Undergraduate Research & Creative Project Grant Awards: 2012-2013

Awards to Students in Arts & Humanities

Student Name: Caterina Masia
            Marcy Webster
            Kevin Weed
            Paige Carusello
            Joshua Lapierre
            Sasha Fukuda
            Jaime DelPizzo

Project Title: Childhood, I Love You (tentative title)

Faculty Sponsor: Jonathan Schwartz, Film

Project Abstract:

The film, Childhood, I Love You will be a portrait of what it means to be a child, which tackles various important social and philosophical issues. These aspects include media’s influence on children, the identity of a child and the importance of upbringing, and the complexities of looking back at childhood as an adult. We propose to confront these issues and present them in various visually artistic perspectives.

The structure of the film will be separate, yet interconnected shorts, or vignettes. This allows our team the invaluable opportunity to take on and try out multiple roles for each vignette, a task which can help us discover our own identities in the film world, and strengthen our skills.

The film shares cinematic tendencies with that of Paris, je t’aime, which is also structured in shorts. Each piece is set in a different district of Paris, and every story has something to do with Love. There is a certain, thoughtful aesthetic in the film, which often relies on showing, not telling. Our piece will reflect this film in the way that it will have strong created visuals and moods. Our team is a group of passionate artists, who want to create a beautiful film with a purpose.

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Student Name: Alexandra Kukalis

Project Title: Modern Muscle; Contemporary Figurative Painting

Faculty Sponsor: Rosemarie Bernardi, Art

Project Abstract:

I am requesting assistance from the Undergraduate Research Grant for my BFA thesis exhibition. My studio thesis is dedicated to expanding on the subject of the nude figure that has been explored since the dawn of man, in a contemporary way. I will create six large scale figurative paintings that explore musculature in the male figure as a symbol of strength both emotional and physical. I will use this project as a vehicle to push myself through my previous restraint to explore color and mark making on this more aggressive scale.

Throughout my life I have been influenced by a number of physically and emotionally strong men of various ages such as my boyfriend, brother, father and grandfather. I have decided to use my interest in their strength and how it relates to traditional figure study as the theme of my research and creative.
As a young woman I am intrigued by this subject because figurative painting has become limited in the art world today I am greatly influenced by important feminine artists such as Jenny Saville and Joan Semmel and photographers like Cindy Sherman. Jenny Saville was quoted saying “I want to be a painter of modern life, and modern bodies.” As a contemporary, female artist I am excited to create a series of work that is innovative and powerful visually.

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Student Name: Nicholas King
Project Title: “Animal Parity”
Faculty Sponsor: Lynn Richardson, Art
Project Abstract:
As an Art Major and a Senior, I have spent this year creating a body of work that will be exhibited this Spring in the Thorne-Sagendorph Gallery as part of the 2013 BFA exhibition. This work will be comprised of multiple sculptural projects that will range in size, subject matter, and materials and will explore the relationship between human beings and animals. My goal is to evoke certain feelings from the audience in regards to the way they think about their relationships with non-human animals. By engaging themselves in my work, my hope is that they gain a newfound appreciation of and admiration for the rest of the animal kingdom.

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Awards to Students in Sciences & Social Sciences

Student Name: Timothy Hastings
Project Title: Gut-Content Analysis of the Web-Invading Spider Neospintharus trigonum
Faculty Sponsor: Karen Cangialosi, Biology
Scott Strong, Biology
Project Abstract:
The web-invading spider Neospintharus trigonum exhibits a variety of foraging behaviors, including web stealing, web sharing, kleptoparasitism, and host predation which may cause high impact on hosts. Predation of the host by N. trigonum has been observed on a macroscale, but little research has been done on the molecular level to determine the rate of predation on the host, and the factors that contribute to this behavior. Observing individual N. trigonum to determine if it preys on its host is time consuming and impractical; therefore, I propose to perform gut-content analyses on N. trigonum in order to determine if predation of its host has occurred. More specifically, I will run polymerase chain reaction (PCR) on mitochondrial DNA sequences called cytochrome c oxisases I (COI), which are species-specific fragments of DNA that can be used to identify a species. After sequencing COI for N. trigonum and the host species Pityohyphantes costatus and Neriene radiata, a gut-content analysis can be performed on N. trigonum and I will be able to identify the presence of N. trigonum DNA or DNA of the host. The results will have implications for the field of behavioral ecology, especially for expanding the knowledge of how foraging strategies of individuals of the same species in a population are influenced by environmental factors.
Student Name: Colin Fagan
Project Title: The Sexflorae: A New Evolutionary Lineage of Passionflowers?
Faculty Sponsor: Kristen Porter-Utley, Biology
Project Abstract:

Passionflowers are a diverse genus of plants consisting of over five hundred different species. As a result of molecular work done on passionflowers by previous undergraduates at KSC, we are now beginning to discover new, smaller evolutionary lineages within the genus. For my project, I will be attempting to discover whether a group of six species, unofficially called the “Sexflorae,” is in fact one of these new lineages. The six species in the “Sexflorae” are currently classified, along with about 90 other species, in a clade known as supersection Decaloba. However, we know that there are some distinct evolutionary lineages within that group of plants. Based upon observations of morphology and some genetic information it seems that the “Sexflorae” should be classified as a distinct evolutionary lineage. In order to determine whether the “Sexflorae” is a cohesive lineage, I will be analyzing the sequences of three genes (cytGS, ncpGS, and ITS) for multiple examples of each species in my study group. With the data I collect, I will be able to determine the correct placement of the group “Sexflorae” within the greater passionflower evolutionary tree. Studying the genetic diversity of these passionflowers can lead to a better understanding of flowering plant evolution and contribute to their conservation in the wild.

Student Name: Ashley Roberts
Project Title: The Relationship Between BMI and Readiness to Change
Faculty Sponsor: Stephen Clark, Psychology
Project Abstract:

Obesity and overweight affect 1.4 billion adults and 40 million children under the age of five. In the United States, more than 35% of all adults are obese as well as 16.9% of children and adolescents. Obesity and overweight are the fifth leading cause of death worldwide. This project seeks to increase our understanding of how one stage model of change, the Transtheoretical Model (TTM), could be used to help address this problem. Previous research suggests that behavioral change programs which are matched to one’s stage of change produce better outcomes than unmatched or “one size fits all” approaches. This study seeks to determine the impact one’s body mass index (BMI) has on one’s stage in the TTM as well as whether differences in emotion regulation (Gross & John, 2003) between participants can account for variation in TTM stage of change among subjects within the same BMI category.

Participants will be asked to estimate their BMI category as well as being weighed and measured by the experimenter. TTM stage of change will be assessed using the TTM Weight Stages of Change Short Form, the URICA, and the Decisional Balance Questionnaire. Gross and John’s Emotion Regulation Questionnaire (ERQ) will be used to divide participants into “reappraisers” and “suppressors.” The null hypotheses that there are no differences in the proportion of participants in each TTM stage of change between different BMI categories and between the two categories of emotion regulation will be tested using a chi-squared test for k-independent samples (Siegel, 1956).
Student Name: Britni Watkinson
Kimberly Kasprak

Project Title: Increased hunger levels in *Neospinharus trigonum* may lead to a shift in foraging tactics utilized

Faculty Sponsor: Karen Cangialosi, Biology

Project Abstract:

Web-invading spiders have been shown to impact their host spider populations. One web-invading species, *Neospinharus trigonum*, displays phenotypic plasticity through utilization of a conditional foraging strategy. The different foraging tactics utilized include kleptoparasitism (prey stealing), considered to be low risk and host predation considered to be high risk. This adaptive ability to alter its foraging behavior when confronted with environmental changes may increase the survival of *N. trigonum*. The main objective of this study is to determine if *N. trigonum* utilizes a conditional foraging strategy on the host spider, *Pityohyphantes costatus*, when subjected to changes in the environment such as reduced food availability. We hypothesize that an increase in hunger level of *N. trigonum*, will lead to increased risks taken and increased rates of host web invasion and predation of host, *P. costatus*. Twenty-one *N. trigonum* will be collected in Keene, NH and split into a control group fed every 5 days and a starved group fed every 20 days. Four host spiders will be placed in a large screened cage and allowed to build webs in separate trees. Two starved and two control *N. trigonum* will be placed in close proximity of host webs and observed for three-hour periods. Foraging tactics utilized by hungry and control spiders will be compared and statistically analyzed for possible differences.

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Student Name: Natalie Neilson
Project Title: Identity Formation and Dissociative Behavior among Adoptees: A Comparative Study of Disclosure in Early versus Late Development
Faculty Sponsor: Karen Jennings, Psychology

Project Abstract:
There are a number of ways to examine iconic memory. Past research has shown that one of those ways is to link it to emotion and neutral stimuli. It has been found that emotional stimuli are remembered more frequently than neutral stimuli. It has also been researched that physiological responses to certain stimuli may not always be conscious. In this undergraduate research study, we will be using emotionally charged and neutral words on a change detection task, we will also be looking at the type of change and physiological response the participant has to the changes. A program in SuperLab will be administered to participants who will view a word shown briefly for 100MS followed by a blank screen (or mask) for 1500MS and then the same word again for the same amount of time (100MS) with either a change in the word, or no change. The participant will then record whether or not they noticed a change. This process will then continue until all 40 of the words (20 emotional and 20 neutral) have been shown. We expect to find that changes in the emotional words were detected significantly more than the neutral words, there will be a difference in the type of change, and there will be greater physiological responses recorded for the emotional words.

Student Name: Kimberly Sollows
Project Title: Authority as Stressor: Measuring Vocal Frequencies during Interaction with an Authority Figure
Faculty Sponsor: Martin Brown, Psychology

Project Abstract:
The concept of authority has been widely studied in the field of psychology in order to enhance our current understanding of the components involved in social interactions. This research will investigate the validity of an authority figure as a stressful stimulus for both genders. Stress level will be evaluated through the measure of vocal frequencies and a standard state anxiety inventory. The collected data will be analyzed to determine whether interaction with an authority figure engenders more stress than interaction with a peer group member. Additionally, this study will be designed to investigate possible differences between the stress responses of males and females when exposed to an authority figure.

Student Name: Michael Desjardins
Project Title: A Geographic Analysis of Coral Reef Conservation at Local and Global Scales: A mixed-methods approach in the Turks and Caicos
Faculty Sponsor: Christopher Brehme, Geography
Karen Cangialosi, Biology

Project Abstract:
Coral reef ecosystems are in a state of decline and many could become extinct in the years to come. The application of Geographic Information Systems (GIS) will aid in the understanding of coral reef health and management in the Turks and Caicos Islands (TCI). The application of GIS to a coral reef environment will support the creation of a spatial database containing substrate and biological data collected by Keene State faculty and students. These data can then be manipulated to show their distributions as well as changes over time within the study area. Interviews will be conducted with stakeholders to understand how their management strategies mitigate negative impacts to the coral reef environment. Examination of relevant literature on coral reef health and management worldwide will further aid in understanding the status of TCI’s reefs. The three methods of GIS analysis, interviews, and comparative studies, will be joined together to suggest reasons why some reefs are in better condition than others. This research will shed light on the importance of coral reef conservation through research and proper management strategies, and how to mitigate the socioeconomic conflicts that often arise.