

3-31-2009

Celebrating Student and Faculty / Staff Collaborations 2009

St. Norbert College

Follow this and additional works at: http://digitalcommons.snc.edu/collaborative_programs

Recommended Citation

St. Norbert College, "Celebrating Student and Faculty / Staff Collaborations 2009" (2009). *Undergraduate Research Forum Programs*. Paper 3.
http://digitalcommons.snc.edu/collaborative_programs/3

This Article is brought to you for free and open access by the St. Norbert Collaborative Center for Undergraduate Research at Digital Commons @ St. Norbert College. It has been accepted for inclusion in Undergraduate Research Forum Programs by an authorized administrator of Digital Commons @ St. Norbert College. For more information, please contact sarah.titus@snc.edu.

Tuesday,
March 31, 2009
Student Union
2nd Floor



Celebrating Student and Faculty / Staff Collaborations

Presentations and Posters 2:00 - 4:30
Reception and Recognition 4:30 - 5:00

Come and go as your schedule allows
Refreshments provided throughout the event



Celebrating Student and Faculty/Staff Collaborations
focuses on the valued tradition at St. Norbert College of
collaborations taking place in labs, studios, and other scholarly
or creative settings, resulting in a rich array of
scholarly research and creative works.

This celebration features collaborative projects that evolved
out of independent studies, class assignments, and casual
interactions, as well as those collaborations supported through
Student-Faculty Development Endowment Grants or
the Research Fellows Program.

*Co-sponsored by the
Office of Faculty Development
and the
Office of the Dean of the College*

Only the curious will learn and only the resolute overcome
the obstacles to learning. The quest quotient has always
excited me more than the intelligence quotient.

~ Eugene S. Wilson

On behalf of the
Office of Faculty Development
and the
Office of the Dean of the College,
we extend

A Big Thank You to:

All Participating Student, Faculty and
Staff Collaborators

Copy Center

Conference and Event Services

And We Especially Thank:

Ben Petry ('09)

Faculty Development Intern

Stephanie Schauer ('10)

Faculty Development Office Assistant

Sarah Volpintesta ('12)

Faculty Development Office Assistant

*for consistently practicing a high level of professionalism
and foresight in the preparation for and execution of this
event, making it possible for this Celebration to take place.*

This program is put together in alphabetical order by the project title. Time(s), location and presentation type are listed along with collaborator names, titles, project title and abstract. Oral presentations and performances will occur during the time listed. Posters and other exhibits will be displayed from 2:00 - 5:00 p.m., but are listed according to the time(s) members will be available to discuss their projects.

A list of all students and faculty/staff participating in *Celebrating Student and Faculty/Staff Collaborations* is available on pages 4 and 5, along with the page numbers where you can find their projects. Some students and faculty/staff may be involved in multiple projects or presenting their project more than once.

Student Participants

Amelia Allgood.....16	Deziree Larson..... 6, 15
Matt Andrews17	Paul McEnaney..... 6
Ashley Ash 9	Keeley Meier 8
Michael Audette13	Melissa Meyer 16
Nicole Bader10	Eric Ming 17
Megan Beauprey22	Andrew Nackers 15
Patrick Bier..... 15, 20	Barbra Namwebe 16
Steph Birmingham17	Seth Oberschlake 8
Kayla Bohn16	Sarah Oliver 16
Kimberly Boone16	Kathryn Page 16
Matthew Bougie.....23	Gretchen Panzer..... 11
Gretel Bubnik.....15	Johanna Panzer..... 22
Vanessa Ceilley15	Ryan Pavlik..... 20
Samantha Christian18	Carianne Purpura 15
Matthew Dougherty14	Amy Radakovich..... 15
Conor DuBoyce.....16	Matthew Rauen..... 16
Jaimee Eckers.....19	Jessica Richards 24
Andrea Ehlers15	Mary Rosichan 16
Susan Ernst22	Justin Rothe..... 15
Andrew Farrell24	Stephanie Schauer 19, 21
Brian Fischer 8	Jeffrey Schneider 16
Kris Fliss..... 7	Monica Sexton 17
Caitlin Froemming22	Eliza Siordia 16
Adam Frost.....15	Bethany Skorik..... 17
Steve Gale.....10	Mary Soldat 16
Kathleen Georgia 8	Sam Spencer 12
Valerie Gray22	Amy Sterckx 22
Laura Hein17	Matthew Sullivan..... 15
Abby Hiltonen.....16	Caressa Swanson 23
Alex Hoffman.....13	Stacy Szczepanski 22
Nicole Jagielski11	Leah Tabbert 17
Kaelene Johnson.....16	Samuel VanStraten..... 15
Matt Kahlscheuer 6	Corey Vorland 19
Jacqueline Kampf.....16	Renee Wenig 14
Mark Kelty.....16	Scott Werley 18
Joseph Kobs16	Molly Winnekins 16
Crystal Kosak.....15	Benjamin Wiseley 9
Justin Krueger 21, 22	Michael Wright 15
Sara Landsee.....16	Yukiyasu Yamada 7
Katie Lange12	

Faculty/Staff Participants

David Bailey	8, 8, 19
Barb Bloomer.....	16
Melanie Brown.....	11
Anindo Choudhury	9, 10
Stephen Correia	12
Tim Flood.....	18, 20
John Frohlinger.....	21
James Harris.....	13
James Hodgson	7, 13, 14, 22, 24
David Hunnicutt	7, 12, 14
Terry Jo Leiterman	19
Yoko Mogi-Hein	22
Elaine Moss	21
James Neilson.....	23
Mandy Nycz.....	10
Cynthia Ochsner	6, 8
Michael Olson	22
Katie Ourada	16
Dave Pankratz	20
John Pennington	11
Brian Pirman.....	15
Shane Rocheleau	18
Wendy Scattergood.....	17
Jason Senjem	24
Michelle Tichy.....	17
Ikuko Torimoto	6
Jack Williamsen	23

3:00-3:30
3:30-4:00

Lounge
Lounge

Poster
Poster

Deziree Larson, Senior Graphic Design Major
Paul McEnaney, Junior Computer Science Major
Ikuko Torimoto, Associate Professor of Japanese

100 FACES OF JAPANESE WOMEN

This project was made possible by a research grant through the Freeman Asia Foundation. In the summer of 2008, the group traveled to Japan to study the roles of women in both modern and traditional Japanese media.

“I am among those who think that science has great beauty. A scientist in his laboratory is not only a technician: he is also a child placed before natural phenomena which impress him like a fairy tale.”

~ Marie Curie

2:00-2:30

Shield Room

Oral Presentation

Matt Kahlscheuer, Senior Chemistry Major
Cynthia Ochsner, Assistant Professor of Chemistry

A COMPARISON OF THE INHIBITION OF THE HUMAN DOPAMINE TRANSPORTER EXPRESSED IN HEK CELLS BY THE WAKE PROMOTING DRUG MODAFINIL AND A STRUCTURAL ANALOG

Rotating disk electrode voltammetry was used to measure the time-resolved transport of dopamine into human embryonic kidney (HEK) cells stably expressing the human dopamine transporter (hDAT). Dopamine transport was first order with a K_m and V_{max} of 1.2 μM DA and 20.2 pmol DA/sec/ 10^4 cells respectively. Modafinil, a drug used to treat narcolepsy, was determined to inhibit the human dopamine transporter in a competitive fashion. Interestingly, a close structural analog was found to be an uncompetitive inhibitor of the transporter.

3:30-4:00

Lounge

Poster

Kris Fliss, Senior Environmental Science Major
James Hodgson, Professor of Biology and Environmental Science

A COMPARISON OF TWO BIOTIC INDICES USED IN THE ASSESSMENT OF STREAM WATER QUALITY

This project compared two biotic indices (Zimmerman Biotic Index and Hilsenhoff Biotic Index) using zoobenthos assemblages from four northeastern Wisconsin streams of varying environmental quality. The Zimmerman Biotic Index (1993) requires taxonomic precision to only the taxonomic family level on a 0-10 scale; whereas, the Hilsenhoff Biotic Index (1988a, 1988b) requires a more exclusive taxonomic precision to the genus level on a 0-5 scale. Although the two indices require significant differences in taxonomic precision, and predicated on different numerical scales, with slight variation the methods provide essentially the same quality assessment rankings (water quality of excellent to very poor) of stream quality.

3:00-3:30

Lounge

Poster

Yukiyasu Yamada, Senior Biology Major
David Hunnicutt, Assistant Professor of Biology

A GENOMIC ANALYSIS OF PROTEASES IN FLAVOBACTERIUM JOHNSONIAE

The genomic analysis of the bacterium, *Flavobacterium johnsoniae*, allows for a comprehensive evaluation of its metabolic pathways. In this research, genes involved in protein metabolism were examined using IMG, MEROPS, Lasergene and NCBI data mining tools. Predicted proteases and peptidases were identified and analyzed, revealing that *F. johnsoniae* contains an unusually high number of these genes. The gene organization suggests the possibility of a novel peptidase transport pathway using homologs of SusC and SuD, which are known to transport glycosidases. To test the predictions of this model, knockout mutations of the peptidase and the transport genes are being generated.

3:00-3:30

Lounge

Poster

Kathleen Georgia, Junior Chemistry Major
Keeley Meier, Senior Chemistry Major
Cynthia Ochsner, Assistant Professor of Chemistry

AN INSTRUMENTAL ANALYSIS EXPERIMENT USING GAS CHROMATOGRAPHY-MASS SPECTROMETRY TO IDENTIFY AND QUANTIFY THE PRESENCE OF OMEGA-3 FATTY ACIDS IN CHICKEN EGGS LAYED BY CHICKENS FED A FLAX SEED DIET

The goal of this project was to develop an experiment for CHEM 312 (Instrumental Analysis) that can be performed in 2 three-hour time blocks that teaches students how to use the Gas Chromatograph-Mass Spectrometer instrument. To this end, the project identifies and quantifies omega-3 fatty acids in chicken eggs layed by hens fed a diet rich in flax seeds and compared the results to eggs from chickens who consumed no omega-3 fats. The outcome is an experiment that answers a relevant and interesting question, is inexpensive, teaches new lab techniques, and produces minimal waste.

3:30-4:00

Lounge

Poster

4:00-4:30

Lounge

Poster

Brian Fischer, Senior Biology Major
Seth Oberschlake, Senior Biology Major
David Bailey, Assistant Professor of Biology

ANALYSIS OF COMPARTMENTALIZATION OF ACTIVITY-REGULATED CYTOSKELETAL-ASSOCIATED (ARC) PROTEIN IN ZEBRA FINCH (*TAENIOPYGIA GUTTATA*) BRAIN

Neurons in the caudomedial nidopallium (NCM) of the songbird brain show selective responsiveness to conspecific songs, activity modified by (changes in) environmental context. Novel or familiar auditory (song) and visual (song-associated environment) stimuli modulate levels of activity-regulated cytoskeletal-associated (ARC) protein in areas such as NCM. Depending on stimulus type(s) or brain region, ARC is observed in the nucleus, cytoplasm, dendrites, or throughout neurons. Analysis of this compartmentalization of ARC is providing a means for determining when different cells/regions come “online” following stimulus presentations, as well as a basis for further hypothesizing functionality of those areas and ARC’s signal transduction pathway.

3:00-3:30

Lounge

Poster

Benjamin Wiseley, Senior Biology Major
Anindo Choudhury, Associate Academic Dean and
Associate Professor of Biology

**ANALYSIS OF THE PHYLOGENETIC POSITION OF THE
DEROPRISTIIDAE USING PARTIAL SEQUENCES FROM 18S AND 28S
RIBOSOMAL RNA GENES OF *PRISTICOLA BRUCHI***

The phylogenetic relationships of *Pristicola bruchi* of the family Deropristiidae, parasitic intestinal flukes of sturgeons, were studied using partial sequences of the 18S and 28S rRNA genes, following PCR-based amplification. PCR amplicons were gel purified before sequencing (done offsite by MCLab, California). Sequences were edited using Finch TV and first 'Blast'-checked in GenBank. 18S and 28S rRNA gene sequences from closely related flukes were aligned with the deropristiid sequences using Clustal W in MEGA 4. Alignment suggested that deropristiids are most similar to lepecreadiids, supporting previous cladistic analyses based on morphology.

3:30-4:00

Lounge

Poster

Ashley Ash, Junior Biology Major
David Bailey, Assistant Professor of Biology

**CALCIUM BUFFERING IN THE ZEBRA FINCH
(*TAENIOPYGIA GUTTATA*) HIPPOCAMPUS FOLLOWING
CORTICOSTERONE TREATMENT**

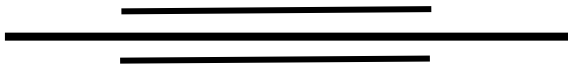
Long-term glucocorticoid exposure results in neurodegeneration, particularly in the hippocampus, a region important in memory formation. This project hypothesized that hippocampal expression of calbindin, a neuroprotective, calcium buffering protein, would indicate susceptibility to neurotoxicity in zebra finches (*Taeniopygia guttata*) treated with corticosterone. Although there was not a difference between corticosterone and control birds, there were more calbindin-positive cells in one subdivision of the hippocampus (dorsolateral) than the others. Whether this subdivision is more susceptible to (or more protected from) cell death is currently being examined by the size and densities of calbindin-positive cells and the intracellular distributions of the protein.

2:00-2:30	Lounge	Exhibit
2:30-3:00	Lounge	Exhibit
3:00-3:30	Lounge	Exhibit
3:30-4:00	Lounge	Exhibit
4:00-4:30	Lounge	Exhibit

Nicole Bader, Sophomore Undecided Major
Mandy Nycz, Assistant Director of Career Services

CAREER SERVICES TECHNOLOGY

Collaborated with Career Services staff and employers from area companies to produce and edit a series of podcasts and videos that relate to topics concerning the students. Included are topics such as career exploration, writing a cover letter, networking, interviewing tips, and company specific information. The podcasts and videos will be available on the Career Services website.



4:00-4:30	Lounge	Poster
-----------	--------	--------

Steve Gale, Senior Biology Major
Anindo Choudhury, Associate Academic Dean and
 Associate Professor of Biology

COMPARISON OF DNA SEQUENCES BETWEEN EUROPEAN AND NORTH AMERICAN ISOLATES OF THE INVASIVE EUROPEAN SNAIL *BITHYNIA TENTACULATA*

Partial sequences of the 18S rRNA, 12S rRNA, and Cytochrome *c* oxidase subunit I (COI) genes were generated to determine genetic change in the invasive European snail *Bithynia tentaculata* since its introduction to North America in the 1870's. DNA was extracted, amplified, purified, and sequenced from snails originating in various European and North American watersheds. The aligned sequences resulted in 635 base pair COI sequences with 1.73% difference between isolates, 338 base pair 12S sequences with 2.37% difference between isolates, and 506 base pair 18S sequences with 0.40% difference between isolates.

3:30-4:00

201 BC

Oral Presentation

Nicole Jagielski, First Year English Major

Melanie Brown, Writing Center Director and Assistant Professor of English

DESIGNING WRITING CENTER WEB SITES FOR MULTIPLE USERS

Since the St. Norbert College Writing Center was founded in 1977, technology has become an increasingly powerful tool in writing center pedagogy and practice. Researchers argue that the quality of a writing center's website is determined by the amount of resources offered to writers, continual updates of those resources, and mastery of cutting-edge technologies available to present those resources. This project presents some possible approaches for designing a robust SNC Writing Center web site for students and faculty to supplement the high-quality work that happens during the nearly 1,700 consultations held annually in the Writing Center office.

2:30-3:00

Lounge

Exhibit

Gretchn Panzer, First Year Undecided Major

John Pennington, Professor of English

***DIGITIZING NORTH WIND:* CREATING A SCHOLARLY DATABASE FOR GEORGE MACDONALD STUDIES**

This project aims to create an international research database for the study of George MacDonald (1824-1905), Victorian author, who wrote in a variety of genres: realistic novel, sermon, literary and cultural criticism, children's realistic fiction, poetry, fairy tale, and fantasy literature. The project began by digitizing all back issues of *North Wind: A Journal of George MacDonald Studies* (John Pennington is current editor of the journal) to create a research database for MacDonald scholars. Once the 24 years of the journal are digitalized, they will be linked to the MLA Online International Bibliography and the Victorian Web to create the most comprehensive database available for MacDonald scholars around the world.

3:00-3:30

Lounge

Poster

Katie Lange, Sophomore Teacher Education Major
Stephen Correia, Associate Professor of Teacher Education

DISCOVERING THE HISTORY OF WISCONSIN'S YELLOWSTONE TRAIL

The Yellowstone Trail was one of the nation's first coast to coast highways built for automobiles. It existed from about 1910 to the 1930s and traversed Wisconsin from Hudson, Wisconsin to the Fox Cities to Illinois. To date, little has been researched on this highway. This project will eventually create: 1) a scholarly history; 2) a school-based history of the highway; and 3) an accompanying 4th grade, web-based social studies curriculum. This poster will share research methodology employed, research progress made, and work yet to be accomplished.

3:30-4:00

Lounge

Poster

Sam Spencer, Senior Biology Major
David Hunnicutt, Assistant Professor of Biology

EFFECT OF MOTILITY ON THE VIRULENCE OF *FLAVOBACTERIUM COLUMNARE* IN ZEBRAFISH

Flavobacterium columnare is a gram negative bacterium that causes Columnaris Disease in many freshwater fish species. Zebrafish (*Danio rerio*) was used as a model organism to study parameters of *F. columnare* infection. Zebrafish were infected with three different strains of *F. columnare* to determine which were most pathogenic: two were wild-types and one was a motility-deficient mutant. It has been suggested that the motility of *F. columnare* is a virulence factor. In replicate trials, the motility-deficient mutant strain proved more, not less, virulent than the wild type strains. Additional exploration of this unexpected result may aid understanding of Columnaris Disease.

3:00-3:30

Lounge

Poster

Alex Hoffman, Junior Organismal Biology Major

James Hodgson, Professor of Biology and Environmental Science

EFFECTS OF GREEN HOUSE GASES ON THE SOIL MOISTURE OF ASPEN STANDS

Soil moisture is a very important factor in tree growth. Usage, evaporation, and water holding capacity of the soil can all impact the soil moisture. Using microlysimeters, which measured weight, we compared soil moisture of treated and controlled aspen stands. At the Aspen FACE (Free-Air Carbon Dioxide Enrichment) site in Harshaw, Wisconsin there are aspen stands treated with CO₂, O₃, both CO₂ and O₃, along with a control. We hypothesized that additional green house gases will affect soil moisture. The control lost 0.05 Kg, compared to .08 Kg for O₃ and .027 Kg for CO₂. The mixed CO₂ and O₃ stand lost .026 Kg. This data suggests that green house gases will increase the soil moisture of aspen stands.

“...it is time not just for compassionate words, but compassionate actions ...”

~ *Marian Wright Edelman*

2:30-3:00

201 BC

Oral Presentation

Michael Audette, Senior Business Administration Major

James Harris, Assistant Professor of Business Administration

EXPLORATORY CONSUMER STUDY

This study is focused on group influences as they pertain to trends. Specifically, current work suggests that so-called early adopters are an influential minority group who actively seek to maintain their opinion leadership. This process is believed to confer status onto the individual if done successfully. This current work is concerned with the social diffusion process. In brief, trends diffuse among groups over time. In doing so, it makes what once was exclusive, common, thus, removing aspects of prestige. We are specifically concerned with the sensitivity and perception among opinion leaders of the so-called mainstreaming of trends. Using marketing and psychological theory, the discussion will present relevant literature, conceptualization of the problem, and data-gathering methods.

3:00-3:30

Lounge

Poster

Matthew Dougherty, Senior Organismal Biology Major
James Hodgson, Professor of Biology and Environmental Science

FORAGING OPTIMIZATION IN PUMPKINSEED SUNFISH

Individual foraging specializations are an important source of intraspecific variability in feeding strategies. Both biotic and abiotic factors can impact foraging behavior. This study evaluated stomach contents of individual pumpkinseed sunfish, *Lepomis gibbosus*, in a small unexploited lake in Michigan's Upper Peninsula, USA. The hypothesis that diet specialization would increase with metabolism as water column temperature increased during the growing season was tested. Evidence was obtained showing that individual diets were more specialized in August than May. With a seasonal increase in 10C mean individual diet diversity decrease (specialized) from 4 orders to 2.5, but pooled population diet diversity increased (generalized) from 6 orders to 12.6. This analysis suggest that population foraging responses may represent the sum of unique individual foraging responses.

3:30-4:00

Lounge

Poster

Renee Wenig, Sophomore Biology and Mathematics Major
David Hunnicutt, Assistant Professor of Biology

GENERATION OF GREEN FLUORESCENT PROTEIN-CONTAINING *FLAVOBACTERIA JOHNSONIAE*

This project researched the mechanism by which *Flavobacteria johnsoniae* move, plasmid pAS43 containing the gene for green fluorescent protein (gfp) was transmitted from *Eschericia coli* into wild type *F. johnsoniae*. Introduction of this plasmid into *F. johnsoniae* resulted in bacteria that glow green when exposed to UV light. Following successful mating into the *F. johnsoniae* wild type, the plasmid was isolated from *F. johnsoniae* cells. To more efficiently transmit the plasmid into *F. johnsoniae* mutants, the method of electroporation was used. Electroporation has resulted in numerous gfp-containing non-motile mutants which will be used to analyze the motility behaviors of wild type *F. johnsoniae*.

3:30-4:00

Lounge
Shield Room

Posters & T-Shirts
Oral Presentation

Patrick Bier, Senior Graphic Design Major
Gretel Bubnik, Senior Graphic Design Major
Vanessa Ceilley, Senior Graphic Design Major
Andrea Ehlers, Junior Graphic Design Major
Adam Frost, Senior Graphic Design Major
Crystal Kosak, Senior Fine Arts Major
Deziree Larson, Senior Graphic Design Major
Andrew Nackers, Senior Computer Science Major
Carrienne Purpura, Junior Graphic Design Major
Amy Radakovich, Junior Geology Major
Justin Rothe, Senior Graphic Design Major
Matthew Sullivan, Senior Graphic Design Major
Samuel VanStraten, Junior Graphic Design Major
Michael Wright, Senior Graphic Design Major
Brian Pirman, Associate Professor of Art

GRAPHIC DESIGN AND ROCK AND ROLL

A class project in Advertising Design—Art 335. At the start of the semester, students were told that out of the four projects offered, this is the one where the professor and the respective student would work collaboratively, with the intention that each would be part of *Celebrating Student and Faculty/Staff Collaboration* in the Spring of 2009. The specific project is located at: <http://home.snc.edu/brian.pirman/websyllabi/ad/adfour/adfour/adfour.html> It involved designing a new logo for a fictitious or existing rock band or musician, then applying the logo to a t-shirt and poster. As the students worked on their projects the professor gave guidance on direction and worked with the students to achieve their goals. The final result is 14 unique posters and t-shirts.

3:30-4:00
4:00-4:30

Lounge
Lounge

Poster
Poster

Amelia Allgood, Junior Communication Major
Kayla Bohn, Junior Communication Major
Kimberly Boone, Junior Communication Major
Conor DuBoyce, Junior Communication Major
Abby Hiltonen, Sophomore Communication Major
Kaelene Johnson, Junior Nursing Major
Jacqueline Kampf, Sophomore Nursing Major
Mark Kelty, Junior Communication Major
Joseph Kobs, Junior Communication Major
Sara Landsee, Junior Nursing Major
Melissa Meyer, Senior Business Administration Major
Barbra Namwebe, Junior Nursing Major
Sarah Oliver, Junior Nursing Major
Kathryn Page, Sophomore Nursing Major
Matthew Rauen, Junior Communication Major
Mary Rosichan, Senior Communication Major
Jeffrey Schneider, Senior Communication Major
Eliza Siordia, Junior Communication Major
Mary Soldat, Junior Communication Major
Molly Winnekins, Junior Nursing Major
Barb Bloomer, Director of Health & Wellness Services
Katie Ourada, Visiting Instructor of Communication and Media Studies

HEALTH COMMUNICATION: THEORY AND PRACTICE

The Comm Health 325 course collaborated with Health and Wellness Services to promote “Step-It-Up Zambian Knights,” the ongoing walking program at SNC. Goals included expounding on existing campaign efforts by increasing the visibility of the participation in this program for students, faculty and staff and to make recommendations for effective communication strategies, promotion and marketing of this event in the future. Students worked in one of two teams: Marketing and Events or Involvement and Promotion. These teams worked on this project inside and outside of class. Team leaders held discussions with their teams and developed action steps to identified objectives.

4:00-4:30

Lounge

Poster

Leah Tabbert, First Year Philosophy and Political Science Major
Michelle Tichy, Assistant Professor of Teacher Education

**HOLISTIC EDUCATION, CONTEMPLATIVE PRACTICES, AND PEACE
EDUCATION INTERSECTING TO REDUCE SCHOOL VIOLENCE**

This study examines the impact of holistic education, contemplative practices, positive social interdependence, and peace education practices on prevention of bullying and creation of pro-social school environments. The research is built on a comprehensive literature review exploring overlaps between these four areas of education as they relate to current school climates. The methods used for this study are qualitative mixed methods including theoretical analysis, survey data, and interview data. The conclusions to this study include a strong finding linking teachers utilizing contemplative practices in combination with any of the other methods and seeing a strong reduction in bullying and hostile behaviors in their classrooms.



2:00-2:30

Lounge

Poster

2:30-3:00

Lounge

Poster

3:00-3:30

Lounge

Poster

3:30-4:00

Lounge

Poster

4:00-4:30

Lounge

Poster

Matt Andrews, Senior Political Science Major
Steph Birmingham, Senior Political Science Major
Laura Hein, Senior Political Science Major
Eric Ming, Junior Political Science Major
Monica Sexton, Senior Political Science Major
Bethany Skorik, Senior Political Science Major
Wendy Scattergood, Assistant Professor of Political Science

**HOMELESSNESS IN GREEN BAY:
A POLICY ANALYSIS**

Students will be working with the Green Bay Mayor’s Task Force on Homelessness to collect, analyze, and present data on the local homeless population and their interactions with local social services. In addition, they will be researching the academic literature on homelessness and incorporating it into the local study in order to produce a group research paper.

2:00-2:30

Lounge

Work of Art

Samantha Christian, Sophomore English Major
Tim Flood, Professor of Geology

IMAGES OF DARWIN

Charles Darwin was born 200 years ago and published the *Origin of Species* 150 years ago. In this “Year of Darwin,” ten St. Norbert College students and Dr. Tim Flood traveled to the Galapagos Islands and Ecuador to experience the natural history of some of the same places visited by Darwin. As a member of this group, this English major with a photography emphasis student photographed and journaled these experiences. This presentation will showcase ten favored, matted photographs out of over 4,000 taken. Captions will describe corresponding events from the trip and the aesthetics of the pieces themselves.

“There is nothing like returning to a place that remains unchanged to find the ways in which you yourself have altered.”

~ Nelson Mandela

4:00-4:30

Lounge

Work of Art

Scott Werley, Senior Graphic Design Major
Shane Rocheleau, Assistant Professor of Art

“JELLYFISH SEA” FINE ART PHOTOGRAPHY

Jellyfish Sea is a wake-up call for the current generation to confront its problematic and selfish ways of living. The numerous layered questions raised in this work are those that are often avoided so that we can stay grounded and psychologically safe. But are any of us *really* safe? Out of a handful of unstable personal experiences, the artist created portraits of an existential crisis for humanity to confront. It is hoped that viewers feel a deep connection to the heavy issues present in the photographs. The primary goal is to plant seeds of change into a community of progressive individuals.

3:00-3:30

Lounge

Poster

Jaimee Eckers, Senior Biology Major
David Bailey, Assistant Professor of Biology

LOCALIZATION OF TYROSINE KINASE B (TRKB) RECEPTORS IN ZEBRA FINCH (*TAENIOPYGIA GUTTATA*) HIPPOCAMPAL NEURONS

In the vertebrate central nervous system, estrogen activity can mirror that of brain-derived neurotrophic factor (BDNF), suggesting that BDNF is a step in estrogen's intracellular cascade. BDNF acts primarily through tyrosine kinase B (trkB) receptors, and in the mammalian hippocampus, BDNF/trkB mediate synaptic plasticity and memory. Songbird hippocampal-dependent memory is modified by estrogen; thus, it is reasonable to hypothesize that trkB-positive cells be observed in the hippocampus, but published work has not reported this. Preliminary work has found trkB-positive neurons in the hippocampus of zebra finches, and additional work will determine the extent and potentially sexually dimorphic nature of this expression.

3:30-4:00

Lounge

Poster

4:00-4:30

Lounge

Poster

Stephanie Schauer, Junior Mathematics Major with Secondary Education Certification
Corey Vorland, Junior Mathematics and Computer Science Major
Terry Jo Leiterman, Assistant Professor of Mathematics

MODELING DIATOM GROWTH IN TROUT LAKE

Aulacoseira is a freshwater diatom whose abundance and colony size has been measured at varying depths in Trout Lake in Northern Wisconsin. Its population growth patterns are influenced by temperature, light availability, and nutrients. In this study, the vertical distribution of *Aulacoseira* is investigated through modeling, which incorporates natural characteristics of the lake as well as effects of the diatom's buoyancy. Predicted outcomes are compared to measured observations.

3:00-3:30

Lounge

Exhibit

Ryan Pavik, Senior Computer Science, Math and Spanish Major
Dave Pankratz, Associate Professor of Computer Science

MULTI-TOUCH COMPUTER INTERACTION AND TASK MANAGEMENT

Multi-touch technology allows users of computer devices to interact directly with software by touching a screen with one or more fingers. Recently the Apple iPhone and the Microsoft Surface table have brought specific multi-touch applications to commercial release, but much room for interaction research remains. This project presents the principles used by a custom-built multi-touch desk and the software it uses. The new “navigation display” task management interaction concept enabled by multi-touch technology will also be discussed. A live, interactive demo of the multi-touch surface will be presented so attendees can experience this exciting technology.



2:30-3:00

Shield Room

Oral Presentation

Patrick Bier, Senior Graphic Design Major
Tim Flood, Professor of Geology

NATURAL ART OF THE GALAPAGOS

The Galapagos Islands straddle the equator and are teeming with flora and fauna, both land and marine. A group of St. Norbert College students and Dr. Tim Flood spent ten days during J-term investigating these famous islands of Ecuador. From an artist’s perspective, the natural beauty of the islands themselves (except for birds and some iguanas) is expressed mostly in hues of gray. However, the natural beauty of the shoals and reefs that surround the islands are a veritable palette of colors. Through photographs and videos collected by the group, aspects of this complex panorama of nature will be presented.

3:00-3:30

Shield Room

Oral Presentation/Performance

Justin Krueger, Senior Religious Studies and Piano Performance Major
Elaine Moss, Adjunct Instructor of Music

PLAYING PIANO IN ARGENTINA

Double-majoring in religious studies and piano performance with a minor in Spanish, it seemed only natural that this student would want to explore the vast repertoire of Hispanic music for piano. Through piano literature class and lessons, he became familiar with the music of Alberto Ginastera. One of his most famous suites is entitled *Danzas Argentinas* and portrays the rhythms and colors of Argentinean folk traditions. This project will encompass a short lecture on the composer and how he came to write these pieces and will culminate with a performance of the three pieces in this suite.

2:30-3:00

Lounge

Poster

Stephanie Schauer, Junior Mathematics Major with Secondary Education Certification
John Frohlinger, Associate Professor of Mathematics

ROLLING SMOOTHLY ON A SAW-TOOTH ROAD: THE THEORY FOR A WHEEL

This project is a follow-up to the square wheel bicycle constructed in fall 2007 through a mathematics course. Given a road constructed from a periodic pattern of isosceles triangles, how does one build a wheel that will traverse the road smoothly? Through a change of variables to polar coordinates, a "messy" problem reveals itself as a simple spiral. Details behind the solution and some interesting discoveries will be shared.

3:00-3:30

Lounge

Exhibit

3:30-4:00

Lounge

Exhibit

Megan Beauprey, Senior Education Major

Susan Ernst, Senior Education Major

Caitlin Froemming, Senior Education Major

Justin Krueger, Senior Music Major

Johanna Panzer, Senior Education Major

Amy Sterckx, Senior Education Major

Yoko Mogi-Hein, Adjunct Assistant Professor of Education and Human Relations
Coordinator of Teacher Education Discipline

**SOCIAL INEQUALITIES (GENS408) ALTERNATIVE GROUP PROJECT -
“FINDING HOPE IN THE WINDS OF CHANGE: HOW WISCONSIN
SCHOOLS THAT STILL USE AMERICAN INDIAN NICKNAMES AND
LOGOS CAN OVERCOME A LEGACY OF WILLFUL BLINDNESS”**

As a part of their course work, a group of students choose this assignment for the capstone seminar titled, Social Inequalities: Race and Minority Relations (GENS408 - GS12). In order to promote cross-cultural dialogue, students also presented critical issues relating to the use of American Indian mascots in schools at the Wisconsin Statewide Equity and Multicultural Conference in November, 2008. This multi-media presentation (18 min. recorded via CD) will address a spectrum of social justice issues relating to American Indian nicknames and logos used in Wisconsin schools.

3:00-3:30

201 BC

Oral Presentation

Valerie Gray, Sophomore Physics and Mathematics Major

Stacy Szczepanski, Senior Environmental Policy Major

James Hodgson, Professor of Biology and Environmental Services

Michael Olson, Assistant Professor of Physics

THE FEASIBILITY AND BENEFITS OF A GREEN SCIENCE FACILITY

This study is an analysis of the feasibility of incorporating solar panels and wind turbines on the JMS roof during the upcoming JMS renovation/expansion. For the study, a wind turbine and a solar panel representative of the products available on the market was chosen. Installing wind turbines and solar panels on the JMS roof will result in a cost savings of approximately 75% of the JMS annual electricity bill. In addition to an economic payback, on-campus generation of renewable power would provide innovative educational opportunities for numerous courses while offsetting St. Norbert College's environmental footprint.

2:00-2:30

Bush Art Center

Work of Art

Matthew Bougie, Junior English Major
James Neilson, Assistant Professor of Art

**“THE SPACE BETWEEN”
AN INSTALLATION EXHIBITION IN THE
JEANNE M. GODSCHLAX GALLERY
BUSH ART CENTER, 23 MARCH - 1 APRIL**

Energy exists within the negative space between two specific points. Power emerges from the space separating body from metal and wood. Crutches, those bearers of physical and psychological weight, are considered in this site-specific installation as objects representing the dynamic tension of the liminal, the precipice of presence and absence. Both art and life are transient, existing only for the shortest of time, and this work is a reflection of the space between liveliness and lethargy, support and failure, distance and collision.

2:00-2:30

Lounge

Poster

Caressa Swanson, Sophomore Mathematics Major
Jack Williamsen, Data Analyst, OIE

**USING STATISTICAL CLASSIFICATION SYSTEMS TO PREDICT
STUDENT RETENTION AT ST. NORBERT COLLEGE**

A statistical classification system was used to build models that predict the retention status of 2007 freshmen one year after matriculation at St. Norbert College. Using standard, readily available demographic variables, two models were built, one that used pre-entrance demographics only, and the other that included 1st semester freshman year variables. This poster graphically displays the two final classification models and provides detailed descriptive information regarding the rationale, methodology, and practical utility of the models obtained.

4:00-4:30

Shield Room

Oral Presentation

Jessica Richards, First Year Biology and Environmental Science Major
Jason Senjem, Assistant Professor of Business Administration

WHY ORGANIZATIONS ADOPT DIFFERENT SHADES OF GREEN

This study investigates the emerging field of organizations and the natural environment. After reviewing this disparate literature, we sought to bring more theoretical understanding to the strategies and contingencies of individual firms. As more organizations receive pressure from their stakeholders to be more environmentally friendly, organizations are reacting in a variety of ways. Given the same institutional pressures, we ask: why do different organizations adopt different environmental practices? Specifically we propose a model of environmental practice adoption based on relationships among institutional forces, opportunity recognition, and improvisation.

4:00-4:30

Lounge

Poster

Andrew Farrell, Senior Environmental Science Major
James Hodgson, Professor of Biology and Environmental Science

ZOOPLANKTON DIEL VERTICAL MIGRATIONS AS IMPACTED BY VISUAL AND TACTILE PREDATION

Zooplankton diel vertical migration (DVM) is a defense mechanism used in planktivory avoidance. Visual and tactile predation pressures influence the length of migration and the time migration occurs in zooplankton populations. DVM was evaluated through pump sampling and video microscopy from two lakes in Michigan's Upper Peninsula. The goal of the study was to test the hypothesis that zooplankton follow normal DVM in the presence of vertebrate visual predators and reverse DVM in the presence of invertebrate tactile predators. Findings show normal DVM in *Daphnia* spp., cyclopoid copepods, and nauplii in the visual predator dominated Peter Lake. Cyclopoid copepods and calanoid copepods exhibited reverse DVM in the tactile predator dominated Paul Lake. This analysis suggests that large cladoceran zooplankton are more susceptible to vertebrate predation while medium size copepod zooplankton are more susceptible to invertebrate tactile predation.

