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Raquel Rozner, BS biochemistry ’13, works in the research lab of Professor Eriks Rozners.
After an unusually mild winter in Binghamton, the spring 2012 semester has finally wrapped up in the Chemistry Department in Binghamton University’s Harpur College. Students, faculty and staff are working feverishly to bring the semester to a successful close, and this newsletter gives me an opportunity to reflect on what we have accomplished. As nearly 100 chemistry and biochemistry undergraduate majors and another eight PhD students will receive their degrees on May 19 and 20, it has clearly been a productive year. It is especially nice to see that many of our students have been recognized with awards this year and several of those are profiled in this newsletter.

The research operation of the department continues to be strong with undergraduates, graduate students and visiting scientists actively involved. In January, the National Science Foundation ranked our funded research 80th of the 350 programs it reviewed from 2010 data. This represents a significant improvement and reflects positively on all of the efforts that our faculty and students have made in maintaining active research programs. To assist this growth, we have been expanding our biological chemistry program and participating actively in the NYSUNY 2020 energy initiative that was received positively by the governor in April. These future directions for the department will be a foundation for us to continue to grow.

Renovations in the department are becoming more common these days. We are now in the middle of a $12 million renovation of the teaching laboratories. In addition, we are completing renovation of a research lab on the third floor of Science 2, which will house the new research program of our newest faculty addition, Ming An. We have also hired a new biochemist, Brian Callahan, who will join our program this fall.

Given the importance of research in the department, we also continue to emphasize opportunities for research for our undergraduates. Inside, you will read about a generous gift by Lee Guterman ’81 and Lisa Benson ’81, MA ’83, in creating the Michael Starzak Undergraduate Summer Research Fellowship. This is a complement to the existing graduate research fellowships named in memory of professors Keith Innes and Cliff Myers. Building on this leadership gift, we are creating a more organized program for undergraduate students interested in continuing their research during the summer. If you are interested in contributing to this program, or you have other ideas on how we can create new and more varied opportunities for our undergraduate and graduate students, I would love to hear from you. Please contact me by e-mail at wjones@binghamton.edu.

If you have the opportunity to visit campus, please let us know. We would welcome the chance to see you again.

Wayne E. Jones Jr.
Professor and Chair
Department of Chemistry
Gene Nolis, who will receive his bachelor of science degree in chemistry May 20, received the Provost’s Award for Excellence in Undergraduate Research in April, one of only two awarded at Binghamton University. A member of Professor Stan Whittingham’s research group since his sophomore year, Nolis has worked on understanding the thermodynamic stability of a class of material that is a key component of many lithium batteries.

Nolis published this work in the Materials Research Society Proceedings in 2011. He has presented five research papers and three poster presentations before statewide and national audiences. A paper given at the Western New York American Chemical Society Chapter Annual Student Symposium in 2011 earned him the award for most outstanding oral presentation.

Last summer, he worked at the Lawrence Berkeley National Laboratory under a Department of Energy internship. His research project focused on the design of materials for higher energy density batteries. He worked for the Northeast Organic Farmer’s Association of New York as a summer intern in 2010, and then as a part-time materials reviewer. He obtained information on the materials organic farmers would potentially use in crop and livestock production and evaluated these ingredients for compliance with USDA National Organic Program Standards.

Nolis will enter the European Commission’s ERASMUS MS program in energy and materials. During this two-year program, he will take classes at three different universities in three different countries — France, Poland and Spain — then conduct research for six months.
At the SUNY Board of Trustees meeting on May 10, Professor M. Stanley Whittingham was promoted to the rank of distinguished professor. In his more than 30 years at Binghamton, Whittingham has been a pioneer in the development of lithium ion batteries and an inspiration to the next generation of chemists and materials scientists. With more than 200 publications in leading scholarly journals and 16 patents, he has earned an international reputation as a prolific and truly innovative scientist. His research in the area of synthesis and characterization of novel transition metal oxides for energy storage and conversion, separations, or as sensors has been continuously supported since his arrival in Binghamton with more than $7 million in federal research grants from the National Science Foundation and the Department of Energy. His world-leading work in the development of materials for batteries emphasized novel approaches to synthesis, solid-state characterization and unique molecular design.

Congratulations Stan!

Teaching lab renovations

The Chemistry Department’s newly renovated teaching labs are substantially improved over the original Science 2 labs. With new benches, hoods and state-of-the-art equipment purchased with support from alumni, students gain hands-on experience in modern lab spaces.
Lee Guterman ’81 and Lisa Benson ’81, MA ’83 are grateful for the opportunities that became available to them because of their chemistry education at Binghamton University. Wanting to give back, they made a generous contribution to the department to establish the Michael Starzak Undergraduate Summer Research Fellowship.

Guterman earned his bachelor’s degree in chemistry from Binghamton before moving on to earn a PhD and MD in neurological surgery. Benson earned bachelor’s degrees in chemistry and history at Binghamton before completing a master’s degree in chemistry. Guterman followed her to medical school in Buffalo, and both have had distinguished careers as physicians.

The Starzak Fellowship provides research support to an undergraduate student to stay in Binghamton’s chemistry department over the summer, participating in intensive research groups. The award recognizes the many contributions that Starzak made during his 30-plus-year career at Binghamton University; he is a physical chemist and retired in 2010.

Guterman and Benson were on campus in April for the Chemistry Department’s colloquium when they met Alex Berg, the first recipient of the Starzak award.

“We were thrilled to meet the recipient. We hope his experience is as rewarding as the time we spent doing research here. That research provided us with the tools to advance our scientific careers. The thought of helping to provide that opportunity for others while honoring Dr. Starzak makes this a home run.” — Guterman

From left to right: Michael Starzak, Alex Berg, Lisa Benson ’81, MA ’83, Lee Guterman ’81
Three chemistry majors were in the group of students who received a 2012 Graduate Excellence Award.

Robert Congdon, a PhD student working with professor Omowunmi Sadik, describes service as generosity, compassion and action, and he believes it is important to leave things better than when you found them. He has served the American Chemical Society as symposium chair, been a representative to the Graduate Program Committee, mentored undergraduate students conducting research in chemistry and served as president of the Graduate Chemistry Club, where he worked to make the club more inclusive. On campus, he has advised large numbers of students, and in the community he has coordinated technical events for the regional Science and Chemistry Olympiads, been a National Lab Day volunteer in local elementary schools and coached swim teams for youngsters.

With an emphasis on motivation, maturity and diligence, Naumih Noah, a PhD student working with professor Omowunmi Sadik, is already making substantial contributions in the areas of analytical and environmental chemistry. She has authored four peer-reviewed publications and co-authored another four, and she has made seven conference presentations. Her current research, based on the development of biosensors for monitoring pain and cancer biomarkers, is “pioneering,” say her nominators, and has revealed new physical insights into the concepts of managing pain in the human body. She received a National Science Foundation award to travel to the University of Western Cape, South Africa, for research.

Paul Tanui, a PhD student working with professor Eriks Rozners, has a talent for teaching and mentoring undergraduates in laboratory settings, providing opportunities for them to employ critical-thinking and problem-solving strategies that allow them to acquire lifelong-learning skills. He expertly handles the logistics of running lab courses, pays attention to students and their problems, and uses his knowledge of experimental techniques, organic chemistry reactions and mechanisms in a way that guides students to success in the lab. His nominators write that he has also played a central role in development of an experimental, advanced organic laboratory course. His students write that he explains the labs “in a clear, understandable manner,” and when students encounter problems, he challenges them to think for themselves.
Graduating senior Lili Karam has immersed herself in chemistry at Binghamton University. “I knew that I wanted to be a chemistry major in high school,” she says. “I had originally wanted to do something in the arts, but after taking general chemistry my junior year, I developed a strong interest in the subject. I knew it was what I wanted to do.” She came to Binghamton because of its great reputation, which was borne out by her experiences here. “In high school, I wasn’t involved in many extracurricular activities, but something in Binghamton sparked an interest in me,” she says. “I started working in the chemistry stock room in my second year, as well as being a TA and doing research. It was a very comprehensive education for me, because I would sit in class and learn the material, put it into practice in the lab and then help teach it to the students.”

Karam also served as vice president and president of the Undergraduate Chemistry Club, is a member of the American Chemical Society and is a student representative on the Chemistry Department’s Undergraduate Program Committee.

“Binghamton’s chemistry program is special because even though a fairly large number of students move through the program, it’s easy to become close with the faculty and staff.”

Karam expects to remain in academia after earning her doctorate in chemistry from Syracuse University. “Everyone talks about the teachers and professors who helped shaped their lives, and I would really like to be one of them,” she says. “Having been inspired to do chemistry by my teachers, I hope that I would be able to do the same for my own students.”

SAVE THE DATE: August 20, 2012

At the American Chemical Society meeting in Philadelphia, we will host a Binghamton University Science Alumni reception from 5 to 8 p.m., on Monday, Aug. 20. The exact location has not been assigned through the ACS office at this time. We will post details at binghamton.edu/chemistry once they are finalized. If you are in the area, please plan to join faculty, current students and fellow alumni at this event.

BE ENGAGED — MAKE A DIFFERENCE

We invite you to stay connected to your alma mater as an alumni volunteer. Find out more about how you can become involved at binghamton.edu/alumni.
Justin Colon, 6, of Vestal, learns how to operate a calculator using electricity created by the electrolytes of an orange from chemistry major Dan McCurry at Advocacy Day at the Oakdale Mall, as Colon’s mother, alumna Angela Topolovec-Colon ’96, looks on.