Successful Women in Chemistry Series—Continued

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Kathy started college at UC San Diego as a math major with the intent to become a teacher but she loved her honors chemistry class. She changed major twice, first to physics and then to chemistry. She got a summer fellowship at Lawrence Livermore National Lab where she was really interested in the chemistry projects. She spent two summers synthesizing dark purple crystals of vanadium organometallic compounds. The provost of her college, *Dr. Tom Bond*, advised her to seriously consider graduate school.

Kathy got a small fellowship at UCSD to do additional undergraduate research for a quarter but wasn't really interested in the projects. Tom suggested that she considers working with *Prof. Mike Sailor*. At Mike's lab she learned electrochemistry and materials science. Mike was a postdoc for *Prof. Nate Lewis* and this is how she ended up in Nate's group in Cal Tech for graduate school. *Kathy* has been working on electrochemical devices ever since. Coincidentally, *Kathy* came in contact with Proton, her current employer. She loved the company when she interviewed with them and took the leap of faith to move 1000 miles with her family and have had amazing opportunities ever since.

Kathy has been fortunate to have very helpful mentors starting from college. Two of her most influential mentors were Tom Bond and her boss at Proton (until about a month ago) CEO Dr. ***Rob Friedland***. In undergraduate school, Dr. Bond took her under his wing and got her into high level classes. He also helped *Kathy* realize that there are more than one career options available after college. Rob has been the most supportive boss she has ever had by putting confidence in her to be able to handle new projects and roles.

Kathy admits that she often struggles with work life balance. Although she is home for dinner every night, she does a lot of work at home later in the evening. She also travels a lot for work. She tries to talk to her daughters every day after school and spends a lot of time with family during vacations. *Kathy's* family recently went to Europe as a follow on to a business trip and walked all over Germany and Paris.

Kathy's advice for women in chemistry is to always be open to new opportunities and not let fear get in the way of doing what you want. She was often nervous about new things but she did them anyway and usually it more than payed off. Always be friendly and open with people because you never know what might lead to a new opportunity. This is how she got the job at Proton. Take time for yourself and recharge with your friends and family.

Ms. Katherine Kemmann
By Samina Azad

Katie Kemmann is an Analytical Chemist with Sherwin-Williams (SW). She joined SW twelve years ago, starting as an intern and then taking a full-time role. *Katie* received M.Sc. in Chemistry from Cleveland State University. Her current responsibilities include instrumental maintenance, method development, supporting key R&D projects and manufacturing, with a heavy focus in failure analysis.

Katie was introduced to the coatings industry through internships while she was in college. After a couple of internships, she knew she would like working in this industry and sought a full time position with the Analytical Sciences group at Sherwin-Williams. She has been in the same group for twelve years now.

Katie's position is not specific to one type or class of coatings, so she had to learn the chemistries of many resin, pigment, and additive systems along the way. Because new technologies are always being developed, the learning process never ceases. Developing and maintaining a solid foundation of coatings chemistry is a challenge. The learning habits she developed at college allow her to pick new things up quickly. The techniques she uses in her role were not taught in school. She learned most of these on the job, and sometimes under stressful circumstances.

Katie is knowledgeable in a variety of instrumental techniques. Her favorite technique is spectroscopy and she also enjoys thermal analysis and elemental analysis. She gathered experience and skills in these techniques in a unique combination that allows her to support research and development in coatings. It is very rewarding to be able to learn new things constantly and tackle increasingly difficult technical scenarios. *Katie's* management team looks to her as a key problem solver.

Katie had mentors at each of her internship positions. Mentors played an important role specifically by helping her understand the job opportunities for chemists. Mentors shared their career experiences with *Katie* and guided her in the job search process. Because of this, she was able to find a role that she enjoys. Once she was hired full time, many colleagues volunteered their time and energy to teach *Katie* the role. Although they were not official mentors, she still looks to them for advice and guidance. *Katie's* colleagues wanted her to learn from their best practices. Through all the training and coaching, *Katie* has become a dependable and trustworthy

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team member with exceptional problem solving skills and capability to produce high quality results.

Katie takes each day at a time so that she can balance work and life. Priorities constantly change and being prepared helps to ease stress. She says, "You simply have no control over some matters and must trust yourself to handle them the best way possible. With two young children, a husband, a dog, and a career to balance takes some logistics - but *Katie* wouldn't change it. She tries to keep home life relaxed and does not over plan weekends and evenings. Katie says, you really need the down time, especially with family. Her husband Matt constantly reminds her to slow down and enjoy the simple things in life. She gives most of the credit for balancing her life to her family. Simple things make her happy, like going for ice cream together, a quiet dinner, or taking her dog for a walk.

Katie's advice for women in chemistry is that you will have to navigate through personalities, prejudices, etc., regardless of which job you choose. However, if you love what you do and you give it your best, obstacles somehow seem less formidable and a lot of times they simply work themselves out. Don't be afraid to step out of your comfort zone and learn something new, get an additional degree, or train to run a half-marathon! You will be surprised what you can do when you challenge yourself, and what you learn about yourself in the meantime.

Dr. Nicole Crane
By Lisa Houston

Dr. Nicole Crane, 2014 Rising Star Award Winner, received her B.S. in Chemistry from Kutztown University (Pennsylvania) in 2000. She then headed to Ann Arbor to attend the University of Michigan where she received a Ph.D. in Analytical Chemistry in 2004. After graduation, she completed two Post docs, one as a Visiting Scientist in the Counterterrorism and Forensic Science Research Unit at the FBI Academy in Quantico, Virginia and one for the National Institute of Diabetes, Digestive and Kidney Diseases (NIDDK) at the National Institutes of Health in Bethesda, Maryland. Each of these provided *Nicole* with the opportunity to develop her skills in applied spectroscopy and imaging.

Nicole began her independent career at the Naval Research Center in Bethesda, Maryland applying her analytical and spectroscopic expertise in 2007. After one year, she decided to see if the "grass was greener" somewhere else and took a position at Wyeth Pharmaceutical as the Analytical Development Manager. There she applied FTIR spectroscopy, near-infrared spectroscopy, and Raman spectroscopy to characterize raw materials, drug substances, and drug products and developed spectroscopic models for at-line and in-process monitoring. After less than a year on the job, Wyeth was purchased by Pfizer and Nicole decided to return to the Naval Research Center.

Nicole's research centers on development and utilization of spectroscopic techniques including Raman and FTIR spectroscopies and visible reflectance imaging to improve the understanding of wound healing, particularly traumatic acute wounds, as well as identifying and quantifying transplant associated ischemia and reperfusion injury. She initiated the Advanced Surgical Imaging Program within the Regenerative Medicine Department for the U.S. Navy and developed new technology to further evolve research projects. In addition, she has been an Associate Professor at the Uniformed Services University of Health Sciences since 2011. She is a big believer in trying to make the world a better place and her drive comes from knowing that her work may one day change a patient's life for the better.

Nicole feels that hard work, ambition and support from her mentors have gotten her where she is today. She feels very fortunate to have had some stellar mentors – people that have believed in her and pushed her to succeed – including her mother and grandmother and a number of undergraduate and graduate advisors. In fact, her advice to other women in chemistry in something her mother always told her – the sky is the limit! *Nicole* also advises to not be afraid to go after what you want. No one is going to hand it to you – when the opportunity arises, grab it and hold on tight.

Dr. Michelle Claffey
By Lisa Houston

Great chemistry teachers in high school and college and her chemistry aptitude inspired 2014 Rising Star Award Winner ***Dr. Michelle Claffey*** to pursue chemistry further. *Michelle* grew up in Connecticut and attended Bates College in Lewiston, Maine where she graduated magna cum laude with a B. S. in Chemistry in 1994. As an undergraduate, she worked three summer internships at Pfizer as a medicinal chemist which exposed her to hands-on organic synthesis in a research environment. The practical application of organic chemistry sparked her desire to focus on organic chemistry at the graduate level. She attended the University of California at Berkeley where she did her graduate research in natural product synthesis.

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