

Undergraduate Focus: Research and Mentoring



Katelyn Buchanan, a senior in Biomedical Engineering, recently completed a summer of

research in Dr. Dacheng Ren's Biofilm Engineering Laboratory under the supervision of post-doctoral fellow, Dr. Xiangyu Yao. Katelyn's research investigated the resistance of certain microbial cell variants, persisters, to antibiotics. She focused on the bacterial strain, *Pseudomonas aeruginosa*, which "can cause chronic infections in people with weakened immune systems; especially those with cystic fibrosis," she explained.

Ultimately, the lab's work will contribute to better understanding of how persisters work and finding

better means to control them.

Katelyn applied for this research opportunity with Dr. Ren through a NSF Research Experience and Mentoring grant.



Erin Jackson is collecting soil samples at Clark Aggregate, a quarry in Tully, NY.

While taking a Geotechnical Engineering class with Dr. Shobha Bhatia in the fall of 2013, **Erin Jackson**, a senior in Environmental Resources

Engineering at ESF, distinguished herself as an engaged student. Impressed with her interest, Dr. Bhatia asked her if she would like to do lab work. Erin seized the opportunity, which she continues to build upon as she analyzes her research in her senior thesis.

Erin's research simulates the conditions found in metal-contaminated soil in order to better understand what measures are needed to reverse the process. She assesses soil's capacity to absorb metals and then experiments with techniques that can reduce the heavy metal concentration in the water runoff.

With undergraduates, WiSE highlights the importance of pursuing research opportunities and seeking out mentors, so we asked Katelyn and Erin to share their WiSEdom from their experiences. Katelyn said: "Don't be afraid to seek out professors you want to work with. Don't let 'no' from one stop you from asking another." And Erin shared: "Be an active participant in class. Make yourself stand out by asking questions that show you are doing the work."

WiSE - FPP Focus: Professional and Career Development Preparation



Elizabeth Droge-Young, a Ph.D. student in Biology and a WiSE-FPP Associate, identifies genetic traits in male red flour beetles (*Tribolium castaneum*) that confer competitive advantages for egg fertilization under various external environmental conditions. These genetic traits may be located within a male's sperm or within other genetic material. Red flour beetles prefer to live in warm, humid conditions and are most often found in agricultural settings, such as flour mills.

This species makes a particularly interesting subject, because the females have multiple internal structures in which they can store sperm from multiple male partners. The females are able to choose which sperm they will use to create the next generation. Female red flour beetles may have evolved the capacity to store sperm so that if they are forced to relocate, they will have a reserve with which to begin immediately reproducing in their new environment. **Liz recently received a Dissertation Grant from the American Association of University Women in May 2014.**

Liz has been an active WiSE Future Professionals Program (FPP) Associate attending a wide variety of programs in career preparation, professional development, and work-life balance; all supporting persistence. According to Liz, "**WiSE has provided me with many strategies and insider tips for navigating a career in academia, including how to address challenges that disproportionately face women in this path. It has shown me not just challenges that women in science face, but strengths that our gender can bring to the table.**" The WiSE-FPP program is growing rapidly. This year, we have a record number for WISE FPP fellows, 44. They are STEM PhD students representing 15 different STEM departments. We have 7 PhD students on the waiting list. A 20% increase from last year; also record breaking with 36 Associates.

Women in Motion



Karen Doherty is the newly appointed Chair of the Department of Communication Sciences and Disorders.



Amy Criss (Psychology) was elected President of the Society for Mathematical Psychology.



Laura J. Steinberg, Dean of the College of Engineering and Computer Science was awarded by The John Ben Snow Memorial Trust for

"Project ENGAGE 2015: Advancing Girls in Engineering."

WiSE is faculty led and driven . Faculty commitment makes WiSE one of the most successful women's organizations at Syracuse University and beyond.



Laura VanderDrift (Psychology) received a grant "Summer Undergraduate Research

Fellowship - Gaithersburg," from the National Institute of Standards and Technology.



Melissa Ann Green (Mechanical and Aerospace Engineering) received grants from both the

Office of Naval Research and the Air Force Office of Scientific Research for her work on vortex shedding and vortex wake structures.



Katharine Lewis (Biology) and SU Post-Doc, Samantha J. England, received a Neurological Disorders and

Stroke/NIH/DHHS award to conduct research that has the potential to facilitate the development of more effective

treatments for spinal cord injuries and neuronal diseases that affect locomotion or sensory perception.

Lewis also received (along with Anthony Garza) an NSF Grant for the project, "IOS: Coordinating Developmental Gene Expression in *Myxococcus Xanthus*."



Beth Prieve (Communication Sciences and Disorders) was recently awarded a five-year, \$3 million grant from the National

Institutes of Health to study and measure auditory responses among newborns.



Tara Kahan (Chemistry) received an award from the Oak Ridge Associated Universities for her work on Air Quality.

Faculty Profile: Marina Artuso



Marina Artuso is the principle investigator (PI) for a new \$5 million

Grant from NSF which will fund construction on a new type of particle physics detector, called an Upstream Tracker (UT). Artuso leads a team that includes SU physics faculty: Steven Blusk, Tomasz Skwarnicki, and Sheldon Stone.

The particle physics detector will ultimately be installed at the Large

Hadron Collider Beauty (LHCb) experiment in the CERN Laboratory near Geneva, Switzerland in 2019. The Syracuse team will take the lead on constructing the UT and will be assisted by colleagues from across the U.S. and Europe.

The addition of the UT will allow the LHCb will be able to process a greater amount of data with the goal of seeking out "new physics" that go beyond current understandings of particle physics.

Artuso is most excited about the

opportunities this grant will offer to undergraduate and graduate students, including hands-on experience assembling the detector elements in new clean-room laboratories specially built for this purpose. Artuso explains, "This is not only a unique research opportunity, but a fantastic teaching tool to expose our students to innovations in mechanics, electronics and position sensing devices."

Artuso has been a part of WiSE leadership since its conception in 1997. This year she will be advising the newly revived postdoctoral group.

Undergraduate Mentoring Program for Women of Color



This fall, WiSE is launching an undergraduate Women of Color in STEM program to support underrepresented groups of women in the fields of science, technology, engineering, and mathematics at Syracuse University.

Women in STEM fields can often experience challenges, including isolation and lack of solidarity with their peers. As women and as members of underrepresented groups, women of color may face situations that are twice as challenging. The program will focus attention on Women of Color who come from African American, Hispanic, Native American, Alaskan Native, or Pacific Islander backgrounds.

The new program aims to provide students with a sense of belonging, as

well as opportunities for social networking with their peers, faculty, and professionals in the field. The overall goal of the program is to increase persistence in STEM, promote academic success, and bolster the positive outlook of its

WiSE invites faculty and staff to refer any woman of African American, Hispanic, Native American, Alaskan Native, and/or Pacific Islander background who is an undergraduate in biology, chemistry, physics, earth science, math, and engineering computer science to participate in the Mentoring Program for Undergraduate Women of Color.

participants.

The program will be facilitated by WiSE staff and faculty members Michelle Blum (Mechanical and Aerospace Engineering) and Jedidah Isler (Physics). In addition to faculty support, the program is also recruiting underrepresented

graduate students in these fields to serve as mentors.

Interested undergraduate participants and graduate mentors can fill out an interest form at:

<http://bit.ly/WOCSTEM>

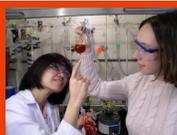
Who is eligible? This pilot year we are focusing on women in the physical sciences and engineering who, according to the NSF, are significantly underrepresented in STEM including who are Black, Hispanic, and American Indian/Alaska Native women.

Studies indicate that women who have mentors of the same gender or race do better at all stages of study and career success, due to forging stronger connections and receiving support.



Fall 2014 WiSE Calendar

<i>Date, Time, & Location</i>	<i>Event Information</i>	<i>Location</i>
September 15th (Monday) – 4:30pm-6:00pm	WiSE-FPP Fall Orientation	Bird Library 114 Peter Graham Scholarly Commons
September 18th (Thursday) – 4:00pm-5:30pm	WiSE Tea	Chancellor's House 300 Comstock Ave.
October 8th (Wednesday) – 5:00pm	Informational Meeting Undergraduate Women of Color	Link Hall 220
October 14th (Tuesday) – 5:00pm-7:00pm	Orientation for First Year Women Engineering Graduate Students	Bird Library 114 Peter Graham Scholarly Commons
November 7th (Friday) – 2:30pm-4:30pm	WiSE-FPP Workshop: The Art of Making Effective Science Presentations	Hall of Languages 102
December 5th (Friday) – 5:30pm-7:30pm	WiSE-FPP Potluck Dinner and Discussion	Dr. Shobha Bhatia's Home



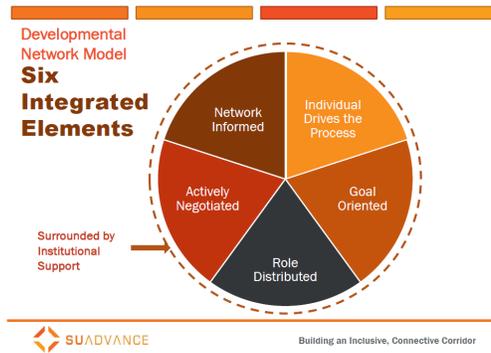
For More Events, Announcements, and Resources Available for Download
Visit our Website: suwise.syr.edu



WiSE Provides Mentoring Workshop at Spring Grad School Retreat

WiSE offered the workshop, “Finding Mentors in a Networked World,” at the annual retreat of SU’s Graduate School this past May, led by WiSE Director Sharon Alestalo.

The workshop utilized the Developmental Network Model described in the Mentoring Toolkit produced by SU ADVANCE. The toolkit draws upon research findings from social networking theory and provides guidance for both mentors and mentees. A wide variety of assessment tools and goal setting worksheets assist users in determining how to leverage their



abilities and address challenges.

While the toolkit’s intended audience is faculty members, its resources are applicable to anyone wishing to reflect

upon and form a strategic plan for career success .

The Mentoring Toolkit is currently providing the framework for career planning for the WiSE-FPP associates and will also play a major role in the orientation session WiSE will lead in October for first year women graduate students in Engineering.

To view the presentation from May, visit the WiSE website (suwise.syr.edu) and click “Mentoring Workshop” on the left or go to SUADVANCE mentoring resource page at suadvance.syr.edu for the full guide.

WiSE is a vital network for women in the STEM disciplines. At first it provided a network of women colleagues, many of whom were the only female faculty in their own departments at the time. As we have added more women faculty, this already existing network has been an avenue for mentoring junior faculty. The WiSE-FPP program is also a great success story—supporting women graduate students so that they will continue up the pipeline to success in academia and industry.” ~ Dr. Marina Artuso

New Women Faculty in STEM ; WELCOME!



Angela Zachman
Assistant Professor
Biomedical
Engineering



Ellyn Riley
Assistant Professor
Communication
Sciences and Disorders



Svetoslava Todorova
Professor of Practice
Civil and
Environmental
Engineering



Loredana Lanzani
Professor
Mathematics



Kimberly Lamparelli
Director of Gebbie Speech-
Language Clinic
Professor of Clinical Practice
Behavioral Sciences and Disorders

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