

2014 WCC Rising Stars

Prof. Julia Brumaghim

By Michelle Rogers

Prof. Julia Brumaghim was one of the 2014 WCC Rising star award winners for her research on the impact of metal ions on DNA damage and cell death at Clemson University. *Julia* received her Ph.D. in 1999 from the University of Illinois Urbana-Champaign and from there went on to a NIH postdoctoral fellowship at the University of California, Berkeley. Following her postdoctoral research, she joined the facility at Clemson University.



Julia loved chemistry all the way back to high school, where the concept of electron orbitals was especially interesting. In fact, *Julia* wrote one of her college application essays on why orbitals were so fascinating. During her undergraduate career, she was originally a biochemistry major, but switched to chemistry her junior year because of all of the questions she was asking. However, her interest in biological aspects of chemistry did not go away; therefore, following her Ph.D. in inorganic chemistry, she pursued a postdoc in bioinorganic chemistry followed by molecular biology. It is the combination of all of these aspects of her training that led her to pursue her independent career in DNA damage research.

Throughout *Julia's* career she has never officially had a mentor. However her graduate advisor, Professor Greg Girolami, was a great teacher and she learned how to be an effective teacher from watching him.

When asked what advice *Julia* would give to other people coming up in this career field she replied: "Make sure you love what you are doing because it will be hard at times, and sometimes you have to be your biggest cheerleader. Develop an unshakable resolve that you will succeed, and be persistent. The typical graduate

school/postdoc/faculty track is not a one-size fits all solution, so make sure you explore your options at every stage to make informed career decisions that are tailored to your needs and interests rather than following the beaten path of those around you."

Additionally for women in chemistry, *Julia* had the following advice: "If this is what you want to do, then do it. I have had an exciting time full of ups and downs, but I would not trade my career as a chemistry professor for any other. In addition, don't feel that you have to put your personal life on hold to be successful. As with many things in life, there will likely never be an ideal time to focus on family instead of a career, but if you want both, you should pursue both. Yes, a family can be time-consuming, but what matters more is how you manage your time, not how many hours you work. A good balance can make one happier and more productive, not less." Congratulations!

Prof. Lauren Benz

By Amy Balija

Prof. Lauren Benz's spark for chemistry came from her high school teacher, Mrs. Kathleen Sullivan. *Lauren* remembers "that she [Mrs. Sullivan] would dress up like a witch for Halloween and do chemistry demonstrations that captured everyone's interest (bubbling cauldrons, color changing reactions)...in order to demonstrate key principles to the class and garner interest. It worked for me!" After high school, *Lauren* attended the University of Rhode Island where she credits her older brother for teaching her good study habits and the magic of the dry-erase board



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to solve tough problems. She began her research career in the lab of Dr. William Euler, examining surface modification of alloys for use in prosthetic devices and later obtained a NSF-REU position at Santa Clara University working under Dr. John Thoburn.

After graduating from the University of Rhode Island, *Lauren* worked in the Analytical Research and Development Department at Pfizer for one year before enrolling at the University of California Santa Barbara (UCSB) for graduate school. At UCSB, *Lauren* worked with Professor Steven K. Buratto on atomic-scale mass-selected clusters. She then traveled to the East Coast to perform research with Professor Cynthia Friend at Harvard University examining reaction mechanisms, surface intermediate formation, and the role of defects in surface reactions. In 2009, *Lauren* accepted a position at the University of San Diego as the Clare Boothe Luce Assistant Professor. At this primarily undergraduate institution, *Lauren* teaches inorganic, general, and physical chemistry and maintains a research group which examines how large petroleum-relevant molecules interact with modified oxide surfaces and how effective surface-supported hybrid materials are in the absorption of gas.

Throughout her career, *Lauren* has had several excellent mentors. While in graduate school, Professor Buratto provided guidance in *Lauren's* research project while allowing for scientific freedom which helped her to think critically. Dr. Paul Kemper, an instrument specialist in Professor Michael T. Bowers's research group, taught her the basics of how to design and build research instrumentation which *Lauren* continues to use today in her group. Furthermore, Professor Ram Seshadri encouraged *Lauren* to become involved in international material chemistry workshops which has influenced her current research area. He also continues to be a voice of encouragement.

Lauren's post-doctoral advisor, Professor Cynthia Friend, mentors *Lauren*, particularly on how to improve her writing and honing her critical thinking skills. Now at the University of San Diego, *Lauren* credits her department and particularly Dr. Tammy Dwyer and Dr. Deborah Tahmassebi for their support in her career.

Lauren strives to inspire the love of chemistry and research in her students, similar to Mrs. Sullivan. "I am a big believer in intrinsic motivation—one should do what makes one happy, even if it is challenging!" As the Clare Boothe Luce assistant professor, *Lauren* sends two female students every summer to research experiences at Ph.D. granting institutions. She also hosts book clubs and movie nights on chemistry related media to allow the students to know her on a more personal level. *Lauren* explained that it is rewarding to work with undergraduates and watch them become critical thinkers. As one of the WCC Rising Star Award winners, *Lauren* has demonstrated how the spark from one high school teacher can influence many chemists. Congratulations!

Prof. Elizabeth Jarvo

By Ellen A. Keiter



It was in her high school Advanced Placement chemistry course that WCC Rising Star **Dr. Elizabeth (Liz) Jarvo** first realized her love for the subject. The next big step in her choice of chemistry as a career came at the end of her freshman year

in college when she joined the research lab of Professor Youla Tsantrizos at Concordia University in Quebec as a visiting summer research student. As a result of that experience, she says she was "hooked."

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