The following is a list of undergraduate students who were granted funding to participate in a six week summer research project in 2013. Below are the students' proposals for research and also their final outcomes upon the conclusion of their research:

Bryan Barry, Geology Major

Investigating Microplastic Contamination in New York State Waterways

Proposal: Mr. Barry seeks to identify likely point sources of microplastics in the Schoharie-Mohawk-Hudson watershed, down the Hudson River to the Long Island Sound, Great South Bay, and Atlantic Ocean. For this study, Mr. Barry will collect water samples upriver and downriver from wastewater treatment plants along the Schoharie, Mohawk, and Hudson rivers. Samples will be processed to determine the concentration of microplastics in the water, in addition to each plant's contribution of pollutants. Mr. Barry also intends to collect nearshore water samples and shoreline sediment samples from various spots on Long Island. Upon completion, Mr. Barry hopes to present his findings at various scientific conferences, such as the Geological Society of America, the College of Saint Rose Undergraduate Research Symposium, and the Syracuse University Undergraduate Research Symposium.

Outcome(s): For this study, Mr. Barry set out to collect and analyze samples from local waterways to determine if microplastic particles are present. According to Mr. Barry, initial visual analysis of the samples collected from each site exposed small pieces of "non-organic" material. Additionally, a high percentage of the material collected was found to be organic. These factors presented an issue for identifying plastic particles, both quantitatively and qualitatively. Due to the fact that separation by density was proven to be an ineffective means of separation, Mr. Barry and his advisor are currently in discussions with Chemistry professors at the College of Saint Rose about potential methodologies for isolating the microplastic fractions. Looking forward, Mr. Barry intends to investigate these processes further. Specifically, once the organic and non-plastic inorganic material has been removed, the remaining particulate will be quantified and then mounted on slides for further analysis.

McKenzie Bourque, Psychology Major

Exploring the Social Environment Formed by Facebook

Proposal: Ms. Bourque will explore the effects of Facebook on the user. Specifically, Ms. Bourque plans to examine whether the social environment of Facebook reinforces positive or negative self-disclosures and expression of identity; assess the extent to which posts are meant to be read by a wide audience; and deduce how integrated Facebook is into the life of college students. For this study, Ms. Bourque will recruit a sample of 25 to 50 student volunteers from the College of Saint Rose to participate. Data will be analyzed through a combination of calculating descriptive statistics (e.g. frequency counts, means, standard deviations, etc.), Chi Square, and Pearson correlation coefficients (to examine the extent to which various aspects of the Facebook social environment correlate with each other).

Outcome(s): After coding and analyzing the data set, which consisted of 217 Facebook posts from 46 participants, Ms. Bourque found that the results supported several speculations by former researchers. For example, Facebook acts as a performance stage by the user. According to Ms.

Bourque, this was shown by the correlation between conversations and participant-initiated wall posts. Additionally, Ms. Bourque noted two peculiar correlations. First, the correlation of the "Debbie Downer" front (i.e. someone who complains or vents frustration through a Facebook wall post) to the number of liked pages. Second, the relationship between negative posts and the number of liked pages. Overall, Ms. Bourque found that, in general, more negative people have indicated more "likes" to other Facebook pages. Ms. Bourque contends that one explanation for this may lie in lurking. It is also presumed that liking many pages is a sign of spending a lot of time on Facebook scrolling, skimming, lurking, and looking on different pages, which can result in high self-image goals and decreased self-esteem; thereby, causing a more negative presence on Facebook. This hypothesis will be explored by Ms. Bourque later this fall.

Rhea French, Psychology Major

Glutamate is the Primary Excitatory Neurotransmitter in the Mammalian Central Nervous System

Proposal: Ms. French seeks to elucidate the role of metabotropic glutamate receptor 7 (mGluR7), which has been found to be one of the most important receptors due to its extensive impact on multiple CNS functions, in memory retrieval using the glucose receptor 7 allosteric agonist. This project will analyze the difference in memory retrieval between rats that are administered MMPIP and those that are administered saline. Ms. French hypothesizes that rats that are administered MMPIP will encounter deficit memory retrieval as compared to their saline injected counterparts.

Outcome(s): Ms. French tested the above hypothesis using the Morris Water Maze. Utilizing both T-tests for independent means and ANOVA tests, Ms. French found that there is no statistically significant data that shows a difference in memory retrieval between rats that are administered MMPIP or saline. However, Ms. French contends that future research in this project is viable and she looks forward to continuing her research within the topic.

Melanie Karow, Psychology Major

Conditioned Taste Aversion

Proposal: Conditioned taste aversion (CTA) is a reflex where animals learn to recognize and then reject potentially unsafe substances by their taste. This aversion is often used to study the neurobiological processes involved in memory and learning that protect the animal against the ingestion of harmful food. For this study, Ms. Karow intends to evaluate the differences between consolidation and retrieval of a memory for conditioned taste aversion by measuring glucose metabolism and glutamate release in the amygdala through microdialysis.

Outcome(s): For the purposes of this research, prior to CTA training, animals underwent a surgical procedure whereby a cannula was implanted in their head. However, after implementation, animals began to remove the cannulas and disturb their surgical incisions, a reoccurring problem that inevitably affected the success of this research. Additionally, animals that had microanalysis performed on them also affected the results of this study by bending the probe, which resulted in clogged lines and the inability to properly collect necessary data. For these reasons, the project was hampered from being completed in a timely manner. As a result of these challenges, Ms. Karow concluded that different procedures would need to be developed in order to ensure a successful and accurate outcome. One possible solution proposed by Ms. Karow is to lower the cannula by 2mm,

which may reduce the size of the incision site. Hopefully, this will create a more secure cap and smaller irritant for the animal, thereby improving toleration.

Amanda Prinz, Special Education/Childhood Education Major

Teachers' Perceptions on the Common Core Learning Standards

Proposal: Ms. Prinz will explore how primary, middle, and secondary teachers feel about the shift towards the Common Core Learning Standards, in addition to their level of comfort regarding this shift. Specifically, Ms. Prinz plans to collect data using survey methods in order to determine teachers' opinions on the shift to the Common Core, the extent to which they feel prepared to teach the new standards, and if their school provided any professional development surrounding the Common Core.

Outcome(s): After analyzing the data set, which consisted of 192 survey responses from teachers, Ms. Prinz was able to determine that the number of years a teacher has been teaching, in addition to the specific grade level taught, impacts how s/he feels about the Common Core Learning Standards. For example, the results showed that while most elementary (Grades 1, 2, and 3) and high school teachers do not feel comfortable using the Common Core Learning Standards, most later elementary (Grades 4, 5, and 6) and middle school (Grades 6, 7, and 8) teachers fall in the middle of a scale which ranges from very comfortable to not at all comfortable. However, overall the results indicated that most teachers, no matter how many years of experience or specific grade level taught, feel that the shift to implement the use of the Common Core in schools occurred too rapidly and that they have not received adequate professional development training surrounding the Common Core Learning Standards.

Rob Stoddard, English Major

Oedipal Desire in Two 'Hamlet' Films

Proposal: Mr. Stoddard plans to broaden and deepen his research and writing, which began in the Fall, 2012, semester. Mr. Stoddard's final project in Shakespeare on Film and on Stage was an essay entitled "Sexual Desire as Plot and Narrative in Franco Zeffirelli's *Hamlet*," where he argued that the director not only establishes but also utilizes the sexual relationship between Hamlet and Gertrude to propel and serve as a reason for Hamlet's indecisive madness. For this study, Mr. Stoddard intends to do additional reading in Freudian and film theory, along with other Oedipal writing on Hamlet and *Hamlet* films, to explore and expand the scope of his previous project.

Outcome(s): In order to deepen his previous analysis and writing, Mr. Stoddard reconsidered the theoretical frame in which he placed his argument. For this, he reread several of Freud's essays, as well as criticism that engaged with Freudian interpretations of *Hamlet.* Concurrently, Mr. Stoddard also worked to advance his argument in relation to criticism on the film-including considering not only the arguments but also the assumptions of published authors. Overall, Mr. Stoddard found that this grant allowed him the opportunity to widen his own writing abilities, as well as learn how to successfully argue a thesis in an unfamiliar setting.