2015

2015 Transformations Program

State University of New York at Cortland

Transformations

A Student Research and Creativity Conference

Friday, April 17, 2015

Schedule of Events and Abstracts

SUNY Cortland

Transformations: A Student Research and Creativity Conference

April 17, 2015
Sperry Center
SUNY Cortland

Schedule of Events

12:30-1:20 p.m.	Keynote Address Sperry Center, Room 204 *"From Physical Education to Kinesiology: Physical Activity for Quality of Life"* **Diane L. Gill '70**, Ph.D. Professor of Kinesiology; University of North Carolina at Greensboro
1:30-2:30 p.m.	Concurrent Sessions I
2:30-3 p.m.	Poster Session A Sperry Center, 1st Floor Hallway
3-4 p.m.	Concurrent Sessions II
4-4:30 p.m.	Poster Session B Sperry Center, 1st Floor Hallway
4:30-5:30 p.m.	Concurrent Sessions III

Refreshments will be available 2:30-4:30 p.m. in Sperry Center, first floor food service area.
PLEASE NOTE: Food and beverages are NOT allowed in classrooms.

Cover design by Reneé Novelli, Junior, New Media Design Major, for Martine Barnaby's Graphic Design I Class, Art and Art History Department.

Transformations: A Student Research and Creativity Conference is an event designed to highlight and encourage scholarship among SUNY Cortland students. Our scholarly work is crucial to who and what we are as individuals and as an institution. This day is an attempt to help our students and the general public understand and appreciate what we do, to draw students into the intellectual life and the excitement of scholarly work, and to publicize the accomplishments of our students.

Presentations will be made by students and faculty mentors. In addition to attendance by members of the campus community, invitations have been extended to area high school students and their advisors, our elected representatives, and to the Cortland community at large.

Support for *Transformations* has been received from the President's Office, the Provost and Vice President for Academic Affairs Office, and Auxiliary Services Corporation.

Our appreciation to the Transformations Committee:

R. Bruce Mattingly, Arts & Sciences (Chair)

Martine Barnaby, Art and Art History

Philip Buckenmeyer, Kinesiology

Patricia Conklin, Biological Sciences

Daniel M. Harms, Library

David Miller, Geography

Lisa Mostert, Campus Technology Services

Charlotte Pass, Literacy

Kevin Pristash, Campus Activities

Special thanks to the Student Alumni Association
for providing volunteers for *Transformations*.

KEYNOTE ADDRESS

12:30-1:20 p.m.

Sperry Center, Room 204

"From Physical Education to Kinesiology: Physical Activity for Quality of Life"

***Diane L. Gill '70**, Ph.D.*

Diane L. Gill, Ph.D., is a professor in the Department of Kinesiology at the University of North Carolina at Greensboro (UNCG). She received her M.S. and Ph.D. degrees from the University of Illinois, and her B.S.Ed. (Physical Education) from SUNY Cortland. She held faculty positions at the University of Waterloo and the University of Iowa before moving to UNCG where she has served as Associate Dean of the School of Health and Human Performance, Head of the Department of Exercise and Sport Science, Director of the Center for Women's Health and Wellness, and was the Linda Arnold Carlisle Distinguished Excellence Professor of Women's and Gender Studies from 2010-2014.

Dr. Gill is the former editor of the *Journal of Sport and Exercise Psychology* and of *Quest,* and currently is Editor of the *Women in Sport and Physical Activity Journal.* She is a fellow in several professional organizations, including the National Academy of Kinesiology, American Psychological Association (APA), and the American College of Sports Medicine (ACSM). She has served as president of Division 47 (Exercise and Sport Psychology) of the American Psychological Association, of the North American Society for the Psychology of Sport and Physical Activity (NASPSPA), and of the Research Consortium of AAHPERD.

Dr. Gill's research emphasizes social psychology and physical activity, with a focus on physical activity and psychological well-being. Her scholarly publications include the text, *Psychological Dynamics of Sport and Exercise*, several book chapters, and over 100 journal articles.

CONCURRENT SESSIONS I

1:30-2:30 p.m.

Sperry Center, Room 104

Moderator: Sharon L. Todd, Professor and Chair, Recreation, Parks and Leisure Studies

The Effect of Heroin Self-Administration on Perineuronal Nets using an Animal Conflict Model of Abstinence and Relapse

Presenter: *Amanda M. Shaw, Senior, Psychology*
Faculty Mentor: *Joshua A. Peck, Psychology*

Effect of Weight Loss on Wrestlers' Mood and Motivation

Presenter: *Jon Yezzi, Senior, Coaching and Psychology*
Faculty Mentor: *Katherine Polasek, Kinesiology*

Capturing Parents' Perspectives for a Youth Needs Assessment

Presenters: *Kyle Boeltz, Graduate, Recreation/Environmental & Outdoor Education*
Thomas Eickelberg, Graduate, Recreation/Environmental & Outdoor Education
Esther VanGorder, Graduate, Recreation/Management of Leisure Services
Faculty Mentor: *Sharon L. Todd, Recreation, Parks and Leisure Studies*

Sperry Center, Room 106

Moderator: Timothy Delaune, Assistant Professor, Political Science

Moot Court Oral Argument Demonstration: *Somerville and DeNolf v. Olympus*

Presenters: *Taylor Cain, Junior, Political Science*
Samantha Cirillo, Senior, Criminology/Political Science
Kyle Davis, Junior, Political Science
Benjamin Hobbs, Junior, Political Science
Faculty Mentor: *Timothy Delaune, Political Science*

Sperry Center, Room 204

Moderator: Erik Lind, Associate Professor, Kinesiology

The Impact of Dehydration on Muscular Strength in College Age Males

Presenter: *Alex Bossert, Senior, Exercise Science*
Faculty Mentors: *Deborah Van Langen, Kinesiology*
Erik Lind, Kinesiology

The Effect of Aerobic Exercise Intensity Levels on Memory

Presenter: *Ashley N. Vogler, Senior, Exercise Science*
Faculty Mentors: *Erik Lind, Kinesiology*

An Investigation of Types of Stretching on Selected Performance Measures, Range of Motion, and Self-Efficacy

Presenters: *Laura R. Johansson, Senior, Exercise Science*
Hannah M. Smith, Senior, Exercise Science
Faculty Mentors: *Erik Lind, Kinesiology*

Effects of an Ankle Brace on Agility, Power, and Psychological Measures

Presenter: *Michael J. Redmond, Senior, Exercise Science*
Faculty Mentors: *Erik Lind, Kinesiology*

Sperry Center, Room 308

Moderator: James Miller, Lecturer, History

History at Work: Interns in the Community

Presenters: *Catherine Faughnan, Senior, Political Science*
Denise Seidler, Senior, Art History
Kathryn Thomas, Senior, History
Faculty Mentor: *James Miller, History*

POSTER SESSION A

2:30-3 p.m.

Sperry Center, 1st Floor Hallway

Histological Assessment of Lung Edema in Sepsis

Presenters: *Gabriella M. Pasquale, Senior, Biology*
Tara A. Sweeney, Junior, Biomedical Sciences
Faculty Mentor: *Louis A. Gatto, Biological Sciences*

Using Sequencing and LC-MS/MS Proteomics to Target Reverse Beta Oxidation Functional Diversity in a Hexanoic Acid Producing Bioreactor

Presenter: *Katherine Woodward, Senior, Chemistry*
Faculty Mentor: *Jeffrey Werner, Chemistry*

Valley Glacier Response to Late Holocene Climate Change: The Role of Glacier Geometry and Forefield Characteristics in Influencing the Magnitude of Advances

Presenter: *Shawn Taylor, Senior, Geology*
Faculty Mentor: *David Barclay, Geology*

Determining the Impact of Road Salt Application to a Small Creek, a Case Study in the Trout Brook, NY

Presenter: *Rachel Perry, Senior, Geology*
Faculty Mentor: *Li Jin, Geology*

Do Cancer Clusters Actually Exist, and if so, what Demographics Have an Effect on Their Formation?

Presenter: *Kaileen Puppo, Senior, Business Economics/Communication Studies*
Faculty Mentor: *Kathleen Burke, Economics*

Differences in Personality between Academic Majors

Presenters: *Zachary T. Longo, Senior, Psychology*
Kathy Tota, Senior, Psychology
Nansi E. Has, Senior, Psychology
Faculty Mentor: *Margaret Anderson, Psychology*

Differences in Assertiveness and Gender Roles between Physical Education and Psychology Majors at SUNY Cortland

Presenters: *Kathlyn Parrish, Senior, Psychology*
Catherine Miller, Senior, Psychology
Faculty Mentor: *Margaret Anderson, Psychology*

The Effects of Mindfulness on Attention and Working Memory

Presenters: *Audrey Adams, Senior, Psychology*
Andrew Leverton, Senior, Psychology
Kyle Delmuro, Class of 2014, Psychology
Faculty Mentor: *Raymond Collings, Psychology*

The Effect of Heroin Self-Administration on Perineuronal Nets using an Animal Conflict Model of Abstinence and Relapse

Presenters: *Nadia Amin, Junior, Psychology*
Cassandra E. Stubbe, Senior, Psychology
Claire Toal, Junior, Psychology
Faculty Mentor: *Joshua A. Peck, Psychology*

An Analysis of Polyploid and Diploid Subspecies of *Arisaema triphyllum

Presenter: *Nicholas Ayvazian, Senior, Biology*
Faculty Mentor: *Steven Broyles, Biological Sciences*

***Binding Affinity Characterization of NahG for its Native Substrate and Nicotinic Acid Substrate Analog**

Presenter: *Weifeng Zhen, Senior, Biochemistry*
Faculty Mentor: *Katherine Hicks, Chemistry*

***Reverse Beta Oxidation Functional Diversity in Metagenomic Analysis of a Hexanoic Acid Producing Bioreactor**

Presenter: *Dylan Kahlstorf, Junior, Biochemistry*
Faculty Mentor: *Jeffrey Werner, Chemistry*

***Wealth Patterns in Byzantine Anatolia**

Presenter: *Toni Bucklaew, Class of 2014, Archaeology/World Archaeology*
Faculty Mentor: *Sharon Steadman, Sociology/Anthropology*

* Denotes students who received 2014 Undergraduate Research Council Summer Research Fellowships.

CONCURRENT SESSIONS II

3-4 p.m.

Sperry Center, Room 104

Moderator: Peggy Murphy, Lecturer, Political Science

Why Did They Stay?
Presenter: *Mark Surico, Senior, Political Science*
Faculty Mentor: *Peggy Murphy, Political Science*

How Politics, Capitalism, and Race Play a Role in Disaster Policy
Presenter: *Mecca Snipe, Senior, Political Science/Africana Studies*
Faculty Mentor: *Peggy Murphy, Political Science*

The Impact of Media during Hurricane Katrina
Presenter: *Kieran Barber, Senior, History*
Faculty Mentor: *Peggy Murphy, Political Science*

Sperry Center, Room 105

Moderator: Laura J. Davies, Assistant Professor, English

Winners of the 2014 SUNY Cortland Outstanding Writing Awards

Fashion and Textiles in the Work of Antoine Watteau
Presenter: *Emilee Smith, Senior, Studio Art*
Faculty Mentor: *Susan Logan, Art and Art History*

21 Boxes
Presenter: *Sara Sampson, Sophomore, Professional Writing*
Faculty Mentor: *David Franke, English*

Video Games and Youth Violence
Presenter: *Erin Corsi, Freshman, Pre-major*
Faculty Mentor: *Jaclyn Pittsley, English*

American Lullaby: Blue
Presenter: *Jahniece McCollum, Freshman, Economics*
Faculty Mentor: *Laura Davies, English*

Flutter and Crash
Presenter: *Leela Mahon, Sophomore, Adolescence Education-English*
Faculty Mentor: *Laura Davies, English*

Profs Run through the Red Dragons
Presenter: *Jason Martinez, Sophomore, Sport Management*
Faculty Mentor: *Matthew Seyfried, Sport Management*

Down the Rabbit Hole *and* **The Mistakes You Made**
Presenter: *Iva Markicevic, Junior, Adolescence Education-English*
Faculty Mentor: *Laura Davies, English*

Sperry Center, Room 106

Moderator: Henry Steck, Distinguished Service Professor, Political Science

Crises Affecting the European Union: Policy Dilemmas and Challenges

Presenters: *Stephen Best, Junior, Political Science*
Michael Braun, Sophomore, Political Science
Lyndsey Dolan-King, Senior, International Studies
Lizaury Rodriguez-Marine, Senior, Political Science/International Studies
Faculty Mentor: *Henry Steck, Political Science*

Sperry Center, Room 204

Moderator: Lin Lin, Associate Professor, Childhood/Early Childhood Education

How to Improve Students' Working Memory

Presenter: *Stephanie Roessel, Senior, Childhood Education*
Faculty Mentor: *Lin Lin, Childhood/Early Childhood Education*

More than Just a Shoe Store

Presenter: *Ashlee Prewitt, Graduate, Non-Matriculated*
Faculty Mentor: *Tara Mahoney, Sports Management*

Developing a Community Resource as a Learning Laboratory in Geology

Presenter: *Sophie-Louise Jackson, Senior, Geology*
Faculty Mentor: *Timothy Conner, Geology*

Stem Cell Therapy to Treat Wounds in Racehorses

Presenter: *Eric Plante, Senior, Biomedical Science*
Faculty Mentor: *Theresa Curtis, Biological Sciences*

Sperry Center, Room 205

Moderator: Christopher McRoberts, Distinguished Professor, Geology; Director, Undergraduate Research Council

***Study of the Unknown Extracellular Polymeric Substances (EPS) Contained within *Legionella pneumophila* (Lpn) Biofilms**

Presenter: *Casey Peterson, Senior, Biology*
Faculty Mentor: *Christa Chatfield, Biological Sciences*

***Institutional Linkages to Foster Employment through the Creation of New Business Enterprises**

Presenter: *Thomas Lee, Senior, Economics*
Faculty Mentor: *German Zarate, Economics*

***Effects of Mindfulness, Acceptance, & Commitment (MAC) Training in College Runners**

Presenter: *Ashley Martin, Senior, Psychology*
Faculty Mentor: *Jeffery Swartwood, Psychology*

***Physical Activity Participation Patterns among Latinos in the Northeast**

Presenter: *Karen Martinez, Senior, Exercise Science*
Faculty Mentor: *Katherine M. Polasek, Kinesiology*

* Denotes students who received 2014 Undergraduate Research Council Summer Research Fellowships.

Sperry Center, Room 304

Moderator: Gigi Peterson, Associate Professor, History

The Sundering of the Soviet Union: Rural Isolation vs. Urban Growth during Josef Stalin's Five-Year Plan and the Famine of 1932-33

Presenter: *Dan Margo, Senior, History-Adolescence Education Social Studies*
Faculty Mentor: *Scott Moranda, History*

Nobility during the French Revolution

Presenter: *Michael Pallassino, Class of 2014, History*
Faculty Mentor: *Scott Moranda, History*

The Not-So-Dry Years of Prohibition in Cortland

Presenter: *John Swayne, Senior, History-Adolescence Education Social Studies*
Faculty Mentor: *Gigi Peterson, History*

POSTER SESSION B

4-4:30 p.m.

Sperry Center, 1st Floor Hallway

Belize: Art, History, and Culture
Presenter: *Kelli Grossmann, Sophomore, Studio Art*
Faculty Mentor: *Jeremiah Donovan, Art and Art History*

Getting It Up: Improving the HPV Vaccine Uptake among Male College Students
Presenter: *Samantha Glassman, Senior, Community Health/Wellness Promotion*
Faculty Mentor: *Jill Murphy, Health*

Macro Fungi of Central New York
Presenter: *Michael Goldman, Graduate, Recreation/Environmental and Outdoor Ed.*
Faculty Mentor: *Timothy Baroni, Biological Sciences*

The Use of Viability-Staining Reagents in Quantifying Microbes in a Solution or Biofilm
Presenter: *Kadeeja Fredankey, Senior, Biomedical Sciences*
Faculty Mentor: *Christa Chatfield, Biological Sciences*

Development of Biosensor for Rapid Detection and Study of Neurotoxins
Presenter: *Nicholas Puoplo, Senior, Biological Sciences*
Faculty Mentor: *Theresa Curtis, Biological Sciences*

Prevention of Arboviruses in Onondaga County through Mosquito Surveillance and Control
Presenter: *Jessica Swindon, Senior, Conservation Biology*
Faculty Mentor: *Larry Klotz, Biological Sciences*

Density Functional Theory Analysis for the Design of Group 10 Transition-Metal Catalysts
Presenter: *Matthew Ellis, Junior, Chemistry*
Faculty Mentor: *Karen Downey, Chemistry*

Determination of the Binding Affinity for Bicyclic Compounds *to Pseduomonas putida* NahG
Presenters: *Gregory Simone, Senior, Chemistry*
Samuel Lothridge, Senior, Biochemistry
Faculty Mentor: *Katherine Hicks, Chemistry*

Biochemical Investigation of the Determinants of NahG Binding Affinity
Presenters: *Crissana Christie, Junior, Biomedical Sciences*
Joseph Kraai, Junior, Biochemistry
Faculty Mentor: *Katherine Hicks, Chemistry*

Understanding the Characteristics of Ophiolitic Mylonites and their Formation
Presenter: *John Mythen, Senior, Geology*
Faculty Mentor: *Gayle Gleason, Geology*

Psychometrically Evaluating the Potential of Social Acuity Stimuli

Presenters: *Frederik Tremblay, Junior, Psychology*
Kelly Taveras, Senior, Psychology
Megan Whitbeck, Junior, Psychology
Jessica Herbst, Junior, Psychology
Vincent Scardino, Senior, Psychology
Jennifer Scheu, Senior, Psychology
Candice Jaimungal, Sophomore, Psychology

Faculty Mentor: *Leslie Eaton, Psychology*

Determinants of College Students' Time Needed to Complete a Reading Comprehension Test

Presenters: *Mikayla Drymond, Junior, Psychology*
Lauren Vita, Sophomore, Psychology

Faculty Mentor: *Benjamin J. Lovett, Psychology*

CONCURRENT SESSIONS III

4:30-5:30 p.m.

Sperry Center, Room 104

Moderator: David Franke, Professor, English

Writers Read: Performances from the Professional Writing Program

Presenters:
Nick Avossa, Senior, Professional Writing
Joshua Citron, Senior, Professional Writing
Hailey Clark, Senior, Professional Writing
Alexandra Cummings, Senior, Professional Writing
Heather Fox, Senior, Professional Writing
Rachel Friedman, Senior, Professional Writing
Joshua Hartnett, Senior, Professional Writing
Craig Hoberman, Senior, Professional Writing
Kathryn Monno, Senior, Professional Writing
Meaghan Mulvana, Senior, Professional Writing
Sarah Nickerson, Senior, Professional Writing
Daniel O'Connell, Junior, Professional Writing
Justin O'Hea, Senior, Professional Writing
Jacob Richter, Senior, Professional Writing
Patricia Rosetti, Senior, Professional Writing
Cody Stetzel, Senior, Professional Writing

Faculty Mentors:
Victoria Boynton, Professor, English
David Franke, Professor, English

Sperry Center, Room 105

Moderator: Judith Van Buskirk, Associate Professor, History

History 101, An Entertainment: Waiting for Land Ho!; the Second Thanksgiving; The Signal; The Ladies Declare

Presenters:
Hugh Anderson, Graduate, History
David Boyle, Senior, History
Andrew Doane, Junior, History
Peter Dohan, Junior, History
Ian Donaghue, Senior, History
Haley Georgia, Senior, History
Claire Leggett, Freshman, History
Hannah Mekeel, Freshman, English
Justin Neretich, Junior, History
Derrick Pratt, Senior, History
Casey Silidjian, Junior, Musical Theater
Ian Tarbania, Senior, History
Ja'Quawn Turner, Sophomore, Economics
Xavier Campbell, Junior, Political Science
Myriam Benincore, Lecturer I, Modern Languages
Laura Gathagan, Assistant Professor, History
Girish Bhat, Professor, History

Faculty Mentor:
Judith Van Buskirk, History

Sperry Center, Room 205

Moderator: Christopher McRoberts, Distinguished Professor, Geology; Director, Undergraduate Research Council

***Conducting a Needs Assessment of Tribal Children in Kodaikanal India**

Presenter: *Nicole Miller, Senior, Community Health*
Faculty Mentor: *Jena Nicols Curtis, Health*

***Metabolic Cost of Supported Weight Treadmill Running**

Presenter: *Adam Lowe, Senior, Exercise Science*
Faculty Mentor: *James Hokanson, Kinesiology*

***Predator-Prey Interactions of Invading Worms**

Presenter: *Allison Osmundsen, Senior, Biology*
Faculty Mentor: *Peter Ducey, Biological Sciences*

* Denotes students who received 2014 Undergraduate Research Council Summer Research Fellowships.

Abstracts

KEYNOTE ADDRESS

12:30-1:20 p.m.

"From Physical Education to Kinesiology: Physical Activity for Quality of Life"

***Diane L. Gill '70**, Ph.D.*

This presentation covers my journey from my initial steps into research as a student through my academic career in sport and exercise psychology, and emphasizes recent research on physical activity for quality of life. My research fits within the larger field of kinesiology, which has moved from physical education teacher preparation to a wider range of professional options and research areas and research areas ranging from the physical to the social sciences, emphasizing research-into-practice in health-related areas. Psychology and behavioral science are especially critical in moving from research into practice to ensure that all people can participate and gain the many benefits of physical activity, including enhanced quality of life.

The Effect of Heroin Self-Administration on Perineuronal Nets using an Animal Conflict Model of Abstinence and Relapse

Amanda M. Shaw, Senior, Psychology
Joshua A. Peck, Psychology

Perineuronal Nets (PNNs) are specialized extracellular matrix structures of the brain that are found around specific neurons. PNNs play a role in structural and developmental plasticity, however, it remains unknown how they are affected by drugs of addiction. To investigate the possible effects of heroin self-administration on PNN density, we used an animal conflict model that contains some important features of human drug-seeking. In this study, abstinence of heroin seeking was achieved by placing an electric barrier between the animal and drug access and increasing the shock intensities. Further, relapse was induced by non-contingent presentations of a previously paired drug cue. After the completion of relapse sessions, PNN density analyses were conducted using Wisteria Floribunda Agglutinin. We found that there was a strong negative correlation between PNN density and the amount of heroin self-administration infusions. These findings suggest that PNNs are affected by heroin self-administration and may play a role in regulating plasticity within the brains of drug abusers.

Effect of Weight Loss on Wrestlers' Mood and Motivation

Jon Yezzi, Senior, Coaching and Psychology
Katherine Polasek, Kinesiology

The sport of wrestling has been prevalent in society for years. As the sport has grown, weight loss has become heavily attached to the sport. While prior research has looked at the physiological effects of the athlete's weight loss, few studies have studied the psychological components. This study specifically focuses on the effect of weight loss on the athlete's mood and motivation over the course of a season. Participants consisted of volunteers at a local high school. Data was collected at four separate periods over the course of the season utilizing the subjective happiness scale, positive and negative affect schedule (PANAS), and sport motivation scale. Based on previous research findings that highlighted negative physiological effects, it was predicted that the athletes would experience an increase in negative components of mood and a decrease in motivation to perform over the course of the season. Results are forthcoming.

Capturing Parents' Perspectives for a Youth Needs Assessment
Kyle Boeltz, Graduate, Recreation/Environmental & Outdoor Education
Thomas Eickelberg, Graduate, Recreation/Environmental & Outdoor Education
Esther VanGorder, Graduate, Recreation/Management of Leisure Services
Sharon L. Todd, Recreation, Parks and Leisure Studies

The Dryden Recreation and Youth Commission (DRYC), which serves as an advisory group to the Town of Dryden, is responsible for assessing the needs and priorities of local youth and developing programs to meet those needs. The Commission approached SUNY Cortland's Recreation, Parks and Leisure Studies Department for help in capturing parents' perspectives for their latest needs assessment. The graduate research methods class gathered data via surveys to help the Commission better understand children's activity participation patterns, interests, needs, constraints, and satisfaction levels. The results of this study will be used by DRYC during the next three years to set Commission priorities and guide funding decisions.

Moot Court Oral Argument Demonstration: **Somerville and DeNolf v. Olympus**
Taylor Cain, Junior, Political Science
Samantha Cirillo, Senior, Criminology/Political Science
Kyle Davis, Junior, Political Science
Benjamin Hobbs, Junior, Political Science
Timothy Delaune, Political Science

This demonstration consists of an introduction and explanation of what the audience will observe, followed by forty minutes of simulated oral argument on a case involving reproductive rights and the freedom of speech as though made before the US Supreme Court on appeal. Each student will argue for ten minutes while being questioned by the endorsing faculty member/faculty mentor acting in the role of appellate judge. Each student's goal is to make the most convincing legal arguments possible to support his or her side of the case.

The Impact of Dehydration on Muscular Strength in College Age Males
Alex Bossert, Senior, Exercise Science
Deborah Van Langen, Kinesiology
Erik Lind, Kinesiology

Reducing total body mass through dehydration is common in weight class sports such as power lifting. The purpose of this study is to determine if self-induced dehydration is a viable option of short-term weight loss without negatively affecting overall strength performance. Hydration levels will be manipulated through fluid restriction and intentional fluid loss while sitting inside the SUNY Cortland environmental chamber set to 45-50°C with a relative humidity of 50-60%. Muscular strength will be compared under different hydration conditions. Muscular strength will be measured by weight successfully lifted in the three standard powerlifting exercises: back squat, bench press, and deadlift. Descriptive data will be presented as mean±standard deviation and will be analyzed using SPSS 22.0 software. Results are forthcoming.

The Effect of Aerobic Exercise Intensity Levels on Memory

Ashley N. Vogler, Senior, Exercise Science
Erik Lind, Kinesiology

The purpose of this study is to determine the effect of aerobic exercise on memory. Eighteen SUNY Cortland college-aged male and female students will be recruited for the study. Participants will complete three counterbalanced trials under the following conditions: (a) at rest, (b) cycling exercise at light-moderate intensity, and (c) cycling exercise at moderate-hard intensity. In each trial, participants will complete the Novel Object Recognition (NOR) test. Exercise intensity will be assessed using ratings of perceived exertion (RPE). Data will be measured at selected time points and the number of correct responses on the NOR test will be recorded. Descriptive data will be presented as mean±standard deviation and analyzed using SPSS 22.0 software. Results are forthcoming.

An Investigation of Types of Stretching on Selected Performance Measures, Range of Motion, and Self-Efficacy

Laura R. Johansson, Senior, Exercise Science
Hannah M. Smith, Senior, Exercise Science
Erik Lind, Kinesiology

The purpose of the present study will be to compare different stretching approaches on flexibility and self-efficacy measures in a sample of college-aged participants. SUNY-Cortland participants between 18-25 years old will be randomly assigned to one of three conditions: (a) control, (b) dynamic stretching or (c) static stretching. Participants will also complete a self-efficacy measure and have their range of motion (ROM) assessed pre- and post-stretch. Descriptive data will be presented as mean±standard deviation and will be analyzed using SPSS 22.0 software. Results are forthcoming.

Effects of an Ankle Brace on Agility, Power, and Psychological Measures

Michael J. Redmond, Senior, Exercise Science
Erik Lind, Kinesiology

The purpose of this study is to investigate the use of two different ankle braces on measures of agility and power. Participants will include a sample of SUNY-Cortland undergraduate students (18-24 years old). Participants will be tested on the following assessments: (a) maximal vertical jump test (b) the Modified Southeast Missouri Agility Drill and (c) the Illinois Agility Drill in a counterbalanced manner under the conditions of (a) with and (b) without an ankle brace. Jump heights and agility performance times will be measured. Descriptive data will be presented as mean±standard deviation and will be analyzed using SPSS 22.0 software. Results are forthcoming.

History at Work: Interns in the Community

Catherine Faughnan, Senior, Political Science
Denise Seidler, Senior, Art History
Kathryn Thomas, Senior, History
James Miller, History

The Fall 2014 History Department Internship course enabled students to assist public history and non-profit organizations. Their work highlights the practical applications of liberal arts skills, the benefits of civic engagement, and outstanding student efforts. Catherine Faughnan helped coordinate and promote the 2014 CROP Hunger Walk at SUNY Cortland, which marked one of its most successful years yet. She met with faculty members, set up student volunteers and gave numerous presentations to inform campus groups about the event. Denise Seidler interned with Cortland's 1890 House, the historic mansion of one of Cortland's leading industrialist families, the Wickwires. She continues to volunteer there and is assisting with the research and writing of a children's book on a day in the life of young Frederick Wickwire. Kathryn Thomas also interned at the 1890 House, archiving Wickwire family correspondence and researching the Victorian Era in the US, for different exhibits throughout the year.

POSTER SESSION A

2:30-3 p.m.

Histological Assessment of Lung Edema in Sepsis

Gabriella M. Pasquale, Senior, Biology
Tara A. Sweeney, Junior, Biomedical Sciences
Louis A. Gatto, Biological Sciences

Tissue injury is accompanied by the inflammatory response, marked by swelling and accumulation of interstitial fluid (edema). Sepsis causes multi-organ disruption of blood capillaries with increase in permeability to proteins and inability to return fluids to the systemic circulation. Fluid accumulation is devastating in the lung, where tissue hydration must be minimal to assure short diffusion distances between air and blood. In pulmonary edema, fluid accumulates in connective tissue cuffs surrounding blood vessels. This provided us with an opportunity to obtain a functional measure of edema in an organ where water movement follows forces that change during the ventilatory cycle (breathing). We quantified edema histologically in experimental animals, and found that vessel cuffs were: (1) significantly more prominent in sepsis; (2) subject to significant change related to protocols of mechanical ventilation. These findings are of clinical significance, since mechanical ventilation is required for life support in critical care patients.

Using Sequencing and LC-MS/MS Proteomics to Target Reverse Beta Oxidation Functional Diversity in a Hexanoic Acid Producing Bioreactor

Katherine Woodward, Senior, Chemistry
Jeffrey Werner, Chemistry

There has been a growing incentive to develop new biomass – to – energy conversion technologies that produce energy from renewable biomass or organic waste. Recently, it has been possible to create these technologies using an open anaerobic microbial bioreactor, which converts biomass into the 6-carbon chain biodiesel precursor n-hexanoic acid. Previous research determined the metagenomic sequences of the bioreactor microbiome. Specifically, this data showed which species (19 total) had the genes for the reverse beta-oxidation reaction, which microbes would need to make our n-hexanoic acid product. In this experiment, I used liquid chromatography tandem mass spectrometry to perform proteomics on bioreactor samples, to determine which enzymes were being actively used by which bacterial species. Our goal is to determine the diversity of bacteria in the key metabolic steps within the reactor.

Valley Glacier Response to Late Holocene Climate Change: The Role of Glacier Geometry and Forefield Characteristics in Influencing the Magnitude of Advances

Shawn Taylor, Senior, Geology
David Barclay, Geology

Tree-ring dates show that valley glaciers in coastal south-central Alaska have made multiple advances during the late Holocene. While the timing of these advances has generally been synchronous throughout the region, termini have differed in the distances they reached down-valley. Adjacent termini often show differences in moraine age, therefore making it unlikely that the variability is due to regional variability in the magnitude of climatic forcing. Rather, we hypothesize that localized glacier-specific effects have filtered the climatic forcing to allow glaciers to respond differently. In this study we test this using a dataset of 36 glaciers. ArcGIS 10.2 was used for the determination of various physical characteristics such as area, elevation, flow lengths, and slope. Correlation of these with outermost moraine dates found a significant relationship for slope at the 95% confidence level, with steeper glaciers having generally older outermost moraines. This finding is consistent with previous studies.

Determining the Impact of Road Salt Application to a Small Creek, a Case Study in the Trout Brook, NY

Rachel Perry, Senior, Geology
Li Jin, Geology

This project is designed to understand the impact of road salt on a small creek that runs through the town of McGraw, New York. Ten locations along Trout Brook, which includes four small tributaries and one large tributary, Smith Brook were sampled weekly between January 26, 2015 and March 27, 2015. The upstream reach of Trout Brook is dominated by agriculture and becomes increasingly urbanized downstream as the channel nears I-81. In situ parameters including temperature, pH, specific conductance, and dissolved oxygen measured by the YSI Professional Plus multiparameter water quality meter were used to compare the general water quality among ten sites. Water samples were also collected for complete chemical analysis of major dissolved solutes (such as Na^+, K^+, Mg^{2+}, Ca^{2+}, Cl^-, NO_3^-, and SO_4^{2-}) on Dionex ICS-2100 and ICS-1100 Ion Chromatograph. Results from this study provide insights to better understanding both natural and human impacts to the water quality of small creeks.

Do Cancer Clusters Actually Exist, and if so, what Demographics Have an Effect on Their Formation?

Kaileen Puppo, Senior, Business Economics/Communication Studies
Kathleen Burke, Economics

Through various outlets of quantitative research, it will be determined whether or not cancer clusters, areas that cancer rates are significantly higher amongst a population, are real or not. Through this research there will be analysis of the demographics of areas that are considered a cancer cluster, to find if a common cause exists in all of them. This research is extremely important in a society where cancer is affecting nearly 15 million Americans. Determining which areas have a higher prevalence of cancer can help to determine varying causes of this detrimental disease.

Differences in Personality between Academic Majors

Zachary T. Longo, Senior, Psychology
Kathy Tota, Senior, Psychology
Nansi E. Has, Senior, Psychology
Margaret Anderson, Psychology

The present study investigated personality differences between upper level Psychology and Physical Education undergraduates at SUNY Cortland. The following tests were administered: Multiple Stimulus Types Ambiguity Test (MSTAT; McLain, 1993), Need for Cognition (NFC; Cacioppo, Petty & Kao 1984), and Need for Closure Scale (NFCS; Webster & Kruglanski, 1994). Significant differences in both NFC ($t(23, 20) = 2.81$, $p < .01$) and tolerance for ambiguity (TA; $t(46.88) = 2.172$, $p < .05$) indicated that the Psychology students scored higher on average. No significant differences were found between majors in NFCS ($t(46) = -.171$). A significant negative correlation between TA and NFCS was noted ($r = -.41$, $p < .01$). No significant correlation was found between NFC and both NFCS and TA. Differences between the majors may be explained by personality traits that lead the individuals towards their specific field. Training differences in each field may explain these differences as well.

Differences in Assertiveness and Gender Roles between Physical Education and Psychology Majors at SUNY Cortland

Kathlyn Parrish, Senior, Psychology
Catherine Miller, Senior, Psychology
Margaret Anderson, Psychology

Two personality tests that have been reliable in assessing personality are the Bem Sex Role Inventory (BSRI) and the Rathus Assertiveness Schedule (RAS). Based on the previous research we hypothesized that if these tests were given to students in two different majors that there might be a difference in scores. The tests were administered to 50 SUNY Cortland students (29 from Psychology and 21 from Physical Education). It was found that the BSRI and the RAS are reliable in evaluating gender roles and assertiveness, respectively. It was also found that there is a correlation between gender roles, masculine and feminine, and assertiveness [$r = .605$, $p < .01$]. As well there were some unexpected results between the scores and the different majors at SUNY Cortland.

The Effects of Mindfulness on Attention and Working Memory

Audrey Adams, Senior, Psychology
Andrew Leverton, Senior, Psychology
Kyle Delmuro, Class of 2014, Psychology
Raymond Collings, Psychology

Mindfulness has been defined as a process of "bringing one's complete attention to the present experience on a moment-to-moment basis" (Marlatt & Kristellar, 1999). Our study examined individual differences in attention and working memory with a sample of undergraduates in relation to a one-time mindfulness training intervention. These differences were measured using computer assessments of attention and working memory. Participants were assigned to either a mindfulness training or control condition. We found no significant effect for the mindfulness training on attention. However, a mindfulness did significantly improve working memory ($p < .05$). We also observed a moderately strong correlation between a consistent practice of meditation to relieve stress and the computer-based attention assessment ($r = .33$). Our results suggest that future studies should explore the integration of mindfulness in clinical settings.

The Effect of Heroin Self-Administration on Perineuronal Nets using an Animal Conflict Model of Abstinence and Relapse

Nadia Amin, Junior, Psychology
Cassandra E. Stubbe, Senior, Psychology
Claire Toal, Junior, Psychology
Joshua A. Peck, Psychology

Perineuronal Nets (PNNs) are specialized extracellular matrix structures of the brain that are found around specific neurons. PNNs play a role in structural and developmental plasticity, however, it remains unknown how they are affected by drugs of addiction. To investigate the possible effects of heroin self-administration on PNN density, we used an animal conflict model that contains some important features of human drug-seeking. In this study, abstinence of heroin seeking was achieved by placing an electric barrier between the animal and drug access and increasing the shock intensities. Further, relapse was induced by non-contingent presentations of a previously paired drug cue. After the completion of relapse sessions, PNN density analyses were conducted using Wisteria Floribunda Agglutinin. We found that there was a strong negative correlation between PNN density and the amount of heroin self-administration infusions. These findings suggest that PNNs are affected by heroin self-administration and may play a role in regulating plasticity within the brains of drug abusers.

An Analysis of Polyploid and Diploid Subspecies of *Arisaema triphyllum

Nicholas Ayvazian, Senior, Biology
Steven Broyles, Biological Sciences

Jack-in-the-Pulpit (*Arisaema triphyllum*) is a herbaceous forest perennial distributed across New England. The species has the unusual ability to undergo a sexual change during their long-lives. Two subspecies of *Arisaema triphyllum* (subsp. triphyllum and stewardsonii) can be found in segregated habitats. *Arisaema triphyllum* ssp. *triphyllum* is tetraploid (four sets of chromosomes), whereas *A. triphyllum* ssp. *stewardsonii* is diploid (two sets of chromosomes). We predict that the differences in chromosome number will account for significant differences in reproductive and vegetative traits. The objectives of this study were to define the differences in leaf and inflorescence morphology, and population genetics between these subspecies using both field and laboratory techniques. The results of the study have interesting implications on how polyploidy affects sexual dimorphism in flowering plants.

***Binding Affinity Characterization of NahG for its Native Substrate and Nicotinic Acid Substrate Analog**

Weifeng Zhen, Senior, Biochemistry
Katherine Hicks, Chemistry

Pollutants and toxin chemicals are well spread across the world and there are many ways to combat this at the molecular level. In this case the combatant we are studying is an enzyme found in the organism *Psudomonas putida*, which metabolizes a molecule similar to benzene. This enzyme is known as 6- hydroxynicotine-3-monooxygenase (NahG). NahG is specifically designed to catalyze the conversion of 6- hydroxnicotinic acid (6-HNA) to 2,5-dihydroxypryidine. In this project, the binding affinities of NahG to 6- HNA, which is the native substrate, and nicotinic acid, a substrate analog were determined. The binding affinities were measured using fluorescence resonance energy transfer (FRET)-based binding assay. Our data demonstrate that 6-HNA binds approximately 25-fold more tightly to NahG than nicotinic acid, indicating that the enzyme requires a substituent at the 6-position for effective binding.

***Reverse Beta Oxidation Functional Diversity in Metagenomic Analysis of a Hexanoic Acid Producing Bioreactor**

Dylan Kahlstorf, Junior, Biochemistry
Jeffrey Werner, Chemistry

To optimize an anaerobic microbial bioreactor that converts biomass to a usable fuel source, we performed a metagenomic functional analysis of the microbiome within the reactor. We found 19 specific microbial species contain the gene for reverse beta oxidation, which is the main process driving this bioreactor. A functional comparison was performed between our nearly complete assembled microbial genomes and known/published genomes, including one novel strain not matching any known genomes. However, some microbes may contain the gene, but do not utilize it. The metagenomic characterization will also be useful as a basis for performing proteomics analysis on bioreactor samples, as well. The end goal we strive for is to create a bioreactor which is a robust system, which has multiple different microbes performing the reverse-beta oxidation pathway.

***Wealth Patterns in Byzantine Anatolia**

Toni Bucklaew, Class of 2014, Archaeology/World Archaeology
Sharon Steadman, Sociology/Anthropology

First, two areas of Çadır Höyük, an archaeological site, reveal wealth patterns. The Northern Terrace shows the establishment of elites at the site, and eventually their shift onto the Mound Summit during hostile times. On the Mound Summit we see evidence of elite goods/activity and what the abandonment of the site looked like. Second, an analysis of the region reveals a clear wealth spectrum based on geographical location. Çadır is the "poorest," site located in a more isolated region and thus was more affected by the gradual downfall of the Byzantine Empire due to external forces. However, the site of Kilise Tepe is located along a southern trade route and a larger elite (wealth) imprint can be seen; as Kilise is also an agricultural community it has similarities to Çadır. Lastly, the site of Amorium is an urban trade hub and reveals the upper end of the spectrum.

* Denotes students who received 2014 Undergraduate Research Council Summer Research Fellowships.

CONCURRENT SESSIONS II

3-4 p.m.

Why Did They Stay?

Mark Surico, Senior, Political Science
Peggy Murphy, Political Science

This study explores the human tragedy that occurred before, during, and after Hurricane Katrina hit the city of Louisiana, New Orleans with regards to effectively getting residents out of the city to safety. Topics covered are the various factors that contributed to so many thousands of New Orleans residents finding themselves trapped in the city during and after the storm. This paper also focuses on potential solutions to such issues that have either been implemented in future disasters or suggested by disaster experts along with the positives and negatives to each. The main reason for this study was to determine what went wrong during the storm with regards to the evacuation of residents as well as assess solutions for future preparedness.

How Politics, Capitalism, and Race Play a Role in Disaster Policy

Mecca Snipe, Senior, Political Science/Africana Studies
Peggy Murphy, Political Science

My paper focuses on the governmental response during both Hurricane Katrina and Hurricane Sandy. Furthermore, it zooms in on the power of both the federal government as well as local governments. In addition to this, I also examined the presidential powers and how they responded to both of the natural disasters. I examined factors such as race and poverty to see if they impacted the lives of victims or if they granted them privileges. Overall, my extensive research has led me to develop my own ideas about how politics plays a part in our daily lives and we as citizens don't even notice it.

The Impact of Media during Hurricane Katrina

Kieran Barber, Senior, History
Peggy Murphy, Political Science

On August 29th, 2005 Hurricane Katrina struck the Gulf Coast resulting in massive human suffering especially in the iconic city of New Orleans, Louisiana. In the days following the storm, the citizens of that area would be subject to further pain and agony as the federal government seemed to fail in its immediate relief efforts. While America's leaders faltered in the wake of this disaster the nations media rose to the challenge. The efforts of 24-hour news networks, their individual reporters, as well as various other newspaper publications brought about the "good" that Professor Levin speaks of in his quote. Through the impact of these media elements the general public gained a greater awareness of not only what the victims were experiencing, but also the government ineptitude that existed in the aftermath of Hurricane Katrina.

Winners of the 2014 SUNY Cortland Outstanding Writing Awards

Fashion and Textiles in the Work of Antoine Watteau
Emilee Smith, Senior, Studio Art
Susan Logan, Art and Art History

Awarded the Kathy Lattimore Prize for Academic Writing.

21 Boxes
Sara Sampson, Sophomore, Professional Writing
David Franke, English

Awarded the Collin Anderson Prize for Creative Nonfiction.

Video Games and Youth Violence
Erin Corsi, Freshman, Pre-major
Jaclyn Pittsley, English

Awarded the prize for Academic Writing from a CPN class.

American Lullaby: Blue
Jahniece McCollum, Freshman, Economics
Laura Davies, English

Awarded the prize for Fiction.

Flutter and Crash
Leela Mahon, Sophomore, Adolescence Education-English
Laura Davies, English

Awarded the prize for Poetry.

Profs Run through the Red Dragons
Jason Martinez, Sophomore, Sport Management
Matthew Seyfried, Sport Management

Awarded the prize for Media.

Down the Rabbit Hole *and* **The Mistakes You Made**
Iva Markicevic, Junior, Adolescence Education-English
Laura Davies, English

Awarded the prize for Non-course Writing.

Crises Affecting the European Union: Policy Dilemmas and Challenges
Stephen Best, Junior, Political Science
Michael Braun, Sophomore, Political Science
Lyndsey Dolan-King, Senior, International Studies
Lizaury Rodriguez-Marine, Senior, Political Science/International Studies
Henry Steck, Political Science

Based on the SUNY Model European Union (SUNYMEU) simulation, the panel will present an in depth review and analyses of various social, political and economic issues facing the EU, e.g., the economic Eurozone crisis precipitated by Greece, the challenge of immigration into the EU from bordering areas, and the issues arising from the Ukrainian crisis.

How to Improve Students' Working Memory
Stephanie Roessel, Senior, Childhood Education
Lin Lin, Childhood/Early Childhood Education

There are many research-based strategies that have been proven to increase test scores and student's working memory. During my time student teaching, I collected various data on testing, and researched how pre and post testing, along with being physically active and engaged in brain games, helped to improve student's memory and resulted in higher test scores. The brain is a muscle that needs to be worked in order to grow' this research proves that as long as students continue to exercise this important, vital muscle, improvement can be gained. This data will support teachers who wish to implement more physical activity, pre and posttests, and memory games as part of their daily routine to improve working memory and test scores.

More than Just a Shoe Store
Ashlee Prewitt, Graduate, Non-Matriculated
Tara Mahoney, Sports Management

The research seeks to explore how a local for-profit running store, Confluence Running, utilizes social media, training, fitness instruction, running groups, race directing, community partnerships, and nutritional info-sessions to build customer loyalty in the greater Binghamton area. This qualitative case study examines whether utilizing such activities meets the goals of the company's administrators; this study also examines the perceptions of store staff and customers. The research explores whether purchase motivations and intentions are influenced by administrative decisions. The main inquiry poses the question: Can a for-profit organization promote community wellness and still meet the goals of the administrators? The title of the presentation is based on the company motto.

Developing a Community Resource as a Learning Laboratory in Geology
Sophie-Louise Jackson, Senior, Geology
Timothy Conner, Geology

Local cemeteries are often overlooked as educational resources. In all actuality cemeteries are great natural laboratories to study Petrology, weathering, natural systems and the history and technology of the stone industry. For this project I identified areas of Geologic interest in the Cortland Rural Cemetery, researched the science and technology behind them, and developed instructional "stories" for 20 locations within the cemetery. This information will be combined with historical and cultural "stories" and be put on permanent display on walking trail signs in the Cortland Rural Cemetery.

Stem Cell Therapy to Treat Wounds in Racehorses
Eric Plante, Senior, Biomedical Science
Theresa Curtis, Biological Sciences

Mesenchymal Stem Cells (MSCs) have been used to promote wound healing in multiple mammalian models. Paracrine signaling, a means of local intercellular communication through the release of soluble factors, enable MSCs to induce a healing phenotype as factors that promote cellular migration, proliferation and extracellular matrix modulation are secreted. In hopes of developing a therapy to treat chronic or severe wounds which plague the race horse industry, the ability of MSC paracrine factors to increase the rate of wound closure within the equine model was investigated. Fibroblasts isolated from horse skin were cultured until a dense cell layer formed and wounds were created electrically before MSC conditioned culture medium was applied. The rate of wound closure was then monitored using Electric Cell-substrate Impedance Sensing (ECIS). It was found that soluble paracrine factors secreted by MSCs increase the rate of wound closure and promote a healing phenotype within the equine skin model.

***Study of the Unknown Extracellular Polymeric Substances (EPS) Contained within *Legionella pneumophila* (Lpn) Biofilms**
Casey Peterson, Senior, Biology
Christa Chatfield, Biological Sciences

Legionella pneumophila (Lpn) is a bacterium that can lead to a serious pneumonia known as Legionnaires Disease. *Lpn* is readily found as part of biofilms, often as part of multi-species microbial communities. Biofilms are adherent communities of bacteria that contain individual cells and extracellular polymeric substances (EPS), which establish the structural and functional makeup of these biofilms. In these experiments, protein and polysaccharide content of *Lpn* biofilms was quantified by spectroscopic analysis. Results showed that small amounts of protein were present and that the EPS contained significant varying levels of carbohydrates. Secondly, EPS composition was investigated by enzymatic detachment and disruption of biofilms, which was then quantified by colony-forming units. Short treatments (1 hour) with the enzymes amylase, cellulase, DNase, lipase, pectinase, proteinase K, and lysozyme (all at 0.1% enzyme concentration) showed no detachment or disruption. These results show that properties of the biofilms may prevent enzyme penetration.

***Institutional Linkages to Foster Employment through the Creation of New Business Enterprises**
Thomas Lee, Senior, Economics
German Zarate, Economics

The research we performed focuses on the Start Up NY Initiative in New York State. This initiative, designed to promote economic growth, has its strengths and weaknesses and our research hopes to help improve on those weaknesses by drawing lessons from an overseas (Spanish) cooperative firm called Mondragon. Mondragon consists of a number of businesses/cooperatives, but our main focus is on Ikerlan (research and development) and Saiolan (a business incubator/diversification). From these two firms we draw reasons for Mondragon's success as well as lessons that can be used by NY legislature to improve the initiative. The improvement of this initiative will allow for more economic growth in our state as well as hopefully creating a friendlier business environment through the use of tax cuts as well as a number of additional ways.

***Effects of Mindfulness, Acceptance, & Commitment (MAC) Training in College Runners**
Ashley Martin, Senior, Psychology
Jeffery Swartwood, Psychology

Our project synthesizes two existing lines of research in the areas of positive psychology and performance enhancement. Strong research support exists for the efficacy of the Mindfulness, Acceptance, & Commitment (MAC) training procedure to enhance the performance of college athletes in a variety of sports. In a related line of inquiry, research in the general population indicates a positive relation between exposure to mindfulness practice and global measures of well-being, decreases in negative mood states, and changes in physiological measures such as the electroencephalogram (EEG). The purpose of the present study was to merge and expand these two lines of research. We examined the effects of mindfulness training (MAC) in college runners on survey measures related to well-being and EEG, as well as previously unexplored effects on activity level and sleep. Results are discussed in terms of differences in these measures as a function of receiving the MAC training intervention.

***Physical Activity Participation Patterns among Latinos in the Northeast**
Karen Martinez, Senior, Exercise Science
Katherine M. Polasek, Kinesiology

The prevalence of obesity in the United States has more than doubled in the past three decades. Certain ethnic populations have been affected disproportionately; national studies have indicated that Latinos have lower levels of leisure-time physical activity than Caucasians and African Americans. Understanding the physical activity participation levels among the Latino population has become a public health concern. Recent studies have solely focused on the physical activity participation levels of recent immigrants to the United States.
Therefore, the purpose of this study was to determine the physical activity patterns of Latinos living in the down state area of New York. Through the use of technology and social media, 248 participants filled out a basic demographic questionnaire along with the Godin Leisure Time Questionnaire. Preliminary data illustrated that our participant population was a very diverse group of people. The descriptive data will be analyzed using SPSS software. Results are forthcoming.

* Denotes students who received 2014 Undergraduate Research Council Summer Research Fellowships.

The Sundering of the Soviet Union: Rural Isolation vs. Urban Growth during Josef Stalin's Five-Year Plan and the Famine of 1932-33
Dan Margo, Senior, History-Adolescence Education Social Studies
Scott Moranda, History

The panelist will present his original research in history, which culminated in a paper written for the HIS 490 "Senior Seminar." He drew on primary and secondary sources to examine analyzes the impacts of major historical changes on particular populations. Margo explores the urban-rural divide in the Soviet Union during a period of dramatic economic and social transformation.

Nobility during the French Revolution
Michael Pallassino, Class of 2014, History
Scott Moranda, History

The panelist will present his original research in history, which culminated in papers written for the HIS 490 "Senior Seminar." He drew on primary and secondary sources to examine analyzes the impacts of major historical changes on particular populations. Pallassino made use of both French- and English-language sources for his study of nobility in the French revolution.

The Not-So-Dry Years of Prohibition in Cortland
John Swayne, Senior, History-Adolescence Education Social Studies
Gigi Peterson, History

The panelist will present his original research in history, which culminated in papers written for the HIS 490 "Senior Seminar." He drew on primary and secondary sources to examine analyzes the impacts of major historical changes on particular populations. Swayne tapped local print media and other sources to explore how various residents of Cortland responded to the national phenomenon of Prohibition.

POSTER SESSION B

4-4:30 p.m.

Belize: Art, History, and Culture

Kelli Grossmann, Sophomore, Studio Art
Jeremiah Donovan, Art and Art History

Did you know there are approximately 170,000 people in Belize? About fifty eight percent of this population is under the age of nineteen. In San Antonio, only a total of 2 people were able to afford and attend high school. After traveling to Belize City, I realized how fortunate we are to be in a world where we can aspire to do anything we want. When traveling to a third-world country, I saw families who had close to nothing and children who walked to school barefoot. My goal is to research the area I visited more in depth and work to create a series of art projects portraying how impoverished their country is, that will eventually lead to a fundraiser to send money to the San Antonio Roman Catholic School District. Sending money towards this community will bring them hope and a future. Since the community is so young, a more promising and enriched education environment will enable their students to thrive and succeed in hopes of keeping the Maya culture as well as Belize a happier place.

Getting It Up: Improving the HPV Vaccine Uptake among Male College Students

Samantha Glassman, Senior, Community Health/Wellness Promotion
Jill Murphy, Health

The human papillomavirus (HPV) vaccine protects against diseases caused by HPV and was approved by the Food and Drug Administration for use in males in 2009. This study explored factors influencing decision-making about the HPV vaccine in a sample of male college students. In 2011, 1,047 students (including 286 males) were surveyed at two universities in New York State using an internet-based, anonymous survey. Twenty-one percent of males reported having received at least one dose of the HPV vaccine. The majority of male respondents (85%) reported that no one had discouraged them from getting the HPV vaccine. The majority of unvaccinated males express a desire to receive the HPV vaccine. Encouragement by healthcare providers and parents may increase vaccine uptake. Health education messages that emphasize perceived susceptibility to HPV infection and routes of HPV transmission may resonate with those who express no interest in the vaccine.

Macro Fungi of Central New York

Michael Goldman, Graduate, Recreation/Environmental and Outdoor Education
Timothy Baroni, Biological Sciences

This project was created to investigate the species of macro fungi found in Cortland New York, specifically at the Lime Hollow Center for Culture and Environment. As an environmental educator I am constantly taking children into the forest to discuss biodiversity, and the different species of flora and fauna. My greatest weakness while leading hikes and programs has been fungi identification, which are generally very brightly colored and sparks the curiosity of children. Over the course of one semester I was able to identify more than 100 distinct species of macro fungi at Lime Hollow, some of which are very rare. By completing this project, I have learned a great deal about fungi, and am able to identify the most common genuses and species. As there are thousands of species of fungi there is still a great deal of work to be done.

The Use of Viability-Staining Reagents in Quantifying Microbes in a Solution or Biofilm

Kadeeja Fredankey, Senior, Biomedical Sciences
Christa Chatfield, Biological Sciences

Legionella pneumophila is an aerobic, Gram-negative bacterium that is the causative organism for Legionnaire's disease. *Legionella* species can be found in symbiotic relationships in aquatic-borne amoebae, in the soil, or in self-produced biofilms that do not require a host. To grow and count *Legionella* they are typically cultured on buffered charcoal yeast extract (BCYE) plates for 2-3 days at 37°C. To speed up counting of *Legionella*, two reagents, FDA and Bactiter Glo, were tested for quantification *L. pneumophila* and *L. longbeachae*. FDA had the lowest limit of detection, since, within 3-4 hours, FDA detected ~$1x10^5$ CFU *Legionella pneumophila;* Bactiter Glo detected only down to $1x10^6$ cells. Biofilm cultures of *Legionella* have around 1 $x10^7$ cells, so it is likely that FDA can quickly and accurately quantify biofilm cultures. The experiment will be expanded to determine the effectiveness of FDA in quantifying cell number and viability of biofilm cells.

Development of Biosensor for Rapid Detection and Study of Neurotoxins

Nicholas Puoplo, Senior, Biological Sciences
Theresa Curtis, Biological Sciences

Mammalian cell-based biosensors have become a powerful way to detect toxic biological and chemical agents in environmental samples. Toxins/toxicants that exist in drinking water or on food from environmental contamination can cause serious and fatal neural illnesses. To quickly assess environmental samples for potential neurotoxins/toxicants, we began development of a neural-based biosensor that can detect a broad range of hazardous agents. In this study, neuron growth and differentiation in the sensor was first optimized. Once a healthy population of neurons was obtained, the cells were treated with a variety of agents known to injure neurons. To determine when neural injury occurred, biomarker release was quantified. Once validated with a wide range of environmental samples, this neural-based sensor will be extremely useful in detecting neurotoxic agents in environmental samples.

Prevention of Arboviruses in Onondaga County through Mosquito Surveillance and Control
Jessica Swindon, Senior, Conservation Biology
Larry Klotz, Biological Sciences

There has been an increased urgency for the prevention of arboviruses in Central New York over the past decade. The combination of vector surveillance and control techniques is the primary tactic for preventing infection. The range expansion and increased density of mosquito populations correlates with an increase in infection from arboviruses. Over the course of 20 weeks in 2014 a total of 282,675 mosquitoes were trapped in the County of Onondaga, NY. This total number of mosquitoes was significantly higher than previous years and included 30 positive cases of Eastern Equine Encephalitis (EEE) and 2 positive cases of West Nile Virus (WNV).

Density Functional Theory Analysis for the Design of Group 10 Transition-Metal Catalysts
Matthew Ellis, Junior, Chemistry
Karen Downey, Chemistry

Hydrophosphination is an atomically efficient method for introducing new carbon-phosphorous bonds in organic synthesis. New, late-transition metal catalytic complexes are proposed to facilitate this process. These group ten metal-based complexes are analyzed using the density functional theory (DFT) model. Previous work using nickel-based complexes has shown that the pincer complexes under investigation are relatively insensitive to solvent dielectric constant and to the chemical character of the monodentate ligand, both in terms of electron distribution and in terms of molecular orbital energies. Complexes using other group ten metals (palladium and platinum) are analyzed using the same methods to determine the impact the choice of metal has on these characteristics.

Determination of the Binding Affinity for Bicyclic Compounds *to Pseduomonas putida* NahG
Gregory Simone, Senior, Chemistry
Samuel Lothridge, Senior, Biochemistry
Katherine Hicks, Chemistry

Our research goal was to measure the disassociation constants (K_d) for the substrate analogs of 6-hydroxynicotinate-3-monooxygenase (NahG). NahG catalyzes the oxidative decarboxylation of 6-hydroxynicotinic acid to 2,5-dihydroxypyridine in the aerobic nicotinate degradation pathway. This enzyme is present in the gram-negative bacteria *Pseudomonas,* which are antibiotic resistant and able to thrive in harsh conditions. 6-hydroxynicotinate (6-HNA) is the natural substrate for NahG. The binding of substrate analogs to NahG was monitored using fluorescence resonance energy transfer (FRET) binding experiments, which involve titrating increasing concentrations of substrate and monitoring the change in fluorescence. The binding affinity of NahG for the substrate analogs, 6-chloronicotinic acid and 2-hydroxy-1-napthoic acid, were also determined. Our data indicate that 6-chloronicitinic acid has a similar binding affinity as the natural substrate, 6-HNA, while 2-hydroxy-1-napthoic acid binds more weakly. These data demonstrate that NahG preferentially binds monocyclic compounds. Our next experiments will involve site-directed modifications of the active site with the goal of accommodating larger substrate analogs.

Biochemical Investigation of the Determinants of NahG Binding Affinity

Crissana Christie, Junior, Biomedical Sciences
Joseph Kraai, Junior, Biochemistry
Katherine Hicks, Chemistry

Our project involves examining 6-Hydroxynicotinate 3-Monooxygenase (NahG), an enzyme present in strains of the bacteria Pseudomonas putida. NahG catalyzes a decarboxylative hydroxylation reaction in which 6-hydroxynicotinic acid (the natural substrate) is converted to 2,5-dihydroxypyridine (product). Our ultimate goal of this project is to broaden the substrate specificity of NahG such that it can readily bind to polycyclic aromatic hydrocarbons (PAHs), a class of environmental pollutants that are commonly produced during industrial processes, and convert them into eco-friendly products. Working toward this goal, our work involved measuring the binding affinity of NahG for various substrates that have different functional groups at the 6-position of the substrate in order to determine the physical parameters and chemical reactivity of the active site. Specifically, we studied the binding affinity of the substrate analog, 6-methylnicotinic acid, for NahG using a fluorescence resonance energy transfer (FRET)-based affinity assay. Experimental results suggest that this analog substrate has a K_d value of approximately 7.5 ± 0.1 μM similar to the natural substrate, 6-hydroxy-nicotinate, which has a K_d of 11.2 ± 1.5 μM. Our studies thus indicate that the presence of a methyl group at the 6-position of the substrate has minimal effects on binding affinity.

Understanding the Characteristics of Ophiolitic Mylonites and their Formation

John Mythen, Senior, Geology
Gayle Gleason, Geology

Ophiolites are thought to be large pieces of oceanic lithosphere that are uplifted and placed onto continental crust. During the fall semester at SUNY Cortland, we looked at a rock sample of mylonite collected from the Blow-Me-Down Mountain area in Newfoundland, Canada. Blow-Me-Down Mountain is comprised of an ultramafic ophiolite surrounded by metamorphosed sedimentary rocks of silica-rich composition. After making the mylonite into thin sections, we analyzed the sections by scanning electron microscopy and x-ray diffraction. We determined this sample to be either a llherzolite or a harzburgite, both of which are ultramafic rocks. Therefore, based on the composition of this rock, it is derived from the ophiolite and not from the metamorphic sedimentary rocks in the area. Mylonites form from intense shearing deformation, thus this sample may represent the base of the ophiolite that was sheared when the ocean rock was pushed up onto the continent.

Psychometrically Evaluating the Potential of Social Acuity Stimuli

Frederik Tremblay, Junior, Psychology
Kelly Taveras, Senior, Psychology
Megan Whitbeck, Junior, Psychology
Jessica Herbst, Junior, Psychology
Vincent Scardino, Senior, Psychology
Jennifer Scheu, Senior, Psychology
Candice Jaimungal, Sophomore, Psychology
Leslie Eaton, Psychology

For this investigation we evaluated the psychometric properties of brief dyadic social interactions, situations previously used in social acuity research (e.g., Letzring, Wells, & Funder, 2006). Our specific aim was to establish reliability and validity for behavioral codes on 25 interaction targets (9 men and 16 women) using the Riverside Behavioral Q-Sort (Funder, Furr, & Colvin, 2000). After ensuring that a coder was not previously acquainted with the randomly assigned target, the interaction was viewed and the target's behavior was coded. Intraclass correlation coefficients quantified the reliability of each target's behavioral codes across the four independent coders (α above .79). The validity analyses centered on predictive validity, the degree to which targets' self-reports of personality (Block, 1961) are associated with theoretically important, coded behavior (r above .60). The results of these analyses indicate that the interactions can be used as stimuli in future research.

Determinants of College Students' Time Needed to Complete a Reading Comprehension Test

Mikayla Drymond, Junior, Psychology
Lauren Vita, Sophomore, Psychology
Benjamin J. Lovett, Psychology

Many college students feel time pressure when completing classroom tests. In addition, students with recognized disabilities often receive additional time to take tests. We investigated predictors of the time taken by college students to complete a typical multiple-choice test that required reading comprehension skills. In this poster presentation, we note the relative utility of the following predictors: (a) information processing speed, (b) reading fluency, (c) self-reported need for additional time on tests, and (d) self-reported symptoms of "sluggish cognitive tempo," a type of attention/concentration problem. We also discuss the implications of our results for future research, for setting time limits on tests, and for making decisions about when to provide additional time to students with disabilities.

CONCURRENT SESSIONS III
4:30-5:30 p.m.

Writers Read: Performances from the Professional Writing Program

Nick Avossa, Senior, Professional Writing
Joshua Citron, Senior, Professional Writing
Hailey Clark, Senior, Professional Writing
Alexandra Cummings, Senior, Professional Writing
Heather Fox, Senior, Professional Writing
Rachel Friedman, Senior, Professional Writing
Joshua Hartnett, Senior, Professional Writing
Craig Hoberman, Senior, Professional Writing
Kathryn Monno, Senior, Professional Writing
Meaghan Mulvana, Senior, Professional Writing
Sarah Nickerson, Senior, Professional Writing
Daniel O'Connell, Junior, Professional Writing
Justin O'Hea, Senior, Professional Writing
Jacob Richter, Senior, Professional Writing
Patricia Rosetti, Senior, Professional Writing
Cody Stetzel, Senior, Professional Writing
Victoria Boynton, Professor, English
David Franke, Professor, English

The written word is a powerful force, but when the written word comes to life in oral performance, another kind of power exerts itself. The beauty, clarity, and hilarity of performed language inspire audiences across the nation and the globe. For instance, in slam and spoken word contests and in such hybrids as performance poetry as well as in popular radio shows such as This American Life and Prairie Home Companion, oral renditions of writing have an important place. Students in this session will perform their original written work. Also this session will serve as the launch for *The Cortland Writer*, the College's literary magazine.

History 101, An Entertainment: Waiting for Land Ho!; The Second Thanksgiving; The Signal; the Ladies Declare

Hugh Anderson, Graduate, History
David Boyle, Senior, History
Andrew Doane, Junior, History
Peter Dohan, Junior, History
Ian Donaghue, Senior, History
Haley Georgia, Senior, History
Claire Leggett, Freshman, History
Hannah Mekeel, Freshman, English
Justin Neretich, Junior, History
Derrick Pratt, Senior, History
Casey Silidjian, Junior, Musical Theater
Ian Tarbania, Senior, History
Ja'Quawn Turner, Sophomore, Economics
Xavier Campbell, Junior, Political Science
Myriam Benincore, Lecturer I, Modern Languages
Laura Gathagan, Assistant Professor, History
Girish Bhat, Professor, History
Judith Van Buskirk, History

History 101, An Entertainment, is a series of comedic one-acts on the following topics of early-American History: Columbus; the Puritans; Paul Revere; The Founding Mothers of the Country. The last piece was written by Tom Hischak especially for this production so it will be a world premiere. Fourteen student actors and three faculty actors will perform. Two of the pieces will be directed by students; the remaining two by Judy Van Buskirk.

***Conducting a Needs Assessment of Tribal Children in Kodaikanal India**

Nicole Miller, Senior, Community Health
Jena Nicols Curtis, Health

We conducted a needs assessment of tribal children in Kodaikanal, India. These children come from jungle villages to the Tribal Children's Home to receive education, medical services and meals that they would otherwise not have. We measured physical and mental health of the children, as a baseline for future interventions. We also conducted focus groups with caregivers. Overall, the children are in good physical health with no observable health problems except widespread stunting, some visible scarring and occasional skin lesions. Socially, the children experience stigma as tribal people. Emotionally, many children have fear and anxiety about their families. Environmentally, squatters are building huts on land that was once used by the Home. This encroachment limits the children's ability to play. This needs assessment suggests that the emotional and environmental issues have a bigger impact on the lives of the children than the physical health needs that the researchers anticipated finding.

***Metabolic Cost of Supported Weight Treadmill Running**

Adam Lowe, Senior, Exercise Science
James Hokanson, Kinesiology

Supported treadmill walking and running are used in clinical and athletic settings for rehabilitation of lower extremity injuries and overcoming movement disabilities. Purpose: To measure the metabolic cost of supported treadmill running. Methods: Oxygen consumption (VO_2) was measured using an open flow system during body weight (control) and supported (experimental) running. Subjects completed control and experimental trials at treadmill speeds of 2.24 $m \cdot s^{-1}$, 2.46 $m \cdot s^{-1}$, 2.68 $m \cdot s^{-1}$, and 3.13 $m \cdot s^{-1}$. Experimental trials were classified as running at either 90% (n = 10) or 85% (n = 9) of bodyweight. Data for VO_2, heart rate and RER were collected at rest and during all trials. Results: The slope of the regression line of VO_2 and percent reduction in body weight was .83. Conclusion: Estimating metabolic cost of supported running using the fractional decrease in body weight as established ACSM equations is not adequate.

***Predator-Prey Interactions of Invading Worms**

Allison Osmundsen, Senior, Biology
Peter Ducey, Biological Sciences

My research focuses on the predator- prey interactions between two Asian species now invasive in North America. The predator, *Bipalium adventitium*, is a terrestrial planarian widely distributed across this country that feeds on a broad range of earthworm species. The prey species, an earthworm of genus *Amynthas*, differs ecologically from most earthworms in the U.S. by occurring in great densities and changing soil composition. *Amynthas* also differs by having unusual defensive strategies. I am investigating the ability of *B. adventitium* to follow continuous and discontinuous trails left by *Amynthas* to account for the jumping behavior of these earthworms. Preliminary analyses confirm that *B. adventitium* follows earthworm trails. They also appear to follow *Amynthas* less than they follow *Lumbricus rubellis* but are not thrown off by discontinuous trails.

* Denotes students who received 2014 Undergraduate Research Council Summer Research Fellowships.