This year, 52 students, representing 14 different majors, are participating in the 2008 Scholars Day activities. Congratulations to these individuals for all of their accomplishments. Thanks also to their 21 faculty sponsors. Since the inception of this event 3 years ago, 168 students have shared their scholarly accomplishments with the Moravian College community.
The 3rd Annual Moravian College Student Scholarship and Creative Endeavors Day

April 17, 2008

Schedule of Events

9:00 a.m.  Welcome and Opening Remarks
Prosser Auditorium

9:10 a.m. -
10:30 a.m.
Session I:  Student Oral Presentations
Prosser Auditorium

11:30 a.m. -
12:30 p.m.
Session II: Student Presentations
Music Department
Peter Hall

11:40 a.m. -
12:40 p.m.
Student Poster Presentations I - Group A
Haupert Union Building, outside of Prosser

1:45 p.m. -
2:45 p.m.
Session III: Student Oral Presentations
Prosser Auditorium

3:15 p.m. -
4:10 p.m.
Session IV: Student Presentations
Documentary films and a music performance
Prosser Auditorium

4:10 p.m. -
5:10 p.m.
Student Poster Presentations II – Group B
Haupert Union Building, outside of Prosser
### Detailed Program Schedule

**Student Presentations I – Morning Session**  
*HUB, Prosser Auditorium*  
9:00 a.m. – 10:30 a.m.

<table>
<thead>
<tr>
<th>Presenter Name(s)</th>
<th>Time</th>
<th>Room</th>
<th>Dept./ Program</th>
<th>Faculty Sponsor</th>
<th>Format</th>
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<tbody>
<tr>
<td>Dean Gordon Weil</td>
<td>9:00</td>
<td>Prosser</td>
<td></td>
<td></td>
<td>Opening remarks</td>
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<tr>
<td>Allan Fatzinger</td>
<td>9:10 – 9:25</td>
<td>Prosser</td>
<td>Math</td>
<td>Shank</td>
<td>“Epidemic growth using a social network model” Elmo projection system</td>
</tr>
<tr>
<td>Christopher Schilling</td>
<td>9:40 – 10:00</td>
<td>Prosser</td>
<td>Psychology</td>
<td>Johnson</td>
<td>“Remember to forget it: Semantic and lexical inter-item similarity in retrieval-induced forgetting” Computer, projector, PowerPoint, laser pointer</td>
</tr>
<tr>
<td>Lydia Zarrella</td>
<td>10:00 – 10:15</td>
<td>Prosser</td>
<td>Psychology</td>
<td>Schmidt</td>
<td>“Victimized girls’ perceptions of popularity” Computer, projector, PowerPoint, laser pointer</td>
</tr>
<tr>
<td>Jamie Long</td>
<td>10:15 – 10:30</td>
<td>Prosser</td>
<td>Math/ Computer Science</td>
<td>Fraboni</td>
<td>“Chaos, Conjugacy, and the Collatz Conjecture” Computer, projector, PowerPoint, laser pointer</td>
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**Student Presentations II – Music Department**  
*Peter Hall*  
11:30 a.m. – 12:30 p.m.

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<th>Presenter Name(s)</th>
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<th>Dept./ Program</th>
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<tr>
<td>Kelly Schmidt</td>
<td>12:20 – 12:30</td>
<td>Peter Hall</td>
<td>Music</td>
<td>Binford</td>
<td>“Bach to business” Oral presentation</td>
</tr>
<tr>
<td>Amy Gollins</td>
<td>12:00 – 12:10</td>
<td>Peter Hall</td>
<td>Music</td>
<td>Binford</td>
<td>“Bach and the use of oboe in his cantatas” Oral presentation/musical performance</td>
</tr>
<tr>
<td>Andrei Maurer</td>
<td>12:10 – 12:20</td>
<td>Peter Hall</td>
<td>Music</td>
<td>Binford</td>
<td>“Symbolism in the works of J. S. Bach” Oral presentation; Chalkboard</td>
</tr>
<tr>
<td>Nicholas Krolak</td>
<td>11:50 – 12:00</td>
<td>Peter Hall</td>
<td>Music</td>
<td>Binford</td>
<td>“Bach to business” Oral presentation</td>
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<tr>
<td>Presenter Name(s)</td>
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<tr>
<td>Kevin McGorry</td>
<td>1:45 – 2:00</td>
<td>Prosser</td>
<td>Historical Studies/Sec Ed</td>
<td>Lempa</td>
<td>“Emotional effects of spas in the 18th century Bath”</td>
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<tr>
<td>Carolyn King</td>
<td>2:00 – 2:15</td>
<td>Prosser</td>
<td>History</td>
<td>Lempa</td>
<td>“Libertines and masculinity in 17th century Europe”</td>
</tr>
<tr>
<td>Jessica Jonas</td>
<td>2:15 – 2:30</td>
<td>Prosser</td>
<td>English/ Media Culture</td>
<td>Harris</td>
<td>“The island’s heart”</td>
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<tr>
<td>Simon Tabchi</td>
<td>2:30 – 2:45</td>
<td>Prosser</td>
<td>Bio-Chemistry</td>
<td>Jones</td>
<td>“Genetic mapping of the bas mutation in Drosophila melanogaster”</td>
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<td>Computer, projector, PowerPoint, laser pointer</td>
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**Session IV: Student Presentations**

*Film Documentaries & Music Performance*

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<tr>
<th>Presenter Name(s)</th>
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<tr>
<td>Grace Teodosio</td>
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<td>Film projector, DVD player</td>
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<tr>
<td>Jessica Kerchner</td>
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<tr>
<td>Kate Shelley</td>
<td>3:40 – 3:55</td>
<td>Prosser</td>
<td>Studio Art</td>
<td>Steinke-Finch</td>
<td>“Beth Works Casino” A documentary film</td>
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<tr>
<td>Amanda Conner</td>
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<td>Film projector, DVD player</td>
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<tr>
<td>Peter Scheneman</td>
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<tr>
<td>Brett Guss</td>
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<tr>
<td>Helen Smith, clarinet; Bram Rader, piano accompanist</td>
<td>4:00</td>
<td>Prosser</td>
<td>Music Performance</td>
<td>Andrus</td>
<td>Carl Maria von Weber-Concertino</td>
</tr>
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* The titles, abstracts, and authors for these presentations are found after the schedule in this program.
Acknowledgements

The 3rd 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 Moravian College Board of Trustees

President Christopher Thomforde

Julie Del Giorno 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, Rick Chillot and the Public Relations Office

Registrar’s Office

Jan Ciganick, Sarah Warrick, and Studio South

Craig Underwood and the Media Center

Ann Claussen

Food Services and Facilities Services
Student Presentations I – Morning Session
HUB, Prosser Auditorium
9:10 a.m. – 10:30 a.m.

Student: Allan Fatzinger
Sponsor: Dr. Nathan Shank
Title: Epidemic Growth Using a Social Network Model

We will look at probabilistic aspects of social networks; in particular a directed network consisting of vertices with different epidemic occupancy stages. First, we look at the several different characteristics for a number of persons in the network as a disease spreads with certain types of transmission. Then using recursion formulas, probabilities, and differential equations we are able to determine the expected size of each different characteristic as well as the expected size of the entire graph.

Student: Daniel Fillman, Ben Mizack
Sponsor: Dr. Nathan Shank
Title: The Effects of Minimum Wage on Labor Force Networks

We will be using a social network model to illustrate how job information is passed among individuals in a closed labor force. Social networks are an area of graph theory where there are points, known as vertices, connected by lines which are commonly referred to as edges. In our model, the vertices represent laborers and edges represent acquaintances between two laborers. Given a graph with \( n \) vertices and a probability \( p \) which represents the probability of each edge being present, we assigned each vertex one of two distinct wage statuses. In this model we assumed job offers could be passed among vertices or directly to a vertex from a boss for example. We were able to determine how many job offers would be necessary for every vertex in the graph to obtain the larger wage statuses. In our second model, we added a minimum wage to our setup and calculate how many offers would be needed until the effect of an implemented minimum wage would be nullified. Under some additional assumptions about the labor force, we were able to determine how many offers would be necessary for the minimum wage effect to be nullified.

Student: Christopher Schilling
Sponsor: Dr. Sarah Johnson
Title: Remember to Forget It: Semantic and Lexical Inter-Item Similarity in Retrieval-Induced Forgetting

Retrieval-induced forgetting (RIF) is a peculiar cognitive effect whereby retrieval of items suppresses access of related items in memory. Prior research demonstrates it in items related by semantic category and by lexically similar properties; however, it is unclear how RIF functions with words sharing both qualities. This study evaluates how RIF operates differentially with such items. Moreover, we seek to explain RIF through an inhibitory mechanism by use of independent probes.
Participants studied word pairs, where each pair was related by semantic category, lexical category, or a combination of these traits. They practiced retrieving a subset of the pairs in a lexical completion task. To rule out non-inhibitory accounts, participants were tested with independent probes on unpracticed exemplars in categories where another exemplar was practiced.

Using semantic probes, RIF was replicated in semantically similar items, and items with combined similarities were facilitated. The results show the importance of transfer-appropriate processing in RIF. When items are retrieved in the same way they are encoded, it reveals competition among similar items, and this competition is resolved to facilitate retrieval. Combined category items appear to be facilitated, and may effectively bypass RIF since they can be accessed in multiple ways.

Student: Lydia Zarrella  
Sponsor: Dr. Michelle Schmidt  
Title: Victimized Girls’ Perceptions of Popularity

This study examines the association between relational victimization and perceived popularity. Because the profile of a bully is similar to the profile of a perceived popular child, it is important to consider popularity in relation to victimization. Participants included a diverse sample of third, fourth, and fifth grade girls (N=345), and approximately 70% of the sample received free or reduced lunch. Participants completed the Social Experiences Questionnaire and were also asked to indicate items which described popular girls from a popularity checklist. Results indicate that girls who experience relational aggression more frequently are more likely to attribute negative traits and behaviors to the popular girls. An additional comparison of means indicated that low relationally victimized girls perceive popular girls as more positive, whereas high relationally victimized girls perceive popular girls as more negative. In addition, results indicate that as the age increases, the traits and behaviors that they attribute to popular girls are more likely to be positive.

Student: Jamie Long  
Sponsor: Dr. Michael Fraboni  
Title: Chaos, Conjugacy, and the Collatz Conjecture

For over half a century, the infamous Collatz Conjecture has stumped every mathematician who has attempted to prove it. Although attempts to flat out solve the problem have proven unfruitful, numerous interesting theorems have sprung up as a result of all the research that has been done on the topic. During his days as an undergraduate at the University of Scranton, Moravian’s Dr. Fraboni approached the problem using the mathematical notion of conjugacy, and was able to come up with a few results of his own. During a SOAR project on the topic, where I also worked alongside Dr. Alicia Sevilla, Kelly LaTourette, and Rebecca Angstadt, I was able to continue Dr. Fraboni’s research and further our understanding of the problem. Now, two years later, I have started an Honors project to hopefully tie up some of the loose ends I left behind after SOAR. This talk will summarize the results that I have discovered since the beginning of this semester, as well as the topics I intend to look into before my Honors defense in the fall. In doing so, I hope to inspire others to look into the problem themselves.
Student Presentations II – Music Department
Peter Hall
11:30 a.m. – 12:30 p.m.

Student: Nicholas Krolak
Sponsor: Dr. Hilde Binford
Title: Bach to Business

There is no doubt that Johann Sebastian Bach was one of the greatest composers and musical theorists of all time, however there is a relatively small amount of research about how Bach supported himself as a musician. In other words, what manner of businessman was Johann Sebastian Bach? Through researching public records, Bach’s various contracts, letters, as well as secondary resources, a picture of Bach’s pragmatic business practices emerges. His good business sense seems to have developed early in his career, possibly influenced by his Uncle Christoph, and continued throughout his life.

Student: Amy Gollins
Sponsor: Dr. Hilde Binford
Title: Bach and the Use of Oboe in His Cantatas

Johann Sebastian Bach used the oboe in nearly 50 of his cantatas. However, it is not the modern oboe we commonly see today. Bach used the oboe da caccia (oboe of the hunt) or the Taille, which is another form of the tenor oboe. I am exploring why he uses the different instruments for each particular cantata, and what role these oboes play within the pieces. My presentation will include short oboe excerpts from the cantatas.

Student: Andrei Maurer
Sponsor: Dr. Hilde Binford
Title: Symbolism in the Works of J. S. Bach

The music of Johann Sebastian Bach has been a principle source for the edification of aspirants for generations. Arguably, no other composer’s works have been subject to as much analysis and speculation, and, as a result, numerous and often contrasting theories have arisen regarding, among many other things, Bach’s use of mathematics in his composition. These studies have, like almost all musical analysis, involved the use of numeric concepts in the formal aspects of the works, but some of the most intriguing studies focus on Bach’s alleged use of numeric symbolism or “numerology.” There is little direct evidence for much of the numerological speculation. Contemporary popularity of numerology, Bach’s confirmed interest in mathematical puzzles, and principally, the statistical analysis of the works in relation to known numerological traditions have provided the basis for these conclusions. This presentation will examine some of the most popular, convincing, and/or contentious of these claims and attempt to evaluate their validity.
Student: Kelly Schmidt
Sponsor: Dr. Hilde Binford

Title: Bach to Business

This paper will explore J. S. Bach’s use of musical symbolism throughout the *Mass in B Minor*. Drawing on research by Bach scholars such as George Schaffer, Christoph Wolff, and David Humphreys, and using both played and sung examples, the presentation will look at both the structural, organizational, and musical ways Bach underscores the meaning of the mass texts.

Student: Erin Maher
Sponsor: Dr. Larry Lipkis

Title: Dieu qui est le plus fort: Selected Sacred Works of Three Members of “Les Six”

This project is a study of the sacred music of Arthur Honegger, Darius Milhaud, and Francis Poulenc, three French composers of the 20th Century. In the early 1920’s, they were members of “Les Six,” a group of six French composers associated with the writer Jean Cocteau. As a formal association, the group only lasted a short time, but it has linked these composers together in the history of music. Of the six composers, Honegger, Milhaud, and Poulenc had the most distinguished compositional careers and are the most well known today. In addition to their secular music, each of them wrote a number of religious works, expressing their different faiths – Honegger was Protestant, Milhaud was Jewish, and Poulenc was Catholic. In this project, I explore the ways in which these pieces were influenced by the personal beliefs of the composers and their respective sacred music traditions. I selected three or four pieces by each composer which I felt were most important or represented an important stage in their understanding of their faith and how to express it through music.
Student Poster Presentations I – Group A (morning)
HUB, outside Prosser Auditorium
11:40 a.m. – 12:40 p.m. (student authors will stand at their posters)

Student: Kensi Stauffer
Sponsor: Dr. Sarah Johnson
Title: The Affect of Images and Their Recall

Many researchers have found that positive stimuli are often recalled better than negative or neutral stimuli, and negative stimuli are often better recalled than neutral stimuli. Information is also better learned when coupled with images. In our study on how the affect of an image coincides with its recall, we expect to find the greatest amount of recall in positive images, then in negative, and then the least amount in neutral images. We are examining the relationship between positive, negative, and neutral images, as opposed to only between two of the affects as previous studies have done. We used the International Affective Picture System and chose fifteen images in all, five rated high for positive feelings, five rated high for negative feelings, and five rated neutrally. A slide show featuring three images at a time is shown to participants, with nine seconds for the images to be examined. Afterwards, the participants answer three math problems, and then have two minutes to answer three questions about each image. This study should allow us to see what kinds of images are best recalled, and this knowledge can be used in classrooms and other instructional areas to further enhance learning.

Student: Jennifer Novatnack
Sponsor: Drs. Shari and Stephen Dunham
Title: Determination of Selenium in Rat Tissue and Rat Food Samples

Selenium has been shown to inhibit heavy metal toxicity in mammals, with evidence that it can decrease oxidative brain damage in Fisher 344 rats with a lesion model for Parkinson’s disease. Previously, rat tissue samples were harvested from two rat groups: one fed a control diet and another given a selenium-enriched diet. This study focused on the use of Graphite Furnace Atomic Absorption Spectroscopy (GFAAS) to determine (1) if low levels of selenium in complex tissue and food samples could be detected, (2) if selenium tissue levels were statistically different in the two different rat groups, and (3) if selenium measurements were accurate and reproducible. Samples were prepared by microwave digestion in nitric acid and then GFAAS was used to determine levels of selenium. Spike-and-recovery experiments were also performed with various digested samples and two different forms of selenium. For rat food samples, issues of sampling (homogenizing of food pellets) and accuracy of selenium content (measured levels compared to levels reported by the manufacturer) were investigated. Results indicate that the average amount of selenium per dry weight calculated for the food samples may be significantly less than that reported by the manufacturer. Selenium levels in tissues were inconclusive.
Dirhodium (II,II) carboxylate complexes have been shown to have significant anti-tumor activity with DNA as a potential biological target. Modifications to the ligands of these compounds have been shown to affect their DNA-binding abilities. A sample of one of these anti-tumor active compounds, Rh(II,II)tetratrifluoroacetamide, has been synthesized by our collaborators and been studied previously in this lab. Although this compound does bind covalently to DNA, unfortunately at maximum binding only 25-30% of this material is bound to DNA. The goal of this project was to determine if the Rh(II,II)tetratrifluoroacetamide sample was a mixture of structural isomers or incomplete synthesis products and to determine if the limited DNA-binding of the sample is a result of varying the nature or arrangement of the ligands around the central dirhodium core. The sample was separated into three components using high performance liquid chromatography (HPLC). The purified components were reacted with DNA to determine the affinity and the binding kinetics of each component with DNA. Results from DNA-binding curves and preliminary identification of each component by mass spectrometry will be presented.

This study examined the use of unobtrusive measures in order to observe certain political opinions that can be found on a small liberal arts college campus. The experiment required the strategic placement of ten different signs that all displayed anti-war sentiment. These signs were monitored over a two-week period, with each week observed as a separate (although connected) set of data. The researchers had various hypotheses pertaining to whether or not the signs would be removed or remain intact. These hypotheses also looked at the effects of gender, location, and sign type on the overall status of the sign. While some thought processes were confirmed with significant results, other tests showed values that were not significant and reinstated the fact that this area of study needs to be further researched.

A brief description of the background leading up to the experiment is that media positively and negatively affects body image. In the media more often than not obese individuals are seen as unattractive while those who are severely underweight are seen as beautiful. Our experiment is testing to see if average college students have a stereotype against the obese. Our study includes four different slide shows of different body types: average viewed as beautiful, skinny viewed as unattractive, skinny viewed as beautiful, and obese viewed as unattractive. We administered an Implicit Association Test to measure reaction times of negative and positive word pairings with the obese photos. If you are exposed to skinny individuals as beautiful then the participants’ self-esteem is going to decrease and the obese stereotype will increase; whereas if they view the
obese viewed as unattractive their self-esteem is going to increase. The usefulness of this study is to show how much people are influenced by the media. Through the debriefing statement we will express our own belief; which is media should not influence your self-esteem and how you are beautiful the way you are.

**Student:** Jenna Wallace  
**Sponsor:** Dr. Frank Kuserk

**Title:** Survival of MRSA and MSSA on Dry Surfaces

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a strain of the common bacteria *Staphylococcus aureus* that has become resistant to treatment with common antibiotics. It has become a growing problem not only because it is resistant to most antibiotics, but also because it is spread very readily in numerous places. Some of the more common locations where MRSA can be found are hospitals, gyms and locker rooms. The goal of this research is to determine if, and for how long both MRSA and its similar counterpart methicillin sensitive *Staphylococcus aureus* (MSSA) will survive on a dry surface at room temperature. Ceramic tile is being used as the surface to simulate those found in many locker rooms and bathrooms. The tiles have been inoculated with a known concentration of the bacteria and at various time intervals samples are taken and assessed to see if live bacteria are present on their surface. To date, this research has shown that both MRSA and MSSA have been able to survive with no nutrients on a dry surface for 25 days.

**Students:** Kristen Wiggins, Jessica Cianci  
**Sponsor:** Dr. Shari Dunham

**Title:** Characterization of DNA-adducts Formed by Antitumor-active Rhodium Compounds

Platinum compounds have been used to treat cancer for many years although high toxicity and low specificity have led researchers to look for other metal compounds with similar antitumor effects. This work focused on two of six rhodium compounds that covalently bind DNA in a manner similar to that of cisplatin. Double-stranded DNA from salmon testes was allowed to react with each rhodium compound. Unbound rhodium compound was then removed, and the remaining metal-modified DNA was enzymatically digested. Separation by HPLC and analysis of the digestion products by atomic spectroscopy was then performed. This investigation improved upon previous rhodium-DNA binding experiments in that nearly 100% of rhodium bound to DNA for both rhodium compounds studied. In addition, the multi-step enzymatic digestion protocols for metal-modified DNA were optimized. Results confirmed those of previous studies that indicated rhodium-modified DNA can be digested with the rhodium-DNA interaction intact. Future work on this project will require larger scale isolation of digestion products for characterization by mass spectrometry to determine the nucleoside preference of rhodium binding.
Parkinson’s disease is a neurodegenerative disorder resulting from the gradual deterioration of the nigrostriatal pathway. The loss of neurons in the substantia nigra and decrease in dopamine and dopamine metabolites in the striatum are hallmarks of this disease. A large body of research implicates free-radical damage as a potential mechanism for this neuronal loss. Therefore, it is reasonable to propose that a regimen of antioxidant therapy may be neuroprotective, and consequently slow the progression of the disease. The antioxidant, selenium resides in the active center of the free-radical scavenging enzyme, glutathione peroxidase. This enzyme assists in the protection of membrane lipids and proteins from oxidative damage. This study examined the efficacy of long-term dietary selenium administration on the rotation behavior in rodents challenged by a 6-hydroxydopamine nigral lesion. Twenty-one F344 rats were randomly divided into 2 groups: control fed or selenium-supplemented fed. Baseline rotation behavior testing was performed for 8 weeks under three conditions: no drug, apomorphine (s.c.), and amphetamine (i.p.). Following baseline testing, rats were treated with an intranigral 6-hydroxydopamine lesion. Apomorphine and amphetamine rotation behavior testing was performed for three weeks post-lesion. The rats were euthanized by intracardiac perfusion. Brains were removed and preserved for future histological staining.

The Lehigh Gap Wildlife Refuge is a 750-acre tract on the Kittatinny Ridge in Pennsylvania and includes part of the Palmerton Zinc Pile Superfund. Eighty years of zinc smelter air pollution (sulfur dioxide and metal particulates) resulted in a landscape stripped of vegetation. In 2003, metal tolerant warm season grasses were tested as a potential way to revegetate the step slopes, sequester the toxic metals in the soil, and serve as the first step in habitat restoration. The addition of soil amendments that accompanied the grass seeding apparently provided conditions sufficient for the emergence of some pioneering species. The grey birch (Betula populifolia) shows extreme signs of stress: stunted growth, severe necrosis along the leaf margins, and altered levels of phenolics. Other tree species appear healthier, even ones such as aspens that have elevated levels of zinc in the leaf tissue. Unexplainably, the Pennsylvania endangered species Dicentra eximia (wild bleeding heart) and the rare, non-native Minuartia patula (sandwort) thrive on the contaminated slopes. Our preliminary studies examined the levels of zinc in some of these pioneering species and examined levels of chlorophyll and phenolics to assess plant leaf stress. Eventually, we would like to understand what adaptations allow certain species to tolerate the toxic metals in the soil.
Student: Amanda deVillers  
Sponsor: Dr. Christopher Jones  
Title: The Relationship Between Fish Diversity and Live Coral Cover and Changes in Diversity Over Time in Bonaire, Netherlands Antilles

Bonaire, Netherlands Antilles has one of the healthiest coral reef systems in terms of fish species richness and live coral cover in the Caribbean. Numerous studies investigating the correlation between coral cover and fish diversity in reefs throughout the world have yielded inconsistent results. This study, using data from the REEF Fish Survey Project and a vertical transect method of estimating coral cover, found a significant negative correlation between coral cover and fish diversity on Bonaire.

The health of Bonaire’s reef systems fuel the diving industry, which is a major part of the island’s economy. Worldwide fish populations are decreasing due to overfishing and other pressures. In an attempt to monitor the valuable fish populations in Bonaire, data from REEF surveys was used to determine whether fish diversity has decreased over time in Bonaire. Although diversity fluctuated at all sites, overall the fish diversity on Bonaire showed no significant change between 1995 and 2007. However, Bari Reef, which is the most surveyed site in the Caribbean, showed an increase in diversity over time. The number of surveys could explain the increase in diversity due to more intensive sampling than any other site.

Student: Rachel Riggs  
Sponsor: Dr. Sarah Johnson  
Title: Order Effects and Impression Formation

This study is being conducted on impression formation and recency effects. A recency effect is when the last information presented has the most impact on the participant. There are three different videos that will be randomly shown to each group. The video will be a short interview of a college male. The interview answers are displayed in a way that shows positive and extroverted traits first, ending with negative and introverted traits. The order of the questions is switched for the second groups’ video. There is also a control video, which is basically neutral. The participants will then answer a questionnaire of likert-type questions to determine what their overall impression of the person in the video is. Since it is a description and not a list of words, as in many previous studies that have found primacy effects, I expect the last information to have the most impact. I am expecting a recency effect because it is in the form of a video and it uses clear positive and negative traits. This study will show what information, the first or the last, that people typically pay attention to when they are forming an impression of a person.

Student: Samantha Christman  
Sponsor: Dr. Michelle Schmidt  
Title: Parental Stress, Child Depression, and Child Behavior Problems

This research examines how maternal stress, childhood depression, and behavioral problems influence one another. Using a sample of 80 fourth and fifth graders from local elementary schools, data was analyzed in order to understand how factors such as maternal age, income level, and family structure affect levels of parenting stress. In addition, comparisons were made
in regards to how maternal stress effects parental perception of their children and how maternal stress relates to reports of childhood depression. Results indicated that maternal age and family structure did not influence a mother’s level of stress. However, results suggested that income level and child depression correlate with maternal stress levels. Mothers with higher stress levels were found to perceive their children as more difficult compared to mothers with lower stress levels. Understanding how these factors are associated might stimulate future research on how to effectively manage maternal stress and promote healthier child development.
Session III: Student Presentations
Prosser Auditorium
1:45 p.m. – 2:45 p.m.

Student: Kevin McGorry
Sponsor: Dr. Heikki Lempa
Title: Emotional Effects of Spas in 18th Century Bath

Throughout history, emotions never change, but the way in which we perceive them as a society does. In the study of emotions by such historians such as Stearns and Reddy, we see emotions explored through the study of the family and emotionology, the change in emotional standards. Through my research, I will explore the spas specifically in Bath, England. By looking at this specific spa, I will be able to breakdown the institutions set up for the visitors of Bath during the 18th Century. By exploring the spas of Bath, I will explain the emotion effects of the social interaction between visitors and the acceptable behavior of a patient.

Spas were originally used as a place of healing and cleansing. As time progressed so did the popularity and visitations of the spas. The spas progressed into becoming more than a medical institution and the expansion of reasons of attendance brought about new emotional standards for the people attending them. I argue that the study of the spas in Bath, England, can be seen as the model for the changing emotional standards in English culture and society.

Student: Carolyn King
Sponsor: Dr. Heikki Lempa
Title: Libertines and Masculinity in 17th Century Europe

During the seventeenth century, expectations of men were constantly evolving as religion, education, and social norms changed. A moral revolution in which the family and chastity took priority for men took place, thus the lifestyles of libertines of England became unacceptable and looked-down upon. In my paper, I argue that libertines became un-masculine and the ideals of the “promiscuous man” declined in popularity due to an increase in values of the middle class as a result of the writings of John Locke, as in the case of John Wilmott and other British libertines.

Libertines came about in France due to the court culture of Louis XIV at Versailles and flourished due to social acceptance of promiscuity for the purpose of procreation. In England, libertines like John Wilmott were very sexual people who wrote poetry and published writings on their sexual escapades. As the seventeenth century progressed, the “biological man” began to decline as family values became more important and chastity evolved as a masculine trait. Since control was emphasized by intellectuals such as John Locke, libertines were viewed as immasculine because they were unable to overcome their sexual desires. With an emphasis on self-control and education, masculine virtues began to reflect family and the private sphere and ultimately moved away from libertinage. Thus, libertines, who emphasized etiquette, extravagant clothing, and haute court-life, became more feminine in the eyes of society.
“The Island’s Heart” is a memoir essay that explores the beginnings of my relationship with fantasy, as well as the role I believe fantasy and wonder play in life in general. In today’s world it’s especially important to devote time to the cultivation of imagination, and to explore the possibilities that lie outside the routines of our lives. After reading my essay, I welcome any discussion of writing—especially explorative writing—and the nature of fantasy.

Student: Simon Tabchi
Sponsor: Dr. Christopher Jone

Title: Genetic Mapping of the bas Mutation in Drosophila melanogaster

In Drosophila melanogaster, the fruit fly, the bang-sensitive mutations cause paralysis of the fly upon mechanical shock. One specific recessive mutation from this group is in fact called “bang-sensitive” (bas). Ganetzky and Wu (1982) mapped this mutation to a region between the g (garnet) and sd (scalloped) mutation genes on the X chromosome. Although bas has been “mapped”, there are 355 possible genes in that region. We are attempting to identify the exact bas gene location. This is to be done by the use of deletion mapping. We have used both extant deletions and deletions created using Exelixis P-element lines to narrow down the location of bas to the 12F1-12F3 region on the X chromosome. Mapping of bas is ongoing in an attempt to narrow the list of candidate genes further. In order to find the exact mutated gene, varying mutations should be created in order for narrower deletion regions to be produced.
In the Truth, Lies, and Videotape class offered at Moravian College, the students were given an opportunity to explore the medium of film as a means of communication. Our group took advantage of the digital video programs and filming equipment made available to us in order to portray a portrait of an extraordinary woman. “Beverly” follows the narrative of Beverly O’Keefe, a transgender woman formerly known as Eugene living in a society that has not yet accepted or truly understood what that means. Her story demonstrates the heartbreaking trials and tribulations that all transgender women and men face as they transition and throughout their entire lives. “Beverly” illustrates the issues behind gender change. The film also challenges societal views and the question of what gender truly is and why there is a difference between gender identity and sex. Many shocking myths and fact are uncovered about an identity that many refuse to believe is more than a psychological phenomenon. In addition, discrimination and hate crime against transgender men and women is discussed through personal account and carefully researched statistics. “Beverly” was created to prove that male or female transgender people and those questioning their identities are just like everyone else.

This film was made in response to the BethWorks Casino coming to Bethlehem. The focus of the film is the exploration of the view that the casino will be more beneficial than detrimental to the community, and the opposing view that the benefits will not outweigh the potential damages. The film was created in an effort to educate the audience about the benefits and damages that may arise due to the casino’s presence in the community. It is left open ended, allowing the viewers to ultimately decide for themselves if the casino will be more beneficial or detrimental, and what they can do in response to the potential damaging effects. The purpose is to educate and allow the viewers to react and form and act on their own conclusions.
I will be performing a musical piece entitled *Concertino for Clarinet, Op. 26* by Carl Maria von Weber. Weber was a German composer who lived from 1786 to 1826. His instrumental and vocal works greatly influenced the development of Romantic music in Europe. Weber wrote his *Concertino* in 1811 for Heinrich Baermann, one of the most accomplished clarinetists of the day. In fact, Weber was so impressed by Baermann's musicianship that he dedicated all six of his clarinet compositions to him. The clarinet was a relatively new instrument at the time and Weber's compositions for it broke new ground by prominently featuring its capabilities.

The *Concertino* consists of three movements: *Adagio ma non troppo*, *Andante*, and *Allegro*. It opens very slowly and dramatically, followed by the main theme. This theme is developed into more elaborate variations until the climactic finale. The premiere of the Concertino was such a great success that the king of Bavaria commissioned Weber to write two full-scale clarinet concerti. His *Concertino for Clarinet* remains a pioneering endeavor for the instrument.
Student: Lukas Marsalek  
Sponsor: Dr. Christopher Jones  
Title: Identification of bacterial samples suspected to be methicillin-resistant *Staphylococcus aureus* (MRSA)

MRSA stands for methicillin-resistant *Staphylococcus aureus*. It can cause serious infections or even death. It is resistant to numerous antibiotics of the beta-lactam family, including methicillin and penicillin. That is why this bacterium has become a major clinical problem around the world. The main purpose was to identify 31 bacterial isolates, collected from Moravian College football players and suspected to be MRSA by LeeAnna Roberts, a previous honors student from Moravian College. The first part of the project involved testing various DNA extraction methods on their effectivity to extract DNA from three control samples (methicillin-susceptible S. aureus, *S. saprophyticus* and MRSA). We found that all the extraction methods worked well on *S. saprophyticus* and MRSA when incubated overnight and for 3 hours at 37°C. However, MSSA strain was not affected after overnight incubation but its DNA was eventually collected when performing the same methods but after 3 hours of incubation. The reason for this is not fully understood. The second part comprised the identification process of LeeAnna’s samples by applying PCR assay followed by gel electrophoresis. We concluded that only 2 out of 31 samples were MRSA (6,5%) whereas the rest was identified as methicillin-susceptible *Staphylococcus aureus* (MSSA; 93,5%).

Student: Jessica Cianci  
Sponsor: Dr. Frank Kuserk  
Title: Response of MRSA and MSSA to antibiotic combinations

The recent outbreak of methicillin resistant staphylococcus aureus (MRSA) in locker rooms and athletic facilities across the globe has caused much concern. This mutated strain of the bacteria, commonly found on your skin, is resistant to our normal antibiotics and can only be cured with new types of antibiotics. Late detection has also, in extreme cases, lead to death. This experiment is being done to see what the minimum inhibitory concentration (MIC) is for three common antibiotics (Penicillin G, Tetracycline and Oxicillin), if there is any at all. Then it will explore if combinations of these three antibiotics are more or less effective at killing the bacteria.

All procedures are going to be done with a modification of the Kirby-Bauer method and will investigate the results of MRSA and MSSA (methicillin sensitive staphylococcus aureus). Zone diameters results will be taken from the standards from the method and interpreted according to the conditions we are using. Tests are still in progress and results should be in with in the next two weeks.
Student: Alison Dobrowolski  
Sponsor: Dr. Sarah Johnson  
Title: The Relationship Between High-Fat Food and Stress

There is a common relationship between high-fat foods and stress. People choose to snack on high fat foods rather than eating healthy low-fat foods in order to cope with stress. When high-fat foods are consumed, they give a calming feeling to the stressed individual. My hypothesis is that consuming chocolate will decrease stress in an individual because of its high-fat content.

In order to see if my hypothesis is accurate, I must test stressed individuals. With a math quiz, the participants stress level will increase. With one group, a regular chocolate bar will be given to them, another group will receive a low-fat chocolate bar, and the control group will receive nothing. After having all the participants take the quiz and eat chocolate, a stress test will be distributed to measure the participants’ stress level. I expect to find that the control group will have the most stressed participants, and the regular chocolate “fun-size” bar will have the least amount of stressed participants. The high-fat content in chocolate should give the individuals a calm feeling when they eat it and will then have less stress while taking the math quiz. The low-fat chocolate group’s level of stress should be in between the control group and the high-fat chocolate group, because the low-fat group is consuming fat, but not as much fat as the high-fat group.

I think this study is useful, because people can recognize that stress leads to poor eating habits. People can learn how to manage their stress level with healthier food by substituting fruits, vegetables, or low fat snacks when stressed.

Student: Annaliese Henwood  
Sponsor: Dr. Sarah Johnson  
Title: Measuring Stigma through Story Interpretation

Stigma threatens the mentally ill at every turn. It can be more devastating and challenging to defeat than mental illness itself. My study examines the attitudes of participants towards the mentally disabled, and how stories affect their perceptions. I hypothesize that the control group without knowledge of mental illness in the experiment will react with less stigma than the experimental group with knowledge. I hope to discover a link between implicit and explicit thoughts by using two different measurement scales. Participants will read a story excerpt, answer an implicit survey, and complete an explicit questionnaire. The experimental group will read an excerpt of Girl, Interrupted while the control group will read an edited version that portrays the main character as a recently released criminal. I expect to find mental illness stigma coming from both groups based on the implicit measurement scale, but I predict the control group will reveal less stigma than the experimental on the explicit measurement scale because they do not realize the purpose of the study. This experiment will help the community understand where it stands regarding its opinions about the mentally ill.
Familial Alzheimer’s disease (FAD) has been linked to mutations in the gene coding for presenilin. Excessive cleavage by presenilin may be responsible for the accumulation of amyloid plaques in the central nervous system of Alzheimer patients. The morphological effects of various “Alzheimer” mutations have been examined in Drosophila melanogaster and have been shown to correlate with FAD age of onset (Seidner 2006). We are interested in examining behavioral effects of these mutations in flies. Preliminary studies using presenilin lines provided by Dr. Mark Fortini (NCI) were inconclusive, probably due to the fact that the transgenes were inserted randomly into the Drosophila genome. By means of a new transformation technique via ΦC31-integrase-mediated cassette exchange (Batemen et al. 2006) we now can assure identical location and expressivity of presenilin transgenes. Currently, we are working to subclone the wild-type presenilin gene into a targeting vector to deliver the insert to a specific site within the fly genome. The resulting construct will then be mutated by site-directed mutagenesis and used in transformation. Behavioral and morphological studies will be performed once the “Alzheimer” presenilin fly stocks are established.

The relationship between certain personality states and intelligence will be tested. From The Big Five Personality Traits, this experiment focuses on neuroticism. The 30 participants will be divided equally into three groups. Two of the groups will be manipulated to produce high or low neuroticism states. These two groups will take a personality test to confirm the manipulation of their personality state. The control group will also take the same personality test. All 30 participants will then take a subset Multiple Intelligence (MI) test and a subset IQ test. These results will then be analyzed to show whether there are any relationships between personality and intelligence. Based on past research, the predicted results should show that anxiety has an effect on intelligence scores. More specifically someone who is in a neurotic state should score poorly on a subset IQ test. The two sections being measured for the subset MI test are interpersonal and intrapersonal. Other studies show that a person in a neurotic state should score higher on the intrapersonal section compared to the interpersonal. This experiment showed that there is a relationship between personality states and test performance. It illustrates how neuroticism, specifically anxiety, tends to lower test scores.

Research on granular piles has shown that such systems exhibit dynamical behavior known as self-organized criticality (SOC). Several experimental studies have been performed in an attempt...
to duplicate and verify this behavior and determine the physical factors responsible. Such experiments often tend to use very small spherical beads (less than 1.0 mm) to try and closely resemble the small nature of particles in granular piles such as sand. Working with small particles introduces issues such as the consistency of the size and shape of the beads, and the effect of outside elements on the experiment such as condensation, static electricity and contaminants. We present here the results of an experimental study utilizing 6.0 mm diameter spherical beads as the granular material – constituent particles which are large enough to eliminate many of the problems accompanying the use of smaller particles. The study will eventually examine varying the mass of the particles to determine what effect inertia may have on the size and distribution of avalanches.

Student: Beverly Beaver
Sponsor: Dr. Francis Ryan
Title: Diamonds are a Girl’s Best Friend: A Historical Overview of Women’s Baseball

Most people only know that women played baseball because of the popular 1992 film, *A League of Their Own*, however women have been playing baseball, not softball, since 1866. Women’s baseball went in and out of style, but rarely because women were not interested in playing. And unfortunately, because of the frequent gaps in its history the majority of people have forgotten that women once wound up for a pitch just like men.

The 1920’s Philadelphia Bobbies is the perfect example of forgotten history. A team of misfits, these young women were sent overseas to play against men’s teams in Japan. Although they did not come home with a winning record, these women returned with far more significant achievements than a trophy could ever represent.

There are a million answers to the question, what have sports done for women and depending on who is answering the replies may differ tremendously. Some believe that sports have no effect on women at all, others feel that it doesn’t matter the effect sports may or may not have because female athletes will never amount to that of their male counterparts. But, there are others who not only believe sports benefit women, but society as well.

The Philadelphia Bobbies, as well as their predecessors and successors have done more for women than they could have ever imagined. Sports have more than just a direct effect on one woman; they affect the entire race of females, whether they are athletes or not. Female athletes “…redefine what it means to be an athlete, and what it means to be a woman.” For centuries the definition of an athlete was reserved for males only, but thanks to courageous female athletes, like the ones who stepped out into the baseball diamonds, the definitions of an athlete and a woman are now all-inclusive. Sports, as well as other monumental movements, such as the women’s rights movement, have made it acceptable for women to wear to pants, sneakers, or spit! American women of today are no longer confined to strict rules, because of those brave women of the past who stepped up to the plate for them.

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1 Mariah Burton Nelson, “Who We Might Become,” xi.
Transition metal complexes such as cisplatin have been in use as chemotherapeutic drugs for many years. Their mechanism of action is believed to involve covalent cross-linking of DNA strands, causing inhibition of the normal processing of this key biological molecule and induction of apoptosis. However, the harmful side effects of cisplatin have caused researchers to focus their attention on other metal complexes. One such metal complex, N,N’,N”-trimethyl-1,4,7-triazacyclononane-ruthenium-trichloride (tacn-RuCl3), was chosen as a possible candidate due to its cis-halide geometry, which is similar to the square planar cis-halide geometry exhibited by cisplatin. In vivo studies of tacn-RuCl3 have shown antitumor activity against ovarian cancer cell lines, although without evidence of a mechanism of action. Our work explores the potential for covalent DNA-binding as a plausible mechanism for the antitumor activity of tacn-RuCl3. Preliminary studies using paramagnetic 1H NMR spectroscopy suggest that tacn-RuCl3 is capable of binding to all four nucleosides. Time-dependent binding studies with double-stranded salmon testes DNA showed that ~40% of Ru remained covalently bound to DNA within 24 hours of reaction at pH 6.9. These data provide evidence that covalent interactions between tacn-RuCl3 and DNA may be relevant to the antitumor activity of this metal complex.

A new avenue of brand loyalty research, archetypal marketing, has come to the forefront of the marketing field within the last few years. Archetypal marketing is founded on the basis that archetypes, representations of universal roles that are a part of traditional stories, are used in branding strategies to help consumers relate to a particular brand, product or service. The purpose of this study was to explore the loyalty customers had to small retail establishments based upon archetypal associations.

Customers that considered themselves to be very loyal to an establishment were compared to customers who saw their relationship with a business as more transactional in nature. We looked for any archetypal associations that customers had when using selected products and services. These were compared with the archetypal positioning of selected businesses to see; 1) did the business project its identity in an archetypal manner, and 2) did the business have loyal customers that identified with the organization at a deep level. The Moravian Bookshop, The Heavenly Hedgehog Ice Cream Company, and Aardvark Sports Shop, located on Main Street in Bethlehem, were presented as case studies. If these small retail specialty shops were to harness the power of archetypal marketing in creating a cohesive brand identity, they would be able to gain the highest level of loyalty from their customers.
The purpose of the study was to observe outstanding teachers in their classrooms to document, analyze, and demonstrate effective teaching behaviors, as identified in educational research. We discussed selected teacher effectiveness research studies to distinguish among effective teacher behaviors in five key teaching components: Planning for Teaching, Creating Class Climate, Managing the Classroom, Teaching the Lesson, and Guiding Student Achievement. We conducted focused observations in a range of grade level and academic disciplines. Based on the observations, we created common questions that teachers may have and dramatized how to solve these questions through story vignettes. The benefits of doing this project have been gaining understanding of research methods and connecting the research to specific strategies in the classroom. Our exchange of information with practicing teachers and our college professor proved to be beneficial for everyone. Our poster will highlight a question from each of the five teaching components and display an example of underlying educational research that addresses the question, followed by a real-life classroom experience that responds to the question and follows the research.
Moravian College Students Who Presented Their Research or Creative Works to Regional or National Audiences
2007 – 2008

Chris Schilling: “Remember to forget it: Semantic and lexical inter-item similarity in retrieval-induced forgetting”, presented at the National Conferences on Undergraduate Research, Salisbury University, MD (April 10-12, 2008) and at the Annual Conference of the Association for Psychological Science (May, 2008, Chicago; Dr. Sarah Johnson, advisor).

Amanda deVillers: "The relationship between fish diversity and live coral cover and changes in diversity over time in Bonaire, Netherlands Antilles", presented at the 2008 Northeast District 2 convention of Beta Beta Beta Biological Honor Society, Mount St. Mary's University (March 29, 2008).

Anastasia Yemelyanova: "Creating 'Alzheimer' Drosophila via phiC31-mediated RMCE", presented at the 2008 Northeast District 2 convention of Beta Beta Beta Biological Honor Society, Mount St. Mary's University (March 29, 2008) and at the international Drosophila Research Conference, San Diego (April 2-6, 2008; Dr. Christopher Jones, advisor).

Yi Li and Greg Niehoff are co-authors on a paper entitled “The central role of plants in the remediation and ecological monitoring of a metal-contaminated site in eastern Pennsylvania”, to be presented at the Northeast section of the American Society of Plant Biologists, Storrs, CT (April 19, 2008; Dr. Diane Husic, advisor).

Ellen Flynn: “The Noose, the Cross and the Double Cross: The Repealed Repentance of Moll Flanders”, presented at the 14th Annual Undergraduate Conference in Women's Studies, sponsored by the LVAIC Women's Studies Coalition, at Muhlenberg College (March 29, 2008; Dr. Martha Reid, advisor).

Debra Evans: “DNA-Binding Properties of Anti-Tumor Dirhodium Compounds”, presented at the National Conferences on Undergraduate Research, Salisbury University, MD (April 10-12, 2008; Drs. Steve and Shari Dunham, advisors).

Allen Wong: “DNA Interactions of an Antitumor-Active Ruthenium Compound”, presented at the National Conferences on Undergraduate Research, Salisbury University, MD (April 10-12, 2008; Drs. Steve and Shari Dunham, advisors).

Andy Villafañe and Brian Birchak: "Remediation Effects on Forest Soil Microflora and Aquatic Macroinvertebrate Communities Affected by Zince Smelter Emissions near Palmerton, Pennsylvania", presented at the Undergraduate Research at the Capital event, Harrisburg, PA (October 2, 2007; Dr. Frank Kuserk, Advisor).

Lisa Morkowchuk, Moravian College, Sarah Gibbons, Duquesne University, Dr. Jeffry Madura, Department of Chemistry and Biochemistry, Duquesne University: "Computational Study of the Counterion and Solvent Effect on Stereoselectivity in SN2 Reactions of Cyclic Nitrile Anions", presented at the Undergraduate Research at the Capital event, Harrisburg, PA (October 2, 2007; Dr. Carl Salter, Advisor)
Anastasia Yemelyanova: "Transformation of Drosophila with Mutated Presenilin to Create 'Alzheimer' Flies", presented at the Undergraduate Research at the Capital event, Harrisburg, PA (October 2, 2007; Dr. Christopher Jones, Advisor)

Josh Beri: "The Heat of Reaction of Luminol: Energy Flow in a Chemiluminescent Reaction", presented at the Undergraduate Research at the Capital event, Harrisburg, PA (April 1, 2008; Dr. Carl Salter, Advisor)

Andy Villafañe, “Current state of soil microflora post zinc-smelter exposure”, presented at the National Conferences on Undergraduate Research, Salisbury University, MD (April 10-12, 2008; Dr. Frank Kuserk, advisor).

Carolyn King and Patrick Rosendale, "Legends, Troubadours, and Eleanor: The Courts of Love in a Queen's Final Years"

Jonathan Ennis, "Sixteenth-Century Drama as Religious Propaganda"


"Music of God: Plainchant of the Medieval Church" - performance by Phillip Minnich, Cynthia Dretel, Katelyn Gudknecht, Eileen Cooper, Caitlin DeBrigard, and Sean Reardon

Minuet Dance - performance by Julienne Basso and Steven Ingraham

"Pandora" - performance by Jasmin Maurer, Emma Grigore, Rachael Todd, and Marta Johnson

Medieval Architecture - a poster exhibition by Meghan Decker, Angela Geosits, Jessica Kerschner, Lauren Pettit, Tim Biery, Colleen Kane, and Sarah Warrick.
Amanda deVillers (junior, biology) — "The relationship between fish diversity and live coral cover and changes in diversity over time in Bonaire, Netherlands Antilles" [Moravian College & CIEE, Study Abroad Program]

Yi Li (senior, biochemistry) — "Preliminary studies on heavy metal tolerant plant species at the Lehigh Gap" [Moravian College, SOAR Program]

Jen Novatnack (junior, biology) — "Determining levels of selenium in rat tissue and food samples" [Moravian College, SOAR Program]

Andy Goodbred (senior, biology) — "Selenium as a protective agent in a 6-hydroxydopamine rat model of Parkinson's disease: a behavioral study" [Moravian College, Honors Program]

Stasy Yemelyanova (senior, biology) — "Effects of Alzheimer mutations in Drosophila presenilin " [Moravian College, Honors Program]

Jess Cianci (senior, biochemistry) — "Characterization of DNA-adducts formed by antitumor-active rhodium compounds" [Moravian College, independent study]

Kristen Wiggins (senior, biochemistry) — "Characterization of DNA-adducts formed by antitumor-active rhodium compounds" [Moravian College, SOAR Program]

Brian Birchak (senior, biology) — "Remediation effects on aquatic macroinvertebrates affected by zinc-smelter emissions near Palmerton, PA" [Moravian College, SOAR Program]

Greg Niehoff (senior, biochemistry) — "Determination of heavy metal concentrations in plants at the Lehigh Gap" [Moravian College, SOAR Program]

Todd Remaley (senior, biology) — "Isomer separation and DNA binding reactions of a dirhodium compound" [Moravian College, SOAR Program]

Simon Tabchi (senior, biochemistry) — "Genetic mapping of the bas mutation in Drosophila melanogaster " [Moravian College, SOAR and Honors Programs]

Nate Tussey (senior, biology) — "Genetic mapping of the bss mutation in Drosophila melanogaster" [Moravian College, SOAR and Honors Programs]

Andy Villafaña (senior, biology) — "Current state of soil microflora post-zinc smelting exposure" [Moravian College, SOAR Program]
2007-08 Moravian College SOAR Participants

Fall 2007

Debra Young
(Prof. Joel Nathan Rosen)
“From New Lanark to Mound Bayou: Owenitism on the Mississippi Delta”

Kelly Schmidt
(Prof. Hilde Binford)
“Cataloguing of the Music Collection at the Schwenkfelder Museum”

Kristen Wiggins
(Prof. Shari Dunham)
“Characterization of DNA-adducts Formed by Antitumor-active Rhodium Compounds”

Jamie Hirner, Teriane Johns, Shana Synder
(Prof. Charlotte Zales)
“Effective Teaching Behaviors: Documenting, Analyzing, and Demonstrating the Findings of Educational Research”

Summer 2007 Rokke Research Scholars

Clint Brody
(Prof. Dana Dunn)
“Teaching about Disability as Diversity and Understanding the Good Life Following Acquired Disability”

Christopher Schilling
(Prof. Sarah Johnson)
“Backward Inhibition of Semantic Memories: Temporary Forgetting of General Knowledge”

Rachel Fast
(Prof. Gary Kaskowitz)
“Retail Loyalty: An Exploration of Archetypal Identification among Small Businesses and Their Customers”

Andrea Millheim, Krystle Willing
(Profs. Joe Shosh and Charlote Zales)
“A Qualitative Study of the Transformation from Teacher to Teacher Action Researcher to Teacher as Agent of Systemic Change”

Zachary Perry
(Prof. Carol Moeller)
“Ethics, Identities, and Realist Philosophies”

Christina Townsend
(Prof. Curt Keim)
“Mistaking Africa: American Popular Culture Myths:”
Danielle Corvacchioli
(Prof. Daniel Jasper)
“The Rhetoric of Violence”

Josh Beri
(Prof. Carl Salter)
“The Heat of Reaction of Luminol: Energy Flow in a Chemiluminescent Reaction”

Jennifer Novatnack
(Profs. Steve and Shari Dunham)
“Determination of Selenium in Rat Tissue and Rat Diet Samples”

Allen Wong
(Profs Steve and Shari Dunham)
“DNA Interactions of Antitumor-Active Rhodium and Ruthenium Compounds”

Allan Fatzinger, Benjamin Mizack
(Prof. Nathan Shank)
“Probabilistic Aspects of Networks”

Kelly Latourette
(Prof. Michael Fraboni)
“Unique Dominating Sets”

Simon Tabchi, Nathaniel Tussey
(Prof. Christopher Jones)
“Mapping Drosophila Bang-sensitive Mutations”

Jamie Long, Tim Mills
(Prof. Ben Coleman)
“Enhancing Mathematics and Computer Science Education Using the Game SET®”

Armando Villafaña
(Prof. Frank Kuserk)
“Remediation Effects on the Forest Soil microflora affected by Zinc-smelter Emissions near Palmerton, PA”

Brian Birchak
(Prof. Frank Kuserk)
“Remediation effects on Aquatic Macroinvertebrates affected by Zinc-smelter Emissions near Palmerton, PA”

Casey Jackson
(Prof. Dan Libby)
“Substrate Specificity in Model Reactions for Nicotinimide Mediated Reduction Reactions”
Yi Li, Gregory Niehoff
(Prof. Diane Husic)
“Analysis of the Uptake and Biochemical Impact of Heavy Metals (Zinc, Lead, and Cadmium) on Four Plant Species in the Lehigh Gap (Pennsylvania)”

Todd Remalay
(Profs. Steve and Shari Dunham)
Isomer Separation and DNA Binding of a Dirhodium Compound
Moravian College Senior Art Show - 2008
Student Exhibitors

Lynsey Augustus
Jennifer Bajczyk
Laura Bauer
Nikki Benson
Jessica Bodine
William Brewer
Sean Cahill
Brandon Cohn
Courtney Connelly
Tyler Dolph
Erica Evans
Michael Gulick
Fatima Somji
Jessica Kerchner
Robyn Klem
Justin Klement
Megan Kocon
Trevor Lawrence III
Maura Lieberman
Garrett Lesusky
Megan Nord
Andrew Piccone
Lauren Pochron
Laura Schantz
Khizer Tariq
Quynh Vo
Sarah Warrick
Lauren Zickmund

Colleen Kane, Senior Show Director