

UNDERGRADUATE RESEARCH AND CREATIVE WORKS

Summer Research

March 2015

Congratulations to the students that have been selected to participate in the URCW summer research programs! Twenty-four students were selected for the SuRPS program and 20 more will join the SuRI program. The students participating in the SuRI program come from a wide range of disciplines, and have interesting research projects in store. Below are a few of

the titles of the expected projects and a brief description of each:



Rendering on a Visualization Wall using a High Performance Cluster (this project focuses on creating a high performance cluster through the use of a visualization wall which will be made up of 16 computer monitors and to create a precise, seamless image across all screens)

Effectiveness of the High Point Community Against Violence Program: An Evaluation of Focused Deterrence on Domestic Violence (the research will test the effectiveness of the High Point Community Against Violence program)

Psychological Benefits of Narrative Medicine on Dementia Patients (Looks at the effects of narrative medicine, specifically poetry, on dementia patients through conducting poetry workshops at High Point's Pennybyrn Assisted Living Facility)

Effects of Footwear Design and Foot Anatomical Structure on In-Shoe Load Distribution and Foot Movement (Addresses how shoe modification can affect risk factors for certain kinds of foot fractures during basketball-related tasks)

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.



Senior Spotlight

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High-PURCS 2015

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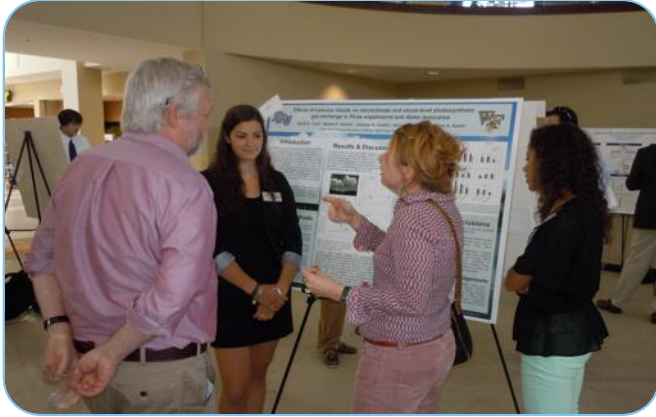
Grants, Conferences, and BigSURS 2015

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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.

Students in the competitive SuRPS program work with professors on specific research projects this summer, all of which can be found on the URCW page under "HPU Summer Research." You can connect directly to the page [here](#).

High-PURCS 2015



Students at High-PURCS 2014

On April 15th, High Point University will be hosting High-PURCS, a symposium in which our very own students showcase the research and creative work they have been doing. Of the 130 or so students participating, 58 are creating poster and art exhibits, 40 are giving oral presentations, there will be 6 performances, and also a walk-through origami exhibit. Students who are not presenting should attend to see what their fellow students are up to in terms of undergraduate research. Looking at other people's projects is a good way of figuring out what you may want to do for your own research in the future. There will also be a food spread for all in attendance.

Below are some of the projects that will be available for viewing at High-PURCS:

"Effects of Tow Flexor Strength on Forefoot Loading During Unanticipated Side-Step Cutting in Football Players" Allison Arpante
"Arthropod Communities in Various Successional Forest Habitats" Calla Telzrow

"Can Doodling Help Us Remember? A Look at the Effects of Doodling, Topic Interest, and Working Memory on Comprehension and Mind Wandering" Amanda Szymanski

"Physics in Non-Inertial Reference Frames" Hallie Stidham

"Damages" (*Performance*) Ashton Kirby, Danielle Criss, Peyton Senning, Madison Bryan, Zoey Chittick

"Internet-independent iOS Platform for Classroom Use" Reza Moghtaderi Esfahani, Thomas Douglas

"Selections from The American College Theatre Festival Irene Ryan Competition" Summer Kiesel, Caleb Redslob

"Bracing and Determining Rigidity in Grids and Shapes" Tierney Loughran

On that note, now is the time to start thinking about doing research next year! Please consider talking with professors about potential future projects. You can join a professor on his or her own research, or you can have them mentor you through your own project. Students from all disciplines are encouraged to do research, so start soon to take advantage of the wonderful research opportunities High Point has to offer.

Senior Spotlight

Andrea Baellow will be attending graduate school at UVA in the fall to pursue a Masters of Kinesiology in Athletic Training. Undergraduate research played a huge role in Andrea's acceptance to graduate school, she says because her research made her resume very competitive and filled the requirement of a thesis project for the Kinesiology program. She believes that doing undergraduate research has improved her critical thinking skills, and that students should participate to learn real world skills and to get to know faculty in their field.



Graphic Design major Christy Hernandez recently won a regional advertising competition, sponsored by the Mid-Atlantic Newspaper Advertising and Marketing Executives, in which she created a campaign concept that communicated to young people the importance of newspapers in their daily lives. This award included a \$5,000 scholarship and an expenses-paid trip to the association's annual convention, held in Savannah, Georgia on March 5 - 7.



Christy Hernandez and Britton Nagy

Senior Tayla Curran is pursuing a Master of Narrative Medicine at Columbia University this coming fall. She says that participating in undergraduate research here at High Point was crucial to her acceptance into the program at Columbia because it gave her a competitive edge against other students doing the same coursework. Presenting at multiple conferences throughout her undergraduate years also sharpened her presentation skills, which she used in her interviews with Columbia to articulate the work she had done in her field. Beyond basic researching skills, Tayla says that the most valuable skills she gained from doing research were the cultivation of critical-thinking skills and using real-life scenarios in her work. Her advice to undergraduates looking to stand out from their peers is to do research in any field you are passionate about, and to find a really good mentor to help you through the process.

Katelyn Long is going to veterinary school at the University of Iowa in fall of 2015. She has been doing research with Dr. Altman regarding the training of a lemur to take the Wisconsin Card Sorting Task. She feels that doing this work really assisted in her post-undergraduate endeavors because not only did it help her earn the volunteer hours necessary to get into veterinary school, but attending what will be a total of five conferences throughout her college career really helped develop her presentation and time-management skills. She encourages students to do undergraduate research because it opens a lot of doors after graduation.

Britton Nagy is an Electronic Media Communications student, but she has always loved journalistic writing. She was named the High Point University Pulitzer fellow last year, which is sponsored by the Pulitzer Center on Crisis Reporting in Washington, DC. Her report, titled *Bastøy Prison: Low Security Brings High Benefits in Norway*, allowed her to travel to Norway to do research on their unique prison system. Her piece placed in this year's Region 2 Mark of Excellence awards. Britton says that this experience has become a major talking point in every single interview, recommendation, and work opportunity she has had, and that it truly makes her stand apart from other students. In addition to this, Britton has a job lined up with the Ellen Degeneres show after graduation, and has worked for the David Letterman Show, American Idol, NBC News Channel, and a Lifetime reality TV show.

Grants

Dr. Brad Barlow and a team of HPU physics and computer science majors are participating in the NASA Micro-g program, which offers undergraduate students an opportunity to participate in a new microgravity activity called Micro-g Neutral Buoyancy Experiment Design Teams (Micro-g NExT). This activity requires students to work in teams to design and build prototypes of spacewalking devices to be used by astronauts for spacewalk training in the Neutral Buoyancy Laboratory at NASA's Johnson Space Center in Houston. Physics majors Hallie Stidham, Jacob Brooks, Michael Cantor, Matthew Iczkowski, and Simeon Simeonides must build a rock chip sampling device for microgravity bodies (such as an asteroid) that will be tested in the Neutral Buoyancy Lab by NASA astronauts in August. If the device works successfully, it may be used on a real space mission.

Conferences

HPU students Robert Rivera, Perry Morris, and Paul Freda gave a very polished and professional presentation of their research titled "Teaching Basketball Free Throw: Using the Wii" during the SHAPE America Southern District Convention in Atlanta on February 18th - 21. Dr. Martie Bell introduced the students, whose presentation involved multiple mediums, including photographs, videos, and a PowerPoint display. Their audience remained fully engaged during the presentation and asked many follow-up questions.

High Point University students Rachel Abel, Savannah Benedict, Madison Bryan, Zoey Chittick, Danielle Criss, Ashton Kirby, and Peyton Senning went to the American College Dance Association Conference with Dr. Lindsey Howie. Six of these students performed guest choreographer Shannon Bramham's dance work *Damages* at the conference. Dance Minor students Danielle Criss and Madison Bryan also presented and performed their own choreographic works. In addition to performing, all of the students took classes from professors, artists, and various professional dancers from around the country. This was an incredible opportunity for High Point University because the students were able to showcase their own talents and make connections with other universities.



Dr. Barlow and students for the NASA program



Dance students at the ACDA conference



Dr. Bell and students at the SHAPE America Convention

Big-SURS 2015

Thirteen students are attending the BigSURS conference at Campbell University on April 10-11, 2015, which is open to students who go to school at any of the schools within the Big South Athletic Conference. Below are their names and a brief description of their projects:

Alex Mills closely analyzes the TV show *Lost* and draws from feminist theories to comment on race, religion, and ability within the show and their portrayal to audiences. Though at a first glance *Lost* appears to offer progressive representations of the ideologies listed above, it actually reinforces and promotes problematic representations of these ideologies.

Mayeesa Mitchell evaluates Tyler Perry's *The Family That Preys* and examines the ideologies of race, gender, and class. The film is often viewed as progressive because of its mostly African-American cast, but Mayeesa deconstructs this notion by revealing other ideologies of white supremacy, classism, and hypermasculinity that are also present in the film. Her research states that though the cast is predominantly black, popular ideologies undermine the racial progressiveness.

Lindsey Anuzis focuses on the effects of hippotherapy (the use of horses as a therapeutic agent for people with physical, motor, or sensory challenges) on the self-esteem of pre-teen girls. Her data addresses whether or not a hippotherapy program can improve self-esteem in young girls overall, especially if they have experienced bullying.

Rodrigo Catalan-Hurtado did a study on a certain kind of bacterium and its potential use of regulatory proteins like GerE, which is used for the regulation of sporulation. The purpose of this study and following project was to use DNA sequences to contrast the differences in gerE between *G. stearothermophilus* and *B. subtilis*.

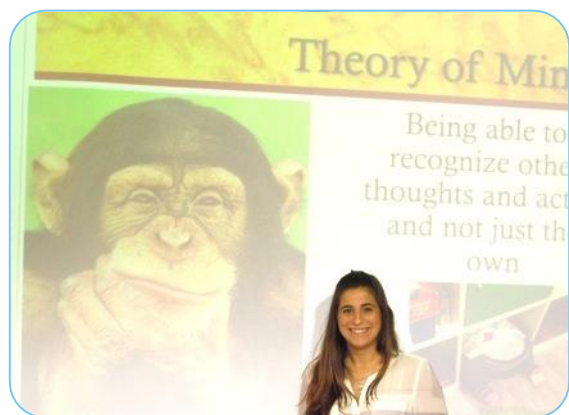
Aaron Smith examines the role of Rac 1, a regulatory protein, in relation to serine-threonine kinase ataxia-telangiectasia mutated (ATM). The purpose of his research was to examine the consequences of activated Rac 1 in cells that lack ATM, in order to clarify why people who have Ataxia-telangiectasia (A-T), which is a neurodegenerative disease, have a predisposition to metastatic cancer.

Brianna Ruth is presenting research that regards the vertical distribution of zooplankton across multiple lakes in the southeast U.S. The research is meant to increase understanding of zooplankton depth selection and which conditions allow different species of zooplankton to prosper.

Christina Burchette is doing an oral presentation on Joe Christmas, the protagonist of William Faulkner's *Light in August*, and analyzes how his violent death serves as a necessary component to the commentary on race relations/hierarchical codes that functions within the novel. Christina states that Christmas's death by castration is essential to the plot to prove a point about the consequences of the disruption of racial hierarchies through interracial relations.

Lilyana Diaz collaborated with student Danielle Prince to create an art piece that is meant to raise awareness of childhood cancers. The foundation for the piece is the story of Soduko, a young girl who developed cancer after the bombing of Hiroshima, and her belief in the lore about the thousand paper cranes. Legend says that if you create a thousand origami cranes while wishing on each one, the wish would come true. The aim of this project is to show society what can be accomplished by hard work and determination.

Big-SURS 2015 Continued



Katelyn Long presenting research

Justin Cummings explores the faculty-student relations at William Penn High School in High Point through interviews and historical research. Justin's aim in doing this project is to provide the general public with the story of William Penn High School as a previously all-black high school and its community.

Lindsay Owen analyzes the different kinds of special education laws and services provided by the United Kingdom and the United States, and how they compare and contrast. Her work is meant to show the different ways in which education programs approach disabilities.

Katelyn Long investigates executive function in non-human primates with the purpose of training a lemur to take the Wisconsin Card Sorting Task. The training has been done in stages and uses operant conditioning to shape the lemur's behavior. The presentation addresses the challenges of teaching a non-human animal to use human technology.

Tayla Curran will present research on endocrine disrupters. The endocrine system regulates several developmental processes in humans, but repeated exposure to environmental endocrine disrupters (hormones, man-made or naturally occurring) can interfere with such processes and lead to abnormal development. She is presenting research on behalf of herself and two other students, Cailyn Scanlan and Loren Safille, regarding the impact of 17β -Estradiol (a form of estrogen) on bone development in zebrafish. The impact of 17β -Estradiol on the ossification of dermal v. endochondral bones will be discussed in her presentation.

Ashley Hagan delves into the history of William Penn High School in High Point NC, and how the experiences of its students fueled the fight against inequality in which many of these students participated. Through interviews, newspapers, and the high school archives, Ashley's work exposes the connection between social and political situations in the High Point area during the Civil Rights Movement.

Mary Pruitt is giving an oral/visual presentation with fellow student Taylor Daniel regarding their interdepartmental art project that centers around beehives. The students created an apiary to serve as a home for honeybees, but that also functions as a display for intricate parts of the internal design of the hives. The hives have been photographed, documented, and displayed for the purpose of giving life to a new form of intriguing and dangerous art while also providing ecological awareness and knowledge to the High Point University community.

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Newsletter brought to you by Christina Burchette