

2011 Adrian Tinsley Program *Summer Research Symposium*

**Thursday, August 4, 2011
8:15 am – 4:30 pm
Moakley Center
Bridgewater State University**

SYMPOSIUM PROGRAM

*Please Note: All presentations will be held in Moakley Auditorium or lobby.
Each presentation is 12 minutes with a 3-minute Q & A at the end of each talk.*

8:15 - 8:45 am	Continental breakfast in Moakley Atrium; Poster and display setup
8:45- 9:15 am	Opening Remarks: ATP Co-coordinators, Dr. Steven Haefner & Dr. Teresa King, Mentor Recognition
9:15 - 10:15 am	Oral Session I: Psychology and Sustainability <i>Presenters: K. Bryant, L. Pistorino, C. Aloia, J. Ashley</i>
10:15 – 10:25 am	Coffee break in Moakley Atrium
10:25 – 11:25 am	Oral Session II: Sustainability, Humanities, Criminal Justice <i>Presenters: M.P. Brennan Finnie, H. Silkonis, J. Nippert, K. Spooner</i>
11:25 – 11:35 am	Coffee break in Moakley Atrium
11:35 – 12:20 pm	Oral Session III: Humanities <i>Presenters: E. George, S. Ranero, K. Smith</i>
12:20 – 1:30 pm	Lunch in Moakley Atrium
12:30 – 1:30pm	Poster Presentations <i>Presenters: J. Jackson, M. Piggott, M. Sullivan, B. Malloy, K. Saucier, K. Vieira, T.W. Howard, A. DoCanto, J. Conway, R. Orcutt, K. Delaney, E. Gulturk, A. James</i>
1:30 – 2:30 pm	Oral Session IV: English, Spec. Ed., and Sociology <i>Presenters: B. MacDonald, J. Sturges, V. Harkins, N. Sauber</i>
2:30 – 2:40 pm	Coffee Break
2:40 – 3:25 pm	Oral Session V: Political Science, Sociology, Social Work <i>Presenters: D. Ramos, A. VanDenBerghe, D. DeMont</i>
3:25 – 4:30 pm	Ice Cream Social

Special Thanks to the Bridgewater State University Foundation, The Classes of '54 & '56, President Dana Mohler-Faria, Provost Howard London, Kathy Frederick, the Office of Undergraduate Research, Faculty Mentors & all of those who supported these students!

ORAL PRESENTATION SESSION I (*Psychology and Sustainability*) (9:15 am - 10:15 am)

- 9:15 am** **Kimberly Bryant**, Psychology (Mentor: Dr. Sandra Nearingard)
How Earlier School Start Times Affect Sleep and Cognition in Children Ages 7-10
- 9:30 am** **Laura Pistorino**, Early Childhood Education (Mentor: Dr. Sandra Nearingard)
Early to Bed, Early to Rise: How Changing to an Earlier School Start Time Affects Sleep Patterns and Cognitive Functioning in Elementary School Children
- 9:45 am** **Christine Aloia**, Psychology and Criminal Justice (Mentors: Dr. Tina Jameson & Dr. Ed Brush)
Green Chemistry: An Analysis of Public Opinion
**sponsored by the Center for Sustainability*
- 10:00 am** **Jennifer Ashley**, Athletic Training (Mentors: Dr. Tong-Ching (Tom) Wu & Dr. Pam Russell)
Bike Sharing as Alternative Transportation at Bridgewater State University
**sponsored by the Center for Sustainability*

COFFEE BREAK - MOAKLEY CENTER ATRIUM (10:15-10:25 am)

ORAL PRESENTATION SESSION II (*Sustain., Humanities, Criminal Justice*) (10:25 – 11:25 pm)

- 10:25 am** **Mary Pat Brennan Finnie**, History (Mentor: Dr. Margaret Lowe)
The History of Community Gardening and its Impact on Sustainability, Particularly in Public School Community Garden Programs
**sponsored by the Center for Sustainability*
- 10:40 am** **Helen Silkonis**, Anthropology (Mentor: Dr. Sandra Faiman-Silva)
One With the Land: An Exploration of Environmental Perspectives of the Native American Tribes of Southern New England
- 10:55 am** **Jonathan Nippert**, Philosophy (Mentor: Dr. Claire Brown & Dr. Laura McAlinden)
The Ethical Quandaries of Space Colonization and How Humans can Flourish on Many Worlds
- 11:10 am** **Kallee Spooner**, Criminal Justice and Philosophy (Mentor: Dr. Richard Wright)
The Meaning of Redemption: Why is America Sentencing Juveniles to Life Without the Possibility of Parole (LWOP)?

COFFEE BREAK - MOAKLEY CENTER ATRIUM (11:25-11:35 am)

ORAL PRESENTATION SESSION III (*Humanities*) (11:35 – 12:20 pm)

- 11:35 am** **Elizabeth George**, History (Mentor: Dr. Joshua Greenberg)
Through the Eyes of Sailors and Citizens: How Americans at Home and on the USS Constitution Viewed the Greek Revolution
- 11:50 am** **Saide Ranero**, English (Mentor: Dr. Lee Torda)
Reading and Writing Women of the Middle East: A Story of War and Recovery
- 12:05 am** **Kathleen Smith**, English (Mentor: Dr. Ellen Scheible)
The Power of Education in Seamus Heaney's Poetry

LUNCH - MOAKLEY CENTER ATRIUM (12:20 – 1:30 pm)

(PLEASE NOTE POSTER PRESENTATIONS ARE CONCURRENT WITH LUNCH)

POSTER PRESENTATIONS: MOAKLEY CENTER ATRIUM**(12:30-1:30 pm)**

- **Poster #1 - Johanna Jackson**, Communication Disorders (Mentor: Dr. Suzanne Miller)
Surveying Performing Arts and Non-Performing Arts Students' Vocal Quality of Life
- **Poster #2 - Mallory Piggott**, Communication Studies (Mentor: Dr. Melanie McNaughton)
Health Risk Communication: The Misuse of Insulin in patients with type 1 diabetes
- **Poster #3 - Meghan Sullivan**, Psychology (Mentor: Dr. Elizabeth Spievak)
Escaping the Self: Non-Suicidal Self-Injury in Attempt to Cope
- **Poster #4 - Brianne Molloy**, Psychology (Mentor: Dr. Elizabeth Spievak)
Out of State/Out of Mind: Cognitive Distance and Beliefs about Global Warming and Sustainability
- **Poster #5 - Katherine Saucier**, Psychology (Mentor: Dr. Elizabeth Spievak)
All Kidding Aside: The Serious Business of Humor in Politics
- **Poster #6 - Krystina Vieira**, Psychology (Mentor: Dr. Tina Jameson)
Optimistic and Pessimistic Decision Making
- **Poster #7 - Thomas William Howard**, Mathematics (Mentor: Dr. Irina Seceleanu)
Understanding Biological Systems Using Self-Similarity
- **Poster #8 - Ademar DoCanto**, Physics (Mentor: Dr. Thomas Kling)
Can Weak Gravitational Lensing Determine Matter Halo Fall-Off?
- **Poster #9 - Jennifer Conway**, Biology (Mentor: Prof. Jenna Mendell)
A Molecular Exploration of the Microbial Community in the Intestinal Tract of the Kiko Goat
- **Poster #10 - Richard Orcutt**, Biology (Mentor: Prof. Jenna Mendell)
Quantification of Methanogens in The Gastrointestinal Tract of Kiko Goats Using Real-Time PCR
- **Poster #11 - Katrina Delaney**, Sociology (Mentor: Dr. James Hayes-Bohanan)
A Fair Trade Educational Action Plan for Bridgewater State University
**sponsored by the Center for Sustainability*
- **Poster #12 - Erkan Gulturk**, Mathematics (Mentor: Dr. Jeffrey Williams)
Exploring Optical Physics and Using Theory to Develop Creative Photography Representing Optical Phenomena
- **Poster #13 - Alisa James**, Art (Mentor: Professor Robert Lorenson and Professor Preston Saunders)
Fold Forming on Metal: Personal Ornament and Home Decor

ORAL PRESENTATION SESSION IV (English, Spec. Ed., Sociology)**(1:30 - 2:30 pm)**

- 1:30 pm** **Bligh MacDonald**, English (Mentor: Dr. Stacey Sheriff)
Infomercial: A Marketing Odyssey
- 1:45 pm** **Jenna Sturges**, Special Education (Mentor: Dr. Ahmed Abdelal)
Influence of Direct Working Memory Intervention on Childrens' Reading Fluency
- 2:10 pm** **Victoria Harkins**, Sociology (Mentor: Dr. Jodi Cohen)
Sexual Education and Teens: A Study of the Effectiveness of Greater Lowell Area Public High Schools' Sexual Education Programs
- 2:30 pm** **Nicole Sauber**, Sociology (Mentor: Dr. Jing Tan)
The Impact of Service: Cultural Understanding and International Service Learning with Bridgewater State University

COFFEE BREAK - MOAKLEY CENTER ATRIUM**(2:30-2:40 pm)**

ORAL PRESENTATION SESSION V (*Poli. Sci, Sociology, Social Work*) (2:40 - 3:25 pm)

- 2:40 pm** **Diana Ramos**, Political Science (Dr. Deniz Leuenberger)
Feeding the World or Feeding the Problem: A Look at How Hunger Relief Aid Strategies Fulfill Moral Obligations
- 2:55 pm** **Amy VanDenBerghe**, Elem. Ed. & Sociology (Mentor: Dr. Patricia Fanning)
Food Pantry Dilemma: Understanding the Need for Nutritional Value in Emergency Food provided in a Down Economy
- 3:10 pm** **Diana DeMont**, Social Work (Mentor: Dr. Lucinda King-Frode)
Overcoming Educational Disadvantage: Shelter Initiatives for Homeless Children

ICE CREAM SOCIAL - MOAKLEY CENTER ATRIUM

(3:25 - 4:30 pm)

ABSTRACTS: (Organized by Session)

ORAL PRESENTATION SESSION I (Psychology and Sustainability) (9:15 am - 10:15 am)

Kimberly Bryant, Psychology (Mentor: Dr. Sandra Nearingard)

"How Earlier School Start Times Affect Sleep and Cognition in Children Ages 7-10"

Abstract: Adolescent sleep deprivation has been the focus of recent research with the primary cause consisting of the shift in their biological rhythm. As a result, many school systems have chosen to restructure their school start times allowing high school students to start school later meaning younger students in turn go to school earlier. Despite all the research concluding the benefits this will provide adolescents, there has been virtually no research regarding its effects on younger children. Overall this study seeks to identify the effects that a change in school start times will have on younger children's cognitive performance from 2nd to 3rd grade. School start times in Duxbury change from 9:10 (2nd grade) to 7:45 (3rd grade). The control group consisted of 6 participants (3 females, 3 males) from Pembroke, MA and the experimental group consisted of 5 participants (5 females) from Duxbury, MA. The first data collection has been completed with the second collection occurring in the spring of 2012. Analysis of the data collected thus far aims to show the groups are equivalent in terms of cognitive performance before the experimental manipulation occurs. Cognitive performance was measured using assessments including the CPT and Digit Symbol Coding B.

Laura Pistorino, Early Childhood Education (Mentor: Dr. Sandra Nearingard)

"Early to Bed, Early to Rise: How Changing to an Earlier School Start Time Affects Sleep Patterns and Cognitive Functioning in Elementary School Children"

Abstract: The purpose of this project is to elucidate the impact of earlier school times on elementary school children. Research demonstrates that adolescents are chronically sleep deprived due to shifting biological rhythms and early school start times. As a result, some schools have restructured to allow for later start times for middle and high school students. This change has inadvertently resulted in earlier start times for the elementary school students. Although studies demonstrate a positive impact of later start times for adolescents, no studies have examined younger children. This project, therefore, examines the effect of an earlier start time on the sleep patterns of elementary school students. Two groups of second graders (an experimental and control group) will be followed for one-year; one is experiencing an earlier school start time and the other is not. Measures of actigraphy and survey data will be obtained. Over the summer, I completed phase one of the project which involved administering the assessments to the two groups. Phase two will be completed in the spring of 2012. For preliminary results, I aim to demonstrate that the two groups are equivalent on all measures before the experimental manipulation of school start time is introduced this fall.

Christine Aloia, Psychology and Criminal Justice (Mentors: Dr. Tina Jameson & Dr. Ed Brush)

"Green Chemistry: An Analysis of Public Opinion"

**sponsored by the Center for Sustainability*

Abstract: The purpose of this study was to assess college student's understanding and use of green chemistry in purchasing everyday consumer products, and to see if a specific profile of green chemistry supporters exists. The study is important because if we find public support then it could advance the green chemistry field, and influence policy changes. To accomplish this, I created an online survey with the help of a professional. The survey is composed of questions targeting participant's purchasing decisions when buying grocery items, clothes, cleaning products, pharmaceuticals and cosmetics. Also, it asks open-ended questions about knowledge and feelings

toward green chemistry. The survey was emailed to professors teaching summer classes at Bridgewater State University; they emailed the survey to their students. Preliminary data shows when participants buy items, cost, taste, comfort, and non-toxic ingredients are most important. Environmentally friendly production practices and packaging are somewhat important. The majority of the participants, 50%, feel very positive towards “green” industrial production processes, and 69% have some knowledge of green chemistry. Based on preliminary results, the survey will be modified and sent to other schools in the United States as well as to faculty, administration, and other campus workers to broaden the results.

Jennifer Ashley, Athletic Training (Mentors: Dr. Tong-Ching (Tom) Wu & Dr. Pam Russell)

“Bike Sharing as Alternative Transportation at Bridgewater State University”

**sponsored by the Center for Sustainability*

Abstract: The purpose of this research project is to create a feasibility study addressing whether a bike share program would be an effective form of alternative transportation at Bridgewater State University. A bike share model was developed, first, by brainstorming with key members of BSU campus management, Bridgewater town leadership, and planners from the Old Colony Council to determine benefits and challenges to a bike share program. Next, interviewing three New England colleges with bike share programs about how they over came these challenges. Lastly, surveying BSU students, faculty and staff to assess needs, usage, and membership interest. With projected increase in the price of oil, amounts of congestion and rise of obesity, healthy forms of alternative transportation need to be developed into the current infrastructure for Bridgewater State University’s students, faculty and staff.

ORAL PRESENTATION SESSION II (*Sustain., Humanities, Criminal Justice*) (10:25 – 11:25 pm)

Mary Pat Brennan Finnie, History (Mentor: Dr. Margaret Lowe)

“The History of Community Gardening and its Impact on Sustainability, Particularly in Public School Community Garden Programs”

**sponsored by the Center for Sustainability*

Abstract: Community gardens have existed since ancient times as organized, collective grounds where people could work together to raise foodstuffs and beautify their surroundings. Whether planned by a neighborhood, school or special interest group, community gardens have a long and varied history in the United States. They have often been at the center of socio-political controversies, yet in times of war or economic recession, collective gardening has been a source of pride and patriotic fervor – as well as much-needed food. As our understanding of the need to protect our environment and our health has grown, so has our interest in growing our own food, often on communal sites. Community gardens have experienced resurgence in the last ten years in response to a number of concerns and interests, not the least of which is sustainability. My research illustrates we must better understand and incorporate the history of community gardens if we want it to add to our long-term sustainability goals. The research also suggests that raising our youngest citizens as community gardeners may guarantee a ‘greener’ future.

Helen Silkonis, Anthropology (Mentor: Dr. Sandra Faiman-Silva)

“One With the Land: An Exploration of Environmental Perspectives of the Native American Tribes of Southern New England”

Abstract: The purpose of this project was to research the cultural relationship that native peoples in Southern New England have with their homelands. Since it is impossible to understand these relationships as they exist in the present without their historical context, the research traced the relevant cultural developments from the pre-contact era through to the present day. This project

focuses on four tribes: the Mashpee Wampanoag Tribe, The Wampanoag Tribe of Gay Head, The Mashantucket Pequot Tribe, and the Narragansett Tribe. A variety of historical and anthropological books, newspaper articles, and interviews were used to examine the turbulent historical developments experienced by the tribes and to determine the cultural responses to these developments as they relate to their environment. The results show that a spiritual connection with a perceived homeland is, and always has been, essential to tribal identity. Today, native peoples across the country are involved in land disputes as they attempt to assert their sovereign rights as native nations. Mainstream America has little understanding of the cultural and legal origins of the native claims, which leads to bitter disputes and prejudice against native peoples. This project will provide people with an understanding of the native perspective in these disputes.

Jonathan Nippert, Philosophy (Mentor: Dr. Claire Brown & Dr. Laura McAlinden)

“The Ethical Quandaries of Space Colonization and How Humans can Flourish on Many Worlds”

Abstract: The purpose of this project was to determine the ethical ramifications of terraforming and to develop a guide for the process of terraforming using ethical theory. The research began with a focus on the scientific background for the project—that is, the science of both terraforming and the natural formation of the cosmos. From here, the ethical foundations of Aristotle and Kant were examined, which were then applied to the process of terraforming to determine under which conditions it would be ethical. A noticeable split occurs between the theories, and though they are compatible, they are not arguing for the same thing, and so a brief reconciliation of the two theories, noting the different aspects, was undertaken. The theories were balanced to give appropriate weight to Kant’s theory, which more so than Aristotle, focuses on ethical action, and then principles for terraforming were derived from this. The reason this project was undertaken is because terraforming is easily conceivable within the next hundred years, and very little literature exists that discusses the ethical dimensions of the process. It is important that any major changes we make to environments do not destroy inherently valuable life, which this project aims to ensure.

Kallee Spooner, Criminal Justice and Philosophy (Mentor: Dr. Richard Wright)

“The Meaning of Redemption: Why is America Sentencing Juveniles to Life Without the Possibility of Parole (LWOP)?”

Abstract: The purpose of this project was to determine if the recent trend of sentencing juveniles to a term of life without the possibility of parole (LWOP) is more indicative of a punitive phase or a permanent end to the juvenile justice system. Historically, juveniles have been held legally less responsible for their crimes than adults. The creation of separate juvenile justice courts in the early 1900s codified this distinction. Biological and psychological research supports differences between juveniles and adults in the relationship between brain and cognitive functioning and criminal behavior. Despite these distinctions, policies regarding the punishment of juveniles have become increasingly punitive, and similar to adult sentences. Certain juveniles are receiving longer sentences, including life without the possibility of parole (LWOP). This qualitative study examines the legal and political factors that persuaded state legislatures to depart from the traditional goals of the juvenile justice system (e.g. rehabilitation) to allow LWOP for juvenile offenders.

ORAL PRESENTATION SESSION III (Humanities)

(11:35 – 12:20 pm)

Elizabeth George, History (Mentor: Dr. Joshua Greenberg)

“Through the Eyes of Sailors and Citizens: How Americans at Home and on the USS Constitution Viewed the Greek Revolution”

Abstract: The USS Constitution was part of a navy squadron that was commissioned to travel to the Mediterranean during the 1820s in order to protect American commerce and strengthen American

diplomacy. During this time, Greece fought for independence from the Ottoman Empire. From 1824 until 1828, the USS Constitution spent the majority of its time sailing between different ports in Greece and Turkey, which offered members on board the ship a firsthand account of the Greek Revolution as well as the opportunity to explore Mediterranean cultures. This research looks at journals and letters of members on board the USS Constitution's Mediterranean Cruise in order to better understand how Americans abroad viewed the Greek War of Independence and different cultures in the Mediterranean. Additionally, my research demonstrates how the American Navy upheld the United State's neutrality and isolationist policies of the 1820s while trying to conduct a treaty with the Ottoman Empire to maintain their Mediterranean trade as well as facilitate America's humanitarian effort to provide relief to the suffering Greek citizens.

Saide Ranero, English (Mentor: Dr. Lee Torda)

"Reading and Writing Women of the Middle East: A Story of War and Recovery"

Abstract: Reading and Writing Women of the Middle East: A Story of War and Recovery is the story of a young woman, Marie, as she comes of age in the last years of the Lebanese Civil War and its aftermath. In the first part of the story Marie realizes that the war not only affected her and her family's life during a year of hiding in an underground shelter, but her entire generation for years to come. In the second part she struggles to find herself in a country that she no longer trusts and, after a series of unfortunate events connected to the unrest in postwar Lebanon, Marie ultimately decides to leave her homeland. The novel is inspired, in part, by the author's life story as a child of war. The story is a fictionalized account based on some of her own experiences and involving both public and personal history. The story looks at the struggle of one generation as it tried to maintain their faith in the future. The story asks if will Marie recover after rejecting everything—her parents, her culture, and her faith—that she was raised to believe in. This text, unlike the work of most middle-eastern women writers currently in translation from Arabic, offers readers the perspective of a new generation of women and writers affected by what came after the years of civil unrest more than the war years themselves and, thus, offers a unique story not yet told.

Kathleen Smith, English (Mentor: Dr. Ellen Scheible)

"The Power of Education in Seamus Heaney's Poetry"

Abstract: The purpose of this project was to examine Seamus Heaney's educational journey and assess its impact on his political influences in Ireland. The research included close reading and note taking of historical, primary, and secondary sources. Upon examining the materials it is clear that the tolerant and peaceful values taught to Heaney at an early age had a great impact on his poetry. Despite the constant animosity between the Catholic and Protestant cultures, Heaney was nondiscriminatory and devoted his loyalty to his craft, proving that literature has the ability to create peace by providing a common ground for conflicting parties to relate. This project is important because it exhibits how education opens doors of opportunity that would otherwise remain closed. Heaney's peaceful influence in Ireland shows that literature is powerful enough to create positive feelings, even in a place as turbulent as Northern Ireland in the 1970s. Learning about Seamus Heaney is significant because he is one of the most momentous poets of our time and his work gives hope that one day Ireland will be a country of peace and religious tolerance.

ORAL PRESENTATION SESSION IV (English, Spec. Ed., Sociology) (1:30 - 2:30 pm)

Bligh MacDonald, English (Mentor: Dr. Stacey Sheriff)

"Infomercial: A Marketing Odyssey"

Abstract: The infomercial has been around since the 1950s. As a selling tool, it is revered by the industry and maligned in the public eye for its tackiness and seemingly low production standards.

For this project, I explored what accounts for the infomercial's effectiveness. My method had two phases: first, I read academic journal articles and books in the fields of English, Communications, and Media Studies and conducted a rhetorical analysis of the genre. Second, I further studied the genre by immersing myself in it -- I scripted, produced, edited, and acted in an original infomercial. It was a study akin to Jane Goodall living amongst the chimps. My presentation will include a screening of the infomercial that I produced for this project, and a discussion which will tie my rhetorical choices to the generic conventions of the infomercial. Additionally, I will introduce the concept of the "viomercial" and I will relate it to the concept of the "disappearing messenger" in media and sales.

Jenna Sturges, Special Education (Mentor: Dr. Ahmed Abdelal)

"Influence of Direct Working Memory Intervention on Children's Reading Fluency"

Abstract: My project was to use direct memory working intervention to see if it had a positive impact on reading fluency in children. My six participants were between the ages of seven and twelve with two having problems in reading fluency. There was an initial assessment of working memory and a reading fluency benchmark. Twice weekly for six weeks I met with the children for intervention using memorization of word sequences, number sequences, and sentences. At the end of the project there will be a final assessment of working memory and reading fluency to see the influence of direct intervention with working memory skills.

Victoria Harkins, Sociology (Mentor: Dr. Jodi Cohen)

"Sexual Education and Teens: A Study of the Effectiveness of Greater Lowell Area Public High Schools' Sexual Education Programs"

Abstract: In 2008, the teen birth rate for Lowell, Massachusetts was 142.3% higher than the teen birth rate for all of Massachusetts. Massachusetts does not mandate sexual education or STD and HIV/AIDS education, but instead provides curriculum recommendations. This study examines the health and sexual education curricula from 9 public high schools in Greater Lowell, comparing their content to the recommendations of the Massachusetts Comprehensive Health Based Curriculum. Data was collected using two methods: a survey of health educators, and a content analysis of 9th-12th grade health curricula. The results show that 78% of the reviewed curricula discuss abstinence and 100% discuss STDs and HIV, yet 67% of educators surveyed report that abstinence and contraceptives receive equal emphasis in their respective school's sexual education program. 100% of curricula discussed pregnancy prevention, though only 56% discussed consequences of teen parenting. Finally, only 62% of educators report that their respective school's curricula meet students' needs. These findings foster greater awareness of the current status of health and sexual education curricula in Greater Lowell, and offer insight into the growing issues that these communities face with teen pregnancy, STD and STI rates, and overall sexual health of teens.

Nicole Sauber, Sociology (Mentor: Dr. Jing Tan)

"The Impact of Service: Cultural Understanding and International Service Learning with Bridgewater State University"

Abstract: The purpose of this research is to explore the impact that international community service experiences have had on college students' academic learning, cultural understanding, and overall global perspectives after studying abroad through programs hosted by Bridgewater State University (BSU). Quantitative survey data evaluating the students' experiences abroad and qualitative interviews with BSU students who have participated in international trips with and without service activities offer insight into international service and education as unique practices, as well as overlapping concepts that can collectively be called "service learning." Hundreds of colleges and universities across the United States are integrating service learning into their

curricula in an effort to enhance the quality of learning that students take away from courses and programs. Previous research has shown that service learning improves the understanding of academic content and reinforces its significance by connecting a classroom education to “hands-on” experiences. BSU offers several international programs that involve community service, as well as a large number of study abroad and international exchange programs that do not include service components. By studying the effects of a service experience on the participants’ education, cultural awareness and respect, and sense of global issues, it will create opportunities to critically evaluate the efficacy of current educational travel programs and the potential worth of establishing an international service learning program to help develop engaged global citizens that truly represent the institutional values of BSU.

ORAL PRESENTATION SESSION V (Poli. Sci, Sociology, Social Work) (2:40 - 3:25 pm)

Diana Ramos, Political Science (Dr. Deniz Leuenberger)

“Feeding the World or Feeding the Problem: A Look at How Hunger Relief Aid Strategies Fulfill Moral Obligations”

Abstract: In 2000 ninety-two countries of the United Nations agreed to a set of rigorous goals for development called the Millennium Development Goals. The first of which is to eradicate extreme poverty and hunger. Although there have been strides in reducing poverty and the world is on track to meeting this goal, the rate of hunger has stagnated and prospects of reaching the target are uncertain in light of increasing food prices. This has called into question the relationship between the two as poverty has been strongly linked to lack of access to food (known as food insecurity). This research aims to look at how the Capabilities Approach can account for some shortcomings in explaining the causes of food insecurity and if it can possibly provide an improved outlook on food insecurity. Through a review of literature this research looks at how food insecurity can be conceptualized via a capabilities lens and makes comparisons to the more widely used Sustainable Livelihoods Approach and the Rights Based Approach. Through these comparisons, the ways the Capabilities approach can better account for important variables not significantly stressed of the latter approaches are illuminated.

Amy VanDenBerghe, Elem. Ed. & Sociology (Mentor: Dr. Patricia Fanning)

“Food Pantry Dilemma: Understanding the Need for Nutritional Value in Emergency Food provided in a Down Economy”

Abstract: The purpose of this project was to determine if there are viable nutritional options available to the patrons of suburban food pantries located in Norton, Easton and Bridgewater, Massachusetts. The goal was to establish what the current existing practices of the pantries are, how the food received is utilized, what the needs of the patrons are, and how corporate establishments work in conjunction with the food pantries. Providing nutritional options in a down economy is a difficult task if there is not a strong system currently in place or if the facility is unable to store and distribute fresh fruits, vegetables and dairy to the patrons. Upon examining these areas, it has become clear that there are viable nutritional options available but only if the pantries are willing and able to work with the corporate and local establishments. Public awareness, volunteers, and new procedures within the existing food pantries are essential if pantries are to restructure toward healthier options for a service that is at risk.

Diana DeMont, Social Work (Mentor: Dr. Lucinda King-Frode)

“Overcoming Educational Disadvantage: Shelter Initiatives for Homeless Children”

Abstract: This project addresses the challenges confronting children living in homeless shelters in Massachusetts, with particular attention to the children’s education and the services provided by

family shelters to support academic achievement. This qualitative study involved interviews with eleven shelter employees across MA. Questions inquired about these children's daily struggles, their educational challenges, and the programs provided by the shelters to support the children's learning. Analysis of the data indicated that the areas of greatest concern are accessing transportation, securing before and after school care, and the quality of parental involvement with the child. Many of the participants cited these issues as significant problems and attest that the shelter programs focused on these concerns are presently inadequate for various reasons. With so many homeless children in the United States it is imperative that shelters are well-equipped to complement the schools' efforts to meet the educational needs of children who are disadvantaged in the school system because of their housing situations.

POSTER PRESENTATIONS: MOAKLEY CENTER ATRIUM

(12:30-1:30 pm)

Poster #1

Johanna Jackson, Communication Disorders (Mentor: Dr. Suzanne Miller)

"Surveying Performing Arts and Non-Performing Arts Students' Vocal Quality of Life"

Abstract: The purpose of this survey-based study was to examine Bridgewater State University undergraduate students' opinions of their voice quality-of-life (V-QOL). Research posits that heavy vocal demands associated with particular professions, i.e., musical theater, increase the risk of an occupational voice disorder (Chernobelsky, Duffy & Moorhead 2011). We aimed to determine how university students perceive their V-QOL, whether performing arts students have a V-QOL different from non-performing arts students, and to obtain a needs assessment for voice treatment services to BSU students. The study was designed as a non-randomized, cross-sectional online survey requiring respondents to rate attitudes on a 1-5 Likert-type scale. Results indicated both groups cited several issues with their perceived V-QOL, yet believed that it did not impact their professional or academic quality of life. University students typically answer survey questions with a bias toward being socially desirable (Vaez & Laflamme 2003). Survey participants may hesitate to realize or admit the extent of the impact V-QOL has on quality of life in general. Therefore, the data may suggest a significant need for education of BSU students on the impact V-QOL has on their overall quality of life. Furthermore, the data suggest a need for dissemination of this information throughout campus.

Poster #2

Mallory Piggott, Communication Studies (Mentor: Dr. Melanie McNaughton)

"Health Risk Communication: The Misuse of Insulin in Patients with Type 1 Diabetes"

Abstract: The purpose of this research is to explore diabetics' knowledge and understanding of the risks associated with misusing insulin. Surveys were distributed to 100 type 1 diabetics ages 18 or older, who have lived with type 1 diabetes for at least one year. Participants were recruited from online diabetes support groups and social networks. The survey consisted of both likert scale ratings and open ended questions. Thematic coding was used to identify common themes in qualitative answers. The results show that adhering to an insulin regimen has long been a challenge for people living with Type 1 Diabetes. Results suggest that there are various reasons a diabetic may not adhere to a strict insulin regimen; some may even choose to omit insulin in order to manipulate their weight. Insulin omission has adverse health effects and serious cases have led to premature death, therefore, understanding possible misconceptions regarding the risks of insulin omission will help healthcare professionals better communicate the severity of these risks to their patients. This research will also add to current knowledge of effective risk communication practices.

Poster #3

Meghan Sullivan, Psychology (Mentor: Dr. Elizabeth Spievak)
"Escaping the Self: Non-Suicidal Self-Injury in Attempt to Cope"

Abstract: Despite theoretical suggestion that non-suicidal self-injury (NSSI) may function as an escape from aversive self-awareness (Heatherton & Baumeister, 1991) and as a method of coping (Brown, Williams, & Collins, 2007), few studies have examined the relationships. The present study considered the role of self-focus in NSSI and the association between NSSI and with maladaptive coping. The objective was to clarify the connections between situational and dispositional variables in predicting NSSI to assist in risk assessment and interventions. It was hypothesized that those who engaged in NSSI would be more likely to exhibit a self focused temperament and that the predictors of NSSI would be similar to predictors of other escape behaviors. Self report data from a college sample provided correlational support for our hypotheses; Participants who reported NSSI behaviors responded similarly to those who engaged in other escape-style coping methods and also presented greater self-focused temperament. Path analyses clarified the influence of self focus, past temporal orientation, anxiety, catastrophizing and trauma symptoms in combination with other dispositional and situational variables in predicting vulnerability to specific escape style coping behaviors.

Poster #4

Brianne Molloy, Psychology (Mentor: Dr. Elizabeth Spievak)

"Out of State/Out of Mind: Cognitive Distance and Beliefs about Global Warming and Sustainability"

Abstract: In the current study, an experimental manipulation was used to assess bias associated with cognitive distance. Previous research on "border bias" indicated that participants considered a threat within the same state to be a greater risk than one that occurred in a different state, even if it were equidistant in location. The present study is a replication and extension, and used a map manipulation to test the effects of border bias on attitudes towards recent environmental issues such as global warming. Border bias, along with other perceptual biases, might be partly responsible for documented disconnects between public opinion polls, which find the mainstream views are that global warming is nonexistent, exaggerated, and unrelated to human activity, and mounting scientific evidence of melting glaciers, changes in migration patterns of species, and sea level rise. Poll results might be affected by cognitive biases, which help us to make quick judgment calls without wasting needed time and energy.

Poster #5

Katherine Saucier, Psychology (Mentor: Dr. Elizabeth Spievak)
"All Kidding Aside: The Serious Business of Humor in Politics"

Abstract: Participants in the current study reported their explicit attitudes of humor endorsement in regard to political and environmental comics that were of a disparaging or neutral nature. Measures of political identity, humor style, and other assessments of individual differences in personality and worldview were included. Results indicated significant differences in comic endorsement and media preference depending on humor style. The breakdown of political affiliation among undergraduate students was also examined. At a time when polarized news coverage is often combined with entertainment and satire of a disparaging nature, it is important to further investigate the heuristics which may inhibit objective perspective sharing.

Poster #6

Krystina Vieira, Psychology (Mentor: Dr. Tina Jameson)
"Optimistic and Pessimistic Decision Making"

Abstract: The purpose of this study is to investigate how life orientation affects decision making. Participants were 220 undergraduates attending Bridgewater State University. The Life Orientation Test Revised (LOT-R) was used to provide a measure of optimism and pessimism. The Iowa Gambling Task (IGT) was used to assess decision making. Most research on optimism and pessimism indicates that it is healthier to be optimistic. However, recent research suggests that there is an upside to pessimism and that the healthier option depends on the situation. Based on this recent research, I hypothesized that there are decision making differences between optimists and pessimists.

Poster #7

Thomas William Howard, Mathematics (Mentor: Dr. Irina Seceleanu)
"Understanding Biological Systems Using Self-Similarity"

Abstract: The field of dynamical systems in mathematics provides many examples of processes exhibiting attributes of self-similarity. We provide an overview of such complex structures that are self-similar at different scales (called fractals) and explain their graphical depictions that often yield beautiful illustrations. Fractals have many applications in diverse arenas from computer graphics to medicine, as they allow us to "break" complex structures into simple pieces using properties of self-similarity. To create a model for the complex biological system of the neuronal pathways in the human brain we generate a fractal tree by using a simple blue-print of a neuronal connection and duplicating it iteratively. Finally, using a realistic probability model, we simulate the formation and decay of plaque in the brain and quantify how plaque interferes with the neuronal connections.

Poster #8

Adelmar DoCanto, Physics (Mentor: Dr. Thomas Kling)
"Can Weak Gravitational Lensing Determine Matter Halo Fall-Off?"

Abstract: The ability for weak lensing observations to constrain the NFW density profile was examined by creating "mock" data similar to current or near future capabilities and attempting to reconstruct the NFW density parameters as one would in practice. The shearing and magnification of images distorted by weak gravitational lensing was derived by integrating the geodesic deviation and optical scalar equations along the null geodesics connecting the observer to a distant source. We determined the level of expected accuracy of lensing to recover lens profile parameters in current measurements by performing a Monte Carlo simulation of the data. We find a large spread in parameters values, all clustered around the corrected total mass. Also, we find that current and near future telescope capabilities cannot constrain the lens profile truncation mechanism. The lens profile truncation mechanism will be well constrained by future telescope with approximately less than 10% of the current error levels in the averaged observed ellipticity. This implies a significant advance in telescope technology will be required in reducing the atmospheric effects and telescope mirror and CCD errors that cause the observed images to be smeared relative to the "true sky".

Poster #9

Jennifer Conway, Biology (Mentor: Prof. Jenna Mendell)
"A Molecular Exploration of the Microbial Community in the Intestinal Tract of the Kiko Goat"
Abstract: Understanding the diversity in the microbial community of the Kiko goat is vital to the overall health of the animal. Kiko goats are mammals belonging to the suborder Ruminantia.

Ruminants possess a specially adapted digestive system for the breakdown of plant matter that would be otherwise inaccessible. This type of digestion requires a symbiotic relationship between the ruminants and their intestinal microbes. Goats have become a growing commodity in the United States for meat, dairy and fiber, however, little is known about their symbiotic intestinal microbiota. This research expanded upon research initiated in the summer of 2010 by completing and expanding on a 16S rRNA gene clone library of the bacterial community of Kiko goats. Microbial identification was based on the 16S rRNA gene, a gold standard in these types of studies. Through the use of standard molecular techniques, clone libraries for three goat intestinal samples were successfully constructed. Of those three samples, DNA sequencing was completed on one of them. The results from these studies show that rumen and fecal samples share similar phyla with low diversity. However, these phyla are those that have been recovered from other mammalian GI tracts indicating a functionally conserved role for these organisms.

Poster #10

Richard Orcutt, Biology (Mentor: Prof. Jenna Mendell)

"Quantification of Methanogens in The Gastrointestinal Tract of Kiko Goats Using Real-Time PCR"

Abstract: Ruminant livestock of beef and cattle industries is responsible for a large percentage of methane produced anthropogenically. Microorganisms from the domain archaea, that colonize the gastro intestines of ruminants, breakdown carbon dioxide and hydrogen by the process of methanogenesis creating methane, a harmful greenhouse gas. This projects goal was to quantify methanogens in Kiko Goats as well as assessing diversity. Goats are working ruminant animals with flexible diets that are utilized in developing countries as a valuable source of milk, meat, and fiber. Further development of methane mitigation requires foundational knowledge of methanogens in all ruminants. In ten weeks of research microbial DNA from rumen and fecal samples of two goats were PCR amplified for methanogen specific 16srRNA genes. These genes were cloned, isolated, and sequenced. A 16s standard curve was constructed from qPCR amplification of *B. subtilis* DNA run in serial dilutions to compare methanogen abundance to total microbial population size. Sequencing results yielded only bacterial 16s genes and no methanogen genes. Methanogen quantification with qPCR could not be completed without confirmation of methanogen DNA. Development of more specific primers and possession of purified methanogen DNA would be necessary to reconstruct this project and to successfully quantify methanogens.

Poster #11

Katrina Delaney, Sociology (Mentor: Dr. James Hayes-Bohanan)

"Fair Trade Educational Action Plan for Bridgewater State University"

**sponsored by the Center for Sustainability*

Abstract: The purpose of this project was to formulate a Fair Trade education and action plan for Bridgewater State University as it moves toward becoming a Fair Trade University (FTU). I interviewed a people in key roles at BSU and a student at Siena College, which is already an FTU. I have gathered information for the Fair Trade BSU Steering Committee and have drafted the educational portion of the committee's action plan. The educational plan includes a detailed outline for a Fair Trade awareness raising campaign that is to be carried out over the next few years. I have extensively researched the topic of Fair Trade and produced a number of educational materials such as Power Point presentations, fact sheets, and resource lists that can be used at the various prospective events. I have also created a Fair Trade Max Guide that is hosted on the BSU Maxwell Library website to facilitate future research by other members of the campus community on Fair Trade and Fair Trade Universities. Because designated FTUs must have education and awareness campaigns, this research is an essential contribution to BSU's eventual FTU designation.

Poster #12

Erkan Gulturk, Mathematics (Mentor: Dr. Jeffrey Williams)

"Exploring Optical Physics and Using Theory to Develop Creative Photography Representing Optical Phenomena"

Abstract: Optical science technology has improved the ability to conduct research outside and inside the visible spectrum. Consumer digital cameras are sensitive to infrared radiation but use filters to block infrared wavelengths. The goal of this multidisciplinary research was to explore the physical principles that govern imaging technologies and use this knowledge to demonstrate optical phenomena through creative digital photography. I have removed the infrared filter from a Canon digital camera, allowing photographs to be created from infrared radiation beyond the sensitivity of the human eye. This is in combination to the use of a nodal rail, which allows the camera to be rotated about the entrance pupil for creation of panoramic images. I have analyzed the physical properties of the equipment used to understand the difficulties arising from diffraction of longer wavelengths and the use of lens coatings optimized for visible light. These properties were the causes of focus shift and hot spots at the center of the images at smaller apertures. Also, understanding the ability of the Bayer filter to provide a mapping from the near infrared to visible light allowed proper exposure compensation for various subjects.

Poster #13

Alisa James, Art (Mentor: Professor Robert Lorensen and Professor Preston Saunders)

"Fold Forming on Metal: Personal Ornament and Home Décor"

Abstract: During the summer of 2011 I have experimented with various metal working techniques such as welding, forging, fold forming and plasma cutting. The goal of my summer project was to create at least five jewelry products and two to three home lighting products using these techniques on silver, copper and stainless steel. The intent of this project is to further my learning and facility with metal as a medium such that I can become a successful smith in the art world. I hoped to gain the skills necessary to provide unique metal designs for both personal adornment and architectural accent.