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April 29, 2011

Dear Students, Colleagues and Guests:

On behalf of the University of Wisconsin-Parkside, welcome to the 11th Annual University of Wisconsin Symposium for Undergraduate Research and Creative Activity. Today we showcase the significant and unique undergraduate research and creative activities occurring at the UW System institutes. And, we celebrate the students who will be the state’s future leaders, educators, entrepreneurs and researchers.

We are pleased that you and more than 300 students, faculty mentors, and guests from throughout Wisconsin and the UW System have traveled to our campus to participate in this event and share in the excitement.

At the University of Wisconsin-Parkside, Academic Excellence, Student Success, Diversity and Inclusiveness, and Community Engagement serve as our Hallmarks. We are committed to high-quality educational programs and to creative and scholarly activities. With our UW System colleagues, our faculty and staff fully embrace Academic Excellence through teaching, learning, and through scholarly endeavors inspiring our students to succeed and to reach beyond their current capabilities. It is my hope that you will have a rich, memorable experience at today’s symposium.

Congratulations to the students, and faculty and staff mentors who are participating today in the wide variety of posters, oral presentations, gallery exhibits and performance.

Welcome to the University of Wisconsin-Parkside.

Deborah L. Ford
Chancellor
KEYNOTE SPEAKER

DEAN YOHNK

*Interim Dean, College of Arts and Sciences*

M.A. / Ph.D. - Bowling Green State University

(Directing / Theatre Education)

Dr. Dean Yohnk currently serves the University of Wisconsin-Parkside as the interim dean of the College of Arts and Sciences. He has been a professional theatre artist and educator for more than 20 years, and has taught a wide variety of theatre courses at UW-Parkside, Viterbo University, and Bowling Green State University.

Under Dr. Yohnk’s leadership, the UW-Parkside Theatre Arts Department received the 2009 University of Wisconsin Board of Regents Teaching Excellence Award. Earlier this year, Dr. Yohnk earned the prestigious 2010 Gold Medallion Award from the Kennedy Center American College Theatre Festival (KCACTF). The Gold Medallion honors university faculty members for extraordinary contributions to the teaching and producing of educational theatre and to the development and quality of the KCACTF. Dr. Yohnk has served since 1992 on the regional executive committee of the KCACTF and has been the regional playwriting program chair.

In addition to directing and designing more than 100 college and university theatre productions, Dr. Yohnk has worked extensively as a professional actor, director, designer, educator, and theatre administrator at such regional professional theatres as The Guthrie Theatre (Minneapolis), The Huron Playhouse (Ohio), The Milwaukee Chamber Theatre, The Milwaukee Repertory Theatre, The Peninsula Players Theatre (Wisconsin), and The Racine Theatre Guild. Dr. Yohnk is the past president of the Alliance for Wisconsin Theatre Education and the Wisconsin Council of Theatre Chairs.
SCHEDULE OF EVENTS

April 28 – 29, 2011

Thursday April 28, 2011
6:00 – 8:00 pm  Registration, UW-Parkside Student Center
6:30 – 7:00 pm  Overview and Insight into Presenting Shakespeare’s Hamlet
Student Center, Oak Room
Speaker: Director Gale Childs-Daly
7:30 – 10:30 pm Shakespeare’s Hamlet, Communication Arts Theatre

Friday April 29, 2011
7:00 – 8:15 am  Registration, UW-Parkside Student Center
Poster Set-Up (all posters): Ballroom, Student Center
Exhibit Set-Up: Alumni Room, Student Center
Continental Breakfast: Outside Ballroom, Student Center
8:15 – 8:30 am  Opening Remarks, Student Center Cinema
Provost Brown & David Higgs
8:30 – 9:30 am  Poster Session I (odd number posters): Ballroom
9:35 – 10:45 am Oral Sessions I
Student Center: Oak, Walnut, Hickory, Spruce and Poplar Rooms
10:50 – 11:45 am Performances: Ballroom and Cinema
Exhibits: Alumni Room
11:50 – 12:30 pm Lunch: Served in “The Den,” Student Center
12:00 – 12:30 pm Campus Coordinators meeting: Birch Room (bring lunch)
12:30 – 1:15 pm Keynote Speaker, Student Center Cinema
Dr. Dean Yohnk, Interim Dean, College Arts and Sciences
1:20 – 2:30 pm Oral Sessions II
Student Center: Oak, Walnut, Hickory, Spruce and Poplar Rooms
2:30 – 3:30 pm Poster Session II (even number posters): Ballroom
3:30 pm Closing remarks: Ballroom
Take Down Posters between 3:30 and 4:00 PM
Arts and Humanities
Social Sciences and Anthropology
Education
Science and Engineering
Chemistry
Cell and Molecular Biology
Life Sciences
Life Sciences
Business
COMPUTER ACCESS  
DURING 2011 UW SYMPOSIUM

The following computer access is available for UW Symposium attendees.

**Internet access via laptops:**

If you have your own laptop, you can access the internet while in the Student Center using the following username and password:

Username: PSC-Guest (not case sensitive)  
Password: get2web (case sensitive)

**Available computers:**

If you need to access your email or the internet, five computers are available for limited-time use. These are located in The Den, which is in the lower level of the Student Center. The computers are near the game area.

To use the computers in The Den, you will need to obtain the guest Username and Password available at the Symposium registration table.
Schedule of Creative Activities

10:50 - 11:45 AM
<table>
<thead>
<tr>
<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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</thead>
</table>
| C1 | 10:50 - 11:05 am | Ballroom | Student Author: John Pahlas  
Institution: UW-Oshkosh  
Faculty Sponsor: Jeff Lipschutz  
Presentation Type: Theatrical  
Self-Own: How to become self reliant again in an age of digital dependence |
| C2 | 11:10 - 11:25 am | Cinema  | Student Author: Jamie Kranig  
Institution: UW-Parkside  
Faculty Sponsor: Dr. Maria D. Martinez  
Presentation Type: Poetry  
This Is A Promise - A Modern Literary Compilation |
| C3 | 11:30 - 11:45 am | Cinema  | Student Author: Kelsey Roets  
Institution: UW-Eau Claire  
Faculty Sponsor: Kitrina Carlson  
Presentation Type: Documentary  
The Political Effects of Group Lending on Nicaraguan Individuals |
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<tr>
<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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| C4 | 10:50 - 11:45 am | Alumni   | **Student Author:** Brett Roberts  
**Institution:** UW-Whitewater  
**Faculty Sponsor:** Jared Janovec  
**Presentation Type:** Sculpture  
*Texture Development on Clay* |
| C5 | 10:50 - 11:45 am | Alumni   | **Student Author:** Jennifer Yunker  
**Institution:** UW-Whitewater  
**Faculty Sponsor:** Charlie Olson  
**Presentation Type:** Sculpture  
*Exploration of Underglaze Pigments: A Search for Unconventional Ceramic Surface Colorations* |
| C6 | 10:50 - 11:45 am | Alumni   | **Student Author:** Allison Timmins  
**Institution:** UW-Whitewater  
**Faculty Sponsor:** Jared Janovec  
**Presentation Type:** Sculpture  
*Conceptual Clarity Through Visual Language: The Development of Figurative Sculpture-Based Installations* |
| C7 | 10:50 - 11:45 am | Alumni   | **Student Author:** Nicholas Kaminski  
**Institution:** UW-Parkside  
**Faculty Sponsor:** Dr. Maria D. Martinez  
**Presentation Type:** 3-D & projected  
*My Cuban Experience: Discovering the Real Cuba* |
| C8 | 10:50 - 11:45 am | Alumni   | **Student Author:** Nicolle LaMere  
**Institution:** UW-Whitewater  
**Faculty Sponsor:** Jared Janovec  
**Presentation Type:** 3-D & 2-D  
*From Printmaking to Clay: An Insight into Image Transfers* |
| C9 | 10:50 - 11:45 am | Alumni   | **Student Author:** Phoebe Baker  
**Institution:** UW-Platteville  
**Faculty Sponsor:** Mary Lenzi  
**Presentation Type:** Painting  
*Philosophy Expressed as Visual Art* |
Schedule of Oral Presentations

Morning Sessions
9:35 - 10:45 AM
### SESSION 1

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<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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</table>
| O1 | 9:35-9:50 am  | Oak  | **Student Authors:** Kyrie Smith, Alethia Paynia Moua, Honey Moua, Julie Koehler, Mai Nhia Vue  
                       **Institution:** UW-Eau Claire  
                       **Faculty Sponsor:** Leah Olson-McBride  
                       *A Vision for the Future of Eau Claire’s Hmong Community: A Community University Collaboration* |
| O2 | 9:53-10:08 am | Oak  | **Student Author:** Aleksey Andreev  
                       **Institution:** UW-Whitewater  
                       **Faculty Sponsor:** Elizabeth Hachten  
                       *Russian Immigrants in Chicago, 1918-1925: The development of a Russian community in Chicago after the 1917 Russian Revolution* |
| O3 | 10:11-10:26 am| Oak  | **Student Author:** Yasir Kuoti  
                       **Institution:** UW-Stevens Point  
                       **Faculty Sponsor:** Sally Kent  
                       *Women In Iran: Deconstruction of Status and Marginalization in the Aftermath of the 1979 Islamic Revolution* |

### SESSION 2

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<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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</table>
| O5 | 9:35-9:50 am  | Walnut  | **Student Author:** Audrey Cowling  
                       **Institution:** UW-Oshkosh  
                       **Faculty Sponsor:** Dr. Susan McFadden  
                       *The Healing Power of Pets: An Evaluation of the Benefits and Limitations of Animal-Assisted Therapy for People with Dementia* |
| O6 | 9:53-10:08 am | Walnut  | **Student Authors:** Lauren Demcak, Heather Lindert  
                       **Institution:** UW-Eau Claire  
                       **Faculty Sponsor:** Dr. Jerry Hoepner  
                       *The influence of partner training on communication for an individual with corticobasal degeneration* |
| O7 | 10:11-10:26 am| Walnut  | **Student Author:** Kiel Tietz  
                       **Institution:** UW-Stout  
                       **Faculty Sponsor:** Dr. Michael Pickart  
                       *Investigation of Squamous Cell Carcinoma Cancer Cells in Developing Zebrafish* |
### SESSION 3

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<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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</table>
| O8 | 10:29-10:44 am | Walnut | **Student Author:** Christopher Jacobs  
**Institution:** UW-La Crosse  
**Faculty Sponsor:** Lisa Riehle  
*Accuracy of PET versus SPECT for Myocardial Perfusion Imaging (MPI)* |
| O9 | 9:35-9:50 am | Hickory | **Student Author:** Stephen Zambo  
**Institution:** UW-Parkside  
**Faculty Sponsor:** Norman R. Cloutier  
*An Exploration of the Determinants of Student Success Using Stepwise Regression* |
| O10 | 9:53-10:08 am | Hickory | **Student Authors:** Sookyoung Lee, Minji Kim, Min Sun Chung  
**Institution:** UW-Parkside  
**Faculty Sponsor:** Dr. Shi Hae Kim  
*Learning from Korea about Math Education* |
| O11 | 10:11-10:26 am | Hickory | **Student Authors:** Aaron Wingad, Tyler Christensen, Lainee Hoffman, Kevin Reinhold, April Ross  
**Institution:** UW-Eau Claire  
**Faculty Sponsor:** Eric Jamelske  
*Using Modeling and Incentives to Expand the Reach of the USDA Fresh Fruit and Vegetable Program* |
| O12 | 10:29-10:44 am | Hickory | **Student Authors:** April Ross, Tyler Christiansen, Lainee Hoffman, Kevin Reinhold, Aaron Wingad  
**Institution:** UW-Eau Claire  
**Faculty Sponsor:** Eric Jamelske  
*The Impact of Free Coupons Given to Families on Fruit and Vegetable Consumption Among Their Children* |

### SESSION 4

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<th>#</th>
<th>Time</th>
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<th>Presentation</th>
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| O13 | 9:35-9:50 am | Spruce | **Student Author:** Zijuan Lai  
**Institution:** UW-Stout  
**Faculty Sponsor:** Forrest Schultz  
*Variation of Solar Absorptance of Carbon Nanotube Coating with Incident Angle* |
<table>
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<tr>
<th>Session</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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</table>
| O14     | 9:53-10:08 am | Spruce | Student Author: Subha Mathew  
Institution: UW-Parkside  
Faculty Sponsor: Dr. Vera Kolb  
Eco-Pharmacology of Tegretol |
| O15     | 10:11-10:26 am | Spruce | Student Author: Cory Windorff  
Institution: UW-River Falls  
Faculty Sponsor: Dr. Magdalena Pala  
Molybdenum Catalyst Synthesis |
| O16     | 10:29-10:44 am | Spruce | Student Author: Scott Schoeller  
Institution: UW-Whitewater  
Faculty Sponsor: Dr. John Ejnik  
Cadmum Acetate Dihydrate and Dandelion Seeds |

**SESSION 5**

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<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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| O17 | 9:35-9:50 am | Poplar | Student Author: Lauren Arendt  
Institution: UW-Stevens Point  
Faculty Sponsor: Per Henningsgaard  
Indigenous Literature in Australia and New Zealand |
| O18 | 9:53-10:08 am | Poplar | Student Author: Christy McCarter  
Institution: UW-Parkside  
Faculty Sponsor: Dr. Dana Oswald  
Masculine Emulation and Social Order: Shakespeare’s Othello |
| O19 | 10:11-10:26 am | Poplar | Student Authors: Christy McCarter  
Institution: UW-Parkside  
Faculty Sponsor: Dr. Dana Oswald  
Feminine Weaponry: Gender Transcendence in Arthurian Literature |
| O20 | 10:29-10:44 am | Poplar | Student Authors: Austin MacKenzie, Carissa Bennett  
Institution: UW-La Crosse  
Faculty Sponsor: Bryan Kopp  
Good Guy or Bad Guy: Examining Stephenie Meyer’s conception of Edward in Twilight |
Schedule of Oral Presentations

Afternoon Sessions
1:20 - 2:30 PM
### SESSION 6

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<tr>
<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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</table>
| O21| 1:20-1:35 pm | Oak  | **Student Author:** Brittney Gerber  
**Institution:** UW-Stout  
**Faculty Sponsor:** Dr. Michael A. Pickart  
*A Screen to Identify Small Molecule Teratogens during Zebrafish Skeletogenesis* |
| O22| 1:38-1:53 pm | Oak  | **Student Author:** Luke Greenwald  
**Institution:** UW-Whitewater  
**Faculty Sponsors:** Hien Nguyen; Catherine Chan  
*Using Computational and Interactive Tools to Model Plant Growth and Development* |
| O23| 1:56-2:11 pm | Oak  | **Student Authors:** Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz  
**Institution:** UW-Eau Claire  
**Faculty Sponsor:** Eric Jamelske  
*What Do College Students Across China Think About Global Warming?* |
| O24| 2:14-2:29 pm | Oak  | **Student Authors:** Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz  
**Institution:** UW-Eau Claire  
**Faculty Sponsor:** Eric Jamelske  
*What Do College Students Across the United States Think About Global Warming?* |

### SESSION 7

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<th>#</th>
<th>Time</th>
<th>Room</th>
<th>Presentation</th>
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</table>
| O25| 1:20-1:35 pm | Walnut | **Student Author:** Stephanie Abbott  
**Institution:** UW-Whitewater  
**Faculty Sponsor:** Larry Anderson  
*State Budgets and Economic Crises* |
| O26| 1:38-1:53 pm | Walnut | **Student Authors:** Yuniwo Nfor, Adam Salvo, Kam Rukavina, Alma Ibanez  
**Institution:** UW-Parkside  
**Faculty Sponsor:** Abey Kuruvilla  
*An Operations Evaluation of Swimtastic* |
SESSION 8

#  Time  Room  Presentation
O29  1:20-1:35 pm  Hickory  Student Authors: Saroj Dhital, Yasith Samarakoon  
Institution: UW-Superior  
Faculty Sponsor: Dr. Robert Beam  
Forecasting Coal Consumption in the United States

O30  1:38-1:53 pm  Hickory  Student Author: Tracy Stuettgen  
Institution: UW-Milwaukee  
Faculty Sponsor: Sandra Braman  
Who Designed the Internet? Stakeholders in the Internet Design Process at Launch and at Maturity

O31  1:56-2:11 pm  Hickory  Student Author: Nathan Bares  
Institution: UW-Milwaukee  
Faculty Sponsor: Dr. Sandra Braman  
Ethics in the Internet Design Process: The Fair Queuing Case

SESSION 9

#  Time  Room  Presentation
O32  1:20-1:35 pm  Spruce  Student Authors: Phoua Yang, Marissa Holst  
Institution: UW-River Falls  
Faculty Sponsor: Melanie Ayres  
Children’s Perceptions of Diversity

O33  1:38-1:53 pm  Spruce  Student Author: Laura Leyh  
Institution: UW-Oshkosh  
Faculty Sponsor: Pete Brown  
The Path of Teen-Aged-Parenting
Student Authors: Jennifer Short, Kasey Pasqualini  
Institution: UW-Parkside  
Faculty Sponsor: Matthew Makarios  
Reducing Juvenile Delinquency: What Works, What Doesn’t, and What’s Promising

Student Author: Zachary Freese  
Institution: UW-River Falls  
Faculty Sponsor: Dr. Betty Bergland  
An Urgent and Prime Objective: Congolese Independence and the Plot to Assassinate Patrice Lumumba

SESSION 10

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<th>#</th>
<th>Time</th>
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<th>Presentation</th>
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</table>
| O34| 1:56-2:11 pm | Spruce | Student Authors: Jennifer Short, Kasey Pasqualini  
Institution: UW-Parkside  
Faculty Sponsor: Matthew Makarios  
Reducing Juvenile Delinquency: What Works, What Doesn’t, and What’s Promising |
| O35| 2:14-2:29 pm | Spruce | Student Author: Zachary Freese  
Institution: UW-River Falls  
Faculty Sponsor: Dr. Betty Bergland  
An Urgent and Prime Objective: Congolese Independence and the Plot to Assassinate Patrice Lumumba |

Student Authors: Brittni Straseske, Carly Bollig  
Institution: UW-Eau Claire  
Faculty Sponsor: Shevaun Watson  
Student Writers across the Disciplines

Student Author: Christina Stevens  
Institution: UW-Parkside  
Faculty Sponsor: Mary Lenard  
Analyzing and Applying Themes in Young Adult Literature

Student Author: Luke Schalewski  
Institution: UW-Whitewater  
Faculty Sponsor: Dr. Leda Nath  
Quantitative Analysis of Higher Education Emotional Intelligence Via Student Engagement and Self-Authorship

Student Author: Nectarios Duchac  
Institution: UW-Parkside  
Faculty Sponsor: Prof. Edward Conrad; Vera M. Kolb  
Chemistry of Emotional Intelligence
Schedule of Poster Session I

8:30 - 9:30 AM
<table>
<thead>
<tr>
<th>#</th>
<th>Topic</th>
<th>Poster Presentation</th>
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<tbody>
<tr>
<td>P1</td>
<td>Arts &amp; Humanities</td>
<td><strong>Student Authors:</strong> Brian Burke, Melissa Heider,</td>
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<tr>
<td></td>
<td></td>
<td>Rachel Matteson, Jacob McDonald, Charles Zink</td>
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<tr>
<td></td>
<td></td>
<td><strong>Institute:</strong> UW-Milwaukee</td>
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<td><strong>Faculty Sponsor:</strong> John Stropes</td>
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<td><em>The Role of the Avant Garde Coffeehouse in the Folk/Blues Revival</em></td>
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<td>P3</td>
<td>Social Sciences &amp; Anthropology</td>
<td><strong>Student Author:</strong> Logan Heinrich</td>
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<td></td>
<td></td>
<td><strong>Institute:</strong> UW-Green Bay</td>
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<td></td>
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<td><strong>Faculty Sponsor:</strong> Dr. Illene Noppe</td>
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<td><em>Preferences in Sex-Role Typed Singles Ads</em></td>
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<tr>
<td>P5</td>
<td>Social Sciences &amp; Anthropology</td>
<td><strong>Student Author:</strong> Julia Bizub</td>
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<td><strong>Institute:</strong> UW-Parkside</td>
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<td><strong>Faculty Sponsor:</strong> Robert Sasso</td>
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<td><em>The Resique’s Washington House Tavern Project: Archaeological Investigation at the Kenosha’s Earliest Tavern on Simmons Island</em></td>
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<tr>
<td>P7</td>
<td>Social Sciences &amp; Anthropology</td>
<td><strong>Student Author:</strong> Dan Buehler</td>
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<td></td>
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<td><strong>Institute:</strong> UW-Whitewater</td>
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<td><strong>Faculty Sponsor:</strong> Dr. Christine Neddenriep</td>
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<tr>
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<td><em>Emotional support coping and problem-focus coping: explaining their relative benefits</em></td>
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<td>P9</td>
<td>Social Sciences &amp; Anthropology</td>
<td><strong>Student Authors:</strong> Maria Duncan, Jessica Grobe</td>
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<td><strong>Institute:</strong> UW-Stout</td>
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<td><strong>Faculty Sponsor:</strong> Susan Wolfgram</td>
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<td><em>Gender and the Effects of Cyberbullying</em></td>
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<td>P11</td>
<td>Social Sciences &amp; Anthropology</td>
<td><strong>Student Author:</strong> Stephanie Sowma</td>
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<td></td>
<td><strong>Institute:</strong> UW-Parkside</td>
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<td><strong>Faculty Sponsor:</strong> Kathleen Gillogly, Ph.D.</td>
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<td><em>Same-Sex Sexuality in the Arab World: The Legality of Desire</em></td>
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<tr>
<td>P13</td>
<td>Social Sciences &amp; Anthropology</td>
<td><strong>Student Authors:</strong> Aleisha Bradac, Alexander Zarek, Portia Hunter</td>
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<td></td>
<td></td>
<td><strong>Institute:</strong> UW-Parkside</td>
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<td><strong>Faculty Sponsor:</strong> Mary Kay Schleiter</td>
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<td><em>University of Wisconsin-Parkside Sociology/Anthropology Alumni Evaluation from 2000-2011</em></td>
</tr>
</tbody>
</table>
P15  Social Sciences & Anthropology  
**Student Author:** Katie Witz  
**Institute:** UW-Oshkosh  
**Faculty Sponsor:** Stephanie May de Montigny  
*Yurok Women and Menstruation Rites*

P17  Social Sciences & Anthropology  
**Student Authors:** Melissa Butler, Miranda Melville, Ana Castro, Jeffrey Gagliardi, Andrea Gust, Rebecca Shaw  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Kara Recker  
*Children and Adults Use Information About Object Size When Scaling Location*

P19  Social Sciences & Anthropology  
**Student Author:** Mai Cha Lee  
**Institute:** UW-Stout  
**Faculty Sponsor:** Susan McClelland  
*Hmong Intergenerational Perceptions of Play*

P21  Social Sciences & Anthropology  
**Student Author:** Tiffany Lozoya  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Sarah Hessenauer  
*Causes of Low Enrollment and Retention Rates among Foster Care Youth*

P23  Social Sciences & Anthropology  
**Student Authors:** Mark Pappas, Joshua Paul, Alanna Stankiewicz  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** Shawn P. Cahill, Ph.D.  
*Can Do vs. Willing to Try: A Measurement of Self-efficacy*

P25  Social Sciences & Anthropology  
**Student Authors:** Alexander Zarek, Janel Wahler, LaTonya Kelly  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Mary Kay Schleiter  
*Analysis of Food Security and Hunger among Clients of Food Pantries in Kenosha County*

P27  Social Sciences & Anthropology  
**Student Author:** Rebecca Stupka  
**Institute:** UW-Oshkosh  
**Faculty Sponsor:** Erin Winterrowd  
*Communication Accommodation in Mixed Gender Dyads*
P29  Social Sciences & Anthropology

**Student Authors:** Megan Key, Dagong Ran, Samuel Klossner, Nathan Boisen, Cory J. Patrick  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** Shawn P. Cahill  
*Emotionally Expressive Writing Manipulation Check*

P31  Social Sciences & Anthropology

**Student Author:** Marcus Bouterse  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Dr. Ward  
*The Domestic Cultivation Issues of China During the Qing Dynasty*

P33  Social Sciences & Anthropology

**Student Author:** Ben Holmes  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Dr. Robert Sasso  
*The Electrolytic Reduction of Square Nails Recovered at the Vieux Fur Trading Post Site*

P35  Social Sciences & Anthropology

**Student Author:** Carlie Kragovich  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Mark Boulton  
*Aid For Veterans and Lack Thereof: A Comparison of the G.I. Bills For World War II Veterans and Vietnam Veterans*

P37  Social Sciences & Anthropology  
(also an Oral Presentation O12)

**Student Authors:** April Ross, Tyler Christiansen, Lainee Hoffman, Kevin Reinhold, Aaron Wingad  
**Institute:** UW-Eau Claire  
**Faculty Sponsor:** Eric Jamelske  
*The Impact of Free Coupons Given to Families on Fruit and Vegetable Consumption Among Their Children*

P39  Education  
(also an Oral Presentation O11)

**Student Authors:** Aaron Wingad, Tyler Christiansen, Lainee Hoffman, Kevin Reinhold, April Ross  
**Institute:** UW-Eau Claire  
**Faculty Sponsor:** Eric Jamelske  
*Using Modeling and Incentives to Expand the Reach of the USDA Fresh Fruit and Vegetable Program*

P41  Education

**Student Authors:** Jacob Dums, Sara Bratsch  
**Institute:** UW-River Falls  
**Faculty Sponsor:** Karen Klyczek  
*Inquiry-based Lab Course used to Engage Students in Research*
| Page | Education | Student Authors: Mikayla Schroeder, Krista Lindemann  
Institute: UW-Eau Claire  
Faculty Sponsor: Dr. Kate Reynolds |
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| P53  | Education  | Student Author: Tom Dembski  
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| P55  | Education  | Student Author: Paula Hagen  
Institute: UW-Eau Claire  
Faculty Sponsor: Erica Benson  
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P57 Education

**Student Author:** Anna Bessuner  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Dr. Alena Holmes

*English Language Acquisition Through the Use of Music in English as a Second Language Instruction*

P59 Science & Engineering

**Student Authors:** Lisa Elliott, Monica Schmidt  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Dr. Maria MacWilliams

*The Impact of Antibiotic-Clay Interactions on Bacterial Growth*

P61 Science & Engineering

**Student Authors:** Jesse Pischlar, Bryce Holm  
**Institute:** UW-Stout  
**Faculty Sponsor:** Jerry Wickman

*Life Cycle Assessment and a Competitive Advantage in Polymer Processing*

P63 Science & Engineering

**Student Author:** Richard Jackson  
**Institute:** UW-Platteville  
**Faculty Sponsor:** Yan Wu

*Electrical and thermal characterization BST ferroelectric thin film by a conductive Atomic Force Microscopy probe with integrated heater*

P65 Science & Engineering

**Student Author:** Laura Schulz  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Patricia Cleary

*Determining Air Quality Plume over Near-Shore Lake Michigan*

P67 Science & Engineering

**Student Author:** Cristofor Michels  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Dr. Dale Splinter

*Stream Morphology and Water Quality of Bluff Creek, Southeastern Wisconsin*

P69 Science & Engineering

**Student Authors:** Kevin Moran  
**Institute:** UW-Oshkosh  
**Faculty Sponsor:** Nadia Kaltcheva

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**Student Authors:** Benjamin Leist, Jordan Fouks  
**Institute:** UW-Stout  
**Faculty Sponsor:** Kitrina Carlson  

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**Student Author:** Megan Nelson  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Dr. Eric Brown  

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**Student Authors:** Michael Roesch, Aaron Herzog  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** Dr. Nicholas Silvaggi  

*Structural studies of Enduracidin biosynthesis*

**P91**  
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**Student Authors:** Zachary Tutlewski, Emily E. Binversie  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Melvin S. Thomson  

*Discrimination of the “H” Gene in Tribolium Castaneum (the Red Flour Beetle)*

**P93**  
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**Student Author:** Timothy Morris Jr.  
**Institute:** UW-River Falls  
**Faculty Sponsor:** Dr. Timothy Lyden  

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**Student Author:** Choua Vang  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Pete Killoran  

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**P97**  
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**Student Authors:** Nicole Krausert, Amanda Smet  
**Institute:** UW-Platteville  
**Faculty Sponsor:** Chanaka Mendis  

*Gene expression analysis to evaluate the effect of p38 specific inhibitor SB203580 on SEB induced apoptosis related pathways*
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Student Author: Katie Streufert
Institute: UW-Oshkosh
Faculty Sponsor: James Paulson Ph.D.
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Student Author: Erin Prader
Institute: UW-Oshkosh & UW-Manitowoc
Faculty Sponsor: Dr. Rebecca Abler
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Student Author: Stanton Jasicki
Institute: UW-Eau Claire
Faculty Sponsor: Dr. Daniel Herman
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Student Author: Katelyn Larsen
Institute: UW-La Crosse
Faculty Sponsor: Jo Arney
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Student Author: Roger Heffron
Institute: UW-Parkside
Faculty Sponsor: Professor Joy Wolf
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Student Author: Nate Groshan
Institute: UW-Whitewater
Faculty Sponsor: Bruce Eshelman
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Student Author: Jane C. Anderson
Institute: UW-Stout
Faculty Sponsor: Christopher A. Moyer
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Student Author: Deion Burks
Institute: UW-Whitewater
Faculty Sponsor: Samantha Samreth
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Institute: UW-Milwaukee  
Faculty Sponsor: Dr. Rebecca Klaper  

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Student Authors: Matt Effinger, Andrew Wensing  
Institute: UW-Parkside  
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Student Author: Kathryn Lange  
Institute: UW-Whitewater  
Faculty Sponsor: Dr. Elisabeth A. Harrahy  

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Student Authors: Abbey Stark, Andrea Wentzel, Kristi Nolden, Casey Sondgeroth, Katrina Taylor  
Institute: UW-Platteville  
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Student Author: Matthew Klein  
Institute: UW-Milwaukee  
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Student Authors: Kevin Polinski, Kami Miles  
Institute: UW-Platteville  
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Student Authors: Adrian Landreth, Stephanie Krueger  
Institute: UW-Fox Valley  
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<td><strong>Student Authors:</strong> Rachel Garrett, Natalie Davidson,</td>
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Institute: UW-Stout
Faculty Sponsor: Dr. Susan Wolfgram

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Student Authors: Christina Hall, Jamie Iverson
Institute: UW-Stout
Faculty Sponsor: Susan Wolfgram, Ph.D.

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P34  Social Sciences & Anthropology

Student Author: Katie Witz
Institute: UW-Oshkosh
Faculty Sponsor: Paul Van Auken

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Student Author: Dennis Polzin
Institute: UW-Parkside
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Student Authors: Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz
Institute: UW-Eau Claire
Faculty Sponsor: Eric Jamelske

What Do College Students Across China Think About Global Warming?

P40  Social Sciences & Anthropology

Student Authors: Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz
Institute: UW-Eau Claire
Faculty Sponsor: Eric Jamelske

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Student Author: Samantha Leick
Institute: UW-Parkside
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P54 Education
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Institute: UW-Whitewater
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P56 Education
Student Author: Caroline Harvey
Institute: UW-Parkside
Faculty Sponsor: Xun Wang
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**Student Authors:** Randy Lim, Nick Asay  
**Institute:** UW-Eau Claire  
**Faculty Sponsor:** Catya von Károlyi  
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P60  Science & Engineering  
**Student Author:** Jeffrey Motschman  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** J. Rudi Strickler  
*Development of Novel Microfluidic Devices*

P62  Science & Engineering  
**Student Authors:** Jonathan Friend, Jairo Guerrero  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Dr. Patricia Cleary  
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P64  Science & Engineering  
**Student Author:** Anthony Gierczak  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Jeff Vanevenhoven  
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P66  Science & Engineering  
**Student Authors:** Matthew Rohr, Christopher Biwer, David Day, Robin Karr  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** Dr. Xavier Siemens  
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**Student Author:** Nicholas Goergen  
**Institute:** UW-Parkside  
**Faculty Sponsor:** David Rogers  
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P70  Science & Engineering  
**Student Author:** Roberta MacDonald  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Dr. John Skalbeck  
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Student Author: Pamela Fuller
Institute: UW-Parkside
Faculty Sponsor: Vera M. Kolb

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Student Authors: Alexander Turinske, Jonathon Tobin
Institute: UW-Oshkosh
Faculty Sponsor: Dr. Nenad Stojilovic

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Student Authors: Graham Radomski, Jacob Porter
Joel Seagren, Benjamin Batura
Institute: UW-Oshkosh
Faculty Sponsor: Samuel David

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P78 Chemistry

Student Author: Sarah Oehm
Institute: UW-Milwaukee
Faculty Sponsor: M. M. Hossain

New Enamine Substrate for Intramolecular Buchwald-Hartwig Indole Synthesis

P80 Chemistry

Student Authors: Thomas Knight, Fax Xu
Institute: UW-Washington County
Faculty Sponsor: Dr. Mohamed Ayoub

A Computational Chemistry Study and Natural Bond Orbital Analysis of N2O3

P82 Cell & Molecular Biology

Student Author: Chad Glisch
Institute: UW-Eau Claire
Faculty Sponsor: Dan Herman

Verification of Methicillin Resistant Staphylococcus aureus in Ecuador Hospital and Community Samplings by Use of Polymerase Chain Reaction

P84 Cell & Molecular Biology

Student Author: Joseph Kebisek
Institute: UW-Milwaukee
Faculty Sponsor: Henry G. Tomasiewicz

Gene trapping finds female specific promoter in Danio rerio
P86  Cell & Molecular Biology  
**Student Authors:** Gundeep Singh, Liyang Zang  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Robert Barber  
*Biochemical Characterization of a Putative Butyrate Kinase from Desulfovibrio vulgaris str. Hildenborough*

P88  Cell & Molecular Biology  
**Student Author:** Melody Miller  
**Institute:** UW-La Crosse  
**Faculty Sponsor:** Dr. Bradley Seebach  
*Alpha Motor Neuron Classification in Mammalian Neonates*

P90  Cell & Molecular Biology  
**Student Authors:** Catherine Rawlins, Benjamin Leist, Jamie Leist, Natasha Khan  
**Institute:** UW-Stout  
**Faculty Sponsor:** Kitrina Carlson  
*Effects of Tradescantia zebrina Extracts on Artemia*

P92  Cell & Molecular Biology  
**Student Author:** Stephanie Simonet  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Dr. Eric Brown  
*Determining the Effects of Intracellular Excitation of Dye-TiO2 Nanoconjugates*

P94  Cell & Molecular Biology  
**Student Author:** Keir Wefferling  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** Sara B. Hoot  
*Phylogeny and Fruit Morphology of the Moonseed Family (Menispermaceae)*

P96  Cell & Molecular Biology  
**Student Author:** Eric Lund  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** Dr. Nicholas Silvaggi  
*Structural Studies of Eduracididine Biosynthesis*

P98  Cell & Molecular Biology  
**Student Author:** Kevin Rixmann  
**Institute:** UW-River Falls  
**Faculty Sponsor:** Dr. Timothy Lyden  
*Modeling and Characterization of Primary and Cell-Line Derived Artificial Breast Cancer Tissues Produced Using 3D Culture Methods*
Physiological Role of a Short Chain Fatty Acid Kinase in *Rhodobacter sphaeroides*

*Student Author:* Jennifer Toro  
*Institute:* UW-Parkside  
*Faculty Sponsor:* Dr. David A. Rogers

*Returning a Gravel Quarry to its Natural State of Beauty*  
*A Restoration Ecology Project*

*Student Author:* Scott Komis  
*Institute:* UW-Green Bay  
*Faculty Sponsor:* Dr. Michael Draney

*Effects of Garlic Mustard, White-Tailed Deer, and Forest Restoration on Ground-Dwelling Invertebrates at Bay Beach Wildlife Sanctuary*

*Student Authors:* Abbey Mattes, Kim Zilavy  
*Institute:* UW-Milwaukee  
*Faculty Sponsor:* Guilherme Indig

*The Development of a New Experimental Protocol for the Investigation of Photoinduced Lipid Peroxidation in Biological Membranes*

*Student Author:* Nate Groshan  
*Institute:* UW-Whitewater  
*Faculty Sponsor:* George Clokey

*A Study of Tracks Left by Antilocapra americana and Canis latrans with a Focus on Decay and Duration*

*Student Authors:* Jane C. Anderson, Erik Feia, Pauline Ceulemans  
*Institute:* UW-Eau Claire  
*Faculty Sponsor:* Sarah Wood

*Prevalence of Methicillin-Resistant Staphylococcus aureus in Loja Province, Ecuador*

*Student Author:* Daniel Monge  
*Institute:* UW-Milwaukee  
*Faculty Sponsor:* Dr. J. R. Strickler

*Observation of Zooplankton During a Rapid Pressure Drop*
P114  Life Sciences  
**Student Authors:** Rachael Baker, Emma Reed  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Dr. Joy Wolf  
Vegetation Cover as an indicator of breeding bird habitat in Chiwaukee Prairie and Richard Bong State Recreation Area

P116  Life Sciences  
**Student Author:** Jasmine Crafton  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Dr. Catherine Chan  
The Effects of Caffeine and Caffeine Metabolites on a model land plant, Arabidopsis thaliana

P118  Life Sciences  
**Student Author:** Erin Browning  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** J. Carson Smith  
The Anxiolytic Effects of Exercise are Sustained after an Emotional Challenge

P120  Life Sciences  
**Student Author:** Tim Flood  
**Institute:** UW-Parkside  
**Faculty Sponsor:** Dr. Joy Wolf  
Native Species Richness and Density Assessment of Hillside Restoration at the Root River Environmental Education Community Center

P122  Life Sciences  
**Student Authors:** Jeanne Price, Marie Nider, Ashley Redinger  
**Institute:** UW-Whitewater  
**Faculty Sponsor:** Dr. Catherine Chan  
Effects of Pharmaceuticals and Personal Care Products on a model terrestrial plant, Arabidopsis thaliana

P124  Life Sciences  
**Student Author:** Autumn Milanowski  
**Institute:** UW-Milwaukee  
**Faculty Sponsor:** Dennis Tomashek  
The Role of Multifocal Lens Glasses on Walking Balance

P126  Life Sciences  
**Student Authors:** Stephanie Kulow, Sarah Stump  
**Institute:** UW-La Crosse  
**Faculty Sponsor:** Scott Doberstein  
The Effects of Time of Day on Power Output Performance
The Political Effects of Group Lending on Nicaraguan Individuals

Student Authors: Kelsey Roets, Ian Allen
Institute: UW-Eau Claire
Faculty Sponsor: Amy Young

Fitness on Facebook: Advertisements Generated in Response to Profile Content

Student Author: Hope Villiard
Institute: UW-Madison
Faculty Sponsor: Dr. Daniel Herman

Lake Forest Hospital Lean Project

Student Author: Laura Steigerwald
Institute: UW-Whitewater
Faculty Sponsor: William Dougan

Analyzing Federal Court of Appeals Cases to Determine Key Factors Used in Determining Employee versus Independent Contractor Status

Student Author: Nadeesha Thewarapperuma
Institute: UW-Oshkosh
Faculty Sponsor: Michael Lizotte

Estimating Commuter Behaviors and Impacts from University Parking Records

Student Authors: Lauren Axelson
Institute: UW-Parkside
Faculty Sponsor: Abey Kuruvilla

Indoor Tanning

Student Authors: Tyler Gruen, Dan Burkhart, Todd Witt
Institute: UW-Marshfield/Wood County
Faculty Sponsor: Malcolm Gold

Cost-Benefit Analysis of the recycling at UW Marshfield/Wood County
Student Author: Andrew Luebke
Institute: UW-Parkside
Faculty Sponsor: Catherine Mossman

Using SCUBA Techniques to Monitor Daily Behaviors and Diet Preferences of Largemouth Bass (Micropterus salmoides) in Three Wisconsin Inland Lakes
Creative Activity & Gallery Exhibit Abstracts
C1 Self-Own: How to become self reliant again in an age of digital dependence
Student Author: John Pahlas
Institution: UW-Oshkosh
Faculty Sponsor: Jeff Lipschutz
Presentation Type: Theatrical
Ballroom, 10:50 - 11:05 am

As our digital age evolves at an ever-quickening pace, we are bridging an inherent gap between man and machine, mind and matter, and between humanity and nature. Information streams through our minds faster than ever before and computers in our pockets customize our instantaneous gratifications. Our focus on individuality in our modern society has pushed us in directions that lead towards digital dependence and further away from self-reliance and self-knowledge, thus making it very difficult for people to use their creativity to solve problems. We mustn’t allow the machines we create to destroy the intrinsic human values that spark creativity and mindful intuitive movements that keep our world humane and natural. It is a great worry that what we’ve grown so dependent on is regulated and regimented by corporate super powers—that our major ways of communicating information are completely separate from our minds, bodies, and ultimately our souls.

Through improvisational performance, satirical humor, and sculptural artwork, my colleagues and I strive to establish a thoughtful insight into our generation’s struggle for self worth and ownership in the 21st century. Our abstract is called: Self-own: how to become self reliant again in an age of digital dependence. Our main focus will be showing collegiate students how to use creative outlets to grow less dependent on digital machinery. There is an untapped realm of creativity within us all; we just need to learn digital moderation in order to harness that energy to help solve some of the world’s greatest problems.

C2 This Is A Promise - A Modern Literary Compilation
Student Author: Jamie Kranig
Institution: UW-Parkside
Faculty Sponsor: Dr. Maria D. Martinez
Presentation Type: Poetry
Cinema, 11:10 - 11:25 am

This is a Promise - A Modern Literary Compilation” is a collection of poems and writing from over the past 13 years of my life. They chronicle my struggles with depression, being diagnosed with cancer, a dying father, loves gained, loves lost, drug addiction, sexual orientation, visions of death, and the many ways one can discover who they are as a person by examining the dark corners of their psyche.

C3 The Political Effects of Group Lending on Nicaraguan Individuals
Student Author: Kelsey Roets
Institution: UW-Eau Claire
Faculty Sponsor: Kitrina Carlson
Presentation Type: Documentary
Cinema, 11:30 - 11:45 am

After receiving funding from the University of Wisconsin-Eau Claire, we went to Teustepe, Nicaragua, in January 2011 to study the political effects of microfinance on Nicaraguan individuals. While the economic ramifications of microfinance are often studied, the political effects are often overlooked and undervalued. In Teustepe we worked with PRESTANIC, a microlending organization that gives small (averaging US$120), short term loans to small groups. Collecting both quantitative and qualitative research, we interviewed individuals who received loans and had them show us how they used their loan to start or develop a business.

Based on our research we found that group lending helps expand women’s spheres of influence by encouraging community participation through the formation of groups and small businesses. Group lending teaches skills, such as group governance and organization, that enable individuals to organize politically if they so choose. Moreover, we found that small loans coupled with financial education not only increase trust and knowledge of financial institutions, but they also prepare women for potential leadership roles in their communities.
C4 Texture Development on Clay
Student Author: Brett Roberts
Institution: UW-Whitewater
Faculty Sponsor: Jared Janovec
Presentation Type: Sculpture
Alumni, 10:50 - 11:45 am

The purpose of my research has been to explore the various methods for obtaining different surface textures with clay to be used in my own ceramic art forms. The surface qualities incorporate various finish characteristics, such as shiny and matte glazes, as well as textures produced through the firing processes, but my main focus has been texture incorporated into the clay prior to the firing processes. My research has utilized plaster molds, ceramic studio tools, (some of which are personally fabricated) sand blasting, and extruding clay through dies, to obtain various synthetic and organic textures. Sand blasting onto soft clay has produced some of the more exciting results. Although there is little variety in the texture quality, its course nature creates a pleasant contrasting element to the otherwise smooth, glazed surfaces of my work. Plaster molds have been another pleasing source for texture as they have provided a mix between organic and synthetic textures, and has a certain precision that other methods lack, which allows for the preservation of fine details. My research thus far has provided me with the greater possibilities to further explore and refine my work. Texture is finding a much more relevant place in my art, and the juxtaposition of that texture to smooth glazed surfaces has brought about more interesting and personalized qualities to my work.

C5 Exploration of Underglaze Pigments: A Search for Unconventional Ceramic Surface Colorations
Student Author: Jennifer Yunker
Institution: UW-Whitewater
Faculty Sponsor: Charlie Olson
Presentation Type: Sculpture
Alumni, 10:50 - 11:45 am

The focus of this research has been to further my understanding of commercially produced underglazes through creating a series of tests using various methods of application and firing temperatures. I plan to utilize this research by achieving an assortment of colored and textured surfaces that have been applied to pre-tested white stoneware clay, which permits higher firing temperatures than earthenware clays. I began by formulating and testing different white clay bodies to find their differences in strength and ability to emphasize underglaze colors. Once the appropriate clay body was realized, I applied a liquefied clay solution called engobe through a sprayed application, thereby creating a specific raised, pebble-like texture on the surface of the clay object. Another technique that I explored to create a specific texture was placing fabric onto the clay and applying pressure in order to create recessed areas, which produced a low relief surface. I then brushed underglaze onto the surface, followed by immediately sponging areas to remove underglaze from high points on the surface of the clay and leaving it in the lower, recessed areas. Through firing all of these tests from both techniques at different temperatures, I found that at higher temperatures the colors became dull with a glossy surface, whereas the colors on the low fired tests became more intense with a matte surface. Both of these processes have shown equally interesting results and have substantially contributed to my ongoing exploration of kiln fired ceramic sculpture.

C6 Conceptual Clarity Through Visual Language: The Development of Figurative Sculpture-Based Installations
Student Author: Allison Timmins
Institution: UW-Whitewater
Faculty Sponsor: Jared Janovec
Presentation Type: Sculpture
Alumni, 10:50 - 11:45 am

My classically representational use of the human figure in my work is linked to abstractly symbolic environments founded upon the intellect. I use clay and mixed media to develop sculptures dedicated to the human figure, which are then placed in psychologically conceptual environments. I view the human form as a literal and symbolic filter for self and the capability of the mind, as well as for our relationships to others. The advancement of my ability to successfully use visual language to communicate broader concepts comes from experimentation with mixed media materials and technical practice in expressively rendering the human form in clay. I have found that sculpting from a quality visual reference, such as a live model or photos taken
from many angles of the subject, has greatly improved my seeing and hand skills. While there may be a hint of ambiguity in my work, my intent is for it to be accessible to a greater audience in order to inspire more appreciation for the visual arts. Investigating various materials has led me to better communicate the concept of my work with greater resolve and clarity. I have found that creating temporary and time-sensitive pieces communicates concepts such as fluidity of the self, as well as the fleeting nature of all we hold dear. The outcome of this work is a direct metaphor for the temporality of the body and all the complexities of the human condition it employs.

C7 My Cuban Experience: Discovering the Real Cuba
Student Author: Nicholas Kaminski
Institution: UW-Parkside
Faculty Sponsor: Dr. Maria D. Martinez
Presentation Type: 3-D & projected
Alumni, 10:50 - 11:45 am

I went to Cuba over Spring Break (March 14th-20th), 2010, and I used this opportunity to conduct research about the Taíno native influence on the far eastern side of the island, an area that is considered the most remote in all of Cuba. I created a presentation that helps to visually demonstrate my experience through photographs and use these to help explain my experience while I was there. Other than the research, I wrote a journal about what we did every day. Although I did this for credit in Spanish (my major, along with International Studies), I also found myself reflecting over experiences that I had previously forgotten about allowing me to write a very detailed and personal account of my time there. This also made me realize how much I like Cuba, how interesting it is and how truly unique, innovative and amazing the Cuban people are. This made me all the more eager to tell people about my experiences, and I found that at times I wanted to tell people everything, but I never had enough time to say what I had wanted to tell. I very much am “addicted” to this island now, something that I had not anticipated before the trip. Other than the power-point presentation, I also have many art objects & other curiosities from my visit that help explain some of my experiences there.

C8 From Printmaking to Clay: An Insight into Image Transfers
Student Author: Nicolle LaMere
Institution: UW-Whitewater
Faculty Sponsor: Jared Janovec
Presentation Type: 3-D & 2-D
Alumni, 10:50 - 11:45 am

As my sensitivity to the concept of modernity grows, I have become increasingly interested in broad, commercial aesthetics and how they’ve affected aspects of culture as well as how they’ve come to shape our identity as individuals. To convey this concept, an investigation into multi-layered images utilizing screen-printed underglazes began in order to conjoin commercial and fine art sensibilities. This study began with an investigation into a dozen different commercially available underglazes. The particle size of the pigments within the underglaze will only pass through a particular mesh size. Once the compatible mesh size was discovered, pre-stretched screens were purchased, and an image was then registered on the screen. This was realized by using screen filler, which is painted onto the surface of the screen in select areas. From there, an investigation into transferring techniques began with commercial decal paper as well as transparencies. Screen printed decals were then transferred onto ceramic test tiles and fired in order to assess the final readability of the printed imagery. When the best method for creating decals was found, multi-layered images were created and transferred onto glaze fired ceramic surfaces. The accumulation of information gained was used to create a body of ceramic works which implement processes as well as images that explore human identity.
C9 Philosophy Expressed as Visual Art

Student Author: Phoebe Baker
Institution: UW-Platteville
Faculty Sponsor: Mary Lenzi
Presentation Type: Painting
Alumni, 10:50 - 11:45 am

Concepts such as causality, materialism, pluralism, and First Cause are explored through concrete, visual imagery. This may include quotations from David Hume, Immanuel Kant, Luce Irigaray, and other well-established philosophers. Images with and without text can be powerful tools for expressing philosophical concepts.
Oral Presentation Abstracts
O1 A Vision for the Future of Eau Claire’s Hmong Community: A Community University Collaboration

Student Authors: Kyrie Smith, Alethia Paynia Moua, Honey Moua, Julie Koehler, Mai Nhia Vue
Institution: UW-Eau Claire
Faculty Sponsor: Leah Olson-McBride

Oak, 9:35-9:50 am

The Eau Claire Area Hmong Mutual Assistance Association (ECAHMAA) has been providing various educational, vocational, and social services to the growing Hmong population in northwestern Wisconsin for 29 years. The primary purpose of the project was to develop and implement a culturally appropriate research protocol that allowed the research team to collect data regarding the Hmong community’s current view of the programming at ECAHMAA and to gather the community’s input on a vision for ECAHMAA’s future operations. The students, in conjunction with ECAHMAA staff, developed and refined the survey and interview protocol. The student researchers identified sites, such as a meeting of the Hmong Student Association and a gathering at the Hmong Christian Church, and obtained the cooperation of individuals at those sites in order to engage in data collection. The members of the research team who were fluent in Hmong collected data from respondents who preferred to speak Hmong; all members collected data from those who preferred to speak English. While the research is ongoing, an initial thematic analysis of the responses (n=82) indicates that generational differences and the lack of communication, both within the Hmong community and between the Hmong community and the larger community, are primary concerns. A number of respondents indicated that they did not actively participate in ECAHMAA-affiliated events, with the exception of the Hmong New Year celebration. It is hoped that ECAHMAA will be able to utilize the information gathered via the research to implement programming that meets the needs of the community.

O2 Russian Immigrants in Chicago, 1918-1925: The development of a Russian community in Chicago after the 1917 Russian Revolution

Student Author: Aleksey Andreev
Institution: UW-Whitewater
Faculty Sponsor: Elizabeth Hachten

Oak, 9:53-10:08 am

Before 1918, Russians in Chicago were an overlooked, small group of immigrants. However, in the years after 1918, Russian immigrants became distinguished from other Eastern European immigrants. After the revolution, this community began to develop its own identity through the emergence of Russian language newspapers, workers’ unions and political groups. This project examines how the Chicago Russian community changed after 1918. The main primary sources that were used extensively to support the argument were a collection of three Russian daily newspapers that were published between 1918-1925 in Chicago. Microfilms were analyzed in addition to other publications which dealt with the labor movement, immigrant population studies and public opinion in the Chicago media.

The Russian Revolution of 1917 was one of the external factors that led to changes in Chicago’s Russian community. The Revolution caused many discussions among both Russian immigrants and native U.S. citizens about the future of Russia and the Bolsheviks. Intense divisions among Russian immigrants developed between the supporters of the Bolshevik government and into those who criticized it.

In addition to the impact, there were also internal changes. The issues of education among adults and children were raised and resulted in new schools and progressive ideas that influenced the establishment of a new class of intelligentsia that started to develop from working-class Russian immigrants. Overall, the decades following the Revolution represented a new era for Russian citizens in Chicago that led to new identity development and stronger community organization.
O3 Women In Iran: Deconstruction of Status and Marginalization in the Aftermath of the 1979 Islamic Revolution

Student Author: Yasir Kuoti
Institution: UW-Stevens Point
Faculty Sponsor: Sally Kent
Oak, 10:11-10:26 am

The paper shall discuss the social, economic, and political effects of the Revolution on the status of women in Iran... a comparable narrative shall be discussed in detail.

O5 The Healing Power of Pets: An Evaluation of the Benefits and Limitations of Animal-Assisted Therapy for People with Dementia

Student Author: Audrey Cowling
Institution: UW-Oshkosh
Faculty Sponsor: Dr. Susan McFadden
Walnut, 9:35-9:50 am

Evidence of a human-animal bond goes back to the origins of mankind. More recently, therapy that utilizes animals such as dogs, cats, and fish has been implemented in long-term care facilities to aid in the well being of people with dementia. By examining the diverse pool of research that has been conducted on pet therapy, also known as animal-assisted therapy, I have gained insight into the benefits and the limitations of this treatment. Animal-assisted therapy (AAT) has been shown to increase engagement with the environment, decrease agitation and depression, and promote social interaction. Advances in technology have led to alternatives to using live animals; for example, both robotics and video technology have shown promising results. However, several factors limit the ability to evaluate AAT, including a lack of controlled studies, the impact of clients’ previous relationships with animals, and the use of potentially biased measures. These factors need to be addressed in further research to allow for a clearer picture of the benefits of AAT for people with dementia. With dementia rates on the rise, it is important to explore the efficacy of this form of therapy so that it can be implemented to enrich the lives of people living with dementia.

O6 The influence of partner training on communication for an individual with corticobasal degeneration

Student Authors: Lauren Demcoak, Heather Lindert
Institution: UW-Eau Claire
Faculty Sponsor: Dr. Jerry Hoepner
Walnut, 9:53-10:08 am

Corticobasal degeneration (CBD) is a rare neurodegenerative disease that is characterized by motoric, speech, language and cognitive dysfunction (Stover & Watts, 2001). There is a growing body of literature discussing cellular, neuroanatomic, and neuroimaging of CBD (Ling et al., 2010; Okazaki et al., 2010; Hassan et al., 2009; Gorno-Tempini, Murray, Rankin, Weiner & Miller, 2004). Prior research of conversation behaviors of individuals with CBD is limited (Donovan, Kendall, Bacon-Moore, Rosenbek, & Gonzalez-Rothi, 2006; Graham, Bak, Patterson, & Hodges, 2003), and authors are aware of no research on the influence of the conversational partner. The present case study involves an individual with CBD and her husband. The case study followed a participatory action research method, involving participants in planning and outcome assessments. Baseline assessments addressed receptive and expressive language, memory, motor speech function, problem solving, executive functions, and attention, for the individual with CBD and conversational interactions with her primary partner. After establishing baseline status, the primary participant and her husband participated in six weeks of structured partner training. The multi-modality partner training follows a modified Supported Conversation for Aphasia ™ approach (Kagan, 1999). Pre-, post- and two-month follow-up measures of support provided by the conversational partner and the participation by the individual with CBD were measured with the Measure of Supported Conversation and Measure of Participation in Conversation (Kagan, 1999). Outcome measures revealed a decrease in non-supportive behaviors (e.g., quizzing behaviors) and an increase in supportive behaviors (i.e., acknowledging and revealing competence) at post-testing and maintenance at the two-month follow-up.
Interactions between tumor and stromal tissues underlie properties of cancer growth and malignancy. Longstanding and recent experiments in developmental organisms suggest these microenvironmental interactions impact growth of transplanted human cancer cells. Interestingly, varying the developmental stage at which cancerous cells are introduced results in either suppression of cancer growth or full support of growth including tumor angiogenesis. The focus of this study was to investigate the capacity of the embryonic zebrafish microenvironment to inhibit the growth of transplanted human squamous cell carcinoma (SCC) cancer cells during early development. To test the varying effects of developmental stage, times of SCC transplantation by injection were varied between immediately following fertilization, at the high shield stage, and two days post fertilization into the duct of Cuvier. The SCC cancer cells were marked with green fluorescent protein (GFP) to facilitate observation of growth within the developing fish. At six hours, one day post injection, and up to five days post-fertilization, fluorescent images were taken and analysis completed for growth and tissue localization. Fish lacking any observed GFP were examined further for evidence of SCC growth using GFP-specific PCR to determine if human SCCs were actually present. Results are expected to display tumor growth across all stages of development, but inhibition of growth for SCCs injected at early time points. These experiments will be beneficial to understand stromal and tumor tissue interactions and may provide an opportunity to isolate genetic components underlying tumor growth and treatment response.

Although SPECT has become the accepted technique for MPI, cardiac PET has gained widespread utilization in the evaluation of coronary artery disease (CAD). The goal was to evaluate the accuracy of PET vs. SPECT for MPI when compared to cardiac catheterization (cath) results. The study consisted of 798 patients referred for MPI; 398 PET and 400 SPECT. PET MPI utilized a dipyridamole rest-stress imaging protocol with attenuation correction and Rb-82 using a PET system. SPECT MPI was conducted using a dual isotope protocol. Studies were evaluated as normal, abnormal, or equivocal. Abnormal cath results were defined as 50% lesion of the left main and/or 70% lesion in the left anterior descending, left circumflex, or right coronary artery. Cath and image results were compared for matching lesions and defects, assessing accuracy of the imaging procedure. 174 patients (79 PET, 95 SPECT) were referred for cath. The true positive rate for PET and SPECT MPI was 59.5% and 56.4% respectively while the false positive rate was 27.9% and 40.4%. The sensitivity of PET MPI was 90.4%, SPECT was 98.2%. Specificity of both tests was abnormally low. It was found that both PET and SPECT MPI are sensitive tests for diagnosing and evaluating extent of CAD. PET is superior to SPECT because it offers increased image quality and speed, with less radiation exposure. The low specificity is likely due to referral bias (normal studies not referred for cath). Results may be limited due to other factors not considered. Further examination is warranted.

The purpose of the research conducted here is to identify the determinants of entry term GPA for a UW-Parkside student and their relative importance. The
analysis benefited from the availability of transcript data (personal identifiers withheld) for more than 9,000 UW-Parkside students. Due to the fact that there is a plethora of data, this paper shows how to implement an estimation technique called stepwise regression, which identifies which of the given independent variables best explains the dependent variable, in this case, entry term GPA. Because stepwise regression is a purely mechanical, model building technique, it was used in a strictly exploratory fashion on a small subset of the data (n=1,000). Next, the stepwise results were used as a guide to estimate a broader model of student success utilizing the full sample of 9,201 students. The more complete model, using the full sample, found that student success as measured by entry term GPA was strongly associated with the number of transfer credits a student had, the number of credits a student attempted, whether or not the student was a member of a minority, and the student's high school rank. Surprisingly, ACT score was significant in the positive direction but only weakly.

O10 Learning from Korea about Math Education
Student Authors: Sookyong Lee, Minji Kim, Min Sun Chung
Institution: UW-Parkside
Faculty Sponsor: Dr. Shi Hae Kim
Hickory, 9:53-10:08 am

Improving math competency holds a high position on the national educational agenda. Cross-cultural studies help us to find applications to improve our practices. Korean students rank high in international math tests. It is worthwhile to examine Korean students’ math learning practices to find implications for improving our math teaching. Conceptual learning and procedural skills are two major components in math education and have been emphasized in traditional math education. The final phase of learning is generalization. To be proficient in math, students should be able to generalize what they have learned. We studied Korean students’ math learning strategies by examining what and how the Korean teachers instruct at school as well as the Korean students’ culture of practicing math at home. Results show that Korean students are more exposed to conceptual learning which is composed of in-depth and higher-level complex practicing with more integrated and combined questions.

The same broad and expanded conceptual structures are repeated starting in early grades. Korean teachers demonstrate concepts, and students practice procedures at home. The result of this rigorous and ongoing routine is that Korean students can learn more and better with each additional year of schooling. Korean students are exposed to concepts and explore those concepts at school. Once they leave school, the students master the concepts through diverse and complex practice enabling them to generalize the concepts and then apply them to other situations. In conclusion, this study sets out some general points and suggestions for improving math instruction and curriculum in American classrooms.

O11 Using Modeling and Incentives to Expand the Reach of the USDA Fresh Fruit and Vegetable Program
Student Authors: Aaron Wingad, Tyler Christensen, Lainee Hoffman, Kevin Reinhold, April Ross
Institution: UW-Eau Claire
Faculty Sponsor: Eric Jamelske
Hickory, 10:11-10:26 am
Note, also a Poster Presentation P39

Overweight and obesity is the most common medical condition of children in the US, with the prevalence more than doubling over the past 20 years. Poor nutrition, especially low fruit and vegetable intake, has long been considered one of the central causes of overweight and obesity in children.

The USDA established the Fresh Fruit and Vegetable Program (FFVP) in 2002 to increase fruit and vegetable consumption as part of a broad effort to combat childhood obesity. Our initial research revealed that the FFVP did increase fruit and vegetable consumption of participating students by providing free access to fruits and vegetables as a morning snack. Unfortunately, there is no evidence that participating in the FFVP increased fruit and vegetable consumption at school lunch or for meals and snacks outside of school. Perhaps most disappointing was that the FFVP did not influence students to bring fruit or vegetable snacks from home on days when one was not provided for free through the program.

This study investigates whether a mix of teacher modeling and incentives can increase children's fruit and vegetable intake beyond just participating in the FFVP. Using a pretest/posttest design, fruit and
vegetable consumption is measured before and during the intervention across treatment and control schools. The results showed that toy prizes had a limited positive influence, but that a simple reminder for homework worked even better. Moreover, a dedicated and enthusiastic teacher also made a big difference in increasing fruit and vegetable consumption.

**O12 The Impact of Free Coupons Given to Families on Fruit and Vegetable Consumption Among Their Children**

Student Authors: April Ross, Tyler Christiansen, Lainee Hoffman, Kevin Reinhold, Aaron Wingad  
Institution: UW-Eau Claire  
Faculty Sponsor: Eric Jamelske  
Hickory, 10:29-10:44 am

Note, also a Poster Presentation P37

Poor nutrition, especially low fruit and vegetable intake, has long been considered one of the central causes of overweight and obesity in children. The USDA established the Fresh Fruit and Vegetable Program (FFVP) in 2002 to increase fruit and vegetable consumption as part of a broad effort to combat childhood obesity. Our initial research revealed that the FFVP did increase fruit and vegetable intake of participating students by providing free access to fruits and vegetables as a school snack. However, the impact of the FFVP was limited in that it did not increase fruit and vegetable consumption in school beyond the free snack period or in the home.

In subsequent research we show that the impact of the FFVP can be expanded slightly through a mix of teacher modeling and incentives provided to children in the classroom setting. However, this added impact was also relatively small and there was still no influence on fruit and vegetable consumption in the home.

In this study, families of participating children received sets of free coupons redeemable only for fruits and vegetables. We measure the rate that families used the free coupons and if fruit and vegetable intake increased among their children. Using a pretest/posttest design, fruit and vegetable consumption was measured before the coupons were distributed, during the coupon period, and when families no longer had free coupons. The data has been collected, but the analysis has just begun thus we do not do not have any results to include in this abstract.

**O13 Variation of Solar Absorptance of Carbon Nanotube Coating with Incident Angle**

Student Author: Zijuan Lai  
Institution: UW-Stout  
Faculty Sponsor: Forrest Schultz  
Spruce, 9:35-9:50 am

Solar energy is a great source of energy! However, capturing this energy is still a science and engineering challenge that has not yet been solved. At UW-Stout, a carbon nanotube and ceramic nanoparticle based black coating for solar panels has been developed. The goal of this research project is to explore the variation of solar absorptance of UW-Stout coating and commercially available coatings at different incident angles by using an integrating sphere attachment with UV-VIS-NIR spectroscopy. Incident angle performance is critical since the sun's angle of incidence is always changing. Our experimental data indicates that the UW-Stout coating exhibits variation based on formulation parameters. The data also shows that the performance of the UW-Stout coating is similar to that of commercially available coatings at incident angles of 5 and 12 degrees.

**O14 Eco-Pharmacology of Tegretol**

Student Author: Subha Mathew  
Institution: UW-Parkside  
Faculty Sponsor: Dr. Vera Kolb  
Spruce, 9:53-10:08 am

Various pharmaceuticals end up in the environment, including our drinking water, where they may persist for years. This unintended exposure may be harmful to the living systems, including humans. Only very recently, this problem has been addressed in a systematic way. However, we still do not know how most of the pharmaceuticals decompose in the environment, for example under the influence of heat, acidic or basic conditions in the water systems or soil, and under the catalysis of various clays. In this work, we focus on tegretol, which is a widely used drug. We have studied decomposition of tegretol and carbamazepine (which is its active ingredient) by prolonged (several weeks to months) heating at 640°C in water, with acid, with base, and with various clays (illite, Syn-1, SynAz-1, and SHCa-1). We have found out that both tegretol and carbamazepine decomposed, but only partially. These
drugs are quite resistant to decomposition and we were able to recover 40-98% (depending on the experimental conditions). Our results thus show that decomposition of tegretol is slow and difficult, and that this drug is likely to persist in the environment. The analyses were done by the IR and X-ray analyses, among others. Thanks are expressed to Prof. Zhaohui Li for supplying clays and for doing the X-ray analyses.

O15 Molybdenum Catalyst Synthesis
Student Author: Cory Windorff
Institution: UW-River Falls
Faculty Sponsor: Dr. Magdalena Pala
Spruce, 10:11-10:26 am

Catalysts are important for chemical reactions because they speed up the rate of reaction or by performing selective reactions that could not be otherwise achieved. They are heavily used by the pharmaceutical industry and other industries. The majority of catalysts are based on transition metals, the block in the middle of the periodic table. As a result, the ability to synthesize different compounds is integral to unlocking future possibilities. Molybdenum carbonyl-based catalysts are used in organic chemistry for cycloaddition reactions. These compounds are reactive with air and water and were therefore worked with under an atmosphere of nitrogen or argon using Schlenk line (a system of glass and tygon tubing) techniques. The progress and products were characterized using infrared and nuclear magnetic resonance spectroscopy. The synthesis was more difficult than it appeared and was not successful in previous attempts. The synthesis was repeated using a two-step scheme and it appears to be working. The infrared spectra of the final reaction mixture suggest that a transformation is taking place but the products do still have to be isolated and fully characterized. The previous reactions have produced tars or polymers. Finding alternative methods to synthesize transition metal based carbonyl derivatives may offer more efficient ways to prepare important catalytic species.

O16 Cadmium Acetate Dihydrate and Dandelion Seeds
Student Author: Scott Schoeller
Institution: UW-Whitewater
Faculty Sponsor: Dr. John Ejnik
Spruce, 10:29-10:44 am

Studies have repeatedly shown that dandelions (Taraxacum officinale) easily absorb Cadmium and its compounds. Our study was attempting to extend the knowledge base regarding cadmium toxicity on dandelions to include the effects of Cadmium Acetate dihydrate, which has been studied in other plants. In particular, our study focused on generational seed accumulations of cadmium and nutrient changes in the seeds, which have rarely been studied in any type of plant. In our experiment, we first had to determine in what soils the plants would grow. The successful mixture was 1/3 Topsoil, 2/3 Sand. After the determination, the raw 1/3-2/3 mixture was acid dissolved, microwaved and analyzed for metals, both nutrients and cadmium, by Inductively Coupled Plasma – Optical Emissions Spectroscopy. A sterilized Murashige-Skoog nutrient solution was added to the plantings after all leaves sprouted. The Murashige-Skoog media would allow us to control the concentration of nutrients and Cadmium Acetate dihydrate in the experiment. The experimental group would contain around 63 micrograms cadmium/gram of soil. Unfortunately, the first successful control group died from a water mold; the time left over was inadequate to successfully grow a new control group with only the soil mixture described above and water. If I would repeat the experiment, I would not use the nutrient solution due to contamination risks.

O17 Indigenous Literature in Australia and New Zealand
Student Author: Lauren Arendt
Institution: UW-Stevens Point
Faculty Sponsor: Per Henningsgaard
Poplar, 9:35-9:50 am

While Australia and New Zealand are regarded as members of the so-called “first world,” the indigenous inhabitants of these two nations belong to the “third” or perhaps even “fourth world.” This disparity is reflected in the cultural record of these two nations. In particular, Aboriginal and Maori literature is a product of the plight
of indigenous populations following colonization. The works examined in this study include novels written in the last 30 years by two Aboriginal and two Maori authors. Two of the novels were written near the beginning of this period and represent some of the earliest works of indigenous writing to attain popular success in these two nations. The other two novels were written within the past couple years. The earlier works feature contemporary settings and chronicle the fallout of colonization and the characters’ attempts to reclaim their cultural pride. The authors of these works write with highly charged emotion, enraged about the state of their communities. The more recent works, on the other hand, dispassionately depict the historical act of colonization from the point of view of the colonized. The shifts in setting and tone over this 30-year period reflect the easing of race relations in the two nations, as well as the effects of an increasingly globalized book industry, in which indigenous/postcolonial literature occupies a distinct market segment. The novels examined here are a microcosm of all indigenous writers working in a postcolonial world, elaborating on the consequences of colonialism and globalization on their individual communities.

O18 Masculine Emulation and Social Order: Shakespeare’s Othello

Student Author: Christy McCarter
Institution: UW-Parkside
Faculty Sponsor: Dr. Dana Oswald
Poplar, 9:53-10:08 am

In the early modern period, the construction of social orders served to scaffold a populace facing governmental, religious, and personal anxiety. This apprehension is apparent in Shakespeare’s tragedy, Othello. The play moves from stability to chaos, and through the dissection of relationships, we are able to reveal the glue that holds this play together. The homosocial relationship between Othello and Cassio represents patriarchal social order and, when healthy, is strong enough to maintain stability in the play. Othello obeys the masculine need for emulation by partnering with Cassio, and when this bond is broken, the resulting fracture in the masculine power structure crumbles and disorder follows. To keep chaos at bay, Othello depends upon a stable homosocial relationship with Cassio. The failure portrayed by these men mirrors early modern gender expectations and in doing so, reveals the inherent weaknesses of this gender system. Despite the fragile groundwork of the masculine system, the true threat arises when a male figure takes on a feminine acted gender, as seen in Iago. Othello’s failing occurs with his easy acceptance of Iago as a masculine character. By allowing himself to become contaminated by Iago’s femininity, Othello becomes the “fellow almost damn’d in a fair wife” (I.I.20). The significance placed on the normativity of gender gives social order a frail foundation. While the emulative necessity has flaws, the true weakness in this arrangement lies in the supposition of an aligning biological and acted gender.

O19 Feminine Weaponry: Gender Transcendence in Arthurian Literature

Student Authors: Christy McCarter
Institution: UW-Parkside
Faculty Sponsor: Dr. Dana Oswald
Poplar, 10:11-10:26 am

Critics will always question the downfall of King Arthur’s legendary Round Table. Deceit, treason, and murder surround the common accusations in this matter. Missing from general examination is the study of gender interaction. Using tactics such as gender transcending and mimesis, women are able to exploit the system that dares to call them vulnerable, needy, and helpless. The knights, aiming to personify the ultimate balance of chivalric and masculine identities, must rely upon the presence of the feminine entity to test their characters. If representations of the feminine gender role were not present in Arthurian Literature, the knightly identity would crumble. The outcome is a trail of political power literally given to the women by the chivalric code. When women exploit their position or challenge the passive nature expected of them, the knights face a severe threat. Specifically, this paper examines Alfred Lord Tennyson’s manipulative Elaine of Astolat of Idylls of the King, and the intentionally destructive Morgause of Le Morte Darthur and T.H. White’s The Once and Future King. Ultimately, this power shift allows Arthurian women to be the best weapon against the knights sworn to defend them. This gender bending, paired with society’s brittle understanding of sexual categories, leads to the society’s collapse. The Round Table Oath underestimates the potential of strong females, and in doing so, opens a gap for them to invade.
O20 Good Guy or Bad Guy: Examining Stephenie Meyer's Conception of Edward in Twilight

Student Authors: Austin MacKenzie, Carissa Bennett
Institution: UW-La Crosse
Faculty Sponsor: Bryan Kopp
Poplar, 10:29-10:44 am

Almost anybody could intuitively know who is the hero and who is the villain in a book but how do authors think of these characters? Are they divided into heroes and villains as they are for readers or are all the characters viewed simply as their own creations? To begin examining this complex question Stephenie Meyer's descriptions of her character Edward were examined in two sections of her book Twilight in which Edward intuitively seems to change from out-group to in-group. Descriptions of Edward were coded using the Linguistic Category Model and analyzed to determine their level of abstraction. The positive and negative valence of these descriptions was determined through inter-rater agreement. A factorial ANOVA was performed using these data and the results analyzed based on the Linguistic Intergroup Bias, which states that positive descriptions of members of one's own in-group are more abstract while negative descriptions are more concrete and the reverse for out-group members. It was found that significantly more negative words were used to describe Edward in the hypothesized out-group section as well as positive words in the hypothesized in-group section. However, abstraction level varied significantly with valence but not with in-group/out-group section, F (1, 44) = 10.076, p = .003. These results may indicate that while Stephenie Meyer introduced Edward to the reader as an out-group character before moving him into Bella's in-group, she always thought of Edward as an in-group character through the course of the book.

O21 A Screen to Identify Small Molecule Teratogens during Zebrafish Skeletogenesis

Student Author: Brittney Gerber
Institution: UW-Stout
Faculty Sponsor: Dr. Michael A. Pickart
Oak, 1:20-1:35 pm

Zebrafish genetic screens have identified many genes that contribute to the biology of development and disease. Additional chemical screens have identified small molecules with the capacity to alter developmental and behavioral processes in zebrafish and perhaps other vertebrates as well. The main purpose of this study was to identify novel small molecules that alter vertebral skeletal development of zebrafish embryos following chemical exposure. Previous results from the investigators' lab suggest 5-10 interesting developmental phenotypes will be observed per one hundred embryos screened using the Chembridge DiverSet E small molecule library. Screening was performed by continuous treatment of zebrafish embryos post-gastrulation, approximately 4 hours post fertilization. Zebrafish were visually inspected for general development abnormalities up to twenty-four days post-fertilization. However, the focus of the work was to examine juvenile fish for skeletal malformations between ten and twenty-one days using an Alcian Blue/Alizarine Red S cartilage/bone staining protocol. The identification of chemical-induced phenotypes following treatment of zebrafish has the potential to identify new development teratogens, advance drug development and expose molecular pathways that lead to developmental disorders and disease. Thus, study of small molecules may advance the understanding of risks associated with teratogens during human skeletogenesis.

O22 Using Computational and Interactive Tools to Model Plant Growth and Development

Student Author: Luke Greenwald
Institution: UW-Whitewater
Faculty Sponsors: Hien Nguyen; Catherine Chan
Oak, 1:38-1:53 pm

Statistics show that students in the United States trail behind those of other economically developed countries in understanding and utilizing quantitative and computational tools for mastering biological concepts. This research project seeks to develop a set of interactive and computational tools which allow students to develop a visual model that illustrates essential principles of plant growth. The modeling work is complemented with hands-on and interactive activities. Specifically, we are exploring the use of interactive and 3-D display technologies to enhance the learning of quantitative biology concepts. The software program Java 3D is paired with FractaL to create a visual model to simulate the growth patterns of trees. We are also working on a teachers’ manual that contains definitions of key terms, and interactive questions/answers modules to reinforce
the key concepts introduced. We will assess if our teaching module results in increased comprehension and appreciation of the power of using quantitative and computational tools to understand basic biological principles among secondary educational institutes. The results will be measured by comparing two quizzes: one given before the students go through the module, the second after they have seen the information. The anticipated results for this project are not only to enhance the conceptual knowledge of students in biology, but also to give them powerful tools to better appreciate the order of the naturalistic world we live in.

O23 What Do College Students Across China Think About Global Warming?
Student Authors: Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz
Institution: UW-Eau Claire
Faculty Sponsor: Eric Jamelske
Oak, 1:56-2:11 pm

Global warming has become a very important issue. It is not just an issue for one country or a few countries, but rather it is a global issue. But is global warming really happening and if so what is causing it, what are the consequences and what could or should we do about it if anything? Motivated by the above statement/questions we are conducting a survey examining what college students in China think about this important issue. Specifically, we compare student responses from college campuses across the China including the north, south, east and west. Our focus on college students is for two reasons. First, because they are young and therefore they represent the future and also because it is likely that we can get a reasonably high participation rate, thus making the data more valid. Similarly, we are focusing on China for two reasons. First, in absolute terms, China is the single largest emitter of CO2 in the world. Second, they are one of the world’s fastest growing economies, but yet there is still much poverty in China as per-capita GDP lags far behind almost all developed countries. We are just now collecting this data and thus we do not have any results to include in this abstract. We are also conducting the same survey among college students at four universities in different regions of China. Therefore, part of our presentation will compare the viewpoints of young adults in the US to their counterparts in China.

O24 What Do College Students Across the United States Think About Global Warming?
Student Authors: Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz
Institution: UW-Eau Claire
Faculty Sponsor: Eric Jamelske
Oak, 2:14-2:29 pm
Note, also a Poster Presentation P40

Global warming has become a very important issue. It is not just an issue for one country or a few countries, but rather it is a global issue. But is global warming really happening and if so what is causing it, what are the consequences and what could or should we do about it if anything?

Motivated by the above statement/questions we are conducting a survey examining what college students in the US think about this important issue. Specifically, we compare student responses from college campuses across the US including the northeast, midwest, southeast, southwest and west coast.

Our focus on college students is for two reasons. First, because they are young and therefore they represent the future and also because it is likely that we can get a reasonably high participation rate, thus making the data more valid.

Similarly, we are focusing on the United States for two reasons. First, the US is one of the wealthiest nations in the world as measured by per-capita income and they are also disproportionately responsible for the amount of CO2 in the atmosphere with per-capita emissions much greater than most other developed nations.

We are just now collecting this data and thus we do not have any results to include in this abstract. We are also conducting the same survey among college students at four universities in different regions of China. Therefore, part of our presentation will compare the viewpoints of young adults in the US to their counterparts in China.

O25 State Budgets and Economic Crises
Student Author: Stephanie Abbott
Institution: UW-Whitewater
Faculty Sponsor: Larry Anderson
Walnut, 1:20-1:35 pm

State budgets have the ability to affect individuals at least as much as the federal budget. Perhaps the
The greatest difference between state and federal budgets is the constitutional requirement that prevents states from engaging in deficit spending. As a student in the public university system, the state budget has a direct effect on how much I contribute to my own education. With the recent downturn in economic climate, many states have re-examined their budgets and made changes to the funding of higher education. My work focused on three states, chosen for their variations in economic climate: North Dakota, California, and Wisconsin. I also had to take into consideration variations in demography and structure. I examined carefully both primary documents, the state budgets themselves, and then examined literature from the National Council of State Legislatures and the university systems within each of the examined states beginning with FY 2005. I also worked with select state legislators in Wisconsin, including the former chair of the Colleges and Universities Committee to understand their rationale in budgeting. Initially, I expected to find the situations in Wisconsin and California to be quite similar, but while Wisconsin students and faculty do face some challenges with increased tuition and furloughs, California’s two university systems have made much more dramatic tuition increases and face significantly more furlough days. Upon completion of the project, only North Dakota, which has lowered its tax rates and increased benefits for staff members, could guarantee some level of stability in cost to students.

O26 An Operations Evaluation of Swimtastic
Student Authors: Yuniwo Nfor, Adam Salvo, Kam Rukavina, Alma Ibanez
Institution: UW-Parkside
Faculty Sponsor: Abey Kuruvilla
Walnut, 1:38-1:53 pm

Swimtastic is a business aimed at serving the city of Franklin and its surrounding areas by offering swim classes to children as well as other services attractive to more mature persons. As stated on their website (www.swimtastic.com), their goal “is to teach young children to swim in a positive, safe, and loving environment.” Other services offered include the Swim Team, Swim Camps and Infant Clinic. There are services targeted for adults also. Our objective in this study is to research the operational structure of the facility and make recommendations which should improve and facilitate a smooth working mechanism for the business while improving the services they provide to the community. In order to achieve this, we aim to survey the workers and customers in order to gather information on their perception of the business. The survey shall focus on the following areas of the business’ operations: Product design and quality, capacity planning, location and layout, staff scheduling and environmental management concerns. The information gathered will be used to make an analysis of the present operational procedures and make recommendations with the aim of improving areas where any short falls are perceived. The research will also attempt to identify forms of wastage in the organization and offer suggestions to make the operation lean.

O27 Good Design is More Than Meets the Eye
Student Authors: Konna Jahns, Derek Kucksdorf
Institution: UW-Stevens Point
Faculty Sponsor: Katja Marquart
Walnut, 1:56-2:11 pm

The reason for our research is to show how the design process evolves. During the summer of 2010, a local franchise restaurant in Stevens Point, WI, sought the help of UWSP Interior Architecture students to create a new UWSP-based theme for their space. The client’s main goal was to attract more students and to show their support for the campus. Our team worked with the clients to develop a series of conceptual ideas for both the interior and exterior building space. As design students in the Interior Architecture program, we were honored to have the opportunity. Research began with site observations and casual user surveys. Through this process we discovered additional issues affecting the user experience of the space, such as traffic flow and seating placement. In addition to creating a UWSP theme, we were able to address these other issues in our final design concept. We presented several new design options for our clients, each with more functional design solutions for the space. The final design solution allows traffic to move efficiently through the space and provides a wide range of seating options for customers. In turn, we have observed that the customers take full advantage of the new options. To share our process, we created a gallery exhibit on campus showcasing the entire design. In the end, our design and exhibit positively impacted the client, the community, and helped communicate the work that goes into the design process. Good design is more than meets the eye.
O28 Advertising in Video Games
Student Author: David Wooten
Institution: UW-Parkside
Faculty Sponsor: Dr. Megan Mullen
Walnut, 2:14-2:29 pm
This paper is a critical review of the current literature on the advertising messages that are found in the content of video games. The historical context that has forced marketers to use product placement in video games, and the trend to advertise to a niche market that cable and satellite television companies has started are reviewed. An examination of the consumer market for video games is conducted, as well as, children being a special target market for the advertising found in video game content. An analysis of the factors that contribute to the product placement in video games to fail or succeed, and the attempts of the advertisers to track and quantify the success of the in-game advertising are explained. This paper lays the foundation for further research in the area of content-based, product placement advertisements in video games. This is a unique interactive medium that engages its audience in ways that media have not in the past. Finally, this work is the first step in answering the research question of how the advertising industry is changing its tactics with the changing technology.

O29 Forecasting Coal Consumption in the United States
Student Authors: Saroj Dhital, Yasith Samarakoon
Institution: UW-Superior
Faculty Sponsor: Dr. Robert Beam
Hickory, 1:20-1:35 pm
Coal is one of the most used energy resources in the world and a major fuel. Due to a large consumption of coal worldwide, it has come under threat of being depleted. Hence, the necessity has arisen for keeping track of amount of resource we use and resource we can actually produce. This paper analyzes the first part of necessity and leaves room for more research in the future. For the purpose of this research, secondary data were collected from various governments’ historical data sources. Paper utilizes mainly two methods of forecasting, namely Multiple Regression and Winter’s Multiplicative Method, and combines them together to refine the forecast. These models were preferred over the others because of their significance and small errors. The combination of these two methods yielded the best model with 93% accuracy and least errors. Forecast values of coal consumption were developed using this combined model. Forecasted values showed the historical trend and seasonality as expected. Conclusively, this model can be used to forecast coal consumption for the short run with great accuracy.

O30 Who Designed the Internet? Stakeholders in the Internet Design Process at Launch and at Maturity
Student Author: Tracy Stuettgen
Institution: UW-Milwaukee
Faculty Sponsor: Sandra Braman
Hickory, 1:38-1:53 pm
This paper will present a comparative analysis of the number, types, and geographic distribution of institutions influencing the technical design of the Internet through their contributions to the document series recording that decision-making process -- the Internet Requests for Comments (RFCs) -- at the launch of the process (1970-1979) and at maturity (2000-2009). The research utilizes a typology of types of institutions developed inductively in the course of analyzing the approximately 6000 items in the first 40 years of that series. Institutional and historical research on every organizational contributor to the design process was conducted in order to categorize each by type of stakeholder. Distinctions among types of institutions influencing the design process provide insight into the political economic dimensions of the Internet, revealing diverse interests as presented by distinct categories of stakeholders. Differences in the number of institutions involved during the two decades being compared provide evidence of significant changes in the nature of the decision-making process itself. Expansion of the range of geographic distribution of the institutions involved shows that, while the United States continued to dominate in the Internet design process, inputs from around the world were increasingly important over time. The findings from this research project also throw light on intervening variables of use in analyzing positions on the numerous legal and policy issues addressed in the course of designing the Internet.
O31 Ethics in the Internet Design Process: The Fair Queuing Case
Student Author: Nathan Bares
Institution: UW-Milwaukee
Faculty Sponsor: Dr. Sandra Braman
Hickory, 1:56-2:11 pm

The transparent ease of use of the Internet and its apparent free flow of information derive from design decisions. Those responsible for designing the Internet sought not only to solve technological problems, but also to ensure that ethical principles such as fairness were incorporated into the network. The policy issue of network neutrality provides a contemporary example of such interactions between technological and the social concerns. Network neutrality, however, is only the most recent manifestation of a problem that has recurred at every level of the network structure’s development. This paper presents a case study of the alternative approaches developed by Internet designers seeking to technically design social fairness into the network – the “Fair Queuing” problem -- during the early 1980s, when the rapid expansion of the number of networks becoming interconnected and incorporated into the Internet drew attention to problems of congestion. Fairness is an issue at the gateways between these networks because it is there that decisions are made about how to direct Internet traffic (routing) and allocate the shared resource of bandwidth. Analysis of the treatment of Fair Queuing in the technical document series recording the history of Internet design, the Internet Requests for Comments (RFCs), provides insight into how fairness was conceptualized, arguments for and against treating fairness as a design principle, and technical alternatives for resolving this social problem. The findings show that Internet designers drew upon game theory, experimentation, and social theory as they addressed the social and ethical implications or their technology decisions.

O32 Children’s Perceptions of Diversity
Student Authors: Phoua Yang, Marissa Holst
Institution: UW-River Falls
Faculty Sponsor: Melanie Ayres
Spruce, 1:20-1:35 pm

This two part study investigates children’s perceptions of race and social class. We plan to collect data from eighty kindergarten children between the ages of 5-6 years. In part one of the study, participants will be read a children’s book about race and racial discrimination. They will be given a racial attitudes assessment both before and after the reading. In part two of the study, children will be presented with pictures depicting high and low income houses and asked a series of questions to assess their understanding of social class. We anticipate that children will show less stereotypical racial attitudes after hearing a story about racial discrimination, will demonstrate an awareness of societal perceptions of social class, and will demonstrate an understanding of the connection between race, social class, and resources. This research seeks to provide information on how children perceive race and social class as well as inform interventions aimed at reducing bias and discrimination among young children.

O33 The Path of Teen-Aged-Parenting
Student Author: Laura Leyh
Institution: UW-Oshkosh
Faculty Sponsor: Pete Brown
Spruce, 1:38-1:53 pm

Teenage parenting is a controversial topic in the public eye. The conversation is usually led away from teenage parenting and into teenage pregnancy and the avoidance of such occurrences. Where does this leave the teenage parents? How are they surviving in a climate that some professionals say is becoming “more accepting” of teenage parenthood but funding and public policy is focused on prevention and not the results of pregnancy-parenting. What is in place for when teenage pregnancy isn’t avoided? With this question in mind I looked to the teenage parents who have been and who are teenage parents in a single city of Wisconsin. I interviewed teenage parents and professionals who work with them. I found that the teenage parents are working within two systems: one of an adolescent who has no rights or access to public resources without their parents and the other system as being a parent and being held accountable to provide as a parent. The professionals who are working with the teenage parents and who have been designated as their educators are not consciously aware of these systems. Despite many of the educators being pro-education of teenage parents, their actions actually worked to deter the attainment of education and resources by teenage parents. The lack of a clear path for teenage parents to receive education, resources or assistance has left
teenage parents to find their own path or take the path of the dim statistics that have come to define teenage parents.

O34 Reducing Juvenile Delinquency: What Works, What Doesn’t, and What’s Promising

Student Authors: Jennifer Short, Kasey Pasqualini
Institution: UW-Parkside
Faculty Sponsor: Matthew Makarios
Spruce, 1:56-2:11 pm

There are numerous ways that the United States attempts to reduce juvenile delinquency and yet delinquency remains a major social problem. Given the variety of juvenile treatment programs, an important question becomes: what are the characteristics of juvenile correctional interventions that are effective in reducing delinquency? This research involves an in-depth literature review and visits to local correctional facilities in order to identify characteristics of programs that have been shown to be effective in the reduction of recidivism. Based on the quality of the research evidence, juvenile correctional interventions are categorized into the following categories: effective, promising, ineffective, and unknown. Findings indicate specific types of programs have been shown to be effective in reducing juvenile delinquency and that these programs have particular characteristics. In particular, effective programs have tend to have quality aftercare, are cognitive behavioral in nature, and target moderate to high risk youth. This implies that reducing juvenile delinquency should involve investment in correctional interventions that utilize characteristics of that have been shown to be effective.

O35 An Urgent and Prime Objective: Congolese Independence and the Plot to Assassinate Patrice Lumumba

Student Author: Zachary Freese
Institution: UW-River Falls
Faculty Sponsor: Dr. Betty Bergland
Spruce, 2:14-2:29 pm

This is a detailed examination of U.S. action leading up to and after Congolese independence. Its purpose is to place the U.S. involvement in Congo and the plot to assassinate Congolese Premier Patrice Lumumba into the larger frame work of the Cold War ideology.

O36 Student Writers across the Disciplines

Student Authors: Brittini Straseske, Carly Bollig
Institution: UW-Eau Claire
Faculty Sponsor: Shevaun Watson
Poplar, 1:20-1:35 pm

The purpose of this study is to begin to understand the experiences of undergraduate writers at the University of Wisconsin-Eau Claire as they progress through their major areas of study. This research project is designed to identify students’ development in writing over the course of their college careers and to determine if the first year composition course influenced writing abilities. For this study we interviewed five upper-level students about their writing in their respective majors. Our questions addressed the types of writing required in the major, the students’ perceptions about their writing, and their experience in the first-year writing course. We found that students were confident in their writing abilities upon entering college, though samples of their graded writing suggested otherwise. Students felt that writing in their majors was very specific and different from writing in other majors. Students also expressed that the first-year writing course did not directly apply to the writing needed for their major. Our findings suggest that clearer connections need to be made between first-year composition and upper-level writing courses. The study also points to the need for curriculum development in the first-year composition course and improved faculty development in the disciplines.

O37 Analyzing and Applying themes in Young Adult Literature

Student Author: Christina Stevens
Institution: UW-Parkside
Faculty Sponsor: Mary Lenard
Poplar, 1:38-1:53 pm

I decided to do a 7 week lesson plan based on the books, "Speak" by Laurie Hale Anderson, and "Thirteen Reasons Why" by Jay Asher. I will be teaching 8th graders how to analyze the texts, tell it in their own creative ways, and seek the symbolism in both books. Both books follow the lives of teenage girls whose lives are torn apart by bullying and harassment and both have the similar themes of rape, bullying and drinking. Weeks will be spent reading the material, analyzing and applying it to real life situations, making presentations,
expressing creative themes, writing papers, taking quizzes, and performing social skits that will be viewed and blind voted by the class.

O38 Quantitative Analysis of Higher Education Emotional Intelligence Via Student Engagement and Self-Authorship
Student Author: Luke Schalewski
Institution: UW-Whitewater
Faculty Sponsor: Dr. Leda Nath
Poplar, 1:56-2:11 pm

Present day's societal and workforce demands are in need of quality graduates from higher education institutions. Quality graduates are those who exhibit higher emotional intelligence which is linked to academic achievement, life satisfaction, self-awareness, goal orientation and increased job performance. I quantitatively examine how student-engagement (SE) and self-authorship (SA) affect emotional intelligence (EI). Student engagement is the amount of time and effort students put into their studies and other educationally purposeful activities and includes dimensions of level of academic challenge, active and collaborative learning, student-faculty interaction, and enriching educational experiences. Self-authorship is viewed as meaning-making by taking one's values, beliefs or elements of a system and integrating them as part of one's identity; SA includes situational coping, interpersonal leadership, self-efficacy and knowledge creation. Emotional intelligence refers to the skill of monitoring one's self and other's emotions to produce appropriate behavior. During fall 2010, N=741 students were surveyed on SE and SA dimensions, EI, and other control variables at a Midwestern university using a random systematic sampling method. Preliminary statistical analyses of data support most hypotheses that dimensions of SE positively relate to dimensions of SA, and which positively relate with EI. Based on past literature, survey questions are reliable and valid to measure desired concepts. Results of this study contribute to the literature of higher education student development. Understanding the positive relationships between aspects of student engagement, self-authorship and emotional intelligence can guide researchers to identify instructional strategies to enhance emotional intelligence among college graduates.

O39 Chemistry of Emotional Intelligence
Student Author: Nectarios Duchac
Institution: UW-Parkside
Faculty Sponsor: Prof. Edward Conrad; Vera M. Kolb
Poplar, 2:14-2:29 pm

Our objectives are to learn how decisions and interactions between two conflicting parties can possibly be linked to emotional intelligence. We hope to elucidate interplay of various hormones and neurotransmitters which may be involved in this process. We are especially interested in ways emotional intelligence can be enhanced by the proper training to facilitate effective communication and reduce stress. We are interviewing relevant subjects, from the field of medicine, clergy, and rehabilitation, amongst others.

Our ultimate goal is to understand the way certain hormones and neurotransmitters are involved in stressful interactions, and how these chemicals may be manipulated to reduce the negative impact on the body.
P1 The Role of the Avant Garde Coffeehouse in the Folk/Blues Revival

Student Authors: Brian Burke, Melissa Heider, Rachel Matteson, Jacob McDonald, Charles Zink
Institute: UW-Milwaukee
Faculty Sponsor: John Stropes
Topic: Arts and Humanities

Scholarship in the study of finger-style guitar is in its infancy. Attention has only been drawn to finger-style guitar since the folk/blues revival of the 1960s. The careful study of vernacular music discovered during this revival is just emerging as part of an expanded view of the critical content of musicology and ethnomusicology. This research project focuses on the Avant Garde Coffeehouse, a Milwaukee music club which, from 1962-1968, was the locus of the folk/blues revival in Wisconsin.

We began interviewing the dramatis personae, discovering the written record and extant recordings, establishing a list of performers, cataloging recordings and concert ephemera, studying the architectural history of the French Moorish building which the club occupied at 2111 North Prospect Avenue, and understanding more about both its cultural context and sociological milieu.

We prepared annotated citations of books; newspaper, magazine and journal articles; and audio and video recordings of the following artists who performed at the Avant Garde Coffeehouse: Skip James; Koerner, Ray & Glover; The New Lost City Ramblers; Bukka White; and Fred McDowell. Audio recordings were entered into a database. A written summary of findings was prepared. We worked together to sketch the role of the Avant Garde Coffeehouse in the folk/blues revival. This provides the foundation for future written repertoire for finger-style guitar.

P2 Comparative Analysis of Frequency Spectrums: Creating Enhanced Transcriptions for Finger-Style Guitar

Student Author: Josh Lane
Institute: UW-Milwaukee
Faculty Sponsor: John Stropes
Topic: Arts & Humanities

Guitarist Skip James (1902-1969) first recorded in 1931 in Grafton, Wisconsin for Paramount Records and had no further commercial releases until he was rediscovered in 1964 and began touring in the US and Europe riding the wave of the folk/blues revival. In 1966, he performed at the Avant Garde Coffeehouse, a Milwaukee music club which, from 1962-1968, was the locus of the folk/blues revival in Wisconsin. High quality recordings of his performances at the Avant Garde Coffeehouse have recently surfaced which provide excellent documentation of Skip James’ performance practice later in his career.

I have compared the original 1931 recording of “Devil Got My Woman” with live recordings made at the Avant Garde Coffeehouse in 1966. By means of biographical research, study of the context of each recording, and analysis of existing media using frequency spectrum technology (FFT Properties, Melodyne editor), I have constructed an enhanced transcription. This model provides an opportunity for significant developments in guitar pedagogy: identification of performance techniques, deconstruction of passages based on the study of comparative repertoire, and synchronization of source material with written music.

P3 Preferences in Sex-Role Typed Singles Ads

Student Author: Logan Heinrich
Institute: UW-Green Bay
Faculty Sponsor: Dr. Illene Noppe
Topic: Social Sciences & Anthropology

The present study sought to determine if there was a sex-role pattern in the attraction process. College students were given four personal ads and they were asked to rate their attraction to those ads. Each ad had been created to reflect an ad that might be written by each of the sex-role types: masculine, feminine, androgynous and undifferentiated. The students were then given a Bem Sex-Role Inventory to ascertain their sex-role types. The results of the students’ sex role types
and their preference in gendered ads was compared. Results suggested that feminine, androgynous and undifferentiated women preferred feminine men. The participants were further grouped into categories based on the difference of their feminine expression and their masculine expression. Larger magnitudes of F/M expression were correlated with increased attraction to BEM-feminine men, whereas smaller magnitudes of F/M expression were correlated with increased attraction to BEM-masculine men.

P4 Factors Affecting Positive Transitions for Foster Children

Student Authors: Jennifer Anagnos, Megan Ware
Institute: UW-Stout
Faculty Sponsor: Dr. Susan Wolfgram
Topic: Social Sciences & Anthropology

The majority of foster children are forced to endure a multitude of hardships and stress as they attempt to make successful transitions, moving from one foster caregiver to a subsequent or permanent placement (Cole, 2005). The purpose of this study was to investigate the factors affecting positive transitions for foster children from the perspective of licensed foster mothers. The central research question in this study was, “What is the foster mothers’ perspective on the factors affecting positive transitions for foster children?” We predicted that foster mothers would consider the quality of home life and the emotional and physical caregiver availability to be the most important aspects affecting positive transitions for the foster children. This hypothesis is based on literature and theory. The site of this cross-sectional and nonrandom pilot study was at two foster care agencies in northwestern Wisconsin. Licensed foster mothers will be surveyed on different factors that influence the transitions between placements for foster children from their perspectives. Survey data will be statistically analyzed using frequencies, mean comparisons, correlations, and Cronbach’s Alpha reliability analysis. Implications for foster care agencies, foster parents, and foster children will be discussed as well as implications for future research.

P5 The Resique’s Washington House Tavern Project: Archaeological Investigation at the Kenosha’s Earliest Tavern on Simmons Island

Student Author: Julia Bizub
Institute: UW-Parkside
Faculty Sponsor: Robert Sasso
Topic: Social Sciences & Anthropology

Archaeological field research aimed at locating the site of the first tavern in the Kenosha, Wisconsin area was conducted in 2010. Information presented covers a synopsis of this fieldwork and a description of artifacts recovered during a nine-day preliminary exploration that follows an earlier shovel-test survey of the area. Artifacts recovered are cleaned, sorted, cataloged, identified, and analyzed by type and location recovered to learn more about the life-ways of the people who left them behind. Large quantities of construction materials, animal bone and shell remains, and evidence of coal fires were recovered as well as container glass, clay pipe fragments, clay marbles, gun shells, jewelry items, ceramics and earthenware, and buttons of bone, shell, and glass. This ongoing research will shed light on the early European settlement of the region. Additionally, historic records indicate the Potawatomi lived at least temporally in this area, so there is also an opportunity to learn more about their life-ways and the interactions of these cultures in this region.

P6 Language-Based Communication Strategies that Support Person-Centered Communication

Student Authors: Rachel Garrett, Natalie Davidson, Elizabeth Stuart
Institute: UW-Milwaukee
Faculty Sponsor: Dr. Marie Savundranayagam
Topic: Social Sciences & Anthropology

This study examined the relationship between two broad approaches to communication enhancement with persons with dementia: language-based and person-centered strategies that support communication with persons with dementia. Conversations (N=46) between staff-resident dyads were audio-recorded during routine care tasks over 12 weeks. Staff utterances were coded twice, using both language-based and personhood categories. Findings revealed that there were particular language-based strategies that characterized each personhood indicator. For recognition, 47% of utterances
were greetings, 16% were yes/no questions, 12% were affirmations, 8% were utterances that announced intent clearly, and 8% were rephrases. Various forms of questions (yes/no, choice, open-ended) comprised 91% of utterances that were coded as negotiation. A similar pattern was observed for utterances coded as facilitation-conversation starter; 65% were closed-ended questions and 23% were open-ended questions. Of utterances coded as facilitation-intent to fulfill, 80% were affirmations, 7% were utterances that announced intent clearly, 7% were yes/no questions, and 5% were confirmations of understanding by restating what residents said. Finally, 93% of utterances coded as validation were affirmations. Although the findings identify specific language-based strategies that support personhood, they also suggest that staff need training in the use of more diverse language-based strategies that support personhood.

P7 Emotional-Support Coping and Problem-Focus Coping: Explaining Their Relative Benefits

Student Author: Dan Buehler
Institute: UW-Whitewater
Faculty Sponsor: Dr. Christine Neddenriep
Topic: Social Sciences & Anthropology

Individuals regularly use coping strategies in response to daily hassles. The effectiveness of the coping strategy may relate to the individual’s ability to communicate and attend to their emotions. In the present study, 40 undergraduate participants completed two sessions one week apart. The participants were randomly assigned to one of two conditions—problem-focused coping or emotional-support coping. Participants in both conditions were asked to identify a current stressful situation and were instructed to establish plans to cope with that stressful situation based on guidelines that matched their condition. Both groups were also asked to complete a questionnaire assessing their mood and their ability to express their emotions. At the second session participants were reminded of the problem they had identified and their response. They were asked to self-assess on a four-point scale the effectiveness of the assigned coping strategy. They were again asked to complete a mood questionnaire. Analyses were conducted to determine differences in mood by coping strategy and type of stressor. I predict a significant interaction between coping strategy, type of stressor, and mood. Analyses were also conducted to determine how the ability to communicate and attend to emotions predicted the perceived resolution to the problem. I predict that the ability to communicate and to attend to emotions may significantly contribute to the successful resolution of the problem depending on the type of coping method used. Implications for the effectiveness of individual coping styles will be discussed.

P8 I’ma Tell You ‘bout I’ma: A Sociolinguistic and Syntactic Analysis of the Reduced Form of I’m Gonna

Student Author: Megan Risdal
Institute: UW-Eau Claire
Faculty Sponsor: Erica J. Benson, PhD
Topic: Social Sciences & Anthropology

The present study is the first to define the unique syntactic properties of I’ma, a contraction of I am going to associated with non-standard dialects. Linguists have extensively explored the rules governing grammatically acceptable usage of to-contractions (e.g., going to, gonna) and auxiliary reductions (e.g., I am, I’m) (see Kaisse, 1983; Pullum, 1997; and Hudson, 2006). However, as an apparent contraction of I’m and gonna, I’ma is a combination that has yet to be understood syntactically. The present study uses native speakers’ judgments of acceptability to determine the rules governing how I’ma is used in different contexts (e.g., negations, questions, declarative sentences). Additionally, scores on a language attitudes survey are used to compare perceptions of I’ma to forms of be going to as well as measure linguistic receptivity (openness to linguistic variation). Previous research indicates that non-standard dialects tend to be derogated relative to the standard dialect (Coupland & Bishop, 2007). I’ma is typically associated with non-standard dialects such as African American Vernacular English and Southern dialects (go Def. 4e, DARE; Bradley, 1954). However, reductions like gonna are associated with casual discourse in general (Biber, 1994). We expect that I’ma will be judged as less correct and less acceptable as compared to other reduced forms of be going to. We also predict that linguistic receptivity will be associated with more favorable judgments of I’ma. Finally, we investigate the interplay among language attitudes, gender, and judgments of I’ma.
P9 Gender and the Effects of Cyberbullying

Student Authors: Maria Duncan, Jessica Grobe
Institute: UW-Stout
Faculty Sponsor: Susan Wolfgram
Topic: Social Sciences & Anthropology

With the rapid growth of communication technology especially among adolescents, cyberspace has been implicated as a new risky environment for bullying (Juvonen & Gross 2008). The purpose of our study is to see if gender plays a role in the way freshman college students identify the effects of cyberbullying. We hope to gain the knowledge of what the relationship is between gender and the effects of cyberbullying in freshmen college students. With this information we will be able to increase the awareness of the dangers of cyberbullying and examine any gender differences to contribute to effective early intervention and prevention. The central research question in this study was, “Does gender play a role in the way freshman college students identify the effects of cyberbullying?” We hypothesized no gender differences based on the current literature. The site of this cross-sectional and nonrandom pilot study was at a Midwestern university. Male and female college students will be surveyed on their views on the effects of cyberbullying. Survey data will be statistically analyzed using frequencies, cross-tabulations, mean comparisons, independent t-tests, and a Cronbach’s Alpha reliability analysis.

P10 Gender in Advertisements

Student Author: Katelyn Scharf, Calie Short
Institute: UW-Barron County
Faculty Sponsor: Nichole Kathol
Topic: Social Sciences & Anthropology

Erving Goffman argues that modern advertising presents us with gender ideals through a remarkable pattern of masculine and feminine codes. Masculinity is portrayed as powerful, protective, dominant, assertive, controlling, manipulative, and active. Femininity is portrayed as weak, self-touching, submissive, passive, and sexually available.

To uncover the peculiarity of images often perceived as normal, we recreated representative examples of Goffman’s gender codes from popular magazine advertisements. We did this in an effort, not to argue that men and women’s gender roles should be switched, but that these roles should be more permeable. Through this project, we discovered that each area of Goffman’s arguments was, in fact, true. Advertisements clearly are gender oriented.

In the recreation of these images we found that while most viewers didn’t find the representative examples awkward or peculiar, they did find our recreations both awkward and peculiar. Most responses included laughter or surprise. Even in the making of this creating, we found ourselves finding it odd to pose for the opposite picture. It felt awkward to be in a pose that was traditionally done by a male figure and vice versa.

Cultural critic, bell hooks, argues “The issue is not freeing ourselves from representations. It’s really about being enlightened witnesses when we watch representations.” In this project we sought to show viewers that while the influence of the advertisements is there regardless, we need not be trapped into thinking consciously and unconsciously that one set of images is normal. We must be enlightened witnesses.

P11 Same-Sex Sexuality in the Arab World: The Legality of Desire

Student Author: Stephanie Sowma
Institute: UW-Parkside
Faculty Sponsor: Kathleen Gillogly, Ph.D.
Topic: Social Sciences & Anthropology

Regardless of what identities have been taken on by Arabs in the modern era, the fact is that before colonization, Arabs did not view same-sex sexual actions in an “identitary” manner, that is, as the whole of ones identity. This view of same-sex sexual activity, that of the “homosexual” as a person rather than ones actions, was created within the Western world and imposed upon the Arab world through both legislation and Western enculturation. My work argues against both the ethnocentric humanitarian efforts to impose Western cultural values upon the Arab world, as well as against the Arab sodomy laws still in place within most of the Middle East. I take a look at these laws not through Western LGBTQ theory, but through the perspective of Arab culture, Islamic Law, and the interplay of the two.
P12 Differences between Architecture and Occupational Therapy Student Perceptions of Restaurant Accessibility using the RATE-IT Evaluation Tool

Student Author: Kati Liegl
Institute: UW-Milwaukee
Faculty Sponsor: Melissa R. Lemke
Topic: Social Sciences & Anthropology

Accessibility of restaurants is important for people with disabilities; currently no user-friendly evaluation tool exists. The Americans with Disabilities Act (ADA) necessitates accessibility of public facilities for people with disabilities by providing various design guidelines, including minimally acceptable ranges for physical features that are mainly focused to accommodate individuals with physical impairments. The Restaurant Accessibility and Task Evaluation Information Tool (RATE-IT) was developed as an accessibility assessment for different impairment categories that focuses on multiple impairment groups, including physical, cognitive, and sensory. RATE-IT utilizes a trichotomous sub-branching system to increase survey speed and efficiency by expanding or eliminating questions when appropriate.

Approximately fifteen participants from architecture and occupational therapy (OT) majors evaluated the accessibility of two restaurants using RATE-IT. The hypotheses are 1) architecture RATE-IT scores will be statistically different than expert scores and 2) OT scores will not be statistically different than the expert scores. These results are expected because architecture students focus heavily on physical accessibility and compliance with codes, which limit their understanding of needs other than physical. Contrarily, OT students focus on functional tasks and interactions between all types of people and their environments. Preliminary results appear to support these hypotheses. Preliminary analysis of data will help improve the tool, develop useful protocols for evaluating restaurant accessibility, and document the need for architecture programs to address all impairments in the design process. This study is part of an ongoing line of research designed to create user-friendly accessibility rating tools that can be used anywhere.
data was statistically analyzed using frequencies, mean comparisons, correlations, and a Cronbach's Alpha reliability analysis. Results indicated a strong correlation between repeat offending and substance abuse. This prediction was supported in the literature in that drug use furthers the chances of recidivism (Huebner & Cobbina, 2007). Additionally, inmates agreed recidivism would be more likely without the use of treatment options. Implications for practitioners and future research are discussed.

P15 Yurok Women and Menstruation Rites
Student Author: Katie Witz
Institute: UW-Oshkosh
Faculty Sponsor: Stephanie May de Montigny
Topic: Social Sciences & Anthropology
This paper explores the power and sacredness that was imbued with menstruation for Pacific Northwest Native American women. Instead of menstruating being a negative, dirty or inconvenient monthly occurrence, Native American women welcomed the monthly lunar cycle. One way that this power was relayed and passed on to the next generation of young girls was through women's lodges or huts. These huts provided women a sacred space to revel in their wisdom and power: to tell stories and pass down the wisdom of their people, to birth their children, to concoct and ingest medicinal potions that only the wisest of the women could mix, to mingle with other menstruating women.

P16 “I’m out of here!” Or not?: Threat Detection and Assertiveness in Women’s Responses to Date Rape
Student Authors: Banu Oztuncer, Elizabeth N. Schneider, RaeAnn Anderson
Institute: UW-Milwaukee
Faculty Sponsor: Shawn P. Cahill, Ph.D.
Topic: Social Sciences & Anthropology
Sexual assault is a serious public health problem with a wide range of negative outcomes (Koss, 1993). Rates are especially high among college women, with some studies reporting one out of two college women experiencing some form of sexual coercion or assault (Ullman et al., 1999). Assertiveness has been suggested as a protective factor against sexual assault (Gidzyc et al., 2006). In this study we seek to investigate whether the relationship between threat level and the assertiveness of responses to threat are moderated by an arbitrarily set threat level or the participant's own perception of threat.

Ninety-four undergraduate women were randomly assigned to one of four conditions and listened to a recording of a date rape scenario. In three experimental conditions, the level of threat was experimentally manipulated whereas in the control condition participants determined the level of threat by stopping the recording when they decided the man's advances went too far. Participants were then asked to imagine themselves as the woman in the recording and to describe what they would do and/or say in that situation. Their open-ended responses were scored for verbal and nonverbal definiteness.

Multiple regression analyses revealed that level of threat predicted verbal and non-verbal definiteness regardless of whether threat level was set by the experimenter or selected by the participant. Thus, the additional task of recognizing the threat did not moderate the relationship between threat level and definiteness of the responses.

Further research should be conducted, examining which factors increases assertiveness in responses.

P17 Children and Adults Use Information About Object Size When Scaling Location
Student Authors: Melissa Butler, Miranda Melville, Ana Castro, Jeffrey Gagliardi, Andrea Gust, Rebecca Shaw
Institute: UW-Parkside
Faculty Sponsor: Kara Recker
Topic: Social Sciences & Anthropology
The ability to scale distance plays a central role in everyday functioning for children and adults alike. People use maps to find locations, construct diagrams to represent microscopic entities, and draw pictures to represent family and friends. This study examined whether children and adults use information about the size of an object to help them scale from a large to a smaller sized space. Four- and five-year-old children and adults were asked to remember the location of an object on mat placed on the floor of a room. They then produced the location of the object on a mat that was either the same length (memory task) or a different length (scaling task) place on the floor of an adjacent room. To examine whether participants used information about the size of the objects to help them scale, the size of the objects were either scaled to the
size of the mat or remained a constant size. Analysis of mean error scores showed that when objects were the same size throughout the experiment, children and adults placements were significantly less accurate than when objects were scaled to the size of the mat. This difference in accuracy between object conditions suggests that when children and adults engaged in the scaling task, they used the objects as a source of information to assist them in reproducing the original location. When this information was not available, children and adults had more difficulty with the scaling task.

P18 Play and the Subculture of Larping: Gender, Motivations and Self
Student Author: Mai Cha Lee
Institute: UW-Stout
Faculty Sponsor: Susan McClelland
Topic: Social Sciences & Anthropology

The literature on play focuses on children. In addition, the protestant work ethic is very dominant in American culture, subordinating playfulness to working hard. Therefore, play is marginalized as we enter adulthood (Cohen, 2006; Mackay, 2001; Blatner & Blatner, 1997). The purpose of this qualitative research inquiry was to explore the importance of adult play by examining the subculture of Live Action Role-Playing, also known as LARP, larp, or lrp. The research also examined gender roles, motivation and self construction in larp. The research was conducted through snowball sampling of larpers in the Dallas/Fort Worth area (DFW or “the Metroplex”), and the states of Massachusetts, Minnesota and Wisconsin. The three methods used for triangulation were semi-structured interviews or questionnaires, participant observations, and scholarly literature. Data was analyzed through grounded theory and Emerson, Fretz and Shaw’s (1995) analysis of qualitative data. The findings were that larp allowed participants to explore aspects of self in a safe environment, and thus, contributed to their growth—personally and socially. Implications for future research may include biological, psychological, and social benefits of larp and adult play.

P19 Hmong Intergenerational Perceptions of Play
Student Author: Mai Cha Lee
Institute: UW-Stout
Faculty Sponsor: Susan McClelland
Topic: Social Sciences & Anthropology

Research on child play has been beneficial towards exploring the importance play has in the development of a child. Although we know play has many positive benefits there lacks scholarly research on adult play, and even more so on the cultural differences of play (Van Leeuwen & Westwood, 2008; Mannell, 2005; Floyd, Bocarro, & Thompson, 2008). This nonrandom cross-sectional pilot study, conducted at a Midwestern college, explored the relationship between the generational differences and similarities on Hmong perspectives of adult play. It was hypothesized that there would be more differences than similarities between these two groups. Survey data was statistically analyzed using frequencies, cross-tabulations and mean comparisons. It was found that there were more similarities in perspective than differences between these two adult groups, and that play was seen as beneficial for one’s health. Implications for practitioners are play is perceived to relieve stress, and that social interactions are important to play activities. Future research would benefit from a large, randomized national sample and a qualitative research design.

P20 Divorce and Children
Student Author: Jaclyn Tenuta
Institute: UW-Parkside
Faculty Sponsor: George Wang
Topic: Social Sciences & Anthropology

Recent studies have shown that the current divorce rate in the United States is estimated at nearly 50%. This number is alarming for several reasons. First, the reality that almost half of all marriages do not last and end in divorce and secondly, and perhaps most importantly, what happens to the children within these separating families. This study will examine the short and long term effects that divorce has on children, and more specifically, the suffering that can potentially take place on their academic performance and social involvement. The methodology of this study will utilize a survey questionnaire of children from Racine Unified School District in the fourth and eighth grade who will respond to regarding their social involvement. The student’s academic involvement will be analyzed and released by
the district, allowing it to be used for this study. The responses will be compared with both children from married and divorced families to establish if divorce, the independent variable, has a negative impact on the selected dependent variables- academic performance and social involvement. It has been hypothesized that (a) divorce will have a negative effect on children’s academic performance and (b) divorce will have a negative effect on children’s social involvement. Such findings would provide reasons to emphasize the importance of this topic and why it is necessary to continue to do further research. Overall, the topic of this study not only affects children and families but school educators, counselors, and the community as well.

P21 Causes of Low Enrollment and Retention Rates among Foster Care Youth
Student Author: Tiffany Lozoya
Institute: UW-Whitewater
Faculty Sponsor: Sarah Hessenauer
Topic: Social Sciences & Anthropology
This research project examines the current foster care system and why there are such low enrollment and retention rates of foster care youth who have transitioned out of the foster care system and who attend four year universities in Wisconsin. Historically, only a very small percentage of foster youth who have aged out of foster care have enrolled in college. Nationally, the rate of college degree completion for foster youth is 5% or less, compared to 20% for their peers outside of the system. My research attempts to identify the reasons for these enrollment and retention rates. It is hypothesized that the lack of information about educational opportunities and support services present within the foster care system are the primary reasons for the low enrollment and retention rates of foster care youth transitioning out of foster care and attending four year universities. A survey will be given to approximately 15-25 individuals currently living in the Wisconsin foster care system who are working with a local youth-oriented foster care placement agency in early Spring 2011. The data collected from these surveys will identify what can be done to improve the method of delivery of information concerning higher education, as well as what resources need to be made available to foster care youth. This information will help to increase the percentage of children involved in the foster care system who enroll and graduate from college.

P22 Empowerment and Continuous Improvement
Student Authors: C. Mari Jocson, Suleim Pacheco, Alejandra Mendez, LaTonya Kelly
Institute: UW-Parkside
Faculty Sponsor: Mary Kay Schleiter
Topic: Social Sciences & Anthropology
Domestic violence is among the leading causes of housing instability nationally for women and children. This research is focused on a local non-profit organization that provides women and children survivors of domestic violence safe transitional housing and supportive services necessary to begin a new life free of violence. This transitional housing program has been designed to empower women and help them regain peace, strength, and confidence. We have developed an entrance survey for new residents and an exit survey for previous residents to better understand and consider client perspectives. Our dependent variables are the clients’ career, relationship, housing stability, and educational progress. The independent variables are the length of their participation in the program and the types of services they received. This research is aimed at evaluating the effectiveness of the program and gathering information that will be applied to continuous improvement of the program.

P23 Can Do vs. Willing to Try: A Measurement of Self-efficacy
Student Authors: Mark Pappas, Joshua Paul, Alanna Stankiewicz
Institute: UW-Milwaukee
Faculty Sponsor: Shawn P. Cahill, Ph.D.
Topic: Social Sciences & Anthropology
Self-efficacy refers to people’s confidence in their ability to perform specific tasks. Kirsch agreed that for skill-based tasks, measures of self-efficacy assess a person’s perceived ability to perform the task. However, Kirsch proposed for fear based tasks, measures of self-efficacy assess people’s willingness to try the task. This study was designed to test Kirsch’s hypothesis. Participants in two experiments completed questionnaires asking them to predict their performance on a fear-based snake behavior approach task (BAT) and a skill-based basket-shooting task (BSKT). In Experiment 1, half the participants specified which steps on each task they could do; remaining participants specified which tasks
they would be willing to try. In Experiment 2, half the participants specified which items on the BAT they could do and which items they would be willing to try. Remaining participants provided the same information for the BSKT. We predicted for both experiments that participants would endorse more BSKT items in the “willing to try” condition than in the “can do” condition. For the BAT, we predicted participants would endorse the same number of items in both conditions in Experiment 1, but they would endorse more items in the “can do” condition than the “willing to try” condition in Experiment 2.

Contrary to predictions, results did not differ across experiments. For the BSKT, participants endorsed more items in the “willing to try” condition than in the “can do” condition; for the BAT, participants endorsed a comparable number of items across conditions. Results did not support Kirsch’s hypothesis.

P24 Religious Pilgrimages and their influence on International Tourism

Student Author: Timothy Schroeder
Institute: UW-Stout
Faculty Sponsor: Damian Hanft
Topic: Social Sciences & Anthropology

I am interested in researching the influence Religious Pilgrimages have on the Tourism industry. Religious Pilgrimages have had their impact on Tourism around the world, making it necessary to recognize this clientele and how we, as an industry, can appropriately cater to their expectations of service. Many different religions and cultures have required their members to make long voyages to Holy lands or sacred places that are known to their beliefs. Along this journey our industry is there to accompany them and ensure the comforts of service. I am going to explore the religious tourism sector and describe how it variously influences how we do business today, and how it will change our style of hospitality in the future.

My research hypothesis is that the Religious Travelers certainly have an influence on how we organize our companies, and train our employees to be open and accepting to all individuals. I believe that there are a vast number of ethics and morals that need to be considered when catering to this population to show proper respect to our guests. I will learn and apply our current attitudes on Religious Tourism, and explore how different nations are approaching similar markets. Being able to understand a targeted portion of this traveling market will better equip us to service individuals in a comforting and reassuring manner. By being uninformed about religious taboos and a person's cultural values is an absolute way to destroy customer service and your own reputation of your brand or company.

P25 Analysis of Food Security and Hunger among Clients of Food Pantries in Kenosha County

Student Authors: Alexander Zarek, Janel Wahler, LaTonya Kelly
Institute: UW-Parkside
Faculty Sponsor: Mary Kay Schleiter
Topic: Social Sciences & Anthropology

The Kenosha County Hunger Prevention Council (KCHPC) is an organization that fights the battle of hunger in Kenosha County. The purpose of this study is to identify the characteristics of the client population of Kenosha County food pantries. A random sample of food pantry clients in 2008 and 2010 were interviewed in either English or Spanish. The main dependent variable is level of food security in the household. Independent variables include race/ethnicity, nutrition, and the satisfaction that clients had with the food pantries. The level of food security in the households of Kenosha County food pantry clients declined between 2008 and 2010. Households with food security seemed to have disappeared from the population of food pantry clients. The percentage of food pantry clients who report hunger in the household increased. The KCHPC is using the results of the study to improve services to low income families in Kenosha County.

P26 Attitudes of South and Central Asian International Students On Women Obtaining a College Education

Student Authors: Keyana Silverberg, Margo Hanson
Institute: UW-Stout
Faculty Sponsor: Dr. Susan Wolfgram
Topic: Social Sciences & Anthropology

In South and Central Asia the traditional cultural stereotype for women is to fulfill the role she plays in the family. Modern women desire to obtain an education but face barriers that prevent this such as: safe facilities,
finances, and gender stereotypes (Lall, 2009). Women are finding that education encourages them to not only challenge gender roles, but also to develop an individual identity and knowledge of their rights (Maslak & Singhal, 2008). This study explored the attitudes that men and women from South and Central Asia had towards women obtaining a college education. It was hypothesized that women will be more supportive of women obtaining a college education and the changing gender roles than men. In the literature there was a consistent pattern that quality of life was improved when a woman had an education (Malik et al., 2010; Lall, 2009; Maslak & Singhal, 2008; Katz et. al, 2007; Furuta & Salway, 2006). This cross-sectional non-random pilot study was conducted at a small Midwestern university through its International Education office. Survey data will be statistically analyzed using frequencies, cross-tabulations, mean comparisons, independent t-tests, and Cronbach’s Alpha reliability analysis. Implications for practitioners and future research will be discussed.

P27 Communication Accommodation in Mixed Gender Dyads
Student Author: Rebecca Stupka
Institute: UW-Oshkosh
Faculty Sponsor: Erin Winterrowd
Topic: Social Sciences & Anthropology

There are observable patterns of gender differences in communication. To reconcile differences and facilitate communication it is necessary to use accommodation, the process of adjusting patterns towards or away from a conversational partner. Past research on accommodation has been limited to a laboratory setting, in which conversational topics are assigned or suggested and participants are put in an unfamiliar situation with unfamiliar conversational partners. This study extends research on gender accommodation by using unobtrusive observation of male-female dyads in conversation within the public domain. Consistent with the literature, it was hypothesized that women would exhibit more convergent accommodation behaviors than men overall; that in conversations in which the topic is stereotypically feminine, men would exhibit more convergent accommodation behaviors than women; and in high stress conversations both partners would exhibit divergent accommodation behaviors. Preliminary results indicate partial support for the first and third hypotheses. A novel finding is that in conversations in which the couple is dating and does not have a specific conversational topic there appears to be more convergent accommodation by men. If confirmed, these findings suggest that women and men facilitate communication via accommodation both within and outside the laboratory.

P28 Campus Climate: Attitudes and Experiences within the workforce
Student Authors: Jaclyn Tenuta, Stephanie Maki
Institute: UW-Parkside
Faculty Sponsor: Mary Kay Schleiter
Topic: Social Sciences & Anthropology

The climate at the University of Wisconsin Parkside is significantly important to the overall academic community, which includes all levels of faculty, staff, and students of the campus. The climate is an essential aspect within the institution because a negative climate could impair the knowledge of the academic community and influence the community's capability in teaching, research, and scholarship. The University of Wisconsin Parkside completed a survey of the Campus Climate in the fall of 2009. Research is done to assess and improve the environment for working, living, and learning at the University. The benefits of surveying the climate will help to ensure that the environment at the University is conducive to working, living, and learning.

In this study we are analyzing, in depth, the differences in attitudes and experiences according to position within the university workforce. The independent variables that are used in the current study contain the levels of staff at UW-Parkside which consists of Administration, Faculty (Tenured and Untenured), Academic Staff (Instructional and Non-Instructional), and Classified Staff. The dependent variables include: Employee Attitudes about Climate for Diversity, Employee Attitudes about Work Life Issues, and Employees’ Perceptions of Resources Available at UW-Parkside. This contains sixty-eight questions found within the survey.

The results of the study show that there are significant differences between the attitudes and experiences based on the positions in the workforce. There are similarities and differences found among academic staff and other employees.
P29 Emotionally Expressive Writing Manipulation Check
Student Authors: Megan Key, Dagong Ran, Samuel Klossner, Nathan Boisen, Cory J. Patrick
Institute: UW-Milwaukee
Faculty Sponsor: Shawn P. Cahill
Topic: Social Sciences & Anthropology
Cahill and colleagues (unpublished manuscript) demonstrated activation of anger after first writing about an angry memory and a habituation of anger across subsequent writings. Patrick and colleagues (2010) subsequently evaluated whether some types of expressive writing are more effective in reducing State Anger than others. Ninety undergraduate participants wrote twice about their angriest memory, first being instructed to describe the event and their thoughts and feelings about the event. On repetition, separate groups were instructed to either view the event from the other person’s perspective or generate potential solutions to solve problems associated with the event. A third control group just repeated the initial writing task. The activation and habituation effects replicated, but there were no differences across the three writing groups.

This investigation entails a multi-step process to develop and validate a rating scale to evaluate the content of the Patrick et al. (2010) writing samples to determine whether participants followed instructions for the different conditions. We have developed an initial set of criteria based on the written instructions and a few writing samples to differentiate among the three groups. Next, researchers, blind to condition assignment, will apply the scale to a larger number of writing samples, and we will evaluate the reliability and accuracy of the ratings. We will use this experience to make adjustments to the rating scale and then validate the revised rating scale with separate, larger group of writing samples.

Results of this investigation will help us understand the mechanisms by which writing reduces anger.

P30 College Male Attitudes Towards Bystander Intervention: Preventing Violence Against Women
Student Author: Nathan Tysk
Institute: UW-Stout
Faculty Sponsor: Dr. Susan Wolfgram
Topic: Social Sciences & Anthropology
It is widely demonstrated that violence against women is a major public health problem on college campuses and that bystander intervention is an increasingly popular approach to rape prevention (McMahon, 2010). The purpose of this study is to explore college male attitudes towards the bystander intervention approach of preventing violence against women. This study’s central research question was, “What are college male attitudes towards bystander intervention in the context of violence against women?” The author predicted that due to the current social structure, classifying females as inferior, males will choose to be silent bystanders in potentially dangerous situations for women. The current literature found that one of the largest predictive factors of rape myth acceptance and negative attitudes towards bystander intervention was gender; displaying male’s unhealthy bystander behaviors (McMahon, 2010; Kress, Shepherd, Anderson, Petuch, Nolan, & Thiemeke, 2006). The site of this nonrandomized pilot study was a Midwestern university. Male college students will be surveyed on their attitudes towards bystander intervention, specifically addressing violence against women. Survey data will be statistically analyzed using frequencies, mean comparisons, correlations, and a Cronbach Alpha reliability analysis. Implications for: college students, future proactive education programs towards violence against women, and future research will be discussed.

P31 The Domestic Cultivation Issues of China During the Qing Dynasty
Student Author: Marcus Bouterse
Institute: UW-Parkside
Faculty Sponsor: Dr. Ward
Topic: Social Sciences & Anthropology
This project analyzes the opium issues in China experienced during the Qing Dynasty (1644-1912). Many historians claim that Britain was the sole source of evil infecting China with opium. This is based on the Qing Emperor Daoguang’s (r. 1820-1850) decision to commission Lin Zexu (1785-1850) in an effort to halt
the influx of British foreign opium. The Qing government insisted the term “opium” to be synonymous for “foreign opium.” They completely denied the notion that China was experiencing an issue with domestic cultivation of opium as well. It was stressed that the purity of Chinese soil could not produce anything deadly; only “less happy lands” in foreign soil is where the drug must have came from. In contradiction to these beliefs, research involving incidents related to native Chinese opium, more specifically opium grown in province of Yunnan, is quantified in comparison to coinciding confiscations of the British opium done by Lin Zexu. Geographic Information Systems (GIS) technology was utilized to demonstrate the confiscations and densities of the issue within Yunnan and demonstrate the severity of the opium issue. Additional data is being compiled in support of this claim in an effort for historians to properly identify the Chinese domestic involvement. Hopefully with further research of district and prefecture memorials, a more concise picture of the domestic cultivation issues of opium within China can be understood.

P32 The Relationship between Gender and Attitudes Towards Cohabitation

Student Authors: Christina Hall, Jamie Iverson
Institute: UW-Stout
Faculty Sponsor: Susan Wolfgram, PhD
Topic: Social Sciences & Anthropology

A major social change in recent decades has been the dramatic increase in the rate of cohabitation of unmarried partners (Wydick, 2007). With the current depressed economy, people are concerned about how to support themselves and many are therefore delaying marriage which may be leading to a higher prevalence of cohabitation (Wydick, 2007). Strong, DeVault and Cohen (2005) define cohabitation as the sharing of living quarters by two heterosexual, gay or lesbian individuals who are involved in an ongoing emotional and sexual relationship. The central research question in this study was: Is there a gender difference in how male and female college students view cohabitation? The purpose of our study was to observe the relationship of gender and attitudes towards cohabitation in a contemporary sample of male and female college students. It was hypothesized that males would be more accepting of cohabitation than females based on the literature. We conducted cross-sectional survey research at a small Midwestern university. Survey data will be statistically analyzed using frequencies, cross-tabulations, mean comparisons and independent t-tests as well as a reliability analysis, Cronbach’s Alpha. Implications for practitioners and future research will be discussed.

P33 The Electrolytic Reduction of Square Nails Recovered at the Vieau Fur Trading Post Site

Student Author: Ben Holmes
Institute: UW-Parkside
Faculty Sponsor: Dr. Robert Sasso
Topic: Social Sciences & Anthropology

In this poster, I will discuss the electrolytic reduction of rust on historic square nails found at the Vieau site in Franksville, Racine County. In 2002, Dr. Robert Sasso began field research to locate and explore the remains of a fur trading post run by the Vieau brothers during the early 19th century. Among the various artifacts found at the site, we uncovered a great many square nails used in the construction of buildings and other equipment, and that also served as items of trade themselves. Being buried for more than a century naturally caused the nails to develop a great amount of rust. For us to accurately identify them, we needed to safely and gently remove that rust in order to reveal aspects of their manufacture. The process to accomplish this goal involves bathing the nails in a lye solution while running a current through them for a period of four and a half days. At the completion of this stage various methods of sonic cleaning and heat are used to finish the process, allowing us to proceed to their identification. This is important to the overall study of the Vieau site for it allows us to put minimum dates on building construction as well as to understand where they acquired their construction materials. This process has personally taught me the value of archaeological lab work as well as patience and improvisation.

P34 Single Mothers on TV: Have we Moved Past Murphy Brown?

Student Author: Katie Witz
Institute: UW-Oshkosh
Faculty Sponsor: Paul Van Auken
Topic: Social Sciences & Anthropology

In our patriarchal society, there is a lack of true, diverse and plentiful images of women in mainstream media. Women are viewed at best, comically and
not to be taken seriously and at worst, derogatorily. Mothers, including single mothers, are no exception to this. Many times, we only see stereotypical images of mothers. A common stereotype we see is wealthy single mothers who can “do it all” like Murphy Brown in the early 1990s. Many studies have shown the importance of television. Network TV programs tend to reiterate moderate to conservative ideals in general, but especially when they involve family structure. When there are diverse, non-traditional families, they are viewed in comedic settings (Skill, Robinson & Wallace 1987). This is due to the fear of the decline of family values that the political right has successfully proffered (Silbergleid 2002). Television audiences see a version of reality that they take on absolutist grounds. Family life is one example. In this content analysis study of current network television shows, parenting in general will be examined. The differences between single parent families and married, nuclear families will be analyzed including the frequency, acceptance, and traits bestowed to the family structure/parent. Differences between mothers and fathers from both single and married, nuclear families will also be highlighted.

P35 Aid For Veterans and Lack Thereof: A Comparison of the G.I. Bills For World War II Veterans and Vietnam Veterans

Student Author: Carlie Kragovich
Institute: UW-Whitewater
Faculty Sponsor: Mark Boulton
Topic: Social Sciences & Anthropology

The much-lauded World War II G.I. Bill set the precedent that soldiers ought to receive higher education and other benefits to compensate them for time lost from civilian life and to help them reintegrate back into society. Unfortunately, this was not the case for Vietnam veterans. In contrast to the World War II G.I. bill, the benefits provided to Vietnam veterans were inadequate to their readjustment needs. World War II veterans had enjoyed the luxury of having most of their education paid for, and had a positive image in society. This project will study the creation the Vietnam G.I. Bill and will examine how the bill affected the veteran’s return to civilian life. We wish to illustrate that Vietnam veterans were also concerned about continuing their education after active duty, only they did not have the means to do so. Congressional committee hearings on the formation of the bill are critical to understanding why these veterans received less than the World War II veterans, when both parties sacrificed equally for America. Final conclusions will show that Vietnam veterans did not have equal opportunities to become a member of society again as World War II veterans did.

P36 The Role of NGOs on Water Quality and Health in Cambodia

Student Author: Dennis Polzin
Institute: UW-Parkside
Faculty Sponsor: Kathleen Gillogly
Topic: Social Sciences & Anthropology

In July, 2010, I traveled to Cambodia for a water quality and health study abroad experience. Here I stayed with an NGO called RDI (Research Development International). I participated and learned about the work they do in Cambodia. This work included laboratory analysis of water from drinking wells, construction of rainwater collection tanks, education in rural villages, construction of water filters, and field testing for arsenic. I will be discussing the importance and effectiveness of this work to the Cambodian community. I will also explore the cultural occurrences that happen when an international organization has a large influence in a community.

P37 The Impact of Free Coupons Given to Families on Fruit and Vegetable Consumption Among Their Children

Student Authors: April Ross, Tyler Christiansen, Lainee Hoffman, Kevin Reinhold, Aaron Wingad
Institute: UW-Eau Claire
Faculty Sponsor: Eric Jamelske
Topic: Social Sciences & Anthropology

Note, also an Oral Presentation O12

Poor nutrition, especially low fruit and vegetable intake, has long been considered one of the central causes of overweight and obesity in children.

The USDA established the Fresh Fruit and Vegetable Program (FFVP) in 2002 to increase fruit and vegetable consumption as part of a broad effort to combat childhood obesity. Our initial research revealed that the FFVP did increase fruit and vegetable intake of participating students by providing free access to fruits and vegetables as a school snack. However, the impact of the FFVP was limited in that it did not increase fruit and vegetable consumption in school beyond the free
snack period or in the home.
In subsequent research we show that the impact of the FFVP can be expanded slightly through a mix of teacher modeling and incentives provided to children in the classroom setting. However, this added impact was also relatively small and there was still no influence on fruit and vegetable consumption in the home.
In this study, families of participating children received sets of free coupons redeemable only for fruits and vegetables. We measure the rate that families used the free coupons and if fruit and vegetable intake increased among their children. Using a pretest/posttest design, fruit and vegetable consumption was measured before the coupons were distributed, during the coupon period, and when families no longer had free coupons. The data has been collected, but the analysis has just begun thus we do not do not have any results to include in this abstract.

P38 What Do College Students Across China Think About Global Warming?
Student Authors: Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz
Institute: UW-Eau Claire
Faculty Sponsor: Eric Jamelske
Topic: Social Sciences & Anthropology
Note, also an Oral Presentation O23
Global warming has become a very important issue. It is not just an issue for one country or a few countries, but rather it is a global issue. But is global warming really happening and if so what is causing it, what are the consequences and what could or should we do about it if anything?
Motivated by the above statement/questions we are conducting a survey examining what college students in China think about this important issue. Specifically, we compare student responses from college campuses across the China including the north, south, east and west.
Our focus on college students is for two reasons. First, because they are young and therefore they represent the future and also because it is likely that we can get a reasonably high participation rate, thus making the data more valid.
Similarly, we are focusing on China for two reasons. First, in absolute terms, China is the single largest emitter of CO2 in the world. Second, they are one of the world’s fastest growing economies, but yet there is still much poverty in China as per-capita GDP lags far behind almost all developed countries.
We are just now collecting this data and thus we do not have any results to include in this abstract. We are also conducting the same survey among college students at four universities in different regions of the US. Therefore, part of our presentation will compare the viewpoints of young adults in China to their counterparts in the US.

P39 Using Modeling and Incentives to Expand the Reach of the USDA Fresh Fruit and Vegetable Program
Student Authors: Aaron Wingad, Tyler Christiansen, Lainee Hoffman, Kevin Reinhold, April Ross
Institute: UW-Eau Claire
Faculty Sponsor: Eric Jamelske
Topic: Education
Note, also an Oral Presentation O11
Overweight and obesity is the most common medical condition of children in the US, with the prevalence more than doubling over the past 20 years. Poor nutrition, especially low fruit and vegetable intake, has long been considered one of the central causes of overweight and obesity in children.
The USDA established the Fresh Fruit and Vegetable Program (FFVP) in 2002 to increase fruit and vegetable consumption as part of a broad effort to combat childhood obesity. Our initial research revealed that the FFVP did increase fruit and vegetable intake of participating students by providing free access to fruits and vegetables as a morning snack.
Unfortunately, there is no evidence that participating in the FFVP increased fruit and vegetable consumption at school lunch or for meals and snacks outside of school. Perhaps most disappointing was that the FFVP did not influence students to bring fruit or vegetable snacks from home on days when one was not provided for free through the program.
This study investigates whether a mix of teacher modeling and incentives can increase children's fruit and vegetable intake beyond just participating in the FFVP. Using a pretest/posttest design, fruit and vegetable consumption is measured before and during the intervention across treatment and control schools.
The results showed that toy prizes had a limited
positive influence, but that a simple reminder for homework worked even better. Moreover, a dedicated and enthusiastic teacher also made a big difference in increasing fruit and vegetable consumption.

**P40 What Do College Students Across the United States Think About Global Warming?**

Student Authors: Matthew Sackmann, Drew Christensen, Joy Larson, Ben Ponkratz
Institute: UW-Eau Claire
Faculty Sponsor: Eric Jamelske
Topic: Social Sciences & Anthropology
Note, also an Oral Presentation O24

Global warming has become a very important issue. It is not just an issue for one country or a few countries, but rather it is a global issue. But is global warming really happening and if so what is causing it, what are the consequences and what could or should we do about it if anything?

Motivated by the above statement/questions we are conducting a survey examining what college students in the US think about this important issue. Specifically, we compare student responses from college campuses across the US including the northeast, midwest, southeast, southwest and west coast.

Our focus on college students is for two reasons. First, because they are young and therefore they represent the future and also because it is likely that we can get a reasonably high participation rate, thus making the data more valid.

Similarly, we are focusing on the United States for two reasons. First, the US is one of the wealthiest nations in the world as measured by per-capita income and they are also disproportionately responsible for the amount of CO2 in the atmosphere with per-capita emissions much greater than most other developed nations.

We are just now collecting this data and thus we do not have any results to include in this abstract. We are also conducting the same survey among college students at four universities in different regions of China. Therefore, part of our presentation will compare the viewpoints of young adults in the US to their counterparts in China.

**P41 Inquiry-based Lab Course used to Engage Students in Research**

Student Authors: Jacob Dums, Sara Bratsch
Institute: UW-River Falls
Faculty Sponsor: Karen Klyczek
Topic: Education

There is nationwide interest in enhancing the experience of students in college biology labs. Many labs effectively function to educate the students, but are sometimes seen as boring, predictable, and traditional. Recently a Howard Hughes Medical Institute (HHMI) Science Education Alliance (SEA) supported class at UWRF has challenged this traditional approach to lab courses. The main objectives of SEA are to support science literacy and to stimulate interest in biomedical research by engaging students in a genuine research experience. Instead of performing cookie-cutter labs, 19 freshman students partook in a two semester course that embodies genuine research. Over the course of the first semester students isolated mycobacteriophages from soil samples and characterized these phages through plaque morphology, DNA restriction digests, and electron microscopy. One phage from the class was then selected to be sequenced and the class dedicated the second semester to annotating the genome of their phage. Throughout the semester, the students rapidly gained knowledge of techniques and problem solving skills. As teaching assistants, we had an opportunity to be closely engaged with the students and help guide them. We will describe how this course, based on what we saw in the students, has changed our views about teaching science, and how it has changed the students’ attitudes toward scientific research.

**P42 Removal of Methylene Blue from Water by Swelling Clays**

Student Author: Samantha Leick
Institute: UW-Parkside
Faculty Sponsor: Zhaohui Li
Topic: Education

Extensive but separate studies have been conducted to focus on utilization of swelling clays to remove cationic dyes from aqueous solution and to investigate the feasibility and applicability of methylene blue (MB) adsorption for cation exchange capacity (CEC) and specific surface area (SSA) determination. This research
aimed at elucidating the mechanism of MB adsorption on low charge montmorillonite in order to better understand the principles behind MB removal using swelling clays and to validate the practices of using MB for CEC and SSA determination. Stoichiometric desorption of exchangeable cations from the clays accompanying MB adsorption as well as the close match between the MB adsorption capacity and the CEC of the clays confirmed cation exchange as the most important mechanism for MB removal. XRD and TG-DTG analyses revealed interlayer adsorption, thus, intercalation of MB molecules. FTIR analyses suggested that hydrogen bonding may not play a major role in MB adsorption. The results confirmed that the charge density, rather than the SSA was the limiting factor for MB adsorption. For the treatment of wastewater containing cationic dyes, swelling clays with a high CEC value would result in a greater removal of MB.

P43 Do Teachers Use Textbooks as their Curriculum?

Student Authors: Mikayla Schroeder, Krista Lindemann
Institute: UW-Eau Claire
Faculty Sponsor: Dr. Kate Reynolds
Topic: Education

Our research sought to determine how instructors of ESL (English as a Second Language), EFL (English as a Foreign Language), Foreign Language, and Second Language outside of the United States viewed their responsibilities for modifying and/or creating support materials, designing curricula, and writing objectives. Session attendees will view data in an engaging manner. Casualties and implications for teacher education will be discussed interactively.

P44 The Disappearance of Play in Kindergarten

Student Authors: Brittney Hagerty, Jennifer Schnelle, Erica Klefstad
Institute: UW-Whitewater
Faculty Sponsor: Simone DeVore
Topic: Education

Over the years, play has become less prevalent in kindergarten classrooms. As future early childhood educators we are concerned that academic content in kindergarten curricula is often not developmentally appropriate for the children’s success in the areas of social-emotional, language, and cognitive development (NAEYC, 2007), possibly due to lack of play. We decided to interview four kindergarten teachers and two principals about their views on the use of play in classrooms of five year olds. In addition to conducting interviews, we will observe the complexity of children’s engagement with peers, materials, and adults using McWilliam’s Engagement Check II (1999). We are scheduling interviews and observations with two school districts in southeast Wisconsin. We will summarize what we learned about the educators’ opinions regarding play, current curricula used, their practices, and observations of children’s engagement. We will compare our findings to those of last year’s results. Our research team expects to find that teachers are struggling to find a balance between academics and play.

P45 University of Wisconsin-Parkside Model Science Scholars Program

Student Authors: Susan Lemanski, Tina McKinnis, Aaren Johnson
Institute: UW-Parkside
Faculty Sponsor: Dr. Mary Kay Schleiter
Topic: Education

Over the past three years a study was conducted to evaluate the Model Science Scholars (MSS) Program at the University of Wisconsin-Parkside. The MSS Program has two objectives: to increase the number of under-represented students in the STEM (Science, Technology, Engineering, and Mathematics) disciplines, and to increase retention of STEM majors through degree completion. Surveys were completed by Model Science Scholar participants and STEM students with similar majors and grade levels, who served as a control group. The results of the surveys were analyzed using SPSS. The results indicate that MSS students are equally or slightly more likely to say they plan to graduate with their original major. Participation in MSS did not impact students’ ability to work at an internship. The greatest impact of the Model Science Scholar Program seems to be that participant students were able to work less hours and were more likely to plan to attend graduate school. We therefore conclude that MSS does have a positive impact on students, however that impact may not be as substantial as originally intended. The implications of this study suggest that scholarships decrease the financial burden for students, which
allows them more time for academics. Having mentors, tutoring, and access to internships also have a positive impact on the likelihood that a student will graduate in their first choice of STEM majors. However, our research indicates that the implication of some support services for MSS students need to be adjusted to better meet the needs of the students.

P46 Living Together: Now What? Cohabitation Among College Students
Student Authors: Lorrin Pekarske, Shelly Smith
Institute: UW-Eau Claire
Faculty Sponsor: Dr. Kathleen Nybroten
Topic: Education

Young adult union formation has changed dramatically in recent decades; the greater emphasis on higher education and financial stability and a resulting delay in marriage has increased the amount of college students cohabiting with their significant other. We examine why students cohabit, marital expectations, relationship quality, and parental attitudes towards cohabitation. A random sample of UWEC students was surveyed regarding their attitudes towards cohabitation; an additional survey was conducted for those in cohabiting relationships. Our findings indicate the vast majority of respondents cohabit for relationship convenience and less to test the compatibility for marriage. However, over 80% of the respondents anticipate marrying their cohabiting partner. Approximately 1/3 of our sample indicated a decrease in romance and/or sexual satisfaction since cohabiting. Parental support for cohabitation was surprisingly positive. Our results provide greater understanding about young adult union formation and decision making within the social context of higher education.

P47 Helping Children with Special Needs Engage in Literacy through the Use of Adaptive Devices
Student Author: Tanya Brudos
Institute: UW-Whitewater
Faculty Sponsor: Simone DeVore
Topic: Education

Teachers of young children with disabilities must foster emergent literacy activities and provide materials that will increase their interest in reading and writing (The Center for Literacy and Disability Studies, 2009). For my undergraduate research I am investigating how a student with speech, sensory, and motor difficulties can overcome barriers to engage in pre-literacy activities. To help the student, I am investigating different types of adaptive emergent literacy materials. I am working with an occupational therapist to determine an intervention that will provide the child with opportunities to actively engage in the learning of emergent literacy skills such as alphabet and word recognition, sentence formation, inventive story writing, and plot creation and comprehension. Based on this case study, I will share with professionals how children with disabilities can benefit from using adaptive devices such as (1) homemade story boards and visuals that guide the child’s tasks and activities (e.g. self help skills such as getting ready to go outside, classroom tasks such as lining up, sequencing tasks such as preparing a snack); (2) a communication board with tactile letters and words and pictures, and (3) a voice output device (with recorded commands and pictures). Assessment will take place by observing the child’s skills in making choices about activities he plans to engage in or wants to engage in (choosing a partner to line up, preparing a snack).

P48 Learning from Korea about Math Education
Student Authors: Sookyoung Lee, Minji Kim, Min Sun Chung
Institute: UW-Parkside
Faculty Sponsor: Dr. Shi Hae Kim
Topic: Education

Improving math competency holds a high position on the national educational agenda. Cross-cultural studies help us to find applications to improve our practices. Korean students rank high in international math tests. It is worthwhile to examine Korean students’ math learning practices to find implications for improving our math teaching. Conceptual learning and procedural skills are two major components in math education and have been emphasized in traditional math education. The final phase of learning is generalization. To be proficient in math, students should be able to generalize what they have learned. We studied Korean students’ math learning strategies by examining what and how the Korean teachers instruct at school as well as the Korean students’ culture of practicing math at home. Results show that Korean students are more exposed to conceptual learning which is composed of in-depth and
higher-level complex practicing with more integrated and combined questions.

The same broad and expanded conceptual structures are repeated starting in early grades. Korean teachers demonstrate concepts, and students practice procedures at home. The result of this rigorous and ongoing routine is that Korean students can learn more and better with each additional year of schooling. Korean students are exposed to concepts and explore those concepts at school. Once they leave school, the students master the concepts through diverse and complex practice enabling them to generalize the concepts and then apply them to other situations. In conclusion, this study sets out some general points and suggestions for improving math instruction and curriculum in American classrooms.

P49 Using Brief Experimental Analysis (BEA) to Identify Effective Math Interventions

Student Authors: Christina DeLapp, Vincent Campbell
Institute: UW-Eau Claire
Faculty Sponsor: Dr. Michael Axelrod
Topic: Education

In 2009, the National Assessment of Educational Progress reported that the steady climb of fourth-grade mathematic achievement across the country has suddenly reversed. Only 39% of the nation’s fourth graders were rated proficient in the subject. The purpose of this study was to identify math computation fluency interventions for three low achieving elementary school students using Brief Experimental Analysis (BEA) methodology. BEA has been used primarily to identify individualized oral reading fluency interventions with little empirical research validating the procedure for math computation. The application of BEA to academic problems can provide a direct link between assessment and intervention. The current study involved two related experiments. Experiment one empirically evaluated several interventions to determine which produced the greatest increase in Digits Correct Per Minute over baseline. Experiment two investigated the effects of the empirically-selected interventions on the math computation fluency. Results suggest that BEA of math computation fluency can empirically select interventions that improve math computation skill over time.

P50 Scale Literacy of Students in Introductory College Chemistry

Student Author: Lindsey Janowiak
Institute: UW-Milwaukee
Faculty Sponsor: Dr. Kristen Murphy
Topic: Education

The American Association for the Advancement of Sciences (AAAS) has identified four common themes for science literacy: systems, models, consistency and change, and scale. These themes pervade any science course, and scientifically literate students would be expected to be successful in these courses. However, scale is the only theme that is not specifically addressed in the National Science Education Standards and therefore typically not included in K-12 curriculum. There is an assumption that concepts of scale should have been “absorbed” by the time a student reaches college level, but our empirical evidence demonstrates that it has not. Through a pilot study, we examined students’ scaling abilities through a series of activities. We found that both novices (students in introductory chemistry) and experts (graduate students in chemistry) exhibited poor scaling abilities over a wide range of skills. We were unable to conclude to what degree this was based on number sense, scaling of objects, the ability to conceptualize scales or the ability to compare one scale to another. Therefore, the second phase of activities utilized the same set of scaling tasks from the first phase not with the participants using a head-mounted-eye-tracking device. This allows for the collection of a scan path with fixations and pupil diameter to determine where a participant is looking and for how long. The analysis of this study will be presented along with conclusions with regards to the impact on scale literacy.

P51 Professor’s Knowledge of LGBTQQIA Issues as they Pertain to Students

Student Authors: Kathryn Showers-Curtis, Ashley Struck, Undergraduate Research Program
Institute: UW-Whitewater
Faculty Sponsor: Professor Jennifer Flad
Topic: Education

We examined what professors on the UW-Whitewater campus know about Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Intersex and Asexual,
(LGBTQQIA) issues and determined how well prepared and well trained they have been on creating inclusive spaces in the classroom. Preliminary investigation showed that there are students on this campus who identify as LGBTQQIA who do not feel safe in classrooms or feel they are being discriminated against, which in turn affects their academic performance. Because the recent campus climate survey showed students in this community to be among the most vulnerable and discriminated against, it is important to understand professors’ knowledge of these issues, as well as their experience and preparedness in incorporating issues of diversity into the curriculum to create an inclusive environment in the classroom for these students. This was a qualitative study involving in-depth, semi-structured interviews with professors from a variety of departments on campus about their knowledge, training, and experience pertaining to LGBTQQIA issues, which were audio-recorded, transcribed and coded for themes. Professors were randomly sampled and invited to participate. Approximately 315 professors were contacted, and of those only about 30 agreed to be interviewed. The responses received showed a wide range of faculty experiences, training, and general feelings about classroom diversity issues and inclusive spaces. However, from these responses, we believe more training needs to be offered for professors to be knowledgeable on issues of inclusivity in their classrooms.

P52 Students Perceptions of ENGL 110
Student Authors: Christinia DeLapp, Michael Jobb
Institute: UW-Eau Claire
Faculty Sponsor: Dr. Shevaun Watson
Topic: Education

The primary objective of this study is to determine students’ perceptions of and experiences in ENGL 110, Introduction to College Writing, which is the one course required of all students at UW-Eau Claire. This project is significant because it is campus-wide and potentially involves several thousand student-participants. The results of this research will guide major, ongoing curriculum revision of ENGL 110. While this study is similar to traditional qualitative research performed within the discipline of psychology, and thereby provides the student-researchers with valuable survey methodology experience, the greatest import of this work is its wide scale and future impact on students at Eau Claire. The data will be acquired by the distribution of an online survey to all students who have taken ENGL 110 in the past several years. The survey instrument was developed with input from student focus groups and then piloted with a test group before being disseminated. We expect that our results will show significant areas of variability and instability among ENGL 110 sections, which ultimately undermines the purpose and pedagogical effect of ENGL 110.

P53 Teaching Module of the Portrayal of Disability Through Assistive Technology use in Film
Student Author: Tom Dembski
Institute: UW-Milwaukee
Faculty Sponsor: Dr. Roger O. Smith
Topic: Education

Film has portrayed both favorable and unfavorable views of people with disabilities through the years. However, films often convey a message that disabilities preclude a person from leading a fulfilling life, or drastically portray the person with a disability as an outsider. The purpose of the study was to test student’s current perceptions of disability, create an educational module based on portrayals of disability in movies, and to test if the educational module changed the student’s outlook on disabilities. The idea was that cinema has mainly only portrayed disabilities in a negative fashion. Knowing that media can have a powerful effect on viewers, student’s perceptions most likely echo that of the movies. With the educational module, students’ perceptions should change to a more positive position on disabilities in general. Through the use of pre- and post- surveys, descriptive data has been gathered on phase I to evaluate 35 students’ attitudes, with the anticipated outcome that students will share Hollywood’s pessimistic portrayal prior to viewing the module. It was anticipated that after the module, the post-survey will reveal students have a better understanding of how mainstream media portrays people with disabilities, particularly those who use assistive technology. Hopefully, a better understanding of the portrayals will guide students to reevaluate their current perspective on disabilities and become more critical of its portrayals. Data collection and educational module implementation for phase II is in progress.
Empowering Biology Education Through Computer Analysis of Whale Origins

Student Author: Courtney Thompson  
Institute: UW-Whitewater  
Faculty Sponsor: Dr. Robert Kuzoff  
Topic: Education

According to the National Academy of Sciences, biology students in the United States are not being adequately prepared for successful futures. In particular, they do not receive sufficient training in math and computer skills. Therefore, they lack the credentials to compete effectively for available educational and career opportunities. Our research project examines the potential benefit of a classroom exercise that introduces the use of computers to solve biological problems. We developed a learning module that investigates the early ancestry of a lineage of aquatic mammals that includes whales, dolphins, and their closest relatives. Both high school and college level students are invited to consider the following question: “Where do whales come from?” Using MEGA 4.0, a free, user-friendly program, students explore the ancient history of this group by gathering protein sequences from electronic databases and building phylogenetic trees (diagrams of evolutionary relationships). Students then use their trees to dissect anatomical changes that coincided with the transition of this group to an aquatic lifestyle. These include adaptations to: (1) counteract buoyancy (increased bone density); (2) improve under-water hearing (thicker bones around the middle ear); (3) facilitate locomotion (modified forelimbs and hindlimbs); and (4) utilize fish as a food source (decreased chewing basins). The skills learned through this exercise can be used for other applications, including pinpointing the origins of H1N1, HIV or SARS outbreaks. The effectiveness of a similar lesson plan was tested in the previous academic year. That lesson, which included a brief video, website, and wrap-up discussion, was assessed in a recent publication in Evolution: Education and Outreach. Statistical analyses revealed a significant improvement in both comprehension of phylogenies and computer skills among participating students.

Imperative Constructions in English

Student Author: Paula Hagen  
Institute: UW-Eau Claire  
Faculty Sponsor: Erica Benson  
Topic: Education

In English, commands, requests, assertions, instructions, etc. are typically expressed by sentences called imperatives. Because English does not provide specific morphological markers to differentiate between imperatives and other constructions, speakers must rely on other factors in order to determine the intent of such an utterance. This was the basis for my research, to examine how imperative constructions work in English: in particular how linguists might be able to account for specific rules for their syntax and how they are used in varying contextual settings. In the broader field of linguistic study, being able to comprehensively label and understand the specific phenomena that occurs in imperative constructions is crucial to understanding the inner-workings of the entire English language.

Success Universities, Successful Students: An Examination of the Effects of Retention and Graduation Rates on University Students

Student Author: Caroline Harvey  
Institute: UW-Parkside  
Faculty Sponsor: Xun Wang  
Topic: Education

A growing body of research examines the relationship between student and university characteristics on the outcome of retention and college graduation. To the extent at which this relationship determines student outcomes has not been the primary focus of many studies however. The purpose of this study, therefore, is to identify key variables that enhance student success defined as the percent of students who graduate from the Wisconsin system of 4-year colleges. Student success will be measured by the overall graduation percentage of each college. Three variables—admission practices, academic practices and student motivation—will be compared with the percentage retained to see if there are significant correlations and to see how that impacts the graduation percentage. It is hypothesized that 1) the retention percentage is a good indicator of the graduation percentage and 2) there is a positive correlation between all three student...
success variables and the retention and graduation percentages. This study seeks to complement ongoing research conducted by the University of Wisconsin-Parkside that is seeking to improve the university’s standards and ratings through the implementation of the Parkside Promise strategic plan.

P57 English Language Acquisition Through the Use of Music in English as a Second Language Instruction

Student Author: Anna Bessuner
Institute: UW-Whitewater
Faculty Sponsor: Dr. Alena Holmes
Topic: Education

This study researched the effects of integrated music methods into the English as a second language classroom. English language learners (ELLs) who speak English socially received support in acquiring academic language required to succeed in school. Over a period of eight weeks, two groups of kindergarten ELLs were taught the same material with two different pedagogical approaches. Students were initially assessed for their general English language proficiency level. Furthermore, they were pre-assessed for prior knowledge through random assessments on instructional content. The treatment group received lessons integrating music into kindergarten curriculum content incorporating English as a second language learning goals, such as vocabulary and concept knowledge. The control group was taught the same lessons with the same learning goals using the traditional method, relying on books and worksheets with oral instructions. For the treatment group, subject matter-specific vocabulary and underlying concepts that align with the kindergarten curriculum were taught through song, use of musical instruments and interaction. In contrast, the control group was taught the same material but without multisensory music experiences. As expected, students who were taught using a musical approach better retained language and content. Final assessments revealed that for four units out of six learning objectives, the group taught with music outperformed the group taught without. These results should encourage educators to include musical activities into their lessons to help ELLs acquire English more efficiently.

P58 Performance Differences Between Spatial and Aspatial Majors on Visual Spatial Tasks

Student Authors: Randy Lim, Nick Asay
Institute: UW-Eau Claire
Faculty Sponsor: Catya von Károlyi
Topic: Science & Engineering

When engaged in visual spatial tasks, people use global strategies (examining figures as a whole) or local strategies (examining figures piece by piece; Gluck & Fitting, 2003). Spatial majors are, generally, more likely to use global strategies on such tasks (Li & O’Boyle, 2008). Therefore, we hypothesized that students in spatial majors (art and physics) compared to those in an aspatial major (psychology) would be better at identifying global information on two computer-based visual spatial tasks: The impossible figures task (von Karolyi, 2001) and Fink et al’s (1997) hierarchical task. Impossible figures cannot really exist in three-dimensional space, but look as though they could. In the impossible figures task, one must examine both possible and impossible figures; but must use a global strategy to see impossible figures as not possible. In Fink et al’s task, stimuli composed of large shapes (i.e., anchors, examined at the global level) are made up of small shapes (i.e., stars examined at the local level). For each task, we examined the global component and assessed participants’ performance (speed and accuracy). Our results lead to the question: Does global visual spatial ability predict performance in careers that rely on visual spatial talent?

P59 The Impact of Antibiotic-Clay Interactions on Bacterial Growth

Student Authors: Lisa Elliott, Monica Schmidt
Institute: UW-Parkside
Faculty Sponsor: Dr. Maria MacWilliams
Topic: Science & Engineering

Inappropriate antibiotic use has led to the emergence of resistant bacterial pathogens. It is hypothesized that continuous exposure to sub-lethal antibiotic doses selects for resistant organisms. In agricultural settings, approximately 80% of the antibiotics fed to livestock leave the animals unchanged and are disseminated into the water and soil. The impact of introducing antibiotics into the environment is not fully understood. This project studies interactions between clay, a
common soil component, and tetracycline to determine if antibiotic-clay complexes affect bacterial growth. The clays, Kaolinite (KGa) and Montmorillonite (SAz), were incubated with varied concentrations of tetracycline for 24 hours at 26°C to allow for binding. Two washes were performed to remove unbound antibiotic. The unbound tetracycline in the supernatants was measured in order to estimate the amount of clay-bound Tetracycline. Escherichia coli and Salmonella enterica were exposed to antibiotic-bound clay for 24 hours at 37°C. Viable cell counts were used to determine the level of growth inhibition due to clay-tetracycline vs tetracycline alone. For both clay types, little inhibition of growth was detected at tetracycline concentrations that normally prevent bacterial growth. Montmorillonite, a swelling clay with a higher binding capacity, had a greater ability to quench tetracycline antimicrobial activity. Thus both clays were capable of mitigating the immediate impact of antibiotic release. Nevertheless, clay sequestration of tetracycline and subsequent low-level release of the antibiotic may select for increased antibiotic resistance. Results from this study address how interactions between clay and antibiotics affect bacterial growth and influence acquisition of antibiotic resistance.

P60 Development of Novel Microfluidic Devices
Student Author: Jeffrey Motschman
Institute: UW-Milwaukee
Faculty Sponsor: J. Rudi Strickler
Topic: Science & Engineering

Microfluidics deals with the behavior, manipulation, and precise control of fluids at the microscopic level. It is a multi-disciplinary field that merges engineering, chemistry, physics, microtechnology and biotechnology. Microfluidic devices may be used to mix, separate, and identify chemicals, to test chemotaxis and galvanotaxis in bacteria and single celled eukaryotes, and to observe various fluid dynamic applications. My goal was to create low-cost, high-efficiency “lab-on-a-chip” systems. This technology could improve medical practices and would enhance research in nanotechnology, proteomics, genetics and environmental monitoring.

I used Paramecium as test subjects in microfluidic devices. Paramecium is a unicellular microorganism that attains a length of approximately 70-140 μm. They are commonly found in freshwater environments and are a key link to detritus-food webs in aquatic ecosystems, most being bacterivorous and feed on bacteria that accompany decaying organic matter. They are known to show a chemosensory response to mineral oils, pesticides, urban runoff and other chemicals, and adjust their motility accordingly. We placed Paramecia in a three-lane microfluidic chip with attracting and repelling chemicals and their motility was observed.

The results show how Paramecia react with various chemicals. The main focus of my research was the development of these novel microfluidic devices which are needed in order to produce such results.

P61 Life Cycle Assessment and a Competitive Advantage in Polymer Processing
Student Authors: Jesse Pischlar, Bryce Holm
Institute: UW-Stout
Faculty Sponsor: Jerry Wickman
Topic: Science & Engineering

Life Cycle Assessment (LCA) is the compilation and evaluation of the inputs, outputs, and potential environmental impacts of a product system during its lifetime. To remain competitive in the global economy of the future, manufacturers must be conscious of the burdens that their operations place on the earth and its inhabitants. For business and industry, being “sustainable” is more than “doing the right thing” for the environment; it is the path towards a competitive advantage in the economic arena. Minimizing energy consumption and raw materials usage while maximizing manufacturing process efficiency are actions that are not only positive for the environment, but are also for the bottom line of any business. The University of Wisconsin-Stout Plastics Engineering Outreach Center is collaborating with a leading medical device package manufacturing company to explore LCA and apply it to their product designs and manufacturing operations. Extensive literature searches and reviews have been performed on the topic. In addition, models of processes have been developed using GaBi LCA software to benchmark environmental impacts. While LCA is in its infancy, the efforts of the authors are aimed towards compiling knowledge from academia and industry and implementing it in polymer processing operations.
P62 Observations of total aqueous mercury in groundwater, rainwater and Lake Michigan in Southeastern Wisconsin
Student Author: Jonathan Friend, Jairo Guerrero
Institute: UW-Parkside
Faculty Sponsor: Dr. Patricia Cleary
Topic: Science & Engineering
Mercury emissions into the atmosphere enter the hydrologic cycle over wide areas and in different types of environments. This pollutant has the ability to be mobile throughout surface waters along with groundwater sources. Sensitive wetland environments are especially susceptible to changes that occur from pollutants or other detrimental effects from man’s activities. During the summer and early autumn of 2010; rainfall, water from Lake Michigan, and groundwater was collected for the purpose of measuring mercury concentrations at the Chiwaukee Prairie Preserve and at the University of Wisconsin-Parkside campus near Kenosha, Wisconsin. A Tekran mercury analyzer CVAFS (Cold Vapor Atomic Fluorescent Spectrometry) system series 2600 was used for the measurement of trace levels of mercury (Hg) in environmental samples using EPA method 1631. All measurements were conducted under trace-metal analytical conditions. The instrument was regularly purged using a 10% BrCl (v/v) with 4% hydroxylamine hydrochloride solution. The analyzer has to be cleaned with BrCl purges every day after use and to be calibrated every 12 hours. The calibration standards were prepared by using a 10,000 mg/L Hg stock solution. The recommended range for standards is from 1.0 ppt (ng/L) Hg to 100 ppt. The analysis of rainwater, lake water, and groundwater showed different results in terms of mercury concentrations. Rainfall mercury concentrations generally resided around 6 ppt, which is near the average global rainfall concentration. Lake Michigan’s mercury levels were constant near 1 ppt. Mercury levels in the ground water on campus were near 2 ppt and at Chiwaukee Prairie were a bit higher between 2 – 3 ppt. Higher levels of mercury in the groundwater at Chiwaukee Prairie, could be attributed to a wetlands nature of accumulating pollutants in its system over time.

P63 Electrical and thermal characterization BST ferroelectric thin film by a conductive Atomic Force Microscopy probe with integrated heater
Student Author: Richard Jackson
Institute: UW-Platteville
Faculty Sponsor: Yan Wu
Topic: Science & Engineering
A unique AFM probe which implements independent thermal and electrical control is obtained. By electrically isolating the voltage-controlled heater elements of the AFM cantilever from the electrical probe tip by use of an NPN diode structure, the tip can be heated to more than 400°C and biased to ±10 volts. With this probe, we study the localized temperature dependence of polarization of Barium Strontium Titanate (BST) ferroelectric thin film around the phase transition temperature. A thin film of BST has a Curie temperature around 90-100°C. An AC voltage is applied to the BST film through the tip, and the piezoelectric response is determined by the bending of the cantilever. Meanwhile, the sample is locally heated using the integrated heater. The results give insights to the understanding of polarization, charge distributions in interface regions of ferroelectric materials, domain structure, and local electromechanical properties.

P64 Feasibility of Turbine co-generation in consumer vehicles
Student Author: Anthony Gierczak
Institute: UW-Whitewater
Faculty Sponsor: Jeff Vanevenhoven
Topic: Science & Engineering
The research project that will be the subject of my efforts will focus on the feasibility of creating a Turbine-Hybrid vehicle system and business plan to implement it. Through looking into new materials, smaller and more efficient engine designs, and utilizing the electrical hybrid system, I plan to test the feasibility of the engine through computer modeling software. Another aim of this project is to also do the requisite research to put together a business plan that can efficiently and effectively get the vehicle system on to the market. Some of the general advantages of this proposed system are comparable or greater fuel efficiency over piston internal combustion engine, the ability to run on a range of fuels, and greater utility to the consumer. Business advantages include less moving parts (a turbine system has almost a 1/3
less moving parts than a traditional internal combustion engine, making production and maintenance less costly, utilizing materials that are cheaper and strong enough to stand up to the rigors of use, and the potential of the system to be more lightweight than traditional piston-driven engines. If this research is fruitful, it could open many avenues in which to improve current personal transportation efficiency, reduction in air pollutants from vehicle emissions, and pave the way for a more sustainable transportation infrastructure, one that is less dependent on imported sources of energy.

**P65 Determining Air Quality Plume over Near-Shore Lake Michigan**

Student Author: Laura Schulz  
Institute: UW-Parkside  
Faculty Sponsor: Patricia Cleary  
Topic: Science & Engineering

Several communities surrounding Lake Michigan have been labeled as excess ozone zones including Kenosha, Wisconsin, where air quality violates the 8-hour ozone standard. This is problematic as excess ozone is harmful to vegetation and can cause asthma, respiratory problems, and cardiopulmonary problems in humans. Along with high ozone levels, additional pollutants are being introduced to the atmosphere due to the development of nearby power plants and industrial processes. When determining air quality in communities surrounding Lake Michigan, it is important to understand the unique atmospheric processes occurring between air plumes over an urban/rural air-shed and a large adjacent freshwater lake. For this study, concentrations of nitrogen dioxide, ozone, formaldehyde, and sulfur dioxide were measured by the method of Differential Optical Adsorption Spectroscopy (DOAS) from June 11 to November 6 2009. The DOAS instrument used measures concentrations of atmospheric gases by means of the Beer-Lambert principle. From this study, it was determined that daytime air flow occurred mainly from east to west, whereas the opposite was true during the night. Air from the east had higher concentrations of sulfur dioxide and ozone while air from the west had higher formaldehyde and nitrogen dioxide levels. These findings are due to a combination of atmospheric lifetimes, ozone formation reactions, and the unique ozone retention plume created over Lake Michigan. In addition, an odd oxygen relationship between onshore and offshore air flow was noted and rapid changes in wind direction were analyzed in regards to rapid changes in ozone levels.

**P66 Searching For Pulsars To Detect Gravitational Waves**

Student Authors: Matthew Rohr, Christopher Biwer, David Day, Robin Karr  
Institute: UW-Milwaukee  
Faculty Sponsor: Dr. Xavier Siemens  
Topic: Science & Engineering

A low frequency stochastic background of gravitational waves could be detected by pulsar timing experiments in the next five to ten years. Increasing the number of time of arrival data sets available for gravitational wave searches will improve the sensitivity of a pulsar based gravitational wave detector. To achieve this goal, a group of faculty, staff, postdoctoral researchers, and a graduate student at the University of Wisconsin-Milwaukee are participating in a broad effort to increase the number of known stable pulsars collecting and analyzing the pulsar Arecibo L-band Feed Array (P-ALFA) survey data, and the Green Bank Northern Celestial Cap survey data. We have followed the pioneering model started at the University of Texas-Brownsville (UTB) to involve undergraduate and high school students in this research. In close collaboration with the group at UTB we have engaged two local high school teachers, several high school students, and about 15 UWM undergraduates in remotely commanding and observing using the Arecibo radio telescope and the Green Bank telescope, in searches in the collected data for new candidate pulsars, and follow-up observations of of potential pulsar candidates. In addition, the group is using its expertise in LIGO data analysis to improve gravitational wave searches in pulsar timing data.

**P67 Stream Morphology and Water Quality of Bluff Creek, Southeastern Wisconsin**

Student Authors: Cristofor Michels  
Institute: UW-Whitewater  
Faculty Sponsor: Dr. Dale Splinter  
Topic: Science & Engineering

Stream channel morphology and water quality are useful indicators of the health of a stream and provide insight into how streams function spatially and temporally.
along the longitudinal profile. When coupled with stream morphology, water quality provides an understanding of physical and chemical variables that influence biological relationships at multiple spatial scales. I measured stream channel cross-sections along a section of Bluff Creek to better understand morphologic changes from upstream to downstream. At each cross section I measured particle size, max flow velocity, channel width and depth, and entrenchment ratio. Cross-sectional transects were completed in pools, runs, and riffles. Particle size was measured following the Wolman Method, flow velocity was measured using a type AA current meter, and water quality was measured using an YSI 556 multi-probe. The results of this project show that the physical and chemical characteristics change from upstream-to-downstream. The influence of springs are a key contributor to channel morphology and water quality changes in the headwater reaches, while human modification (i.e, channelization) downstream impacts channel morphology. Continued studies are necessary to assess how water quality and channel morphology impact aquatic assemblages in Bluff Creek.

P68 Morphological variation of *Styphelia tameiameiae* across environmental gradients

Student Author: Nicholas Goergen
Institute: UW-Parkside
Faculty Sponsor: David Rogers
Topic: Science & Engineering

The island of Maui (Hawaii, USA) exhibits a large range of both climate and elevation conditions that greatly influence growing conditions for plants. Because of its isolation and relatively low diversity, many Hawaiian species show extreme morphological variations along these environmental gradients. Perhaps the best studied species is Mestrosiderps polymorpha which grows from sea level to approximately 2500 m and shows extreme variation in leaf shape and pubescence in response to local environmental conditions (Dawson and Stemmerann 1990). Here, we study morphological variation in the endemic shrub, *Styphelia tameiameiae*. *S. tameiameiae* also shows extreme variation in leaf and stem morphologies ranging from short evergreen shrubs to tall semi-deciduous deciduous forms. We quantified this variation by taking leaf and wood samples along elevation and moisture gradients and measuring leaf shape, leaf mass per unit (LMA), cuticle thickness and wood density. In general, plants in cool wet conditions had wider, thicker leaves and denser wood than did plants growing in warm, dry environments. These results are consistent with general ecological theory on the evolution of leaf longevity and consistent with previous work on *Mestrosiderps polymorpha* (Cordell et al. 1997). These results provide insight into what limits shrub growth in high elevation grasslands, how these grassland might respond to global warming and may provide a simple technique that could provide early warning to park managers about ecological change of these important habitats.

P69 Centaurus star-forming field revisited

Student Authors: Kevin Moran
Institute: UW-Oshkosh
Faculty Sponsor: Nadia Kaltcheva
Topic: Science & Engineering

Background and Rationale – The aim of this project is to further contribute to our understanding of the structure of one particular region in our Galaxy, the Centaurus star-forming complex. This is an important part of the spiral pattern of the Milky Way and obtaining a reliable and consistent picture of its characteristics will significantly contribute to the overall knowledge of the Galactic structure.

Methods – The method of investigation chosen is called uvby photometry. This is a sophisticated astronomical technique, which allows the derivation of stellar physical parameters, such as brightness and temperature, with high precision. Knowing these parameters allows us to estimate the stellar distance and to map out the structure of the field of interest, delineating in this way the galactic spiral features. From a computational point of view, the procedure of calculating physical stellar parameters is complex and highly interactive, involving real time graphing and analyzing the intermediate results.

Results and Conclusions – The field we study is located between 299° and 311° Galactic longitude and -5° to 7° Galactic latitude. The study is based on a sample of more than 1000 stars with uvby photometric data currently available. The stellar physical parameters we derived have allowed us to establish a homogeneous scale for distances, extinction of light, and ages for the major apparent groups and layers of foreground and background stars in Centaurus. Included in our
investigation are the young stellar association Cen OB1 and the major clusters and cluster candidates in the field.

**P70 Evaluating Water Level and General Water Quality Data of Three Wetland Areas in the Albion Basin and Little Cottonwood Creek, Alta, Utah**

Student Author: Roberta MacDonald  
Institute: UW-Parkside  
Faculty Sponsor: Dr. John Skalbeck  
Topic: Science & Engineering

Albion Basin in Alta, Utah serves as the headwaters to Little Cottonwood Creek which is a major source of drinking water for the residents of Salt Lake City. Groundwater chemistry and water level data from three wetlands areas in the basin have been collected for the past five summers (2006-2010) and are being analyzed.

Water levels were collected from nine piezometers installed in the three wetlands areas (Albion Basin, Catherine’s Pass, and Collins/Sugarloaf) using pressure transducer dataloggers. The water level response characteristics at Catherine’s Pass suggest that it is a groundwater dominated wetland. The Collins/Sugarloaf wetland exhibits greater variability in water levels suggesting that precipitation has a greater influence on water levels in this area than in Catherine’s Pass. Water level data from Albion Basin in 2007 and 2008 suggests a precipitation dominated wetland. The pressure transducer measurements collected from 2009 did not produce useable data but initial 2010 data looks to be similar to the 2007/2008 data.

Samples for laboratory analysis of general water quality were collected from the piezometers and springs at the three wetland areas and from Little Cottonwood Creek. Standard piper diagrams show that the water samples represent calcium, magnesium carbonate fresh water that is likely derived from limestone and dolomite rocks in the area. The water quality results at Albion Basin Fen suggest precipitation dominated wetland while the Catherine’s Pass results suggest a groundwater dominated wetland. The water quality results at Collins/Sugarloaf indicate the source of water is a mixture of precipitation and groundwater.

**P71 An undergraduate experience in multi-step drug synthesis: making R/S-rasagiline, a Parkinson’s Drug**

Student Authors: Jacob Porter, Tiffany Kedzierski, Joel Seagren, Peter Christiansen, Atanas Radkov  
Institute: UW-Oshkosh  
Faculty Sponsor: Samuel David  
Topic: Chemistry

A novel synthesis of the racemic version of the popular anti-Parkinson’s drug, R-rasagiline (Azilect) was developed in order to introduce the intermediate or advanced chemistry undergraduate to the methodology and strategic thinking involved in a multi-step synthesis. It makes use of common concepts found in the organic chemistry curriculum, conveniently fits into two 3-hr lab modules and utilizes regularly found equipment and inexpensive commercially available chemicals.

**P72 Insights into the solid-state green reactions**

Student Author: Pamela Fuller  
Institute: UW-Parkside  
Faculty Sponsor: Vera M. Kolb  
Topic: Chemistry

The reactions in the solid state are solventless, and thus are green. Usually, the solid-state reactions require substantial heating for the reactive components to melt. Heating is a waste of energy, and thus is not a green procedure. However, a substantial lowering of the melting point of the reactive mixture can be achieved by the presence of the unreactive solid materials (so-called mixed melting point phenomenon). We have studied Diels-Alder reaction in the solid state and the lowering of the melting point of its reactive components by adding naphthalene as an unreactive component. Addition of naphthalene enabled the reaction to occur at much lower temperature. We are further studying this phenomenon to include other compounds and thus broaden the greening of the solid-state reactions.
P73 REE and Trace Element Analyses of Ash Used by the Ancient Andean Civilization of Tiwanaku

Student Author: Heather McFarlin
Institute: UW-Whitewater
Faculty Sponsor: Dr. John Ejnik
Topic: Chemistry

When researchers for the Iwawi Project, working at an archaeological site in Bolivia in the Taraco Peninsula of Lake Titicaca, unearthed numerous layers of volcanic ash, a simple explanation could not be found because archaeologists generally deem geologic materials such as obsidian, sandstone, and basalt as raw supplies for tool-making humans and disregard volcanic ash as having any technological significance. Initial analyses of the ash layers suggest that they were transferred in by people to the location where they were found, signifying that the ash may have fulfilled some technological function. Stratigraphic analysis and radiocarbon dating indicate that the ash was deposited sometime between A.D. 550 and A.D. 750. In order to ascertain whether the ash was transported from a single source or from multiple sources, we chemically analyzed 13 samples collected from the Iwawi Project for Rare Earth Elements (REE) and trace elements. We performed a microwave digestion to prepare the samples for analysis and then utilized an Inductively Coupled Plasma Optical Emissions Spectrophotometer on the UW-Whitewater campus. Initial results reveal that the ash samples include Lu, Yb, Sm, La, Nd, Ce, Y, Sc, as well as abundant amounts of Th. Also, Ce values fluctuate greatly among samples. Chondrite-normalized plots for REE signify that sample 8 is possibly from a separate source than the remainder of the samples. In this poster we present the data from our chemical analyses and their archaeological implications.

P74 Structure and Morphology of Titania-Alumina Nanofibers

Student Authors: Alexander Turinske, Jonathon Tobin
Institute: UW-Oshkosh
Faculty Sponsor: Dr. Nenad Stojilovic
Topic: Chemistry

Composite metal-oxide nanofibers of titania–alumina were prepared by electrospinning a sol–gel and polymer mixture to form template polymeric fibers followed by calcinations at different temperatures. The resulting fibers were characterized using thermogravimetric analysis (TGA), X-ray diffraction (XRD), scanning electron microscopy (SEM), and transmission electron microscopy (TEM). We study the effect of calcination temperature on the physical properties of these fibers. In particular we monitor temperature induced changes in morphology of these materials using electron microscopes and crystal phase transitions using XRD. The combination of excellent physical and chemical properties of these fibers makes them excellent candidates for use at high temperatures, and in particular for photocatalytic applications where doping titania with Al has potential to improve its photocatalytic activity.

P75 Absorbance of Chromium (VI) on Iron (II) Modified Zeolite

Student Authors: Renee Hanson, Samantha Leick
Institute: UW-Parkside
Faculty Sponsor: Dr. Zhaohui Li
Topic: Chemistry

The purpose of this study is to investigate how certain elements within naturally found minerals in soils can retard (or accelerate) the movement of contaminants. Our study involves the absorbance of chromium (Cr VI) on an iron (Fe II) modified aluminosilicate (zeolite). Ferrous chloride tetra-hydrate (FeCl2•4H2O) solution was combined with 8-14 size zeolite to create Fe (II) modified zeolite a mineral substance suitable for the study of Cr (VI) absorbance. Several experiments have been completed within the study to include a kinetic study measuring the rate of chemical process against time and an isothermal study examining the absorbance of the contaminant when changing the thermodynamic state of a substance at the same time maintaining a constant temperature. An ionic strength experiment is currently underway and future experiments are planned including contaminant movement measurements through the modified zeolite using columns of that material.
P76 A novel, unusual acid catalysed route to substituted 1,2-dihydropyridine via double decarboxylation

Student Authors: Graham Radomski, Jacob Porter, Joel Seagren, Benjamin Batura
Institute: UW-Oshkosh
Faculty Sponsor: Samuel David
Topic: Chemistry

A simple and high yield route to 3,4,5-trisubstituted 1,4-dihydropyridine systems via an interesting intermolecular condensation and double decarboxylation is described.

P77 Removal of Arsenic and Chromium from Water Using Fe-Exchanged Zeolite

Student Author: Caren Ackley
Institute: UW-Parkside
Faculty Sponsor: Dr. Zhaohui Li
Topic: Chemistry

Arsenic and chromium are two of the most harmful environmental contaminants. In this research, a natural clinoptilolite zeolite was exchanged with iron (III) to enhance its arsenic and chromium removal. The zeolite was modified with FeCl₃•6H₂O to create a Fe-eZ to use in this sorption study. The zeolite used had a particle diameter ranging from 1.4–2.4 mm. The major cations responsible for the cation exchange were Na⁺, Ca²⁺, K⁺ and Mg²⁺. Batch test results showed that the zeolite could sorb as much as 100 mmol/kg of Fe(III). The arsenic (As) sorption on the Fe-exchanged zeolite (Fe-eZ) could reach up to 100 mg/kg while that of chromate could be as high as 200 mg/kg of Cr, or 3.5 mmol/kg.

P78 New Enamine Substrate for Intramolecular Buchwald-Hartwig Indole Synthesis

Student Author: Sarah Oehm
Institute: UW-Milwaukee
Faculty Sponsor: M. M. Hossain
Topic: Chemistry

The palladium-catalyzed Buchwald-Hartwig cross-coupling reaction of an aryl-bromide with an unhindered amine in the presence of a strong base forms a new carbon-nitrogen bond and has been widely used to form aryl amines. However, very few intramolecular Buchwald-Hartwig reactions have been reported. Of the published intramolecular procedures which form the bicyclic indole ring; the indole moiety is substituted at the C-2 rather than C-3 position. Keeping in mind a desired C-3 substituted indole product, ethyl-3-amine-2-(2-bromophenyl)acrylate was selected as a substrate for the organometallic reaction.

Results so far have relied on the formation and isolation of this new enamine, ethyl-3-amine-2-(2-bromophenyl)acrylate. Our group recently reported the novel synthesis of 3-hydroxy-2-arylacrylates from aromatic aldehydes and ethyl diazoacetate catalyzed by tetrafluoroboric acid-diethyl ether complex at low temperatures. The synthesis of 3-hydroxy-2-arylacrylates gave rise to construction of 3-amino-2-arylacrylates through reactions with various sources of ammonia. Old procedures were modified to construct ethyl-3-amine-2-(2-bromophenyl)acrylate. Work is being continued to synthesize 3-ethoxy-carbonyl indole in a palladium-mediated intramolecular Buchwald-Hartwig coupling.

P79 The total synthesis of (S)-2,4-dihydroxy-1-butyl (4-hydroxyl) benzoate

Student Authors: Joel Seagren, Atanas Radkov
Institute: UW-Oshkosh
Faculty Sponsor: Samuel David
Topic: Chemistry

This study is the first synthesis of (S)-2,4-dihydroxy-1-butyl (4-hydroxyl) benzoate, a newly discovered natural product with anti-tumor properties from the fungus, Penicillium auratiogriseum. The key steps are a 1,3 diol protection followed by the coupling of p-anisic acid to the protected alcohol and subsequent de-protection steps.

P80 A Computational Chemistry Study and Natural Bond Orbital Analysis of N2O3

Student Authors: Thomas Knight, Fax Xu
Institute: UW-Washington County
Faculty Sponsor: Dr. Mohamed Ayoub
Topic: Chemistry

In this work we used unrestricted density functional method (UDFT), in particular the B3LYP method that combines Becke’s three-parameter exchange function with the correlation function of Lee et al (B3LYP) to investigate N2O3 known for its vital biochemical and environmental role (air pollutant). Gaussian 03 is used.
as electronic structure system (ESS) to optimize both structures followed by a frequency job, where no imaginary frequencies were obtained. We analyze the wave function by natural bond orbital (NBO) and natural resonance theory (NRT) to give the optimum description for the orbital in terms of Lewis-type, such as 1-center, lone-pair and 2-c bonding pair followed by their non-Lewis type often ignored in the Lewis-dot presentation. We present 2-d and 3-d contour and surface plots for all bonding and nonbonding electrons with second-order energy perturbation energies ($E(2)$) to explain the deviation from Lewis-dot type presentation and offer a logical way for the different resonance structures with their weightings associated with N2O3.

**P81** Darkened glands and lost secretions: *Tribolium castaneum* and the tar mutation

Student Author: William W. Ames Jr.
Institute: UW-Parkside
Faculty Sponsor: Dr. M. Scott Thomson
Topic: Cell & Molecular Biology

The order Coleoptera (beetles) represents about 400,000 species: 40% of all described insects and roughly 25% of all eukaryotic life. Beetles show a high degree of adaptation while conserving a standard body plan common to insects, with hardened forewings as defining features. The red flour beetle *Tribolium castaneum* possesses paired thoracic and abdominal odoriferous glands, secreting $p$-benzoquinones which prevent fungal and bacterial growth in its flour substrate. The melanotic stink gland (msg) phenotype is associated with dramatically lower production of $p$-benzoquinones, with the secretion crystallizing into a solid black mass within the gland. The artificially generated mutant tar represents a thoracic gland specific msg phenotype. An in silico survey of genes near tar was performed, scanning the region where tar maps: between the telomere and the homeobox genes, on chromosome 2. Expression levels for the candidate genes in this region will be quantified in tar and wildtype beetles using real time RT-PCR. If a candidate gene is significantly under-expressed in tar beetles, it is implicated as the gene undergoing loss of function in the mutant.

**P82** Verification of Methicillin Resistant *Staphylococcus aureus* in Ecuador Hospital and Community Samplings by Use of Polymerase Chain Reaction

Student Author: Chad Glisch
Institute: UW-Eau Claire
Faculty Sponsor: Dan Herman
Topic: Cell & Molecular Biology

There are very few published studies about the prevalence of Methicillin Resistant *Staphylococcus aureus* (MRSA) in Ecuador. Nasal swabs collected in both rural communities and hospitals in the Loja province were brought back to the University of Wisconsin-Eau Claire to be analyzed for MRSA. Nasal swabs were cultured on media containing oxacillin (a stable derivative of methicillin) in order to identify suspected MRSA samples. In order to confirm that these samples were *Staphylococcus aureus* and were in fact resistant to methicillin, DNA was isolated and polymerase chain reaction (PCR) was used to detect specific genes found only in *Staphylococcus aureus* and MRSA. FemB primers were used to identify samples as *Staphylococcus aureus*, while MecA primers were used to identify strains of *Staphylococcus aureus* that are methicillin resistant. 16s rRNA primers were used to confirm that isolates belonged to the genus *Staphylococcus*. PCR results confirmed that samples which grew on oxacillin media contained the MecA gene while samples that did not grow do not contain the MecA gene and are not MRSA strains. The results of studying MRSA prevalence have significant implications for public health policy and procedure in Ecuadorian hospitals and communities.

**P83** To Establish CD43 as a Prognostic and Diagnostic Tool

Student Author: Greta Foley
Institute: UW-La Crosse
Faculty Sponsor: Dr. Carl Simon Shelley
Topic: Cell & Molecular Biology

CD43 is a molecule that prevents cells from binding to one another. Under normal circumstances, CD43 exists only on the surface of white blood cells and never on the surface of lung tissue. However, unlike normal lung tissue, malignant lung tissue has the ability to produce CD43. My hypothesis is that CD43 represents a new tool
for identifying lung cancer and predicting its outcome. I am currently testing this hypothesis by examining CD43 production in tumors isolated from 300 lung cancer patients with different types and severity of the disease. Five different histological types will be examined: adenocarcinoma, squamous cell, carcinoid tumor, large cell, and small cell (oat cell). These tissue samples are located in the Gundersen Lutheran BioBank and have been processed by the pathology department of the Gundersen Lutheran Medical Center. Formalin-fixed, paraffin-embedded tumor tissue isolated from these patients will be assessed for CD43 expression by immunohistochemistry. The degree of CD43 expression will be correlated with histologic sub-type to determine diagnostic utility and with tumor gender and stage to determine prognostic utility. At the conclusion of these studies I expect to have established CD43 as a new tool that can be used to detect and predict lung cancer.

P84 Gene trapping finds female specific promoter in Danio rerio

Student Author: Joseph Keble
Institute: UW-Milwaukee
Faculty Sponsor: Henry G Tomasiewicz
Topic: Cell & Molecular Biology

After microinjection of DNA constructs encoding GFP into one cell stage embryos, fish expressing GFP were selected and bred with wild type fish. Two lines of zebrafish, Danio rerio, GT1 and GT2, were generated that expressed GFP in the one-cell embryo. GT1 carries a gene cassette encoding a human tau protein (HT) fused in frame with a gene encoding GFP, resulting in a human tau-GFP fusion protein (HTG). GT2 carries only the functional coding sequence for GFP. All of the offspring of the female carrying the GT1 gene cassette expressed GFP when observed under a fluorescent microscope using a GFP specific filter from the one cell stage and ending prior to the pectoral-fin stage. Expression was observed relatively strongly in the very early stages of development and began diminishing until GFP was no longer visible at approximately 48 hours post fertilization (HPP). To determine whether the GFP being expressed is due entirely from the mother, male F1 offspring of the GT1 founder were crossed with wild type females and examined for GFP expression. These offspring have not displayed GFP thus far at any stage of development, which gives reason to believe the promoter is specific to females. Studies conducted using the GT2 line have given similar, but not as consistent, results relative to GT1. Further tests, including PCR, are being conducted to determine whether the offspring of the injected embryos are in fact carrying the respective transgene. Due to expression of GFP prior to the midblastula transitions, predictions have been made that the promoter being utilized is specific to the ovaries, hopefully being confirmed in the near future.

P85 Effects of Tradescantia zebrina on Growth and Proliferation of SCC-13y Head and Neck Cancer Cell Line

Student Authors: Benjamin Leist, Jordan Fouks
Institute: UW-Stout
Faculty Sponsor: Kitrina Carlson
Topic: Cell & Molecular Biology

From pain relievers to anticancer drugs, specific plants have been used throughout history to treat diseases and to cure many ailments in human populations. Tradescantia zebrina (Tz) was identified as one of these therapeutic plants through previous research of plants used in traditional Hmong medicine. In this culture, Tz was used as a poultice on abnormal growths. The main objective of this research investigated the capacity of Tz extracts to suppress the abnormal growth and proliferation of a common head and neck cancer—squamous cell carcinoma (SCC-13y). Potential effects of the plant extracts were assessed using growth curve analysis, clonogenic survival assays, and fluorescent imaging. Results of the growth curve analysis indicated that Tz inhibits proliferation of SCC-13y cells to a statistically significant degree (P<0.001). Clonogenic survival assays supported the cytostatic inhibition and cytotoxic potential of Tz extracts to a statistically significant degree. Fluorescent imaging revealed that morphological changes were due in part to alteration of the cytoskeleton (-tubulin subunits) of the treated cells. Based upon these observations, this study supports the oral tradition of the Hmong people in the medicinal use of Tz. It additionally highlights several areas for ongoing research into the anti-cancer effects of the plant’s active compounds.
P86 Biochemical Characterization of a Putative Butyrate Kinase from *Desulfovibrio vulgaris* str. Hildenborough

Student Authors: Gundeep Singh, Liyang Zang
Institute: UW-Parkside
Faculty Sponsor: Robert Barber
Topic: Cell & Molecular Biology

Short chain fatty acids (SCFAs) are prominent environmental metabolic intermediates produced and utilized in response to energy needs within various prokaryotic consortia. A key step in the metabolism of SCFAs is the activation of these molecules by reversible, ATP-dependent phosphorylation reaction. This reaction is catalyzed by enzymes known as SCFA kinases, which can vary substantially in terms of their substrate specificity. Some SCFA kinases exhibit exquisite specificity for certain substrates such as acetate or butyrate, while others exhibit broad substrate specificity. Our laboratory is interested in characterizing natural variants of proteins within this enzyme family in an effort to understand sequence/structure/function relationships for SCFA phosphorylation. Here, we describe the biochemical characterization of a putative butyrate kinase cloned from the organism *Desulfovibrio vulgaris* str. Hildenborough and heterologously produced in E. coli. The long term goal of this research is to provide tools for generating commercially useful and cost-effective bioplastics derived from short chain fatty acids.

P87 Determining the Effects of Photoactivated Dye-Coated Titanium Dioxide Nanoparticles on Bacteria

Student Author: Megan Nelson
Institute: UW-Whitewater
Faculty Sponsor: Dr. Eric Brown
Topic: Cell & Molecular Biology

Pathogenic bacteria cause many diseases in humans, some of which can be fatal. As a result, disinfecting surfaces where there is a higher risk of being infected by bacteria is important. Current disinfecting procedures are somewhat effective in healthcare and food service industries, but the reoccurrences of Methicillin-resistant *Staphylococcus aureus* in hospitals and E. coli contamination in foods suggest that discovering a new technique of disinfecting surfaces would be a useful advance. Dye-titanium dioxide (TiO2) nanoparticle conjugates produce reactive oxygen species when exposed to visible light. It is hypothesized that these reactive oxygen species may cause damage to bacteria. This experiment used three different techniques to test this hypothesis. The first technique was employed to determine if the dye of interest was capable of forming a favorable interaction with TiO2 nanoparticles. Second, using agarose gel electrophoresis, it was tested whether the dye-nanoparticle conjugate was able to cause plasmid cleavage when exposed to visible light. The third ongoing technique is currently testing whether the dye-nanoparticle conjugate causes death to bacteria after visible light exposure. The dye of interest was shown to bind well to TiO2 nanoparticles through sedimentation, spectrophotometry, and gel electrophoresis techniques. The dye of interest did not cause cleavage of a bacterial plasmid after exposure to visible light and gel electrophoresis. Further trials are being conducted to determine whether the dye of interest causes death to bacteria after the dye-nanoparticle conjugates are exposed to visible light.

P88 Alpha Motor Neuron Classification in Mammalian Neonates

Student Author: Melody Miller
Institute: UW-La Crosse
Faculty Sponsor: Dr. Bradley Seebach
Topic: Cell & Molecular Biology

Central Pattern Generators (CPGs) are specialized neuron cell networks in the central nervous system that produce patterned and rhythmic bursts of electrical activity, assumed to be representative of the left, right and extensor, flexor motor behaviors used in swimming or walking. In vitro spinal cord preparations have recorded this bursting activity, which is commonly known as fictive locomotion. Currently, the contributions of individual alpha-motor neurons to these patterns are unknown. Furthermore, alpha-motor neuron properties in neonatal mammals have yet to be categorized based on muscle fiber types (i.e. slow, fast-fatigue-resistant, and fast-fatigable); these associations will help determine their input to fictive locomotion and overall motor behaviors. This project seeks to increase the consistency in obtaining intracellular recordings of stable action potentials from alpha motor neurons. Statistical analysis of these neurons will indicate
whether or not such groups in the developing neonatal mammal correspond to adult, well-studied motor unit and motor fiber sub-categories. This research will also enhance understanding about the motor circuitry of the in vitro neonatal rat spinal cord model, which is often utilized for testing spinal cord injury interventions. Our laboratory goals seek to develop a more accurate description of mammalian lower motor units and their associated networks, both of which are important for motor behaviors such as walking and running.

**P89 Structural studies of Enduracidin biosynthesis**

Student Authors: Michael Roesch, Aaron Herzog  
Institute: UW-Milwaukee  
Faculty Sponsor: Dr. Nicholas Silvaggi  
Topic: Cell & Molecular Biology

The cyclic peptide antibiotic enduracidin is active against a number of drug-resistant pathogens including MRSA. Enduracidin is produced by the bacterium Streptomyces fungicidicus and its biosynthetic gene cluster includes seven open reading frames (ORFs) that code for proteins of unknown function. Because these proteins do not share significant sequence identity with any proteins of known structure or function, structures of these proteins will provide additional information required to assign possible functions to these unknown proteins. To this end, we are working to determine the structures of two of these unknown proteins, ORF4 and ORF8. Both genes were commercially synthesized and subcloned into plasmids suitable for expression in E. coli. The ORF8 protein expresses at high level in E. coli as a fusion with the small ubiquitin-like modifier (SUMO) protein and was purified in a two-step process. In the first step, His6-tagged SUMO-ORF8 is purified by immobilized metal affinity chromatography (IMAC). ORF8 is then separated from the His6-SUMO protein through the action of a SUMO-specific protease. Following proteolysis, the material is subjected to a second round of IMAC, which removes the protease and the cleaved His6-SUMO protein to afford >95% pure ORF8. Crystallization conditions were identified by sparse matrix screening. Several conditions are currently being optimized to obtain diffraction-quality crystals of ORF8. Determining structures and functions of ORF8 and the other unknown proteins will provide a deeper understanding of enduracidin biosynthesis. This information will facilitate work aimed at metabolic engineering of the enduracidin pathway for large-scale production of this promising antibiotic.

**P90 Effects of Tradescantia zebrina Extracts on Artemia**

Student Authors: Catherine Rawlins, Benjamin Leist, Jamie Leist, Natasha Khan  
Institute: UW-Stout  
Faculty Sponsor: Kitrina Carlson  
Topic: Cell & Molecular Biology

From pain relievers to anticancer drugs, specific plants have been used throughout history to treat diseases and to cure many ailments in human populations. Tradescantia zebrina (Tz) was identified as one of these therapeutic plants through previous research of plants used in traditional Hmong medicine. In this culture, Tz was used as a poultice on abnormal growths. Simultaneous research at UW-Stout found that Tz is both toxic and inhibitory to head and neck cancer cells. However, the effects of the extracts on whole organisms were unknown. Extracts of Tz were prepared at UW-Stout and then tested at UW-Manitowoc as part of this NSF grant-funded collaborative project. The main objective of this research investigated the effects of Tz extracts when applied to Artemia – also known as brine shrimp. Potential effects of the plant extracts were assessed using Artemia lethal concentration (LC) assays. In these tests, the effects of Tz extracts were quantified using a life/death count as a function of extract concentration. Results of the LC assays suggested that Tz actually promotes longer-term survival of Artemia when compared to Artemia living in their normal saline solution. Based upon these observations, this study supports the use of Tz in further testing of other animal species. Additional research could focus on what specific active compounds in Tz promote longer survival of Artemia.

**P91 Discrimination of the “H” Gene in Tribolium Castaneum (the Red Flour Beetle)**

Student Authors: Zachary Tutlewski, Emily E. Binversie  
Institute: UW-Parkside  
Faculty Sponsor: Melvin S. Thomson  
Topic: Cell & Molecular Biology

For my independent study, I cross-bred multiple, specific strains of the Red Flour Beetle (Tribolium castaneum) to
test for the presence of a specific gene (known as the “H” gene) that has been found to cause development issues, under certain circumstances. I separated each individual subject by strain and gender at the midway point in their development, and then crossed them with a test-strain, which was chosen because of its genetic incompatibility with carriers of the “H” gene. These data will be easy to collect, and quantify, as the presence of the “H” gene prohibits the offspring from reaching adulthood. Once the results are present, and the gene is isolated, further studies of the “H” gene may be undertaken with much greater ease. Ultimately, this study will serve to accelerate further research of this gene, which may give rise to innovations in pesticides, or even in understanding similar genetic diseases in humans, and how to treat them.

P92 Determining the Effects of Intracellular Excitation of Dye-TiO2 Nanoconjugates

Student Author: Stephanie Simonet
Institute: UW-Whitewater
Faculty Sponsor: Dr. Eric Brown
Topic: Cell & Molecular Biology

Cancer is one of the leading causes of death throughout the world, with hundreds of thousands of new cases every year. Studying the possibilities of diagnosing as well as maybe finding an alternative to chemotherapy to help in the cure of cancer would be a great discovery and advance. The purpose of this study is two-fold: first, to determine which dye-nanoconjugate would be appropriate to use for further experiments in order to be able to distinguish the stains from the dye-nanoconjugate, using a fluorospectrometer. Second, using confocal microscopy, the localization of the titanium-dioxide nanoparticles in the cell with and without the dye bound to it will be determined. It is hypothesized that the nanoparticles, once they enter the cell, migrate very close to the nucleus, however, they are not going inside the nucleus. The four dyes of interest will be compatible with the different stains that will be used to stain the nucleus. Furthermore, the dye bound to the nanoparticle will most likely not affect the localization of the nanoparticles in the cell.

P93 Characterization of Human Embryonic Stem Cell-Derived 3D Artificial Tissues Produced Using Natural ECM Scaffolding Materials

Student Author: Timothy Morris Jr.
Institute: UW-River Falls
Faculty Sponsor: Dr. Timothy Lyden
Topic: Cell & Molecular Biology

Our laboratory has been exploring the application of natural extracellular matrix materials to rudimentary tissue engineering for several years. These efforts are directed toward the production of artificial tissues (ATs) for the study of early developmental processes. We are also extending that work to include human embryonic stem (hES) cells with the purpose of developing a method to generate specific human ATs from the cell level up. If successful, this will provide an in-vitro method to study fundamental cellular processes which establish tissue architecture in the developing fetus. In the studies reported here, the ATCC hES cell line (hESC BG01V) was used to establish cultures on mouse embryonic or human foreskin fibroblast feeder layers as well as bare scaffolding matrix materials with no feeder layer. Following growth of the feeder cells on scaffolds or with the simple scaffold, hES were transferred and maintained in 3D culture for more than 2 months. Cultures on feeder layers developed large scale features consistent with standard “embryoid bodies” commonly used to derive differentiated cells from hES cultures. Most of these structures appeared to be cystic and some displayed relatively well organized complex features similar to those seen in early development. When loaded directly onto scaffolds without feeder cells, colonies of hES maintained a less differentiated basic colonial morphology for longer periods, but eventually differentiated into cystic structures as well. In this report, we present morphological data using phase contrast, dark field, scanning electron microscopy, and immunofluorescent labeling.
P94 Phylogeny and Fruit Morphology of the Moonseed Family (Menispermaceae)
Student Author: Keir Wefferling
Institute: UW-Milwaukee
Faculty Sponsor: Sara B. Hoot
Topic: Cell & Molecular Biology

Menispermaceae (order Ranunculales) is a mostly tropical family of dioecious woody lianas comprising approximately 75 genera and 500 species. About 30 species are used worldwide for a variety of medicinal purposes, including the muscle relaxant and poison-dart ingredient, curare, used widely in the Neotropics. For this study, the evolution of Menispermaceae was explored through molecular phylogenetics, microscopy of fruit and seeds, and the comparison of extant to fossilized endocarps. For the molecular work, we derived phylogenies using both parsimony and likelihood methods for chloroplast DNA sequence data (atpB, rbcL, and matK) and including a biogeographically broad sampling of the family. For the morphological study, ripe fruits with endocarps were obtained from herbarium sheets and were sectioned, examined, and photographed. Endocarps were extremely diverse, ranging from the crescent–shaped species that gave the family its name to spiny, hedgehog-like forms. We superimposed the endocarp morphological data on the phylogeny in order to explore character evolution. Most clades were strongly correlated with endocarp characters. For example, a well-supported clade spanning Africa, Asia, and South America is characterized by boat-shaped endocarps. Many species in a South American clade share large, somewhat featureless fruits while a group of three genera spanning the Southern Hemisphere have moon-shaped, often perforated endocarps. These results indicate the utility of morphological studies in this group, and the potential for the integration of fossils into phylogenies of extant taxa.

P95 Environmental Effects on Pig DNA Degradation over Time
Student Author: Choua Vang
Institute: UW-Whitewater
Faculty Sponsor: Pete Killoran
Topic: Cell & Molecular Biology

This research is an analysis of the effects of the environment on DNA degradation and decomposition in pig tissue. Since pigs have been known to share similar tissue as humans, piglets will serve as a model for humans for this research. Subject piglets are placed in one of three environments—submerged, positioned on surface, and buried. During the first three days of decomposition, data and tissue are collected. This schedule of collection is critical because during the first three days, the most physical changes typically take place. After the first three days, data and tissue will be collected every three days until the decomposition cycle is completed. Tissue samples collected during the decomposition cycle of piglets are analyzed by Polymerase Chain Reaction (PCR) and visualized using gel electrophoresis. These tissue samples are tested for presence of DNA over time as well as how different environments might affect the DNA degradation rate of piglets. This study will assist forensic trace evidence collection and interpretation by determining how environments affect DNA degradation in pig tissue. It is anticipated that the results of the study will yield valuable insight into how the DNA of a similar form of tissue, human tissue, is impacted under similar conditions through photos of gels and graphs to show the degradation of DNA as the decomposition cycle takes its turn. This analysis will assist scientists in evaluation of crime scene evidence, which could aid law enforcement officials’ efforts to more efficiently utilize forensic techniques.

P96 Structural Studies of Eduracididine Biosynthesis
Student Author: Eric Lund
Institute: UW-Milwaukee
Faculty Sponsor: Dr. Nicholas Silvaggi
Topic: Cell & Molecular Biology

The rise of antibiotic-resistant pathogens is a serious worldwide public health concern. Currently, vancomycin is the last line of defense against Gram-positive pathogens such as methicillin-resistant Staphylococcus aureus (MRSA), but strains of vancomycin-resistant S. aureus have emerged necessitating the development of new, more effective antibiotics. A cyclic peptide antibiotic from Streptomyces fungicidicus, eduracin, is effective against MRSA infections. Enduracin contains the non-proteinogenic amino acid L-enduracididine (L-End), and so efforts aimed at producing variants of enduracin for antibiotic discovery will benefit from a
ready source of this unusual building block. L-End is thought to originate from L-arginine, and to require the action of three enzymes, EndP, Q, and R. The exact steps in L-End biosynthesis and the chemical reactions catalyzed by each of these three enzymes are currently unknown. As a first step to elucidating the details of this pathway, we have determined the X-ray crystal structure of the homologous protein MppQ and analyzed its activity against potential amino acid substrates. The structure verifies that MppQ is a fold type I pyridoxal-5'-phosphate (PLP) dependent aminotransferase. HPLC-based activity tests show that the enzyme is maximally active with L-Arg and glyoxylate as the amino donor and acceptor substrates, respectively. These results have allowed us to form a general hypothesis about the steps involved in L-End biosynthesis.

P97 Gene expression analysis to evaluate the effect of p38 specific inhibitor SB203580 on SEB induced apoptosis related pathways

Student Authors: Nicole Krausert, Amanda Smet
Institute: UW-Platteville
Faculty Sponsor: Chanaka Mendis
Topic: Cell & Molecular Biology

Staphylococcal enterotoxin B (SEB) is one of the enterotoxins that has been thoroughly investigated; however, little is known about the cascades of signaling events that explain its patho-mechanism. This research involves the pathogenic nature of SEB, which can cause death in human peripheral blood mononuclear cells (PBMC). As SEB is known to induce multiple signal transduction pathways, we have identified a crucial pathway inter-connector (p38) that may have an inhibitory effect in SEB induced unwanted cellular activities. This study is focused on inhibiting signaling pathways with the use of the inhibitor 4-[4-(4-fluorophenyl)-2-(4-methylsulfinylphenyl)-1H-imidazol-5-yl]pyridine (SB203580), followed by analyzing alterations to a known expression pattern of a set of genes associated with apoptosis. Some of these genes include Caspase 1, Caspase 3, Caspase 6, Caspase 7, Caspase 8, Caspase 9, Caspase 10, SOD, Heparanse precursor (HEP), NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 13 (GRIM 19) and ubiquitin-specific proteases (USP). We will further confirm this effect by carrying out a set of protein expression analysis. As our experimental design specifically targets pathway inter-connector p38, we believe that the target is unique and has the ability to sustain longer lasting inhibitory effects. We are also confident that inhibiting such a component will have a maximum effect on a cell module, terminating the “leaking effect,” which may benefit a number of experimental modules focused on disease prevention and rapid diagnostics.

P98 Modeling and Characterization of Primary and Cell-Line Derived Artificial Breast Cancer Tissues Produced Using 3D Culture Methods

Student Author: Kevin Rixmann
Institute: UW-River Falls
Faculty Sponsor: Dr. Timothy Lyden
Topic: Cell & Molecular Biology

In an effort to develop a translational in-vitro modeling method for individual breast tumor patients, our lab has focused on natural 3D matrix materials to produce artificial tumor tissues (ATTs). These studies have included both isolation and culture of primary human tumor samples as well as the use of the breast ductal carcinoma cell-line MCF-7. These studies have so far focused on developing relevant culture methods and characterization of the resulting ATTs as well as cellular populations within these new structures. In the case of primary tumors, ATTs have been established with a combination of direct outgrowth of the initial tumor explant as well as a distinctive seeding of sub-nodules from the primary explant onto scaffolds. These nodules are then seen to expand and fill the remaining scaffolds. Perhaps the most significant observation relative to primary ATTs was the association of adipose cells with the established explant and the maintenance of these cells throughout an extended culture period of up to 6 months. In monocultures of MCF-7 cells on 3D scaffolds, distinctive patterns of growth were clearly seen throughout culture periods of up to 3 months. These have included the development of “acinar-like” structures and extended coverage of the scaffolds with MCF-7 cells. Recently two populations of cells have been successfully cultured as new “strains” with specific and distinct properties. Morphological, ultrastructural and molecular characterization of these human breast cancer related ATTs and their respective cellular populations are ongoing.
P99 Histone Acetylation and Mitosis
Student Author: Katie Streufert
Institute: UW-Oshkosh
Faculty Sponsor: James Paulson Ph.D.
Topic: Cell & Molecular Biology

Histones are chromosomal proteins that condense DNA in eukaryotes. Addition of acetyl groups to histones by Histone Acetyltransferase (HAT) decreases histones’ affinity for DNA, allowing for gene transcription. It has been shown that histone acetylation is diminished during mitosis which is of interest because transcription is shut off at that stage. This could be due to (a) decreased HAT activity during mitosis or (b) structural changes in chromosomes that render the acetylation cites inaccessible to HATs. To evaluate these hypotheses, we plan to use an in vitro histone acetylation system with HeLa cell extracts plus exogenous histones tagged with a TrAP peptide to distinguish them from HeLa histones. Plasmids encoding TrAP-histones were cloned in bacteria, which were treated with an inducer to activate histone production. The histones were extracted and purified using the TrAP-tag. To test the hypotheses above, the TrAP-histones will be incubated with acetyl-Coenzyme A in extracts of interphase and mitotic HeLa cells. This project has the potential to give important, new information about gene regulation and the process of mitosis.

P100 Physiological Role of a Short Chain Fatty Acid Kinase in Rhodobacter sphaeroides
Student Authors: Amber Peterson, Michelle Harnack, Emma Shanine
Institute: UW-Parkside
Faculty Sponsor: Robert Barber
Topic: Cell & Molecular Biology

Poly-hydroxyalkanoates are synthesized from building blocks of short chain fatty acids as a carbon storage medium by numerous bacteria and have commercial potential for use as biodegradable plastic. The metabolically-versatile microbe, Rhodobacter sphaeroides, produces poly-hydroxybutyrate (PHB) as a carbon overflow mechanism presumably in response to cellular levels of acetyl-CoA. A model for understanding PHB synthesis in this microbe has been developed based upon identification of an operon containing four genes including a gene encoding PHB synthase. Previous biochemical experiments have shown a short chain fatty acid kinase encoded within this operon exhibits broad substrate specificity for short chain fatty acids. Here, we present genetic experiments coupled with phenotypic characterization to examine the physiological role of this short chain fatty acid kinase in R. sphaeroides PHB synthesis. The long term goal of this research is to engineer strains of R. sphaeroides capable of generating commercially useful and cost-effective bioplastic.

P101 Investigating and Preserving Medicinal Plants of Hmong Communities
Student Author: Erin Prader
Institute: UW-Oshkosh & UW-Manitowoc
Faculty Sponsor: Dr. Rebecca Abler
Topic: Cell & Molecular Biology

Medicinal plants are a key component of the Hmong culture of Wisconsin. Western science knows little about their medicinal, taxonomic, or ecological significance. Because of the oral history of the Hmong, valuable information and rich cultural traditions among the immigrants may be lost to future generations. To preserve the Hmong customs for future generations, and to expand the knowledge of western medicine, it is crucial to sustain medicinal plant knowledge used by the Hmong. The goal of this project is to identify and catalog various medicinal plants used by the Wisconsin Hmong people. DNA analysis was performed and the entire genome of each plant was extracted. Extractions of the fresh plant material were performed using various methods. A Qiagen mini DNA extraction kit proved most efficient for all subsequent extractions. Modifications were needed for the dried plant material. Next, the regions of interest were targeted and amplified through the polymerase chain reaction (PCR). DNA was extracted from 7 out of 8 fresh plant materials and 9 out of 22 dried plant material. All fresh material was amplified, but only five of the dried material amplified. These methodologies will lead to the analysis and identification of the samples by comparison to a worldwide database.
P102 Returning a Gravel Quarry to its Natural State of Beauty: A Restoration Ecology Project

Student Author: Jennifer Toro
Institute: UW-Parkside
Faculty Sponsor: Dr. David A. Rogers
Topic: Life Sciences

Much of Southeastern Wisconsin’s native ecosystems have fallen victim to the plow, residential development, or other advancements of civilization. Habitats like prairies, oak savannas, and wetlands have nearly vanished, leaving many animals homeless or forced to adapt to less than optimal ranges. The science of restoration ecology applies modern ecological theory with traditional natural history to recreate and enhance these lost ecosystems.

One such site is the future “KD” Park, just south of Hwy 50 and west to county KD, in New Munster, Wisconsin. The 235 acre site once contained a very dramatic blend of habitats featuring prairie, oak openings, dry mesic woods, and wetlands. The site currently sits unused, recovering from heavy agricultural and gravel mining uses. The park holds promise to be a site of ecological education, and enjoyable year-round recreation.

Through research of historical surveys and natural ecosystems we have created a plan to establish natural plant communities while maintaining cultural uses with the intention of creating self sustaining native plant communities that will serves as wildlife habitat and establish a harmonious blending of both native landscape and vital park amenities. We surveyed the current vegetation and identified appropriate target communities based on historical records and modern day reference communities. We then used the scientific literature to establish a flexible management plan detailing steps to return the site to a natural self sustaining state while simultaneously creating a recreational opportunity for the citizens of Kenosha County.

Nature is a treasure worth preserving.

P103 Household Infestation Rates of Chagas Disease Vectors and Trypanosoma cruzi Prevalence in Southern Ecuador

Student Author: Stanton Jasicki
Institute: UW-Eau Claire
Faculty Sponsor: Dr. Daniel Herman
Topic: Life Sciences

It has been over 100 years since the discovery of Chagas disease and the identification of its causative parasite (Trypanosoma cruzi) and insect vectors (triatomines), yet the disease runs rampant throughout endemic regions in Central and South America. The purpose of this study was to detect the presence of triatomines within 13 communities in southern Ecuador as well as to determine the seropositivity for T. cruzi of residents within the communities. Houses in each community were screened for the presence of triatomines and collected specimens were subjected to microscopy to determine the prevalence of T. cruzi. Screening for the presence of T. cruzi within community residents utilized the InBios and Stat-Pak rapid field tests, both of which detect antibodies produced to T. cruzi. Village triatomine infestation indices ranged from 0-32.1%, the highest of which were Tacoranga (32.1), Coamine (25.0), Jurupe (25.0), Guara (24.0), Chirimoyos (16.7), and Chaquizhca (15.2). Prevalence of T. cruzi within the 1,678 triatomines collected was 1.4%. Out of 949 administered tests, 9 reactive tests were confirmed serologically, corresponding to a 0.95% prevalence of T. cruzi. These results show that triatomine infestation rates are high within many communities and confirm the presence of Chagas disease in southern Ecuador.

P104 Effects of Garlic Mustard, White-Tailed Deer, and Forest Restoration on Ground-Dwelling Invertebrates at Bay Beach Wildlife Sanctuary

Student Author: Scott Komis
Institute: UW-Green Bay
Faculty Sponsor: Dr. Michael Draney
Topic: Life Sciences

Since 2006, a field experiment has been maintained at Bay Beach Wildlife Sanctuary (Brown Co., Wisconsin) to study the effects over time of three ecological restoration treatments to a degraded woodland. Four plots established within the wildlife sanctuary were subdivided into eight blocks and were set as either controls...
or treatments for: exclusion of white-tail deer herbivory, reduction of an invasive plant, garlic mustard, and restoration planting of native understory plants.

In 2010, we trapped ground-dwelling invertebrates using one covered propylene glycol pitfall trap (screened to exclude mammals) in the center of each 3 x 3 meter plot (32 traps: 4 replicate plots of each of the treatment/control combinations). We ran traps for two week periods in summer and fall to study treatment effects on these ecologically important animals. Spiders and harvestmen were identified to species; all other invertebrates (excluding mites and springtails) were counted and identified to Order. All were preserved as vouchers.

14,983 animals belonging to 18 Orders were trapped, 86.5% in June/July and 13.5% in September/October. We examined abundance of invertebrate groups (with N>30), number of Orders, spider Species richness, and Shannon-Weiner diversity of Orders using ANOVA and ESTIMATE S (complete design, blocked by season) to detect treatment differences.

Although the number of Orders in the treatment and control groups remained consistent (average=10) the number of individuals in treatment blocks was consistently higher than controls. Another interesting finding was the extremely low species diversity of spiders at this site, which may indicate a much degraded ecosystem.

P105 The Endangered Species Act and its Impacts on Gray Wolf Recovery in Yellowstone National Park
Student Author: Katelyn Larsen
Institute: UW-La Crosse
Faculty Sponsor: Jo Arney
Topic: Life Sciences
Gray wolf recovery in Yellowstone National Park is widely controversial. The species has been delisted and relisted on the Endangered Species Act (ESA) multiple times over the past several years. With no consistency, it is hard to propose an effective management strategy both inside and outside the park. This project argues that relisting wolves on the ESA negatively impacts the policy agenda of managing the wolves. Methods used in this project include a thorough literature review, interviews, and secondary data analysis. The interviews include commentary from key people involved in the wolf project like Doug Smith, leader of the project, and Jim Halfpenny, scientist and naturalist who has written several books about wolves in Yellowstone. Although the issue is still ongoing, this research clearly shows that delisting the gray wolf in the Northern Rocky Mountains from the ESA has a positive effect on overall wolf management.

P106 The Development of a New Experimental Protocol for the Investigation of Photoinduced Lipid Peroxidation in Biological Membranes
Student Authors: Abbey Mattes, Kim Zilavy
Institute: UW-Milwaukee
Faculty Sponsor: Guilherme Indig
Topic: Life Sciences
Photodynamic therapy (PDT) is a cancer treatment that requires two individually non-toxic components: a photosensitizer and light. When these two components are combined in a cellular environment containing oxygen, reactions occur that can lead to the destruction of the tumor cell.

Lipid peroxidation is one possible cytodestructive event that can result from photochemical reactions. Thus far, comparisons between the lipid peroxidation capabilities of Type I and Type II photosensitizers have not yet been fully described. Therefore, we seek to design a protocol that allows for the analysis of the quantum efficiencies with which certain Type I and II photosensitizers are capable of inducing lipid peroxidation in biological targets.

Our work employs UV-visible spectroscopy and chemical methods, such as the thiobarbituric acid (TBA) assay, to characterize the photoinduced peroxidation of micelle-solubilized linoleic acid and arachidonic acid on behalf of the photosensitizers crystal violet (Type I) and methylene blue (Type II). Both photosensitizers are drug candidates for use in PDT. Preliminary results suggest that methylene blue induces conjugated diene formation of micelle-solubilized linoleic and arachidonic acid (and at a faster rate than crystal violet) as indicated by an increase in absorption at 233nm, an indicator of lipid peroxidation. Application of the TBA assay requires further refinement as initial results have indicated that malonaldehyde, the indicator of lipid peroxidation, is consumed in the system containing methylene blue. Our future work will employ other chemical methods, such as the iodometric assay, and studies analyzing the effect of changes in photosensitizer and lipid concentration.
P107 Plant Species Identification - Camp Ohdakota
Student Author: Roger Heffron
Institute: UW-Parkside
Faculty Sponsor: Professor Joy Wolf
Topic: Life Sciences

The object of this study was to evaluate the plant species growing at BSA Camp Ohdakota in western Kenosha County. Given the complexity of the location, the management practices of the camp, multiple land uses and information regarding invasive species, I predicted that the flora of Camp Ohdakota would be primarily second growth plants and exotic, invasive plant species. The end goal was to organize a detailed listing of plant species from which a Field Guide could then be created to guide Cub Scouts and Boy Scouts in plant identification and to provide the Southeast Wisconsin Council BSA a proper analysis of the property for future land management planning.

P108 A Study of Tracks Left by Antilocapra americana and Canis latrans with a Focus on Decay and Duration
Student Author: Nate Groshan
Institute: UW-Whitewater
Faculty Sponsor: George Clokey
Topic: Life Sciences

Interpretation of animal tracks is a useful tool that can be used to obtain behavioral and physiological information on wildlife in an area, but as tracks age they breakdown and information is lost. This study investigates how tracks decay over time and how the data they provide change with age. Research took place in the Greater Yellowstone Ecosystem and consisted of analysis of tracks from pronghorns (Antilocapra americana, n=11 tracks) and coyotes (Canis latrans, n=29 tracks), which were selected for their availability and distinct foot anatomy. The analysis was divided into two parts. The first part focused on how tracks change from day to day. Measurements were taken daily on minimum length, minimum width, variable length, and variable width of every track. For the second part a cohort of seven coyote tracks were used and the primary focus was on how tracks change within a 24 hour period. The same measurements were taken as in the first part, but a minimum of twice a day instead of just daily. Results indicate an overall shrinking trend as tracks age as well as an inverse relationship between track size and atmospheric pressure. There is evidence to suggest that moisture levels in the soil and disturbances caused by other organisms both play a role in track size variability.

P109 Invertebrate Species Associated with the Plains Pocket-Gopher (Geomys bursarius) in Central Wisconsin
Student Author: Nate Groshan
Institute: UW-Whitewater
Faculty Sponsor: Bruce Eshelman
Topic: Life Sciences

Pocket gophers are considered by many ecologists to be keystone species in the environments they inhabit for their ability to move soil. This aerates the ground and encourages increased floral diversity via disturbance. Their effect on invertebrate species has been much less studied. This study investigates the impact of the plains pocket gophers (Geomys bursarius) on invertebrate fauna in Wisconsin. Two sites in Central Wisconsin were surveyed and insect specimens were collected from the gopher tunnels and mounds between the months of May and November of 2010. 204 unique collections were made representing 64 different families of terrestrial invertebrates. Of these 64 distinct families, the two sites shared only 21 of them in common (Sorenson Similarity Index (SSI) value = 0.44). When comparing the diversity in the pocket gopher mounds to that in the tunnels, only 8 families overlapped (SSI value = 0.22). The significant difference between these two sites implies that many more invertebrate families could be associated with pocket gophers across their extensive range in North America. The even greater difference in family overlap between the mounds and the tunnels points to a high level of specialization in invertebrate species that reside in the pocket gopher tunnels. These findings are discussed in detail and information on significant observations pertaining to insect behavior is also mentioned.
P110 Prevalence of Methicillin-Resistant Staphylococcus aureus in Loja Province, Ecuador

Student Authors: Jane C. Anderson, Erik Feia, Pauline Ceulemans
Institute: UW-Eau Claire
Faculty Sponsor: Sarah Wood
Topic: Life Sciences

Methicillin-resistant Staphylococcus aureus (MRSA) is an antibiotic-resistant strain of the bacterium Staphylococcus aureus, which can cause serious and potentially fatal infections in humans and accounts for a significant portion of hospital-acquired infections. In recent years, MRSA has become a serious health problem both in the United States and globally as the incidence of MRSA infections has increased, resulting in thousands of MRSA-related deaths annually. Little published data currently exists on the prevalence of MRSA in Ecuador, however, and its health impact in Ecuador is therefore poorly understood. In this study, nasal swabs were obtained from individuals in rural communities and from patients and staff at a regional hospital in Loja Province, Ecuador. Health surveys were also conducted to assess potential risk factors for MRSA colonization. Samples were inoculated onto mannitol salt agar (MSA), and Gram stains, catalase, and coagulase tests were conducted to identify isolates of S. aureus. Samples were also inoculated onto MSA containing oxacillin to identify potential MRSA specimens. Preliminary results indicate that 106 (37.9%) of the 280 samples collected from the communities were positive for S. aureus, and 9 of these (3.2%) were MRSA positive. Of the 255 samples collected from the hospital, 158 (62.0%) were S. aureus positive, and 41 of these (16.1%) were MRSA positive. The results indicate that MRSA is a potentially serious health threat in Loja Province that warrants further investigation.

P111 Frontal EEG Asymmetry is Positively Altered by Very Brief Meditation Training

Student Author: Jane C. Anderson
Institute: UW-Stout
Faculty Sponsor: Christopher A. Moyer
Topic: Life Sciences

Prior research has shown that an eight week period of intensive (> 1hr/day) mindfulness meditation training alters frontal EEG asymmetry toward a pattern associated with approach-oriented emotional states (Davidson et al., 2003). The present study examines whether this effect can be produced by a shorter five week period of less intensive (< .5hr/day) training in focused-attention (FA) meditation. METHOD: Twenty-nine subjects untrained in meditation were recruited from a university setting and underwent EEG assessment as they attempted to perform FA meditation for 15 minutes. Subjects also completed the PANAS before and after meditation. Subjects were then randomized to either meditation training (MT; n = 15) or wait-list (WL; n = 14) conditions. MT subjects were offered nine 30-minute sessions of FA meditation training across a five week period and were also encouraged to practice independently. Following the five week period, all subjects underwent a second EEG assessment as they attempted 15 minutes of FA meditation, and again completed the PANAS. Alpha band EEG data were used to calculate an index of frontal EEG asymmetry for each subject at 14 distinct timepoints during the meditation protocols. RESULTS: Prior to the training period, subjects did not differ in their frontal EEG asymmetry during attempted FA meditation. Following the training period, MT subjects had indices of frontal EEG asymmetry during FA meditation (mean = .102, SD = .026) that were significantly higher than the untrained WL subjects (mean = .024, SD = .023) across all timepoints in the protocol (paired t(13) = 10.78, r = .40, p < .001), which is consistent with the hypothesis that the practice of FA meditation shifts activity in the frontal brain regions to a pattern associated with approach-oriented emotional states. MT subjects also exhibited a marginally stronger reduction of negative affect, compared with WL subjects following the training period (F(1) = 3.88, p = .06).

P112 Observation of Zooplankton During a Rapid Pressure Drop

Student Author: Daniel Monge
Institute: UW-Milwaukee
Faculty Sponsor: Dr. J. R. Strickler
Topic: Life Sciences

Zooplankters are among the world’s most abundant organisms in population as well as total mass. The location of large patches of zooplankton is important to our understanding of the mechanics of ocean life and to ocean life itself. The congregation of zooplankton (50-85% of which are copepods) have been found to
be related to sites of vertical currents; copepods have preferential depths at which they congregate and spend most of their time. However, the mechanism that allow the copepod to sense their depth is still unknown.

In order to investigate the question we will set up a pressure chamber, place into it some copepods, and pressurize it. Once the copepods have to the pressure we will then run several trials where we drop the pressure slowly, rapidly, by a large amount, by a lesser amount, etc. The copepods reaction to this treatment will be recorded and analyzed.

Results are pending, however, we hope to find that the copepods are in fact sensitive to pressure as well as various treatments of pressure i.e. will they still be pressure sensitive after repeated drops in pressure.

P113 Effects of Benzophenone on Terrestrial Plants
Student Author: Deion Burks
Institute: UW-Whitewater
Faculty Sponsor: Samantha Samreth
Topic: Life Sciences

Benzophenone is an organic compound that is commonly found in products needing ultraviolet light filters or absorbers. Benzophenone absorbs or filters ultraviolet light given off from the sun and blocks it from causing any damage to the product. Different products that may contain benzophenone include: sunscreen, perfume, soaps, and even plastic packaging. Benzophenone in personal care and household items may inadvertently end up in the environment through multiple methods. For example, the benzophenone in sunscreen can get washed off from a person's skin and get into natural bodies of water (e.g., river or lake) or flushed into the sewer system. Most waste water treatment plants are not equipped or designed to remove benzophenone (and many other chemicals) from their influents. A filtration system can be introduced into the waste water treatment system that can partially remove some benzophenone, but most municipalities do not require such a system to be installed. Benzophenone is indeed detected in effluent of waste water treatment plants and soil (which may have received the chemical through waste water discharge during flooding or land application of biosolid). However, the effect of benzophenone on the environment is largely unknown. The goal of my research is to determine the possible effects benzophenone may have on terrestrial plants and compare the concentration of this chemical at which it affects plant growth to that found in the environment.

P114 Vegetation Cover as an indicator of breeding bird habitat in Chiwaukee Prairie and Richard Bong State Recreation Area
Student Authors: Rachael Baker, Emma Reed
Institute: UW-Parkside
Faculty Sponsor: Dr. Joy Wolf
Topic: Life Sciences

Population declines in grassland breeding birds are a concern for land management and restoration. Many grassland breeding birds have specific habitat requirements to sustain viable populations. In a Fall 2010 study, Dr Joy Wolf's Geography Field Methods course assisted the WDNR to collect and analyze data in two prairies in Southeastern Wisconsin to determine vegetation cover types as a habitat indicator for certain bird species, such as Bobolink, Henslow's Sparrow, and Eastern Meadowlark, which are found in numbers at Richard Bong State Recreation Area but in serious decline in Chiwaukee Prairie. Specific vegetation cover boundaries were recorded in belt transects. At Chiwaukee Prairie, the cover types were grasses, forbs, wet matrix, trees, and shrubs while at RBSRA the cover types were grasses, forbs and shrubs. At both sites, the overall shrub densities were high and should be noted as a concern in future management plans. Overall, the results show that the sites did not differ statistically in vegetative cover, although vegetation distribution and shrub growth stage differed. The Breeding Birds of Wisconsin Survey suggests that these differences may be due to habitat factors such as soil type, topography, maritime effects, fragmentation, and distance to residence. This study can assist land managers working on future restoration plans that restore breeding bird habitats. Further, RBSRA may be useful as a reference site for other similar grassland habitats that have the potential to support nesting grassland birds.
P115 The Effects of Carbon Nanotubes on *Daphnia magna*

Student Author: Adam Nikolaus  
Institute: UW-Milwaukee  
Faculty Sponsor: Dr. Rebecca Klaper  
Topic: Life Sciences  

As the use of carbon nanotubes (CNTs) becomes more widespread, there is a greater chance they will be released into the environment. With this knowledge it is essential to study the toxicology of CNTs. The goal of this project is to determine lethality of different nanotubes and develop possible biomarkers to test for exposure in the aquatic model species *Daphnia magna*. *Daphnia magna* have been selected because they are important to the ecosystem as primary consumers and are a model worldwide for toxicology, genomics and ecology. I used acute (48hr) and chronic (21 day) toxicity test to study how different carbon nanotubes impact daphnids. Three replicate trials were set up with differing concentrations ranging from 1ppm to 50ppm as well as a control group which received no CNT's. Over the course of the chronic experiments the daphnids were counted every other day and their offspring were raised to determine impacts on the following generation. All surviving daphnids had RNA extracted for use in testing of expression of genes associated with stress. Over the course of the testing it was found that the lethality of the carbon nanotubes varied greatly depending on both type of nanotube and concentration.

P116 The Effects of Caffeine and Caffeine Metabolites on a model land plant, *Arabidopsis thaliana*

Student Author: Jasmine Crafton  
Institute: UW-Whitewater  
Faculty Sponsor: Dr. Catherine Chan  
Topic: Life Sciences  

The presence of pharmaceutical and personal care products (PPCPs) in the environment has become a growing concern due to increased consumption of such chemicals. When they are consumed by humans, varying amounts of these chemicals, either unchanged or metabolites are excreted from the body. Some chemicals are also disposed directly through the sewer system. These PPCPs then enter the ecosystem through the effluent from wastewater treatment plants. Indeed, some recent studies have detected PPCPs in surface water. Terrestrial plants are also exposed to PPCPs when flooding occurs and untreated waste water is released from wastewater treatment plants, or when biosolids from treatment plants are applied on land as fertilizers. The presence of PPCPs has been correlated with negative impact on aquatic systems; however very little is known about the effects of PPCPs on land plants. My research investigates the effect of a very high volume PPCP: caffeine and its breakdown, metabolites, on a model land plant, *Arabidopsis thaliana*. These chemicals are applied to the growth media to simulate land application of PPCP-containing biosolid, and topically applied to various plant organs to simulate exposure to PPCP-containing flood water. The effects on plant growth and development are measured by quantifying a variety of growth parameters, such as the timing of leaf and flower emergence and seed yield. My project provides the foundation for an expanded project involving agriculturally important crop plants, thus contributing to a better understanding of the effect PPCPs on the environment.

P117 Renewable Biofuels from Algae: Analysis of Triacylglycerols in *Chlamydomonas reinhardtii*

Student Authors: Matt Effinger, Andrew Wensing  
Institute: UW-Parkside  
Faculty Sponsor: David C. Higgs  
Topic: Life Sciences  

The global need for renewable energy to reduce or eliminate our dependence on fossil fuels has made it necessary to develop technology to convert biomass into liquid biofuels. Biofuels can be produced from plants – for example, corn, soybeans, and native grasses – or from single-celled microalgae. These renewable sources of biofuels have great potential to reduce carbon dioxide emissions through photosynthesis. Plants and algae have the ability to produce substantial amounts of triacylglycerols (TAG) that can account for 20 to 50% of cellular biomass. TAG, specific forms of fat, may be directly converted into biodiesel via a simple transesterification reaction. In this investigation, we have studied the single-celled green alga *Chlamydomonas reinhardtii*, a well-characterized model organism, and quantify TAG accumulation in cells grown under different environmental conditions using the common Nile Red method. We have tested high and low
nitrogen concentrations, high and low light intensity, temperatures from 19 to 32 °C, and combinations of all three variables to determine the impact on TAG accumulation. In preliminary experiments, cultures grown in low nitrogen and high light accumulated significantly more TAG per million cells. Future work will look to determine the amount and composition of TAG using analytical methods. Furthermore, we are initiating experiments to compare expression of candidate gene to TAG metabolism. Our long-term goal is to understand the genetic controls of TAG accumulation in algae so as to maximize production of renewable biodiesel.

P118 The Anxiolytic Effects of Exercise are Sustained after an Emotional Challenge

Student Author: Erin Browning
Institute: UW-Milwaukee
Faculty Sponsor: J. Carson Smith
Topic: Life Sciences

Exercise has been widely reported to have anxiolytic effects. However, the effects of differing intensities of exercise on state anxiety have not been as widely explored. Most previous research has only viewed effects of high intensity exercise, e.g., 70% VO2max, which many individuals report as unpleasant. Using the Borg perceived exertion scale, participants were instructed to exercise at a ‘somewhat hard’ level of 13. Prior investigations show individuals tend to self-select for the ‘somewhat hard’ intensity. Thirty-six college aged participants (21 men, 15 women) participated in this study. Participants completed the State-Trait Anxiety Inventory. On two separate days, participants either cycled on a stationary bike for a half hour with a three minute warm up and cool down or rested for the same amount of time. Participants were instructed to self-select a “somewhat hard” intensity of 13 on the Borg scale during cycling. Fifteen minutes after the condition, they filled out a second state anxiety survey. After they viewed a slide show containing 90 emotional—positive, negative or neutral—images, they completed another state anxiety survey (roughly 50 minutes after the condition). State anxiety decreased from pre-condition to 15-minutes after both the exercise and rest conditions (p=.003). After viewing the slide show, state anxiety levels increased back to baseline for the rest condition. However, after the exercise condition, state anxiety levels remained decreased. At a rating of ‘somewhat hard’, cycling or resting may lead to temporarily reduced state anxiety levels. Exercise may lead to sustained anxiety reduction up to 50 minutes after exercise.

P119 Chronic Toxicity of the Antimicrobial Triclocarban to Ceriodaphnia dubia and Gammarus pseudolimnaeus

Student Author: Kathryn Lange
Institute: UW-Whitewater
Faculty Sponsor: Dr. Elisabeth A. Harrahy
Topic: Life Sciences

Triclocarban (TCC) is an antimicrobial found in several personal care products, such as soaps. Much of this chemical ends up at wastewater treatment plants (WWTPs). Studies have detected TCC in surface waters downstream of WWTPs at concentrations in the low parts-per-billion (ppb) range. The purpose of this study was to determine whether environmentally relevant concentrations of TCC adversely affect the aquatic organisms Gammarus pseudolimnaeus (an amphipod) and Ceriodaphnia dubia (a water flea). Chronic toxicity tests were conducted. C. dubia were exposed to 0, 0.93, 1.55, 2.6, 4.3, 7.2, or 12 ppb TCC for seven days. Mortality and reproduction were recorded daily. G. pseudolimnaeus were exposed to 0, 1.6, 2.6, 4.3, 7.2, 12, and 20 μg/L for 14 days. Mortality was recorded daily, and growth (total length) was measured at the end of the test and compared to initial length measurements. Exposure to TCC resulted in a significant decrease in reproduction of C. dubia at 12 ppb. We did not observe a significant decrease in growth of G. pseudolimnaeus, but it is possible they were not fed enough since we measured little growth in the controls. We did observe an increase in mortality of G. pseudolimnaeus with increasing concentration. The LC50 (lethal concentration for 50% of the population) was 8.3 ppb. In summary, ecologically important aquatic organisms were adversely affected by environmentally realistic concentrations of TCC. Information from this study may be used to establish environmental regulations, and to help determine the need for better WWTP processes.
P120 Native Species Richness and Density Assessment of Hillside Restoration at the Root River Environmental Education Community Center

Student Author: Tim Flood
Institute: UW-Parkside
Faculty Sponsor: Dr. Joy Wolf
Topic: Life Sciences

We conducted a study at the Root River Environmental Education Community Center (REC) to document the composition of native grasses and forbs that were planted during a restoration effort. In 2008, a grant was approved to restore a degraded hillside at REC for ecological restoration and environmental education. During the planting experiment, only native species were used and nonnative plants were removed. With a grant from the Collaborative Undergraduate Research Apprenticeship Program funded by UW-Parkside, the objective of my study was to determine if the native flora would return the following season and to record their location. Data were collected along the hillside with digital photos, which were used with aerial photography to help visualize plant distribution. The 15 x 122 meter study area was divided into four sections based on composition transition. We found that a majority of the plants had success on their own, but non-native species are still thriving. Results showed that the hillside has higher richness and density in sections A and C, compared to sections B and D, which is likely from the proximity to nonnative dispersal and allelopathy tendencies. Future plans are to halt any further dispersal of Fallopia japonica (Japanese Knotweed). This invasive species has characteristics that allow it to be quite competitive and aggressive, such as tolerance to a wide range of soil types and the durability of their rhizomes. This project contributes to learning experiences in restoration ecology and biological invasion issues at the Root River Environmental Education Community Center.

P121 The Genetic Diversity of Brown Trout Populations in Southwest Wisconsin

Student Authors: Abbey Stark, Andrea Wentzel, Kristi Nolden, Casey Sondgeroth, Katrina Taylor
Institute: UW-Platteville
Faculty Sponsor: Wayne Weber
Topic: Life Sciences

This presentation is on the current progress of the genetic analysis of brown trout populations (Salmo trutta) in southwest Wisconsin. In this analysis, comparisons are being done between stream, stock and wild stock populations in the investigation of the genetic diversification and distribution of this important game species.

P122 Effects of Pharmaceuticals and Personal Care Products on a model terrestrial plant, Arabidopsis thaliana

Student Authors: Jeanne Price, Marie Nider, Ashley Redinger
Institute: UW-Whitewater
Faculty Sponsor: Dr. Catherine Chan
Topic: Life Sciences

The accumulation of pharmaceuticals and personal care products (PPCPs) in the environment is a growing concern as the consumption of such chemicals increases. They can make their way into natural bodies of water through effluent from wastewater treatment plants, or may also imbed in soil from wastewater runoff and through the application of biosolids. To date, the effects of PPCPs on terrestrial plants are not well documented. We are interested in discovering the possible growth effects of select PPCPs, including caffeine and its metabolites, on a model land plant, Arabidopsis thaliana. We applied these PPCPs to A. thaliana at various concentrations and different growth stages, and quantified the effects of these chemicals on different growth parameters, such as root length and germination rate. We also performed mineral analysis to quantify the effects of these chemicals on mineral nutrition of the plants. Preliminary data indicate that paraxanthine, the most abundant caffeine metabolite, was more effective than caffeine in inhibiting growth and germination of A. thaliana when applied at 10 ppm or above, but no significant change in mineral accumulation was observed. Caffeine concentrations in the environment vary depending on location, but are
expected to be present in the ppb range. No information is currently available for environmental concentration of paraxanthine. Our work suggests that some PPCPs only affect Arabidopsis growth at concentrations not likely to be present in natural environments. Moreover, Arabidopsis is an effective experimental system for screening the effects of PPCPs on terrestrial plants.

P123 Influence of Pain on Function among People with Musculoskeletal Shoulder Impairments

Student Author: Matthew Klein
Institute: UW-Milwaukee
Faculty Sponsor: Dr. Bhagwant Sindhu
Topic: Life Sciences

Background – It is not clear how level of pain influences change in function among people undergoing rehabilitation for shoulder impairments.

Purpose – To examine if shoulder pain at admission influences upper extremity function at admission and discharge.

Methods – We examined responses of 3,290 people receiving rehabilitation for musculoskeletal shoulder impairments on the Shoulder computerized adaptive test (Shoulder CAT; scale of 0 to 100, 100 being highest functioning) at admission and discharge and pain intensity was measured using a numeric rating scale (NRS; scale of 0 to 10, 10 being highest pain). Pain intensity scores at admission were used to form two pain groups, low (score of 0-5) versus high (score of 6-10). The low pain groups were compared to for differences in function at admission and discharge, using an ANOVA and ANCOVA respectively.

Results – Functional status was significantly better for low than high pain groups at admission (F = 230.75, p < 0.001) and at discharge (F = 10.04, p < 0.002). Post-hoc analyses revealed that functional status change scores were significantly greater for high (16.9 + 16.7) than low (14.02 + 14) pain groups (F = 29.37, p < 0.001). Independent samples t-test revealed that reduction in pain intensity was significantly greater for high (3.9 + 2.5) than low (1.2 + 2.1) pain groups (t = 84.75, p < 0.001).

Conclusion – Higher pain was associated with lower function at admission and discharge. Also, a greater decrease in pain was associated with a greater improvement in function from admission to discharge.

P124 Role of Multifocal Lens Glasses on Walking Balance

Student Author: Autumn Milanowski
Institute: UW-Milwaukee
Faculty Sponsor: Dennis Tomashek
Topic: Life Sciences

The literature has shown a link between visual impairments and an increased risk of falling in older adults. Falling is a major reason for hospitalization, injury, and death amongst individuals over 65. Multifocal eyeglasses, which are designed for distance viewing and correcting presbyopia, distort vision in the lower part of the visual field when viewing ground level while walking. This pilot project provides clarification on the relationship between multifocal eyeglasses and gait. Specifically, this study analyzes performance of 6 young, healthy individuals while wearing bifocals and single lens glasses. Four measures are used in trials: Dynamic Gait Index-modified (DGI-m), a step/ramp obstacle and Motion Capture Analysis (MCA). Participants complete a series of trials containing the DGI-m and the step/ramp obstacle. MCA measures participant’s joint flexion and extension of the lower extremities to detect changes in gait. EMG evaluates the electrical activity produced by skeletal muscles. It is anticipated that participants will demonstrate gait changes that occur while approaching and descending the step/ramp and during the DGI-m trials while wearing multifocals. It is hypothesized that patients will demonstrate decrement in gait pattern when using bifocal lens as demonstrated by change in gait speed, toe clearance, and muscle activity. MCA data is collected and analyzed using the Cortex 2.0.0 software, and the DGI-m is scored by a rater. Results will provide future research to analyze different interventions that reduce the number of falls while wearing bifocal eyeglasses. These interventions include interchanging single lens glasses, education on bifocals, and flip up multifocal lens. This presentation will explain within-subject analysis of MCA and DGI-m to compare multifocals to single lens glasses to portray the need for multifocal interventions.
P125 Decomposition Rates of Hog Carcasses in Southwest Wisconsin

Student Authors: Kevin Polinski, Kami Miles
Institute: UW-Platteville
Faculty Sponsor: Aric Dutelle
Topic: Life Sciences

The central purpose of this research study was to find the difference in the rates of decomposition among hog carcasses to achieve comparison standards for Southwest Wisconsin. It is important to note that hogs decompose in very similar rates to that of humans.

The research was conducted in the months of September and October in Grant County, Wisconsin and was modeled off of studies conducted by Dr. Jerry A. Payne in Clemson, S.C. The control was placed on a concrete pad. The experiments, Subject 1 and Subject 2, were placed in a field of tall grass and decomposition rates between the three were compared. Weather conditions including temperature, wind chill, humidity, wind speed and direction, pressure and rainfall were all recorded as well as internal temperatures of the carcasses. Observations of the control revealed that it decomposed slower from the inside out, while the experimental subjects decomposed faster from the outside in. The cooler climate of southwestern Wisconsin was documented to have a major effect on the rate of decomposition of hog carcasses compared to research done in southern regions of the United States. The surface that the carcasses were placed on affected the manner and rate of decomposition. Insects played a vital role in the decomposition of the carcasses placed in the grass, whereas temperature had more of an effect on the carcass placed on the concrete pad. This experiment established an estimated time frame for decomposition. It set guidelines for further research to be conducted.

P126 The Effects of Time of Day on Power Output Performance

Student Authors: Stephanie Kulow, Sarah Stump
Institute: UW-La Crosse
Faculty Sponsor: Scott Doberstein
Topic: Life Sciences

Every athlete varies slightly, specifically in the routine and the time of day they practice and compete. Most athletes have rather consistent competition times, however if these times are advantageous for maximal performance is another question. This study investigated the effects of time of day on power output performance. Fourteen college track and field athletes between the ages of 18-25 participated in this study. For three consecutive weeks, participants reported for testing, once each at 6am, 3pm, and 11pm. At each testing session, participants completed a five minute dynamic warm-up. After their warm-up, participants completed three standing broad jumps, of which their average was recorded. Between each jump participants had approximately two minutes rest. The data collected were analyzed using paired t-tests. We can report with 95% confidence that, when tested, subjects will jump between 4.8cm and 16.9cm farther at 3pm. When comparing 3pm to 11pm, we did not find enough evidence to prove a significant difference in power output. With these results, we conclude that power output is higher in the afternoon and evening than in the morning.

P127 Growing Communities and Gardens through Composting

Student Authors: Adrian Landreth, Stephanie Krueger
Institute: UW-Fox Valley
Faculty Sponsor: Teresa Weglarz
Topic: Life Sciences

We are presently engaged in developing a large-scale, centrally-located compost program for use by City of Menasha community and business members, UW-Fox Valley, and the Community Garden Partnership. The goal is to divert organic waste from the landfill, thereby promoting environmental sustainability. UW Fox Valley developed an all-campus composting program to capture organic food waste generated by the kitchen, students, faculty and staff for the compost site. Additionally, the finished product will be given/sold to Community Garden members to enhance soil building at the garden sites. The Community Garden at UW- Fox Valley will be used to host educational opportunities for students, community members, and children. Through this collaborative effort we hope to support a compost program that provides practical benefits while reducing overall organic waste that is sent to the landfill. Our future project goals are to provide educational opportunities to the community on the benefits of composting, how to compost, and finally generate usable soil for community
members. We hope to grow communities by supporting partnerships between community members and UW-Fox Valley faculty, staff and students, while growing gardens through soil production.

P128 The Political Effects of Group Lending on Nicaraguan Individuals
Student Authors: Kelsey Roets, Ian Allen
Institute: UW-Eau Claire
Faculty Sponsor: Amy Young
Topic: Business

After receiving funding from the University of Wisconsin-Eau Claire, we went to Teustepe, Nicaragua, in January 2011 to study the political effects of microfinance on Nicaraguan individuals. While the economic ramifications of microfinance are often studied, the political effects are often overlooked and undervalued. In Teustepe we worked with PRESTANIC, a microlending organization that gives small (averaging US$120), short term loans to small groups. Collecting both quantitative and qualitative research, we interviewed individuals who received loans and had them show us how they used their loan to start or develop a business.

Based on our research we found that group lending helps expand women’s spheres of influence by encouraging community participation through the formation of groups and small businesses. Group lending teaches skills, such as group governance and organization, that enable individuals to organize politically if they so chose. Moreover, we found that small loans coupled with financial education not only increase trust and knowledge of financial institutions, but they also prepare women for potential leadership roles in their communities.

We did not find anything that implies that receiving a microloan increases formal political participation within political parties, nor does there appear to be any direct correlation between the microloan groups and political activism; however, group lending teaches organizational and financial skills that are essential to political activity. As these skills continue to be developed in traditionally neglected populations, further research should be done to see if this methodology creates a new generation of political leaders.

P129 Creating a More Efficient System to Minimize Guest Wait Times at KeyLime Cove Indoor Water Park Resort
Student Authors: Jason Evenson, Michelle Warren, Tamykka Lamb, Jennifer Helgesen
Institute: UW-Parkside
Faculty Sponsor: Dr. Abey Kuruvilla
Topic: Business

Guests at KeyLime Cove Indoor Water Park Resort, located in Gurnee, Illinois, currently experience extended wait times during the check-in process for their resort stay. Our group’s study will show that, through research, effective strategic and operation management tools and techniques implemented at this facility will reduce actual wait-times by more than 15%. We expect to have significant findings that will identify key operational opportunities that lead to unnecessary time spent in line. We also expect to identify techniques that will reduce wait-time “perception.” This local business will benefit from our study and suggestions.

P130 Fitness on Facebook: Advertisements Generated in Response to Profile Content
Student Author: Hope Villiard
Institute: UW-Madison
Faculty Sponsor: Dr. Daniel Herman
Topic: Business

Obesity affects half of college students and only 30% of students obtain adequate physical activity for health benefits. Over 94% of college students currently maintain a Facebook profile; advertisements on Facebook are tailored to the displayed content. The purpose of this project was to determine if fitness key-words generate fitness-related advertisements. Individual profiles were examined to determine types of displayed fitness references; Facebook was explored to observe advertisements generated in response to fitness references. 71.9% of profiles evaluated referenced fitness behaviors; 70.2% referenced physical activity, 12.3% poor diet. Most advertisements were for fad diets or charity runs. Thus, students reference both healthy and unhealthy fitness behaviors on their Facebook profiles, and these trigger fitness-related advertisements of which few are healthy.
P131 Developing a Grounded Theory of Project Management for NGOs in Developing Countries

Student Author: Elizabeth McCarthy  
Institute: UW-Whitewater  
Faculty Sponsor: Sameer Prasad  
Topic: Business

Project management theory has been derived from the corporate sector in the developed world. In this research, we attempted to generalize project management theory to the NGO sector and the developing world. In our research, we decided to focus on qualitative methodology (case study) following Eisenhardt's (1989) process of building theory from case study research. We conducted a literature review of relevant topics to derive possible propositions to guide us, followed by collecting secondary data from three NGOs (US based observations/ interviews/ access to data and emails) and primary data from four NGOs (on-the-ground observations and interviews in India). The literature review identified a total of fourteen salient variables to implementing projects and propositions among them. We were able to modify the variables through secondary research and form a theoretical model showing the relationships between the variables. With the findings from the primary research, we further modified the model to include variables not identified in the literature and eliminate irrelevant existing variables. The results of this research provide NGOs with a clearer methodology in implementing projects. Given the new methodology, we anticipate that NGOs will be able to provide more of the specified deliverables (e.g. number of children educated, passing rate, literacy rate), in a shorter amount of time and at a lower cost.

P132 Lake Forest Hospital Lean Project

Student Author: Nicole Moriarity, John Czarnecki, Melissa Green, Adam Avalos  
Institute: UW-Parkside  
Faculty Sponsor: Abey Kuruvilla  
Topic: Business

The goal of our research was to improve the co-pay collections process in the Emergency Room of Lake Forest hospital, since they were exceptionally low compared to its sister location that was over five times that of Lake Forest. We collected data on the amount of co-pays that were presented and compared that to current collections to get an idea of how much can actually be improved in this area. Also, the current staff were surveyed to get a better understanding of why collections were so poor. We used our collective experience to analyze the process and make recommendations for strategic ways to improve the process. We identified several forms of waste and found that efficiencies could be improved to make the collections process more effective. Employees expressed several reasons that we were able to provide solutions for. We strategized to come up with a way to make data collection and tracking patients a more efficient process. Since this is an emergency room, efficiency is vital to operations. The new policy is currently being implemented so official results are not yet available, but our goal is to increase co-pay collections by a minimum of 400%. Based on the information we collected, we believe this is a realistic goal. Not only will point of sale collections increase but employees will have more time to complete other job tasks, improving productivity, and making the hospital more lean.

P133 An Econometric Analysis of Used Vehicle Pricing

Student Author: Shannon Hilberg  
Institute: UW-Parkside  
Faculty Sponsor: Norman Cloutier  
Topic: Business

The statistical analysis in this paper uses ordinary least squares to estimate how used car dealerships determine pricing of their inventory using "standard" and "additional" options available on each vehicle. Standard option variables included: year, make (grouped by parent companies), model, number of cylinders, current mileage, and type of transmission. Additional option variables included: sunroof, navigation unit, soft or hard top convertible, four wheel/all-wheel drive, alloy wheels, estimated miles per gallon, seat heaters, and if the vehicle is a hybrid or not. A log-linear regression model of used car price was estimated to determine the relative importance, and therefore contribution to sales price, of each standard and additional option. The most significant findings were the effects on pricing due to the vehicle manufacturer with respect to Ford Motor Company, for example Toyota and subsidiaries priced nearly 20% higher, and the significant decrease in price, approximately 12%, from each additional percent...
of mileage on the vehicle. I concluded that with the exception of mileage on the vehicle, additional options and vehicle manufacturer had a greater impact on the price than standard options. This model could be used by used car customers by offering them a guide to what they should expect to pay for a used vehicle.

P134 Analyzing Federal Court of Appeals Cases to Determine Key Factors Used in Determining Employee versus Independent Contractor Status

Student Author: Laura Steigerwald
Institute: UW-Whitewater
Faculty Sponsor: William Dougan
Topic: Business

Factors used by the court use to determine the classification of an individual as an employee or independent contractor are important to the greater issue of organizational boundaries (Williamson, 1975, 1981), because the outcomes of such cases play an important role in determining the boundaries in subsequent economic activity. Patterns in court decisions pertaining to the litigation of such cases can become a source of insight regarding those factors the court uses the most frequently to determine rulings. Furthermore, examination of juridical outcomes is also a source of insight.

We have considered the outcomes of a number of Federal Appellate Court cases and recorded juridical outcomes and the court’s reasoning using a set of factors handed down by the US Supreme court in Nationwide Mutual Insurance Co. v. Darden (1992).

In workers’ compensation cases, organizations typically moved to create an employment relationship and/or individual moved to sever an employment relationship. In unemployment compensation cases organizations most often moved to sever an employment relationship and/or individuals moved to create an employment relationship.

The most common factors used by the Court include the degree of 1) supervision, work on employer’s premises and set hours of work. We also observed that if the court determines that either party is attempting to exploit a legal status or legal relationship to avoid a legal requirement (such as worker’s compensation), the Court rules to fulfill the spirit of the law.

P135 Effects of the Labor Immobility Law (Job Security Law) on the Economic Development of the Private Sector in Venezuela

Student Author: Beatris Mendez Gandica
Institute: UW-Eau Claire
Faculty Sponsor: Manuel Fernandez
Topic: Business

Job security means that the employee has a secure job that is under the jurisdiction of the courts. To achieve this, a labor immobility law was enacted in Venezuela in 2002. Since the implementation of the law, the government has shown constant economic growth figures. This apparent positive effect of the law is paradoxical given that the government has subsequently also put into practice other drastic measures to preserve employment.

To determine this law’s true impact, negative or positive, in the economic growth of the private sector, it is necessary to take into account various types of considerations: economic growth, business policies, government policies, etc. This study will make use of newspaper articles, laws, and interviews from Venezuelan sources in order to determine the effects of this law, if any, on the Venezuelan economy. This research is important not only with regards to Venezuela but also to the international business field because companies need to be aware of what is going on in a country before investing there.

Preliminary results have so far shown that there are more political than economic reasons to sustain labor control, aside from price, currency, and tax controls. Further research will elaborate on those results.

P136 Estimating Commuter Behaviors and Impacts from University Parking Records

Student Author: Nadeesha Thewarapperuma
Institute: UW-Oshkosh
Faculty Sponsor: Michael Lizotte
Topic: Business

The University of Wisconsin Oshkosh is drafting a campus-wide Transportation plan, and needs improved estimates of commuter activities for greenhouse gas emission inventories. UWO is located in downtown Oshkosh, WI, a city with car-friendly infrastructure and abundant street parking. The university is growing but
the campus is restricted by the availability of land, thus parking on campus is limited. The Campus Sustainability Plan adopted in 2008 contains recommendations for managing the demand for parking as well as alternative transportation options. However, data on commuter behavior was limited, and university policies limit our ability to directly survey the student and staff population of 15,000 people. This project describes our efforts to estimate commuter activity from data obtained through the Parking Services Department. Home addresses were used to estimate distance travelled by commuting students and employees. Records of vehicle year and model were used to estimate fuel efficiency and compact car use. Through these analyses, the Campus Sustainability Office was able to better estimate the geographic distribution of commuters, their distances travelled, fuel consumption, and amount of compact car spaces to provide on campus. Mapping of commuter origins was also used to make recommendations for alternative transportation such as carpools via our Zimride network, preferred city bus routes, and possible vanpool clusters.

**P137 If They Trust Our Ecommerce Site, Will They Trust Our Social Commerce Site Too? Differentiating the Trust in E-Commerce and S-Commerce: The Moderating Role of Privacy and Security Concerns**

Student Author: Lijun Chen  
Institute: UW-Green Bay  
Faculty Sponsor: Dr. Gaurav Bansal  
Topic: Business

The study ventures into the new domain of scommerce. It studies the moderating impact of the four privacy concern dimensions (collection, secondary use, improper access and errors) and security concerns on trust between ecommerce and scommerce sites of the e-vendors. Even though several studies have examined privacy concern, however, the knowledge pertaining to the role of its individual dimensions is very limited. The study involves 270 students studying in a Midwestern university. The study reveals several interesting findings. It suggests that users trust ecommerce sites more than the scommerce ones. More interestingly, the findings reveal that the Internet users have freed their trust formation from the limiting hives of collection and secondary usage concerns. The role of concerns related to security, improper access and errors was significant. Interestingly, these concerns shape the users trust in ecommerce and scommerce differently. According to the results the users trust in ecommerce sites is impacted by their error concerns and to some extent improper access and security concerns; however, their trust in scommerce sites is impacted by improper access concerns only. The theoretical and practical implications are discussed.

**P138 Indoor Tanning**

Student Author: Lauren Axelson  
Institute: UW-Parkside  
Faculty Sponsor: Abey Kuruvilla  
Topic: Business

Indoor tanning has seemed to have lost some of its popularity over past years due to the perceived mediated health risks associated with it. While this may be a popular belief, indoor tanning is in fact an activity that can and should be done in moderation, and not predominately for cosmetic reasons. This research attempts to use Operations Management principles to help the Tropical Tan company improve their business.

In order to assure that the general population of Kenosha, WI is informed about the benefits and positive side effects of indoor tanning, I have been assisting Tropical Tan, and indoor tanning company in Kenosha, with endorsing their services. I have also offered the company practical operations management techniques pertaining to their personal business goals of increases revenue.

By opening Tropical Tan on Sundays (normally the day they are closed) and offering “Sunday Specials” (1/2 off tanning lotions, free lotion sample, etc.) they have already experienced profit within the business. Informing new clients of positive physical and mental results associated with indoor tanning—if done in a healthy manner—is a goal I have additionally set to achieve for Tropical Tan. Indoor tanning during colder months (especially in WI) provides the body with Vitamin D, a vital nutrient our bodies may be depleted of.

From my studies I am thus far able to conclude that my recommendations will help the company continue to improve its operations. While I am still in the process of furthering my research regarding this topic, I can confidently assert that individuals must be informed of the positive effects that indoor tanning has and all that it has to offer.
P139 Commercial Banks Balance Sheets and the Financial Crisis
Student Author: Janell Topczewski
Institute: UW-Parkside
Faculty Sponsor: Marcelo Milan
Topic: Business
This project examines the balance sheets of 150 randomly selected commercial banks pre-financial crisis (December 2006) and after the initial impacts of the financial crisis were felt (December 2009). The Sample is broken up into two groups: resistant banks versus fragile banks. This allows for examination of variables, assets and liabilities, which had the biggest change during the financial crisis as well as which variables had the largest impact on bank failures. These variables are also being compared to regional GDP, regional unemployment, and interest rates to view correlations with macroeconomic variables. Once all variables have been examined the interaction between the variables will allow for a better determination into what caused a bank to fail. This project will give a better understanding of what allowed certain banks to survive the crisis, make connections between variables that had the biggest impact on bank’s balance sheets during the crisis, and show how macroeconomic variables impacted a bank’s balance sheet.

P140 Cost-Benefit Analysis of the recycling at UW-Marshfield/Wood County
Student Authors: Tyler Gruen, Dan Burkhart, Todd Witt
Institute: UW-Marshfield/Wood County
Faculty Sponsor: Malcolm Gold
Topic: Business
We analyze the costs and benefits of the recycling program at UW-Marshfield/Wood County, both at the campus-specific level and with regards to the larger community. The campus-specific costs of the recycling program are minimal with a larger cost imposed on the city and state. Benefits vary for current students, potential students, and staff.

P141 Have Commercial Banks Circumvented Monetary Policy Using Sweep Accounts?
Student Author: Patricia Jensen
Institute: UW-Parkside
Faculty Sponsor: Marcelo Milan
Topic: Business
Commercial banks introduced sweep accounts to lower their deposit levels reported to the Federal Reserve. The goal of the study is to determine if the monetary policy was less effective due to the introduction of sweep accounts in the mid-1990s. The study carries out a “before and after” comparison of reserve levels using the date of introduction of sweep accounts as the pivotal point. First, banks were selected randomly for a sample to compare to the whole industry. Thereafter, bank information was gathered from the FDIC website about deposits, reserves, and a few financial conditions ratios (profitability, liquidity, etc.), as well as macroeconomic data about the industry. Next, the study searched out any changes in the fed funds target rate and the effective fed funds rate, as well as any market rates as well as any significant changes in reserves held by banks in the sample as compared to the industry as a whole. The study is expected to find significant changes in the amount of required reserves, but no significant changes in the interest rate spread. Reserves are not essential for monetary policy; however, they are important for bank profitability. As of the date of this submission, the study is in process and is anticipated to be complete before the symposium date. For now, the expected results upon completion of the research raise doubts about the centrality of setting reserves – money that commercial banks should set aside to back withdrawals and payments - as the essence of monetary policy, as traditionally understood. The implication is that the Federal Reserve may not need to use reserve requirements in setting monetary policy.
**P142 Using SCUBA Techniques to Monitor Daily Behaviors and Diet Preferences of Largemouth Bass (Micropterus salmoides) in Three Wisconsin Inland Lakes**

Student Author: Andrew Luebke  
Institute: UW-Parkside  
Faculty Sponsor: Catherine Mossman  
Topic: Life Sciences

*Micropterus salmoides*, largemouth bass are the dominant carnivores of many North American lakes, although little is known about their behaviors in a natural habitat. With the use of a close circuit rebreathing SCUBA system, we observed largemouth bass occurring naturally in three inland Wisconsin lakes (Kenosha Co.) in Fall 2010. We were interested in the diet preferences and number of fish eating versus swimming over the course of a day. We found that the bass ate sunfish, minnows, and invertebrates, but did not exhibit a preference between these items. Furthermore, we found that there was no difference between lakes in the number of fish that were found eating or swimming over the course of the day (Friedman's ANOVA, p>0.05). These largemouth bass were observed in the Fall as water temperatures started to drop. This could result in a loss of food preference as the fish ate more opportunistically. Furthermore, the similar number of individuals found swimming and eating through the day may be related to seasonal changes in water temperature and the depth at which the fish occurred, but more data are needed to analyze these variables. Behavioral lab studies of largemouth bass have typically used constant water conditions and predetermined food items to compare. Future studies may benefit from the use of SCUBA techniques to observe largemouth bass in their natural habitats over longer periods to determine if daily behavior patterns and food preferences exist and/or change seasonally.
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