

9th Annual UW System
Symposium for

UNDERGRADUATE
**RESEARCH
AND
CREATIVE
ACTIVITY**

SCHEDULE OF EVENTS

APRIL 25, 2008

UNIVERSITY OF WISCONSIN-RIVER FALLS



Contents

Map of the University Center	2
Chancellor Betz’s Welcome.....	3
Keynote Speaker.....	4
Schedule of Events.....	5
Quick Guide to Poster and Gallery Exhibits Session I	6
Quick Guide to Poster and Gallery Exhibits Session II.....	11
Quick Guide to oral and creative activity presentations.....	18
Abstracts.....	25
Attendees	143
Acknowledgments	148



UNIVERSITY OF WISCONSIN-RIVER FALLS

UNIVERSITY CENTER

Campus Information: (715) 425-3911

Involvement Center: (715) 425-4444

Map

Locator Room Name Room Number

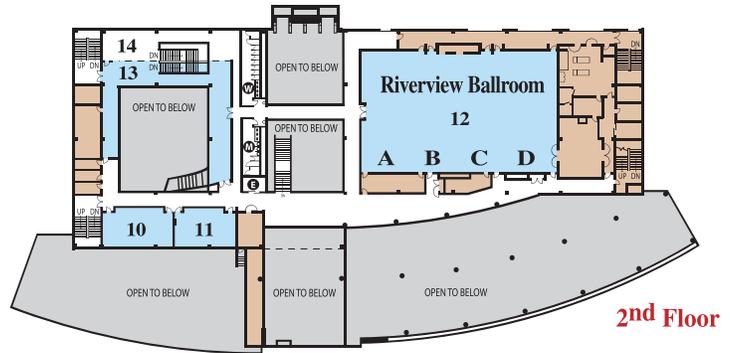
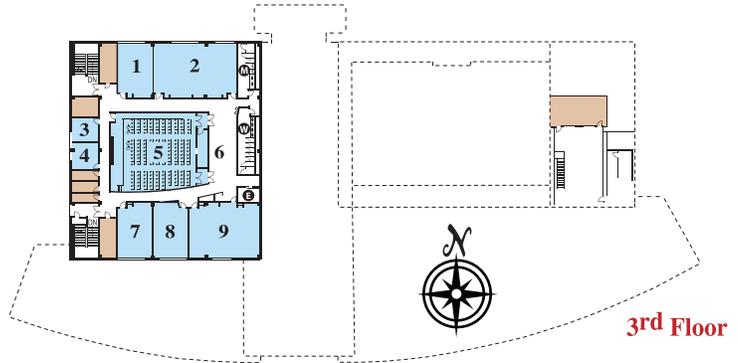
- 1 Chippewa River Room 322
- 2 St. Croix River Room 321
- 3 Rush River Room 325
- 4 Red Cedar River Room 326
- 5 Kinnickinnic River Theater 320
- 6 Ames Gallery
- 7 Eau Galle River Room 332
- 8 Apple River Room 333
- 9 Willow River Room 334

- 10 Trimble River Room 231
- 11 Wind River Room 232
- 12 The Riverview Ballroom 250
- 13 Falcon's Nest Mezzanine Level
- 14 Game Room

- 15 Falcon's Nest Entertainment Complex 120
- 16 Mississippi River Room 172
- 17 Cyber Cafe
- 18 Environmental Learning Kiosk
- 19 Information Desk
- 20 Kinni Copies
- 21 Heritage Hall
- 22 Game Room
- 23 Freddy's Convenience Store
- 24 Falcon Shop
- 25 First National Bank
- 26 Peregrine Perk Coffee Shop
- 27 Involvement Center/Student Affairs
- 28 Robert "Bob" Sievert Fireplace Lounge

- 29 The Falls Room 004
- 30 1874 Room 044
- 31 Pete's Creek Dining
 - Mondo Subs
 - Coyote Jack's Grill
 - Mamma Leone's
 - Roots
- 32 Riverside Commons Residential Dining
- 33 Cup of Knowledge Sculpture

- M** Men's Restroom
- W** Women's Restroom
- E** Elevator



Website: sa.uwrf.edu/sa/places/university-center
 University Center • UW-River Falls • 410 S. 3rd St. • River Falls, WI 54022-5001
 University Center Map September 2007



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April 25, 2008

Dear Students, Colleagues and Guests:

Welcome to the University of Wisconsin-River Falls and the Ninth Annual UW System Symposium for Undergraduate Research and Creative Activity. More than 400 students, faculty mentors and guests from throughout Wisconsin and the UW System have travelled to River Falls today to celebrate the significant and unique undergraduate research and creative activities occurring at UW System campuses.

Showcased by poster sessions, oral presentations, gallery exhibitions and artistic performances we proudly applaud these pursuits. The mentoring relationships they build between faculty and students, and the distinct learning opportunities they produce for our students are infinitely valuable. I hope you will leave here today with a sense of pride in the efforts of our state's future researchers, educators and workers.

I would like to extend a special welcome to UW-River Falls Alumna Patty Skinkis of Oregon State University, who will be sharing her experiences with us today as Keynote Speaker.

A special appreciation also goes to the Steering Committee for their contributions in planning this statewide event.

Welcome!

Don Betz
Chancellor



9th Annual UW System Symposium

Dr. Patricia Skinkis

Viticulture Extension Specialist
Oregon State University
Corvallis



A Journey of Passion: The Science and Art of Wine

12:25-12:50 p.m., Falcons Nest

Patricia Skinkis's journey exemplifies the best of what is possible for dedicated students who desire to pursue serious inquiry and research in their respective fields. From her home town of Oneida, Wisconsin, to the Willamette Valley in Oregon, she has demonstrated her passion for learning and sharing knowledge.

Patricia (Sobieck) Skinkis graduated summa cum laude from the University of Wisconsin-River Falls in December 2002, with a Bachelor of Science degree in Horticulture. As a McNair Scholar, Patty conducted undergraduate research under the supervision and mentorship of Dr. P. Lanny Neel. She then pursued a Ph.D. in the Department of Horticulture and Landscape Architecture at Purdue University, West Lafayette, Indiana. While a graduate student, she conducted research on vine canopy management. Patty received her Ph.D. in December 2006, and began her current position at Oregon State University in January of 2007.

Patty is an assistant professor and Viticulture Extension Specialist in the Department of Horticulture at OSU. She leads the statewide Viticulture Extension Program in Oregon, providing research and educational programs for the commercial winegrape industry. She also teaches viticulture courses in the undergraduate and graduate viticulture and enology programs.

Patty's publications include "Vineyard Management in Developing Wine Aroma," AWS Journal (2005), and "Impact of Training System on Vine Performance and Fruit Composition of Traminette," Am. J. Enol. Vitic (2008). She is a member of the American Society for Horticultural Science, American Society for Enology and Viticulture, and the American Wine Society. She also serves as a technical adviser for the Low Input Viticulture and Enology (LIVE) Program, a sustainable viticulture certification for the Oregon grape industry.

Patty was recently honored by the McNair Scholars Program with the Full Circle Award in recognition of her attainment of the Ph.D. She and her husband, Paul Skinkis, live in Albany, Oregon.



9th Annual UW System Symposium

Schedule of events

All events take place in the University Center

Day, date, time	Event	Room
Thursday, April 24		
6:00 p.m. - 8:00 p.m.	Early registration and building tours	Falls Room
Friday, April 25		
7:00 a.m. - 8:10 a.m.	Continental breakfast Registration Poster set up	Falls Room Falls Room Riverview Ballroom
8:15 a.m. - 8:25 a.m.	Welcome and logistics	Falcons Nest
8:30 a.m. - 9:25 a.m.	Oral and creative activity presentations session I	
9:30 a.m. - 10:25 a.m.	Posters and gallery exhibits session I	Riverview Ballroom
10:30 a.m. - 11:25 a.m.	Oral and creative activity presentations session II	
11:30 a.m. - 12:15 p.m.	Luncheon	Pete's Creek
12:25pm - 12:50 p.m.	Keynote speaker--Patricia Skinkis "A Journey of Passion: The Science and Art of Wine"	Falcons Nest
1:00 p.m. - 1:55 p.m.	Oral and creative activity presentations session III	
2:00 p.m. - 2:55 p.m.	Oral and creative activity presentations session IV	
3:00 p.m. - 3:55 p.m.	Posters and gallery exhibits session II	Riverview Ballroom
4:00 p.m. - 4:15 p.m.	Closing remarks	Riverview Ballroom



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session I – 9:30-10:25 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
91	Benjamin Fiess	Alternative Approaches to Ceramic Surface Treatment: Printed Porcelain and Soluble Flux Impregnation	UW-Whitewater	Jared Janovec	Gallery Exhibit
97	Emily Zeien	First Again: Wisconsin's Public Health Nursing Program on Native American Reservations	UW-Whitewater	Elizabeth Hachten	Humanities
99	Jesse Storms	Effects of Rural Residential Development on Land Use and Land Cover in Waukesha County, Wisconsin	UW-Whitewater	Thomas C. Jeffery	Natural Sciences
101	Lori Themmes	Keeping Creeping Soils On Shore	UW-Parkside	Dr. Chris Evans	Natural Sciences
103	Nicole Carter	Stratigraphy and Paleontology of the Late Ordovician Platteville Formation, Enhanced by Gamma-Ray Spectroscopy	UW-Whitewater	Dr. Rex Hanger	Natural Sciences
105	Katherine Campbell Darin Zahrte Marti Jett Chanaka Mendis	Gene Expression Patterns and Pathway Functions of SEB Induced human PBMC	UW-Platteville	Dr. Chanaka Mendis	Natural Sciences
111	Miranda Froehlich	Development of a Tree-Ring Chronology from Eastern Red Cedar	UW-La Crosse	Dean Wilder	Natural Sciences
113	Bethany Costello	Spatial Analysis of Mineral Grain Size Distribution at a Northern Wisconsin Shear Zone	UW-Whitewater	Dr. Juk Bhattacharyya	Natural Sciences
115	Jason Busse	Virtual Slot Machine: Developing Flexible Software Architectures with Design Patterns	UW-Oshkosh	Wing Huen	Applied Sciences & Health
119	Joanne Ehrmantraut Jennifer Wilson	Attitudes towards the inclusion of children with special needs in public elementary schools.	UW-Stout	Susan Wolfgram	Social Sciences
123	Cal Schmidt	Application of Wavelet Transformations to Images of Galaxies	UW-Whitewater	Robert Benjamin	Natural Sciences
129	Kristi Strey	Identifying specific interactions between N protein monomers in Tomato Spotted Wilt Virus	UW-Whitewater	Mark Kainz	Natural Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session I – 9:30-10:25 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
133	Michelle Curci Wendy Weimerskirch Hannah Jones Renda Sweeney Pamela Forman Deb Pattee	Researchers Giving Piggyback Rides: Ethnography as a Tool for Understanding Female Adolescent Development	UW-Eau Claire	Pamela Forman	Social Sciences
137	Ashley Thompson Travis Tubre	Perceptions of the Attractiveness and Dating Potential of Single Mothers and Fathers	UW-River Falls	Travis Tubre	Social Sciences
141	Aaron Trow Jessica Solis	Initial Characterization of Where and When a Functional Circadian System is Present in the Eye During Early Development in Xenopus Laevis	UW-Whitewater	Dr. Kristen L. Curran	Natural Sciences
143	Ian Hansen	A Quantitative Analysis of Health Care Coverage and Concerns in Western Wisconsin	UW-Eau Claire	Eric Jamelske	Social Sciences
145	Nicole Sarver Aaron Trow	Initial Characterization of When a Functional Circadian System is Present in the Eye of Xenopus Laevis	UW-Whitewater	Kristen Curran	Natural Sciences
147	Trevor Lippman Justin Patchin	Cyberbullying and School Climate: The on Campus Effects of Online Behaviors	UW-Eau Claire	Justin Patchin	Social Sciences
149	Amy Stelzer	The factors that govern male mate guarding behavior and success in mallards (<i>Anas platyrhynchos</i>)	UW-Whitewater	Dr. Ellen Davis	Natural Sciences
151	Staci Hofferber Leigh-Anna Fournelle	Family Support: What It Means To Male Inmates	UW-Stout	Susan M. Wolfgram Ph.D.	Social Sciences
153	Amanda Hartwig Jeremy Whiting	Creating the Visual Elements and Implementing the Designs	UW-Whitewater	Amanda Helm	Professional & Business
163	Karly Guldan	Archaeological Investigations of the Meyer Wooded Parcel of the Vieau Fur Trade Post Site of Franksville, Wisconsin.	UW-Parkside	Robert F. Sasso, Ph.D.	Social Sciences
165	Josh Manning	Effects of Beaver (<i>Castor Canadensis</i>) Dams on Temperature and Dissolved Oxygen in Southwest Wisconsin Streams	UW-Richland	Scott E. Walter	Natural Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session I – 9:30-10:25 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
167	Kaitlin Hartshorn	Tests for Associative Learning in the Flatworm <i>Dugesia tigrina</i>	UW-Barron County	Alexander Bezzerides	Natural Sciences
169	Cayla Lillge Tricia Mason Chanaka Mendis	Alterations to a set of Apoptotic related Genes specific to SEB in a Human PBMC Module	UW-Platteville	Dr. Chanaka Mendis	Natural Sciences
173	Teresa O'Keefe Alyssa Anderson	The Groundwater Quality in the State of Wisconsin.	UW-Superior	William Bajjali	Natural Sciences
175	Jared Koerten Corey Hilber Isaac Borofka-Webb Matthew Rick Christina Hansen Jodi Neuman Jenna Pultz Julie Baewer	Western Wisconsin Local Foods Project: Characterizing the Landscape of Local Foods	UW-Eau Claire	Eric Jamelske	Social Sciences
177	Sarah Tomczyk Sara Zeinert Diana O'Reilly Jessica Harr	The Influence of a Pseudo-credible Source on Persuasion	UW-Stout	Sarah Wood	Social Sciences
179	Lee Meyer	Prevention may be the Key; Effectiveness of preventing shoulder impingement in competitive collegiate baseball players	UW-Stevens Point	Holly Schmies	Applied Sciences & Health
181	Kyle Vircks Ashley Halligan Amanda Selle Courtney McCrary Jenee Jacobs Larissa Larsen Andrew Vyhnanek Joseph Wermeling	Fast Gas Chromatography Capabilities in Arson Debris Analysis	UW-Platteville	Dr. Charles Cornett	Natural Sciences
183	Abby LeCloux	Domestic Violence: Why Women Stay in Abusive Relationships.	UW-Oshkosh	Dominic Bruni	Social Sciences
185	Sara Wroblewski Kevin Anderson Sara Wroblewski Zack Litchke	A Comparison of Urchin Densities on a Caribbean Coral Reef	UW-Superior	Dr. Edward Burkett	Natural Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session I – 9:30-10:25 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
187	Anastasha Bixler Stephanie Peterson	The Activity Patterns of the Fiddler Crab <i>Uca pugilator</i>	UW-Superior	Edward W. Burkett	Natural Sciences
189	Robert Jagla Chris Coleman Sean Murphy	The Demographics of Blanding's Turtle (<i>Emydoidea blandingii</i>) at Richard Bong State Recreation Area in Southeastern Wisconsin.	UW-Parkside	Gregory Mayer, Ph.D	Natural Sciences
191	Jacqueline Smith Nadine Bensen	Distribution of Christmas Tree Worms (<i>Spirobranchus giganteus</i>) on Species of Scleractinian Coral	UW-Superior	Dr. Edward W. Burkett	Natural Sciences
195	Stephanie Daniels	Tibet may free China, if not itself	UW-River Falls	Pat Berg	Professional & Business
201	Jennifer Leptien Cassandra Vogt Satoris Youngcourt	The Role of Attractiveness and Friendliness in Online Dating	UW-River Falls	Travis	Social Sciences
203	Rachel Hinkley Abby Romenesko	Designing for Sustainability the Wright Way	UW-Stevens Point	Nisha Fernando	Applied Sciences & Health
207	Mykle Sederlund	Disease Analysis on the CCMR.	UW-Superior	Dr. Edward Burkett	Natural Sciences
209	Michael Bellecourt Bopaiah Biddanda Steven Ruberg	Source of Sedimentary Carbon in Lake Huron Sinkholes: Planktonic Production, not Benthic	UW-Stout	Dr. Stephen C. Nold	Applied Sciences & Health
211	Matt Brewer Nathan Butler	Risk Factors for Cryptosporidium and Giardia parasites in Wisconsin Dairy Calves	UW-Eau Claire	Dr. Darwin Wittrock	Natural Sciences
213	Brittany Kerschner	Using Functional Genomics to Elucidate the Defense Response of <i>Arabidopsis Thaliana</i> Infected With <i>Pseudomonas Syringae</i>	UW-River Falls	Dr. Kim Mogen	Natural Sciences
215	Sean Murphy	Substrate Color Preference With Respect to Predation in the Praying Mantis <i>Tenodera aridifolia sinensis</i>	UW-Parkside	Catherine Mossman, Ph. D	Natural Sciences
217	Gerald Clark	Minnesota Public Radio: Continuing a tradition of innovation	UW-River Falls	Patricia Berg	Professional & Business
219	Brandon Martell	Technological Efficiency: Book vs. Computer and the Human Tendency	UW-Superior	Shevaun Stocker	Social Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session I – 9:30-10:25 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
221	Tobias Barske Joanne Goskovicz Jessica Flachmeyer Aliece Guarino Jonathan Moravec Anya Muggli Vanessa Brown	Current Events in the German Media	UW-Stevens Point	Tobias Barske	Humanities
223	Archana Shrestha	Tissue culture and characterization of genetic diversity in a threatened plant species, <i>Opuntia fragilis</i>	UW-Stout	Kitrina M. Carlson, Ph.D	Natural Sciences
225	Theresa Zenz Carrie Mueller Dr. Kristina Hiney Dr. Gary Onan Dr. Peter Rayne	Correlation of exertion in the western performance horse to metabolic parameters	UW-River Falls	Dr. Kristina Hiney	Applied Sciences & Health
227	Ashleigh Waltz Jim Bruhn Alex Stark Kimberly Blivens Dan Hoesly	The Phylogenetic Relationships of the Brittle Star	UW-Platteville	Dr. Wayne Weber	Natural Sciences
231	Thomas Shoaf	Investigation of Residual Stresses in Injection Molded Vs Thermoformed Parts	UW-Platteville	Majid Tabrizi	Applied Sciences & Health
235	Mackenzie Sullivan Jadell Turnquist Maicie Schick Cate Prichard	Cryptofauna of Small and Large Coral Heads in Caye Caulker, Belize	UW-Superior	Dr. Edward Burkett	Natural Sciences
245	Amber Dunse Brian Plante Laura Harsdorf Abigail Cook Stefany Getty	Teaching English at Shih Hsin University Taipei, Taiwan	UW-River Falls	Dr. Robyne Tiedeman	Humanities
253	Michael Aleksandrowicz Dr. Wendy Huddleston Alina Yufa	Are visual attention and motor attention separable mechanisms?	UW-Milwaukee	Dr. Wendy Huddleston	Applied Sciences & Health
255	John Schafer	Optimizing In-situ Water Quality Monitoring Equipment on Lake Michigan	UW-Milwaukee	Dr. Harvey Bootsma	Applied Sciences & Health



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session II – 3:00-3:55 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
261	Robert Bialozynski Scott Ballantyne	Cytoplasmic polyadenylation of Hermes mRNA	UW-River Falls	Scott Ballantyne	Natural Sciences
271	Ben Bosman	The Impact of Invasive Plants Upon the Kinnickinic River Valley and Within Sustainable Community Development	UW-River Falls	Dr. Kelly Cain	Natural Sciences
273	Ryan Reichwaldt	The Relationship Between Physical Fitness and Motivation for Activity in College Aged Students.	UW-La Crosse	Rebecca A. Battista	Applied Sciences & Health
275	Justin Sokol	Ongoing struggles versus resolved issues; Are either appropriate for a therapist to reveal?	UW-La Crosse	Carmen Wilson VanVoorhis	Social Sciences
277	Amber Goldbeck	Nutrient Analysis in an Urban Marsh	UW-La Crosse	Eric Strauss	Natural Sciences
281	Valentine Sackmann	Comparing the Flexibility of Helical Peptides of Varying Lengths using H NMR Spectroscopy	UW-La Crosse	Adrienne Loh	Natural Sciences
283	Maggie Lach	South African Female Printmakers	UW-La Crosse	Joel Elgin	Gallery Exhibit
285	Amy Buvid	High Copy Suppression of cdc7-7 allele by DBF4	UW-La Crosse	Anne Galbraith	Natural Sciences
289	Travis Cordie Chris Wenig	Engineered Artificial Chicken Cardiac Tissues: Protein Profiles	UW-River Falls	Timothy Lyden, Ph.D.	Natural Sciences
291	Chris Wenig Travis Cordie	Localization, micro-dissection and 3D culture of the substantia nigra from early chicken embryo.	UW-River Falls	Timothy Lyden, Ph.D.	Natural Sciences
293	Danae Helton	Structural analysis of “artificial tissues” produced in 3D cultures of the human placental cell line, BeWo.	UW-River Falls	Timothy Lyden, Ph.D.	Natural Sciences
299	Janay Alston	Non-profit Services and the Multicultural Community	UW-Whitewater	Michael Wallace	Social Sciences
301	Scott Kersten Bryan Carlson	Trialkylamine Complexes of Transition Metal Halides	UW-Fox Valley	Martin Rudd	Natural Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

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No.	Presenters	Title	Campus	Adviser	Group
92	Tristan Long	Effects of Elevated Calcium Concentrations on the Gravitropic Response in a Calcium Sensitive Mutant of Arabidopsis Thaliana.	UW-Whitewater	Dr. Catherine W, Chan	Natural Sciences
94	Bryan Asby Roxanna Godiwalla	Effects of Internal Ion Concentrations on Growth of Arabidopsis	UW-Whitewater	Catherine Chan	Natural Sciences
98	Rebecca Cote	In Vitro Modeling of Early Embryonic Hematopoiesis	UW-River Falls	Dr. Tim Lyden	Natural Sciences
100	Laura Kolbach	Investigating Functional Evolution of Ovule Regulatory Genes in Tomato	UW-Whitewater	Dr. Robert Kuzoff	Natural Sciences
104	Samantha Wasem	Phytoremediation of Urban Soils	UW-Parkside	Christine Evans	Natural Sciences
106	Ali Fromader Misty Malott	What is the inmate perspective regarding access to resources post-incarceration that may reduce recidivism?	UW-Stout	Dr. Susan Wolfgram	Social Sciences
108	Steve Sokolik	Characterization of Candidate Host Plant Genes Required for Tomato Spotted Wilt Virus Replication.	UW-Whitewater	Dr. Mark Kainz	Natural Sciences
110	James Meyers Amy Poplawski	Application of Geologic Methods to 21st Century Artifacts	UW-Parkside	Christene Evans	Natural Sciences
112	Andres Padron Kim W. Pierson Chris D. Hawes Jack T. Kollwitz	Multi-Parameter Investigation of Ar+ Ion Bombardment of Ag/Cu Alloys	UW-Eau Claire	Dr. Kim Pierson	Natural Sciences
114	Miki Nomura Sarah Albers Stefanie Irwin Eric Mann Lauren Rock	Racial Stereotypes and Violent Video Game Performance: Saints Row as a Measure of Implicit Attitudes	UW-Stout	Richard Tafalla	Social Sciences
116	Lindsay Olson Phil Larson Harry Jol, PhD Joe Hupy, PhD Douglas Faulkner, PhD Garry Running IV, PhD	Late Quaternary Eolian Dunes and Fluvial Terraces of the Lower Chippewa River Valley	UW-Eau Claire	Dr. Garry L. Running IV	Natural Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session II – 3:00-3:55 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
118	Amy Robak	Efforts to Analyze Nutrient Management without the Use of Commercial Fertilizer	UW-River Falls	Dan Martens	Natural Sciences
120	Mandy Liesch	Visual Soil Structure, Soil Strength, and Aggregation in Organic Matter Plots	UW-River Falls	Dr. Bill Anderson	Natural Sciences
122	Eric Helwig	Effects of Slope and Aspect on Brushfire Severity	UW-Whitewater	Dr. Thomas Jeffery	Natural Sciences
124	Rachel Alden-Anderson Travis Tubre Melissa Sylvester Bryan D. Edwards	Bandwidth Issues in the Prediction of Aggressive Driving	UW-River Falls	Travis Tubre	Social Sciences
128	Joseph Pangborn Heidi Zajack Bopaiah Biddanda Stephen Nold	Unique Lake Huron Sinkhole Habitats Contain Sulfate Reducing Proteobacteria and Cyanobacteria Related to Antarctic clones	UW-Stout	Stephen Nold	Natural Sciences
130	Gregory Remsza	Alternative Energy in Education	UW-Whitewater	Dr Steven C. Sahyun	Natural Sciences
132	Nicole James	Learning Disabilities in the String Classroom	UW-Whitewater	Dr. Benjamin Whitcomb	Social Sciences
134	Elizabeth Schmidt Carly Burda	Directed Instruction Vs. Play Based Preschool Curriculum	UW-Whitewater	Simone DeVore	Applied Sciences & Health
140	Carrie Mueller Dr. John Parrish Joan Susko-Parrish Elsa Ludwig	Day Length Does Not Affect Live Sperm Nuclear Shape in the Stallion	UW-River Falls	Dr. Gary Onan	Applied Sciences & Health
144	Serenity Mutchler	PCR Amplification Parameters for Two Species of Mice	UW-Whitewater	George Clokey	Natural Sciences
146	Jared Kunick	Kinetics of the Transesterification of Triglycerides Using the Heterogeneous Catalyst DOWEX	UW-Whitewater	Dr. Hassimi Traore	Natural Sciences
154	Rachel Rademan Trisha Gudex	When Bigger isn't Better: the relationship between q-angle and knee injury.	UW-Stevens Point	Holly Schmie	Applied Sciences & Health
156	Heather Perrault	Trends in Online Social Networking: Youth Use of MySpace over Time	UW-Eau Claire	Justin W. Patchin, Ph.D.	Social Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session II – 3:00-3:55 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
160	Megan Wilson	The Analysis of Artifacts Relating to Adornment Found at the Vieau Fur Trading Site in Franksville, Wisconsin	UW-Parkside	Robert F. Sasso Ph.D.	Social Sciences
162	Jason Rice Margot Davies Jacob Demes	Habitat Selection by Ring-necked Pheasants (<i>Phasianus colchicus</i>) in Southwestern Wisconsin	UW-Richland	Scott E. Walter	Natural Sciences
164	Margot Davies Jacob Demes Jason Rice	Home Range Size of Pen-reared Ring-necked Pheasants in Southwest Wisconsin	UW-Richland	Scott E. Walter	Natural Sciences
166	Jacob Demes Margot Davies Jason Rice	Survival of Pen-reared Ring-necked Pheasants (<i>Phasianus colchicus</i>) in Southwest Wisconsin	UW-Richland	Scott E. Walter	Natural Sciences
174	Robyn Gabel	The Role (or lack thereof) of Parent Input in Children's Acquisition of the Plural	UW-Green Bay	Dr. Jennifer A. Zapf	Social Sciences
178	Michael Scheets Serenity Mutchler	Testing Habitat Preferences and Resource Partitioning in Two Mice: <i>Peromyscus leucopus</i> and <i>Peromyscus maniculatus</i>	UW-Whitewater	George Clokey	Natural Sciences
180	Yashu Vashishath	Impact of a Nonnative Plant Species on Soil Microbial Diversity	UW-Parkside	Maria P. MacWilliams	Natural Sciences
182	Stephen Jansen	Proposals to Enhance Solvency of Social Security	UW-Whitewater	Dr. Susan Johnson	Social Sciences
184	Victor Piazza	Biochemical purification and characterization of the major polyadenylate binding protein present in <i>Xenopus laevis</i> embryos	UW-River Falls	Scott Ballantyne	Natural Sciences
186	Brianne Looze Marian Ashpurdy Meaghan Vaughan	A Comparison of Algal Communities Surrounding the Caye Caulker Channel	UW-Superior	Dr. Edward W. Burkett	Natural Sciences
192	Matthew Peterson Adrian J. Koski	Estimation of basement topography in Fond Du Lac County using 3-D modeling of gravity and aeromagnetic data.	UW-Parkside	John D. Skalbeck	Natural Sciences
196	Kue Lor	Museum Studies in the UK	UW-River Falls	Brad Gee	Humanities
198	Leah Bodrog	Effects of Glyphosphate on <i>Lumbriculus variegatus</i>	UW-River Falls	Dr. Elaine Hardwick	Natural Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session II – 3:00-3:55 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
200	Elizabeth Fox Paulo Galvo	Role Reversal: Narrated Illustrations	UW-Milwaukee	Nigel Rothfels	Gallery Exhibit
204	Kristin McElligott Joe Mascaro	Phenological difference between exotic and native shrub species in a Wisconsin forest.	UW-Milwaukee	Nigel Rothfels & Liz Taylor UROP program	Natural Sciences
206	Devin Underwood	Plasmonic Nano-Lithography Using Absorbance Modulation	UW-River Falls	Rajesh Menon	Natural Sciences
208	Anna Markgren	Observations in the dry reciprocating sliding of Commercially Pure titanium on WC-Co	UW-Platteville	Dr. Hisham A Abdel-aal	Natural Sciences
214	Eric Doro Andrew Melby Tyler Bechel	Investigation into the Dry Sliding Wear of Low-Carbon Steel Pairs	UW-Platteville	Dr. Hisham A. Abdel-Aal	Applied Sciences & Health
216	Anna Peterson	TROUT UNLIMITED Driftless area project	UW-Stout	Charles Bomar	Applied Sciences & Health
224	Christina Luke Elbek Kurbanov Brooke Koenig	Medicinal Plant Use in the Wisconsin Hmong Population	UW-Stout	Dr. Kitrina Carlson	Natural Sciences
226	Amy Wichlacz Beth Ellison	Historical Channel Change of the Lower Chippewa River in West-Central Wisconsin	UW-Eau Claire	Doug Faulkner	Natural Sciences
228	Christopher Johnson	Antibiotic Resistant E. coli from the Dairy Complex	UW-River Falls	Elaine Hardwick	Natural Sciences
230	Dan Hoesly Paula Olig Jerrod Parker	The Genetic Diversity of Brown Trout Populations in Southwest Wisconsin	UW-Platteville	Dr. Wayne Weber	Natural Sciences
236	Justin Townsend	A Case for Using Locally Grown Food on Campus	UW-River Falls	Kelly D. Cain Ph.d	Applied Sciences & Health
244	Bradley Kerschner	Expression of receptors for human immunodeficiency virus on leukemia cells exhibiting dendritic cell phenotype	UW-River Falls	Karen Klyczek	Natural Sciences
250	Armando Carrillo	Impact of Alliaria petiolata on the Soil Fungal Community	UW-Parkside	Maria MacWilliams	Natural Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session II – 3:00-3:55 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
256	Adrian Koski	Estimation of basement topography in southeastern Wisconsin using 3-D modeling of gravity and aeromagnetic data.	UW-Parkside	John Skalbeck	Natural Sciences
258	Vang Pao Yang	The Application of Lubricants on Thermoforming Molds for Enhanced Product Yield	UW-Platteville	Majid Tabrizi	Applied Sciences & Health
260	Mary Zoubek	A Transforming Political Philosophy Within the Democratic-Republican Party: Jefferson to Jackson	UW-River Falls	Kurt Leichtle	Social Sciences
262	Lue Lor	The Investigation of the Levels of Crystalline and Ease of Thermoforming Crystallinity Materials	UW-Platteville	Dr. Majid Tabrizi	Applied Sciences & Health
264	Martha O'Brien	Concentration Dependence of the Freezing Point for Strong Electrolytes in Water	UW-River Falls	Kevin McLaughlin	Natural Sciences
266	Patrick Garsow	What are We Throwing Away? A Study for Placement of Outdoor Campus Recycling Receptacles	UW-River Falls	Kelly Cain	Applied Sciences & Health
268	Chia Neng Kong	Thermoforming of Low Viscosity Polymers	UW-Platteville	Dr. Majid Tabrizi	Applied Sciences & Health
270	Amber Galarowicz	Effects on EKGs and respiration during drug and alcohol withdrawal	UW-Milwaukee	John Dellinger	Applied Sciences & Health
272	Tiffany Gille Rachel Mittag	Smart and Sexy? Major and Clothing's Influence on Perceptions of Intelligence	UW-La Crosse	Carol Oyster	Social Sciences
274	Katherine Schaaf	Empathy: Victim Impact Panels and DWI Offenders	UW-La Crosse	Betsy Morgan	Social Sciences
278	Elizabeth Kaufman	Effects of Montessori Painting on an Older Adult with Dementia	UW-La Crosse	Patricia Ardovino	Applied Sciences & Health
286	Kristin Liberatore	Creating a Sustainable and Inclusive Campus by Adopting New Contractor Guidelines for Food Sustainability at UWRF	UW-River Falls	Kelly Cain	Applied Sciences & Health
288	Jeremy Tempesta	GIS Analysis of Artifact Distributions at the Vieau Fur Trade	UW-Parkside	Robert Sasso	Social Sciences



9th Annual UW System Symposium

Quick Guide to posters and gallery exhibits

Session II – 3:00-3:55 – Riverview Ballroom

No.	Presenters	Title	Campus	Adviser	Group
290	David Markle Karl Peterson, Ph.D.	Effects of plant growth regulators on essential oil production in <i>Mentha spicata</i> L. shoots in vitro.	UW-River Falls	Susan Wiegrefe, Ph.D.	Natural Sciences
292	Chris Wenig Travis Cordie Rebecca Cote Stephen Talsness	Culturing human embryonic stem cells in 3D using rudimentary tissue engineering scaffolds.	UW-River Falls	Timothy Lyden, Ph.D.	Natural Sciences
300	Sarah Seidl	Metal Complexes from the Ring Opening of Woollin's Reagent	UW-Fox Valley	Martin Rudd	Natural Sciences



9th Annual UW System Symposium

Quick Guide to oral and creative activity presentations

No.	Presenters	Title	Campus	Adviser	Time	Room
269	Travis Getzie	Using NMR Spectroscopy to Confirm the Relative Stereochemistry of the Key Intermediate in the Synthesis of Incarvillateine	UW-River Falls	Dr. Karl Peterson	8:30	Willow (334)
202	Eric Johnson Daniel Levings Amanda Graumann Valerie Golden Mykle Sederlund Laura Paulson	Use of Discriminant Function Analysis to Model the Benthic Community Structure of Two Coral Reef Energy Zones	UW-Superior	Dr. Edward W. Burkett	8:30	St. Croix (321)
142	Beth Lutz Kathryn Glodowski Brandon Lauersdorf	Findings from an Evaluation of the USDA Fresh Fruit and Vegetable Program After One Year	UW-Eau Claire	Eric Jamelske	8:30	Chippewa River (322)
218	Megan Wisbar	Success of Short-Term Preparation for the TOEFL by Japanese College Students	UW-River Falls	Annette Klemp	8:30	Wind River (232)
252	David Chrisinger	Nazi Germany and the Holocaust: the T4 'Euthanasia' Program and The Emergence of the Final Solution	UW-Stevens Point	Dr. Eric Yonke	8:30	Trimbelle River (231)
276	Colin Thomas	Experimental Recreation of Slag from Pirque Alto, Bolivia	UW-La Crosse	Tim McAndrews	8:45	Willow (334)
237	Mackenzie Sullivan Meaghan Vaughan	Food Preference and Feeding Rate of Three Species of Parrotfish on the Belize Barrier Reef	UW-Superior	Dr. Edward Burkett	8:45	St. Croix (321)
171	Ryan VanLanduyt	The Efficient Way of Growing America's Fuel.	UW-Superior	William Bajjali	8:45	Chippewa River (322)
222	Dennis E. Haakenson, Jr. Dr. Majid Tabrizi	Production of Educational Modules to Assist in Facilitating Plastics Technology Within A High School Curriculum	UW-Platteville	Dr. Majid Tabrizi	8:45	Wind River (232)



9th Annual UW System Symposium

Quick Guide to oral and creative activity presentations

No.	Presenters	Title	Campus	Adviser	Time	Room
254	Paul Borofka-Webb	Populists and the Grange	UW-River Falls	Dr. Kurt Leichtle	8:45	Trimbelle River (231)
295	Mark Ortell Barry Trochinski Anthony Weber Mike Clausen Dan Zirbel Lee Strauss	Impedance Analyzing Prototype for the Detection of Pre-Cancerous Tissue	UW-Milwaukee	Mohammad Habibi	9:00	Willow (334)
241	Rebecca Valaske James Lokken Heather Patnode	Understanding Pigment-Related Gene Function in Zebrafish	UW-Stout	Dr. Michael Pickart	9:00	St. Croix (321)
257	Crystal Mathisrud	Preliminary Inventory of Vascular Plants at the NPS Tewksbury Unit, Polk County, Wisconsin	UW-River Falls	John Wheeler	9:00	Chippewa River (322)
238	Carye Kringle Andrea Hanzlik	Supporting Language & Literacy Development With Classroom Story Retells	UW-River Falls	Dr. Gay Ward	9:00	Wind River (232)
265	Benjamin Ebner	The Warrior's Code, an Inquiry Into Bushido During the Sengoku and Tokugawa Eras	UW-Parkside	Dr. Jeffrey Alexander	9:00	Trimbelle River (231)
249	Brandon Foust Allan Watkins Theresa Erbs	Searchlight Websites: Exploring Literary Aesthetics in Online E-Zines	UW-Barron County	Joel Friederich	10:30	St. Croix (321)
190	Brian Barnes	The Commons	UW-Milwaukee	Brad Lichtenstein	10:30	Chippewa River (322)
117	Colleen Kroll Krista Bruso Ashley Huebner Colleen Kroll	Linking Diverse Campus Communities Through Design Actions	UW-Stevens Point	Donna Zimmerman	10:30	Willow (334)
188	Valerie Golden Amanda Graumann Eric Johnson Daniel Levings Laura Paulson Mykle Sederlund	Recovery of the Coral Reefs of Caye Caulker: Historical or Disturbance?	UW-Superior	Edward W. Burkett	10:30	Wind River (232)



9th Annual UW System Symposium

Quick Guide to oral and creative activity presentations

No.	Presenters	Title	Campus	Adviser	Time	Room
93	Lacey Reichwald	Adolescent Daughters of Teen Mothers: the Impact of Mother-Daughter Communication on a Daughter's Developing Sense-of-Self	UW-Whitewater	Dr. Richard Gregory	10:30	Trimbelle River (231)
251	Amanda Maule	Nightmarish Poetry With Roots in the Writing by Edgar Allan Poe, Charles Simic, and Dean Young	UW-Stevens Point	Dr. Pablo Peschiera	10:45	St. Croix (321)
212	Ashley Styczynski	Environmental Consciousness: What It Is, and How It Can Be Influenced	UW-River Falls	Tricia Davis, PhD	10:45	Chippewa River (322)
121	Allison Berry Donna Zimmerman	Designing Across Disciplines: Harmonious Landscapes Inside and Out	UW-Stevens Point	Donna Zimmerman	10:45	Willow (334)
220	Jessica Van Der Werff	The Relationship Between Recycling Education and Behavior Among College Freshmen and Its Effect on Campus Recycling Rates	UW-Stout	Krista James	10:45	Wind River (232)
199	Jacquelyn Harvey	How Do Love Styles Relate to Romantic Relationships Between College Students	UW-River Falls	Jennifer Willis-Rivera	10:45	Trimbelle River (231)
294	Amanda Maslowski	An Analysis of Osteology for an Old Catholic Cemetery	UW-Milwaukee	Dr. Patricia B. Richards	11:00	St. Croix (321)
267	Nick Bisley Jason Kittel Haiya Zhang Karen Pederson	Presentation of Student Cultural Conservation Internships Completed in Yunnan, China.	UW-River Falls	Dr. Lynn Jermal	11:00	Chippewa River (322)
280	Jeanne Whisler	Fair Trade Coffee in Northern Nicaragua	UW-La Crosse	John Betton	11:00	Willow (334)
282	Derek Kockler	An Anthropological Study of the Use and Importance of Herbal Medicines in Costa Rica	UW-La Crosse	Faye Ellis	11:00	Wind River (232)



9th Annual UW System Symposium

Quick Guide to oral and creative activity presentations

No.	Presenters	Title	Campus	Adviser	Time	Room
131	Katharine Redford	Women of Metal	UW-Whitewater	Teresa Faris	1:00	Kinnikinnic Theatre
125	Jennifer Dwyer	Exploring the Molecular-Genetic Basis of Ovule Evolution in Asterids	UW-Whitewater	Robert Kuzoff	1:00	St. Croix (321)
107	Avril Flaten	Museum Methodology and Feminism: An Analysis of the Chippewa Valley Museum's Paths of the People Exhibit	UW-Eau Claire	Karen O'Day	1:00	Willow (334)
90	Eric Weber Mitch Phillipson Chris DeCleene	Classification and Deformations of Two Dimensional Infinity Algebras	UW-Eau Claire	Dr. Michael Penkava	1:00	Wind River
168	Troy Fredrick	The Transition from Marketplace to Marketspace	UW-Whitewater	Carol Scovotti	1:00	Chippewa River (322)
135	Eric Sheffield Trevor Saint	Enhancing the Performance Aspect of the Electronics in Live Interactive Music	UW-Whitewater	Dr. Jeff Herriott	1:15	Kinnikinnic Theatre
240	Mackenzie Sullivan	Differences in Competitive Hierarchies Drive Patterns of Fouling Communities Diversity	UW-Superior	Dr. Edward Burkett	1:15	St. Croix (321)
138	Joanne Goskowicz	Social Inequality as a Result of the German School System	UW-Stevens Point	Tobias Barske	1:15	Willow (334)
232	Daniel Dudzik Daniel Dudzik John Lusignan Eric Van Berg	Creating and Porting a Database in MS Access from Lotus Approach	UW-Parkside	Dr. Weijun (Will) Zheng	1:15	Wind River
127	Patrick Bornbach Sean O'Brien	UW-Whitewater American Marketing Association: Textbook and Online Learning Focus Groups	UW-Whitewater	Carol Scovotti	1:15	Chippewa River (322)



9th Annual UW System Symposium

Quick Guide to oral and creative activity presentations

No.	Presenters	Title	Campus	Adviser	Time	Room
248	Michael Gutschenritter Ben Hendrickson Lauren Shimulunas Paul Kratwell Dana Grahler Carl Olson Sam Kauer Josh Wussow	Telling of Our Times	UW-Stevens Point	Dr. Pablo Peschiera	1:30	Kinnikinnic Theatre
259	Nathan Maier	Characterizing Lake Huron Sinkhole Microbial Communities Through PLFA Profiles	UW-Stout	Stephen Nold	1:30	St. Croix (321)
148	Anthony Berg	Anarchy from Alienation and Nihilism: Case Study of Theodore Kaczynski in the Context of Modern American Society	UW-Oshkosh	Doctor Marguerite Helmers	1:30	Willow (334)
279	Michael Fitzpatrick	Factorization and Block Monoids	UW-La Crosse	Karl Kattchee	1:30	Wind River
161	Aaron Dahl Megan Landgraff	Usage and Perceptions of Interactive Technologies in the Textbook Publishing Industry	UW-Whitewater	Carol Scovotti	1:30	Chippewa River (322)
158	Anthony Kuchera	Precision Multicolor Photometry of the Monoceros Star-Forming Complex	UW-Oshkosh	Dr. Nadia Kaltcheva	2:00	Chippewa River
95	Amy Nikolai Brittany Novotny Cortney Bohnen Kathryn Schleis	The Cardiovascular and Metabolic Responses to Water Aerobics Exercise in Older Adults	UW-Eau Claire	Lance Dalleck	2:00	St. Croix
109	Sam Werner Bryant A. Browne Cory W. Wallschlaeger Jeremy R. Wyss Juliane M. Bowling	Dissolved Gases as Indicators for Stream-Ground Water Interactions	UW-Stevens Point	Bryant Browne	2:00	Willow River



9th Annual UW System Symposium

Quick Guide to oral and creative activity presentations

No.	Presenters	Title	Campus	Adviser	Time	Room
89	Eric Reich	Socrates as Forewarner, an Indepth Commentary on the Opening Lines of Plato's Republic	UW-Oshkosh	Roberta Maguire	2:00	Wind River
242	Jeff Grinager	Caddisfly Larvae Visual System: Response to Light	UW-Stout	Dr. Jo Hopp	2:15	Chippewa River
96	Erica Borresen Jeanna Wallenta Kyle Zahler Eugene Boyd	A Moderate-Intensity Exercise Program, Fulfilling the Net Energy Expenditure Recommendation, Improves Health Outcomes in Premenopausal Women	UW-Eau Claire	Lance Dalleck	2:15	St. Croix
170	Jason Bramstadt Jared Leino	Water Quality Monitoring and Evaluation of Newton Creek	UW-Superior	William Bajjali	2:15	Willow River
194	Andrew Engel	Foreign Resource Inflows and GDP Growth: A Study of Latinerica 1980-2004	UW-River Falls	Wes Chapin	2:15	Wind River
126	Chris Roginski Eriko Vang Richard Jazdzewski Marilyn Kile	An Analysis of the Barriers to Student Usage of the University Health Services	UW-Whitewater	Richard Jazdzewski	2:30	St. Croix
234	James Lokken	Characterization of Ethanol Toxicity in Zebrafish Through the Use of Functional Genomics	UW-Stout	Dr. Michael Pickart	2:30	Willow River
284	Hollie Nyseth	"I Am Not Lazy:" Panhandling in Urban Mexico	UW-La Crosse	Timothy Gongaware	2:30	Wind River



9th Annual UW System Symposium

Abstracts

124 **Bandwidth Issues in the Prediction of Aggressive Driving**

Rachel Alden-Anderson

Travis Tubré, Melissa Sylvester, Bryan D. Edwards

UW-River Falls

Sponsor/advisor: Travis Tubré

Additional sponsor/adviser (if any): Additional adviser not specified

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Due to the impact of aggressive driving on crash involvement and the enormous associated costs, research examining this phenomenon has valuable implications for increasing driving safety. Recent research indicates that the five-factor model personality traits of conscientiousness, agreeableness, and neuroticism predict risky driving. However, the strongest attitude-behavior relationships are obtained when constructs are matched by level of specificity. Accordingly, we examined relationships between facets of the FFM traits and aggressive driving. Participants completed survey measures of FFM traits and aggressive driving. Agreeableness, conscientiousness, and neuroticism significantly predicted aggressive driving. However, more narrow facets of these traits predicted aggressive driving just as well, with higher conceptual fidelity. Specifically, cooperation, caution, and anger were equally valid predictors even though the facet scales consisted of fewer items. Our findings indicate that matching constructs by level of specificity is useful in predicting aggressive driving. Our findings may be useful for interventions designed to reduce this costly phenomenon.

253 **Are visual attention and motor attention separable mechanisms?**

Michael Aleksandrowicz

Dr. Wendy Huddleston, Alina Yufa

UW-Milwaukee

Sponsor/advisor: Dr. Wendy Huddleston

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Visual attention is a mechanism that assists in processing relevant information. As the information load is increased, one will eventually reach a maximum capacity of information that can be processed. Previous work has demonstrated capacity limits during visual attention tasks. The purpose of this study was to test the hypothesis that visual attention and motor attention are separate mechanisms by challenging the capacity limits of visual attention and measuring the effect on motor attention. Participants were positioned in front of a visual display with their gaze centered on a stream of letters in a Rapid Serial Visual Presentation (RSVP) and instructed to saccade as quickly and as accurately as possible to one of four targets based on cue presentation. The targets were fixed and present at all times, while cues and distractors were shown at increasingly faster rates to challenge



9th Annual UW System Symposium

Abstracts

visual attention. The initial saccade and first fixation were used for analysis. Movement attention errors were quantified by measuring errors in initial saccade trajectory, changes in saccade accuracy and changes in saccade variability. Data from six healthy subjects indicate most were challenged with the visuospatial task, but motor performance did not change. For example, the number of times the subjects made saccadic corrections was not significantly different across levels of visual attention task difficulty. The results of this study indicate that visual attention systems can be challenged without significant impact on motor attention, suggesting separable attention mechanisms.

299 **Non-profit Services and the Multicultural Community**

Janay Alston

UW-Whitewater

Sponsor/advisor: Michael Wallace

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Many non-profit firms provide services in urban and ethnic minority communities. Most of the services that are providing care have minimal cost, which could enable community residents to easily access them. This research study focuses on the impact of the local branch of a national non-profit agency on African American males in Milwaukee, Wisconsin. The males that will be observed and interviewed will range from 15-18 years of age. Much of the research on males in urban areas centers on the negative impact of the choices of a few individuals. This study attempts to analyze systems that allow individuals to escape hopelessness and despair while pursuing social and professional dreams and aspirations. A result of the study will be the documentation of services and programs that could be models for engaging African American males.

94 **EFFECTS OF INTERNAL ION CONCENTRATIONS ON GROWTH OF ARABIDOPSIS**

Bryan Asby

Roxanna Godiwalla

UW-Whitewater

Sponsor/advisor: Catherine Chan

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Calcium is vital to the maturation of plant development, and is responsible in growth responses to various environmental stimuli. However, little is known about how environmental calcium levels affect calcium uptake. Therefore, little is known about its internal concentration, and the specific calcium permeation pathways that are responsible for this process. My research focuses on studying the



9th Annual UW System Symposium

Abstracts

effect of external calcium on the growth of wild-type and a calcium-sensitive mutant *Arabidopsis*. This mutant, *cngc2*, grows as a dwarf and has reduced seed yield when the calcium concentration in the media exceeds 10 mM (Chan et al. 2003 *Plant Physiology* 132:728-731). I am interested in correlating the macroscopic growth phenotypes of wild-type and mutant plants with their internal ion concentrations. The Atomic Absorption Spectrometer is used for quantifying the amount of various ions (e.g. calcium, potassium, magnesium, and iron) in plant tissues. The result of my experiments may help establish the ion profile of healthy and unhealthy plants grown under different external calcium concentrations and explain the growth phenotype of the *cngc2* mutant.

190 **The Commons**

Brian Barnes

UW-Milwaukee

Sponsor/advisor: Brad Lichtenstein

Additional sponsor/adviser (if any):

Group 6: Environmental & Cultural Communities

Chippewa River (322), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

The air, water and access to information are all things that are owned by all people collectively. These are called “Commons” and have been progressively privatized by corporations and governments. These entities are then withheld from the public except for those willing to “pay the toll.” DocUWM and 371 Productions is producing an interactive documentary based experience with fictional and historical figures in narrative roles as well as music and animation to inform and advocate action by viewers in the defense of the commons. With a release on Public Television and through a viral presence on the internet DocUWM and 371 Productions hopes to heighten awareness of the implications involved with the privatization of intellectual property, clean air and drinking water.

221 **Current Events in the German Media**

Tobias Barske

Joanne Goskovicz, Jessica Flachmeyer, Aliece Guarino, Jonathan Moravec, Anya Muggli, Vanessa Brown,

UW-Stevens Point

Sponsor/advisor: Tobias Barske

Additional sponsor/adviser (if any):

Humanities

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Most commonly, the study of “culture” in university classrooms consists of reading and analyzing canonical pieces of literature. As an alternative, this set of 4 posters utilizes a critical analysis of more



9th Annual UW System Symposium

Abstracts

mainstream sources to help us understand Germans on a level relevant to everyday life in Germany. Based on a semester long survey of current events covered in various German newspapers and online news casts, the individual posters each offer a discussion of a different aspect of German everyday life. The topics of the individual posters span German food culture.

209 **Source of Sedimentary Carbon in Lake Huron Sinkholes: Planktonic Production, not Benthic**

Michael Bellecourt

Bopaiah Biddanda, Steven Ruberg

UW-Stout

Sponsor/advisor: Dr. Stephen C. Nold

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Recently discovered submerged sinkhole habitats in Lake Huron differ from surrounding lake water due to the intrusion of high conductivity, high SO₄²⁻, and low O₂-containing groundwater that covers the lake floor. Here, cyanobacteria form microbial mats that overlay sediments containing massive deposits of poorly degraded carbon. Two competing hypotheses explain carbon deposition in these habitats: (1) cyanobacterial primary producers in the overlying mats fix the carbon found in the sediments, or (2) phytoplankton in the water column fix the carbon that is later deposited onto the lake floor. To better understand carbon flow through this ecosystem, EA-IRMS was used to measure stable isotopes of carbon and nitrogen in the dissolved, suspended, and sedimentary carbon pools in two sinkholes: the shallow El Cajon site (<1 m), fed exclusively by venting groundwater, and the deeper (22 m) Middle Island site, which is potentially influenced by the overlying lake water. Dissolved inorganic carbon (DIC) values indicate two distinct sources of CO₂ available to primary producers in these habitats' groundwater CO₂ ($\delta^{13}\text{C} = -5.4 \pm 1.5$, n=15), which differs by 5.5 from Lake Huron water CO₂ ($\delta^{13}\text{C} = 0.1 \pm 1.1$, n=15). Although the $\delta^{15}\text{N}$ values of primary producers displayed wide variation, $\delta^{13}\text{C}$ signals in organic carbon pools reflect the two DIC sources; photosynthetic mats growing solely in groundwater DIC were generally more ¹³C-depleted than the ¹³C-enriched phytoplankton from the water column. Sediments ($\delta^{13}\text{C} = -23.1 \pm 1.0$, n=15) had $\delta^{13}\text{C}$ values more similar to carbon captured in sediment traps ($\delta^{13}\text{C} = -22.8 \pm 0.1$, n=3) than the carbon fixed by cyanobacterial mats ($\delta^{13}\text{C} = -30.2 \pm 1.5$, n=8). These data suggest that the majority of carbon in the sinkhole sediments comes from allochthonous sources rather than autochthonous production by the overlying photosynthetic mats. Ongoing studies measuring the extent of carbon transfer to higher trophic levels at the 22 m Middle Island site, which is potentially influenced by the overlying lake water. Dissolved inorganic carbon (DIC) values indicate two distinct sources of CO₂ available to primary producers in these habitats' groundwater CO₂ ($\delta^{13}\text{C} = -5.4 \pm 1.5$, n=15), which differs by 5.5 from Lake Huron water CO₂ ($\delta^{13}\text{C} = 0.1 \pm 1.1$, n=15). Although the $\delta^{15}\text{N}$ values of primary producers displayed wide variation, $\delta^{13}\text{C}$ signals in organic carbon pools reflect the two DIC sources; photosynthetic mats growing solely in groundwater



9th Annual UW System Symposium

Abstracts

DIC were generally more ^{13}C -depleted than the ^{13}C -enriched phytoplankton from the water column. Sediments ($\delta^{13}\text{C} = -23.1 \pm 1.0$, $n=15$) had $\delta^{13}\text{C}$ values more similar to carbon captured in sediment traps ($\delta^{13}\text{C} = -22.8 \pm 0.1$, $n=3$) than the carbon fixed by cyanobacterial mats ($\delta^{13}\text{C} = -30.2 \pm 1.5$, $n=8$). These data suggest that the majority of carbon in the sinkhole sediments comes from allochthonous sources rather than autochthonous production by the overlying photosynthetic mats. Ongoing studies measuring the extent of carbon transfer to higher trophic levels will help to further understand the roles sinkholes play in the larger lake ecosystem.

148 Anarchy from alienation and nihilism: Case study of Theodore Kaczynski in the context of modern American society

Anthony Berg

UW-Oshkosh

Sponsor/advisor: Doctor Marguerite Helmers

Additional sponsor/adviser (if any):

Group 13: History, English, & Foreign Languages

Willow (334), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

The threat of violence from foreign terrorist organizations has resulted in the creation of foreign aid programs to decrease poverty levels in communities socioeconomically alienated from benefits enjoyed by the ruling party. These communities provide a place where terrorists find refuge and a sympathetic ear. The growing socioeconomic alienation of the American impoverished inner city communities may be exploited by such ideological entrepreneurs looking for a sympathetic party to their violent actions. A case study of Theodore Kaczynski (a.k.a. the "Unabomber") yields a profile for socioeconomically alienated American intellectuals who may turn to violent contention with the state to resolve said alienation. The socioeconomic alienation of the American inner city has already created a community where violence is an accepted fact of life, exacerbated by continuing deindustrialization and poor social programs. Understanding that intellectuals like Theodore Kaczynski may become violent towards the state, and that impoverished American communities may support such violence through socioeconomic alienation, a concentrated effort to decrease the poverty levels in our own country may prevent the advent of future terrorist organization in America.



9th Annual UW System Symposium

Abstracts

121 **Designing Across Disciplines: Harmonious Landscapes Inside and Out**

Allison Berry

Donna Zimmerman

UW-Stevens Point

Sponsor/advisor: Donna Zimmerman

Additional sponsor/adviser (if any):

Group 7: Architecture & Social Movements

Willow (334), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

Interior designers work as part of a design team that includes architects and landscape architects to design spaces that work effectively, are aesthetically pleasing and in harmony with coexisting spaces. Designers strive to seamlessly interconnect the building, its interior space and the surrounding landscape to place the building into a unified context. The goal of this design project is for a student of interior design to explore how interior and exterior spaces can be integrated by conducting an interdisciplinary study of landscape and garden design history/style and then demonstrate the findings through a residential project application. This design study will include extensive research and conceptual development based on researching cross-cultural garden design, garden styles and their elements and case study analysis of residential landscape projects. The final project will include several phases of the design process including programming, conceptual development, design development, and final presentation materials. This study is in progress; therefore findings are not yet known. The expected results will demonstrate how to design exterior spaces as an extension of the interior for an overall harmonious "landscape of home." The final outcome of this project will emphasize the interdisciplinary impact of design professions in the field.

261 **Cytoplasmic polyadenylation of Hermes mRNA**

Robert Bialozynski

Scott Ballantyne

UW-River Falls

Sponsor/advisor: Scott Ballantyne

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Hermes is a RNA binding protein first identified in the African clawed frog, *Xenopus laevis*. Hermes protein is required for normal heart development and female meiosis. We have identified a novel Hermes cDNA, related to but distinct from the sequence first described. Our Hermes cDNA contains sequence that corresponds to the very 3' end of the mRNA. The Hermes 3' untranslated region (3' UTR) contains a non-consensus polyadenylation signal (AUUAAA) just upstream of the Poly(A) tail. We note that the Hermes 3' UTR also contains two copies of the sequence UUUUUGU which is strikingly similar to UUUUUAU, the consensus cytoplasmic polyadenylation element (CPE). We



9th Annual UW System Symposium

Abstracts

propose that the variant CPE like sequences will cause Hermes mRNA to undergo cytoplasmic polyadenylation during frog egg formation. We are testing our hypothesis using a modified reverse transcription and polymerase chain reaction method (RT-PCR) to compare the poly(A) tail length of Hermes mRNA in frog oocytes and eggs.

267 Presentation of Student Cultural Conservation Internships completed in Yunnan, China.

Nick Bisley

Jason Kittel, Haiya Zhang, Karen Pederson

UW-River Falls

Sponsor/advisor: Dr. Lynn Jermal

Additional sponsor/adviser (if any):

Group 6: Environmental & Cultural Communities

Chippewa River (322), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

During the summer of 2007, a group of 5 students from the University of Wisconsin - River Falls went to the Yunnan Province in the People's Republic of China to engage in cultural conservation projects aimed at preserving minority heritage. The students, under the advisement of Dr. Lynn Jermal, spent several weeks documenting, interviewing, and recording two traditional Tibetan folk arts. The first project involved a style of black-ware pottery that has been the product of the region for over 2000 years. The second project involved documenting a local musician, who is dedicated to the preservation of traditional Tibetan music. The group decided that film was the most effective way to archive, display and distribute the research we collected. "Fire and Earth" is the title of the pottery documentary that is complete and ready for viewing. The second film has yet to be completed, but a portion may be complete by the presentation date. These films capture the unique culture of this remote southwest region in China, as well as successfully document traditional Tibetan art forms.

187 The Activity Patterns of the Fiddler Crab *Uca pugilator*

Anastasha Bixler

Stephanie Peterson

UW-Superior

Sponsor/advisor: Edward W. Burkett

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM



9th Annual UW System Symposium

Abstracts

Fiddler crabs (*Uca pugilator*) can be found on beaches and mudflats along most subtropical coastlines. It has been suggested that these crabs use biological clocks to synchronize their activity patterns with tidal patterns in order to enhance foraging. In general, activity levels are high during low tides, and activity levels are low during high tides. The purpose of this study was to determine whether *U. pugilator* uses lunar cycles and/or photoperiod to entrain their biological clocks with local tides. Actographs were constructed in order to measure the crabs' activity levels during constant light and a 12L: 12D photoperiod. Each day, six crabs were placed in actographs (six total) where activity was monitored by a computer for 24 hours. Seven days of data were collected for each light regime. Data were then graphed to compare synchrony of activity with predicted activities at low tide, high tide, sunrise and sunset. Results indicated that *U. pugilator* activity patterns were significantly different from predicted activities based on tidal patterns and photoperiod. Although crab activity was not in sync with predicted tides, activity was cyclic with an interval of approximately 5 hours. These results strongly suggest the presence of a free running activity cycle controlled by an internal clock. It is hypothesized that *U. pugilator* activity is controlled by a biological clock which is entrained by the presence or absence of water during low and high tide.

198 **Effects of Glyphosphate on *Lumbriculus variegates***

Leah Bodrog

UW-River Falls

Sponsor/advisor: Dr. Elaine Hardwick

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Lumbriculus variegates, also known as blackworms, are found in shallow marshes, ponds and swamps. In the wild and in laboratory settings, blackworms will autofragment, meaning they will break into segmented parts due to physical or chemical stressors in their environment. Blackworms also autofragment as a means of reproduction. Since blackworms live in areas which may encounter various herbicides due to soil contamination and agricultural runoff, some of these processes may be affected. Roundup™ and Rodeo™ are common household herbicides: the active ingredient is glyphosphate, a suspected invertebrate toxicant that disrupts reproductive process in vertebrates and invertebrates. Various studies have been conducted to determine the effects the herbicides have in a variety of aquatic environments. This study was designed to evaluate the effects of various concentrations of glyphosphate, found in Roundup and Rodeo, on the growth, autofragmentation and regeneration of *Lumbriculus variegatus* in a lab setting. Blackworms, either purposely fragmented using razor blades or left whole, were exposed to various concentrations of glyphosphate diluted in reverse osmosis water. The worms were monitored to determine levels that were lethal or had an effect on the natural processes listed above. During the first phase of the experiment it was determined that concentrations $\geq 10^{-5}$ glyphosphate killed the whole worms in minutes and caused fragmented worms to bleed out. Blackworms survived concentrations of 10^{-6} to 10^{-10} and are



9th Annual UW System Symposium

Abstracts

the range being tested for the second phase currently underway. This study involves measuring regeneration and autofragmentation in cut and whole blackworms. Thus far autofragmentation has occurred with two worms and regeneration averaged 0.37 mm. The data collected demonstrates the potential negative repercussions herbicides have on aquatic organisms such as the *Lumbriculus variegatus*. This experiment has further potential to demonstrate how continued pollution to soil and aquatic environments can be devastating to organisms.

127 UW-Whitewater American Marketing Association: Textbook and Online Learning Focus Groups

Patrick Bornbach

Sean O'Brien

UW-Whitewater

Sponsor/advisor: Carol Scovotti

Additional sponsor/adviser (if any):

Group 15: Marketing

Chippewa River (322), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

The UW-Whitewater chapter of the American Marketing Association is participating in the 2007-2008 AMA Case Competition. The competition involves the development of a marketing plan for McGraw Hill Higher Education (MHHE), a major textbook publishing company, for a new online educational portal it will soon introduce. Based on extensive primary research, we generated several creative approaches that might be used by MHHE and confirm how effective college students, the primary target market, perceive and respond to them. Two focus groups with UW-Madison students were conducted to ascertain the effectiveness of the various approaches and to further understand the methods students learn course materials. UW-Madison was chosen as it is a campus where students purchase their textbooks. There were 10 UW-Madison students in each focus group; I served as moderator. Discussions centered on the three distinct creative approaches designed to accomplish the following objectives; promote the use of a new e-learning portal, ascertain opinions about purchasing textbooks directly from the publisher instead of traditional channels, and general textbook purchasing behaviors. Chamberlain Research Consultants, a market research firm in Madison, offered the use of their focus group facilities for our project. With suggestions from focus group members, our team finalized its creative materials and completed the MHHE e-learning portal marketing plan. Ultimately, our research may help the purveyors of educational materials upgrade their offerings and move into the digital age. The UWW case competition entry was selected as one of eight finalists and will be presented to MHHE in early April.



9th Annual UW System Symposium

Abstracts

254 **Populists and the Grange**

Paul Borofka-Webb

UW-River Falls

Sponsor/advisor: Dr. Kurt Leichtle

Additional sponsor/adviser (if any):

Group 5: History

Trimbelle River (231), Oral Presentations Session 1, 8:30 AM - 9:25 AM

Abstract There has been much historical research into the development of popular political movements in American history. This topic is still relevant today. People were and are still political beings. Popular political movements occur when people perceive that they are being treated unfairly. Two movements in the late nineteenth century the Populists and the Grange characterized this phenomenon. Both movements saw inequities towards the farmer. These inequities included monopolization of railroads and grain elevators. Though these movements saw similar problems they approached them differently. Their differences in approaches reflect their definitions of fairness. The Grange, formally called The Patrons of Husbandry, fraternal in origin it never became a party and remained a social organization. In contrast the Populist Party sought change by seeking political power to rewrite the rules of the system. In this regard the Populist Party was a radical political organization while the Grange was a centrist social organization. A key difference between these movements was how they defined fairness. We will be adding to the current literature by examining definitions of fairness within these movements. We expect to find the definition of fairness shaping their disparate approaches to inequity in the American system.

96 **A moderate-intensity exercise program, fulfilling the net energy expenditure recommendation, improves health outcomes in premenopausal women**

Erica Borresen

Jeanna Wallenta, Kyle Zahler, Eugene Boyd

UW-Eau Claire

Sponsor/advisor: Lance Dalleck

Additional sponsor/adviser (if any):

Group 17: Health Sciences

St. Croix, Oral Presentations Session 4, 2:00 PM - 2:55 PM

PURPOSE: The purpose of this study was to assess and quantify the health outcomes associated with a moderate-intensity (50% maximal oxygen uptake reserve – VO_2R) exercise program designed to achieve the ACSM net caloric expenditure guideline of 1000 kcal \times wk $^{-1}$. **METHODS:** Fifteen, apparently healthy, but sedentary premenopausal female subjects with the baseline characteristics (mean \pm SD age, height, weight, body composition, and maximal oxygen uptake (VO_{2max}): = 37.4 \pm 6.3 yr, 166.2 \pm 6.2 cm, 72.1 \pm 11.2 kg, 32.5 \pm 5.8 %, and 34.8 \pm 5.8 mL \times kg $^{-1}$ \times min $^{-1}$, respectively) participated and completed the study. Exercise training was performed 3-4 days per week for 10



9th Annual UW System Symposium

Abstracts

weeks in a progressive manner at moderate-intensity (50% VO_2R). RESULTS: It was found that there were significant ($p < 0.05$) improvements in VO_2max (+ 2.5 $\text{mL}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$), systolic (-13.7 mmHg) and diastolic (-6.4 mmHg) blood pressure, HDL cholesterol (+3.2 $\text{mg}\cdot\text{dL}^{-1}$), fasting blood glucose (-4.9 $\text{mg}\cdot\text{dL}^{-1}$), and percent body fat (-1.6 %). CONCLUSION: Although the ACSM specifies that the energy expenditure goal should be a net caloric expenditure of 1000 $\text{kcal}\cdot\text{wk}^{-1}$, and classifies relative moderate-intensity as 40-59% of HRR or VO_2R , we are unaware of any previous investigations that have examined the specific health outcomes associated with an exercise program fulfilling these requirements. Results indicate that significant health benefits will be conferred to previously sedentary, premenopausal women that engage in a moderate-intensity, 10-week exercise program, designed to fulfill the net energy expenditure guideline of 1000 $\text{kcal}\cdot\text{wk}^{-1}$.

271 **The Impact of Invasive Plants Upon the Kinnickinic River Valley and Within Sustainable Community Development**

Ben Bosman

UW-River Falls

Sponsor/advisor: Dr. Kelly Cain

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Invasive organisms play an increasingly important role within all systems they are artificially introduced to. The River Falls and St. Croix Valley communities are impacted by terrestrial invasive plants such as but not limited to Japanese knotweed and Buckthorn. This study looks at the immediate and long term ecologic impacts, socio-economic costs and possible remediation techniques for these invasive species within the Sustainable Community Development context of the region.

170 **Water Quality Monitoring and Evaluation of Newton Creek**

Jason Bramstadt

Jared Leino

UW-Superior

Sponsor/advisor: William Bajjali

Additional sponsor/adviser (if any):

Group 18: Water Sciences

Willow River, Oral Presentations Session 4, 2:00 PM - 2:55 PM

Newton Creek is located in Superior, WI, and flows 1.6 miles before emptying into Hog Bay, in the harbor section of Lake Superior. The headwaters for this stream are a Murphy Oil refinery treated wastewater impoundment and this waterway is used by the refinery to discharge industrial waste



9th Annual UW System Symposium

Abstracts

water into Hog Bay. Newton Creek has been considered to be a potential source of contaminants to Superior Bay. This study is focused on the quality of the water in the stream. Five sampling sites along the flow of this creek have been analyzed weekly for electric conductivity, dissolved oxygen, temperature, and Ph. The results show there are large variations in these four parameters along the flow path due to various reasons. The small volume of water flowing in the creek makes it highly responsive to atmospheric climate, thus the water temperature over time corresponds to the temperature of the atmosphere. The first site, in close proximity to the refinery, reveals thermal pollution and decreased dissolved oxygen compared to the other sites. Throughout the year the pH of the water fluctuates from below 5.0 to above 11.0, ranging from acidic to hyper-alkaline. The salinity reveals a wide range from 150 mg/l to 1600 mg/l, and decreases during times of snow melt and rain.

211 Risk Factors for Cryptosporidium and Giardia parasites in Wisconsin Dairy Calves

Matt Brewer

Nathan Butler

UW-Eau Claire

Sponsor/advisor: Dr. Darwin Wittrock

Additional sponsor/adviser (if any): Dr. Julie Anderson

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Cryptosporidium and Giardia are widespread protozoan parasites. They infect the gastrointestinal tract of many vertebrate hosts including livestock, wildlife, and humans. Human outbreaks connected with contaminated surface water have been attributed to manure runoff from dairy operations. Dairy calves are frequently infected and shed large numbers of cysts into the environment. Chemotherapeutic treatment is expensive for Giardia and non-existent for Cryptosporidium. Calf housing management, therefore, is important for controlling outbreaks. We obtained fecal samples from a total of 87 calves located on 9 dairy farms in Western Wisconsin. Cesium chloride centrifugation was used to purify the samples which were then examined for the presence of Giardia and Cryptosporidium with immunofluorescence microscopy. Giardia and Cryptosporidium were detected in 43 (49.4%) and 28 (32.2%) of calves, respectively. Fourteen (16.1%) of the calves were infected with both parasites concurrently. Farm survey data was analyzed with a mixed-effect logistic regression model to identify risk factors associated with infection. Identification of these risk factors provides information about the ecology of Giardia and Cryptosporidium on Wisconsin dairy farms and helps generate inexpensive prevention techniques.



9th Annual UW System Symposium

Abstracts

115 **Virtual Slot Machine: Developing Flexible Software Architectures with Design Patterns**

Jason Busse

UW-Oshkosh

Sponsor/advisor: Wing Huen

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Educating software engineers in designing software architectures that are flexible will be significantly beneficial to their careers. Enhancements, updates, new releases, and new models are necessitated by customer and market needs, so flexible design is crucial to the success and profitability of software projects. Design patterns, general repeatable solutions to commonly occurring problems in software design, are amenable to flexible software architectures but they can be difficult to comprehend. Designs of a computerized slot machine are used to illustrate the application of design patterns to accommodate requirement changes. Slot machines are produced with a wide range of configurations. Our model has the ability to implement these current real world variations while anticipating the unknown challenges of the future. Using design patterns, we create a malleable software model for this highly customizable yet easily comprehended real world object, resulting in accessible, visually stimulating examples and explanations. Our research demonstrates that in well thought out architectures, the emerging design patterns amply facilitate requirements changes.

285 **High Copy Suppression of cdc7-7 allele by DBF4**

Amy Buvid

UW-La Crosse

Sponsor/advisor: Anne Galbraith

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The CDC7 gene is necessary for yeast to undergo both mitosis and meiosis. Any mutation found in this gene is therefore lethal. However, a temperature sensitive mutant will remain viable at low temperatures, allowing one to study the phenotype by simply raising the temperature. The temperature sensitive cdc7-1 allele has been examined extensively to determine its mitotic phenotype, and has been studied in our lab to determine its effects on meiosis. We have shown that high-copy DBF4 suppresses the mutant phenotype of the cdc7-1 mutation both in mitosis and meiosis, lending support to a hypothesis that the Cdc7 and Dbf4 proteins interact in both processes. Recently we constructed cdc7-7 strains containing a different CDC7 mutation. We examined the ability of high-copy DBF4 to suppress this allele both in mitosis and meiosis. We transformed the



9th Annual UW System Symposium

Abstracts

cdc-7 strain with three different plasmids: vector, (negative control), high copy CDC7, (positive control), or high copy DBF4 (experiment). We then grew these transformants at low versus high temperature to see if mitotic function was restored in a cdc7-7 mutant. We did a similar test of meiosis by plating the transformants on starvation media at various temperatures. Results of these analyses will be presented.

105 **Gene Expression Patterns and Pathway Functions of SEB Induced human PBMC**

Katherine Campbell

Darin Zahrte, Marti Jett, Chanaka Mendis

UW-Platteville

Sponsor/advisor: Dr. Chanaka Mendis

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Staphylococcal Enterotoxin B (SEB) is one of several exotoxins produced by staphylococcus aureus that may be used as a bio-weapon due its stability and fatality if inhaled. We have successfully tracked and located signal transduction events induced by SEB by investigating SEB specific gene expression patterns. Prior work done in our lab has identified p38 as a key signal transduction component of multiple signal transduction pathways induced by SEB in human Peripheral Blood Mononuclear Cells (PBMCs). Our strategy is to compare the gene expression profile of SEB to the p-38 inhibitor (SB203580) by using Reverse Transcription Polymerase Chain Reactions (RT-PCR). Comparison of the two gene profiles (with and without the inhibitor) together with the protein profiles will allow us to validate the effectiveness of the p38 inhibitor as a potential diagnostic marker in SEB induced human PBMCs.

250 **Impact of Alliaria petiolata on the Soil Fungal Community**

Armando Carrillo

UW-Parkside

Sponsor/advisor: Maria MacWilliams

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Garlic mustard (GM; *Alliaria petiolata*, Brassicaceae), a plant of European origin, has encroached upon the woodland and prairie habitats of native Wisconsin species. One strategy (of many) that *A. petiolata* employs to out-compete native species, is the secretion of allelopathic chemicals that inhibit



9th Annual UW System Symposium

Abstracts

the growth of specific mycorrhizal fungi required for tree seedling growth. To better understand the impact of *A. petiolata* on soil microbial diversity, we analyzed GM-invaded and pristine soils from a Wisconsin old-growth woods for a difference in fungal species richness. Molecular techniques such as DNA isolation, PCR, cloning, and bioinformatics were used to identify the fungal species present. Preliminary results indicate that fungal diversity is markedly lower than bacterial diversity in a similar area. We will present a comparison of sequences derived from the soils analyzed.

103 Stratigraphy And Paleontology Of The Late Ordovician Platteville Formation, Enhanced By Gamma-Ray Spectroscopy

Nicole Carter

UW-Whitewater

Sponsor/advisor: Dr. Rex Hanger

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Late Ordovician strata are mined extensively by the aggregate industry in southeastern Wisconsin. The Hausz Brothers quarry exposes one of the thickest sections of Late Ordovician rocks in Jefferson County, Wisconsin, over 30 meters of the Platteville and Galena Formations. Parasequence analysis, augmented by paleoecological and gamma ray spectroscopy logging enhance the stratigraphic study of the entire region. Preliminary results include: 1) at least 4 parasequences are present, indicating multiple sea level changes, 2) overall shallowing of the ramp environment during Platteville deposition, 3) a consistent, orthid brachiopod trepostome bryozoan paleocommunity that is persistent throughout the formation, 4) variable logs of U-Th-K gamma radiation revealing additional, more subtle sea level change, and 5) peaks of gamma radiation suggesting possible volcanic ash fall horizons, or K-bentonite. Production of the log allows for higher-resolution stratigraphy to test hypotheses of sequence stratigraphy and sea level change, response of Ordovician organisms to sea level changes. Confirming the preliminary evidence of volcanic ash fall is significant as it would mean that a regional extinction event would be preserved in the Platteville Formation at this location. This will present opportunities for publication and future research by others as well.



9th Annual UW System Symposium

Abstracts

252 Nazi Germany and the Holocaust: The T4 “Euthanasia” Program and the Emergence of the Final Solution

David Chrisinger

UW-Stevens Point

Sponsor/advisor: Dr. Eric Yonke

Additional sponsor/adviser (if any):

Group 5: History

Trimbelle River (231), Oral Presentations Session 1, 8:30 AM - 9:25 AM

The T4 “euthanasia” program was instituted in Germany following the invasion of Poland by the German army on September 1, 1939. Over the next two years, over seventy thousand handicapped Germans would become the first to be murdered because they were deemed “unworthy of life.” Approximately 100 physicians, along with their assistants, gained important experience in medical killing centers where they experimented with the most efficient methods for assembly-line homicide through gas chamber operations. Eventually, both knowledge of and unease about the “euthanasia” program became increasingly widespread in Germany, and the growing public unease moved a handful of courageous churchmen to go public with their protest. Shortly thereafter, on August 24, 1941, Adolf Hitler ordered a halt to the adult “euthanasia” program in its current form. Unfortunately, other forms of the “euthanasia” program not only continued but even intensified as hundreds of out-of-work professional killers were utilized in “euthanasia” programs in the Eastern territories as well as the extermination centers. After studying translated primary sources and numerous secondary source materials, a clear line of development emerges that proves the T4 “euthanasia” program was a conceptual, as well as technological prelude to the Final Solution to the Jewish question.

217 Minnesota Public Radio: Continuing a tradition of innovation

Gerald Clark

UW-River Falls

Sponsor/advisor: Patricia Berg

Additional sponsor/adviser (if any):

Professional & Business

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Minnesota radio has been the source of many innovations in radio that impact modern radio. Minnesota Public Radio continues to lead the way in radio today. Touring Minnesota Public Radio studios and interviewing key staff members will allow me to understand pivotal roles and factors in determining MPR’s significance. I have yet to conduct this research. My intent is to show how MPR will continue to be a driving force in radio.



9th Annual UW System Symposium

Abstracts

289 **Engineered Artificial Chicken Cardiac Tissues: Protein Profiles**

Travis Cordie

Chris Wenig

UW-River Falls

Sponsor/advisor: Timothy Lyden, Ph.D.

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

This poster reports on a continuing series of studies designed to explore the use of natural extracellular matrix materials as 3D scaffolds for the production of artificial tissues (ATs). In this case, fetal avian heart tissue from 3, 6 and 9 days were harvested and grown on 3D scaffolds for 2, 4 and 6 weeks respectively. The resultant ATs were then harvested and prepared for protein analysis using standard Western blotting methods. Blots will be probed with markers for mesenchymal stem cells (MSC) and cardiomyocytes. Particular markers of interest in these studies will include, BMP-4 and c-Kit for MSC as well as MyoD, Pax7 and myosin heavy chain for the cardiomyocytes. These samples will also be compared with control heart tissue of similar developmental stages for relative comparisons of expression for the several cardiac and MSC markers. Additional matching samples have been harvested and fixed for cryosectioning. These sections will be labeled for the same markers as those in the blots and used to localize the “cells of origin” for specific proteins within the tissue-like context of these ATs. Collectively these data should further clarify the developmental status of our cardiac artificial tissue constructs and validate this system for the study of early cellular events during the establishment of cardiac tissue in development.

113 **Spatial Analysis of Mineral Grain Size Distribution at a Northern Wisconsin Shear Zone**

Bethany Costello

UW-Whitewater

Sponsor/advisor: Dr. Juk Bhattacharyya

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Earth's tectonic forces permanently deformed the rocks in the crust and mantle along narrow zones, called ductile shear zones, by bending them instead of actually breaking them; however, the exact mechanism that causes this weakening in the rocks is still unknown. The central goal of my research is to evaluate whether a critical concentration of smaller mineral grains in a particular area can make rocks weaker to ultimately create a shear zone. It is important to study such shear zones to gain a



9th Annual UW System Symposium

Abstracts

better understanding of how and why they formed, which will teach us more about rock strength. I am studying a ductile shear zone that formed around 1.8 billion years ago, near the township of Mountain, in Oconto County. Shear zones of this age can potentially provide insight into the earliest mechanisms of plate tectonics on Earth. I have collected both deformed and non-deformed granite samples at various distances from the shear zone. Thin sections of the collected samples are being analyzed under a microscope so that I can take digitized micrograph images. The images are then being put into Geographic Information Systems (GIS) and a statistically significant number of individual mineral grains are being manually traced in order to create polygon shapefiles. Spatial statistical analyses on the shape files using this completely novel technique will allow me to determine the area of each mineral grain, the average grain size, pattern of grain size distribution, and whether there is a relationship between grain size and location relative to the shear zone.

98 In Vitro Modeling Of Early Embryonic Hematopoiesis

Rebecca Cote

UW-River Falls

Sponsor/advisor: Dr. Tim Lyden

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Hematopoietic stem cells have the ability to differentiate into the blood and immune cells of the body and through self-renewal provide a constant source of these cells. To be beneficial as a therapeutic treatment a large number of hematopoietic stem cells are necessary. By creating a functional model of in vitro hematopoiesis using chick cells, the methods necessary to isolate and culture hematopoietic stem cells can be better understood. To create this model, natural three-dimensional collagen scaffolding was used to support the growth of hematopoietic stem cells isolated from early chick embryos. The yolk sac and liver from chick embryos were used as potential sources of hematopoietic stem cells due to their respective roles in development of the hematopoietic system in the embryo. Cells from the yolk sac and liver were grown in culture on natural collagen scaffolding for approximately two weeks before the appearance of stem-like cells were seen. These cells and resulting artificial tissues have been characterized using light microscopy and Scanning Electron Microscopy (SEM).



9th Annual UW System Symposium

Abstracts

133 Researchers Giving Piggyback Rides: Ethnography as a Tool for Understanding Female Adolescent Development

Michelle Curci

Wendy Weimerskirch, Hannah Jones, Renda Sweeney, Pamela Forman, Deb Pattee,
UW-Eau Claire

Sponsor/advisor: Pamela Forman

Additional sponsor/adviser (if any): Deb Pattee

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Pre-adolescent girls face multiple challenges in negotiating their gender and sexual identity in a time of complicated transitions. To both assist 5th grade girls in negotiating these challenges and to learn more about the complexity of their young lives, UWEC professors and undergraduate students worked with elementary school teachers in creating and facilitating an after school program. The program emphasizes experiential activities where the girls become active agents of their own socialization. Our program operates in philosophical distinction from the school day where children are given lessons to master; instead the girls take away their own lessons from the weekly outings. As researchers who accompanied the girls on various “adventures” (kayaking, hiking, a ropes course, hip hop dancing, horseback riding), we took on dual roles as buddies to these girls and ethnographers taking field notes and conducting interviews. Throughout our interactions, we attempted to create participatory relationships by refusing titles and not acting as disciplinarians (except when girls were at risk of injury). By spending time with the girls outside the weekly activities, the undergraduates further diminished relationships of authority and created a more comfortable atmosphere for the girls to express themselves. This ethnographic lens enables us to capture more nuanced interpretations of their pre-adolescent experiences. We will use this data to reinterpret earlier research on female adolescent development.

161 Usage And Perceptions Of Interactive Technologies In The Textbook Publishing Industry

Aaron Dahl

Megan Landgraff

UW-Whitewater

Sponsor/advisor: Carol Scovotti

Additional sponsor/adviser (if any):

Group 15: Marketing

Chippewa River (322), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

The goal of this study is to identify and explain the elements that impact a new business model in higher education textbook publishing. Surprisingly, this industry has been slow to incorporate technology-enabled features and functions into its product mix. That is about to change. Publishers



9th Annual UW System Symposium

Abstracts

have discovered they are more than just printers of textbooks: They are the purveyors of educational materials used in higher education. Learning environments are being transformed by technology. The question publishers struggle with is how to get faculty and students to appreciate and use the assets provided. We developed two questionnaires—one for faculty, the other for students—to determine their opinions about textbooks and supplemental materials supplied by publishers and what faculty and students seek in the learning materials they use. Over 926 students from six countries and eleven states completed our online survey about textbook and supplement usage and interest. A total of 136 professors from two countries and fourteen states completed an extensive faculty survey. Our research indicated that freshmen and sophomore students are most likely to use online supplements and study aids. In addition, our research indicated that faculty are the gatekeepers of student supplement use, serving as the initial intermediary to the end goal of student use. This helped us refocus our campaign in terms of what market segments to target first. We were able to identify faculty market segments that have the greatest potential to accept and promote the online learning program we developed. This primary research fed the creation of a marketing plan for this year's American Marketing Association Collegiate Case Competition client, McGraw-Hill Higher Education. Our campaign is significant because it contained the creative approach and media plan that McGraw-Hill could use to drive student traffic to their interactive web portal. This campaign suggested new tools for online education, perhaps changing the way students learn and professors teach. The UW-Whitewater case competition entry was selected as one of eight national finalists and was presented to McGraw Hill in early April.

195 **Tibet may free China, if not itself**

Stephanie Daniels

UW-River Falls

Sponsor/advisor: Pat Berg

Additional sponsor/adviser (if any):

Professional & Business

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

This project tests my hypothesis that Tibetan journalists are in a better position than the Chinese themselves to initiate a popular movement within China that would result in more political freedom for the Chinese. After such a revolution, the Chinese government would likely be pressured by the newly politically powerful people within China to extend the same freedoms to Tibet. I base this hypothesis on the growing influence of Tibetan journalists; they are now organizing in groups to address issues limiting their ability to effectively communicate human rights abuses in areas controlled by China. Further, certain Chinese language Web sites created by Tibetans have already reached tens of thousands in China with their critical articles about the Chinese government. Reaping the economic benefits of the informal post-Tiananmen agreement with the Chinese government, the potentially influential masses of middle class Chinese are not likely to pursue political change, or even involvement, without some outside force to encourage reform. I will conclude my project with



9th Annual UW System Symposium

Abstracts

an examination of news coverage and data on China and Tibet to identify the barriers facing Tibetan journalists initiating this movement and to determine to what extent the movement is entrenched within Tibet itself. Additionally, I plan to interview an American who traveled around East Asia. His observations on the region's geography and Chinese military presence may help me confirm or refute my hypothesis.

164 Home Range Size of Pen-reared Ring-necked Pheasants in Southwest Wisconsin

Margot Davies

Jacob Demes, Jason Rice

UW-Richland

Sponsor/advisor: Scott E. Walter

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Artificial stocking of ring-necked pheasants has become a common practice throughout the United States. The goal of such efforts is either to supplement harvest or augment natural populations. However, the release of pen-reared birds may have negative consequences related to the introduction of diseases and/or inferior genetics, and the loss of adaptive traits. In order to assess the effectiveness of pheasant stocking programs, estimates of vital rates and life history parameters from released pheasants are necessary. This research project measures home range sizes for 31 pen-reared pheasants in Richland County, Wisconsin, and identifies important covariates of home range size. The pheasants (16 males, 15 females) were fitted with radio transmitters and their movement was monitored 1- 3 times per week from September 13, 2007 - March 1 2008. Results from this project will suggest the spatial scale at which habitat management for pheasants must be enacted, and so help improve the success of pheasant stocking programs in the region.

166 Survival of Pen-reared Ring-necked Pheasants (*Phasianus colchicus*) in Southwest Wisconsin

Jacob Demes

Margot Davies, Jason Rice

UW-Richland

Sponsor/advisor: Scott E. Walter

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Pen-reared ring-necked pheasants (*Phasianus colchicus*) are often released to restore or supplement wild pheasant populations. Effectiveness of such stocking efforts is questionable as the survival



9th Annual UW System Symposium

Abstracts

of released birds is unknown. To estimate survival of pen-reared pheasants in Richland County, Wisconsin, we used telemetry to monitor 31 (16M, 15F) pheasants from 13 September 2007 - 15 March 2008 on three study areas of differing habitat composition. Birds were located 1-3 times per week, and their status (alive/dead) recorded. When birds were found dead, field sign was used to ascertain the cause of mortality. Kaplan-Meier survival curves were generated for the study period, and general linear models constructed to examine the influence of both individual (sex, mass at release, and structural size) and environmental (habitat composition, time of year) factors on survival. Results from this study will inform local landowners and wildlife managers regarding ways to improve pheasant stocking as a management technique.

214 Investigation into the Dry Sliding Wear of Low-Carbon Steel Pairs

Eric Doro

Andrew Melby, Tyler Bechel

UW-Platteville

Sponsor/advisor: Dr. Hisham A. Abdel-Aal

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

This paper studies the wear patterns of dry sliding tribo-pairs (Chrome Coated Low Carbon Steel, CCLCS, sliding on AISI 1137). For the purpose of the study, we performed a series of dry sliding tests. The tests employed a Falex® Pin and V-block tribometer. The V-blocks were made out of AISI 1137 steel (HRC 63), whereas the pins were made of CCLCS. For each of the tested pin-V-Block pairs, data pertaining to wear rate evolution, coefficient of friction and contact stresses were recorded. Post mortem analysis, both by optical microscopy and scan electron microscopy SEM, was also performed. The results indicate that due to friction tractions on the pin surface cracking of the protective chrome coating takes place. This exposes the substrate steel and leads to the formation of cold welds between the V-blocks and the pin surface. The formation of cold welds is found to be directly related to the failure of the pin specimens.

232 Creating and porting a database in MS Access from Lotus Approach

Daniel Dudzik

John Lusignan, Eric Van Berg

UW-Parkside

Sponsor/advisor: Dr. Weijun (Will) Zheng

Additional sponsor/adviser (if any):

Group 14: Mathematics & Computing

Wind River, Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM



9th Annual UW System Symposium

Abstracts

As part of the UW-Parkside MIS program we set out on a project for the Kenosha Visiting Nurses Association. Kenosha Visiting Nurses Association (KVNA) is a non-profit organization based in downtown Kenosha, WI. KVNA uses a patient information database written in the 2002 version of Lotus Approach. The size and complexity of the lotus database is growing beyond what K VNA feels is appropriate for that software and are requesting a prototype of the database be created with Microsoft Access. The main objective of this database project is to analyze and deliver the K VNA a database in Microsoft Access. This objective will be realized by accomplishing the following goals: first, gather and document detailed database needs. Second, identify and suggest potential optimization strategies and design models. Third, identify and suggest the ideal approach for migration. Fourth, identify existing and suggest new SQL queries. Fifth, construct database in Microsoft Access, and sixth deliver prototype and give brief support during recommended testing. We found data modeling a database is by far the most important step in creating a database. Many choose to go right to the computer, but a database can become complex with vast amounts of information. The result of our effort has created a fully functional database in Microsoft Access from Lotus Approach, which allows the KVNA to manage their patients' data more efficiently.

245 Teaching English at Shih Hsin University Taipei, Taiwan

Amber Dunse

Brian Plante, Laura Harsdorf, Abigail Cook, Stefany Getty

UW-River Falls

Sponsor/advisor: Dr. Robyne Tiedeman

Additional sponsor/adviser (if any):

Humanities

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

As part of a pilot program to establish a Summer English Camp at Shih Hsin University in Taipei, Taiwan, the University of Wisconsin-River Falls Teaching English to Speakers of Other Languages (TESOL) Program offered an internship for seven English and TESOL students to teach English to university students from July 30-August 23, 2007. Each student teacher had an average of seventeen students per class and was responsible for four hours of instruction. There were also opportunities for students and the teachers from River Falls to interact outside of the classroom during cultural excursions. Although students had had about six to nine years of English instruction, they had not had many opportunities to communicate with native English speakers. One of the goals of the program was to implement teaching strategies and activities that would foster an environment where students would feel comfortable taking risks and utilizing the language they had already acquired. In order to achieve this goal, we planned lessons based on a textbook designed improve learners speaking and listening skills. However, this text was supplemented with communicative activities researched



9th Annual UW System Symposium

Abstracts

online and gathered from various other texts. Following each day of teaching, we met as a group with our professor to share successful activities and discuss ways of improving lessons or classroom management. During these sessions, we also reviewed class journals in which students provided feedback our teaching; this allowed us to self-evaluate the strategies we used based on their direct responses. As reported by students, staff, and even the President of Shih Hsin University, the summer camp was a success resulting preparations for continuing the program in the future. Not only was the internship a unique experience professionally and culturally, but we are all proud to have been a part of establishing a successful international program.

125 **EXPLORING THE MOLECULAR-GENETIC BASIS OF OVULE EVOLUTION IN ASTERIDS**

Jennifer Dwyer

UW-Whitewater

Sponsor/advisor: Robert Kuzoff

Additional sponsor/adviser (if any):

Group 12: Biology 3

St. Croix (321), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

Biologists are eager to understand how developmental programs evolve to create new shapes among organisms. A well-characterized morphological transition among flowering plants affords an excellent opportunity to explore this evolutionary problem. Although a majority of angiosperm ovules have two integuments (bitegmy), asterid species generally have only one (unitegmy). In the bitegmic ovules of *Arabidopsis*, a rosid species, asymmetric outgrowth of the outer integument requires INNER NO OUTER (INO), a putative transcription factor. Ovules of tomato, an asterid species, have only a single integument. We have cloned an ortholog of INO from this species (TomINO) and expressed its protein-coding region under control of a truncated version of the INO promoter (P-INO) in *ino* mutants of *Arabidopsis*. Whereas a P-INO::INO construct is sufficient to restore normal outer integument development in *ino* mutants, transformants containing P-INO::TomINO showed no evidence of outer integument outgrowth, indicating that TomINO is not functionally equivalent to INO. Sequence comparisons of INO orthologs from diverse higher eudicots reveal that among bitegmic species, the putative DNA-binding domain of INO is highly conserved. In contrast, the putative DNA-binding domains of INO orthologs from unitegmic species show greater sequence variation. Based on these results, we suspect that the functional differences between INO and TomINO can be traced to a set of amino acid substitutions in the putative DNA-binding domain (amino acids # 203 - 232). Partial domain-swap experiments are underway to test this hypothesis. The results should clarify whether mutations in this cluster of amino acids caused the functional divergence between INO and TomINO and, more generally, may provide insights into the evolution of developmental programs.



9th Annual UW System Symposium

Abstracts

265 **The Warrior's Code, an inquiry into Bushido during the Sengoku and Tokugawa Eras**

Benjamin Ebner

UW-Parkside

Sponsor/advisor: Dr. Jeffrey Alexander

Additional sponsor/adviser (if any):

Group 5: History

Trimbelle River (231), Oral Presentations Session 1, 8:30 AM - 9:25 AM

The Japanese code of ethical behavior known to the West as Bushido has been characterized as a morality par excellence. Forged in the fires of war, the samurai were hailed as the noblest of warriors; honorably defending the innocent and weak with grace, dignity and compassion. Yet, looking behind the myths and stereotypes, we find little evidence suggesting that the retainers of the daimyo and shogun had any authoritative system of honor or held any loyalty to a code of behavior beyond mere military obedience to the lord or clan. Instead, a vastly different picture emerges as a deeper search into the history of the samurai class will show. What is the true history and development of Bushido? What was its influence upon the daily habits of the samurai class as a whole during the Sengoku versus Tokugawa eras? Finally, when, how and why was Bushido expounded as a full-fledged, moral code? This paper claims that Bushido was never held as a universal system before the Tokugawa period. Furthermore, during the Tokugawa period, though the code was beginning to be clearly expounded in such works as Hagakure and Bushido Shoshinshu, the political, economic and social establishments of the time prevented any sort of strict adherence to Bushido. Finally, it will be argued that the incident of the 47 ronin may be considered the best account of a form of Bushido implemented into action. However, because their revenge occurred before the writing of Hagakure and Bushido Shoshinshu we may not consider Bushido to have reached its full enumeration by this time. Moreover, the episode displays more effectively the contradictory state of Bushido and the loyalties of the samurai under the Tokugawa rather than a definitive example of Bushido as a unified, moral structure.

119 **Attitudes towards the inclusion of children with special needs in public elementary schools.**

Joanne Ehrmantraut

Jennifer Wilson

UW-Stout

Sponsor/advisor: Susan Wolfgram

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Research has found that teacher attitudes towards the inclusion of children with special needs in public schools are largely dependent upon their level of confidence in their own instruction as well as



9th Annual UW System Symposium

Abstracts

the support personnel provided to them (Jung, 2007). This nonrandom pilot study will investigate and compare the attitudes of teachers and paraprofessionals towards inclusion of children with special needs in public elementary schools by surveying 25 certified teachers and 25 paraprofessionals at two Midwestern public elementary schools. It is hypothesized that the paraprofessionals will score higher on the survey variables given their increased interaction with special needs children in the classroom. Survey data will be statistically analyzed using frequencies, cross-tabulations, and a reliability analysis. Implications for practitioners and future researchers will be addressed.

194 **Foreign Resource Inflows And Gdp Growth: A Study Of Latin America 1980-2004**

Andrew Engel

UW-River Falls

Sponsor/advisor: Wes Chapin

Additional sponsor/adviser (if any):

Group 19: Political Economy

Wind River, Oral Presentations Session 4, 2:00 PM - 2:55 PM

Some members of the international development community hold the assumption that poor countries are unable to develop themselves economically due to a shortage of capital. This idea suggests that a poor country's growth can be spurred through the injection of foreign capital. This capital could create infrastructure that might attract foreign direct investment (FDI). This paper explores the relationship between foreign aid and FDI, if they work in a complementary fashion there could be an ideal ratio of the two. This paper also addresses other variables that could have an impact on growth driven by foreign resource inflows. Two different methodologies are employed; a basic statistical examination is used to assess the relationship between inflows of foreign aid, FDI, and growth in GDP. This examination uses UN economic indicator data coming from twenty Latin American countries over a period of twenty-four years (1980-2004). In addition a comparative study of El Salvador, Brazil, and Uruguay is performed. These countries saw the highest, mean, and lowest amounts of average GDP growth during the time period, respectively. By comparing the differing levels and the makeup of these resource inflows, as well as by looking in an in-depth fashion at: social, economic, and political climates, the ability of foreign resource inflows to provide growth and the ability of aid and FDI to work together is measured. It appears that there is very limited relationship between the makeup of foreign resource inflows and resulting GDP growth. This may be more significant if distinctions are made between different pre-levels of development. It also appears that political, economic, and social factors play a significant role in growth, both in general and as made possible by foreign resource inflows.



9th Annual UW System Symposium

Abstracts

91 **Alternative Approaches To Ceramic Surface Treatment: Printed Porcelain And Soluble Flux Impregnation**

Benjamin Fiess

UW-Whitewater

Sponsor/advisor: Jared Janovec

Additional sponsor/adviser (if any):

Gallery Exhibit

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Ceramic surface treatment is of concern for both the individual studio artist and ceramic industry. While commercially produced dinnerware and sanitary ware surfaces are treated with glazes specifically designed to be durable and crack-free, this research project focused on ceramic surface treatment without using a traditional glazed surface. The goal of the research was to develop subtle surface treatments that exist between bare clay and traditional glazed ware. Materials that easily melt at temperatures attained in a kiln (fluxes) were impregnated into porcelain tiles. Wet porcelain tiles were printed upon using ceramic colorants and were put through a bisque firing, a process that makes the clay durable but still porous by heating it below the temperature needed to vitrify the clay. Soluble fluxes were then dissolved in water and the tiles soaked for varying lengths of time. Sodium carbonate, sodium chloride, potassium carbonate, borax, magnesium sulfate, and trisodium phosphate were experimented with for this project. After the tiles were soaked in the solution, a crystalline structure of the fluxing chemical deposited on the surface of the clay. Upon firing to vitrifying temperature, the fluxes melted and developed surfaces ranging from matte to glossy. By controlling the concentration of the flux in solution, the soaking time in the solution, and the drying process after the soak, it was possible to influence the amount and locations of surface sheen on the porcelain tiles. Further exploration into different soluble fluxes and application methods will allow greater control of surface treatment.

279 **Factorization and Block Monoids**

Michael Fitzpatrick

UW-La Crosse

Sponsor/advisor: Karl Kattchee

Additional sponsor/adviser (if any):

Group 14: Mathematics & Computing

Wind River, Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

I have been performing research in factorization theory. The starting point in this theory is the realization that numbers do not factor uniquely in all algebraic structures. In our familiar ring of integers, every number factors uniquely into primes (e.g. 2×3 is the only way to factor 6) but in general, this is not the case (e.g. $(1+\sqrt{-5}) \times (1-\sqrt{-5})$ is another way to factor 6 in a different ring of



9th Annual UW System Symposium

Abstracts

integers). The structures we study are called “block monoids” and we measure the extent to which they fail to have unique factorization by means of the elasticity function.

107 Museum Methodology and Feminism: An Analysis of the Chippewa Valley Museum’s Paths of the People Exhibit

Avril Flaten

UW-Eau Claire

Sponsor/advisor: Karen O’Day

Additional sponsor/adviser (if any):

Group 13: History, English, & Foreign Languages

Willow (334), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

Feminism has existed in art history since the 1970s. There is no exact definition of a feminist approach. Art historian, Linda Nochlin argues that art must have equality and if it does not, there is no hope for academic disciplines. Over the centuries, Native American art has been presented as a culture that is extinct. This view began to change with the growth of the Native American rights during the 1960s. Native American art collections have been viewed differently since the passage of 1990 Native American Graves Protection and Repatriation Act (NAGPRA). Museums changed their perspectives and presentation methods since the 1800s. With the passage of NAGPRA, museums have been forced to readdress their Native American collections. The changing museum methodology has focused on expanding visitor participation, interactive exhibit design, layout of exhibits, written content, and changes in medium. The Chippewa Valley Museum exhibit entitled, Paths of the People: Ojibwe in the Chippewa Valley, showcases the history of the Ojibwe people from pre-contact to present. The exhibit incorporates elements of a feminist perspective and current museum methodology. The exhibit is an excellent example of the current trends in museum culture.

249 Searchlight Websites: Exploring Literary Aesthetics in Online E-Zines

Brandon Foust

Allan Watkins, Theresa Erbs

UW-Barron County

Sponsor/advisor: Joel Friederich

Additional sponsor/adviser (if any):

Group 10: Visual Presentations 1 (Literature & Anthropology)

St. Croix (321), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

To deepen our creative development and broaden the literary experiences of students at the University of Wisconsin-Barron County and others throughout our region, we developed online literary websites after researching contemporary



9th Annual UW System Symposium

Abstracts

200 **Role Reversal: Narrated Illustrations**

Elizabeth Fox

Paulo Galvo

UW-Milwaukee

Sponsor/advisor: Nigel Rothfels

Additional sponsor/adviser (if any):

Gallery Exhibit

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

As a student of Latin American art history, I am convinced of the importance of spreading awareness of and appreciation for Latin American art in the United States. I spent six months of 2007 in São Paulo, Brazil, studying art and acquiring necessary tools and contacts to meaningfully contribute to Wisconsin's art scene. Upon my return, I curated a show which presented and analyzed a series of experimental illustrations by Paulo Galvo, an extremely gifted artist I met while abroad. "Role Reversal: Narrative Illustrations" is comprised of three sets of seven drawings, each of which were given to three authors. The exhibition consists of all 21 originals and three books, each with the complete texts that accompany the illustrations. The project aims to inspire viewers to question the traditional roles of illustrators and authors, and to invite the viewer to participate in the process of narrative creation. As curator, my roles are largely analytical and organizational, including creating an appropriate display schema which reflects the project's conceptual backing, translations, and a critical essay explaining the project and considering Galvo's place in contemporary art. I have also collected a variety of short films made by students at the university I attended, the Pontificia Universidade Católica (PUC-SP). Although not related to the "Role Reversal" project, I believe they offer a valuable opportunity for Wisconsin film and media students to experience the work of their Brazilian counterparts. I present these films as part of my larger goals of bringing a wider diversity of artistic expression to Wisconsin, and strengthening bonds of compassion between Wisconsin and the world.

168 **The Transition from Marketplace to Marketspace**

Troy Fredrick

UW-Whitewater

Sponsor/advisor: Carol Scovotti

Additional sponsor/adviser (if any): Amanda Helm

Group 15: Marketing

Chippewa River (322), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

Over the past 30 years, much of the functionality of the business world has transitioned from the physical limitations of the marketplace to an environment with infinite possibilities, the world of marketspace. The difference between marketplace and marketspace is simple. In the marketplace, we must deal with the limitations of atoms that take up space as physical entities, whereas



9th Annual UW System Symposium

Abstracts

marketspace deals with bits, electrical impulses that have no physical limitations. The evolution of technological capabilities occurs in three major phases. Phase one is where functions performed in the physical environment are replaced by software in the virtual environment. A good example of this includes accountants' use of spreadsheet software to replace the keeping of bookkeeping records. Phase two involves the modification of processes to take advantage of more of the benefits of automation. Cross-functional integration achieved with accounting software is a good example of the modification phase. Phase three involves a complete transformation in the process (and perhaps even the business), taking full advantage of the power of technology. Online submission of tax returns is an example of accounting technology that has reached the transformation phase. Interestingly, educational publishing lags in its utilization of technology. Most textbooks purchased today are still physical books rather than virtual products. Supplemental materials for students and faculty tend to be physical as well. However, this is changing and textbook publishers see the window of opportunity opening. Publishers are starting to change their business models to take advantage of the benefits of automation. This study focuses on the textbook publishing industry as it goes through its technological transformation. Using the track records of industries that have gone through the transformation, this study compares the progress of textbook publishers as it enters the virtual environment. The changes about to occur might well change the dynamics of higher education.

111 **Development of a Tree-Ring Chronology from Eastern Red Cedar**

Miranda Froehlich

UW-La Crosse

Sponsor/advisor: Dean Wilder

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Dendrochronology is the science that uses tree-rings dated to their exact year of formation to analyze temporal and spatial patterns of processes in the physical and cultural sciences. There currently is no published record for tree-ring studies using Eastern Red Cedar in the Upper Mississippi River Valley in Wisconsin. Therefore, this study develops a chronology from tree-rings using Eastern Red Cedar (*Juniperus virginiana*, L.). The objectives of this study are to collect samples from both living and dead trees and to create a tree-ring chronology based on standard dendrochronological methods such as skeleton plotting and cross-dating. Creating a master chronology makes this study significant because it adds to the knowledge of tree-rings for western Wisconsin and has the potential to be used for further work in dendroclimatology to assess past climate change for the Upper Mississippi River Valley.



9th Annual UW System Symposium

Abstracts

106 **What is the inmate perspective regarding access to resources post-incarceration that may reduce recidivism?**

Ali Fromader

Misty Malott

UW-Stout

Sponsor/advisor: Dr. Susan Wolfgram

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Most people who are incarcerated come from the community and ultimately will return to the community (Andress, Wildes, Rehtine, Moritsugu, 2004). What unmet needs post-incarceration could possibly reduce their risk of reoffending? This nonrandom pilot study will investigate the inmate perspective regarding access to resources post-incarceration that may reduce their recidivism by surveying 50 male inmates at two Northwestern Wisconsin jails. It was hypothesized that male inmates will report not having access to resources post-incarceration. Survey data will be statistically analyzed using frequencies and a reliability analysis. Implications for practitioners and future researchers will be addressed.

174 **The Role (or lack thereof) of Parent Input in Children's Acquisition of the Plural**

Robyn Gabel

UW-Green Bay

Sponsor/advisor: Dr. Jennifer A. Zapf

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The English plural is about multiple individuals in a set. Recent research has shown that these two components of the meaning of the plural are important in two-year-old children's production of the plural (Zapf & Smith, 2007). The current question is whether these factors influence parent productions. This is an intriguing possibility because adults' use of the plural is one possible source of this recent finding regarding children's plural productions. In Experiment 1 parent and two-year-old child dyads (N = 16) were given sets of objects which included a single item (e.g. a chair) and then a set of either two items (e.g. two bottles) or four items (e.g. four cats). Parents' spontaneous plural productions reveal more plurals were produced when the sets of multiple items were identical compared to when they were similar. The difference in the number of objects did not influence parent's likelihood to produce the plural. This indicates parent input is not the sole influencing factor in children's plural production. Experiment 2 examines whether parent input changes when the set changes from singular instances to multiple instances. Fifteen parent and two-year-old child dyads were given three separate scenes (a farm, a baby's room, a garage) with which to play. Half of the dyads were given two of every item in the scene (e.g. two horses) and half of the dyads were given



9th Annual UW System Symposium

Abstracts

one of every item. Surprisingly, parents offered more singular forms in both conditions. In this way, parents exhibited frequency effects such that when multiple instances are presented to a child (e.g. two dogs), parents are more likely to say “dog” than “dogs”. This is further evidence that children are not learning nor basing their productions strictly from parental input but are using those components of the meaning of the plural in their plural productions.

270 Effects on EKGs and respiration during drug and alcohol withdrawal

Amber Galarowicz

UW-Milwaukee

Sponsor/advisor: John Dellinger

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Drug and alcohol abuse continues to be a problem in the United States, as well as many European countries. Currently, however, not enough is known about detoxification and its effects on the body to make the best decision for rehabilitation techniques, including medications to aid in the withdrawal. This study design is specifically aimed at monitoring autonomic control and detoxification/ withdrawal symptoms to allow for accurate, non-pharmacologic therapy in the future. The data will be collected from 60 patients undergoing withdrawal from opiates, alcohol, and other drugs, at Crossroads Drug Rehabilitation Center in Antigua. The patients will have their EKG and respiration recorded in sitting and standing positions at three different times in the detoxification. Questions to be considered will be the differences in vagal tone during the phases of detoxification, in addition to differences between how detoxification works for different substances.

266 What are We Throwing Away? A Study for Placement of Outdoor Campus Recycling Receptacles

Patrick Garsow

UW-River Falls

Sponsor/advisor: Kelly Cain

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Sustainability is a term being widely used among campus officials and academia here in River Falls. With a plan for change in place for more environmentally friendly campus it is now time for implementation. I proposed a project involving facilities management focusing on recycling on campus. A sampling and mapping was done of on campus trash receptacles to measure how many recyclable items were being thrown away. After a GPS map was made of all outdoor trash bins on



9th Annual UW System Symposium

Abstracts

campus, an eight day sampling began every Monday and Wednesday for four weeks. The results showed that areas of high foot traffic had the most recyclable materials in the trash and a higher than thought amount near residence halls. With these results a calculated placement of recycle bins can be made, which will benefit our campus and environment.

269 Using NMR Spectroscopy to Confirm the Relative Stereochemistry of the Key Intermediate in the Synthesis of Incarvillateine

Getzie

UW-River Falls

Sponsor/advisor: Dr. Karl Peterson

Additional sponsor/adviser (if any):

Group 1: Chemistry & Sciences

Willow (334), Oral Presentations Session 1, 8:30 AM - 9:25 AM

The Favorskii rearrangement has been proposed as a means of preparing a key tetrasubstituted cyclopentane derivative intermediate in the synthesis of the natural product incarvillateine. The relative stereochemistry of this intermediate is essential for establishing the correct stereochemistry in the incarvillateine product. A combination of 1D and 2D NMR experiments will be used in conjunction with molecular modeling to establish the relative stereochemistry of this intermediate.

272 Smart and Sexy? Major and Clothing's Influence on Perceptions of Intelligence

Tiffany Gille

Rachel Mittag

UW-La Crosse

Sponsor/advisor: Carol Oyster

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

"First impressions" are predictive of immediate opinions and beliefs (Behling & Williams, 1991), later impressions (Bar, Neta, & Linz, 2006) and the behavior of the perceiver toward the target (Rucker, Taber, & Harrison, 1981). Over 77 percent of participants felt their perceptions were accurate at least some of the time (Johnson, Schofield, & Yurchisin, 2002). Our study evaluated college students' perceptions of intelligence based on clothing style and attributed major. We proposed females would be rated more intelligent wearing conservative clothing in a male-dominated major. Participants were 171 undergraduates at a public mid-sized university taking a public speaking course. Students



9th Annual UW System Symposium

Abstracts

were randomly assigned to a condition where they were shown a picture of a provocatively or conservatively dressed model and described as majoring in Sports Management or Early Childhood Education for 25 seconds. The two majors represent fields that were 75% male- or female-dominated. The provocative dress was a revealing tank top, the conservative dress a polo t-shirt. Participants completed a questionnaire of 18 bi-polar word pairs related to the model's intelligence. On perceptions of intelligence the main effects of clothing style and attributed major were significant. Four significant interactions were also obtained. One interaction involved intelligence ratings based upon the clothing style and attributed major. Females were rated less intelligent when dressed provocatively in a female-dominated major. The other three interactions involved ratings based on participant gender and attributed major. The three dependent variables were ratings on attractive/unattractive, charming/irritating, and feminine/masculine. Results provide women with a better understanding of how their major and clothing style affect the opinions of others, allowing women to portray themselves more intelligently and professionally.

277 Nutrient Analysis in an Urban Marsh

Amber Goldbeck

UW-La Crosse

Sponsor/advisor: Eric Strauss

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The goal of this project was to determine if algal production and biomass is limited by nutrient availability in a marsh (Myrick Marsh, La Crosse County) environment during winter temperatures. The potential limiting nutrients that were tested was Nitrogen (N) and Phosphorus (P). Water was collected from under the ice, returned back to the laboratory, and analyzed for initial rates of primary production and concentrations of nutrients and algal biomass. In addition, a series of 3.8-L carboys containing marsh water and one of four nutrient treatments were incubated in a laboratory incubator for two weeks at 30C. The four treatments were Control (no nutrients added), +N (+2mg N L⁻¹), +P (+0.5 mg P L⁻¹), and +N+P (same concentrations as for individuals). Each treatment was replicated four times. After incubation, contents of each carboy were analyzed for concentration differences of nutrients and algal biomass. Water samples were also incubated in light and dark biochemical oxygen demand (BOD) bottles to determine net primary production, gross primary production, and community respiration. All data was assessed statistically using one-way analysis of variance in order to determine specific significant differences among the treatment means.



9th Annual UW System Symposium

Abstracts

188 RECOVERY OF THE CORAL REEFS OF CAYE CAULKER: HISTORICAL OR DISTURBANCE?

Valerie Golden

Amanda Graumann, Eric Johnson, Daniel Levings, Laura Paulson, Mykle Sederlund
UW-Superior

Sponsor/advisor: Edward W. Burkett

Additional sponsor/adviser (if any):

Group 8: Biology 2

Wind River (232), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

Over the past decade, natural and anthropogenic disturbances have strongly influenced the community structure of the patch reefs of the Caribbean. Long-term monitoring is an essential component of coral reef management in order to determine how these disturbances are affecting the reefs. Ten permanent transects were established in January of 2002 within the Caye Caulker Marine Reserve (CCMR) in Belize, Central America. The CCMR research initiative was designed to detect changes in the structure of the benthic community and better understand the successional changes associated with recovery after disturbances. In January 2007 photos were taken of 250 permanent plots to collect the percent coverage on the following life forms: scleractinian coral, octocoral, algae, sponge, hydrocoral, invertebrates, turf, and sand. The data collected addresses the question, have the reefs of the Caye Caulker Marine Reserve recovered from past hurricane disturbances? When the data sets from 2002 through 2007 were compared, algae showed a significant increase, turf showed a significant decrease, and scleractinian coral showed no significant change. These results suggest that scleractinian coral is following a disturbance recovery pattern, while the rest of the benthic reef community is following predicted successional changes. Continued monitoring, as new governmental regulations are implemented, will determine the effectiveness of reserve management.

138 Social Inequality as a Result of the German School System

Joanne Goskowicz

UW-Stevens Point

Sponsor/advisor: Tobias Barske

Additional sponsor/adviser (if any):

Group 13: History, English, & Foreign Languages

Willow (334), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

Although the German Constitution states that the dignity of the individual is inviolable, the German education system fosters social inequality. Developed in the 1960s, a three-track education system separates children at age ten, determining whether a child succeeds to the upper, middle, or lower levels of society. Children begin school in the same classrooms with the same teachers, but by fifth grade, the eventual future of the children is decided. Some students advance to upper-tier schools



9th Annual UW System Symposium

Abstracts

(Gymnasium) to pursue the Abitur, the German university entrance examination. Other students forge ahead to a middle-tier school (Realschule) to obtain the Realschulabschluss, preparing them for careers in technical fields. The remaining students start down the path for the Hauptschulabschluss, which is typically followed by an apprenticeship. Although the system allows for children to advance from the lowest-tier schools to the upper-tier schools, being placed into the lowest track in and of itself creates a barrier to obtaining that education. Additionally, not all students receive a certificate of completion or diploma. This further hinders employment opportunities and suppresses chances for social equality. In investigating the impact of the current German education system, I utilize different sources: First, I use personal interviews with native Germans of various social standings, in various occupations, and with varied educational experiences to highlight the reality of social inequality in Germany. Second, I collect information from German human rights organizations regarding educational inequality. Finally, I survey current media sources and academic writings to supplement my findings. In a last step, I draw comparisons to alternative education systems and propose realistic solutions for the German education system.

242 **Caddisfly Larvae Visual System: Response to Light**

Jeff Grinager

UW-Stout

Sponsor/advisor: Dr. Jo Hopp

Additional sponsor/adviser (if any):

Group 16: Physics & Astronomy

Chippewa River, Oral Presentations Session 4, 2:00 PM - 2:55 PM

One way to gain insights about the visual system is to examine how vision influences behavior. In order to begin characterizing the visual system in the Caddisfly larvae (Trichoptera, Integripalpia), we examined the animals' behavioral response to light. More specifically, we are interested in the threshold of light detection and color response. Experiments are completed in a controlled environment constructed to mimic the Caddisfly larvae's natural habitat while allowing for observations of both movement and orientation. While the majority of the environment is kept dark, a localized light source produces a narrow light path through the tank. Specimens are placed in specific tank locations with respect to this illumination. The Caddisfly larvae are free to move while their location and orientation are recorded over a period of roughly two hours. Select experiments vary light intensity or color. Preliminary results concerning the behavioral response suggest the Caddisfly larvae preferentially orientate towards light within the tank and move towards the light path, but not necessarily the light source. In addition to helping characterize the visual system of the Caddisfly larvae, this study may have implications for the recreational fishing industry. Since Caddisfly larvae are a major food source of brook trout, describing this behavior may aid the recreational fishing community by helping to better predict where Caddisfly larvae and thus, the brook trout, may be located within a stream.



9th Annual UW System Symposium

Abstracts

163 **Archaeological Investigations of the Meyer Wooded Parcel of the Vieau Fur Trade Post Site of Franksville, Wisconsin.**

Karly Guldán

UW-Parkside

Sponsor/advisor: Robert F. Sasso, Ph.D.

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Archaeological testing conducted within the Meyer Wooded Parcel investigated a portion of the Vieau Fur Trade Post site which had not been examined prior to the 2007 excavations. The exploration into the Meyer Wooded Parcel clearly indicates that the site as a whole extends further to the southeast than previously recognized. A series of thirty shovel-tests recovered a varied amount of artifacts ranging from the pre-historic to the contemporary. Research is focused on the age and cultural origins as well as distribution analyses of the recovered artifacts. This site provides an opportunity to study the interactions between a Potawatomi village site and a French-Canadian-American fur trade post established in southeastern Wisconsin during the 1830's. The findings will contribute critical information to the long-term research of the site.

248 **Telling Of Our Times**

Michael Gutschenritter

Ben Hendrickson, Lauren Shimulunas, Paul Kratwell, Dana Grahler, Carl Olson, Sam Kauer, Josh Wussow

UW-Stevens Point

Sponsor/advisor: Dr. Pablo Peschiera

Additional sponsor/adviser (if any):

Group 11: Visual Presentations 2 (Music, Art, Literature)

Kinnikinnic Theatre, Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

From Whitman's "When lilacs last in the dooryard bloom'd" to contemporary living poets like Amiri Baraka and Adrienne Rich, American poets consistently engage in social commentary. It is through their literature that we can come to understand and appreciate the cultural and social happenings of our young nation's past. At the University of Wisconsin-Stevens Point, several of us student poets have questioned and investigated our own generation through a variety of poetic forms. We have studied the art of poetry together for a few semesters and have often written in specific poetic forms such as the sonnet, the haiku and the villanelle, as well as less specific forms such as free verse, narrative verse, and some experimental forms. We believe that what we read in poetry is a good barometer of society, and this belief has inspired us to express our thoughts, hopes, and desires through a variety of poetic forms. These poems are not only enjoyable to read, but also enjoyable to



9th Annual UW System Symposium

Abstracts

hear. Using poetic form for specific purposes while addressing our contemporary social issues helps us to write stronger, more effective and successful poems.

222 Production of Educational Modules to Assist in Facilitating Plastics Technology within a High School Curriculum

Dennis E. Haakenson, Jr.

Dr. Majid Tabrizi

UW-Platteville

Sponsor/advisor: Dr. Majid Tabrizi

Additional sponsor/adviser (if any):

Group 4: Education

Wind River (232), Oral Presentations Session 1, 8:30 AM - 9:25 AM

The plastics industry is becoming a large segment of the economy. Therefore furthering education in the field of plastic materials, processes, and technologies has become just as important. The problem teachers face is a shortage of proper curricula to instruct students about plastic and its applications. The objective is to create an educational module to assist teachers in instructing plastic technologies. The module will be composed of three parts: instruction, video, and activity.

143 A Quantitative Analysis of Health Care Coverage and Concerns in Western Wisconsin

Ian Hansen

UW-Eau Claire

Sponsor/advisor: Eric Jamelske

Additional sponsor/adviser (if any): Jennifer Johns-Artisensi

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Introduction: In November 2006 Wisconsin overwhelmingly voted in favor of government action to make health care more affordable and accessible for everyone. Our study examines the level of health care coverage and the health care concerns of residents to better understand the forces behind this call for reform. Methods: In the summer of 2007 surveys were conducted among a convenient sample of 223 Western Wisconsin residents. This purposeful method was designed to over-sample those without insurance so that this often overlooked group's voice will be heard. We present statistics characterizing the level of health care coverage and attitudes regarding health care reform among survey respondents. In addition, we use independent samples t-tests to explore differences between insured and uninsured individuals. Results: Sixty-eight percent of respondents feel that Wisconsin health care has at least major problems and only 2.7% say there are no problems. Approximately 60% are extremely or very worried about not being able to afford the health care they need, while over 70% are extremely or very worried that insurance companies care more about



9th Annual UW System Symposium

Abstracts

profits than patients. These concerns translate into a desire for reform with over 90% of respondents saying that it is extremely or very important for Wisconsin to make health care more affordable for all residents. Similarly, over 90% agree or strongly agree that all Wisconsinites should have access to the same basic health care coverage. Although there are many differences between the insured and uninsured, the concern and resulting call for reform is universal among both groups. Conclusions: Our research confirms that there is broad support for substantial health care reform in Wisconsin. Despite the growing concern over health care affordability, there has been no real reform to date. We hope our results will guide the current policy debate on health care reform in Wisconsin.

167 **Tests for Associative Learning in the Flatworm *Dugesia tigrina***

Kaitlin Hartshorn

UW-Barron County

Sponsor/advisor: Alexander Bezzerides

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

We investigated the learning capabilities of the flatworm *Dugesia tigrina* through a series of choice tests following the simultaneous presentation of food with a variety of stimuli. The types of stimuli we addressed in our trials were texture, light, and novel chemical cues. We found evidence that *Dugesia* are able to learn to associate light with the presence of food, but are unable to make such an association via texture differences or novel chemical stimuli.

153 **Creating The Visual Elements And Implementing The Designs**

Amanda Hartwig

Jeremy Whiting

UW-Whitewater

Sponsor/advisor: Amanda Helm

Additional sponsor/adviser (if any):

Professional & Business

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

This presentation describes the process of making a campaign that included creating the visual elements and implementing the designs. This campaign was also entered into a national competition against 45-50 entrants and was ranked in the top eight. Along with other finalists, the UW-Whitewater team presented its campaign proposal to McGraw Hill in early April. The campaign decisions were backed through market research gathered by observations, surveys, and focus groups. This enabled us to create a design that catches the target audience's attention. We began by creating a layout and



9th Annual UW System Symposium

Abstracts

slogan that was used throughout all the ads and promotional materials, creating continuity and a solid position. Our media mix included newspapers, word of mouth, student promotional representatives and the Internet. Outcomes included a working website and the printed media advertisements for our diverse audience. We “mocked up” multiple pages of the website to demonstrate what users would see and how they might flow through the system. We also had multiple black and white as well as color print media designs to be used in different media. All pieces are presented in portfolio format on black core board. Our presentation will display these various elements to help viewers follow the design process. Through our finished works, it is easy to see how research and creative strategies work together to create the final, visually appealing element to the target audience. We will also describe the possible outcome of the campaign if it were to be implemented by using the research we conducted. The overview of the creative element of design in advertising show how important brainstorming and multiple ideas are for a strong end product.

199 How Do Love Styles Relate To Romantic Relationships Between College Students

Jacquelyn Harvey

UW-River Falls

Sponsor/advisor: Jennifer Willis-Rivera

Additional sponsor/adviser (if any):

Group 9: English & Communication

Trimbelle River (231), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

This research examines how the love styles proposed by J.A. Lee (1973, 1977) affect the way in which a person defines a committed romantic relationship. Men and women in college hold several different views on what constitutes “dating” or being in a “relationship.” For example, at what point does the label “boyfriend/girlfriend” become appropriate to use? Is it acceptable to date more than one person at a time? What constitutes cheating? This research explores the differences in how individuals perceive each of these concepts, and compare these differences to each individual’s tested love style. Data collection for this research involves interviewing and collecting surveys from 20 people, 10 male and 10 female, all heterosexual. Thematic analysis is used to analyze the data I collect. With thematic analysis, the interviews I conduct are taped and transcribed in order to analyze the collected data and focus on re-occurring patterns of experiences or themes. Interviewees are also given a love style test to determine their love style and finally are asked to complete a brief questionnaire determining their demographic characteristics. This research is important because previous interpersonal research has shown that lack of communication has been documented as one of the most frequent problems in dating. If individuals have the opportunity to understand how their love style may affect the way in which they communicate and define different issues in a relationship, they might then be better able to communicate and resolve these issues.



9th Annual UW System Symposium

Abstracts

293 **Structural analysis of “artificial tissues” produced in 3D cultures of the human placental cell line, BeWo.**

Danae Helton

UW-River Falls

Sponsor/advisor: Timothy Lyden, Ph.D.

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

A series of continuing studies have been undertaken to evaluate the effect of 3D culture conditions on trophoblastic cell phenotypes and the cell adhesion molecules involved in development of complex “tissue-like” structures within these cultures. Specifically, these studies are examining the morphology and structural details of 3D artificial tissues (ATs) derived from the trophoblastic cell line BeWo. These details will be examined with phase contrast, dark field and scanning electron microscopy (SEM). In addition, we will also evaluate the expression and distribution of integrin cell adhesion molecules within cryostat sections of BeWo ATs using immunofluorescent labeling methods. This study builds on our growing experience using natural scaffolding materials in tissue engineering applications. Previous studies have shown that these placental cells grow well in this environment, producing large-scale complex structures which have been maintained continuously for more than 12 months in culture. Preliminary observations using SEM in this project have shown that these cells elaborate a significant fibrous matrix in addition to that present in the scaffolding material. This observation suggests that integrin switching could be observed in these samples with one set of integrins attaching cells to the scaffold and another attaching them to the newly produced matrix materials. The exact nature of such a “switch” would be very interesting since this is a normal feature of trophoblast differentiation during placental development in vivo. Overall, this project is designed to expand our earlier observations and further explore the details of cellular adhesion within these newly generated ATs.

122 **Effects Of Slope And Aspect On Brushfire Severity**

Eric Helwig

UW-Whitewater

Sponsor/advisor: Dr. Thomas Jeffery

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The purpose of this research is to determine if an examination of the terrain associated with historical brushfires can provide a correlation between slope and aspect as they relate to the severity of the fire. Three separate brushfires of comparable size were selected from 2002 to 2006. Pre and post-fire vegetation analysis was performed to determine the severity of the fire event. Slope was calculated



9th Annual UW System Symposium

Abstracts

from DEM data and divided into 5 degree increments. Aspect also was derived from the USGS 30 meter DEM data and was separated into 15 degree categories. Statistical analysis was then used to evaluate the correlation between the individual terrain components and the burn severity. Additionally, the topographic variables were combined and the correlation reevaluated to determine the relationship with the burn severity.

203 **Designing for Sustainability the Wright Way**

Rachel Hinkley

Abby Romenesko

UW-Stevens Point

Sponsor/advisor: Nisha Fernando

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

This is a senior-level interior design project for a museum to celebrate the various art and architectural works of Frank Lloyd Wright, a renowned architect originally from Wisconsin. The building is located in Veteran's Park on Lake Michigan between the Milwaukee Art Museum and McKinley Marina. This is a multi-use facility including two major exhibit areas, a conference room, small presentation room, reading room, offices, gift store, and restaurant. The museum is a "green" building because nature is a common theme followed by Wright. The building had an existing rooftop garden, equipped with solar panels, and the design provided an equally sustainable interior. Also, the design was required to follow a contemporary theme that did not reflect Wright's common design style. After an extensive research, the design utilized the site views to create a space where the outdoors are incorporated in the indoors. To reflect the modern concept and as a way finding technique, curved walls and partitions were used to create visual interest. In conclusion, the museum is an environmentally friendly and aesthetically pleasing design product. The results impact larger issues in interior design by demonstrating that design and sustainable products can be used in an effective manner.

230 **The Genetic Diversity of Brown Trout Populations in Southwest Wisconsin**

Dan Hoesly

Paula Olig, Jerrod Parker

UW-Platteville

Sponsor/advisor: Dr. Wayne Weber

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM



9th Annual UW System Symposium

Abstracts

This presentation is on the current progress of the genetic analysis of Brown Trout populations (*Salmo trutta*) in southwest Wisconsin. The objectives of this project are several fold: 1) Develop and evaluate effective means of isolating DNA from fin clips taken from Brown Trout populations; 2) Obtain baseline genetic data of local sample populations; 3) Contribute genetic data to the Barcode of Life project; 4) Analyze population divergence from stock and wild stock populations between streams and within the same stream; 5) Compare genetic data to other trout populations through phylogenetic analysis; 6) Investigate genetic analyses for possible wild populations. Trout populations were sampled using an electro-shocker and taking fin clip tissue samples. Different DNA isolation protocols were then tested to maximize yields from fin clips and the Qiagen DNeasy Blood & Tissue Kit silica based spin column method was found to be most effective. Numerous primers were then screened for PCR amplification and successful amplification of an 1800 base pair (bp) region was achieved. DNA sequencing was done by the UW-Madison Biotechnology Center Sequencing Laboratory. Sequence analysis and comparison is currently being done using Bioedit. Initial phylogenetic analysis is also being done using Bioedit and further analysis will be done using either Geneious, PAML, PHYLIP, MrBayes or similar software package. Results of these analyses will provide an understanding of the genetic diversification and distribution of this important game species.

151 **Family Support: What It Means To Male Inmates**

Staci Hofferber

Leigh-Anna Fournelle

UW-Stout

Sponsor/advisor: Susan M. Wolfgram Ph.D.

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Family support for incarcerated individuals is an important issue that receives little consideration in society even though it may be one of the greatest factors for change in the jail system for combating recidivism rates. This study investigated the attitudes of 44 male inmates regarding family support while incarcerated in a Midwestern Wisconsin jail. It was hypothesized that increased family support of inmates while incarcerated would have a positive effect on the inmates and their behavior. Survey data was analyzed using frequencies and a reliability analysis. Results indicated that family support had significant effects on inmates while incarcerated. It was also found that overall conditions of the visits were unsatisfactory. Based on these findings, it is important for people to recognize that incarcerated individuals benefit from support from their family and jail environment while incarcerated. Implications for practitioners and future researchers include a need for greater efforts towards awareness and education of family involvement with inmates. It would also be helpful to improve the incorporation of family support for jail systems.



9th Annual UW System Symposium

Abstracts

189 **The Demographics of Blanding's Turtle (*Emydoidea blandingii*) at Richard Bong State Recreation Area in Southeastern Wisconsin.**

Robert Jagla

Chris Coleman, Sean Murphy

UW-Parkside

Sponsor/advisor: Gregory Mayer, Ph.D

Additional sponsor/adviser (if any): Joy Wolf, Ph.D

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Identifying suitable habitat for small populations is a critical concern for land managers and conservation efforts. Species that naturally exist in fragmented habitats rely on metapopulation dynamics, such as patterns of movement and suitable habitat for breeding and nesting. However, for some populations, anthropogenic activities can alter reproduction success. The Blanding's turtle (*Emydoidea blandingii*) is a semi-aquatic species vulnerable to loss of wetland habitats and is now listed as threatened throughout most of the Midwest states. In Richard Bong State Recreation Area located in southeastern Wisconsin we conducted a study to assess the base population size, home ranges, and nesting habitat of *E. blandingii*. Mark /recapture sampling and telemetry of radio-tagged turtles were performed to determine their population size, home ranges, and nesting habitat. The radio telemetric data collected was analyzed using spatial analysis software to describe the habitat use and home ranges of the turtles at RBSRA. A total of 229 turtles were captured, most of which were painted turtles (*Chrysemys picta*) or snapping turtles (*Chelydra serpentina*). Of 31 Blanding's turtles captured, ten were monitored throughout the season. The minimum age was 3 and the maximum was 23 with a mean of 13.23 years. The male to female sex-ratio was 1:0.0765. All of the gravid females were tracked to a grassland habitat five hundred meters or more from their initial capture sites. The home ranges of all monitored turtles were centralized around one wetland area within RBSRA. The use of grassland habitat for nesting sites is consistent with findings from other studies. Conservation and management plans should address issues of habitat loss that affect mating and nesting activity, movement within their range, and threats to recruitment from predators.

132 **Learning Disabilities In The String Classroom**

Nicole James

UW-Whitewater

Sponsor/advisor: Dr. Benjamin Whitcomb

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Learning disabilities are prevalent in public schools and most teachers will teach many learning disabled students in their career. Learning disabilities can be broken down into four main categories:



9th Annual UW System Symposium

Abstracts

input disorders, output disorders, memory disorders and organization disorders. Each type will manifest itself into student difficulty in the string orchestra classroom. There are steps that teachers of learning disabled students should take before the student begins their class, and while the student is in their class to help ensure that student a successful and meaningful experience playing stringed instruments. My research examines what learning disabilities are, how they manifest themselves in a string classroom and strategies for the teacher of these students. I will explore the literature on learning disabilities and on special needs adaptations for the music classroom and conduct a survey of Wisconsin string teachers regarding the prevalence of learning disabilities in their classroom and how much time they spend on adaptations for these students. I have found many strategies for teaching children with learning disabilities in the literature for general education that can be translated for the string classroom and I can anticipate that with further research I will find more. I expect that a high percentage of teachers I will survey will have encountered children with learning disabilities in their classroom. The results regarding the proportion of time spent with these students may vary greatly, depending on each teacher's personal knowledge of special needs adaptations for music classrooms and the severity of learning disabilities that they have encountered in their teaching. I will present my results in a paper that I will use as a basis for a poster session at the national ASTA convention as well as at the UW Research Symposium.

182 Proposals to Enhance Solvency of Social Security

Stephen Jansen

UW-Whitewater

Sponsor/advisor: Dr. Susan Johnson

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Social Security is the most comprehensive benefit program for retirees in the United States. There are currently 48 million of people who receive benefits from the social security system. Concern has mounted over the predicted shortfall of benefits in nearing years. It is my goal to investigate proposals that will enhance solvency. Such proposals include: privatization, raising the cap for individuals paying into social security, increasing the retirement age, reducing benefits of the wealthiest 1%, and having a lockbox policy that will assure that all revenue stays in the trust fund. To do this I plan to review the history, development, secondary sources, and various policy proposals of Social Security. My analysis indicates that I will find that privatization will not be a sufficient solution to the eminent problem of a shortfall in benefits, and that the most economically sound thing to do is to find a progressive way to increase revenue into the system while at the same time insuring that further withdrawals from the trust fund are prevented.



9th Annual UW System Symposium

Abstracts

228 Antibiotic Resistant E. coli from the Dairy Complex

Christopher Johnson

UW-River Falls

Sponsor/advisor: Elaine Hardwick

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Project description The project has two purposes; the first is to isolate and culture Escherichia coli (E. coli) found in fresh manure from the campus dairy complex. After acquiring a pure sample I will use standard microbiological techniques to identify pure cultures of E. coli. The second purpose is to test the pure E coli for antibiotic resistance by exposing the E. coli sample to antibiotics commonly used in the dairy industry. For example I will use cefotaxime, a common antibiotic used in dairy cattle, to test the sample of E. coli for the resistant gene. Once I have determined that there is a possible resistant gene in the bacteria I will analyze the resistant genes by using PCR techniques. Known primers will be used to detect the resistant genes. From my research that I conducted in fall of 2007 I found that E coli displayed resistance to novobiocin, optocin, and ampicillin. In this semesters project I will use isolates found last semester and I will acquire new isolates. These isolates will be tested by the procedure above. After completing the above procedure I will try to reproduce my results by using a modified chromogenic agar. **Project significance** This project is important because it is furthering my education, by helping me learn lab techniques need to succeed as biology major. The project will improve my understanding of the growing threat of antibiotic resistance bacteria. There is an increase in antibiotic resistant bacteria that is causing many medical problems for people around the world. These problems can be as direct as a deadly infection in a human or indirect like an infection in animals used for our food supply.

202 Use Of Discriminant Function Analysis To Model The Benthic Community Structure Of Two Coral Reef Energy Zones

Eric Johnson

Daniel Levings, Amanda Graumann, Valerie Golden, Mykle Sederlund, Laura Paulson

UW-Superior

Sponsor/advisor: Dr. Edward W. Burkett

Additional sponsor/adviser (if any):

Group 2: Biology 1

St. Croix (321), Oral Presentations Session 1, 8:30 AM - 9:25 AM

Between 1998 and 2001 the barrier reef off the coast of Caye Caulker, Belize was decimated by one class five and two class four hurricanes. The primary goal of the Caye Caulker Research Initiative, for a successful reef management program, is to develop a recovery model for this reef. Discriminant function analysis (DFA), a multivariate statistical method, may be a useful tool for creating such



9th Annual UW System Symposium

Abstracts

models. For this study, the community structure of two distinct reef energy zones were quantified in order to determine the accuracy of DFA as a tool for classifying reef communities. Between 2002 and 2007, 250 photo-quads were collected each year at 10 permanent monitoring sites in order to determine density and coverage of reef benthic life forms. In addition, each site was classified as a high or low energy zone based on the strength of current and wave action. DFA determined eight species of coral and algae to be significant for modeling energy zones based on coverage. This model classified the original dataset with 96.0% accuracy and test sites with 85.4% and 69.1% accuracy. In addition, DFA selected 11 species of coral, algae, and invertebrates as significant based on density. This model classified the original dataset with 94.3% accuracy and the test sites with 86.7% and 90.1% accuracy. In both cases, the selected species had morphologies adaptive to high or low energy environments. This study clearly demonstrates DFAs ability to select species and generate accurate classification models. Therefore, DFA could be used as a reef management tool for generating future reef recovery models.

278 Effects of Montessori Painting on an Older Adult with Dementia

Elizabeth Kaufman

UW-La Crosse

Sponsor/advisor: Patricia Ardivino

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Montessori learning has been associated with innovative education for young children (Bruck, 2001), but in 1995 an idea was piloted to use Montessori principles in recreation programs for people residing in assisted living and nursing homes across the nation. While this new treatment option seemed beneficial, there was little research to provide evidence of its effectiveness in lessening the debilitating symptoms associated with dementia. The intention of this study was to determine if a Montessori painting intervention would increase memory for a person with dementia. An in-depth series of twice weekly pre-test/intervention/post-test sessions was implemented over an eight-week time span. The results showed that the participant had an increase in memory during the post-intervention test 75% of the time.



9th Annual UW System Symposium

Abstracts

244 Expression of receptors for human immunodeficiency virus on leukemia cells exhibiting dendritic cell phenotype

Bradley Kerschner

UW-River Falls

Sponsor/advisor: Karen Klyczek

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The long-term goal of this project is to investigate the physical and spatial relationships between the cell surface proteins necessary for human immunodeficiency virus (HIV) infection. In order to infect a white blood cell, HIV must bind to the CD4 receptor as well as to a co-receptor such as the chemokine receptors CCR5 or CXCR4. We are asking whether these receptors are associated on the cell surface prior to HIV binding. Understanding how these receptors interact with each other and with HIV may provide information that could facilitate development of treatments that block HIV binding to cells. Preliminary results obtained using immunogold labeling and electron microscopy to view the surface of fresh white blood cells suggested that the co-receptors are distributed non-randomly. However, the detectable level of the receptors was too sparse to obtain statistically significant data. In order to address this question, we need to study cells with increased expression of the receptors. Since dendritic cells have been shown to express high levels of HIV receptors and are important in establishing HIV infections, we are attempting to generate cultured cells with a dendritic cell phenotype by treating promyelocytic leukemia cells with varying concentrations of phorbol myristic acetate (PMA), the calcium ionophore A23187, and the cytokines IL-4 and GM-CSF. Expression of the HIV receptors is determined by RT-PCR. Initial results indicate that PMA and A23187 treatments stimulate increased expression of CCR5 receptor in these cells, but reduces CXCR4 expression, consistent with the dendritic cell phenotype. Cell surface protein expression will be confirmed by fluorescent antibody binding prior to electron microscopy analysis.

213 Using Functional Genomics To Elucidate The Defense Response Of Arabidopsis Thaliana Infected With Pseudomonas Syringae

Brittany Kerschner

UW-River Falls

Sponsor/advisor: Dr. Kim Mogen

Additional sponsor/adviser (if any): Bela Peethambaran

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The model system of *Arabidopsis thaliana* and *Pseudomonas syringae* were used to identify plant genes that are important for defense against pathogens. A reverse-genetics approach using T-DNA insertions was used to find mutations in plant defense genes. Mutants were screened for



9th Annual UW System Symposium

Abstracts

homozygosity and disease susceptibility. The specific gene under analysis was At3g09830. Mutants of this gene were shown to exhibit enhanced disease susceptibility (eds) when inoculated with *Pseudomonas syringae*. The main objective was to determine the localization of the protein produced by At3g09830, in an attempt to define its function and its interactions with other proteins in relation to the expression of overall plant pathogen defense phenotypes. Preliminary tests were conducted with *Nicotiana benthamiana* to verify the success of the recombination event between At3g09830 and the destination vector. Destination vectors pEarlyGate103 (pEG103) and pMDC43 were selected; both contain the GFP protein needed for observing gene localization. The destination vector was inserted into *Nicotiana benthamiana* leaves using the Transient Assay method. Results indicated the success of the recombination event and gene expression, as well as At3g09830 protein localization occurring in the cytoplasm of the cell. After analyzing the results of the *Nicotiana benthamiana* preliminary test and determining it a success, At3g09830 was then transferred to *Agrobacterium* in preparation for gene transformation of *Arabidopsis thaliana*. This process was mediated by the Floral Dip procedure. As *Arabidopsis thaliana* approached reproductive maturity, the modified *Agrobacterium* was prepared in a liquid culture. Floral buds were then immersed in the solution for approximately 1 minute. *Agrobacterium* infiltrated the plant and inserted At3g09830 into the *Arabidopsis thaliana* genome. Results for At3g09830 protein localization in *Arabidopsis thaliana* are pending.

301 **Trialkylamine Complexes of Transition Metal Halides**

Scott Kersten

Bryan Carlson

UW-Fox Valley

Sponsor/advisor: Martin Rudd

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

We have been investigating the reactions of anhydrous first row transition metal halides (MX₂ and MX₃; M = Ni, Co, Ti, Sc, Cr, V; X = Cl, Br) with amines as a means to probe the structural and geometry changes that occur across the periodic table. This is a classic example of a Lewis Acid-Base reaction where the electron deficient transition metal is able to accept lone electron pairs from the coordinating nitrogen atom of the amine. In this study to date, we have probed the reactions of trimethylamine and triethylamine with these metal halides. The reactions are very sensitive to moisture and oxygen. We describe the fritted double reaction tube used to carry out these reactions. Once the colored products have been isolated, infra-red spectroscopy and elemental analysis can be used to determine their chemical composition and single crystal X-ray diffraction can be used to analyze their structures and the structure of TiCl₃(NMe₃)₂ is presented.



9th Annual UW System Symposium

Abstracts

282 **An Anthropological Study of the Use and Importance of Herbal Medicines In Costa Rica**

Derek Kockler

UW-La Crosse

Sponsor/advisor: Faye Ellis

Additional sponsor/adviser (if any):

Group 8: Biology 2

Wind River (232), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

With one of the largest samplings of biodiversity in the world, Costa Rica has unique plant species that can be used for medicinal purposes. Herbal medicines are of the oldest medical practices that remain in use today. I traveled to Costa Rica to explore the cultural importance and use of herbal medicines in different regions of the country, as well as compose a list of the most common plants used for medicinal purposes. My research began in San Jose, where I interviewed Costa Ricans regarding their use of herbal remedies and knowledge. The diversity of the participants was extremely high ranging in socioeconomics, professions, education, age, and gender. I then traveled to Parque INBio, a biology reserve and scientific research station. INBio performs extensive studies on the biologically active compounds present in supposed herbal remedies. My time at INBio was spent with leading experts in the field of medicinal plants. After a month at INBio I moved to Pacayas, a small, rural farming community. While in Pacayas I gained experience in organic horticulture and agriculture as well as ornamental and medicinal plants. Here my research included identifying the most common plants used by the general population for medicinal remedies. Also, I compiled the information into a list of the most common plants used by Costa Ricans, and what their uses are. Currently I am in the process of cross referencing commonly used plant species with scientific medical journals. Overall, through my experiences in Costa Rica I have gained insight regarding the use of herbal medicine based on geographic region, economics, profession, and oral history.

175 **Western Wisconsin Local Foods Project:Characterizing the Landscape of Local Foods**

Jared Koerten

Corey Hilber, Isaac Borofka-Webb, Matthew Rick, Christina Hansen, Jodi Neuman, Jenna Pultz, Julie Baewer

UW-Eau Claire

Sponsor/advisor: Eric Jamelske

Additional sponsor/adviser (if any): Andrew Dane

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Introduction: In Western Wisconsin there is a strong push to develop a more robust local/regional food system, for economic development as well as for environmental and health reasons. This project is a partnership between the UWEC Chippewa Valley Center for Economic Research and Development and UW-Extension to document local food production and consumption in Western



9th Annual UW System Symposium

Abstracts

Wisconsin. Methods: In order to characterize local food production and consumption in Western Wisconsin we surveyed colleges and school districts. We believe that investigating farm to school and farm to college programs is a good beginning to characterizing the local food landscape in the region. The questions asked included what local foods are purchased and what portion of the total food budget is allocated to local purchases as well as the perceived benefits of buying and serving local as well as barriers to purchasing local products. Results: We surveyed 33 colleges and 23 school districts and have had approximately a 90% response rate. Of the colleges surveyed one third said they purchased at least some foods locally, while only 2 schools responded that they did so. The completed surveys have just recently been returned and the data entry process is on-going. Due to the timing of our project, we have just begun analyzing the data and therefore will not have any results to present until our poster in April. Conclusions: This is just one part of a larger project that seeks to characterize the supply and demand of local/regional foods in Western Wisconsin. It is our intention to use these surveys to begin to characterize the demand for local foods in Western Wisconsin and then move on to surveying farmers and farmer's markets. Overall our research will provide basic data and information as well as research analysis to inform the local/sustainable foods movement.

100 Investigating Functional Evolution Of Ovule Regulatory Genes In Tomato

Laura Kolbach

UW-Whitewater

Sponsor/advisor: Dr. Robert Kuzoff

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Developmental programs in biological species evolve continually. My research project seeks to understand the basis of functional changes among the networks of genes that control and regulate development in plants. An especially attractive way to explore the evolution of developmental programs is to compare divergence in patterns of gene expression through in situ hybridization. We are using this technique to compare patterns of expression for a set of genes in the class III lineage of the HD-ZIP gene family (HDZ-III) in both tomato and Arabidopsis. Preliminary in situ hybridization results show that expression patterns for HDZ-III genes in tomato are generally similar to those of their counterparts (orthologs) in Arabidopsis, with some exceptions. CORONA (COR), an HDZ-III gene in Arabidopsis, shows a diffuse pattern of expression in floral meristems and no expression in developing leaf primordia. In contrast, its ortholog in tomato, TomCOR, has a strongly localized pattern of expression on the adaxial side of developing floral organs and leaf primordia. Two additional HDZ-III genes, PHABULOSA (PHB) and REVOLUTA (REV), show a strongly adaxial pattern of expression in developing leaves and floral organs in Arabidopsis. However, their orthologs in tomato (TomPHB) had no detectable expression in either developing leaves or developing floral organs. These results demonstrate divergence in the functions of HDZ-III promoters of tomato relative



9th Annual UW System Symposium

Abstracts

to their counterparts in Arabidopsis. Currently I am using in situ hybridization to determine the patterns of gene expression for TomPHB, TomPHV, and TomREV in nascent tomato ovules. Analyzing and contrasting patterns of expression for HDZ-III genes in tomato ovules will provide crucial insights into the functional evolution of the developmental programs in which they operate.

268 **Thermoforming of Low Viscosity Polymers**

Chia Neng Kong

UW-Platteville

Sponsor/advisor: Dr. Majid Tabrizi

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Low viscous polymers particularly thermosetting resins reinforced with fibers have come to a predominant importance in the advanced technology today. This is due to impressive mechanical properties provided by the mixture of thermosetting, infiltrated with the reinforcement and need of today's technology for such product qualities. The thermoforming of the low viscosity polymers is particularly difficult due to lack of physical structure to support the viscose resins. The object of this research project is to offer an innovative production process for low viscosity polymers and verify the integrity of the process in practical application.

256 **Estimation of basement topography in southeastern Wisconsin using 3-D modeling of gravity and aeromagnetic data.**

Adrian Koski

UW-Parkside

Sponsor/advisor: John Skalbeck

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

As water issues permeate society it becomes increasingly important to understand groundwater systems. An accurate estimation of the subsurface basement topography in southeastern Wisconsin is vital to determining flow and quality of groundwater in this region. A 3D model of the Precambrian basement was developed using existing USGS compilations of gravity and aeromagnetic data and state lithologic data (wiscLITH) in conjunction with commercially available GMSYS-3D and Oasis Montaj modeling software. Model grids of 1000 m spacing were constructed for each data set and each geologic unit to match original grid size of gravity data. The surface elevation layer is from DEM data obtained from Wisconsin Department of Natural Resources. Initial elevations grids and physical property assignments for the base of glacial deposits, top of the Mount Simon, and the top of



9th Annual UW System Symposium

Abstracts

Precambrian basement were obtained from previous modeling along profiles (Skalbeck et al., 2007). A layer was developed to represent mafic intrusive bodies with an initial elevation of -5000 m msl and well constrains grid was created using wisCLITH elevations that limit the structural inversion of the model. A forward structural inversion for the basement layer was performed using the gravity data followed by a forward structural inversion for the mafic intrusion layer using the aeromagnetic data. The 3D model yields reasonable fits between observed and calculated gravity and aeromagnetic data and provides additional detail relative to the previous basement surface estimation from profile modeling.

238 Supporting Language & Literacy Development With Classroom Story Retells

Carye Kringle

Andrea Hanzlik

UW-River Falls

Sponsor/advisor: Dr. Gay Ward

Additional sponsor/adviser (if any): Dr. Marie Stadler

Group 4: Education

Wind River (232), Oral Presentations Session 1, 8:30 AM - 9:25 AM

This presentation highlights the importance of oral storytelling and focuses on developmentally appropriate expectations. Video case studies are used to compare stories by developmental level and to identify the language skills important to literacy, cognition, and communication. These include the presence of complex language, literate language features (adjectives, adverbs), cause and effect, story grammar and sequencing. Participants will share strategies to scaffold students' oral stories supporting the development of each of these skills.

117 Linking Diverse Campus Communities through Design Actions

Colleen Kroll

Krista Bruso, Ashley Huebner, Colleen Kroll

UW-Stevens Point

Sponsor/advisor: Donna Zimmerman

Additional sponsor/adviser (if any):

Group 7: Architecture & Social Movements

Willow (334), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

Three interior design students were asked by The College of Natural Resources, an internationally known undergraduate institution for natural resources and environmental management, to design a space which shares its building with the Department of Biology (College of Letters & Science). The cultural identity of both constituents—even though they came from different colleges—were inherently intertwined within this building. The purpose of this design was to address the following



9th Annual UW System Symposium

Abstracts

performance criteria: the space needs to be student centered, flexible for various activities, manage traffic and wayfinding, address acoustics and lighting, and be a sustainable design. Several research methodologies were employed including researching mission statements of the institutions; conducting focus groups in both colleges at faculty meetings and in student organization meetings; photographic documentation of the existing space; and research of sustainable materials and lighting options. This research became the foundation for the design. Ultimately three different design solutions were proposed and discussed with the planning committee composed of both staffs of the colleges. Suggestions were given and the plans were then compiled to form a unified design concept. That concept was presented at a large fund raising event that took place 6 weeks after the introduction of the project.

158 Precision Multicolor Photometry of the Monoceros Star-Forming Complex

Anthony Kuchera

UW-Oshkosh

Sponsor/advisor: Dr. Nadia Kaltcheva

Additional sponsor/adviser (if any):

Group 16: Physics & Astronomy

Chippewa River, Oral Presentations Session 4, 2:00 PM - 2:55 PM

In order to further contribute to the understanding of the Monoceros star-forming complex, a crucial part of the spiral pattern of the Milky Way, we have studied the spatial structure of the apparent groupings of recently born stars within this field. Despite extensive studies, the structure of this field has been poorly known. We use precision uvby photometry and improved distance calibrations to obtain homogeneous stellar distances and color excesses for a large sample of stars of various spectral and luminosity types. We have determined new distances for the apparent stellar groupings, mapped the field stars and those belonging to the clusters, and have investigated possible substructures within the clusters. Studying the structure of star-forming fields gives insight about the morphology of our own galaxy, the Milky Way.

146 Kinetics Of The Transesterification Of Triglycerides Using The Heterogeneous Catalyst DOWEX®

Jared Kunick

UW-Whitewater

Sponsor/advisor: Dr. Hassimi Traore

Additional sponsor/adviser (if any): Dr. Paul House

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Petroleum derived fuel feedstocks are dwindling, and one of the more environmentally friendly successors appears to be biofuels. Comparatively, biofuel combustion produces less sulphur



9th Annual UW System Symposium

Abstracts

containing compounds and carbon dioxide than petroleum based fuels. Sulphur compound byproducts are the major contributor to acid rain while excess carbon dioxide in the atmosphere has been linked to increased global temperatures, both of which have produced noticeably detrimental environmental effects. One way to synthesize biofuels is by transesterification of triglycerides with a short chain alcohol (e.g. methanol) and base (e.g. potassium hydroxide) catalysis. Some naturally occurring oils (rapeseed) or oils subjected to high temperatures (cooking oil) have high free fatty acid content which neutralize the base and prevent catalysis. Another problematic aspect of the base-catalyzed reaction is removal of the homogeneous catalyst post-reaction. This project will investigate the kinetics of transesterification of acidic oils with Dowex[®] anion exchange resins which act as heterogeneous catalysts. As a heterogeneous, non-basic catalyst, Dowex[®] would potentially allow for easier catalyst removal post-reaction, and transesterification of oils with high, free fatty acid content. The experimental goal of research is to begin by reacting low acid content oils to prove feasibility of kinetics measurement, and if possible, apply said methods to highly acidic oils. Kinetics will be followed in real time with NMR detection or by quenching the reaction and analyzing the reactions products using HPLC.

283 **South African Female Printmakers**

Maggie Lach

UW-La Crosse

Sponsor/advisor: Joel Elgin

Additional sponsor/adviser (if any):

Gallery Exhibit

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

This proposal focuses on contemporary female artists in South Africa, a much understudied topic. I want to go to South Africa and research how these artists express their identity and history along with current issues in print making. I would like to visit print shops, galleries, and university programs and talk with female artists as well as experiencing apart of their life as a female artist in South African culture. The knowledge gained through this first hand experience will allow me return and work on expressing my own identity in my artwork along with creating awareness of South African female art through exhibitions and discussing my experience.



9th Annual UW System Symposium

Abstracts

183 **Domestic Violence: Why Women Stay in Abusive Relationships.**

Abby LeCloux

UW-Oshkosh

Sponsor/advisor: Dominic Bruni

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Every year thousands of women are victims of domestic violence. Year after year women stay with their abusers or leave and return a short time later. I set out to answer the question why doesn't she just leave? To answer this question I conducted a thorough review of the available literature in numerous professional journals. I discovered that women stay in abusive relationships for a variety of reasons but five were most common. These include; economics, societal pressures, guilt and self-doubt, concern for children, and a lack of community support. As a Social Work student I found these reasons to be significant because they could all be prevented or solved in some way. This research indicates that much more needs to be done about domestic violence and also that more help is needed for victims of domestic violence. The question "why doesn't she just leave" is insensitive and inaccurate so society's views on domestic violence need to be modified.

201 **The Role of Attractiveness and Friendliness in Online Dating**

Jennifer Leptien

Cassandra Vogt, Satoris Youngcourt

UW-River Falls

Sponsor/advisor: Travis

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Online dating has increased in popularity, in response; we sought to identify factors that may influence success of online dating, physical attractiveness, friendliness, and reactions to online partners. We conducted a 2 (attractive vs. unattractive) x 2 (friendly vs. unfriendly) experiment. We created personal ads to represent the four conditions: attractive/friendly, attractive/unfriendly, unattractive/friendly, and unattractive/unfriendly. Attractiveness was manipulated by photographs deemed to be attractive or unattractive based on several criteria (e.g., facial symmetry). Friendliness was manipulated through self-descriptions of the women (e.g., easy-going vs. demanding). We posted the profiles on the online personals section of Minneapolis/St. Paul Craigslist.com, a website



9th Annual UW System Symposium

Abstracts

for communities that provides classified listings for different services. The profiles were posted everyday for five days, removed, then emails received were counted and their content analyzed. The attractive/friendly profile received 177 responses; 130 responded to the attractive/unfriendly profile; 36 responded to the unattractive/friendly profile; 28 responded to the unattractive/unfriendly profile. Results showed the attractive profiles received significantly more emails than the unattractive profiles ($\chi^2(1, N = 371) = 159.16, p < .001$). Friendly received more responses than unfriendly ($\chi^2(1, N = 371) = 8.16, p < .01$). Responses were coded regarding how positive to negative they were (1 = very negative; 10 = very positive). The only significant difference was between the attractive/friendly and unattractive/unfriendly profile, with the responses to the former being significantly more positive than the responses to the latter (mean difference = .70, se = .27, $p < .05$). We found differences in how individuals were treated based on attractiveness and friendliness, whether they were complimented versus ridiculed (e.g., the unattractive postings received more rude comments than the attractive profiles) and if offered incentives (e.g., attractive/friendly received the most gift offers). Our findings suggest attractiveness and friendliness strongly affects how a person responds when dating online.

286 Creating a Sustainable and Inclusive Campus by Adopting New Contractor Guidelines for Food Sustainability at UWRF

Kristin Liberatore

UW-River Falls

Sponsor/advisor: Kelly Cain

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The food service contract for UWRF is ending in March, 2008. In order for the university to continue moving towards maximizing its achievement of its strategic planning goals, especially Goal #2, "Modeling Sustainability Principles", new specifications and guidelines need to be incorporated into the next food service request for proposal that are consistent with "greening" the campus food system. Such guidelines need to ensure that the next contractor is sourcing as much locally grown food as possible, and that its products and services to the university are eco-friendly and sustainable. A petition was circulated among students, faculty, and staff for signatures during final exam week of Fall, 2007-08, requesting strong sustainability based guidelines, similar to those adapted from Portland State University, by a fellow student, Justin Townsend. These proposed guidelines and the petition were then submitted to the administration supporting green food service contractor specifications in order to demonstrate the commitment of the campus community in changing the way that the UWRF food service operates.



9th Annual UW System Symposium

Abstracts

120 **Visual Soil Structure, Soil Strength, and Aggregation in Organic Matter Plots**

Mandy Liesch

UW-River Falls

Sponsor/advisor: Dr. Bill Anderson

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The Visual Soil Structural Assessment (VSSA) is a useful tool in gauging the overall health and productivity of the soil, especially for the non scientist. These visual analyses are not usually correlated to other physical measurements of soil. This study correlates VSSA with vane shear strength and dry aggregate distribution, both indicators of soil physical health that closely match the characteristics measured in VSSA in three different treatments of organic matter: municipal compost, slurry (urine and manure mix), and a control plot with no treatment. We tested the three different treatments of organic matter in both fall and winter to see if a period of inactivity changed the visual quality of the soil. We found that VSSA and vane shear strength had a correlation and accurately reflects the compaction level in the soil, while dry aggregate distribution did not have a strong relationship with visual score. We concluded that VSSA is a reliable detector of soil of poor soil health and compaction.

169 **Alterations to a set of Apoptotic related Genes specific to SEB in a Human PBMC Module**

Cayla Lillge

Tricia Mason, Chanaka Mendis

UW-Platteville

Sponsor/advisor: Dr. Chanaka Mendis

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Although generally harmless, bacteria are everywhere. The most dangerous of these are easily avoided, but every so often humans will come in contact with a bacterium they would have liked to avoid. Staphylococcus enterotoxin B (SEB) is just one such bacterium found in food such as unrefrigerated meats, dairy, and bakery products where it produces toxins that, when ingested, cause what is known as classic food poisoning. SEB also has the potential to be used as a biological war agent, in which case, the effects could be much more harmful than ingestion. Although much is known about the symptoms and structure of SEB, little is known about its gene expression pathways. Here we attempt to utilize a well characterized set of apoptotic related genes that are key to the pathogenesis of Staphylococcal enterotoxin B (SEB) induced lethal shock in human peripheral blood mononuclear cells (PBMC) to evaluate the effectiveness of two potential signal cascade inhibitors. To



9th Annual UW System Symposium

Abstracts

study the SB203580 (p38) and SP600125 specific inhibitors, the expression pattern of SEB induced apoptosis must be considered. The gene expression pattern of the SEB is dependent on the amount of time the PBMCs are exposed to SEB. After designing primers using stringent parameters, we will analyze any alterations to the known gene expression pattern using reverse-transcription (RT-PCR) for the genes heparanase precursor (HEP), Caspase 3, Caspase 6, Caspase 7, Caspase 8, Ubiquitin specific protease, and SOD. We believe that our investigation may reveal crucial information to better understand the complexity of signaling events taking place in SEB induced apoptosis and the importance of inhibiting pathway inter-connectors such as JNK to abolish unwanted cellular behavior. We also evaluated the effectiveness of JNK-inhibitor by analyzing alterations imposed on to a known SEB specific gene expression pattern.

147 Cyberbullying and School Climate: The on Campus Effects of Online Behaviors

Trevor Lippman

Justin Patchin,

UW-Eau Claire

Sponsor/advisor: Justin Patchin

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The Internet and other technology has changed the way adolescents interact with each other. While computers, cell phones, and other portable electronic devices have provided countless benefits to adolescents, they have also introduced new ways in which peers can bully one another. Cyberbullying has been defined as “willful and repeated harm inflicted through the medium of electronic text.”

While there have been numerous studies exploring the causes and consequences of traditional bullying, very little is currently known about cyberbullying. For example, previous research points to a connection between school climate and traditional forms of bullying. The current study seeks to determine whether school climate and culture also influences the extent to which youth are involved in cyberbullying as well. Implications for the results of this study will also be discussed.

234 Characterization of Ethanol Toxicity in Zebrafish Through the Use of Functional Genomics

James Lokken

UW-Stout

Sponsor/advisor: Dr. Michael Pickart

Additional sponsor/adviser (if any):

Group 18: Water Sciences

Willow River, Oral Presentations Session 4, 2:00 PM - 2:55 PM



9th Annual UW System Symposium

Abstracts

In humans, members of the alcohol dehydrogenase (adh) family of enzymes metabolize a wide variety of substrates, including ethanol, retinol, other aliphatic alcohols, hydroxysteroids, and lipid peroxidation products. There are seven human enzymes associated with metabolizing these substrates adh 1-7. Humans and zebrafish share many of the same genes, allowing for effects found in zebrafish to improve the understanding of human Adh gene function. We are analyzing three enzymes of this family in zebrafish: adh 5, adh 8a, and adh 8b. Morpholino phosphorodiamate oligonucleotides (MOs) were designed to each of these genes individually and in combination to provide the means to decrease their expression in zebrafish embryos. To first understand ethanol toxicity in zebrafish, embryos were treated in 96 well plates with varied ethanol concentrations to determine the survival response. Once established, this response was further assessed by injecting embryos with adh-targeting morpholinos to determine the impact of decreased expression of each gene on ethanol toxicity. Results to date have not indicated the capacity of decreased gene expression of individual genes to alter ethanol toxicity. However, further work must explore different MO concentrations and combinations to determine the role of these adh genes in metabolizing ethanol. By providing information toward understanding basic mechanisms of ethanol toxicity, these experiments may impact the understanding of alcohol-related illnesses such as fetal alcohol syndrome or other effects of ethanol toxicity as well.

92 Effects Of Elevated Calcium Concentrations On The Gravitropic Response In A Calcium Sensitive Mutant Of Arabidopsis Thaliana.

Tristan Long

UW-Whitewater

Sponsor/advisor: Dr. Catherine W, Chan

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Calcium is a signaling ion for many biological processes in plants and indeed, calcium influx controls numerous adaptive behaviors in plants (Sanders et al. 2002 Plant Cell 14 Supplement: S401 - 417). CNGC2 (cyclic nucleotide gated channel isoform 2) in Arabidopsis thaliana is likely a biologically important calcium intake channel (Berkowitz et al. 2007 Plant Cell 19: 1081-1095). Mutations in CNGC2 led to hypersensitivity to external calcium and an adult dwarfism phenotype (Chan et al. 2003 Plant Physiology 132:728-731). This suggests that CNGC2 is responsible for a plant's physiological responses towards changes in calcium levels in its environment. However, a single genetic mutation may result in multiple phenotypes. My recent experimental data suggests that CNGC2 mutants may have altered gravitropic response, which is a plant's ability to orient its roots within the gravity vector. Specifically, my preliminary results suggest that the CNGC2 mutant is slower than the wild type to recognize and adapt to a shift in the gravity vector.



9th Annual UW System Symposium

Abstracts

186 **A Comparison Of Algal Communities Surrounding The Caye Caulker Channel**

Brianne Looze

Marian Ashpurdy, Meaghan Vaughan

UW-Superior

Sponsor/advisor: Dr. Edward W. Burkett

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The Caye Caulker channel of the Belize Barrier Reef brings nutrients and sediments into the lagoon off the coast of Caye Caulker, Belize through ebb and flood tidal flow. The long shore current of the lagoon then transports these nutrients and sediments through the lagoon from north to south. A hydrodynamic model was created that predicted the greatest quantities of nutrients and algae should be found on the north side of the channel. This study tested the predictions of the hydrodynamic model by comparing the algal communities on the north and south sides of the Caye Caulker channel. Researchers used SCUBA diving and the Point-Intercept Surface method to collect data at two sites, one north of the Caye Caulker channel and one south of the Caye Caulker channel. In the lab, the data were entered into Microsoft Excel and Minitab to provide graphical and statistical analysis. These computer programs determined the percent coverage and the relative abundance of the algae species surrounding the Caye Caulker channel. These values were then compared in order to determine if there was a significant difference in the amount of total algae between the two locations. Results of this study indicate that total algal coverage did not differ significantly between the two sites, however micro algae dominated the north site and macro algae dominated the south. Further studies should be conducted to determine actual sediment and nutrient levels predicted by the model.

196 **Museum Studies in the UK**

Kue Lor

UW-River Falls

Sponsor/advisor: Brad Gee

Additional sponsor/adviser (if any): Dr. Kiril Petkov

Humanities

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

I traveled through the program Semester Abroad: Europe which allowed me to be able to develop a research project on my own and find the right place in order to accomplish my task of learning about museum studies intensely. Through a two month internship in Bath, England at a museum named 'The American Museum in Britain' I was able to learn all about the internal workings of a museum. Having worked two months for almost 40 hours a week at the internship I was able to gather a lot of information about the museum studies field and composed a rather detailed paper about what I had learned.



9th Annual UW System Symposium

Abstracts

262 **The Investigation of the Levels of Crystalline and Ease of Thermoforming Crystallinity Materials**

Lue Lor

UW-Platteville

Sponsor/advisor: Dr. Majid Tabrizi

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Thermoformed crystalline materials are gaining popularity due to the desirable low gas permeability characteristics. In this investigation, the levels of crystallinity and processability of crystalline materials as a function of thermoforming condition will be studied. Polyethylene terephthalate (PET), a polymer with common application in food packaging will be used. The material will be exposed to a predefined amount of heat to generate the desirable level of crystallinity; furthermore, the prepared samples will be thermoformed under the same conditions. The result will be analyzed to identify the relationship between the PET crystallinity levels along with the ease of thermoforming crystalline materials.

224 **Medicinal Plant Use in the Wisconsin Hmong Population**

Christina Luke

Elbek Kurbanov, Brooke Koenig

UW-Stout

Sponsor/advisor: Dr. Kitrina Carlson

Additional sponsor/adviser (if any): Dr. Rebecca Abler

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Investigation of how specific cultures use plants for medicine has been critical to the development of many important pharmaceutical products. The Hmong culture has a long tradition of using plants for medicine. Many Hmong people moved to Wisconsin within the past two decades and still maintain traditional uses of plants for medicine. The objective of this work was to develop a Hmong medicinal plant database that catalogues which plants are used, how they are used, why they are used, and which bioactive plant compounds have been identified in the plants. A multigenerational survey of Wisconsin Hmong is currently being conducted to gather this data. Early survey analysis indicates that the younger Hmong population does not typically use traditional Hmong medicines, suggesting that the database will serve not only as an important resource for identification of potential sources of medicine, but also as an important record of traditional Hmong culture. Plants reported as being used for medicinal purposes have been screened for various bioactive compounds with a specific focus on plant alkaloids. A rapid alkaloid detection protocol has been developed and is being used as a fast screening tool for plant samples. Plants are then analyzed using Gas Chromatography/Mass Spectroscopy (GC/MS), where the various plant components are identified. Several Hmong plants



9th Annual UW System Symposium

Abstracts

and their compounds have already been analyzed using GC/MS and the results of this preliminary plant compound screen will be presented.

142 Findings from an Evaluation of the USDA Fresh Fruit and Vegetable Program After One Year

Beth Lutz

Kathryn Glodowski, Brandon Lauersdorf

UW-Eau Claire

Sponsor/advisor: Eric Jamelske

Additional sponsor/adviser (if any): Lori Bica

Group 3: Agriculture & Plants

Chippewa River (322), Oral Presentations Session 1, 8:30 AM - 9:25 AM

Introduction: In 2002, the U.S. Department of Agriculture (USDA) created the Fresh Fruit and Vegetable Program (FFVP) to improve nutrition and help reduce the prevalence of childhood obesity. In November 2005, Wisconsin was added to this program. Our study evaluates whether the Wisconsin FFVP positively impacted child attitude and behavior towards eating fruits and vegetables. **Methods:** In 2006, 25 Wisconsin schools were selected for FFVP program participation. Study measures included a baseline survey and two follow-up surveys given to students in the intervention schools as well as 15 selected control schools. Independent samples t-tests and multivariate probit regression analysis were used to identify attitudinal and behavioral program effects over one year using the first and last surveys. **Results:** An earlier analysis of the program effects after just three months of program implementation yielded several positive results. Compared to control schools, students in intervention schools reported an increased willingness to try new fruits and vegetables in school. Moreover, among children who initially reported eating fruits and vegetables an average of one or less times per day, intervention school students reported increased fruit and vegetable intake compared to control schools. We have just begun analyzing the one year program data and therefore do not have any specific results to report. However, we expect to find continued evidence of positive program effects. Our hypothesis is that the attitudinal and behavioral program effects measured after one year will be more pronounced than what we have found after only three months. **Conclusions:** Our initial research indicates that the Wisconsin FFVP is having beneficial short term effects on both attitude and behavior among participating children. Our continued research will help determine if healthier diets are being adopted by students. This information will be useful in developing school nutrition policies to reduce the prevalence of overweight among children.



9th Annual UW System Symposium

Abstracts

259 Characterizing Lake Huron Sinkhole Microbial Communities through PLFA Profiles

Nathan Maier

UW-Stout

Sponsor/advisor: Stephen Nold

Additional sponsor/adviser (if any):

Group 12: Biology 3

St. Croix (321), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

Lake Huron sinkholes are characterized by groundwater venting onto the lake floor, providing habitat for unique microbial communities adapted to low oxygen and high sulfate conditions. To measure bacterial biomass and characterize differences between microbial communities in Lake Huron sinkholes, the diversity and abundance of phospholipid fatty acids (PLFA) in the sinkhole was measured. Samples were collected from a range of sediment types varying in water depth, sediment depth, and level of groundwater influence. A modified Bligh/Dyer solvent was used for lipid extraction, silicic acid chromatography to separate the lipid classes, mild alkaline methanolysis to prepare fatty acid methyl esters, and gas chromatography to analyze the PLFAs. Phospholipid biomass was significantly higher in the sinkhole sediment versus the surrounding lake sediment. Less pronounced differences in biomass were found at different depths in the sinkhole sediment. Multidimensional scaling analyses of the PLFA profiles displayed distinct differences between sinkhole habitats and the surrounding lake sediments. These findings are supported by automated ribosomal intergenic spacer community profiles from related studies. High levels of the fatty acids 16:0 and 18:1 ω 7c (commonly found in cyanobacteria) were responsible for differentiating sinkhole from surrounding lake sediments. Biomarkers for sulfate-reducing bacteria (10 Methyl 16:0 and 17:1 ω 8c) were more abundant in surface sinkhole sediments than deeper sediments. These signature lipids are found in the genera *Desulfobacter* and *Desulfobulbus*. Biomarkers for protozoan and algal species (20:4 ω 6 and 20:5 ω 3) contributed a small but consistent component of the sinkhole community profile. The presence of eukaryotes and sulfate-reducing bacteria is supported by 16S rDNA data obtained from these habitats. To test the hypothesis that anaerobic methane-oxidizing Archaea are present in this habitat we are also investigating ¹³C incorporation into archaeols and hydroxyarchaeols. Combined, these data support biomass and community composition differences between the sinkhole and lake sediments.



9th Annual UW System Symposium

Abstracts

165 **Effects of Beaver (*Castor Canadensis*) Dams on Temperature and Dissolved Oxygen in Southwest Wisconsin Streams**

Josh Manning

UW-Richland

Sponsor/advisor: Scott E. Walter

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Beaver (*Castor canadensis*) are common mammals throughout Southwest Wisconsin. Beaver dams are often associated with the alteration of stream morphology and water chemistry, and thus are widely believed to impact local trout (especially brook trout [*Salvelinus fontinalis*]) negatively. As a result beaver dams are frequently removed. But because beaver ponds provide important habitat for a variety of other wildlife, (e.g. amphibians, waterfowl), removal of beaver dams often leads to wildlife management conflicts. Dam removal programs therefore need solid data on the impact of dams on stream characteristics. This study monitored temperature and dissolved oxygen above and below beaver dams on Horse Creek and Fancy Creek in Richland County, Wisconsin, from 30 September 2007 - 15 March 2008. Base flow was also measured in each stream as it may influence the overall temperature and [O₂] effects of the beaver dams. Results will be presented and discussed relative to the management implications for local trout populations and stream ecosystems.

208 **Observations in the dry reciprocating sliding of Commercially Pure titanium on WC-Co**

Anna Markgren

UW-Platteville

Sponsor/advisor: Dr. Hisham A Abdel-aal

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Titanium is an advantageous material. It offers great benefits in engineering applications because of its high strength to weight ratio. However, due to its high chemical affinity machining of Titanium presents several technical problems. Typical problems are due to material transfer from titanium to cutting tools (mainly the so called refractory carbides). This study reports on the behavior of commercially pure titanium (CPT) when sliding on tungsten carbide/cobalt (WC-Co 6%) in reciprocating dry motion. The experiments entailed sliding of WC-Co/CPT pairs under an array of loads (100N-360N). To study the variation of the wear and the evolution of material transfer in sliding we performed a series of time dependant experiments. In this group, WC-Co/CPT pairs were slid for a period of 30-180 seconds with 30 second intervals. The results indicate that for all loads and time durations, material transfer takes place in one direction: from titanium to WC-Co. The report also presents data for the evolution of surface topography and coefficient of friction.



9th Annual UW System Symposium

Abstracts

290 **Effects of plant growth regulators on essential oil production in *Mentha spicata* L. shoots in vitro.**

David Markle

Karl Peterson, Ph.D.

UW-River Falls

Sponsor/advisor: Susan Wiegrefe, Ph.D.

Additional sponsor/adviser (if any): Timothy Lyden, Ph.D.

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Native spearmint (*Mentha spicata* L.) shoots were cultured in vitro on media containing 12 plant growth regulator combinations: three cytokinins; N6-benzyladenine (BA), kinetin (KT), or zeatin (ZT) at pre-optimized levels (1.0, 1.0 and 2.5 mg/L respectively), without or with three concentrations (20, 30, and 40 mg/L) of 6-(dimethylallylamino) purine (2iP). All media contained MS basal salts with vitamins, 2% sucrose, 10% coconut water, 1.0 mg/L thiodiazuron (TDZ), 4.0 g/L Gellan Gum, and 2 mL/L Plant Preservative Mixture (PPM). The experimental design was a 3 x 4 x 2 factorial with two native spearmint clonal selections as the other variable. Two-node leafy explants were used. The plant responses evaluated were shoot multiplication rate, fresh weight, and yield (v/w) of (-)-carvone, the most critical essential oil obtained from spearmint. The shoots were harvested, weighed, and 5g (dry weight) tissue from each treatment was distilled using continuous water circulation distillation (CWCD). Identification of component essential oils and quantification were conducted using thin layer chromatography (TLC) and high performance liquid chromatography (HPLC). The project was conceived to test the biological feasibility of advancing the Wisconsin and United States mint oil industry through the use of controlled environment production. Results indicate that in vitro spearmint culture may rival field production since with appropriate plant growth regulator manipulation adequate (-)-carvone production is possible within a competitive time span. Labor intensiveness and laboratory costs may be competitive versus costs of land, irrigation, pesticide usage, and/or losses to pathogens and weather. This technique also lends itself to a high level of automation and broader application in production of other essential oils.

219 **Technological Efficiency: Book vs. Computer and the Human Tendency**

Brandon Martell

UW-Superior

Sponsor/advisor: Shevaun Stocker

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The lack of current research about how efficiently individuals use technology is explored. It is hypothesized that when participants are presented with a timed problem solving task, involving the



9th Annual UW System Symposium

Abstracts

use of a computer and the use of a book, participants will have a tendency to choose to use the computer, even when the book is the more efficient approach. Information was gathered from 15 individuals through the use of self-report questionnaires; along with the use of timed problem solving tasks involving the use of a textbook and a computer. No significant differences were found between the groups who were instructed to use either the text book or the internet and the group who got to choose which tool they used to answer the questions, therefore signifying that the manipulation did not work. The hypothesis was not sufficiently supported; however, several changes are mentioned with regard to future research. As a supplement to this research project I am currently exploring how efficiently individuals perceive technology to be.

294 **An Analysis of Osteology for an Old Catholic Cemetery**

Amanda Maslowski

UW-Milwaukee

Sponsor/advisor: Dr. Patricia B. Richards

Additional sponsor/adviser (if any):

Group 10: Visual Presentations 1 (Literature & Anthropology)

St. Croix (321), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

The second oldest cemetery in recorded history of Milwaukee was not properly moved when the rights to the land were sold. This resulted in the discovery of human remains during a construction project that called for water pipes to be unearthed and replaced. The disturbance caused an unknown amount of remains to be lost and a moderate amount of remains to become commingled, which may be associated with the disturbed individuals. My research is divided into two components. The first is to systematically identify and index commingled remains from the excavation. This was completed during the Spring semester of 2007. Individual elements were given a number, provided a detailed description of details of any damage that may later show similar breakage patters, and any other anomaly or unique characteristic of the elements. Information was recorded and photographs were taken to support the description. The second part of the research is to utilize and study the archaeological excavation documentation of each individual, analyze the physical remains, and attempt to identify the following objectives: identify articulations between known individuals and commingled remains for possible matches, identify anomalies in bone formation that may suggest possible relatedness of individuals buried in the cemetery, document similar breakage patters to develop a better understanding for post- and antemortem trauma, and to develop a knowledgeable understanding and more experience dealing with human variation in an osteological setting.



9th Annual UW System Symposium

Abstracts

257 Preliminary Inventory of Vascular Plants at the NPS Tewksbury Unit, Polk County, Wisconsin

Crystal Mathisrud

UW-River Falls

Sponsor/advisor: John Wheeler

Additional sponsor/adviser (if any):

Group 3: Agriculture & Plants

Chippewa River (322), Oral Presentations Session 1, 8:30 AM - 9:25 AM

A qualitative inventory of the vascular plants at the Tewksbury Unit (aka Tewksbury Bluff) was conducted in the summer of 2007. Tewksbury Bluff is a narrow strip of remnant prairie and woodland on top of the river-bluffs near Osceola Wisconsin. The property is an old homestead site that is now protected by the National Parks Services as part of the St. Croix Scenic River-way. The purpose of this project is to determine the diversity of vascular plant life on Tewksbury Bluff, and to provide a baseline for future bio-monitoring. Plant specimens were collected, identified, documented, and preserved. Sampling revealed a noticeable difference in the diversity of herbaceous plants on human-disturbed surfaces compared to the areas that escaped the plow due to rocky or severely sloped terrain. Many native species are found within the study area, including several rare and special concern species such as: *Besseyia bullii*, *Juglans cinerea*, and *Tradescantia occidentalis*. One species that has not previously been documented in Wisconsin, *Houstonia nigricans*, was identified on the western side of the bluff. An unidentified *Mirabilis* shows characteristics of both *M. linearis* and *M. albida*; a population of this taxon was found on the southwestern end of the study areas. Plant biodiversity at Tewksbury Bluff may be threatened. Near a former homestead area, several aggressive non-native species including *Euphorbia cyparissias* and *Euphorbia esula* compete with the native herbaceous plants and grasses for dominance. Continued monitoring of this site will provide information about how the overall plant diversity is affected by these aggressive non-native species.

251 Nightmarish Poetry with Roots in the Writing by Edgar Allan Poe, Charles Simic, and Dean Young

Amanda Maule

UW-Stevens Point

Sponsor/advisor: Dr. Pablo Peschiera

Additional sponsor/adviser (if any):

Group 10: Visual Presentations 1 (Literature & Anthropology)

St. Croix (321), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

I have found a cathartic reaction to my recurring nightmares through transcribing them and then incorporating that material into my poetry. This experience fueled my interest in translating the role of



9th Annual UW System Symposium

Abstracts

the narrator in Edgar Allan Poe's famous nightmarish fiction into the voice and imagery of my poetry. I first compared the techniques of Poe's poetry with his fiction and later with that of more contemporary poets such as Charles Simic and Dean Young, whose writing has similar nightmarish effects but offers examples of contemporary style. From these comparisons, three major techniques have been consistent: delayed verbs, long sentences interrupted with short phrases, and sensory imagery that becomes overwhelming. The use of delayed verbs puts emphasis on the object being perceived and creates tension through suspense. Interruptions in long sentences increase a reader's sense of suspense and thrusts sensory imagery into the forefront of the reader's consideration, as if the reader is being attacked by the imagery. Out of these studies, I have developed poetic writing project that emphasizes experimentation with these techniques to solicit similar effects of provoking a particular tension in the reader. Currently writing the first section of this collection, I am experimenting with images produced by the speaker of the poem. The goal is to trap readers on the line between reality and unreality. The expected result is that the reader's conceptions about how dream experiences and experiences in reality are conveyed in poetry will be placed into question.

204 **Phenological difference between exotic and native shrub species in a Wisconsin forest.**

Kristin McElligott

Joe Mascaro

UW-Milwaukee

Sponsor/advisor: Nigel Rothfels & Liz Taylor UROP program

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The propensity for exotic species to flush leaves early in the spring and to remain photosynthetically active late into the fall may contribute to their apparent competitive advantage over native species in temperate regions. Mean annual air temperature and growing season length have increased in North America, possibly facilitating the invasion of exotic species that hold onto their leaves longer than natives. We explored differences in leaf phenology among three naturalized exotic shrubs (*Lonicera tatarica* L., *Elaeagnus umbellata* Thunb., *Rhamnus cathartica* L.) and three native shrubs (*Rhus glabra* L., *Zanthoxylum americanum* Mill., *Cornus* spp.) in a mixed hardwood forest in Southeastern Wisconsin. We predicted that exotic shrubs would senesce later and maintain green leaves longer in the fall and flush earlier in the spring in comparison to native shrubs. We randomly selected 10 individuals of each species and compared the change in foliage cover, leaf greenness, and leaf fall of each individual over a 12-week period. During the fall, all three exotic shrubs held their leaves between 3 and 5 weeks longer than all three native shrubs. Also, the exotic shrubs maintained at least partial greenness up until leaf abscission, while native shrubs lost their greenness prior to abscission. Greater leaf longevity of these exotic species allows them to benefit from a longer growing season and may partially explain their increasing abundance.



9th Annual UW System Symposium

Abstracts

179 Prevention may be the Key; Effectiveness of preventing shoulder impingement in competitive collegiate baseball players

Lee Meyer

UW-Stevens Point

Sponsor/advisor: Holly Schmies

Additional sponsor/advisor (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Preventative rehabilitation is used effectively at the professional level but many collegiate programs may not have the time or resources to implement these programs. Proving the effectiveness of a shortened preventative rehabilitation protocol, particularly with collegiate baseball players, may influence coaches and athletes to utilize such a program to prevent injury. Prior to the start of the preventative rehabilitation protocol, subjects were pre-tested using special tests for impingement syndrome. While also evaluating range of motion and past medical history. A consistent strengthening and flexibility prevention protocol was implemented for ten weeks prior to the first day of competition. At this point, subjects have shown not only a decrease in pain and increase in arm strength but also report an improvement in self-confidence. It is hoped that subjects with previous history of shoulder impingement have either delayed or prevented their symptoms. Subjects are currently in week seven of the preventative training protocol. Data collection on March 24th and 25th will consist of current arm status compared to prior seasons, quantitative questionnaire, and discussion of flexibility of protocol in conjunction with student-athlete schedule. I am hoping within the next four weeks subjects will continue to stay committed to the protocol and prior shoulder injuries are prevented. If the study is successful, the efficiency of preventative rehabilitation, particularly with the throwing population, will be further established.

110 Application Of Geologic Methods To 21st Century Artifacts

James Meyers

Amy Poplawski

UW-Parkside

Sponsor/advisor: Christene Evans

Additional sponsor/advisor (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Curious formal and informal students of the earth sciences often bring specimens to Geoscience departments at universities for identification. Increasingly, these specimens, while composed of earthen materials, are, in fact, simply artifacts of one or another processes undertaken by humans. The interest in these objects is keen, and the finders are frequently disappointed to be informed of the anthropogenic forces that form their treasures. In most such cases, the consulted geoscientist simply



9th Annual UW System Symposium

Abstracts

informs the treasure hunter, basing their assessment on their own experiences with natural materials. What if, however, studies of these materials were undertaken as they might be in the distant future, when current reference points have lapsed? Presumably, the investigative methods employed by geoscientists would still be relevant. This study applies traditional geologic methods—petrography, sedimentology, and stratigraphy—to ascertain the source of somewhat curious set of beach pebbles found on the beach and wash areas of Lake Michigan in Racine, Wisconsin. The pebbles were notable for embedded, euhedral pyrite crystals, and seemed to occur in conjunction with pinkish clay along a limited section of the lake shore. In order to attempt to eliminate the nearby power plant as a source, the following investigations were undertaken: Areas of occurrence, both above and below the water line, were assessed by transects. Subaqueous topography of the study area was also mapped. Samples were collected both from within the pink clay (subaqueous) and from the beach. The pink clay matrix was also sampled. Pebbles were cut into thin sections for petrographic analysis. Three sections of the bluff immediately above the beach were also described and sampled for stratigraphic context. Results of these investigations suggest that geologic methods will continue to be useful tools for hypothesis testing even if the cultural and terrestrial context changes dramatically.

140 Day Length Does Not Affect Live Sperm Nuclear Shape in the Stallion

Carrie Mueller

Dr. John Parrish, Joan Susko-Parrish, Elsa Ludwig

UW-River Falls

Sponsor/advisor: Dr. Gary Onan

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

This study is based on the idea that since day length has an effect on the hormonal estrous cycling of mares, day length may affect stallion fertility as well. By altering the hormonal cycles of reproductive male and female equines via artificial lighting, it may be possible to have pregnancies occur earlier in the year. To conduct our experiment, we used Fourier Harmonic Analysis (FHA) of sperm nuclei, a precise and objective method to evaluate shape of the sperm head with the calculated harmonic amplitudes highly related to male fertility. This approach has been developed for use in the bull and boar but has not yet been applied to the stallion due to differences in morphology. Six light horse stallions were collected on a weekly basis over the course of eight weeks during which day light was increased from nine to 16 hours. Sperm heads were placed on slides and imaged with phase contrast microscopy. Digital images were then evaluated with custom software to identify perimeter coordinates of sperm nuclei and converted to Fourier Harmonic Amplitudes. No effect of light on



9th Annual UW System Symposium

Abstracts

sperm nuclear shape or variation was detected using FHA. However, the combination of harmonic amplitudes were consistently different for each stallion. We conclude that there was no effect of day length on equine sperm nuclear shape, and thus fertility of these stallions did not change with season. Further research could possibly relate changes in harmonic amplitudes to individual stallion fertility. FHA was shown to be a successful, objective method to analyze equine sperm nuclear shape.

215 **Substrate Color Preference With Respect to Predation in the Praying Mantid *Tenodera aridifolia sinensis***

Sean Murphy

UW-Parkside

Sponsor/advisor: Catherine Mossman, Ph. D

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Crypsis, often known as camouflage, may serve as a strategy for escaping from a predator (Palma and Steneck, 2001) or aiding the organism in its own predatory efforts (Chittka, 2001). Crypsis in predatory insects is of particular interest, as they are commonly the victims of predation themselves. Praying Mantids are charismatic insect predators, but are also prey to larger organisms such as bats. Therefore, their cryptic coloration may serve the dual function of aiding their predatory efforts while avoiding predation. The Chinese Mantid, *Tenodera aridifolia sinensis*, ranges from pale green to brown, colors closely associated with crypsis. The purpose of this study is to determine if mantids utilize crypsis to stalk prey. This may give future insight into the mechanisms of crypsis evolution. A pilot study was performed in the spring of 2006, utilizing a test box with two choices in flooring, white and green representing contrasting and cryptic backgrounds for the mantids. Crickets were placed in opposite corners of the box to provoke the mantids into predatory behavior. Ten mantids were tested. Two observations were made per mantid: the time a mantid spent on a particular color floor, and time spent orienting its head towards a cricket. A Mann-Whitney test ($p < 0.05$) indicated that the mantids spent significantly more time located on the green side and orienting their heads toward the "green" cricket. The current study will increase the sample size, provide for more rigorous controls such as accounting for potential pheromone bias, and remove errant visual stimuli during testing. If the data indicate that mantids are using crypsis significantly in stalking prey, it will support established thought that mantids are aware of their surroundings and have evolved strategies to use crypsis effectively for predatory behaviors. Chittka, L. 2001. Camouflage of predatory crab spiders on flowers and the colour perception of bees (Aranida : Thomisidae/Hymenoptera : Apidae). *Entomologica Generalis* 25:3 pgs 181-187 Palma, Alvaro T. and Steneck, Robert S. 2001. Does variable coloration in juvenile marine crabs reduce risk of visual predation? *Ecology* 82:10 pg 2961-1967.



9th Annual UW System Symposium

Abstracts

144 **PCR Amplification Parameters for Two Species of Mice**

Serenity Mutchler

UW-Whitewater

Sponsor/advisor: George Clokey

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Habitat partitioning occurs when two species which compete for the same resources have overlapping habitats. This is what numerous studies suggest occurs with the deer mouse (*Peromyscus maniculatus*) and the white-footed mouse (*Peromyscus leucopus*) which are thought to be sympatric in Wisconsin. Because of previously problematic studies based on tail morphology, our lab is using new PCR techniques that work with mtDNA to re-examine the question.

95 **The cardiovascular and metabolic responses to water aerobics exercise in older adults**

Amy Nikolai

Brittany Novotny, Cortney Bohnen, Kathryn Schleis

UW-Eau Claire

Sponsor/advisor: Lance Dalleck

Additional sponsor/adviser (if any):

Group 17: Health Sciences

St. Croix, Oral Presentations Session 4, 2:00 PM - 2:55 PM

The purpose of this study was (a) to assess the cardiovascular and metabolic responses to water aerobic exercise and (b) to compare measured values to those reported in the literature for more traditionally performed land-based aerobic modalities. Fourteen, apparently healthy, men and women (mean SD age, height, weight, body composition, and maximal oxygen uptake ($VO_2\text{max}$): = 57.4 7.6 yr, 171.3 7.8 cm, 89.9 13.9 kg, 32.5 5.8 %, and 31.0 8.3 mL \cdot kg $^{-1}$ \cdot min $^{-1}$, respectively) completed a maximal treadmill exercise test and water aerobics session. Cardiovascular and metabolic data were collected via a portable calorimetric measurement system. Mean exercise intensity was 43.4% and 42.2% of heart rate reserve (HRR) and maximal oxygen uptake reserve (VO_2R), respectively. Training intensity in metabolic equivalents (METs) was 4.26 0.96. Total net energy expenditure for the exercise session was 249.1 94.5 kcal \cdot session $^{-1}$. Results indicate that water aerobics is a feasible alternative to land-based exercise for older adults that fulfills the ACSM guidelines for improving and maintaining cardiorespiratory fitness.



9th Annual UW System Symposium

Abstracts

114 **Racial Stereotypes and Violent Video Game Performance: Saints Row as a Measure of Implicit Attitudes**

Miki Nomura

Sarah Albers, Stefanie Irwin, Eric Mann, Lauren Rock

UW-Stout

Sponsor/advisor: Richard Tafalla

Additional sponsor/adviser (if any): Sarah Wood

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The purpose of this study was to investigate whether an individual's implicit attitude about race predicts how violently one plays the video game Saint's Row when the character they are controlling is of a minority race. It was hypothesized that: 1) the stronger the Caucasian-positive association is, the more violently the individual will play the game when controlling a non-Caucasian character, and 2) the individual will commit more crimes in Saint's Row as a minority character than as a non-minority character. Participants were randomly assigned to play the violent video game Saint's Row for 30 minutes as one of four racial personas. Participants completed the Implicit Attitude Task (IAT) before the game. IAT is a computer task where words and pictures are presented. The participant responds quickly to stimulus pairings. As expected, participants who showed a stronger association between Caucasian faces and positive words committed more crimes than as an African American character. Additionally, people playing the game as an African American character committed approximately 30% more crimes than as a Caucasian character. This research may demonstrate that implicit attitudes about race are robust across multiple behavioral situations. In addition, these implicit stereotypes may influence behavior regardless of conscious awareness.

284 **"I Am Not Lazy:" Panhandling in Urban Mexico**

Hollie Nyseth

UW-La Crosse

Sponsor/advisor: Timothy Gongaware

Additional sponsor/adviser (if any):

Group 19: Political Economy

Wind River, Oral Presentations Session 4, 2:00 PM - 2:55 PM

This ethnographic study of a street community in one of Mexico's largest cities examines the stigma management techniques utilized by panhandlers. Panhandlers publicly request for money, food, or other goods with little or nothing of value given in return to the potential donor. Originating from an intricate blend of unemployment and solicitation of materials, they display a stigma as they undergo the very act that defines them: the panhandling itself. Consequently, as a stigmatized group, panhandlers must engage in strategies to manage and cope with their stigma. Following the work of Erving Goffman, stigma management is the process of managing a stigma by working to



9th Annual UW System Symposium

Abstracts

ease the social situation. While previous research has predominantly focused on the occurrence of panhandling, it has largely ignored this process. I explored panhandling through participant observation and semi-structured ethnographic interviews, and what emerged from the data were the many ways that the panhandlers engaged in stigma management techniques throughout the panhandling process. Particularly important among these strategies are the presentations of self that are used to increase their daily profits as well as the factors such as gender and disabilities that determine which stigma management techniques the panhandlers use. Another stigma management strategy can be found in the subject's notion that panhandling is a job with norms, values, and strategies. Such meanings are found to be lodged within cultural definitions of gender, work, class structure, agency, and morality.

264 Concentration Dependence of the Freezing Point for Strong Electrolytes in Water

Martha O'Brien

UW-River Falls

Sponsor/advisor: Kevin McLaughlin

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The freezing point depression equation (FDE) for aqueous salt solutions fails at high concentrations. In 2001, Zavitsas showed that assigning a hydration number to the cation of the salt allowed the experimental data to fit the FDE at high concentrations. We report the derivation of a hydration-number corrected FDE for simple electrolytes. Linear regression using this new equation produces a best-fit line with outstanding correlation coefficients for all ten strong electrolytes studied by Zavitsas. However, these best-fit lines produce heats of fusion for water which are not in good agreement with the known value. When the known value of the heat of fusion of water is used with this new equation, hydration numbers different from those obtained from the eutectic point (used by Zavitsas) or from those obtained from the best-fit line resulted. This anomalous behavior is currently under investigation

173 The Groundwater Quality in the State of Wisconsin.

Teresa O'Keefe

Alyssa Anderson

UW-Superior

Sponsor/advisor: William Bajjali

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM



9th Annual UW System Symposium

Abstracts

The state of Wisconsin is uniquely rich in surface water and groundwater resources: the two Great Lakes of Michigan and Superior, the Mississippi River, numerous lakes (15,000) and streams (7,000), and three aquifer systems with 1.2 quadrillion gallons of groundwater. The water resources, especially the groundwater, should be of great concern to both the Wisconsin government and its citizens in terms of quantity and quality. Groundwater studies and monitoring systems have found that the primary contaminants of concern are VOC, pesticides, nitrate, arsenic, fluoride and naturally occurring radioactivity. This study is focused on using GIS techniques to create a color coded map showing the distribution and the level of the contaminants; specifically, VOC, nitrate, pesticides, and the drawdown of the water level in the groundwater.

116 Late Quaternary Eolian Dunes and Fluvial Terraces of the Lower Chippewa River Valley

Lindsay Olson

Phil Larson, Harry Jol, PhD, Joe Hupy, PhD, Douglas Faulkner, PhD, Garry Running IV, PhD
UW-Eau Claire

Sponsor/advisor: Dr. Garry L. Running IV

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The Lower Chippewa River Valley (LCRV) is a geomorphically complex and relatively uninvestigated landscape in west-central Wisconsin. Seven paired terraces were previously mapped within the LCRV and eolian dunes were recognized on the highest two terraces at that time. However, the age, origin, geomorphology, and paleoenvironmental significance of these terraces and dunes remain poorly understood. The objective of this project is to build on our previous investigations of these important components of the LCRV landscape by 1) mapping the distribution of dunes in the LCRV and 2) testing ground penetrating radar (GPR) to explore its applicability to future investigation of both terraces and dunes. This project began with the addition of 30,000 elevation points collected using differentially corrected GPS to improve the accuracy of the original terrace map. USGS topographic quadrangles, stereo analysis of aerial photographs, and attributes from SSURGO soil data, were then compiled in ArcGIS to map the distribution of eolian dunes. Parabolic dunes (3-6 meters high and up to 300 meters long), apparently the result of cliff-top depositional processes, are concentrated adjacent to northwest-facing scarps of the highest two terraces. In addition, lower, more irregular mound dunes are present in locations away from terrace scarps. These dunes, widespread only on the uppermost terrace, are more aerially extensive than are cliff-top parabolic dunes. Initial results of GPR testing in representative eolian and fluvial landforms (Pulse Ekko 100 and 1000 GPR systems) indicate that GPR will be a valuable tool for identifying and characterizing both deposits in the LCRV.



9th Annual UW System Symposium

Abstracts

295 Impedance Analyzing Prototype for the Detection of Pre-Cancerous Tissue

Mark Ortell

Barry Trochinski, Anthony Weber, Mike Clausen, Dan Zirbel, Lee Strauss

UW-Milwaukee

Sponsor/advisor: Mohammad Habibi

Additional sponsor/adviser (if any):

Group 1: Chemistry & Sciences

Willow (334), Oral Presentations Session 1, 8:30 AM - 9:25 AM

The goal of our design project is to build a product that will allow the detection of cancer at earlier stages of its development so that treatment may occur quickly and more effectively. Laboratory studies have shown that cancerous and pre-cancerous tissues have different electrical impedances than healthy tissue. One problem that has affected other impedance measuring devices is the current direction in tissue can be sporadic. Utilizing the impedance properties of tissue at different frequencies we are constructing a prototype device that will measure and display the impedances of a piece of tissue. Our prototype is unique because it uses multiple sources of current to mitigate the problem of sporadic current flow. Our device will be able to measure the impedances at numerous points across the entire cross section of the tissue. The results of the measurements will then be displayed on a computer interface. The prototype is still in the construction process and hasn't been tested on tissue yet, however, based on the results of other prototypes, we are confident that our design will show great improvements in measurement accuracy and detection. Positive results from our prototype will allow the detection of cancerous cells in earlier stages of its development.

112 Multi-Parameter Investigation of Ar⁺ Ion Bombardment of Ag/Cu Alloys

Andres Padron

Kim W. Pierson, Chris D. Hawes, Jack T. Kollwitz

UW-Eau Claire

Sponsor/advisor: Dr. Kim Pierson

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

This project fits into the general area of low energy ion bombardment modification of the surface structure of bulk metals and metallic alloys. The results have fundamental science and engineering technology applications. Low energy argon ion bombardment (100 to 1500 eV Ar⁺) of Ag/Cu alloys as a function of component composition, sample temperature, ion current density, ion dose, and ion energy has been completed. Results indicate that the surface topography development is a strong function of temperature and depends to a lesser extent on ion energy, ion dose and ion current density. The surface at low temperature and low ion dose and/or low ion current density is flat and faceted with widely dispersed large conical structures. As the temperature is raised, the



9th Annual UW System Symposium

Abstracts

rate of surface diffusion of Ag increases faster than that of Cu and Ag begins to coat the Cu grains thereby, decreasing the subsequent erosion of the Cu. Selective erosion of the higher yield Ag and continuous Ag diffusion toward the surface results in a decrease in the Ag concentration in the near surface region as measured by energy dispersive spectroscopy (EDS). Auger electron spectroscopy (AES) depth profiles indicate significant diffusion of both Cu and Ag when the electron beam was used in spot mode. The surface erosion rate is related to the growth of surface topography and the subsequent recapture of ejected material on to the sides of surface features. A method of increasing the thermal conductivity between the sample and holder using graphite colloid was found to affect the surface topography growth and AES profiles.

128 Unique Lake Huron Sinkhole Habitats Contain Sulfate Reducing Proteobacteria and Cyanobacteria Related to Antarctic clones

Joseph Pangborn

Heidi Zajack, Bopaiah Biddanda, Stephen Nold

UW-Stout

Sponsor/advisor: Stephen Nold

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Lake Huron sinkholes discharge anoxic groundwater with high sulfate concentrations and high conductivity into the normally oxygen-rich lake ecosystem. To describe the composition of the microbial communities inhabiting a variety of sinkhole habitats, we obtained Automated Ribosomal Intergenic Spacer Analysis (ARISA) community profiles from samples collected at El Cajon (<1 m depth), Middle Island (22 m), and Isolated (92 m) sinkholes near Alpena, MI. We also obtained 16S rDNA+intergenic transcribed spacer (ITS) sequence data from the organic-rich sediment and overlying cyanobacterial mats surrounding the El Cajon and Middle Island Sinkholes. Multidimensional scaling analysis of ARISA profiles revealed differences between sampling sites and within sites since the overlying mat communities differed from underlying sediments. 16S rDNA+ITS clone libraries created from the overlying cyanobacterial mat (0-0.1cm) at Middle Island sinkhole and El Cajon sinkholes were dominated by sequences closely related to *Microcoleus* and *Oscillatoria*, but also contained proteobacterial sequences (α , β , γ , δ subdivisions). Interestingly, GenBank BLAST searches resulted in high similarities between our *Oscillatoria* sequences and sequences detected in a permanently ice-covered lake in Antarctica (Lake Fryxell). In addition to cyanobacterial sequences, Middle Island sediments (0-2 cm depth) included representatives of the *Verrucomicrobiales*, *Flavobacterium*, β -Proteobacteria, and Actinobacteria lineages. Some of the β -proteobacterial sequences were similar to known sulfate-reducing bacteria. These data support findings from lipid profiling studies in these habitats. We are currently linking the 16S rDNA+ITS sequence data to ARISA profiles from the habitat to more fully understand microbial community dynamics in Lake Huron sinkholes.



9th Annual UW System Symposium

Abstracts

156 **Trends in Online Social Networking: Youth Use of MySpace over Time**

Heather Perrault

UW-Eau Claire

Sponsor/advisor: Justin W. Patchin, Ph.D.

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

MySpace has received a significant amount of negative attention by the media and many concerned adults who point to several isolated incidents where predators have contacted, become involved with, and even assaulted adolescents whom they met through the popular social networking web site. Furthermore, concerned parents have expressed discontent with the amount and type of personal and private information youth seem to reveal on their profile pages. We performed an extensive content analysis of over 2,000 randomly-selected, publicly-accessible, adolescent MySpace profiles in the summer of 2006, and found the vast majority of youth were making responsible choices with the information they shared online. In this follow-up study, we revisited the profiles one year later to examine the extent to which the content has changed during the previous year. Though exceptions occur, youth are generally exercising discretion in posting personal information on MySpace and increasingly limiting access to their profile. Moreover, a significant number of youth appear to be abandoning their profiles or MySpace altogether.

216 **TROUT UNLIMITED Driftless area project**

Anna Peterson

UW-Stout

Sponsor/advisor: Charles Bomar

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Gilbert Creek and Elk Creek are two streams in the northern area of the Driftless area. The Clearwater chapter of Trout Unlimited in partnership with UW-Stout has monitored these streams for a variety of biological (insect diversity, coli form/ *Escherichia coli*) and physical properties (pH, velocity, temperature, nitrogen, phosphate, conductivity, turbidity, dissolved oxygen and salinity). Gilbert Creek of Dunn County has gone through 5 years and nearly 20,000 feet of restoration and dramatic changes have been observed in the stream.



9th Annual UW System Symposium

Abstracts

192 **Estimation of basement topography in Fond Du Lac County using 3-D modeling of gravity and aeromagnetic data.**

Matthew Peterson

Adrian J. Koski

UW-Parkside

Sponsor/advisor: John D. Skalbeck

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The Precambrian basement surface throughout Fond du Lac County is known to be very undulated and this uneven basement topography may controls water well yields and zones of stagnant water. Therefore, an accurate estimation of the basement topography in Fond Du Lac County is vital to determining ground water flow and quality of groundwater in this region. A three dimensional model of the Precambrian basement was developed using modeling software GMSYS-3D and Oasis Montaj and existing of gravity and aeromagnetic (USGS compilations) and lithologic (wiscLITH) data. The model is constructed with 250 m grids for each data set and each geologic unit. DEM data was used for the surface elevation layer while layers for the base of glacial deposits and the top of Precambrian basement were created using wiscLITH data from over 90 wells. Initial physical property assignments for the layers were obtained from modeling results in southeastern Wisconsin (Skalbeck et al., 2007). A mafic intrusive bodies layer with an initial elevation of 5000 m below mean sea level and well constrains grid created using wiscLITH elevations that limit the structural inversion of the model are also included in the model. Forward structural inversions were performed for the basement layer using the gravity data and the mafic intrusion layer using the aeromagnetic data. The 3D model yields reasonable fits between observed and calculated gravity and aeromagnetic data and provides an acceptable basement surface.

184 **Biochemical purification and characterization of the major polyadenylate binding protein present in *Xenopus laevis* embryos**

Victor Piazza

UW-River Falls

Sponsor/advisor: Scott Ballantyne

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Animal development requires the precisely choreographed appearance and disappearance of proteins. These changes are often mediated by regulatory proteins that bind and control specific mRNA. The poly(A) tail on the 3' end of mRNA is a major target for post-transcriptional control. Poly(A) binding protein (PAB), a 70kDa protein, binds the poly(A) tail and promotes mRNA translation and



9th Annual UW System Symposium

Abstracts

stabilization. PAB has also been linked to poly(A) shortening and mRNA decay (1). How can PAB both stabilize the poly(A) tail and promote its removal? Recent biochemical analyses reveal that yeast PAB exists in two different conformations that are separable by native polyacrylamide gel electrophoresis (PAGE) (2). One form binds poly(A), the other form is required for poly(A) removal. The two PAB conformations require C-terminal PAB sequences. ePAB is the major PAB found in embryos from the frog, *Xenopus laevis* (3). It is 72% identical to PAB and differs primarily in the C-terminal sequence. The divergent C-terminal sequences, combined with the robust poly(A) tail metabolism present in frog embryos, has lead us to ask whether or not purified ePAB exists in two conformations. We are using metal-ion affinity chromatography to purify a poly-histidine tagged version of ePAB from *E.coli*. Purified ePAB will then be analyzed by native PAGE for the presence of a possible circularized, inactive form. Previous work in our lab has identified a family of frog proteins that bind the C-terminus of PAB and ePAB, and which may alter the equilibrium between the two PAB conformations. The long term goal of this research is to establish a biochemical assay for testing this hypothesis.

154 **When Bigger isn't Better: the relationship between q-angle and knee injury.**

Rachel Rademan

Trisha Gudex

UW-Stevens Point

Sponsor/advisor: Holly Schmies

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

In athletic training, it is commonly accepted that increased q-angles, greater than 18°, predispose individuals to knee injuries. Female athletes are more susceptible to greater q-angle due to their anatomical makeup. The UWSP women's volleyball, basketball, golf, and softball teams' q-angles were measured using goniometry, the most commonly accepted method in the field of athletic training. A questionnaire including a history of knee injuries was distributed, filled out, and filed from all participating subjects. Results are currently in progress and will be completed by the end of March. We hypothesize we will encounter a higher percentage of increased q-angles in females of non-jumping sports. If there is a relationship found between increased q-angles and increased knee injuries, as research has taught, we can conclude that by decreasing q-angle, we can decrease the number of knee injuries. Further research has shown, a quadriceps strengthening program can decrease q-angle. Therefore, sports such as golf and softball, which do not highly emphasize quadriceps strength would benefit greatly from the implementation of a quadriceps strengthening program. This should ultimately decrease q-angle and decrease the number of knee injuries.



9th Annual UW System Symposium

Abstracts

131 **Women of Metal**

Katharine Redford

UW-Whitewater

Sponsor/advisor: Teresa Faris

Additional sponsor/adviser (if any):

Group 11: Visual Presentations 2 (Music, Art, Literature)

Kinnikinnic Theatre, Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

The legacy of American women in metalsmithing is an important part of the research being conducted for the 2008 exhibition "Women of Metal" to be held in the Crossman Gallery in the Greenhill Center of the Arts on the UW-Whitewater campus. The significance of women in metalsmithing in the past will tell us something about current working metalsmiths in Wisconsin. This contextual information is used when conducting the interviews of the participants of the exhibition. Learning what these women did in order to live and continue as metalsmiths is the goal of this research project. Over 30 artists were interviewed all over the state, and some outside of the state, every one of whom have taught or are currently teaching classes in metals. They have made metalsmithing in Wisconsin possible. To honor their accomplishments and inspire current and future students, we hold this exhibition. Historically, women have been very prominent in the metalsmithing field, which is atypical in other studio art media. Reasons for this success include the vast and elaborate support networks created by women metalsmiths. Key individuals paved the way for current women artists. This is true of all of the women participating in the exhibition. Many contemporary metalsmiths follow in the footsteps of these amazing women predecessors; they changed the landscape of metalsmithing and made possible the diversity of metal work that we see today

89 **Socrates as Forewarner, an indepth commentary on the opening lines of Plato's Republic**

Eric Reich

UW-Oshkosh

Sponsor/advisor: Roberta Maguire

Additional sponsor/adviser (if any): Laurence Cooper

Group 19: Political Economy

Wind River, Oral Presentations Session 4, 2:00 PM - 2:55 PM

In the opening lines of Book I of The Republic, Socrates firmly sets his mind to communicate to his open public on creating and ordering his city in speech. Is this claim reasonable, even plausible? Could a more precise interpretation be uncovered? Perhaps it is more reasonable, even more plausible, to look on as if Socrates effectively opens his mind wide alongside his interlocutors' to dialogue around, and maybe even originates truth, his aim still focused on creating and ordering the current common endeavor of Socrates and his followers. In this passage (327 a - 327 d) of The Republic, Socrates openly sees into the future. Is this claim reasonable, even plausible? Could a



9th Annual UW System Symposium

Abstracts

more precise interpretation be uncovered? Perhaps it is more reasonable, even plausible to look on as if Socrates grapples alongside his interlocutors to search truth and educate in common, his aim still focused one night on creating and ordering their current common endeavor - we call this common knowledge. Socrates may be grappling along; he may also be opening his mind wide to instill original creation and order, to effectively forewarn his interlocutors of future harmful common creations and orders.

93 Adolescent Daughters Of Teen Mothers: The Impact Of Mother-Daughter Communication On A Daughter's Developing Sense-Of-Self

Lacey Reichwald

UW-Whitewater

Sponsor/advisor: Dr. Richard Gregory

Additional sponsor/adviser (if any): Dr. Barbara Penington

Group 9: English & Communication

Trimbelle River (231), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

Children develop sense of self through communication interactions with their parents, but teenage mothers are often not capable of the child-focused communication that helps children develop this positive sense of identity (Deutscher, Fewell, & Gross, 2006), and the children more likely to experience negative outcomes than their peers who were born to older mothers (National Campaign to Prevent Teen Pregnancy, 2002). This study examines the teen mother/adolescent daughter communication relationship relative to development of self-concept. It examines the current research on development of identity and outcomes for children of teen mothers including sense of identity, identity development through communication, adolescent development, and mother-daughter communication. With this scholarly framework, interviews are being conducted to provide a more comprehensive understanding regarding communication between teen mothers and their daughters and the development of girls who were raised by teen mothers. While the outcomes for daughters of teen mothers have been studied, this study specifically examines the development of the daughter pertaining to parent-child communication. The study's results are anticipated to benefit society at large related to members of the educational and healthcare systems including teachers, counselors, clergy, and mental-health professionals.



9th Annual UW System Symposium

Abstracts

273 The Relationship Between Physical Fitness And Motivation For Activity In College Aged Students.

Ryan Reichwaldt

UW-La Crosse

Sponsor/advisor: Rebecca A. Battista

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Understanding determinants of participation in physical activity becomes the cornerstone in setting guidelines that enable individuals to engage in physical activity as part of a healthy lifestyle. Nonetheless, individuals in the early stages of behavioral change may need extra encouragement to participate in physical activity in order to improve fitness levels. **PURPOSE:** The purpose of this study was to determine the relationship between physical fitness and motivation in college aged students in low stages of behavioral change. **METHODS:** Thirty-five college students aged 19.7 ± 1.4 years in stages 1, 2, or 3 of the Transtheoretical Model of Behavior Change (TMB) participated in the following tests: 1) push-ups (PUSH); 2) sit-ups (SIT); 3) flexibility (FLEX); 4) body composition (BC); and 5) maximal oxygen consumption (VO₂max). Height (cm) and weight (kg) were also measured and used to calculate body mass index (BMI). In addition, participants completed a self-motivation assessment (SM) and physical activity questionnaire (PA). Correlations ($P < 0.05$) were performed to determine the relationship between body composition, motivation, and physical fitness. Regression analysis was used to determine the variability physical fitness had on motivation. **RESULTS:** Significant correlations existed between motivation, PUSH, VO₂max, BMI, and BC. Stepwise regression analysis revealed PUSH and BMI accounted for approximately 35% of the variance in motivation. The PA revealed 22 participants reported engaging in strenuous activity sometimes, corresponding to the stage of TMB. **CONCLUSIONS:** Overall, results suggest motivation has a small but significant role in fitness, specifically as it relates to body composition. As level of motivation decreases body composition and BMI increase. Concomitantly, as motivation increased VO₂max and muscular endurance (PUSH) increased. These observations suggest an emphasis on improving body composition may assist participants in maintaining a physical activity program.



9th Annual UW System Symposium

Abstracts

130 **Alternative Energy in Education**

Gregory Remsza

UW-Whitewater

Sponsor/advisor: Dr Steven C. Sahyun

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Wind energy production in the world is expected to grow at a rate of nearly 20% for the next three years, coupled with the instability of the world's oil market, and the desire for a cleaner environment there is a definite need for alternative energy resources. The objective of my research is to study wind and solar energy resources as a means to provide a clean, renewable, cost effective source of power. This study will incorporate a small scale wind turbine in combination with a comparable solar panel that will be used to present secondary learners with an up-close working model and to experience hands-on clean energy solutions. Computer data acquisition software will provide round the clock monitoring of voltage output and current production in changing weather conditions and the electrical storage requirements and limitations. The wind turbine and solar panel setup will be presented to students and teachers at the secondary level for demonstration and class instruction. The ambition is to make clean energy solutions a feasible project in secondary education curriculum. The aspiration for clean energy solutions requires an extensive effort to recruit young minds to pursue the physics field and studies in alternative energy since these educational needs are just as vital as the power itself. In order to meet this future need we must survey young minds for ideas which will promote interest and advocacy of viable alternative energy sources. This study will address the aptitude and attitude of secondary students toward environmental pressures and viable energy solutions with pre and post surveys. This research will offer interactive models for secondary learners and data for educators to provide a catalyst for future alternative energy educational programs.

162 **Habitat Selection by Ring-necked Pheasants (*Phasianus colchicus*) in Southwestern Wisconsin**

Jason Rice

Margot Davies, Jacob Demes

UW-Richland

Sponsor/advisor: Scott E. Walter

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Pen-reared ring-necked pheasants (*Phasianus colchicus*) are often released with the goal of increasing wild pheasant populations. However, it is well documented that pen-reared birds often experience low survival and fecundity and may in fact negatively impact wild stocks. It is therefore



9th Annual UW System Symposium

Abstracts

critical to understand the ecology and behavior of pen-reared birds; of particular importance for managers is a basic understanding of pheasant habitat requirements. To assess this, we monitored 31 radio-equipped (16M/15F) pheasants from 13 September 2007 – 15 March 2008 in Richland County, Wisconsin. Pheasants were located 1-3 times per week, and the habitat type was recorded at each location. Detailed habitat maps were developed for the study area in order to estimate habitat availability. We then apply Use:Availability metrics to estimate habitat selection and define habitats of particular importance to pheasants. We also consider sex and time of year as factors influencing pheasant habitat selection. Results will allow the improved use of artificial stocking as a management technique for pheasants in this region.

118 Efforts to Analyze Nutrient Management without the Use of Commercial Fertilizer

Amy Robak

UW-River Falls

Sponsor/advisor: Dan Martens

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The purpose of this project for the past two years has been to research how corn will perform without the use of commercial fertilizer. This is being pursued in order to help American farmers realize that past legume credits and past and current manure credits can be enough nutrients, especially nitrogen, to support a corn crop throughout a growing season. This approach is also expected to produce no difference in the harvested yield. The project also consisted of researching and comparing the new and old nutrient management recommendations prepared by the University of Minnesota. Throughout the growing season, various scouting procedures and tests were conducted to help test our hypothesis. Replicated test plot areas were set up to help compare and contrast yield calculations in the fall. Analysis of the resultant data are on-going.

126 An analysis of the Barriers to Student Usage of the University Health Services

Chris Roginski

Eriko Vang, Richard Jazdzewski, Marilyn Kile

UW-Whitewater

Sponsor/advisor: Richard Jazdzewski

Additional sponsor/adviser (if any): Marilyn Kile

Group 17: Health Sciences

St. Croix, Oral Presentations Session 4, 2:00 PM - 2:55 PM

The University Health and Counseling Services (UHCS) offers a variety of beneficial health services to its students, but many students are under-utilizing these services. The UHCS are aiming to



9th Annual UW System Symposium

Abstracts

increase the utilization of its health services on campus by identifying prohibiting factors that would result in non-utilization (i.e. concern about confidentiality or narrow hours of operation) and demographic groups who may be under-utilizing services. An online survey was sent out to three thousand randomly selected UW-Whitewater students in order to ensure a representative sample of UW-Whitewater students is assessed. It is assumed that at the conclusion of this research project; preventative factors that lead to non-utilization and demographic groups who under utilize UHCS Health Services will be identified. This information will then be used to modify current marketing practices to reduce the barriers and thus increase utilization.

281 Comparing the Flexibility of Helical Peptides of Varying Lengths using H NMR Spectroscopy

Valentine Sackmann

UW-La Crosse

Sponsor/advisor: Adrienne Loh

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The ways that proteins function are controlled by two main properties: structure and flexibility. Helices are the most abundant form of secondary structures in proteins. We will study the flexibility of helical peptides of varying lengths by comparing the strengths of the intrahelical hydrogen bonds in the different peptides. The helical peptides are composed of different lengths of alpha-aminoisobutyric acid (Aib) a well known helical stabilizer. H NMR spectra will be obtained on samples of the peptides dissolved in a deuterated solvent. By monitoring the exchange of amide hydrogen for deuterium atoms as a function of time, rate constants for the exchange reaction can be found using the integrated rate law equation. By performing the experiment at various temperatures, the pseudo-first order rate constants can be used to determine the activation energies. High activation energies suggest strong intrahelical H- bonds between that particular hydrogen and oxygen. Stronger hydrogen bonds would ultimately imply a less flexible helix. As the length of the helix increases, there will be a greater number of hydrogen bonds, which may correlate to a more rigid helix. Understanding more about protein structure and flexibility will aid in the development of pharmaceutical drugs design and delivery, as well as for other applications such as modeling protein folding.



9th Annual UW System Symposium

Abstracts

145 Initial Characterization Of When a Functional Circadian System is Present in the Eye of *Xenopus Laevis*

Nicole Sarver

Aaron Trow

UW-Whitewater

Sponsor/advisor: Kristen Curran

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Almost all organisms present in nature exhibit a circadian rhythm, a 24 hour cycle in which the organism undergoes both physiological and behavioral changes based on the time of day. The circadian control of physiological processes in organisms is important because it allows them to anticipate changes (physiological/molecular/behavioral) that need to occur at different times of the day. In these organisms there is both a central oscillator that serves as an internal clock when there are no external stimuli and several output genes which display rhythmic patterns based on the circadian cycle. By quantitatively analyzing two genes, an output gene (NAT) and a central oscillator gene (xBmal1), we aim to determine at what stage of development the circadian oscillator becomes fully functional in the eyes. In order to analyze these eyes we must first dissect out tadpole eyes, at different times of the day (dawn, midday, dusk, and midnight). We then extract RNA and convert it to cDNA (reverse transcription). Real-time RT-PCR is then used on the cDNA to quantitatively measure the amount of NAT and xBmal1. In previous experiments, we have found that both NAT and xBmal1 display rhythmic expression at stage 46. We are now in the process of analyzing stage 26 eyes. We anticipate that at stage 26 we will have arrhythmic expression of both the central oscillator gene and the output gene, which can then serve as a negative control. If we were to see any rhythmic expression at this stage, we would plan for future experiments testing for expression at an earlier stage.

274 Empathy: Victim Impact Panels and DWI Offenders

Katherine Schaaf

UW-La Crosse

Sponsor/advisor: Betsy Morgan

Additional sponsor/adviser (if any): Kimberly Vogt

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

A Victim Impact Panel (VIP) is one of many intervention methods implemented to reduce DWI recidivism. While other sentences focus on tangible punishments and rewards, a VIP provides emotional motivation to change one's behavior and attitudes towards drinking and driving. In study one, I assessed the relationship between VIPs and empathy. DWI offenders completed



9th Annual UW System Symposium

Abstracts

a questionnaire immediately before and after attending a VIP and again eight weeks later. The questionnaires assessed their views about their own crime, their future behavior/intentions concerning drinking and driving and their current state of empathy (as measured by four items from the Basic Empathy Scale (BES)). Participants showed a significant increase in empathy scores after attending the VIPs (Time 1 $M = 22.15$, $SD = XX$; Time 2 $M = 22.89$, $SD = XX$), one-tailed, paired $t(60) = -1.92$, $p = .059$. Collectively, the findings from study one suggest that VIPs can play a role in increasing victim empathy for a short period of time. In study two, I employed an experimental design to assess the roles that severity of injury, gender and age play in affecting feelings of empathy for a victim of DWI offenses. After reading a partial transcript from the original VIP, participants completed a questionnaire that assessed their feelings of empathy, as measured by items from the BES, perception of the crime, and thoughts on future drinking and driving behavior. Data analyses are not yet completed. I hypothesized that the highest levels of empathy would be felt for victims who sustained the extreme severity of injury, were college age, and were the same sex as the participant. If my hypotheses are supported, justice sanctions programs may be able to use the results in order to maximize and preserve the effectiveness of VIPs by increasing the potential for victim empathy felt by the offenders.

255 Optimizing In-situ Water Quality Monitoring Equipment on Lake Michigan

John Schafer

UW-Milwaukee

Sponsor/advisor: Dr. Harvey Bootsma

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Advances in environmental monitoring equipment have made it feasible to remotely collect and communicate real-time water quality data. Over the course of the last eight months, I have worked to utilize this technology to gather data for the scientific study of physical, chemical, and biological processes in Lake Michigan. This poster will focus upon the methods I employed to optimize an existing water quality sensor array and process control system. The updated sensor array will include an infrared gas analyzer (IRGA) for atmospheric and dissolved carbon dioxide measurements, a chlorophyll fluorometer, a conductivity sensor, a flow sensor, and a dissolved oxygen sensor. Precise, redundant water temperature measurements will be collected using an inline, fast response thermistor sensor and a 100 ohm platinum resistance temperature detector (PRTD). Offshore in-situ water monitoring equipment is subject to a host of adverse environmental conditions. This poster will also address the design elements utilized to counteract the confounding factors of wave motion, temperature extremes, moisture infiltration, precipitation, innate hysteresis, and off-shore maintenance. Additionally, this poster will discuss the system components selected to minimize consumption of the solar power source.



9th Annual UW System Symposium

Abstracts

178 **Testing Habitat Preferences And Resource Partitioning In Two Mice: *Peromyscus Leucopus* And *Peromyscus Maniculatus***

Michael Scheets

Serenity Mutchler

UW-Whitewater

Sponsor/advisor: George Clokey

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Mike Scheets, Department of Biology, University of Wisconsin Whitewater, Whitewater, WI 53190
The white-footed mouse, *Peromyscus leucopus* and the deer mouse, *Peromyscus maniculatus*, are often found occupying overlapping ranges and are thought to be sympatric in southern Wisconsin. When two species with similar niches are sympatric they may engage in resource partitioning, reportedly the case for *P. leucopus* and *P. maniculatus*. When engaging in resource partitioning, *P. leucopus* lives primarily on the ground while *P. maniculatus* is found in a more arboreal habitat. However, previous studies have identified *P. leucopus* and *P. maniculatus* by tail morphology; this may be problematic since there are only slight differences between the two species. To identify *P. leucopus* and *P. maniculatus* more reliably, we plan to employ a recently developed method using PCR amplified mtDNA. We will attempt to corroborate the studies based on tail morphology using this methodology. In our preliminary work we collected mice at both ground level and in trees from a local Wisconsin wood lot. In the 20 mice captured, we found only *P. maniculatus* DNA, although several samples showed no PCR amplified bands. The lack of *P. leucopus* DNA may be caused by a problem with the amplification protocol or it may represent an absence of *P. leucopus* in our sampling. A co-researcher in our lab is determining if the amplification protocol is working. This will enable us to test a statistically powerful sample of mice and thereby: 1) determine if the two species are sympatric and 2) if sympatric, assess whether they engage in resource partitioning.

123 **Application Of Wavelet Transformations To Images Of Galaxies**

Cal Schmidt

UW-Whitewater

Sponsor/advisor: Robert Benjamin

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

We present an application of wavelet transformations to processing images of galaxies from the Spitzer Space Telescope. Our objective in this research project is to develop an algorithm for removing noise and discrete objects (like foreground stars and clusters). If we were to just remove the stars we would be left with holes where the stars once were, but if an algorithm could be created to



9th Annual UW System Symposium

Abstracts

erase the stars and then fill in the wholes with what mathematically should be behind them, it would be as if we were looking through the stars. With the stars removed the structure of the galaxies can be more completely and more efficiently analyzed. The main instrument in this study is MATLAB and the book Digital Image processing using MATLAB. We are using MATLAB because it can be integrated into a prototyping environment whose objective is to provide a set of well-supported tools for the solution of a broad class of problems in digital image processing.

134 **Directed Instruction Vs. Play Based Preschool Curriculum**

Elizabeth Schmidt

Carly Burda

UW-Whitewater

Sponsor/advisor: Simone DeVore

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

How Complex are Children's Active Learning Engagements in Each Type of Setting? In our undergraduate research, we compare the complexity of young children's engagement in preschool activities in two different types of programs (1) classrooms in which teachers primarily use a constructivist and play-based curriculum and (2) classrooms in which teachers primarily use direct instruction and teacher initiated activities. The comparative analysis is based on interviews with two to three teachers in each of the two types of classrooms and observations of children in the classrooms. The two tools we use for the interviews with teachers and observations of children are the Routines-Based Interview (RBI) and the Scale for Teachers' Assessment of Routines Engagement (SCALE). The RBI measures how caregivers and teachers view children's engagement, independence, and social interactions as children participate in daily routines. The SCALE measures the complexity of children's engagement as they interact with play materials, peers, and adults. We will conduct interviews and observations from January through March 2008. Our findings will focus on comparing the length and complexity of children's engagement in the different types of classrooms; as engagement has been directly linked to learning outcomes in young children in the areas of social, cognitive, and language development.



9th Annual UW System Symposium

Abstracts

207 **Disease Analysis on the CCMR.**

Mykle Sederlund

UW-Superior

Sponsor/advisor: Dr. Edward Burkett

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Over the past thirty years the coral reefs of the Caribbean have experienced several major disease outbreaks. White band disease and bleaching have caused the near extinction of several species of coral as well as increased mortality. Due to the significance of these outbreaks it is important to study the incidence and distribution of disease among the reefs in the Caribbean. Recently there has been extensive research on finding the possible causes of disease, as well as monitoring reefs for signs of any significant changes or outbreaks. CCRS has been monitoring the reefs of the Caye Caulker Marine Reserve (CCMR) in Belize for the past 5 years. Using SCUBA, disease data was collected at ten permanent monitoring sites using ARC sampling. Incidence of disease (# of colonies per 1000) was calculated and Linear Regression and Chi Square analysis were used to detect significant differences between years and between sites, respectively. The results showed that there was a significant decrease in the incidence of bleaching and a significant increase in fish bites and Yellow Band disease between the years of 2003 to 2007. Monitoring sites were compared for 2007 in order to determine if the occurrences of disease were homogeneously or heterogeneously distributed. Results show that distribution of disease within the reserve was due to local outbreaks. Disease fluctuations occur in most populations and the reefs of the CCMR should not be expected to be any different.

300 **Metal Complexes from the Ring Opening of Woollin's Reagent**

Sarah Seidl

UW-Fox Valley

Sponsor/advisor: Martin Rudd

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Woollin's Reagent $[(\text{PhPSe}_2)_2]$ has recently attracted attention as a selenium "equivalent" to the oft-used and much studied Lawesson's Reagent in the field of organic and organometallic synthesis as well as coordination chemistry. In this work we describe a series of reactions of Woollin's Reagent with a variety of main group and transition metal complexes, their characterization and possible structures. With a suitable nucleophile such as methoxide, $[(\text{PhPSe}_2)_2]$ is cleaved in solution to the coordinating ligand $[\text{CH}_3\text{O}(\text{Ph})\text{PSe}_2]^-$ that serves as a versatile anion in metathesis reactions. Such



9th Annual UW System Symposium

Abstracts

examples include the reactions with a telluroheterocycle, 1,1-diiodo-3,4-benzotelluracyclopentane that has proved to be useful acceptor for “soft” donors such as sulfur and selenium. We discuss the synthetic methods used in our laboratory and our approaches to utilizing these novel complexes in the development of new materials.

135 **Enhancing The Performance Aspect Of The Electronics In Live Interactive Music**

Eric Sheffield

Trevor Saint

UW-Whitewater

Sponsor/advisor: Dr. Jeff Herriott

Additional sponsor/adviser (if any):

Group 11: Visual Presentations 2 (Music, Art, Literature)

*Kinnikinnic Theatre, Oral Presentations and Literary and Creative Activity Performances Session 3,
1:00 PM - 1:55 PM*

As the adoption of electronics in modern art music continues to evolve, so should the ways in which this music is performed. The electronic elements in music have generally involved playback of pre-recorded sounds or live processing of an acoustic performer with little to no input from the performer of the electronics. Even when the electronics performer is called upon to truly “perform”, it often consists of pushing buttons and twisting knobs and does not always allow for expressive musical interpretation. My goal was to further bridge the gap between the notion of playing a “real” instrument and playing electronics, while also taking advantage of the unique sounds available through an electronic medium. To accomplish this, I began by building a MIDI drum pad based software instrument in the audio program Max/MSP that reacts to certain parameters readily controllable by the electronics performer. This makes it possible for said performer to draw from their musical experience to perform naturally through an electronic means. The research process towards building this software instrument included considerable experimentation and study within the program Max/MSP as well as improvisational performances using preliminary versions of the instrument. To further explore the possibilities of this instrument, I have composed a duet for one acoustic percussionist and one performer playing the software instrument. Through performances of this piece, I have further realized the possibilities for connections between sounds originating in the acoustic and electronic worlds, as well as the connections between performers working in these different mediums.



9th Annual UW System Symposium

Abstracts

231 Investigation of Residual Stresses in Injection Molded Vs Thermoformed Parts

Thomas Shoaf

UW-Platteville

Sponsor/advisor: Majid Tabrizi

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The comparison of stress distribution has been investigated in thermoformed and injection molded parts of a similar design. Injection molding is traditionally preferred for automotive applications because of its ability to create parts with minimal internal stress. However, in recent years because of the potential cost reduction, thermoformed parts are often being substituted. Matrox Inspector has been used to show internal stress created by both processes. Results show a difference in the comparison of similar parts that is dependent on location.

223 Tissue culture and characterization of genetic diversity in a threatened plant species, *Opuntia fragilis*

Archana Shrestha

UW-Stout

Sponsor/advisor: Kitrina M. Carlson, Ph.D

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The fragile prickly pear (*Opuntia fragilis*) is a geographically wide ranging cactus with isolated populations throughout the Midwest, including Wisconsin. Research efforts to determine genetic diversity of this threatened population have been hampered by the inability to extract DNA from cactus cladodes due to high levels of extra cellular polysaccharides. Historically researchers have collected plant tissue samples from roots or fruit in order to assess plant genetic diversity in this genus; these methods are both invasive and time-consuming. The objective of this work was to develop a less invasive and more rapid method for analysis of genetic diversity by using plant tissue culture to generate callus tissue from the *Opuntia* cladodes. Callus tissue is an undifferentiated mass of cells that theoretically should not contain high levels of extracellular polysaccharides. In this work callus was successfully generated in basic Murashige and Skoog (MS) media containing NAA and BPA. These cells were harvested for DNA extraction. The extracted DNA was used to characterize the genetic diversity between cactus populations from six different locations around the Midwest using RAPD analysis. During RAPD analysis, random segment of genomic DNA was amplified with a single primer of arbitrary nucleotide sequence via PCR amplification. Polyacrylamide gel will be subjected to Silver-staining to see the RAPD profiles. The results of this project could lead to a more ecologically friendly way to determine genetic diversity in threatened or endangered plant species.



9th Annual UW System Symposium

Abstracts

191 Distribution Of Christmas Tree Worms (*Spirobranchus Giganteus*) On Species Of Scleractinian Coral

Jacqueline Smith

Nadine Bensen

UW-Superior

Sponsor/advisor: Dr. Edward W. Burkett

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Christmas Tree Worms (*Spirobranchus giganteus*) are one of the common polychaete worms which inhabit coral reefs. Sessile as adults, these filter feeding worms colonize living coral. Using SCUBA, we chose to study habitat preferences of Christmas Tree Worms, while diving on the reefs of the Caye Caulker Marine Research, Belize in January 2006. During four, one hour dives we recorded the species composition of living coral colonies that were available for colonization by Christmas Tree Worms and the numbers and species of coral colonies actually inhabited by the worms. Data were entered into Microsoft Excel and analyzed to determine if there was a significant difference in the availability of coral substrate and the use of coral by living worms. Chi-Square ($p < 0.05$) indicates Christmas Tree Worms were most commonly found on the dominant species of scleractinian coral (*Montastrea annularis*). Utilization of corals by worms differed significantly from expected for species such as *Montastrea faveolata*, *Montastrea cavernosa*, *Porites asteroides*, *Porites porites*, *Favia fragum*, *Siderastrea sideria* and *Diploria strigosa*. Factors influencing the distribution of Christmas Tree Worms will be discussed.

275 Ongoing struggles versus resolved issues; Are either appropriate for a therapist to reveal?

Justin Sokol

UW-La Crosse

Sponsor/advisor: Carmen Wilson VanVoorhis

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Historically there has been considerable debate over the clinical utility of therapist self-disclosure (Nilsson, Strassberg, & Bannon, 1979), a statement that reveals something personal about the therapist (Hill & Knox, 2002). While some enthusiastically support therapist self-disclosure (TSD), others adamantly oppose its use. More recent research has led to the general consensus that judicious use of TSD can be of great therapeutic value (Hayes & Gelso, 2001; Hill & Knox, 2002). Several suggestions have been provided for practitioners on this controversial topic but not all are supported by empirical research. One such suggestion is that TSD statements should remain



9th Annual UW System Symposium

Abstracts

confined to resolved issues rather than ongoing struggles (Knox & Hill, 2003). While this seems logical, the suggestion is based entirely on clinical experience with no empirical support. The current study attempted to fill this gap in the literature by further investigating perceptions of TSD. Sixty-six undergraduate students listened to 1 of 3 tapes from a hypothetical counseling session. Tapes were approximately 10 minutes in length and identical except for the type of TSD used. In the first condition, the therapist disclosed 3 resolved issues and in the second condition, the therapist disclosed 3 ongoing struggles. A third condition was used as a control; the therapist did not self-disclose any personal matters. Participants evaluated the therapist and session using modified versions of the Counselor Rating Form (Barak & LaCrosse, 1975) and the Session Evaluation Questionnaire (Stiles, 1980). Results indicate that therapists, and corresponding sessions, who disclosed resolved issues received higher ratings than cases with no self-disclosure. However, participants did not rate therapists, and corresponding sessions, who disclosed ongoing struggles different from the other two groups. Practitioners can benefit from this knowledge when deciding on the appropriateness of conversation during therapy.

108 Characterization Of Candidate Host Plant Genes Required For Tomato Spotted Wilt Virus Replication.

Steve Sokolik

UW-Whitewater

Sponsor/advisor: Dr. Mark Kainz

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Viruses employ host cell factors in their replication cycles. The host factors involved in the replication of Tomato spotted wilt virus (TSWV) are not known. Several candidates were identified in the genome of *Arabidopsis thaliana* by yeast two-hybrid screening for *A. thaliana* proteins that physically interact with TSWV proteins. We have obtained seed stocks of *A. thaliana* that have the candidate genes disrupted by T-DNA insertions. I have propagated the seed stocks and am starting my experiment. I will assay the levels of TSWV RNA synthesis in T-DNA insertion *A. thaliana* compared to levels of viral RNA synthesis in wild-type *A. thaliana* as a measure of virus replication in the mutant and wild-type plants. Levels of viral RNA accumulation will be measured using real-time RT-PCR. If proteins identified in the original screen are involved in TSWV replication, I expect that levels of viral RNA will be reduced in mutant *A. thaliana* leaves compared to levels in the wild type *A. thaliana* leaves. This experiment will confirm which genes are involved in TSWV replication. These results will then lead to further investigation of host and viral proteins involved in viral gene expression and genome replication.



9th Annual UW System Symposium

Abstracts

149 The factors that govern male mate guarding behavior and success in mallards (*Anas platyrhynchos*)

Amy Stelzer

UW-Whitewater

Sponsor/advisor: Dr. Ellen Davis

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Male mate guarding (MG) in mallards (*Anas platyrhynchos*) is thought to be a male behavior that increases female foraging efficiency and prevents forced extra-pair copulations (FEPC). The central question is behaviorally, what makes a male good at MG? Previous studies showed that males with high testosterone (T) levels have mates with less feather loss resulting from FEPC than do lower T males. This suggests that males with high T are better at MG when measuring female feather loss. A second study suggested that preferred males (those that pair earlier in the fall) defend a larger area around their mate. The purpose of this study is to determine if MG distance correlates with T levels and/or with mate guarding success as measured by feather loss or harassment rates of the females. The preliminary results indicate two things. First, there is no relationship between mean MG distance and the levels of testosterone in the male. This indicates that some males may just be better at MG, despite the distance in which they do it from. For example, the preferred males can defend a larger area around their mate but don't necessarily have higher levels of T. Second, there is no relationship between mean MG distance and the harassment rates of the females. I will continue this research and test the hypothesis that males with high T have female mates with less feather loss and lower rates of harassment. I will also compare female feather loss and rates of harassment to MG distance to determine if MG distance correlates with the female condition.

99 Effects Of Rural Residential Development On Land Use And Land Cover In Waukesha County, Wisconsin

Jesse Storms

UW-Whitewater

Sponsor/advisor: Thomas C. Jeffery

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

My research focuses on the manifestation of residential development in rural Waukesha County in southeastern Wisconsin. The purpose of the study is to identify land use and land cover changes in relation to rural residential development from 1941 to current, through the analysis of sequential aerial photographs. The expansion of residential development will be quantified temporally, and the changes in land use and land cover adjacent to new housing will provide indications as to the effects



9th Annual UW System Symposium

Abstracts

of residential development on surrounding land. The variations in land use and land cover in relation to residential development will be detectable through the analysis of nine aerial photographs spaced roughly ten years apart from 1941 until 1990 and five years apart from 1990 until 2005. The changes will be analyzed and categorized according to their positive and negative effects. The resulting categorizations can provide insight into how land use and land cover has changed over time near the rural residential development, as well as indicate the degree of impact on those land areas. The anticipated significance of this study is to provide conclusive evidence showing positive and negative effects of rural residential development on adjacent land use and land cover in an attempt to influence future studies, and more importantly, future development of rural areas worldwide in a positive manner.

129 Identifying specific interactions between N protein monomers in Tomato Spotted Wilt Virus

Kristi Strey

UW-Whitewater

Sponsor/advisor: Mark Kainz

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Viruses enter host cells where they grow, reproduce, and cause disease in a variety of different ways; leading to minor or lifelong health problems, cancer, and even death. To control viruses, it is important to understand macromolecule interactions between the virus and the host cell that are involved in viral transcription and viral replication. To understand the biology of viral replication I'm using a plant infecting virus of the family Bunyaviridae called Tomato Spotted Wilt Virus (TSWV). TSWV can infect over 800 plant species and causes billions of dollars each year in agricultural food production losses. TSWV contains a tripartite single stranded RNA genome with segments that are encapsidated by multiple N protein monomers which form ribonucleoproteins (RNPs). RNPs are essential to TSWV by serving as a template in both transcription and replication. Previous studies show that N protein monomers bind to TSWV RNA cooperatively. This binding suggests that neighboring N proteins in RNPs interact; also implying they have surfaces that interact with other N proteins. In this study, I am examining some of the protein-protein interactions required for the reproduction cycle of TSWV by using a yeast two-hybrid assay to isolate mutant N proteins that are defective in protein-protein interactions. I will test models for N-N interactions by using the yeast two-hybrid assay to seek second site suppressors of mutant N proteins. Understanding the structure and how molecules assemble to form viruses, is the key to understanding cellular processes like viral replication. This information can then be used in developing methods of viral control in Bunyaviridae, plants, animals, and humans.



9th Annual UW System Symposium

Abstracts

212 **Environmental Consciousness: What It Is, and How It Can be Influenced**

Ashley Styczynski

UW-River Falls

Sponsor/advisor: Tricia Davis, PhD

Additional sponsor/adviser (if any):

Group 6: Environmental & Cultural Communities

Chippewa River (322), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

This research explores the relationship between several demographic factors and a person's environmental consciousness. Prior research has been conducted in this field, but has shown varying results. This research adds to the knowledge about demographic factors affecting a person's environmental consciousness and what those effects are. Specifically this research is looking at an individual's age, sex, level of education, thoughts concerning economic growth, socio-economic status, political views, religious beliefs, the region in which an individual lives, and the region in which an individual grew up. Data from the 2000 General Social Survey was used in this research and statistical analysis was conducted to see if a significant relationship exists between the above listed independent variables and the dependent variable of environmental consciousness. This research furthers sociologists' knowledge about society and helps environmental scientists find a target audience for their message. Under current environmental conditions, knowledge of who will lead the way in protecting and helping the environment and who is going to require extra motivation to prevent more damage will be useful in determining what type of information is released to the public, where it is released, and who it is released to. Knowing which group of people need the extra motivation can help focus attempts to get more people to help prevent more environmental loss.

235 **Cryptofauna Of Small And Large Coral Heads In Caye Caulker, Belize**

Mackenzie Sullivan

Jadell Turnquist, Maicie Schick, Cate Prichard

UW-Superior

Sponsor/advisor: Dr. Edward Burkett

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The cryptofauna of coral heads play an important functional role in the reef ecosystem. These cryptic invertebrates utilize the micro-communities of individual coral heads for food, refuge, and structure while displaying a high level of diversity with varying abundance. This study examines the differences in the community structure of the various types of cryptofauna between small and large sized coral heads on the Belize Barrier reef, off the island of Caye Caulker. Larger coral heads were expected to have a higher species richness, density, and diversity. The height, depth, and circumference were



9th Annual UW System Symposium

Abstracts

taken for each coral head examined. All invertebrates were identified and counted. Statistical analysis was performed to compare density, percent similarity, diversity, and dominant species to determine differences in community composition between large and small coral heads. The data collection resulted in discovering a total of 21 types of organisms of varying abundance over a total of 31 coral heads. Differences were found between the two-sized coral heads and there were several groups of organisms found only on large coral heads. Similarities between small and large coral communities included density, diversity, and dominant fauna. Differences between the coral heads were due to the organisms present, not density. A large amount of variation between every coral head shows the heterogeneity of the coral reef system. Further research into the effects of other factors of the coral heads including percent alive could help explain the differences found between coral heads.

237 Food Preference and Feeding Rate of Three Species of Parrotfish on the Belize Barrier Reef

Mackenzie Sullivan

Meaghan Vaughan

UW-Superior

Sponsor/advisor: Dr. Edward Burkett

Additional sponsor/adviser (if any):

Group 2: Biology 1

St. Croix (321), Oral Presentations Session 1, 8:30 AM - 9:25 AM

Parrotfish play an important role in calcium cycling by digesting calcareous algae and coral, producing up to one ton of sand per year per parrotfish. The ability of parrotfish to consume food item containing calcium carbonate allow parrotfish to reduce competition with other fish on the reef that cannot utilize these food sources. However, competition also exists between parrotfish species, and between life stages. There is an obvious advantage to reducing this competition by reducing the overlap in resources used, so we expect to see niche partitioning occurring between parrotfish species. This study focuses on food preferences between three species of parrotfish that inhabit the barrier reef off the coast of Caye Caulker, Belize. Data were collected to determine the extent of food partitioning that is occurring within this unique family of fish. The foraging activity of three different species of parrotfish, *Sparisoma viride* (Stoplight parrotfish), *Scarus iserti* (Striped Parrotfish) and *Sparisoma aurofrenatum* (Redband Parrotfish) were examined, along with differences in feeding in the juvenile, initial phase (IP) and terminal phase (TP) life stages. SCUBA was used to observe and quantify parrotfish feeding during one to three minute feeding bouts and to collect high resolution photographic data to quantify the reef benthic composition. Data will be analyzed using the CPCe (Coral Point Count with Excel extensions), Excel, and Minitab to determine if food selectivity and foraging rates differ between species and life stages.



9th Annual UW System Symposium

Abstracts

240 Differences in Competitive Hierarchies Drive Patterns of Fouling Communities Diversity

Mackenzie Sullivan

UW-Superior

Sponsor/advisor: Dr. Edward Burkett

Additional sponsor/adviser (if any):

Group 12: Biology 3

St. Croix (321), Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

In sessile marine invertebrates that settle on hard substrata, limited space often leads to competition in the form of overgrowth. Many factors can play a role in the ability of a species to monopolize space, and studies have quantified these into a competitive hierarchy that ranks the competitive ability of each species or group. This study focuses on the effect of the hierarchy on diversity patterns within communities, comparing benthic communities with a weak competitive hierarchy in Maryland to benthic communities in Connecticut with a strong competitive hierarchy, containing several species of invasive ascidians. 100cm² grey polyvinylchloride (PVC) panels were suspended from docks where they were left undisturbed for 31-37 days. Each panel was sampled by a point count under a dissecting microscope, and relationships between top-tier competitors and both species richness and evenness were modeled. In Maryland, a weak competitive effect of top-tier species in this community did not affect the evenness or richness. In Connecticut, where a large range in competitive ability existed among the organisms living there, the strongest competitors played a more important role in driving diversity patterns. Since these are invasive species, the implications on diversity is worth studying further. Also, with the weaker native competitors in the communities sampled in Maryland, these communities may be more susceptible to competitive exclusion in the event that a top-tier invasive species is introduced into this region. Thus, these interactions between the competitive hierarchies and the subsequent roles abundant species have in controlling diversity patterns in communities is an important topic.

288 GIS Analysis of Artifact Distributions at the Vieau Fur Trade

Jeremy Tempesta

UW-Parkside

Sponsor/advisor: Robert Sasso

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The Vieau site was an early 1800s fur trade post in the area of Racine County now known as Franksville. Jacques Vieau, Jr., and his brother Louis operated it until 1837, when the Potawatomi



9th Annual UW System Symposium

Abstracts

were removed from southeastern Wisconsin. The post land was purchased a year later and became a farmyard. During the mid-1900s, it became a residence. Thus we have a site with several distinct sets of artifacts denoting different historic as well as prehistoric periods of occupation. All data have been collected via metal detection survey, shovel tests, surface collections, and test excavations from both the main site area and another area across the road. I used ArcMap GIS software to create a distributional database, and by entering all of the proveniences from their common data points I was able to recreate the site layout. I then entered all the items recovered at each provenience, so that with a minimal effort I can generate distribution maps for any artifact type on site. These distribution maps give us new insights into aspects of this site, such as suggestions regarding the locations of former buildings and areas where certain activities took place at various times in the past.

101 **Keeping Creeping Soils On Shore**

Lori Themmes

UW-Parkside

Sponsor/advisor: Dr. Chris Evans

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

A Waterway General Permit Application has been applied for and approved from the Wisconsin Department of Natural Resources in regards to a shoreline restoration project. This project will take place on Leigh Lake flowage in Oconto County, Wisconsin. Elevated Lake levels, sparse vegetation, and a lack of rock riprap have exposed 130 feet of existing shoreline to a high degree of erosion and soil creep. The methods used to correct this condition will involve adding both, geotextile filter fabric and approximately 100 sq. yards of rock riprap 6 to 9 inches in diameter to the shoreline. Vegetation including, shrubs, grasses and plants native to the area will be planted as well. The anticipated results of this project will be that the new riprap will provide stabilization to the shoreline and prevent it from further erosion. The added vegetation will serve three purposes. First, it will reinforce the shoreline; second it will filter nutrients and pollutants from runoff water entering the lake. Thirdly, any subsequent soil creep can be assessed by measuring deviation from the orthogonal relationship between the plant stems and the soil surface.



9th Annual UW System Symposium

Abstracts

276 **Experimental Recreation Of Slag From Pirque Alto, Bolivia**

Colin Thomas

UW-La Crosse

Sponsor/advisor: Tim McAndrews

Additional sponsor/adviser (if any):

Group 1: Chemistry & Sciences

Willow (334), Oral Presentations Session 1, 8:30 AM - 9:25 AM

While working on the Prehistoric Paratoni Settlement Project in June of 2007 we uncovered a forge feature at the site of Pirque Alto near Cochabamba Bolivia. This project is utilizing mass spectrometry to identify the specific chemical composition of the slag sample. This information allows for a specific chemical match between the original mother-ore and modern ore samples, thereby creating a direct analogue for the material present in archaeological context. This modern ore segment is being subjected to reduction techniques in use during the time period from which the slag dates. This dating has been approximated using ceramics found in context with the slag and throughout the feature in which the reduction furnace was found. With the aide of experts in modern and historic smelting techniques analogous conditions will be created within a reduction furnace accurate to the best scientific knowledge of period smelting and furnace construction techniques. The resulting slag material will be a structural and chemical analogue to the material found within archaeological context. This experimental reproduction affords an opportunity for a pragmatic evaluation of our understanding of ancient smelting processes as well as providing data for further study. The mass spectrometry analysis also provides data against which to compare local sources of ore, and thereby evaluate where the slag was originally mined. This allows for interpretations of trade activities in the area and evaluation of the prestige and value placed upon metals and metallic objects in pre-Incan Bolivia.

137 **Perceptions of the Attractiveness and Dating Potential of Single Mothers and Fathers**

Ashley Thompson

Travis Tubré

UW-River Falls

Sponsor/advisor: Travis Tubré

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Research suggests that children may interfere with single parents' sexual experiences. Although both male and female single parents face these challenges, they have stronger associations with the sexual satisfaction of single mothers as compared to single fathers. This may arise from the ways that parental status affects the availability and interest of potential sexual partners. Single mothers may be perceived as less sexually available and attractive, because of the assumed time demands



9th Annual UW System Symposium

Abstracts

of parenting. Conversely, single fathers may be perceived as more responsible and committed, thus increasing their perceived attractiveness. Our study examines how the presence of a child affects how a given individual is perceived by others in terms of attractiveness and potential dating interest. Participants viewed photographs of male and female targets, depicted either alone or in the presence of a young child. Participants then rated the target photos on attractiveness and dating potential. Results indicate interactive effects of target sex and parental status on perceptions of attractiveness and dating potential. Specifically, single mothers were rated lower on attractiveness and dating potential than were single women without children. Conversely, single fathers were perceived as more attractive and higher on dating potential than were single men without children.

177 **The Influence of a Pseudo-credible Source on Persuasion**

Sarah Tomczyk

Sara Zeinert, Diana O'Reilly, Jessica Harr

UW-Stout

Sponsor/advisor: Sarah Wood

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

Problem or Major Purpose: This study explores the impact of a pseudo-credible source on persuasion. Specifically, we're exploring participants' responses to counterattitudinal messages when the arguments come from high, pseudo, or low credible sources. It is expected that participants will perceive the pseudo-credible source as less credible than the unambiguous high credible source, but more credible than the unambiguous low credible source. It is expected that attitudes toward the comprehensive exams will mirror this pattern. **Procedure:** Participants read a persuasive essay arguing for the institution of mandatory senior comprehensive exams in the near or distant future. The stimulus materials were modified versions of materials used in previous research using this methodology (e.g., Petty, Cacioppo, & Goldman, 1981). The essays were ostensibly written by one of three sources, a professor from Princeton University (high credibility), a leading expert (pseudo-credibility), or a high school student (low credibility). After reading the essay, all participants responded to a series of questions assessing their attitude toward comprehensive exams and their perceptions of the credibility of the source. **Results:** A significant main effect of Credibility suggests that participants perceived the pseudo-credible source as expected. Average credibility ratings for the pseudo-credible source were less than the high credible source and greater than the low credible source. In addition, a significant Credibility x Relevance interaction suggests that, as expected, credibility was more influential in the low relevance conditions. As expected, attitudes of those in the pseudo-credible condition fall in between attitudes of those in the high and low credible source conditions. **Conclusions and implications.** The results suggest that pseudo-credible sources can be moderately persuasive. This has important implications because the nature of this type of source is inherently deceptive. Further research is needed to explore more conditions under which pseudo-credible sources are persuasive.



9th Annual UW System Symposium

Abstracts

236 **A Case for Using Locally Grown Food on Campus**

Justin Townsend

UW-River Falls

Sponsor/advisor: Kelly D. Cain Ph.D

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

As The University of Wisconsin River Falls has made the decision to be at the forefront of sustainable community development in the region, it becomes very important to look at all aspects of campus. Since our current food service contractor uses unsustainable practices, I researched the possibilities and benefits of using our local food stocks. My research was primarily looking at hidden costs of the food we eat on campus based on previous research done by ecologists and economists. I also studied the feasibility of using our local food stock by using other universities, local programs, and our current use of local products. What I discovered was two important facts about our food services on campus: first, it was not sustainable and promoted a system that harmed our local economy, our neighbors, and the environment around the globe; secondly, I found if we made a few changes in procurement, our food services could provide a higher degree of freshness and nutrition to River Falls' students and staff. The conclusion I came to is that UW-River Falls should support imposed guidelines that tell our food services how much they must spend in our community. Furthermore, if we do not begin doing such things we will fail to meet our Strategic Planning Goals, the President's Climate Commitment, and the ideals set forth by the St. Croix Institute for Sustainable Community Development.

141 **Initial Characterization Of Where And When A Functional Circadian System Is Present In The Eye During Early Development In Xen**

Aaron Trow

Jessica Solis

UW-Whitewater

Sponsor/advisor: Dr. Kristen L. Curran

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The molecular basis of circadian rhythm is well characterized in the adult frog retina. Less is known about how the circadian oscillator is built during development and how it is hooked up to output genes to form a circadian system. We are interested in analyzing when and where in the developing retina a functional circadian oscillator and circadian system are present. We used (Real time RT PCR) to quantitatively measure the rhythmic increase and decrease of a gene acted upon by the circadian oscillator (NAT) in the developing eye. Currently, we are beginning to analyze embryonic eyes at



9th Annual UW System Symposium

Abstracts

specific developmental stages and circadian times to figure out when during development a functional circadian system is present in the retina. We have begun by analyzing embryos at a stage where we know that there is a functional circadian system present (stage 46). The eyes of stage 46 embryos were dissected from ten individuals and frozen at dawn, mid-day, dusk, and mid-night. We also fixed embryos at these same times for in situ analysis. In situ analysis showed expression of NAT in the pineal gland, eye, and nervous system as well as other structures. The pattern of expression was not affected by the time of day, although the embryos analyzed at dusk and mid-night were slightly darker when compared to embryos fixed at dawn and mid-day. Rhythmic expression of NAT (high levels at night) was observed in the eyes of stage 46 embryos analyzed by RT-PCR. Therefore a fully functional circadian system is present in stage 46 eyes. Further analysis of earlier stages of development is ongoing to establish when a functional circadian system is present in the developing retina.

206 **Plasmonic Nano-Lithography Using Absorbance Modulation**

Devin Underwood

UW-River Falls

Sponsor/advisor: Rajesh Menon

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

By means of an Absorbance Modulation Layer (AML) we created a periodic mask and illuminated the interface of a conducting metal beneath a photoresist. From this illumination we looked to excite a Surface Plasmon Polariton (SPP) standing wave. This standing wave would then be recorded into the photoresist, forming subwavelength line patterning, with only a single exposure. We looked to verify the existence of SPPs both analytically using a Finite Difference Time Domain (FDTD) method, and experimentally.

241 **Understanding Pigment-Related Gene Function in Zebrafish**

Rebecca Valaske

James Lokken, Heather Patnode

UW-Stout

Sponsor/advisor: Dr. Michael Pickart

Additional sponsor/adviser (if any):

Group 2: Biology 1

St. Croix (321), Oral Presentations Session 1, 8:30 AM - 9:25 AM

Recent proteomic studies of human melanosomes, pigment producing cell organelles, have identified several proteins not previously known to be involved in pigment formation. To determine



9th Annual UW System Symposium

Abstracts

whether or not some of these genes are involved in pigment pathways, morpholino oligonucleotide (MO) “knockdown” was used to evaluate gene expression using zebrafish (*Danio rerio*) as a model organism. MO knockdown is implemented using antisense oligonucleotides by decreasing gene expression of targeted pathways. The pigment genes targeted in zebrafish were identified using sequence information from equivalent human pigment genes. MOs targeting these pigment-related genes were injected into one- to two-cell stage embryos and subsequent pigment developmental patterns and/or malformations were documented pictorially at 48 hours post fertilization. A gene target was determined to be pigment related if MO knockdown resulted in an embryo with decreased quantity, size, or distribution of pigment cells. To ensure a maximum tolerable concentration was reached, concentrations of injected MO were systematically increased until a 50% mortality rate was achieved. Five of the ten gene targets evaluated by MO knockdown exhibited a phenotype deviating from control wild type embryos. Four had identifiable pigment phenotypes with few other effects. Since these gene targets were found to affect pigment development, further studies are under investigation to identify the specific role the genes have in pigment pathways. These studies further the understanding of pigment pathways and may prove valuable in the advancement of understanding of pigment-related disorders in humans.

220 The Relationship between Recycling Education and Behavior among College Freshmen and its Effect on Campus Recycling Rates

Jessica Van Der Werff

UW-Stout

Sponsor/advisor: Krista James

Additional sponsor/adviser (if any):

Group 8: Biology 2

Wind River (232), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM

Several campuses have determined that their recycling resources aren't being used efficiently. Students are often confused about what and how to recycle, resulting in either poor recycling behavior or refusal to recycle all together. Consequently, recycling education programs have been used to increase recycling rates. The University of Wisconsin-Stout has a unique opportunity to test the effectiveness of recycling education because there is a Freshman Orientation initiative. This allows for a targeted recycling education program. An experiment was designed to test the hypothesis that freshmen who participate in the recycling workshop during orientation week will have higher recycling rates than freshmen who do not participate in the workshop. Two freshmen residence halls of similar population size were observed, one control and one experimental. During the first week of the fall 2007 semester, more than 200 college freshman from the experimental group attended a 20 minute workshop to learn why recycling is important and how to do it properly. The control group did not receive the training. After the workshop, weekly recycling data were collected at both sites for the entire semester. A pre- and post-experiment recycling attitudes survey was also administered to students living within the experimental and control residence halls. The data from this research



9th Annual UW System Symposium

Abstracts

project supports the hypothesis that recycling education will increase recycling rates among college freshmen. In addition, survey results provide important feedback that can be used to help campuses develop or refine their recycling education programs to increase student recycling rates.

171 **The Efficient Way of Growing America's Fuel.**

Ryan VanLanduyt

UW-Superior

Sponsor/advisor: William Bajjali

Additional sponsor/adviser (if any):

Group 3: Agriculture & Plants

Chippewa River (322), Oral Presentations Session 1, 8:30 AM - 9:25 AM

The time of reducing our dependence on foreign oil is rapidly approaching, and the time for the alternative is here. According to the US Government's Energy Information Administration, the United States consumes about 400 million gallons of gasoline every day or about 20 million barrels of oil every day. The reality of a non infinite supply of oil has come to the realization of the world as oil prices endlessly climb. Alternatives are being developed more and more as the inevitable event when oil is limited and too costly approaches. The main alternative ideas include ethanol, biodiesel, hydrogen, and electric powered vehicles. The alternative focused on in this study is ethanol and how it is produced to fuel our countries gasoline needs. The GIS technology used in this research is able to present the available growing areas for different plants that are able to produce ethanol for the US and show how with the proper facilities the United States will be able to power its national transportation needs as well as also being able to help the economy while doing so.

180 **Impact of a Nonnative Plant Species on Soil Microbial Diversity**

Yashu Vashishath

UW-Parkside

Sponsor/advisor: Maria P. MacWilliams

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The flora of some of the forestlands of America is in danger due to competition from nonnative, invasive plants. These plants commandeer the space and nutrients of the native species. One invasive species is Garlic mustard (*Alliaria petiolata*), a European import that is a member of the Brassicaceae family. The climate conditions in the US and the lack of natural herbivores favor the growth of garlic mustard. One hypothesis explaining how invasive species take hold of an area is that the invader selectively alters the microorganisms present in the soil. Such a change may favor the growth of the invasive while retarding native species growth. The goal of the present project is to



9th Annual UW System Symposium

Abstracts

identify the microbes associated with garlic mustard. DNA was isolated from soil around the invasive plant roots as well as from noninvaded soil. The 16s rDNA signature sequences were amplified as a first step toward detecting the different microbial species. The amplified sequence was ligated to cloning vector DNA and transformed into *Escherichia coli*. Bioinformatics analysis using Ribosomal Database Project (pipeline) of the cloned inserts afforded a snapshot of the associated bacteria. We are attempting to confirm the results using Denaturing Gradient Gel Electrophoresis. These results will be presented and discussed with respect to the soil source.

181 **Fast Gas Chromatography Capabilities In Arson Debris Analysis**

Kyle Vircks

Ashley Halligan, Amanda Selle, Courtney McCrary, Jenee Jacobs, Larissa Larsen, Andrew Vyhnanek, Joseph Wermeling
UW-Platteville

Sponsor/advisor: Dr. Charles Cornett

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The primary method of detecting and characterizing ignitable liquids in a variety of fire debris matrices is gas chromatography (GC). This project evaluates the capabilities of Fast Gas Chromatography (Fast GC) in separating and analyzing ignitable liquids in such matrices. In this research, evaporated ignitable liquids ranging from pre-concentrated single compound ignitable liquids (i.e. toluene) to common ignitable liquids with multiple compounds (i.e. gasoline) are analyzed by Fast GC and conventional GC to assess the potential benefits of Fast GC. Retention time and resolution for a host of ignitable liquids in a wide array of fire debris are the two primary figures of merit assessed in this project. This work demonstrates that Fast GC is capable of reducing the chromatographic retention times by 60% in the analysis of ignitable liquids. Furthermore, the use of helium in place of hydrogen as a carrier gas (mobile phase) more than compensates for the resolution that was lost from the use of a shorter Fast GC minibore column (20 m x 0.18 mm x 0.18 μ m DB-5). In fact, resolution increases, of up to 500% for Fast GC compared to conventional GC, are possible using hydrogen as a carrier gas. The use of hydrogen in GC-MS does involve significant, additional safety protocols. The results of the work will be presented.



9th Annual UW System Symposium

Abstracts

227 **The Phylogenetic Relationships Of The Brittle Star**

Ashleigh Waltz

Jim Bruhn, Alex Stark, Kimberly Blivens, Dan Hoesly

UW-Platteville

Sponsor/advisor: Dr. Wayne Weber

Additional sponsor/adviser (if any): Rhea Presiado

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

This presentation reflects the current progress on the phylogenetic analysis of the ecologically important smooth brittle star *Ophioplocus esmarki* and other related brittle star species. The purpose of this analysis is two fold: 1) Determine if significant morphological variations in populations of *Ophioplocus esmarki* discovered by Dr. Rhea Presiado have a genetic basis and 2) Investigate the evolutionary relationships of different species of brittle stars within the class Ophiuroidea. Individual arms and whole specimen brittle star samples were obtained by Dr. Rhea Presiado through SCUBA along the pacific coast from Vancouver to the southern end of the Baja peninsula. Different DNA isolation protocols were then tested to maximize yields from sample tube feet and the Qiagen DNeasy Blood & Tissue Kit silica based spin column method was found to be most effective. Numerous primers were then screened for PCR amplification and successful amplification of an approximately 500 base pair (bp) region was achieved. DNA sequencing was done by the UW-Madison Biotechnology Center Sequencing Laboratory. Sequence analysis and comparison is currently being done using Bioedit. Initial phylogenetic analysis is also being done using Bioedit and further analysis will be done using either Geneious, PAML, PHYLIP, MrBayes or similar software package. Results of these analyses will provide an understanding of the biological adaptation of populations within *Ophioplocus esmarki* and provide insights into the phylogenetics of this and other species of brittle stars. Results of this research will also make considerable contributions to the Tree of Life and Barcode of Life Census of Marine Life (COML) project.

104 **Phytoremediation of Urban Soils**

Samantha Wasem

UW-Parkside

Sponsor/advisor: Christine Evans

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Mary Ellen Helgren Johnson Park in Racine, Wisconsin is the former site of a tennis club adjacent to Root River. The parcel was purchased by the Kenosha/Racine Land Trust (KRLT) and donated to City of Racine. This site had also been a location for disposal and dumping of foundry sands in the 1960s and 1970s. These industrial wastes have introduced uniformly measurable quantities of Cr, and



9th Annual UW System Symposium

Abstracts

created “hot spots” (hundreds of ppm) of Pb contamination. Now, a cooperative project among KRLT, Univ. Wisconsin-Parkside, the Milwaukee Community Service Corps, and students from St. Rita’s School in Racine is underway to restore this site via phytoremediation. As the wooded nature of the site creates light obstacles, it has been necessary to use shade-tolerant plants, in this case, Canada Rye grass. Seeding of the test plots was augmented with *Glomus intraradices* inoculant, in order to enhance the uptake of Pb and Cr. Effectiveness of the rye grass/*Glomus* mixture will be assessed by comparing levels of Pb and Cr in the grass tissue to background levels of Pb and Cr in tissues of forbs that grow abundantly at the site.

90 Classification and Deformations of Two Dimensional Infinity Algebras

Eric Weber

Mitch Phillipson, Chris DeCleene

UW-Eau Claire

Sponsor/advisor: Dr. Michael Penkava

Additional sponsor/adviser (if any):

Group 14: Mathematics & Computing

Wind River, Oral Presentations and Literary and Creative Activity Performances Session 3, 1:00 PM - 1:55 PM

Infinity algebras are generalizations of associative and Lie algebras. They play a role in both mathematics and mathematical physics. We study low dimensional examples of these algebras, and classify the non-isomorphic structures. Deformation theory is concerned with how one structure smoothly changes into another structure, and the object of studying the deformations is to understand how the space of all such structures is glued together. In physics, deformations arise because the algebra of quantum mechanics is a deformation of the algebra of the phase space of classical physics. In mathematics, one is interested in the structure of the space of algebras, which is called a moduli space. We present some examples of low dimensional moduli spaces of algebras, and show how the deformations give a picture of these moduli spaces.

291 Localization, micro-dissection and 3D culture of the substantia nigra from early chicken embryo.

Chris Wenig

Travis Cordie

UW-River Falls

Sponsor/advisor: Timothy Lyden, Ph.D.

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM



9th Annual UW System Symposium

Abstracts

Recently our lab has been investigating the development and growth of artificial tissues (ATs) in-vitro. We have developed a new method of employing natural extracellular matrix materials as 3D scaffolds and applied this to studies of early avian fetal development. To date we have produced ATs from heart, lung, bone, liver and the major developmental regions of the brain. In this study, we explored the isolation and culture of a specific region of the brain called the substantia nigra. This region is important in many processes, but has clinical significance in being the location of dopamine producing cells affected by Parkinson's disease. These cells are also uniquely valuable to our studies in that they are pigmented neurons and therefore can be observed easily in the context of normal brain tissues. Focused efforts were made in this study to isolate one region of the mid-brain which contains significant areas of vascular tissue. This region has previously been shown to be associated with successful isolation of the substantia nigra. Following harvest of this area, ATs cultures were established and maintained for at least 2 months. Several days after collection, explanted tissues showed clear attachment to scaffolding as well as the presence and migration of pigmented cells. It was also noted at harvest that no clear evidence of accumulations of pigmented cells were seen. These results were predictably repeated with more than 15 samples. This suggests that the cells and their associated structure developed in-vitro from prepositioned stem cell populations. Image analysis using Image J is being conducted on through-focus data sets to map the dimensions of the cellular networks clearly established in this samples.

292 Culturing human embryonic stem cells in 3D using rudimentary tissue engineering scaffolds.

Chris Wenig

Travis Cordie, Rebecca Cote, Stephen Talsness

UW-River Falls

Sponsor/advisor: Timothy Lyden, Ph.D.

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Our laboratory has recently been exploring the application of natural extracellular matrix materials to rudimentary tissue engineering. These efforts are seeking to produce artificial tissues (ATs) for the study of early developmental processes. To date, we have been extremely successful and produced ATs from over a dozen cell lines as well as more than 7 early avian developmental tissues. This year we extended 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 these studies, the ATCC HES cell line (hESC BG01V) was used to establish cultures on mouse embryonic fibroblast feeder layers. Following growth of the feeder cells on scaffolds, HES were transferred and maintained in 3D culture for more than 2 months. These cultures developed large scale features consistent with standard "embryoid bodies" commonly used to derive



9th Annual UW System Symposium

Abstracts

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 organized morphology for longer periods, but eventually differentiated into cystic structures as well. In this report, we present morphological data using phase contrast, dark field and scanning electron microscopy. Ongoing work is now focused on characterizing the nature of the cells observed in these 3D structures using immunofluorescent labeling for HES as well as mesenchymal, endodermal and ectoderm stem cells.

109 Dissolved Gases as Indicators for Stream-Ground Water Interactions

Sam Werner

Bryant A. Browne, Cory W. Wallschlaeger, Jeremy R. Wyss, Juliane M. Bowling
UW-Stevens Point

Sponsor/advisor: Bryant Browne

Additional sponsor/adviser (if any):

Group 18: Water Sciences

Willow River, Oral Presentations Session 4, 2:00 PM - 2:55 PM

The connection between groundwater and surface water varies along stream corridors, but these hydrologic changes can be difficult to measure. Many dissolved gases entering streams via groundwater discharge are not at equilibrium with the general atmosphere due to physical or biological mechanisms. Because such gases behave non-conservatively (e.g., via losses to the atmosphere) within the stream channel, their longitudinal patterns can potentially help identify locations of groundwater discharge and recharge. Unfortunately, dissolved gases (other than oxygen) have not been frequently employed in studies of stream systems. In this study, we present and interpret longitudinal patterns of several gases along a 7 km stretch of a baseflow dominated stream located in a predominantly agricultural sand plain watershed of central Wisconsin. Sampling locations were sited at 100-m intervals along the thalweg of the stream into headwater tributaries. Losing stream sections had CFCs and nitrous oxide concentrations near atmospheric equilibrium. Gaining stream sections were supersaturated with nitrous oxide, methane, and carbon dioxide and undersaturated with CFCs and oxygen.

280 Fair Trade Coffee in Northern Nicaragua

Jeanne Whisler

UW-La Crosse

Sponsor/advisor: John Betton

Additional sponsor/adviser (if any):

Group 7: Architecture & Social Movements

Willow (334), Oral Presentations and Literary Performances Session 2, 10:30 AM - 11:25 AM



9th Annual UW System Symposium

Abstracts

In recent years the Fair Trade movement has grown tremendously with “conscience” consumers, but is this coffee really fair? Can coffee farmers make a livable wage by selling their coffee on the Fair Trade market? Is Fair Trade raising the standard of living for the members of the cooperative in terms of: gender equality and women’s rights, education, infrastructure, and the environmental sustainability? This study seeks to answer these questions of whether or not the claims made by Fair Trade organizations are empirically substantiated, specifically within the context of COPEMUJER, a women’s coffee cooperative in Los Llanos, Nicaragua. Multiple sources of data including, research summaries and studies published in the academic literature and by Fair Trade Organizations, texts, interviews, observations, and fieldwork, were referenced to examine the fairness of Fair Trade.

226 Historical Channel Change of the Lower Chippewa River in West-Central Wisconsin

Amy Wichlacz

Beth Ellison

UW-Eau Claire

Sponsor/advisor: Doug Faulkner

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The Lower Chippewa River, located in west-central Wisconsin, has a number of features on its flood plain indicating channel change over time, such as oxbow lakes, abandoned channels, and bars of water-laid sediment found far from the present active channel. The objective of this research is to identify and quantify channel change that occurred during the historical period (mid-1800s to present) along a 16-km stretch of river downstream of the city of Eau Claire. To do this, we took meander survey data from the Public Land Survey of 1848 and converted the data into UTM coordinates. Using these coordinates, we constructed a planform map of the 1848 channel using ArcMap. Then, using 2005 digital orthophotos as base maps in ArcMap, we digitized the modern-day channel. Subsequently, we layered the digitized channels from 1848 and 2005 to identify and quantify historical changes in channel planform. We identified many significant changes, especially along meander bends. At one bend, the river experienced almost 200m of lateral migration, due undoubtedly to cutbank erosion and point bar deposition. Along this same bend, the river also narrowed from 240m to 150m, possibly due to flow loss resulting from the development of a cut-off channel across the meander neck. At another bend, we identified considerable channel widening (up to 300m), which likely was caused by sand and gravel mining from the channel and point bar. However, not all reaches experienced significant change, as some appear to be the same in 2005 as in 1848.



9th Annual UW System Symposium

Abstracts

160 The Analysis of Artifacts Relating to Adornment Found at the Vieau Fur Trading Site in Franksville, Wisconsin

Megan Wilson

UW-Parkside

Sponsor/advisor: Robert F. Sasso Ph.D.

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

During the 1830s, there was a Potawatomi fur trading post at Franksville, in Racine County. Two French-Canadian-American brothers, Jacques Vieau Jr., and Louis Vieau operated the site. By investigating this site, we are able to better understand the relationships that existed between the Potawatomi and the Europeans who were living in the area. Through archaeological research, the University of Wisconsin-Parkside has recovered a considerable amount of artifacts that indicate activity at the site. The focus of my research has been to analyze the artifacts that relate to adornment. Some examples of this would be glass beads, buttons, rings, grommets, and a broach. These artifacts provide insights into important aspects of past life at the site, up to very recent times.

218 Success of Short-Term Preparation for the TOEFL by Japanese College Students

Megan Wisbar

UW-River Falls

Sponsor/advisor: Annette Klemp

Additional sponsor/adviser (if any):

Group 4: Education

Wind River (232), Oral Presentations Session 1, 8:30 AM - 9:25 AM

The purpose is to study the effects of short-term test preparation in regards to score improvement. This presentation will describe the Guy Healy program, Test of English as a Foreign Language TOEFL test, and the Japanese educational system. The paper will compile the before and after test scores and make suggestions for next year's program. The Guy Healy program is a consortium with Japan and America, with children and students being the vehicle of change. The TOEFL test is administered by the Educational Testing Services (ETS), is Internet based, and measures a person's ability to use and understand English at a University level. Japan's educational system is complex and varies greatly from the US in discipline, importance of test results, and the stress placed on students. The research project is based on scores the Guy Healy Japanese students receive on their TOEFL test. Seven Japanese students will be studying for the TOEFL test on the UW-River Falls (UWRF) campus from approximately April 10 to August 10, 2007 through the Japanese Transition Program (TP). Conclusions will be made, based on the test scores, whether a short-term, intensive



9th Annual UW System Symposium

Abstracts

study for the TOEFL test is conducive to obtaining an acceptable score. This research is best done in a small group setting, like the Guy Healy program. The results of the study will benefit other TOEFL preparation sessions by offering possible alternatives. The research methodology will include statistical comparisons of the TOEFL results and observations in the classroom. The combination of both will allow strong conclusions and suggestions to be made because the cause and effect between the classroom and test results will be statistically documented. In regards to the confidentiality of human subjects researching, anonymity of the scores and their recipients will be withheld. Based on the correlations of the test scores, the conclusion will include suggestions on possible changes to the program that could improve next year's Japanese Transition Program (TP).

185 **A Comparison Of Urchin Densities On A Caribbean Coral Reef**

Sara Wroblewski

Kevin Anderson, Sara Wroblewski, Zack Litchke

UW-Superior

Sponsor/advisor: Dr. Edward Burkett

Additional sponsor/adviser (if any):

Natural Sciences

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

On reefs, algae compete with coral for space, light, and nutrients. Since algae grows at a greater rate than coral, algae growth must be limited for coral to survive. The main consumers of algae on reefs are fish and sea urchins. Since sea urchins feed on algae, urchin densities should be correlated with algal abundance. This study addresses the question, "Are urchin densities greater on regions of coral reefs with large algae populations?" A hydrodynamic model was developed to predict distributions of algae based on current flow and nutrient availability off the coast of Caye Caulker, Belize. Based on this model, two sites were chosen with predicted differences in algae densities. At each site, three dominant species of urchins (*Diadema antillarum*, *Eucidaris tribuloides*, and *Echinometra viridis*) were surveyed using strip plots and densities were calculated. Analysis of Variance was used to compare urchin densities between the two sites. Results supported predictions of the hydrodynamic model. Significantly higher densities of urchins were observed on the site predicted to have higher algae abundance. Urchin community composition consisted of 92% *Echinometra viridis*, 8% *Diadema antillarum* and less than 1% *Eucidaris tribuloides*. These results indicate that algae communities directly influence sea urchin densities on coral reefs. Further research is needed to determine whether or not actual nutrient levels were as predicted in the model.



9th Annual UW System Symposium

Abstracts

258 **The Application of Lubricants on Thermoforming Molds for Enhanced Product Yield**

Vang Pao Yang

UW-Platteville

Sponsor/advisor: Majid Tabrizi

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

The thermoforming process is a process of heating a uniformly thick sheet of thermoplastic to a specified temperature then forcing the sheet to conform to a specified shape and letting it cool. There are six main components to a typical thermoformer, and one of these vital components is a mold. But there is always a fear of the unfinished product sticking onto the mold. With this problem, production time and cost will rise and the quality of the product will be jeopardized. One way to solve this problem is to apply a uniform coat of a nonstick material to the finished mold.

97 **First Again: Wisconsin's Public Health Nursing Program On Native American Reservations**

Emily Zeien

UW-Whitewater

Sponsor/advisor: Elizabeth Hachten

Additional sponsor/adviser (if any):

Humanities

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

At the beginning of the 20th century, the health of Native Americans living in the United States became a concern for the federal government, which began to make a more concerted effort to preserve their health. Because historians interested in public health programs have focused on the federal level, they have overlooked the importance of early state programs such as the one in Wisconsin in the mid 1920s. My research focused on the Wisconsin public health program aimed at Native Americans. This program employed several public health nurses to work on the reservations and help instruct the residents in sanitation, disease prevention, and child care. Through my research in the state archives using nurses' monthly reports, I discovered that the Wisconsin program quickly began to provide more bedside nursing. The nurses set up vaccination clinics and traveled to patients in their homes, filling gaps left by federal traveling doctors. Because the Wisconsin public health program predated the federal public health nursing program for Native Americans, the experiences of the early nurses on the reservations helped shape knowledge of health conditions and also served as a partial template for the new federal program which eventually adopted the public health nursing system.



9th Annual UW System Symposium

Abstracts

225 **Correlation of exertion in the western performance horse to metabolic parameters**

Theresa Zenz

Carrie Mueller, Dr. Kristina Hiney, Dr. Gary Onan, Dr. Peter Rayne

UW-River Falls

Sponsor/advisor: Dr. Kristina Hiney

Additional sponsor/adviser (if any):

Applied Sciences & Health

Riverview Ballroom, Posters & Gallery Exhibits I, 9:30 - 10:25 AM

The reining horse is a unique athlete whose popularity has increased tremendously in recent years, not only in the United States, but with growing interest in Europe and South America. However, the metabolism of the reining horse has not been extensively studied as in other disciplines. In an effort to achieve a greater understanding of the metabolism in the western performance horse, an exercise trial was performed using the unique maneuvers performed by reining horses. Seven highly-trained Quarter Horses completed a standard exercise test (SET) comprised of conventional reining maneuvers which involve both aerobic and anaerobic work. Heart rate, and respiration rate were recorded and blood was drawn following each set of maneuvers as well as at regular recovery intervals. Muscle biopsies were taken, pre-exercise, post-exercise and 48 hrs following recovery. These samples will be used to determine the muscle glycogen content before and after exercise, and thus the extent of glycogen mobilization. The exercise trials were recorded to allow later calculation of velocities and thus effort of individual maneuvers. Data for individual horses such as lactate production, cortisol release, glucose metabolism and glycogen utilization will be compared to the speed at which each horse completed each maneuver and overall exercise test. This data will provide useful information as to future training and conditioning program recommendation. Furthermore, understanding of the nutrient utilization in the reining horse may aid in the formulation of diets designed to enhance the performance of these athletes.

260 **A Transforming Political Philosophy Within the Democratic-Republican Party: Jefferson to Jackson**

Mary Zoubek

UW-River Falls

Sponsor/advisor: Kurt Leichtle

Additional sponsor/adviser (if any):

Social Sciences

Riverview Ballroom, Posters & Gallery Exhibits II, 3:00 - 3:55 PM

Republicanism and democracy are two dynamic principles that have equally shaped the American political system. Although America's political philosophy today is composed of these two equally influential principles, during the late 1700s to the age of Jackson, historiography reveals a quasi-rivalry between republicanism and democracy. Through the analysis of primary and secondary



9th Annual UW System Symposium

Abstracts

documents, the research revealed a transformation from a greater emphasis on classical republican ideals during the early republic to an emphasis on democracy during the age of Jackson. Throughout the late 1700s, the founders established an ideology based on classical republican ideals of a decentralized federal government, a fear of corruption disbanded by the ownership of property, a deferent society, and a virtuous citizenry that not only placed the common good before their own needs, but also participated in the political discourse. These ideals within the Democratic - Republican Party shifted to an ideology based on democracy in which there was no longer an emphasis on a virtuous property holding citizenry but instead placed power and responsibility in the hands of all white males, not simply Jefferson's virtuous property holders. While neither Jefferson's nor Jackson's political philosophy are completely dissimilar, the research unveils that Jefferson's ideology was based on classical republican principles while Jackson's philosophy was based on growing democratic ideals.



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Bezzerides, Alex
Erbs, Theresa

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Watkins, Allan

UW-Eau Claire

Baewer, Julie
Bica, Lori
Borofka-Webb, Isaac
Borresen, Erica
Brewer, Matt
Butler, Nathan
Curci, Michelle
Dalleck, Lance
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Flaten, Avril
Forman, Pamela
Glodowski, Kathryn

Hansen, Ian
Havholm, Karen
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Lutz, Ellie
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Wareham, Roger
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Gille, Tiffany

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Kaufman, Elizabeth
Mittag, Rachel
Nyseth, Hollie
Reichwaldt, Ryan

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Schaaf, Katherine
Sokol, Justin
Thomas, Colin
Whisler, Jeanne



9th Annual UW System Symposium

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Pao, Vang

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Weber, Wayne
Zahrte, Darin



9th Annual UW System Symposium

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Carlson, Bryan



9th Annual UW System Symposium

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Brown, Vanessa
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Wood, Sarah
Zeinert, Sarah



9th Annual UW System Symposium

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9th Annual UW System Symposium

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