

# UNDERGRADUATE RESEARCH AND CREATIVE WORKS

## STATS OF THE MONTH

October 2014

As of the end of October, the Undergraduate Research and Creative Works Program has 31 students from 12 departments in our mentee registry, and we have awarded 15 URCW grants. These grants are shared among 26 students. Sixteen were awarded grants to attend conferences and give presentations. Three students have been granted a small amount of money to collect data. Another three attended conferences as future presenters. Eleven students are scheduled to go to competitions related to mathematics/computer science or dance. Another 82 students registered in our Research Rookies program. We are proud of each of these students for taking the extra step to enhance their college education!

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## Opportunities

### Regional Conference

The call for abstracts starts Nov. 1 for the Big South Undergraduate Research Symposium (BigSURS) which will be held at Campbell University April 10-11, 2015. See their website for more information: [www.campbell.edu/bigsurs-2015](http://www.campbell.edu/bigsurs-2015).

### Journal

Submissions to the HPU peer-reviewed Journal, *Innovation: Journal of Creative and Scholarly Works* are due December 31st, 2014. The journal will be published by graduation. This journal is published like all other professional journals, which involves a review and approval of your manuscript by teams of professors within the discipline that your manuscript applies to. After edits are made and accepted, the manuscripts are published in the journal. High Point University has two previous issues, and they are available to view online at our website.

### Newsletters

If you are interested in seeing what your fellow students have done in the past in relation to research and scholarly work, check out earlier issues of the Undergraduate Research and Creative

## Mission Statement

To engage undergraduates in student-faculty led collaborations that reflect individual and unique scholarly and imaginative experiences which promote the development of new competences, foster critical and creative thinking and provide students with privileged opportunities to add to the sum of human knowledge.



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*Undergraduate research is a student-faculty collaboration to examine, create, and share new knowledge or work commensurate with practices and discipline.*

Works newsletters online! Go to [www.highpoint.edu/urcw](http://www.highpoint.edu/urcw) and look for the newsletter link on the left side of the page! You can also check us out on Facebook!

# Spotlight: Research Rookies

The Research Rookies program is a new addition to the Undergraduate Research and Creative Works department that is open to freshmen and first-semester sophomores who are interested in becoming a part of the undergraduate research community on campus. Freshman can start in the spring if they did not join in the fall. The program runs for two consecutive semesters, involves 15 tasks, and a final mini-research project. This is the second semester of the program and we have highlighted a couple of students participating who can explain first-hand the benefits of the program to their college careers and beyond.

**Elizabeth Perkins** is a sophomore with a major in mathematics and minors in statistics and psychology. She feels that the Research Rookies program is beneficial because it gives students a multifaceted education on the research process. She recently attended an ethics presentation, which she found extremely helpful, and strengthened her writing skills. She feels that everything she has learned so far applies far beyond the reaches of the university research culture, and will help her in her future endeavors. Before this program, Elizabeth says she would have been unable to complete research on her own, but now feels confident that she has much to offer to the university's research culture.

**Elesa Poteres** is a biology major and a sophomore, and feels that the Research Rookies program will be extremely beneficial to her current education and her job options after school. The most important task she has completed to date is the workshop on presenting research effectively, which was held by Dr. Altman. It went into great depth about the do's and don'ts of giving presentations, and demonstrated how important it is to present research in any field. She feels that this program has given her and her peers the necessary skills to conduct effective research in the future, and the confidence to approach professors later on in her college career for collaboration in a study. She plans to approach a professor either in the spring, or next fall. This program and her future research will help her in the job market, she says, because it will show potential employers how serious she is about conducting responsible research.



*Miss Poteres, a Research Rookie*

**Holly Gambrell** is a sophomore, and a communications major with a concentration in journalism. She also has a minor in English writing. As a part of the research rookies program, she feels that the most beneficial aspects of the program are the workshops and presentations, because both give her the opportunity to understand the ethics and importance of research while also giving her tangible examples of what research truly is. She believes that the program has also benefited her education overall because it enhances her critical thinking skills. In the future, she would like to use the skills she has garnered in the program to conduct research about how and why people read magazines (paper and online). She feels this research would make her competitive in the job market, especially since we live in such a digitally focused age.

# GRANTS

Congratulations are in order for a number of our students and their faculty mentors who applied for grants to develop their research further, or to attend conferences in which they present their completed work.

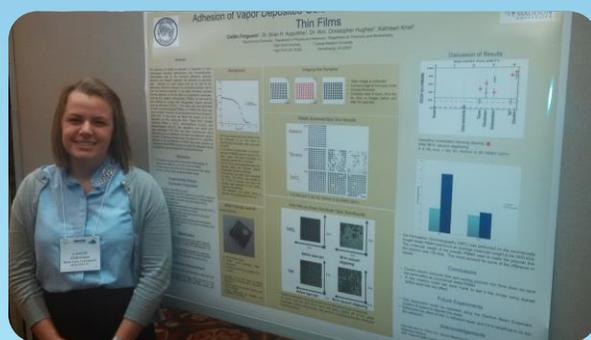
Christopher Wagner, Shane Gregory, and their advisor, Dr. Patrick Viguera of the Biology department, received a grant to attend the 2nd Annual Cell Biology of Eukaryotic Pathogens Symposium. This event was held at Clemson University in North Carolina on October 17th. Dr. Viguera is mentoring both students through the process of developing research projects that they will begin in the Spring 2015 semester. Both of their projects involve collaborative endeavors with other colleagues of Viguera's and students at Clemson University.

Brea Hampton, Laura Chitwood, Caitlin Ferguson and their mentor Dr. Heather Miller attended the Southeast Regional Meeting of the American Chemical Society (SERMACS) on October 16-19, 2014 in Nashville, Tennessee. Each student presented her own research. Brea's work involved analyzing human Tat-SF1 binding to the HIV-1 genome. Laura's research also investigated Tat-specific factor 1's role in Insulin signaling as specific to a human cell culture system. Caitlin collaborated with Dr. Chris Hughes and Dr. Brian Augustine on a project which examined the adhesion of vapor deposited gold films onto spun-cast polymer thin films.

Shannon Curley, senior and English Literature major, will be attending the Mid-Atlantic Popular & American Culture Association (otherwise known as MAPACA) Conference on November 7th, 2014, in Baltimore, Maryland. She will present a paper that investigates why Betty Draper, on AMC's Mad Men, is such a hated character on the program. The way her character changes over the series from a typical 60's housewife to a broken woman who makes incredibly irresponsible decisions, according to Shannon, marks the dangers of complicity with social systems that squander the importance of interpersonal relations, individuality, and self-efficacy.



Students at SERMACS



Caitlin Ferguson presenting research at SERMACS

# Grants and Conferences



*Sarah Patterson at the Society of Comparative Literature and the Arts at Eckerd College*

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David Naylor and Nick Zayatz received a grant to attend the ACM Mid-Southeast Conference with their mentor, Dr. Roger Shore. The conference is November 13th and 14th in Gatlinburg, Tennessee. Their presentation, focused in mathematics and computer science, is titled “Is Democracy a Total Train Wreck? An Exploration of Voting Anomalies in Real World Data,” and regarding voting theory and the analysis of different voting systems. They focused primarily on the Instant Runoff Voting method, because it has been proven mathematically that this method violates certain criteria necessary for a fair vote. Through creating their own software to mimic this method, and analyzing real world data, they came to find that the system of voting employed in an election rarely has an impact on who gets elected.

Seniors Tierney Loughran and Andrea Perreault, along with their mentor Dr. Jenny Fuselier, will attend the Southeastern Conference for Undergraduate Women in Mathematics, from November 15th to 16th, at Clemson University. Tierney is presenting her study titled “Bracing and Determining Rigidity in Grids and Shapes,” while Andrea will present her study, “Dopamine in a Neuron.” Tierney’s presentation explains the findings of bracing shapes as well as the ideas of tessellation of hexagons to a plane. Andrea’s project describes the mathematical model designed to explain the vesicular dopamine in a specific neuron. To complete her project, Andrea derived a system of differential equations which model how dopamine is converted between the types of dopamine that exist.

Caitlin Ferguson attended the Southeastern Regional Meeting of the American Chemical Society, otherwise known as SERMACS, with several other students and professors. She presented chemistry research that she had been working on for over a year, which dealt with the adhesion of gold films onto spun-cast polymer thin films. She even went to James Madison University this past summer to work on this project, which gave her ample time to test hypotheses that she wouldn't have been able to run experiments for otherwise. She felt that attending the conference was beneficial to her because it gave her the chance to speak with students and professors outside of her department regarding their research and her own. Caitlin plans to attend two smaller conferences in November: an AVS-MRS meeting held by the Materials Research Society, and the State of North Carolina Undergraduate Research & Creativity Symposium (SNCURCS).

Katie Long, a senior and Biology major, has received a student support grant that she will use to travel weekly to the Greensboro Science Center for a research project she is collaborating on with her mentor, Dr. Joanne Altman. The study focuses on executive function which relates to the activity of the prefrontal cortex of the brain. Executive function has been studied in humans, but it has never been tested in animals before. Katie works with a lemur at the science center and uses basic operant training techniques of reward to train the lemur to interact with a tablet. After the lemur is trained to use the tablet, the lemur will be taught basic matching skills. Once all of this has been achieved, Katie and Dr. Altman will present the lemur with an executive matching task. Katie plans to continue to work on the project until graduation. This project deals directly with her career goals, as she is applying for veterinary school, and hopes to learn more about animal behavior and methodology. Incidentally, Dr. Altman is looking for students who may be interested in joining this project.

Jenny Schoulda, Christina Giusto, and their advisor Dr. James Smoliga received a grant to attend Resveratrol 2014, the third international conference on Resveratrol in Waikoloa, Hawaii, from November 30-December 3, 2014. Christina, an exercise science major, will give a podium presentation titled "Clinical Utility of resveratrol -- for who and how much?" The project itself was undertaken by Christina, Dr. Smoliga, and Ole Vang. The purpose of the study was to collect expert opinions from individuals active in the resveratrol community regarding clinical use and recommended dosage in humans. Their data provide an overview of the current opinions among professionals regarding the clinical utility of resveratrol. Jenny's study will be presented at the conference in the form of a poster. The study is titled "Resveratrol treatment as an adjunct to pharmacological management in type 2 diabetes mellitus -- systematic review and meta-analysis," and was authored by Jenny, Dr. Heather Hausenblas, and Dr. Smoliga. This collaboration involved a systematic review that identified randomized controlled clinical trials whereby resveratrol was used as an adjunct to pharmaceutical interventions in types 2 diabetes mellitus. The article evaluation and data extraction were performed by the three authors.

Sarah Patterson attended the Society for Comparative Literature and the Arts at Eckerd College on October 16-19th in St. Petersburg, Florida. The theme of the conference was Nuance, and the papers presented were from a range of English disciplines. Sarah presented her paper which discussed the works of Aphra Behn, and participated in one of two undergraduate panels. Sarah said that her experience with undergraduate summer research was vital to her presentation at the SCLA. The most important things she learned during summer research that she was able to apply to this conference were the ability to present a paper in a specific discipline to people of different disciplines, and presenting her paper in a professional and polished manner. The conference also gave her the opportunity to promote herself as a professional in the English field, another skill she learned during the summer research program.

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