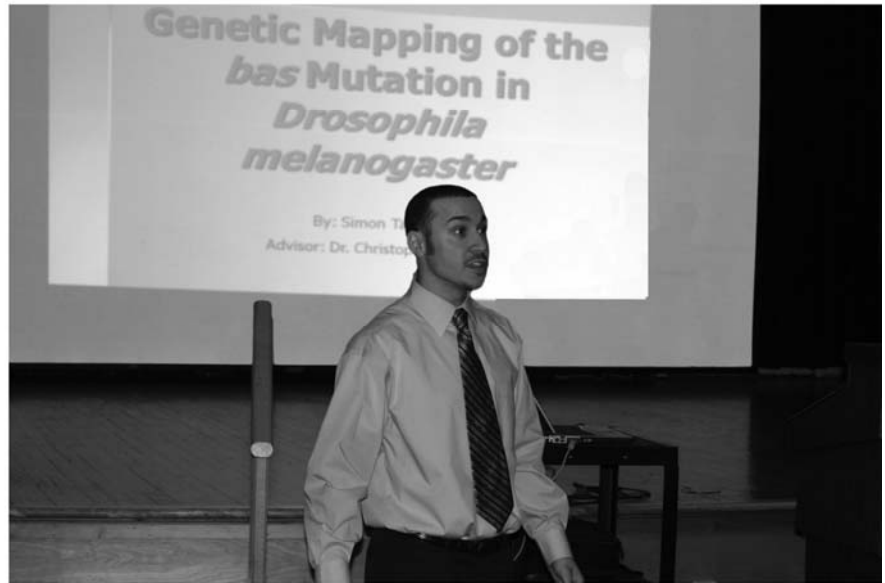


**Fourth Annual Moravian College  
Student Scholarship and Creative Arts Day  
April 21, 2009**



**The 4<sup>th</sup> Annual**  
**Moravian College**  
**Student Scholarship Day**



**April 21, 2009**

*~ A day of sharing and celebration of  
student scholarship at Moravian College ~*

**This year, 61 students, representing 15 different majors, are participating in the 2009 Scholars Day activities. Congratulations to these individuals for all of their accomplishments. Thanks also to their 22 faculty sponsors. Since the inception of this event 4 years ago, 229 students have shared their scholarly accomplishments with the Moravian College community.**

# The 4<sup>th</sup> Annual Moravian College Student Scholarship and Creative Endeavors Day

April 21, 2009



## *Schedule of Events*

- 8:45 a.m.                    **Welcome and Opening Remarks**  
*PPHAC 101*
- 9:00 a.m. -                **Session I: Student Oral Presentations**  
10:30 a.m.                *PPHAC 101*
- 10:45 a.m. -              **Session II: Student Presentations**  
11:45 a.m.                *PPHAC 101*
- 11:45 a.m. -              **Student Poster Presentations I**  
12:45 p.m.                *PPHAC 1<sup>st</sup> Floor Atrium*
- 1:15 p.m. -                **Session III: Student Oral Presentations**  
2:30 p.m.                *PPHAC 101*
- 2:45 p.m. -                **Session IV: Student Presentations**  
4:00 p.m.                *PPHAC 101*
- 4:00 p.m. -                **Student Poster Presentations II**  
5:00 p.m.                *PPHAC 1<sup>st</sup> Floor Atrium*

The Friends of Reeves Library (FORL) invites all SSCAD student participants and their mentors to a reception immediately following the day's activities at **5:00pm** in the 3<sup>rd</sup> floor atrium in PPHAC in recognition of their scholarly and creative undertakings. FORL and Reeves Library welcome your support in promoting life-long learning among Moravian students and alumni. For further information about FORL, please contact Ms. Ann Claussen, Chair of FORL and Director of the HUB/Events Management at [meaec01@moravian.edu](mailto:meaec01@moravian.edu).

The 4<sup>th</sup> Annual Moravian College Student Scholarship Day  
 April 21, 2009

*Program Overview (Abstracts in the following pages)*

Note: Please try to attend each oral presentation session in its entirety.

<b>Opening Remarks</b> <b>PPHAC 101</b> <b>8:45 a.m.</b>		
<b>Presenter Name(s)</b>	<b>Department/Program</b>	<b>Faculty Sponsor</b>
<b>Oral Presentations—Session I</b> <b>PPHAC 101</b> <b>9:00-10:30</b>		
Paper 1: Pfeifer Paper 2: Evans Paper 3: Gibbons Paper 4: Kluk	Psychology Biology/Chemistry Sociology Philosophy	Dr. Robert Brill Drs. Sheri & Stephen Dunham Dr. Joel Nathan Rosen Dr. Carol Moeller
<b>Oral Presentations—Session II</b> <b>PPHAC 101</b> <b>10:45-11:45</b>		
Paper 1: Simmons Paper 2: DeFazio Paper 3: Vargo	English Computer Science Foreign Languages	Dr. John Black Dr. Ben Coleman Dr. Erica Yozell
<b>Poster Presentations I</b> <b>PPHAC 1<sup>st</sup> Floor Atrium</b> <b>11:45-12:45</b>		
<b>Oral Presentations—Session III</b> <b>PPHAC 101</b> <b>1:15-2:30</b>		
Paper 1: Yeager Paper 2: Fenske Paper 3: Rosendale Paper 4: McCambridge	Psychology Mathematics English Computer Science	Dr. Robert Brill Dr. Nathan Shank Dr. John Black Dr. Ben Coleman
<b>Oral Presentations—Session IV</b> <b>PPHAC 101</b> <b>2:45-4:00</b>		
Paper 1: Mount & Shamy Paper 2: Wicklund Paper 3: Geosits Paper 4: Young	Art Biology English Sociology	Angela Fraleigh Dr. Cecilia Fox Dr. John Black Dr. Joel Nathan Rosen
<b>Poster Presentations II</b> <b>PPHAC 1<sup>st</sup> Floor Atrium</b> <b>4:00-5:00</b>		
<b>Reception</b> <b>Sponsored by the Friends of Reeves Library</b> <b>PPHAC 3<sup>rd</sup> Floor Atrium</b> <b>5:00</b>		

*Scholarship Day Co-Chairs:  
Drs. Diane Husic, Michelle Schmidt, Joel Nathan Rosen*

### Acknowledgements

**The 4<sup>th</sup> Annual Moravian College Student Scholarship and Creative Endeavors Day** would not have been possible without the commitment of many people associated with Moravian College. In addition to all of the participating students and faculty listed on the following pages, we would like to acknowledge the contributions of the following individuals and offices:

Mrs. Priscilla Payne Hurd & the Rokke Endowment for Student Research

The Moravian College Board of Trustees

President Christopher Thomforde and the President's Office

Dean Gordon Weil and the Office of the Vice President for Academic Affairs

The Leadership Center

Moravian College Honors Program

SOAR Program

Michael Wilson and the Public Relations Office

Friends of Reeves Library

Registrar's Office

Jan Ciganick and Studio South

Craig Underwood and the Media Center

Ann Claussen

Food Services and Facilities Services

**Student Oral Presentations I (PPHAC 101)**  
**9:00-10:30am**

**Moderator: Dr. Robert Brill, Psychology Department**

**Title:** **Anxiety and Test Taking: The Effects of Music on Anxiety**  
**Student:** Jessica Pfeifer  
**Faculty advisor:** Dr. Robert Brill

My experiment proposal for Psych 212 is about how soothing music can affect the amount of anxiety during test taking. There will be four groups in which I will test this theory. Group 1, or the control group, will consist of a certain amount of students who don't listen to music while studying an informational packet or while taking a short exam on that material. Group 2 will have different students listening to music while studying, but not while taking that same exam. Group 3 is the opposite where different students will only listen to music while taking the exam, not when studying. Finally, Group 4, or the extreme experimental group, will listen to music while both studying and exam taking. I am hoping to find that while listening to soothing music while studying will allow for less anxiety during test taking because the participants will experience the same sort of calming feeling. To do so, I will evaluate each participant's feelings of anxiety through two different surveys as well as through the scores of the short exam that they will take. The psychological idea behind this theory involves state dependent learning as well as content dependent learning.

**Title:** **DNA adduct characterization for an antitumor active dirhodium compound**  
**Student:** Debra Evans  
**Faculty advisors:** Drs. Shari and Stephen Dunham

Sometimes called the "penicillin of cancer drugs," the platinum-containing compound cisplatin has been a widely-used antitumor drug in the U.S. since 1978. Cisplatin antitumor properties are attributed to binding of the platinum to double-stranded DNA. Dinuclear rhodium compounds have also been shown to covalently bind double-stranded DNA and exhibit antitumor properties. Our lab has examined the DNA-binding kinetics of several of these dirhodium compounds. For one of the compounds studied, termed "Rh4," only ~30 % was observed to bind to DNA and it was later shown that Rh4 is in fact a mixture of at least three synthesis products that can be separated by C18-HPLC. The three most abundant Rh4 mixture components were isolated and the DNA-binding of each component was examined. Only one of these components exhibits significant binding to double-stranded DNA. Structural identification of this component as well as MALDI-TOF mass spectrometry results of its reaction with both salmon testes DNA and purified DNA nucleotides *in vitro* will be presented.

**Title:** **Schools as Mass Media: The Management of Ideas and Thought in Schools from McCarthyism to Present**  
**Student:** Emily Gibbons  
**Faculty advisor:** Dr. Joel Nathan Rosen

As the government began to send messages of abstinence, values and patriotism to children through the American public school system, the public school became the foremost means of mass media and communication. From requiring teachers to sign a pledge of patriotism and loyalty to requiring that students recite the Pledge of Allegiance daily, to the stifling of opinion and discussions of so-called

“treasonous” topics, schools in America have been managing thoughts and ideas in students and teachers while pretending to promote the idea of free thought. This study examines the role that such management of ideas has taken in the changing face of education and the impact it has had on teachers and students. Dr. Joel Spring, writer of educational policy coined the phrase “Ideological Management” to describe such a phenomenon. Much like the propaganda-style indoctrination Americans typically associate with foreign governments, the government-controlled public school system has indoctrinated students in a very similar fashion for many years, thus making the Orwellian management of thoughts and ideas a very real, American value.

**Title:**                    **Say What?: The Trials of Minoritized Identities and Post-Positivist Realism**  
**Student:**                Meredith Kluk  
**Faculty advisor:**     Dr. Carol Moeller

Post-positivist realism is a scary term. So scary, in fact, that I find it necessary to hyphenate the first word in order to make it more readable—though I will admit this does nothing for the stutter it causes in pronunciation. The term is a fright not only to philosophical virgins, but to thinkers of the pompous elite; the former sitting stupefied while the latter fears the reaper. It is a term the latter simply push away, plugging their ears and warning the former to do the same, lest these unholy words compromise their purity.

It is these two varieties of people that I would like to address in my paper/presentation; explaining the main points of PPR and the trials it trudges through, while simultaneously arguing for its practical importance in American society, provided we want a culture of equality, tolerance, and fairness; free of the hateful “isms” that we currently possess. Collectively, this essay/presentation is broken into four main trials of PPR: (1) understanding the term, (2) fighting post-modernism, (3) getting PPR to work, and (4) staying alive. This is post-positivist realism for the next generation.

**Student Oral Presentations II (PPHAC 101)**  
**10:45-11:45am**

**Dr. Kelly Kriebel, Physics Department**

**Title:**                    **The Roots of C.S. Lewis' Apologetics**  
**Student:**                Brette Simmons  
**Faculty advisor:**     Dr. John Black

My presentation for the Scholarship and Creative Arts Day will be based on the Independent Study project I have been working on this semester. With assistance from Dr. Black, I am spending this spring semester discovering more about C.S. Lewis. I have incorporated close readings of primary and secondary texts, along with weekly writing responses to each work, all of which will culminate in a final paper. The primary focus of this project has been to learn more about Lewis' life and faith, in order that I may understand his apologetic writings in light of his true character. Thus far, I have looked closely at *Surprised by Joy*, *Mere Christianity*, and *The Screwtape Letters*, all of which are primary texts. I have also studied William Griffin's *C.S. Lewis: Spirituality for Mere Christians*, a biographical work. In order to prepare my presentation for Scholarship and Creative Arts Day, I plan to dive more deeply into several secondary texts, and perhaps one other primary source (*A Grief Observed?*), which will ultimately allow me to construct my final paper—a study of the life and Christian apologetic works of C.S. Lewis.

**Title:** Optimal Foraging  
**Student:** Steve DeFazio  
**Faculty advisor:** Dr. Ben Coleman

The theory of optimal foraging is that an animal will behave in such a way as to maximize its caloric intake in a given span of time. If an animal is feeding in a “patch” (our animal’s generalized source of food), it has to weigh the caloric cost of moving to another patch against the benefits of staying in its current foraging patch. As the value of the current patch declines, the animal will eventually decide to move to another patch. In this way the animal moves about its environment, going from patch to patch, in a reasonably efficient manner. In this project I created an animated representation of this behavior, which students in the classroom can use to understand optimal foraging on a conceptual level. It is intended to be used in an introductory level animal behavior class.

**Title:** Contemporary Post-Dictatorship Film in Argentina and Chile  
**Student:** Marisa Vargo  
**Faculty advisor:** Dr. Erica Yozell

Since the collapse of Argentina’s military dictatorship in 1983, directors have tried to represent the realities and the lasting repercussions of the Dirty War on film. Early efforts, such as *La historia oficial* and *Camila*, rely on an accessible narrative format and commercial sheen to tell their stories, but later filmmakers reacted against this model. One such director, Marco Bechis, examines the brutality of Argentina’s clandestine torture centers as well as the Dirty War’s continuing effect in the lives of *hijos* (the children of the disappeared) in his films *Garage Olimpo* (1999) and *Figli/Hijos* (2001). I argue that Bechis employs certain narrative and filmic techniques that mirror Argentine cinema of the 1980’s, but with a completely contrary purpose in mind. In his films, Bechis denies audiences any sense of closure in order to remind people that the Dirty War is still a contemporary issue. Thus, I maintain that Bechis’ films implicitly criticize the previous generation’s take on the dictatorship by utilizing its form but twisting its function.

### **Poster Session I: 11:45am-12:45pm (PPHAC 1<sup>st</sup> floor Atrium)**

**Title:** 2D Crystallite Size Distribution in Binary Granular Media  
**Student:** Andrew Abraham  
**Faculty advisor:** Dr. Kelly Kriebel

**Title:** Job Satisfaction, Stress, and Happiness Measured Among Access Personnel  
**Students:** Alex Agnor, Amanda Davis, Jonna Finocchio, Kyle Krupa, Elisa Raab  
**Faculty advisor:** Dr. Robert Brill

The primary goal of the current research is to ascertain and assess job satisfaction, stress levels, and happiness among Access workers. Access is an inpatient mental health facility divided into two buildings, one of which is devoted to higher functioning patients, and the other to lower functioning residents who require additional attention. Experimenters hypothesize that Access employees who work with lower functioning patients will experience higher levels of work-related stress and report lower levels of job satisfaction than employees working with higher functioning patients. To ensure the

validity of this study, experimenters use a general happiness inventory to differentiate results pertaining to work as opposed to overall quality of life. This will also allow for exploratory hypotheses about happiness and the other variables in the original hypothesis.

**Title:** **The Central Role of Plants in the Remediation and Ecological Monitoring of a Metal-Contaminated Site in Eastern Pennsylvania**

Student: Sarabeth Brockley, Yi Li, Gregory Niehoff, D. Husic, and D. Kunkle

Faculty advisor: Dr. Diane Husic

The Lehigh Gap Wildlife Refuge is a 750-acre tract on the Kittatinny Ridge in eastern PA that is also part of the Palmerton Zinc Pile Superfund site. Eighty years of zinc smelter air pollution (SO<sub>2</sub> and metal particulates) resulted in a landscape almost devoid of vegetation. Beginning in 2003, metal-tolerant warm season grasses were planted as a means to revegetate the steep terrain, stabilize the severe erosion problem, sequester the toxic metals, and serve as the first step in habitat restoration. Some pioneering species, as well as a number of aggressive invasive plants are emerging at the site. The grey birch (*Betula populifolia*) shows extreme signs of stress: stunted growth, severe leaf necrosis, and elevated levels of phenolics. Other tree species such as aspens appear healthier, even though they also have elevated levels of zinc in the leaf tissue. Unexplainably, the PA endangered native species *Dicentra eximia* and a rare, non-native species *Minuartia patula* (Arenaria) thrive on the contaminated sites. The latter species is of particular interest; the population size and distribution of *Minuartia patula* is being monitored as this plant may serve as an indicator of bio-availability of the heavy metals. Plant succession monitoring is being used to both assess biodiversity and develop sound adaptive management practices.

**Title:** **Success in the Classroom Versus Success in Testing**

Student: Jasmine DeFranco

Faculty advisor: Dr. Arthur Lyons

The complexity of educating exceptional learners is not easy to untangle. This dilemma has crept into the classroom along with the changes in federal legislation due to the implementation of No Child Left Behind. Teachers are challenged to reach every student regardless of disability. Special needs students must perform at the same level as other students within the classroom as well as on standardized assessments. As a result, accommodations and modifications have been developed to help all students excel. The goal of this study was to examine the performance of learning support students, in classroom assessment and standardized tests, as compared to the performance of non-exceptional students, in the same classes and tests. Based on analysis of data from Springfield School District, it was determined that learning support students were performing at the same level as non-exceptional students in the classroom. However, learning support students were performing at a much lower level on the standardized form of assessment. One possible explanation for this is accommodations and modifications teachers can provide in the classroom facilitate students to reach their fullest potential. The standardized testing environment prohibits any type of assistance and without this the students struggle to answer unfamiliar questions.

**Title:** **Achieving Sales Success through Trust-Based Relationships**

Student: Perry Freifeld

Faculty advisor: Dr. Gary Kaskowitz

**Title:** **Effects of Color and Label on Flavor Identification**

Student: Mallory Goggins

Faculty advisor: Dr. Robert Brill

It was hypothesized that changing the color a beverage would lead participants to incorrectly identify the actual flavor of the beverage. Additionally, when tasting color-taste consistent beverages, it was hypothesized that participants would correctly identify the flavor more often than they would with the color-taste inconsistent beverages. Finally, it was expected that participants in who read a deceptive label on their beverage to incorrectly identify the flavors of the beverages more frequently than the subjects without labels on their beverages. Participants were randomly assigned to the label/no label condition, and all participants sampled beverages color-taste consistent and color-taste inconsistent. Data has yet to be conducted therefore the results are currently unknown.

**Title: Archetypes and Professional Sports**

Student: Amanda King

Faculty advisor: Dr. Gary Kaskowitz

Archetypes, brand loyalty and storytelling are three elements that when put to use together effectively can create a strong connection with the consumer. Through the use of storytelling and archetypes for a brand or product the desired outcome is a strong sense of brand loyalty. The story about the brand can be anything from its creation myth to a story of a consumer relating to their product. An archetypal connection can be made through the actions of the characters. The consumer who learns of this story uses its archetypal connection to fulfill their innate desires. The consumer will then fill a strong sense of loyalty to this brand or product. While other techniques can be used to create brand loyalty, the use of storytelling and archetypes can create loyalty on a deeper subconscious level.

**Title: Media's Influence on Female Views of Personal and Peer Body Shape**

Student: Michele Leffler

Faculty advisor: Dr. Lori Toedter

Recent studies have shown that women's view of ideal personal and peer body shapes are heavily influenced by the media and society's pressure to attain a thin figure. This study examined what size body shape women would choose as ideal for themselves and other women after being exposed to the same photos of well known celebrities, and articles either defending or attacking their weight and overall appearance. Participants for this study included 30 female volunteers from the psychology department at Moravian College, ages ranging from 18-26. Participants were randomly assigned to two groups, receiving either articles defending the models (positive group) or criticizing them (negative group). The dependent variable was measured by choosing a figure from a nine body shape silhouette scale, followed by a questionnaire measuring items such as self esteem and diet/exercise habits. As predicted, participants in the group that received positive articles chose larger body shapes as ideal for themselves and peers. The current study extends previous literature to support that the media's definition of beauty and exposure to thin women has an influence on females' views of ideal body shape. Results found that the positive group responded with larger ideal body shapes and higher self esteem and the discrepancy between own actual body shape and ideal was larger for the negative group. Strong positive correlations were also found between that discrepancy and current dieting, and media exposure and stress about eating.

**Title: Stories From Beijing: An Archetypal Analysis of Chinese Consumers**

Student: Xiuzhu Lin

Faculty advisor: Dr. Gary Kaskowitz

My project is focused on the studies of archetypes that exist in the Chinese market, as compared to those of the American market. Western companies have long been using archetypes to for branding purposes. The archetypes I studied are from a book called “The Hero and the Outlaw”, which introduces the twelve different kinds of archetypes that are deeply embedded in the branding techniques of many western companies. Many western archetypes originated from folklore stories that have a well-known character, therefore, I spent part of my research reading Chinese folklore stories and extracting similar archetypes. The second part of my research was done in Beijing, where I conducted in-person interviews and surveyed Chinese consumers, on their impressions of the roles of archetypes when it comes to purchasing decisions towards certain brands. To make the comparisons more visible, I focused on Chinese consumers’ perceptions and general attitudes towards two well-known western brands: Adidas and Starbucks. To probe deeper into their perceptions in order to lead to original archetypes, I used the laddering technique when surveying consumers to generate progressive responses. To support my studies, I also observed and photographed advertising campaigns around Beijing.

**Title:** **Macroinvertebrate Diversity in Metal Contaminated Ponds of the Lehigh Gap Refuge**  
**Student:** Andrew Mashintonio  
**Faculty advisor:** Dr. Frank Kuserk

The area surrounding Palmerton, PA was heavily polluted by two zinc smelting plants that were in operation for almost 100 years, resulting in severe deforestation of the northern slope of the Kittatiny Ridge of Blue Mountain along the Lehigh River. A 2000 acre zone was declared a Superfund site, the largest east of the Mississippi River, when operations ceased in the 1970’s. In 2003 the non-profit Wildlife Information Center purchased 750 acres west of the Lehigh River, began habitat restoration and management efforts, and initiated baseline ecological studies of the refuge, in order to monitor change, measure success, and enhance these habitats for the future. The purpose of this project was to establish an inventory of the macroinvertebrate populations in three ponds affected by heavy metal contamination that are located within the refuge. Each of the three pond sites were sampled with 1000  $\mu\text{m}$  mesh nets. From about 100 to 200 macroinvertebrates were sampled at each pond, yielding 25 to 50 different species. Macroinvertebrates were sorted and identified to family or genus and diversity measured using the Shannon and Hilsenhoff Family Biotic Indices. The Shannon Index values indicate that Mallard Pond is the most diverse and Wood Duck Pond has the most even species distribution. The Family Biotic Index ranking of Mallard was fairly poor, whereas it was good for the other two ponds.

**Title:** **Taking Notes vs. Not Taking Notes: Comprehension and Recall Ability**  
**Student:** Shannon McEvoy  
**Faculty advisor:** Dr. Robert Brill

When students are trying to learn new material it was hypothesized that students who took notes would score better on a recall test than those who just listened to the presentation. Participants are split into two groups, one taking notes during a presentation and one listening to the presentation. After both groups have seen the presentation they are given a recall test to see how much information they can recall.

**Title:** **Identification of Bacteria found in Metal Contaminated Soil**  
**Student:** Nicole Sarson  
**Faculty advisor:** Dr. Frank Kuserk

For 90 years two zinc ore smelter plants were located in Palmerton, Pennsylvania. The plants led to the devastation of nearly 3,000 acres of forests located on the north slope of Blue Mountain in Palmerton, Pennsylvania. Last summer students from Moravian college collected soil samples from 7 different locations along the Appalachian Trail, Blue Mountain. I attempted to identify the microflora that was found in the soil samples using a variety of techniques. In the process I had to prepare an assortment of different media that were needed to grow the bacteria and learn how to do a variety of different techniques involving staining and testing. The main method of identification used was a testing system called BioLog. Once it was determined whether the bacteria was gram negative or gram positive, determined by preparing a gram stain, other tests were then performed which helped with a positive identification. Some of the other tests performed were catalase tests, oxidase tests, and spore tests. After all the preliminary tests were performed, BioLog was used to try and determine the bacterial species' identification. My ultimate goal was to try to identify as many different bacteria as possible that were found in the soil samples.

## **Student Oral Presentations III (PPHAC 101)**

### **1:15-2:30pm**

**Moderator: Dr. Nathan Shank, Mathematics and Computer Science Department**

**Title:** **Motivation and Performance: Performance Memories and Feedback influences on Self-efficacy, Motivation, and Resulting Achievement**

Student: Suzanne Yeager

Faculty advisor: Dr. Robert Brill

The associations that we make everyday come from memories and allow us to form new thoughts, learn new things, and set new goals for ourselves. Thinking about a positive or negative memory may affect our mood or concentration, influence our cognitive processes, and alter our ability to perform at our highest potential. Performance memories are past experiences that an individual remembers when they either made an accomplishment or failed at something, whether it is a task, a creative project, or an assignment. These memories usually hold an emotional attachment to that person, so that when they reminisce about that certain experience they can remember and feel how their emotions were at that time of achievement or disappointment.

In this study, positive and negative performance memories and feedback were manipulated to show the correlating results on self-efficacy, motivation, and the resulting performance. In this study deception was used when subjects received positive or negative feedback that was manipulated, not based upon their actual performance, intended to change their motivation by altering their perception of their achievement. Two different types of activities were included in this study in a learning and creative context which show the relationship between varying levels of self-efficacy and performance.

**Title:** **Explorations into Benford's Law**

Student: Jessica Fenske

Faculty advisor: Dr. Nathan Shank

Benford's law states that the probability distribution for the first significant digit of certain data sets should decay as the value of the digit increases. There are currently two measures of how "close" a distribution is to Benford's law. We have created a new measure by looking at how many digits can align with Benford's law for a Uniform and Exponential random variable by adjusting the values of certain parameters. A digit,  $d_1$ , is said to align with Benford's law for a certain distribution if the probability that the first digit of the distribution equals  $d_1$  equals the probability for  $d_1$  under Benford's law. We will examine the maximum number of digits that can align with Benford's law for a Uniform and Exponential random variables.

**Title:** **Bestiaries and Their Presence in English Sermons**

Student: Patrick Rosendale

Advisor: Dr. John Black

The bestiary grew popular in the Middle Ages and was an accumulation of information about animals and Christian allegories. The collection or cataloguing of animals stories contains both religious aspects and an understanding of their characteristics. This source of material held great importance with the Catholic Church and was welcomed as a teaching vehicle to the masses.

The paper will chronicle the bestiary from the time of Augustine and Gregory the Great, leading to the eventual disuse or decline of these stories during the Reformation. It is the objective of this project to

focus on the extent, which the reception of bestiaries were received by the people. This will be accomplished by examining the sermons of various individuals including St. Bernard and collections from Benedictine houses in England. These sermons professed the message of God and taught the laity on becoming good Christians. This paper will show that the bestiaries were apparent in the sermons and began to fade during the time of The Reformation.

**Title:** Dietary Selenium Protects Dopamine Levels and May Improve Motor Behavior in the 6-Hydroxydopamine Rat Model of Parkinson's disease  
**Student:** Tyler McCambridge, Cecilia Fox  
**Faculty advisor:** Dr. Cecilia Fox

The significant loss of dopamine and dopamine metabolites may lead to the following symptoms characteristic of Parkinson's disease: muscle rigidity, tremor and bradykinesia. Previous research has demonstrated that free-radical damage may be responsible for some symptoms observed in this disease. Therefore, the antioxidant, selenium, (located in the active center of the free-radical scavenging enzyme, glutathione peroxidase) was used to examine its neuroprotective effects in the rat model of Parkinson's disease following a 6-hydroxydopamine (6-OHDA) nigral lesion. Fischer 344 rats were divided into two groups: control fed and selenium enhanced fed. Baseline rotation behavior testing for was performed prior to 6-OHDA lesioning. During this period, rats were tested under three conditions: no drug, apomorphine, and amphetamine. Following baseline testing, rats received 6-OHDA. Apomorphine and amphetamine behavior testing continued for 10 weeks post-lesion and rotation data was collected. High Performance Liquid Chromatography (HPLC) analysis was performed on the brain tissue to measure the amount of dopamine, DOPAC, and Homovanillic acid (HVA). Behavior analysis demonstrates that there was some preservation of motor function in the selenium treated rats. The HPLC analysis revealed higher percentages of dopamine, DOPAC, and HVA in animals treated with selenium indicating that this antioxidant may be able to maintain synthesis and metabolism of dopamine in neurons challenged with 6-OHDA.

### **Student Oral Presentations IV (PPHAC 101) 2:45-4:00pm**

**Moderator: Dr. Joel Nathan Rosen, Sociology Department**

**Title:** After: A series of paintings questioning issues of gender power and identity  
**Students:** Stephanie Mount, Nicole Shamy  
**Faculty advisor:** Angela Fraleigh

For this presentation, we will talk about our research and involvement in this past summers SOAR Program. Under the supervision of Professor Angela Fraleigh, we examined, and questioned issues of gender, power, and identity as they simultaneously reflect on art history, literature, popular culture, and the ways in which we construct individual and collective meaning. Throughout the summer we compiled our research on this topic, which Professor Fraleigh has used to create a new course for Moravian College. This multidisciplinary class is the culmination of our past summers research, showcasing the various themes that we explored. In conjunction to our research, we also analyzed this thesis through assisting Professor Fraleigh in her studio explorations of these issues as she created a new body of work. We aided in the creative production process by prepping her painting surfaces, securing creative resources, as well as developing a strategic plan for exhibition opportunities and publication.

**Title:** Metapopulation Dynamics  
**Student:** Erik Wicklund  
**Faculty advisor:** Dr. Ben Coleman

Metapopulation Dynamics is the study of how a species populates a given environment. In this project, I considered the challenges of using this model in the classroom. The model contains complex mathematics, and it is difficult to understand the results by simply looking at the numeric values. In response to these challenges, I developed a graphical program for exploring Metapopulation Dynamics. The software allows users to simulate instances of the model using a variety of parameters. In addition, the software provides a graphical representation of each model and the ability to compare multiple simulations. In my presentation, I will discuss the idea of Metapopulation Dynamics, demonstrate the software, and discuss the advantages of the using this software in the classroom.

**Title:** Medieval Views of the Church: Estates Satire and the Clergy  
**Student:** Angela Goeosits  
**Faculty advisor:** Dr. John Black

This presentation will address evidence of estates satire within medieval literature. More specifically, it identifies instances of estates satire of the clergy within the poetry of fourteenth century writers Geoffrey Chaucer, John Gower and William Langland. Using the three estates: the nobility, the clergy, and the peasantry, as a model for society, these poems use satire as a means of social criticism. The relevant poems, the *Canterbury Tales*, the *Confessio Amantis* and *Piers Plowman*, employ both tales and allegory to convey their satire. Estates satire commonly presents an idealized model of behavior for each of the estates and then indicates contemporary departures from that model. For the clergy, this means pointing out when the clergy are corrupt and when they fail to minister to the laity as they should. One of the most frequent complaints against the medieval Church is that members of the clergy are more interested in earthly concerns than they are in God. Despite the occasional harshness of the satire, estates satire was meant to be ultimately redemptive, indicating problem areas in society so that they could be resolved.

**Title:** Owenism From New Lanark to Davis Bend  
**Student:** Debra Young  
**Faculty advisor:** Dr. Joel Nathan Rosen

The connection between Robert Owen and Joseph E. Davis is clearly evident in the structure of the late 1800's slave community Davis Bend, in Mississippi. However, the link that connects these two men is hardly as explored. Built with the ideas that a suitable home life and proper amenities would produce a more efficient work force, Davis had taken a page out of Owen's book and boasted one of the best slave communities to live and work in, of its time.

Robert Owen, a Scotsman who debuted this idea at his New Lanark factory in Scotland, offered workers a comfortable living situation complete with education for children and the seeming dissolution of social class. Owens' factory community continued to be one of the most prosperous factories in Scotland, even through difficult economic times in the country.

Owen attempted to bring his ideas to America with a town in Indiana named New Harmony. His town may not have been as successful as he had planned but his ideas were, oddly enough, adopted by Joseph E. Davis, where Davis put the ideas into motion at his southern plantation. The connection may not be crystal clear, but the influence that Owen's ideas had on Davis are strikingly reminiscent of the utopian

socialist ideals of Owen's New Lanark in Scotland, making an odd mix of the South's peculiar institution with Owenism.

## **Poster Session II: 4:00pm-5:00pm (held in the PPHAC 1<sup>st</sup> floor Atrium)**

**Title:** Spooky Health: Service Learning with a Halloween Twist  
**Students:** Amy Anderson, Courtney Beahn  
**Faculty advisor:** Karen Groller

The Moravian College Student Nurses Association (SNA) in collaboration with first-year college students enrolled in the Introduction to College Life (ICL) course and faculty planned and implemented activities for a Children's Fall Fair in a local shelter. The primary goals of the Children's Fall Fair was to 1) provide homeless children with a safe and non-threatening environment to enjoy Halloween activities and 2) offer children and parents information related to dental hygiene, healthy diet and exercise patterns. This joint project received a \$250 dollar community service grant through the Moravian College Leadership Center. SNA members organized, designed and engaged the children and their parents at the shelter in age appropriate activities relate to Halloween. Nursing students were assisted by first-year ICL college students, to educate the children in a fun way on dental hygiene, healthy diet and exercise during the activities. Some activities included storytelling with nutritious foods and teaching children how to floss their teeth with a pool noodle.

Service learning was evident by the following student learning: Identified, planned and implemented activities based on the local homeless children community; Planned for and managed a budget for an event; Heightened student awareness with vulnerable populations within their community; SNA students served as a role model/mentor to first-year College students; Provided health promotional activities to community members (child and parent) on healthy habits of living; Strengthened relationships between Moravian College and the local shelter to plan for future endeavors; Shelter children and their parents were engaged with activities and asked appropriate questions related to healthy living habits. This poster will discuss how service learning benefits the community and college students by reviewing the process used to make the Children's Fall fair a successful reality.

**Title:** Evidence for zinc tolerance among bacteria in the Palmerton, PA area  
**Student:** Vivian Clarke-Ruiz  
**Faculty advisor:** Dr. Frank Kuserk

Zinc smelting, which took place in Palmerton, PA for almost a century, denuded a large portion of Blue Mountain's northern slope. Studies completed in both 1975 and 2007 showed a decrease in heavy metal contamination along with an increase in bacterial levels to nearly those of control sites. The purpose of this study was to determine the level of zinc tolerance among bacterial isolates from soil samples located both near and far from the former smelters. Samples were diluted and cultured using a pour plate technique on nutrient agar and nutrient agar amended with 1.0 mM and 6.0 mM. Results confirmed that bacterial levels near the former smelters are not significantly different from those at the more distant site. However, bacteria isolated from soil samples located closer to the former zinc smelters exhibited significantly higher percentages of zinc tolerance. Approximately 44% of bacteria from soils nearest the zinc smelters were tolerant to 1.0 mM zinc whereas only 22% of isolates from the more distant site were tolerant. Tolerance to 6.0 mM zinc was shown by almost 5% of bacteria isolated from soils nearest the zinc smelters while only 4% of isolates from the more distant site were tolerant.

**Title:** Mossbauer Spectroscopy Investigation of Ge Substituted Cobalt Ferrite  
**Student:** Deanne Dorak  
**Faculty advisor:** Dr. Kelly Kriebel

Research in the field of magnetic materials has shown that doping cobalt ferrite with specific transition metals can produce beneficial changes to the material's magnetic properties. These properties have been harnessed in the manufacturing of high-frequency technological devices such as conductors, actuators and computer hard drives. In this study, a series of germanium-substituted cobalt-ferrite compounds,  $(Co_{1+x}Ge_xFe_{2-2x}O_4)$  was studied using Mössbauer Spectroscopy. The series consisted of six powdered samples with germanium concentrations of  $x = 0.0, 0.1, 0.2, 0.3, 0.4$  and  $0.6$ . The data exhibit two sets of six-line hyperfine patterns for each sample, indicating the presence of Fe in both A (tetrahedral) sites, and (B) octahedral sites. Increasing Ge concentration was found to decrease overall the hyperfine field strength at both sites, with the B-site being more affected than the A-site. Increasing Ge concentration was also found to increase the hyperfine distribution width in samples, again with the B-site being more affected. Isomer shifts were within a range of  $(0.10-0.33)$  mm/s for Site A and  $(0.30-0.50)$  mm/s for Site B. These results agree with a hypothetical model where Ge ions are substituted into A-sites, with Co ions substituting into B-sites.

**Title:** Gender Roles in *Chichicastenango Supermarket and Northern Ladies*  
**Student:** Katherine Gallagher  
**Faculty advisor:** Dr. Claudia Mesa

“Gender Roles in *Chichicastenango Supermarket* and *Northern Ladies*” is a discussion of the irony found in the portrayal of traditional Latin American gender roles that have been transplanted to the United States in the short works *Chichicastenango Supermarket* by Ricardo Armijo and *Northern Ladies*, a selection from *In the Land of God and Man* by Silvana Paternostro. Both short works seek to offer a criticism of the expectations that their respective cultures place on men and women.

“Chichicastenango Supermarket” offers a vision of the typical Latin macho: a man who *is* served but never serves, who spends his nights drinking until the early hours of the morning, and who always maintains control. However, what the work also presents is the macho's counterpart: a man who is much more effeminate, cares about his appearance, and listens attentively to the needs of those around him. However, in Armijo's microcosm that is the Chichicastenango Supermarket, it is the latter, more effeminate man who has the last laugh.

Silvana Paternostro, however, finds nothing funny about the unjust demands placed on her fellow Latin American women to maintain a beautiful physical exterior yet remain silent, virginal and vapid. In “Northern Ladies” Paternostro goes “undercover” to explore the ironies of a society that expects women to be simultaneously highly sexual in their manner of dress and self-presentation, and at the same time virginal, even going so far as to pursue hymen reconstruction surgery in order to restore their virginity. What she uncovers for the reader is the expectation of falsehood for the women of her community.

**Title:** Understanding How to Live Heart Healthy  
**Student:** Jillian Kleintop  
**Faculty advisor:** Karen Groller

My poster will review the etiology, incidence, and risk factors of heart disease and the associated health complications. The emphasis of the poster presentation will be on health promotion activities to

maintain a healthy heart. These activities include education of warning signs, regular screenings and prevention strategies such as lifestyle modifications in diet, exercise, and management of stress.

**Title:**                    **The Role of Apology in Forgiveness of Transgressions**  
**Student:**                Samantha Kozza  
**Faculty advisor:**      Dr. Lori Toedter

The objective of this study was to find an association between the type of apology that is delivered and the amount of forgiveness that occurs. Sixty two female participants read descriptions of two transgressions, a “spreading rumor” transgression and a “skipping dinner” transgression. Participants viewed an apology for each transgression. The apology that was viewed was one of three levels, with a level three being the most complete apology and a level one being the least complete apology. A level one apology consisted of a standard “I’m sorry”. A level two apology consisted of an “I’m sorry” and an aspect of empathy. A level three apology consisted of an “I’m sorry”, an aspect of empathy, and a promise of restitution. Participants also filled out four questionnaires including The Forgiveness Scale and the Rejection Sensitivity Questionnaire. For the “skipping dinner” transgression, Level 2 and 3 apologies ( $M= 52.10, 55.20$ ) yielded higher forgiveness scores than did a Level 1 apology ( $M= 48.63$ )  $F(2,59) = 3.45, p = .038$ . Though the results for the “spreading rumor” transgression were not significant  $F(2,59) = 2.53, p = .088$ , there was a trend for greater forgiveness when more than just an “I’m sorry” was delivered.

**Title:**                    **Play in the Secondary Education English Classroom**  
**Students:**                Stephanie Miller, Kayla Teeling  
**Faculty advisor:**      Dr. Joseph Shosh

Play is not just meant to be conducted at recess during school hours. Play is just as beneficial to the building of learning within the English classroom. We conducted our research based upon the English Journal, a primary source within our field of study. We discovered that professionals in the English field are using playful ways in which to engage students within the learning environment. Using drama and unique writing prompts are two ways in which students can be playful and interactive with the English Language.

Play creates progress within the classroom by building skills, socialization, and engagement among students ultimately providing rewards for students. Using play historians such as Howard Chudacoff, and play scholars such as David Elkind, to support our English professionals, we discovered that play within the classroom surfaces from activities that extend beyond rote memorization and textbook formulas. Play within the classroom is dramatizing Shakespeare’s *Romeo and Juliet*. Play within the classroom is using imagination to create responses to literature. The main reason for play within the English classroom is to foster the engagement of students. Where there is engagement, progress follows.

**Title:**                    **Religion 299 Borderlinks Trip: Are You One of the Lucky Ones?**  
**Students:**                Janine Noel, Kelly Gallagher, Leon Edelman, Nina Patton, Kevin Duncan  
**Faculty advisor:**      Dr. Kelly Denton-Borhaug

The purpose of this poster/presentation is to highlight the trip taken in conjunction with Moravian’s Religion 299: Topics in Theology course. The five students in the course, Kevin Duncan, Leon Edelman, Kelly Gallagher, Janine Noël and Nina Patton, travelled to Tucson, Arizona and Sonora, Mexico from February 27, 2009 to March 4, 2009, along with three Moravian professors, Dr. Kelly

Denton-Borhaug, Dr. Curtis Keim, and Dr. Carol Moeller. The trip was conducted through Borderlinks, a binational non-profit organization that aims to educate both North Americans and Mexicans about the realities of life on the border. Through Borderlinks, students received a glimpse into the lives of the citizens living on both sides of the border, as well as political and social activists. On the Mexican side of the border, students witnessed the social and economic conditions faced by migrants that often lead them to make the perilous journey north. Once back in Tucson, Arizona, students were introduced to the greeting many migrants receive upon their arrival to the United States, in the form of cavity searches, interrogations, and the unjust American legal system. Due to these experiences on the border, the group wishes to inform the Moravian College community of what they saw, and thus challenge preexisting notions about immigration and the migrant experience.

**Title:** **The Effects of Facial Expression and Anxiety on Memory for Faces**  
**Student:** Jaime Renninger  
**Faculty advisor:** Dr. Robert Brill

This research project examined the effect of participants' anxiety levels on their memory for facial stimuli in addition to the effect on memory (both remembrance and familiarity) of various facial expressions of these stimuli. Facial processing is a highly debated topic in cognitive psychology, and there have been a number of dissenting results on the relationship between memory, the expression of facial stimuli, and the participants' anxiety. In order to investigate this topic, an experiment was conducted in which subjects were randomly assigned to either a high or low anxiety condition. Anxiety level was manipulated by the presentation of an article that provided either a positive or negative outlook on the economy and the job market for college graduates. After the anxiety manipulation, participants were shown 48 different faces with happy, sad, or angry expressions. After a short filler task, the participants were shown 48 more faces, some of which were new and some were repeated from the first group of stimuli. The subjects' abilities to distinguish between the new and repeated faces and their feeling of familiarity with each face were measured.

**Title:** **Mental Health Perception and How They Correlate to One's Overall Definition of Health**  
**Students:** Andrew Trontis, Stephanie Dellaquilla, Kathleen Flood, Elizabeth Python, Colin Riley  
**Faculty advisor:** Dr. Robert Brill

Health is a concept that has often evaded concrete definition and is largely conceptualized with great variability within and across societies. Some professions, and typically western cultures, have defined health as the absence of illness or ailment, whereas others, typically eastern cultures, believe health is more than simply the absence of negative symptoms, but a promotion of positive health practices and relationships. Whereas this dichotomy in classifying physical health has been studied in classrooms and doctor's offices around the globe, the conflict as it applies to mental health has been given less scrutiny. With the rising of the "positive psychology" movement, it may be of interest to examine what people's current perceptions are of just what is required to be "mentally healthy." The present study attempts to do this by investigating how individuals define mental health and explore differences that may be due to cultural or demographic variables, one's definition of physical health, and finally how one fits mental health into their definition of overall health.

**Title:** **Effect of Dietary Selenium Exposure in the Striatal 6-OHDA Model of Parkinson's Disease**  
**Student:** Kanizeh Visram, Cecilia Fox  
**Faculty advisor:** Dr. Cecilia Fox

Parkinson's disease is a debilitating neurodegenerative disorder resulting from the gradual deterioration of the nigrostriatal pathway. A large body of research implicates free-radical oxidative damage as a potential mechanism for this neuronal loss. Therefore, it is reasonable to propose that antioxidant therapy may be neuroprotective, and slow the progression of the disease. The antioxidant, selenium is an essential element in the diet of all mammals. It resides in the active center of the free-radical-scavenging enzyme, glutathione peroxidase, which assists in the protection of membrane lipids and molecules from oxidative damage. This study was designed to test the efficacy of long-term dietary selenium administration on the rotation behavior in rodents challenged by a 6-hydroxydopamine (6-OHDA) striatal lesion. Fisher 344 rats were divided into two groups: control chow and chow supplemented with selenium (2ppm). Baseline rotation behavior testing was performed on both groups for two weeks using either 0.1mg/kg apomorphine (subcutaneous injection), or 5 mg/kg amphetamine (intraperitoneal injection). Following baseline testing, rats were treated with an intrastriatal 6-OHDA lesion. Apomorphine and amphetamine rotation behavior testing was performed for eight weeks post-lesion before all rats were euthanized by intracardiac perfusion. Brain tissue was processed for tyrosine hydroxylase immunocytochemical staining and cell survival analysis.

*The following two students are candidates for the Masters in Education program:*

**Title: Helping Students Learn to Love Mathematics: High Motivation Problem Solving in Heterogeneous and Homogeneous Groups**

Student: Lisa DeSanctis

Faculty advisor: Dr. Joseph Shosh

This qualitative research study examined what grouping methods, heterogeneous or homogeneous, motivated students the most while participating in challenging mathematics problem solving activities using cooperative learning. This study was completed at an elementary school in eastern Pennsylvania that is part of a suburban school district with a student population of approximately 3,100 students. The study involved a fourth grade inclusive classroom consisting of twenty-two students. For the purpose of grouping, the students were identified as gifted, high ability, on-level, or approaching level. All groups consisted of three to five students, and homogeneous groups were composed of a mix of gifted and high ability as one group, or on-level and approaching level students as another group. Heterogeneous groups were compiled using a mix of various levels of students. Data gathering methods consisted of participant observations, reflective memos, student surveys/questionnaires, student work, and student interviews. All data was kept in a researcher log. Over the course of four months students participated in equal numbers of heterogeneous and homogeneous activities. When students work in heterogeneous groups, student scaffolding allowed everyone to work on the same challenging open-ended problems, but when working in homogeneous groups, all students were challenged with problems differentiated to meet the needs of the varied student populations. The study documents the strengths and weakness of the distinctive groups, revealing the necessity of the teacher's role to be attentive to the students needs, as students' attitudes, abilities, relationships, and social skills all affected the collaborative experience. The findings suggest while there are benefits to both grouping methods, with a slightly more favorable preference for homogeneous grouping, utilizing a mix of grouping methods may be the preferred choice as student motivation is enhanced by both.

**Title: The Effects of Implementing Visual, Verbal, and Performance-Based Strategies for Reading Comprehension with Struggling Adolescent Readers**

Student: Dana Russo

Faculty advisor: Dr. Joseph Shosh

This qualitative research study examined the effects of implementing visual, verbal, and performance-based, non-traditional reading comprehension strategies with struggling adolescent readers. The participants were seventh-grade general education and special education students in a remedial Language Arts class. The class met twice daily to engage in lessons that included drawing, acting, and retelling to enhance overall reading comprehension. This study proposes that positive effects result from using non-traditional approaches with struggling readers. With the use of instruction in the non-traditional format, students' attitudes toward lessons improved, classroom assessment scores remained proficient, and standardized test scores improved.

# Moravian College Students Who Presented Their Research or Creative Works to Regional or National Audiences 2008 – 2009

## Student-Faculty Publications:

Dunn, D. S., & **Brody, C.** (2008). Defining the good life following acquired physical disability. *Rehabilitation Psychology, 53*, 413-425.

Dunn, D. S., & **Brody, C.** (2008). Accurately assessing implicit attitudes: The IAT and beyond. [Review of *Implicit measures of attitudes*]. *Journal of Social and Clinical Psychology, 27*, 899-901.

Dunn, D. S., & **Brody, C.** (in press). Emotion regulation: Diverse perspectives and directions for research. [Review of *Handbook of emotion regulation*]. *Journal of Social and Clinical Psychology*.

**Guadreau, P.**, & Shank, N. (in press). Component order edge connectivity for graphs of fixed size and order. *Ars Combinatoria*.

## Conference Presentations:

**Tim Mills:** "*Spheriosity: Mathematics and Programming with Spherical Geometry*"  
23rd Annual Moravian College Undergraduate Mathematics Conference (Feb 21, 2009).

**Tim Mills:** "*SwingSet: A Tool to Visualize the Game SET*"  
5th Annual Midstates Conference on Undergraduate Research in Mathematics and Computer Science (November 1, 2008). His article also appeared in the printed proceedings.

**Jamie Long:** "*Sliding Block Endomorphisms and the Collatz Conjecture*"  
23rd Annual Moravian College Undergraduate Mathematics Conference (Feb 21, 2009).

**Jamie Long:** "*The Collatz Conjecture: A Conjugacy Approach*"  
5th Annual Midstates Conference on Undergraduate Research in Mathematics and Computer Science (November 1, 2008). His article also appeared in the printed proceedings.

**Jess Fenske:** "*Explorations into Benford's Law*"  
23rd Annual Moravian College Undergraduate Mathematics Conference (Feb 21, 2009) and at the Eastern Pennsylvania and Delaware section of the MAA Spring Meeting at Gettysburg College (March 28, 2009).

**Kanizeh Fatema Visram:** "*Effect of Dietary Selenium Exposure in the Striatal 6-OHDA Model of Parkinson's Disease*"  
Society for Neuroscience Conference, Washington D.C, (November 2008) and the 2009 Northeast District 2 convention of Beta Beta Beta Biological Honor Society, Moravian College (March 14, 2009);  
Mentor: Dr. C. Fox, Dept. of Biological Sciences

**Tyler McCambridge:**

"*Dietary Selenium Protects Dopamine Levels and May Improve Motor Behavior in the 6-Hydroxydopamine Rat Model of Parkinson's Disease*"

NEURON Conference, Hunter College, NYC, (April 4, 2009); Mentor: Dr. C. Fox, Dept. of Biological Sciences

**Vivian Clarke-Ruiz:** *"Evidence for zinc tolerance among bacteria in the Palmerton, PA area"*

National Conference on Undergraduate Research (April 16-18, 2009); Mentor: Dr. F. Kuserk, Dept. of Biological Sciences

**Andrew Mashintonio:** *"Macroinvertebrate Diversity of Metal Contaminated Ponds of the Lehigh Gap Refuge"*

National Conference on Undergraduate Research (April 16-18, 2009) and at the 2009 Northeast District 2 convention of Beta Beta Beta Biological Honor Society, Moravian College (March 14, 2009, Winner of the John C. Johnson Award for Excellence in Student Research); Mentor: Dr. F. Kuserk, Dept. of Biological Sciences

**Andrew Mashintonio, Amy Parrish, and Amanda deVillers:** *"Ecological Assessment of the Fry's Run Watershed"*

Undergraduate Research at the Capitol, Harrisburg, PA (March 24, 2009) and at the 2009 Northeast District 2 convention of Beta Beta Beta Biological Honor Society, Moravian College (March 14, 2009, 3<sup>rd</sup> place); Mentor: Dr. F. Kuserk, Dept. of Biological Sciences

**Sarabeth Brockley:** *"The Central Role of Plants in the Remediation and Ecological Monitoring of a Metal-Contaminated Site in Eastern Pennsylvania"*

National Conference on Undergraduate Research (April 16-18, 2009), Mid-Atlantic Chapter of the Ecological Society of America and the Society for Ecological Restoration, The College of New Jersey (March 13, 2009), and Undergraduate Research at the Capitol, Harrisburg, PA. (October, 2008); Mentors: Dr. D. Husic, Dept. of Biological Sciences and D. Kunkle, Lehigh Gap Nature Center

**Sarabeth Brockley:** *"Analysis of Plant Succession at the Lehigh Gap - A Superfund Site Undergoing Restoration"*

CUR Posters on the Hill (May 5, 2009; one of 60 students selected out of 447 proposals submitted); Mentor: Dr. D. Husic, Dept. of Biological Sciences and D. Kunkle, Lehigh Gap Nature Center

**Natalie Zedalis:** *"Synthesis of Guaiiazuleneiminodiacetic Acid: A Possible Visual Metal-Ion Indicator"*

Undergraduate Research at the Capitol, Harrisburg, PA (March 24, 2009); Mentor: Dr. C. Salter, Dept. of Chemistry

**Joshua Beri:** *"Enthalpy Change for the Chemiluminescent Oxidation of Luminol"*

237th American Chemical Society National Meeting, Salt Lake City, UT (March 22-26, 2009); Mentor: Dr. C. Salter, Dept. of Chemistry

**Michelle Fraser:** *"Androgyny in Selected Works by Donatello, Leonardo, Michelangelo"*

15<sup>th</sup> Annual Undergraduate Conference in Women's Studies, sponsored by the LVAIC Women's Studies Coalition, Lehigh University (March 28, 2009); Mentor: Dr. D. Radycki, Dept. of Art

**Rachel Gunderson:** *"Sexual Violence in America"*

15<sup>th</sup> Annual Undergraduate Conference in Women's Studies, sponsored by the LVAIC Women's Studies Coalition, Lehigh University (March 28, 2009); Mentor: Dr. L. Hoffman, Dept. of Nursing

**Carolyn Rauffer:** *"Community-Level Approaches to Intersexuality and Gendered Norms"*  
Social Research and Social Justice Conference, Muhlenberg College (April 3, 2009); Mentors: Dr. D. Jasper, Dept. of Sociology and Dr. S. Zaremba, Dept. of Psychology

**Samantha Christman:** *"Maternal Stress, Childhood Depression, and Behavioral Problems"* State Posters on the Hill event in Harrisburg, PA (October, 2008); Mentor: Dr. Michelle Schmidt, Dept of Psychology

**Debra Evans:** *"DNA adduct characterization for an antitumor active dirhodium compound"* 2009 Northeast District 2 convention of Beta Beta Beta Biological Honor Society, Moravian College (March 14, 2009, 3<sup>rd</sup> place); Mentors Drs. S. Dunham

**Moravian College Honors Candidates  
Fall 2008-Spring 2009**

<u>Student</u>	<u>Advisor</u>	<u>Liaison</u>	<u>Discipline</u>	<u>Title</u>
Andrew J. Abraham	K. Kriebel	E. Roeder	Physics	An Investigation of Magneto-elastic Materials using Mössbauer Spectroscopy
Victoria A. Bartkus	M. Reid	B. Falla	English	Use of Narrative Voice in Faulkner's Works (Fall 2008)
Kristina R. Cherrier	F. Ryan	S. Johnson	History	How Sexuality was Affected by the Political Movement of the 1960s in America (Fall 2008)
Deanne A. Dorak	K. Kriebel	E. Roeder	Physics	Mossbauer Spectroscopy of Cobalt-substituted Ferrites
Scott M. Ehrenburg	C. Ferrero-	A. Hildebrandt	Spanish	The Deconstruction and Reconstruction Pino of Cultural History and National Identity in Peron's Argentina and Franco's Spain
Debra L. Evans	Sh. Dunham/ St. Dunham	N. Shank	Chemistry	DNA-binding sites of anti-tumor dirhodium compounds
Jessica M. Fenske	N. Shank	M. Fraboni	Math/CSci	Applications of Benford's Law
Perry R. Freifeld	G. Kaskowitz	B. Coleman	Econ/Bus	An Investigation of the Difference between Satisfaction and Loyalty in the Dental Supply Industry
Angela M. Geosits	J. Black	M. Reid	English	Middle English Narrative Poetry: A Comparative Study
Nicholas S. Heimbach	B. Smolansky	M. Schmidt	Sociology	An Assessment of Attempts to Address Drug Addiction in America from the Mid-

				19th Century to the Modern-Day “War on Drugs”
Paul C. Jackson	A. Benert	D. Glew	English	Contradictory Voice in Wharton’s The Age of Innocence
Jessica M. Jonas	G. Diamond	S. Johnson	English	Illustrating Bradbury: The Sociological Context of an American Storyteller
Amanda J. King	G. Kaskowitz	P. Adamshick	Business	Archetypes and Professional Sports
Samantha L. Kozza	L. Toedter	G. Kaskowitz	Psychology/ Sociology	Factors in Forgiveness of Transgressions
James T. Long	M. Fraboni	B. Coleman	Math/CSci	The Collatz Conjecture: A Study in Chaos Theory (Fall 2008)
Tyler C. McCambridge	C. Fox	N. Shank	Biology	Does the Combined Therapeutic Approach of Dietary Selenium and Alpha-Tocopherol Enhance Protection Against 6-Hydroxydopamine in the Rat Model of Parkinson’s Disease?
Sarah K. Naumes	G. Olson	D. Glew	Pol. Sci.	Post-War Reconciliation in Former Yugoslavia
Carolyn M. Raufer	S. Zaremba/ D. Jasper	M. Schmidt	Psychology	Studying the Various Aspects of the Intersex Community
Brette K. Simmons	J. Black	C. Mesa	English	A Study of C.S. Lewis: Discovering Unity in the Christian Apologist and Literary Master
Natalie M. Zedalis	C. Salter	M. Fraboni	Chemistry	Synthesis of potential metal chelating derivatives of azulene

**3<sup>rd</sup> Annual Undergraduate Conference in Medieval and Early Modern Studies**  
**Moravian College, December 6, 2008**  
**Drs. John Black and Sandra Bardsley, organizers**

**Justin Arifaj**, “Crime and Famine: An Investigation of Crime Rates before, during and after the Great Famine”

**Joel W. Atkinson III**, “Serfs and Free Peasants in the *Liber Gersumarum*”

**Kristen Connerat**, “Households Headed By Women Before and After the Black Death: 1340-1390”

**Jessica Cortes**, “Catholic Smack Down”

**Alex Fydryszewski**, “Lollard Heresy in England in the Late 1400s and Early 1500s”

**Angela Geosits**, “Satire of the First Estate in John Gower's *Confessio Amantis*”

**Carolyn King**, “Margaret Beaufort”

**Dominic Longo**, “The Black Death’s Effect on Crime”

**Andrew Morrissey**, “The Relationship of Medieval Peasants and the Manor”

**Adam Partington**, “The Great Famine and Crime in Fourteenth-Century Rural England”

**Patrick Rosendale**, “A Study of Robin Hood and Medieval Popular Culture”

**Patrick Rosendale**, “Arthur and Mordred: Father and Son or Hero and Villain?”

**Dominic Volpe**, “Medieval Farming: Before and After the Black Death”

**Sarah Ward**, “Chaucer’s *Canterbury Tales*: A Marxist Critique”

**Jennifer Weber**, “Work Opportunities in Late Medieval England”

## 2007-08 Moravian College SOAR Participants

### Summer 2008 Rokke Research Scholars

**Jasmine DeFranco** (Prof. Art Lyons)

“Developing a Holistic Model for Educational Evaluation:

**Stephanie Mount, Nicole Shamy** (Prof. Angela Fraleigh)

“*After*: A Series of Paintings Questioning Issues of Gender, Power, and Identity”

**Jason Cote** (Prof. Paula Zerkle)

“Editing the Orchestral Score of Amy Beach's Mass in E-flat Major”

**Marisa Vargo** (Prof. Erica Yozell)

“Contemporary Post-dictatorship Film in Argentina and Chile”

**Angela Geosits** (Prof. Joel Wingard)

“Assessment of Student Learning Outcomes and Intentional Learning in Writing-Across-the-Curriculum Courses”

**Emily Gibbons** (Prof. Joel Nathan Rosen)

“Contemporary Society and the Way We Teach”

**Carolyn Raufer, Meredith Kluk** (Prof. Carol Moeller)

“Minoritized Identities, Politics, and Knowledge”

**Stephanie Miller, Kayla Teeling** (Prof. Joe Shosh)

“Playing with Words: An Historical Examination of Language and Literature Exploration through Play in the Secondary School Classroom”

**Chris Leiby** (Prof. James Paxton)

“Canajoharie: An Eighteenth-Century Mohawk Village”

**Adam Partington, Michael Padasak** (Prof. Heikki Lempa)

“Honor and Economics: The Ideologies of the Nazi-SS and Their Uses in Germany, 1926-1941”

**Jacqueline Baker** (Prof. Michelle Schmidt)

“Peer Relations and Friendship in Childhood”

**Xiuzhu Lin** (Prof. Gary Kaskowitz)

“Stories from Beijing: An Archetypal Analysis of Chinese Consumers”

**Debra Evans** (Profs. Shari Dunhan and Stephen Dunham)

“Isolation and Identification of DNA adducts formed by Rhodium Antitumor Agents”

**Sarabeth Brockley** (Prof. Diane Husic)

“Analysis of Succession, Biodiversity, and the Impact of Heavy Metal Contamination Surrounding Seeps and Springs within the Superfund Site at the Lehigh Gap (Pennsylvania) “

**Natalie Zedalis** (Prof. Carl Salter)

“Synthesis of Guaizuleneiminodiacetic Acid: A Possible Visual Metal-ion Indicator”

**Phillip Gaudreau** (Prof. Nathan Shank)

“Network Analysis”

**Steve Defazio, Erik Wicklund** (Profs. Ben Coleman and Frank Kuserk)

“Developing Stand-alone Software for Biological Models”

**Kanizeh Fatema Visram** (Prof. Cecilia Fox)

“The Effect of Long Term Selenium Exposure in the Striatal 6-Hydroxydopamine Model of Parkinson's Disease: A Cell Survival and Behavior Study”

**Vivian Clarke-Ruiz, Andrew Mashintonio** (Prof. Frank Kuserk)

“Remediation Effects on Forest Soil Microflora and Aquatic Biota Affected by Zinc Smelter Emissions near Palmerton, Pennsylvania”

## **Fall 2008**

**Samantha Christman** (Prof. Michelle Schmidt)

“Parenting influences on development in middle childhood”

**Matt Swiss** (Prof. Hilde Binford)

"Preparing Performing Editions of Early Moravian and Schwenkfelder Hymns"

## **Spring 2009**

**Cynthia Dretel** (Prof. Hilde Binford)

“Transcription of Conrad Beissel's Personal Hymn Book”

**Beta Beta Beta | Rho Eta chapter, Moravian College  
Research Seminar Series 2008-2009**

Amanda deVillers (senior, biology) — "The effect of different carbon sources on chemotaxis and predation of a toluene-degrading bacterium" [Rutgers University, RIOS Program] on November 5th

Deb Evans (senior, biochemistry) — "Notch-regulated ankarin repeat protein (NRARP) regulates stability of lymphoid enhancer binding factor (Lef)-1 in MC3T3 osteoblast cells" [Mayo Clinic, SURF Program] on November 5th

Sarabeth Brockley (junior, environmental science) — "The central role of plants in the remediation and ecological monitoring of a metal-contaminated site in eastern Pennsylvania" [Moravian College, SOAR Program] on November 12

Brian Reckenbeil (senior, biology) — "Quantifying movement and dispersal in adult weakfish, *Cynoscion regalis*: day vs. night comparison" [Rutgers University, RIOS Program] on December 3

Jordan Teisher (senior, biology) — "A phylogenetic study of *Sclerotinia homoeocarpa*" [North Carolina State University, REU Program] on December 3

**Moravian College Senior Art Show - 2008**  
**Student Exhibitors**

Biery, Timothy  
Carlini, Jessica  
Castellano, Georgia  
Conner, Amanda  
Corallo, Susan  
Corcoran, Megan  
de Rouen, Morgan  
de Rouen, Tyler  
Feinstein, Rachel  
Geosits, Angela  
Gustin, Lee  
Hettinger, Scott  
Heyer, Brandon  
Melber, Alicia  
Moore, Reshan  
Moser, Marina  
Nelson, Caitlin  
Panick, Jennifer  
Pellicani, Kristie  
Raskovic, Nikole  
Santacross, Lindsey  
Shelley, Katherine  
Shunk, Lucy  
Todd, Daniel  
Wolfe, Jessica

**Moravian College Dance Show - 2009**  
**Student Performers**

Jessica Andersen  
Jaclyn Blazier  
Kori Burke  
Ravjot Chana  
Kristen Connerat  
Caitlin Dean  
Allison DeNuzzi  
Stephanie Dorney  
Megan Greiner  
Anne Hoffman  
Jessica Jonas  
Elizabeth Kussler  
Caryolyn Latkovich  
Meredith Lobb  
Jill McCloskey  
Shannon Murray  
Brooke Prelovsky  
Amanda Raiser  
Alexandra Shapiro  
Jessica Swartz  
Anna Whetstone  
Meredith Wright

## *Defining Student-Faculty Collaborative Scholarship*

### **What is Undergraduate Research?**

In spring 2005, a task force on Undergraduate Research and Creative Endeavors (UGRACE) was formed to talk about ways to promote and expand opportunities for students and faculty to engage in collaborative scholarship at Moravian College. The committee ascribes to the definition of undergraduate research put forth by the Council on Undergraduate Research (CUR)<sup>1</sup>:

*Undergraduate research is an inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to a discipline. CUR programs emphasize the importance of a mentor, usually a faculty member, in guiding an undergraduate to achieve the most from an undergraduate research experience.*

In some fields, new experimental data and peer-reviewed publications may be the outcomes of the scholarly endeavor. In other disciplines, original interpretation, synthesis, and application of theories or approaches might qualify as the “original intellectual contribution”. At times, research may be quantitative or qualitative, empirical or theoretical, or may have immediate applications beyond academe. The results of marketing research, for example, can lead to policies and procedures used by organizations (profit, not-profit, governmental). Thus, academics (including students) work closely with businesses and other organizations to not only determine the problems that they face, but help to test out theories and ideas that might help improve the value-creation process. Clinical researchers might develop new methods of patient care or study the effectiveness of new drugs. In fields that are more aesthetic, the development or reinterpretation of and performance or display of new works of fine art may be the end products of the scholarly experience.

### **What are the Steps Involved in Doing Scholarly Research?**

Scholarship is all about asking and answering a question. Scholarly research is often characterized by a series of steps that lead to answers:

1. Formulate an answerable question or testable hypothesis -- that is, a question whose answer is based on your interpretation of data, fact and information.
2. Research the question by reading literature found in journals, periodicals and other publications that relate to the question.
3. In the scientific fields, participants design and conduct experiments to test their hypotheses.
4. Synthesize the learning provided by the research – summarize the information acquired research and extract themes of commonality, difference or interest that are observed. Analyze the results.
5. Think about how the learning contributes to answering the question – apply what you learned from your synthesis of the research to generate an answer (not the only answer) to the question. Determine if the experimental results support or refute the original hypothesis.
6. In some fields, experiments might need to be repeated or redesigned the hypothesis may need to be revised.
7. Write a feasible and appropriate answer based on the learning – formalize in writing the answer you arrived in the previous steps.

Students engaged in creative work at an advanced level also conduct research; for students of creative writing, this might mean reading works that are related (perhaps by theme, genre, period, element(s) of craft) to their own creative endeavors as a means toward honing their own craft. One significant difference, though, is that a poet, playwright, or writer of fiction or creative nonfiction, rather than *beginning* with a question, often arrives at, or *discovers*, the question through the process of crafting the work. The goal, then, is to take others along on the journey to that same luminous, haunting, probably ultimately *unanswerable* question.

### **Why is Student Scholarship Important?**

---

<sup>1</sup> See [www.cur.org](http://www.cur.org) for more information on this organization.

Student engagement in scholarship is important because:

- it is student-centered and individually-oriented, but at the same time, draws students into a community of learners;
- it creates meaningful and supported opportunities for students to challenge themselves intellectually and creatively;
- it encourages initiative and accountability, which is of value for all sorts of future undertakings;
- it extends and expands upon the notion of education and learning, encouraging students to make meaningful connections between the classroom and the world, to transfer/apply classroom learning to solving 'real world' problems;
- it emphasizes both content and process; students learn not only 'material,' but perhaps more importantly, practice critical thinking, analysis, evaluation of evidence, problem-solving skills, and other methods that promote intellectual development.

From a faculty perspective, engagement in scholarship keeps individuals connected to the passion they have for their particular discipline and serves as a way to remain vital and relevant throughout their career. In a CUR white paper<sup>2</sup>, Ramirez and Hoagland state that faculty and students should be encouraged to

*"...collaborate as partners in their explorations of uncharted intellectual terrain. The symbiosis established between the faculty member and undergraduate collaborator energies and informs the faculty member's teaching and research while simultaneously introduces the student to the joys of discovery as well as to lessons in persistence, problem-solving and critical thinking."*

Bringing one's research or other forms of scholarship into the classroom is a way to show students why the field is so exciting and why a faculty chose to pursue that field of study. Involving students in one's scholarship IS a form of teaching and can often engage students in ways that other methods simply can not accomplish. John W. Gardner<sup>3</sup> once said:

*"Much education today is monumentally ineffective. All too often we are giving young people cut flowers when we should be teaching them to grow their own plants."*

Through the dedication of faculty and administrators, the creative spirit of students, and the generous support of many, especially Ms. Priscilla Hurd who established the Rokke Endowment for Faculty-Student Research, Moravian College is allowing students to grow their own plants.

Thoughts on student-faculty scholarship contributed by:

*Diane Husic (Biology), John Black (English), Carl Salter (Chemistry), Gary Kaskowitz (Economics and Business), Santo Marabella (Economics and Business), and Joyce Hinnefeld (English)*  
April 24, 2006

---

<sup>2</sup>J. Ramirez and E. Hoagland (2003) "Faculty-Undergraduate Collaborative Research and Publishing", a CUR White Paper, <[http://www.cur.org/wp\\_repub.html](http://www.cur.org/wp_repub.html)>; accessed 12/22/04.

<sup>3</sup> John W. Gardner, former Secretary of Health, Education and Welfare, was a 20<sup>th</sup> century visionary who spent most of his life studying leadership and community.