which treats of eternal Ideas and not their shadows, is construed as an ultimately worthy practice. Plato's presentation of 'the arts', however, is problematic, and leads him to make untenable claims with regard to the Forms. What if *Republic* X is to be understood less as a (serious) metaphysical critique of art than a thinly veiled polemic against the sophists, who merely 'imitate' true philosophy and its appropriate form, that is, the Platonic dialogue? The essay explores evidence in support of this reading and suggests that Plato's attempt to promote even his own brand of philosophic dialogue vis-à-vis the sophists issues in both an awkward set of views on art and an over-valorization of the Forms.

A Critique of Aristotle's Third-Man Argument

Jessica Gilmore
Student Commentator: Anna Hope

This paper argues against Aristotle's Third-Man Argument as a valid criticism of Plato's Theory of the Forms. The argument is based on the idea that Aristotle misunderstood Plato's theory and, therefore, created a straw man argument. First, I explain Plato's theory and discuss universals and particulars in some detail, theorizing as to how and why Plato developed this theory the way he did. I then discuss the aspect of Plato's theory that is attacked specifically by the Third-Man Argument and go on to describe the basis of Aristotle's attack. I bring to a close by identifying the weak points of the argument and the ways in which it represents Aristotle's misunderstandings of his teacher, therefore leading to the conclusion that his argument is not valid.

Session 4-L • Theater — Welles 133

Shakespeare in Performance

Session Chair and Faculty Sponsor: Melanie Blood, School of the Arts

The students have all taken Acting 4: Period Styles and study Shakespearean acting. They will perform four scenes and discuss the most important elements of transforming Shakespeare's plays from the page to the stage.

Two Gentlemen of Verona

Angelis Duarte and Gary Ciuffetelli,
A scene from *Two Gentlemen of Verona*

Midsummer Night's Dream

Norma Butikofer and Jamal Adbunnasir
A scene from *Midsummer Night's Dream*

Taming of the Shrew

Amanda Serianni and Jonathan Davis
A scene from *Taming of the Shrew*

The Tempest

Gavin Price, Danny Carroll, and Dave French
A scene from *The Tempest*

Session 4-M • School of Business — South Hall 340

Applying Business Research Skills to Real-World Problems

Session Chair and Faculty Sponsor: Paul Scipione, School of Business

The Uneven Geographic Distribution of Health Care Quality in the USA

Greg Feltes
Student Commentator: Brian Totman

Greg Feltes, Brian Totman and Dr. Scipione have been working with the Editors of U.S. News & World Report to analyze where the centers of medical excellence are in the United States, based on the annual surveys conducted by USN&WR. Dr. Scipione and his students will be comparing data from 2002 vs. 2007 to test a hypothesis that the top medical centers are also moving

south and west to match trends in where Americans are choosing to live. Their analyses will be featured in the upcoming annual health care edition of USN&WR in July 2008. The presentation includes color chloropleth statistical maps created using ArcView mapping software.

Measuring Quality-of-Life in the United States

Joel Sovie

Faculty Commentator: Paul Scipione, School of Business

Joel Sovie has been working with Dr. Scipione for nearly three years on a multivariate quantitative model of quality-of-life in the United States. Their QLAM (Quality of Life Analytical Model) will be explained and then demonstrated across more than 600 local markets in the United States, based on the responses to hundreds of consumers about what they are looking for in an "ideal" community.

Western New York Vital Signs

David Sikora

Faculty Commentator: Ellen Zuckerman, School of Business

David Sikora has been working with Dr. Scipione on their forthcoming book, *Western New York Vital Signs: Past, Present & Future*, a statistical almanac and factbook of trends in the demography, economy, business, government and social landscapes in the 17 counties of Western New York -- a total of more than 10,000 individual statistics. The purpose of the forthcoming book, and selected findings, will be presented. The SUNY Geneseo School of Business will be publishing and selling WNYVS in Fall 2008.

Session 4-N • Anthropology — Welles 140

Field Research Projects in Madagascar: Assessing the Unique Flora and Fauna in an Ecological Hotspot

Tentative Session Chair: Dr. Wright, SUNY Stony Brook

Faculty Sponsor: Anne Eisenberg, Sociology

The Effect of Stream Flow Rate on Frog Abundance and Species Research: Learning to do Research in an Outdoor Classroom

Lindsey Campana

Madagascar is home to over 300 anuran species. Many of these endemic species occupy niches in streams because these habitats provide suitable conditions for reproduction and predation. This study investigates the effect of stream flow rate on anuran abundance and species richness. A census was conducted at two secondary forest streams in Ranomafana National Park over a two week period. Mariavaratra, characterized by various flow rates, had the greatest abundance near cascades whereas Sakaroa, characterized by stagnant current, had the greatest abundance near still water. Species richness was the same in both streams. Thus, stream flow rate may not be a deciding factor in anuran abundance and species richness. Different reproductive modes and predator avoidance strategies may have a more direct effect on spatial occupation.

Comparison of Flora Surrounding Two Streams in Ranomafana National Park: Deforestation in Madagascar

Angie Ip

The rainforests of Madagascar is one of the world's greatest biodiversity hotspots. The forests are subject to much logging and slash-and-burn; less than 20% of the island's original vegetation remains intact. Differing degrees of disturbance result in varying secondary growth, but the effects of this disturbance on the floral composition are not well studied. In Fall 2007, during a Study Abroad program in Madagascar, I conducted a survey of the flora alongside two streams located in the secondary forest. Different levels of anthropogenic change have affected both study sites in the past. These study sites exhibited disparate floral compositions; an invasive plant was found to be highly abundant at one site and hardly present at the other site. The difference in the presence of Psidium, commonly known as guava, in these areas was due to their particular disturbance histories. The site with a history of greater disturbance was more susceptible to invasion and formation of monolithic stands by Psidium.

Density and Dispersion of Traditional Medicinal Plant Species in Primary and Secondary Forests: Implementation of Local Programs

Susan Cerny

Madagascar is an island of high special diversity and endemism making it one of the world's biodiversity hotspots. Of its estimated 12,000 plant species, 80% are endemic. Throughout its history, Madagascar's unique environment has been devastated by practices such as tavy and logging. Today only 10% of its original rain forest remains. Within the Malagasy culture there is a strong reliance on plants for their use in traditional medicine. It is estimated that 80% of all plant species on Madagascar are utilized for their medicinal benefits making them an important and unique cultural resource. For effective conservation initiatives to be implemented, it is important to understand how widespread anthropogenic disturbances change floral composition, affecting key medicinal plant species of biodiverse lands. The study considers the effects of selective logging on four traditional medicinal plant species in Madagascar's Ranomafana National Park and aims to increase awareness concerning the multifaceted value in preserving medicinal plants.

Forest Cover and Water Quality in Pristine, Town and Edge Locations: Madagascar and Climate Change

Breana Behrens

Major deforestation in Madagascar is essential for the formation of rice paddies; however the Malagasy government and environmental organizations are in the midst of an initiative to create more national parks. This specifically has made three ecologically distinct locations; pristine forest, edge of national parks and towns. Water quality and forest cover was assessed in these places in order to determine the effects of deforestation on natural processes. It is essential to evaluate the role deforestation plays in maintaining environmental homeostasis in the face of current climate change, especially as more and more devastating cyclones hit the fragile island.

SATELLITE EVENTS

6:30PM - 8:30PM

Second Annual SUNY Geneseo Bio-Olympics **Integrated Science Center**

Sponsored by the Biology Department the Bio-Olympics consist of six to ten events ranging from practical skills (calculations, pipetting accuracy) to useless (cockroach races). Teams of four biology majors (freshman to seniors are encouraged to participate) compete for fame and fortune (gift certificates).

7:00PM - 8:30PM

School of Business Annual Spring Lecture **Newton 202**

Geneseo Alum and their Entrepreneurial Careers

Joe Bucci, American Rock Salt and Greg O'Connell, Real Estate Developer with Pier 41 Associates

Two Geneseo alumni will reminisce about their time at Geneseo and discuss their entrepreneurial activities since graduation.

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