

# UNDERGRADUATE RESEARCH AND CREATIVE WORKS

## Updates and High-PURCS

February 2014

So far this year, the Undergraduate Research and Creative Works department has approved 101 projects, worked on by 88 students, from 20 different departments within the university. Congratulations to these students and their faculty, and we wish you luck in your research endeavors, now and in the future!



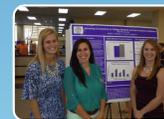
High Point University students from all disciplines, majors, and minors are invited to participate in HPU's 3rd annual Research and Creativity Symposium (High-PURCS), which will be held on April 15, 2015. Students may choose to present their work in a variety of mediums, including posters, oral presentations, a brief performance, or an exhibit. Projects entered must be mentored by a faculty member and reflect originality and creativity. The call for abstract to High-PURCS closes March 1. Be sure to check out page 3 for photos of last year's High-PURCS.

## Summer Research Programs

The time to sign up for summer research programs is running out! The application portal for the Summer Research Program in the Sciences (SuRPS) is now closed. Fifty-five students applied for 24 positions. Congratulations to the students selected to participate in this wonderful program! However, applications for the Summer Research Institute (SuRI) are still being accepted! SuRI is open to undergraduates in all disciplines. Students must identify a faculty mentor with whom they will work over the summer,

### 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.*

as well as a description of the project goal, method, and timeline. Students may stay on-campus for free during the research period as long as they are not enrolled in any classes. The submission deadline is March 20, so be sure to apply soon!

# URCW Grants Awarded

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**Nicole Giordano, Oonagh Aatnite, and Rebecca Oakes** attended the Southeast American College of Sports Medicine Conference and College Bowl Competition with Dr. Kimberly Reich from February 11 to 14, 2015. All three students participated in the college bowl competition, representing High Point University.

**Steven Michael Smith, Eli Morris, Sam Schoenfield, Taylor Tornatore, and Kira Foglesong**, with faculty mentor Dr. Stefan Hall, will attend the Broadcast Education Association 2015 National Conference in Las Vegas from April 11 to 16, 2015. The students will participate in a panel that will address the use of the Oculus Rift for video games, simulations, and business development. The presentation will look at a wide range of inventions in the realm of virtual reality, explain what these inventions were attempting to do technically and aesthetically, and why they did not succeed. This research helps to understand the potential for the Oculus Rift device, as well as other contemporary VR systems to succeed in the future.

Students **Lindsay Anuzis, Julianna Adams, and Nicole Bayeur**, along with faculty member Dr. Kirsten Li-Barber will be attending the Association for Psychological Science Conference in New York City from May 21 to 24, 2015. The students will be presenting their research, titled “Maternal and Paternal Overprotectiveness and its Association with Student Motivation and Persistence in a College Setting,” which focuses on examining correlations between overprotective parenting behavior, student motivation for learning, and student persistence on academically-related tasks. The results provide support for the idea that parental overprotectiveness may have an impact on how students approach the learning process and challenges in the classroom.

Dr. Neil Coffield III and students **James Rager and Matthew Slitzky** will be attending the 2015 Southeast Regional Society for Developmental Biology Annual Meeting from May 11 to 13, 2015 at Clemson University. The students are currently involved in research that looks at different estrogenic EDCs and their impact on bone ossification in zebrafish. Their aims are to determine whether exposure to these EDCs, which are commonly found in effluent from sewage treatment facilities, affect the formation of dermal and endochronal bones in the fish.

**Benjamin May** is presenting research at the MAA Southeast Regional Meeting on March 13 and 14, 2015, in Washington D.C. His mentor, Dr. Laurie Zack, will also be in attendance with students **Leah Yoch, Elizabeth Perkins, Joshua Parsons, and Kaitlyn Griffith**. Benjamin’s work is titled “Matroids ‘4’ Macaulay2” and its purpose was to study matroids in order to create a package for them in Macaulay2, a software system designed to aid mathematical research in algebraic geometry and commutative algebra. This research focused specifically on approaching matroids from a linear perspective. In addition to presenting this project, all of the students in attendance will participate in a Math Jeopardy contest as part of a team against other regional colleges.

Professors Cynthia Vigueira and Josh Campbell are taking students to the Association of Southeastern Biologist Meeting, which takes place from April 1 to 4, 2015 in Chattanooga, Tennessee. Dr. Vigueira’s student is **Christopher Wagner**, who will be presenting research titled “Comparative Genetics of Parallel De-domestication Events in Weedy Red Rice (*oryza sativa*)” which he worked on with Dr. Vigueira and Gina Botskoo. This research examines what genetic changes are required for red weedy rice to take hold in an agro-ecosystem using comparative genetics. Dr. Campbell is bringing student **Calla Telzrow** to present her research titled “Anthropod Communities in Various Successional Forest Habitats.” This work examined the effects of various logging management schemes on insect abundance and diversity in different forest communities.

# American College of Sports Medicine Annual Meeting

Several students and faculty members have received URCW grants to attend the American College of Sports Medicine Annual Meeting on May 26 to 30, 2015, in San Diego, California. All students worked on different several projects involving Exercise Science research. Below are the names of the faculty and students presenting, and the titles of the projects:

## Dr. James Smoliga

**Kelly Hardesty:** “A comparison of 10 weeks of functional versus traditional resistance training in amateur female golfers”

**Allie Zambito:** “Relationship between near-infrared spectroscopy parameters and physiologic intensity during incremental speed treadmill running”

**Rachel Thiets:** “Reproducibility of intrabreath measurements of lung diffusion capacity and cardiac output during various cycling intensities”

**Kaitlyn Farina:** “Influence of unweighting on muscle oxygenation and VO<sub>2</sub> during running on a power-body positive-pressure treadmill”

## Dr. Kevin Ford

**Kaitlyn Wright:** “Effects of toe flexor strength on forefoot loading during unanticipated side-step cutting in football players”

**Allison Arpante:** “Effects of cutting direction on in-cleat toe dorsiflexion during unanticipated backpedal cutting in football players”

## Dr. Kyle Sunderland

**Jamie Schnuck:** “Effect of Caffeine Dose on Postural Stability”

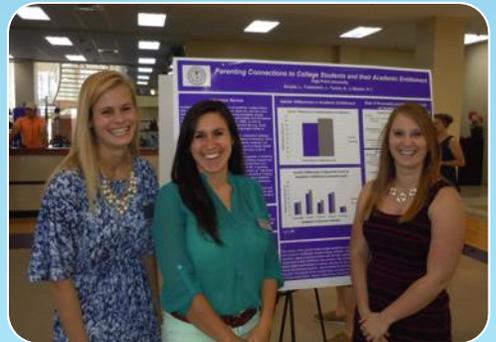
## Dr. Jeffrey Taylor

**Lauren Mantikas:** “Concurrent Validity of Maximal Jump Height Measurements of Clinical, Wearable, Research-Grade Instrumentation”

**Paige Ward:** “Sex differences in the relative distribution of lower extremity sagittal plane moments during landing”

**Colleen Mulrey:** “The relationship between hip extensor strength, jump height, and external hip flexion moments during jumping”

**Jeffrey Berwager:** “A one-step countermovement jump elicits asymmetrical distribution of lower extremity joint movements in female athletes”



*Students participating in High-PURCS 2014*

*High-PURCS will take place on April 15<sup>th</sup> this year*

# Why Undergraduate Research and Creative Works?

Recently, companies and graduate schools are moving toward a different approach to hire the best employees that will be most beneficial to company/school growth. This “trend” consists of choosing graduates who have certain important “soft” skills that would make them enticing to today’s institutions.



There are several studies to support this claim. A study by the National Association of Colleges and Employers (2013) states that the skills that employers are most concerned about when hiring are communication and teamwork skills, analytical abilities, reasoning and problem solving, planning and organization, the ability to obtain and process information, and technical and technological knowledge. Another study by Hart Research Associates (2013) says that these kinds of “soft” skills are prioritized over a job candidate's field of study or major when making hiring decisions. *The High Point Enterprise* published an article in 2014 regarding a

chamber report that focused on jobs the Piedmont-Triad area. The research was conducted by UNC-Greensboro professor Keith Debbage, and found that many job-seekers applying to openings in the area are lacking in skills like critical and analytical thinking, problem solving, and communication, leaving local positions indefinitely unfilled because potential employees simply do not have the kinds of skills that companies need. It seems that majors become less important than the individual skills one has to offer when entering the real world.

Students may be wondering how to obtain these skills in a university setting. One of the best ways to increase this skill set and to make one stand out to employers is by doing research or creative work, which is extremely accessible through our Undergraduate Research and Creative Works Office. Undergraduate research is defined as a student-faculty collaboration to examine, create, and share new knowledge or work in ways that match up with practices within a discipline. Completing a research project with a faculty member offers the students benefits like developing a close relationship with a professor (which may lead to a really good letter of recommendation down the road!), credibility through the reviewing and acceptance process, and viable proof of the soft skills that employers are looking for (critical thinking, follow-through, and many more).

If you are interested in an opportunity to cultivate these kinds of skills and looking to make your resume and experience unique and credible, undergraduate research is a great way to reach your goals. Students in any class or major may conduct research. There is a special Research Rookies program designed for freshmen that consists of completing 15 tasks over two semesters, and a mini-research project which will introduce students to the university research culture and prepare them to take on their own mentored work. Juniors and seniors should approach a professor about getting involved in their own research, or collaborate with a professor on the professor’s research. The possibilities range from presenting scientific research at a conference to publishing a paper in a professional literary journal. The URCW website has many sources and helpful links for students who are interested.

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