



The Schlieren

Winter 2008

NEWS

- Dr. Paul Craig will be sending 3 students from the RIT Proteomics lab to the annual meeting of the American Society for Biochemistry and Molecular Biology in San Diego, CA, April 5-9, 2008. Laura Filkins and Jamie Lou Mallonga are majors in the Chemistry department and will be presenting their results in a continuing effort to identify biomarkers for mutagenesis in *P. putida* KT2440. Scott Mottarella (Bioinformatics) will be presenting his work on developing a universal scripting interface for molecular visualization programs. All three will participate in an undergraduate poster competition on Saturday, April 5, and will also present their posters during the regular scientific sessions at the meeting
- As a continuing effort to keep our department state-of-the-art and on par with our drive for scholarship, the department recently purchased two UV-VIS instruments, a thermal gravimetric analyzer (TGA), a differential scanning calorimeter (DSC), an LC-MS, a differential mechanical analyzer (DMA) and an auto-sampler for our existing GC-MS.
- Brenda Mastrangelo was recently promoted to academic advisor. If you get the chance, stop by and wish her congratulations. It was long overdue given all her dedication and hard work for our department. Go Brenda!
- Marc O'Donnell '08 presented his research at the inaugural Commission on Independent Colleges and Universities Undergraduate Research Exposition on January 22nd, 2008. This meeting promoted strong undergraduate research to the New York State Assembly men/women. Marc met with his assemblyman from his home town while he was there.
- ChemClub will be painting a mural in the Chem Lounge very soon. If you'd like to help out, email us and let us know so we can contact you as to which Saturday we plan to embody Picasso!

Alumni, Faculty and Students Working Together

Combine the opportunity to work in a team with faculty, staff, and alumni with a project that could dramatically improve energy efficiency and you've got the makings of a rich and fruitful research experience. It all started with Ken Reed, a 1971 undergraduate of RIT's Chemistry Department. After obtaining a Ph.D degree in Physical Chemistry from Stanford University in 1975, he joined the research laboratories of Eastman Kodak Co. His 30 year career there



(from left) Laura Herder, Lea Rubin, Katie Poole

focused on the reaction chemistry and precipitation of nano-particles and micro-emulsions and resulted in 24 patents and induction into the Kodak Distinguished Inventors Gallery. Over the last two years he and Mick Stadler spun out a nano-catalyst company, Cerion Energy, from RIT's business incubator, Venture Creations. The project involves the development of a diesel fuel additive using nano-particles that greatly improves energy efficiency. Additionally, the group is working on a modified lube oil that will reduce engine wear and improve fuel economy.

In order to develop his product, Ken reached out to RIT faculty and students. Currently, three of our majors are involved on this project: Lea Rubin, first-year environmental chemistry major; Laura Herder, third-year chemistry major; Katie Poole, second-year biochemistry major.

Ken stated that one of the most rewarding experiences of his career has been the recent interactions with RIT's College of Science faculty and staff, as they do the research necessary to bring Cerion Energy's products to market. To read more about this collaboration, check out the most recent issue of The University Magazine (Winter 2007-08).

Word In The Hood

Sidney Coombs: BS '11 Chemistry

Mentor: Dr. Chris Collison

Research: "The uptake of Nile Red by conjugated polymer nanoparticles"



Sidney Coombs is only a first-year student and she's not only conducting independent research already but is also getting involved in a variety of other activities across the RIT campus. Sidney is in the Honors Program, works on the weekends, serves on an Honors committee, is a member of the RIT Singers, and is in the RIT Pep Band. Needless to say, it was hard to catch her for this 15 minute interview!

Sidney hails from Canaseraga, NY. She visited RIT as a senior in high school and immediately knew this was where she wanted to be. For four weeks prior to first-year orientation, Sidney participated in the Summer Research Scholars Program. The program involved participating in a scientific literature course and beginning a research project in her chosen area of chemistry. Sidney was paired with Dr. Chris Collison and began work on a physical chemistry project.

Sidney has continued her research throughout the academic year in Dr. Collison's lab. She is working with

fluorophore Nile Red to determine whether the uptake into the polymer, poly fluorine (PFO), can occur. She has already used a UV-Vis, a fluorimeter, and an AA spectrometer—instruments students don't normally touch until their second year! This research may help in understanding how polymer nanoparticles, embedded with fluorophores, factor into molecular transport. Complicated!

When asked about her future plans, Sidney says she sees herself happy. Anyone that knows her cannot deny this—she always wears a smile. A lover of student life, Sidney shares her favorite quote, "I should like to go on forever learning."

-Stephanie Dorn BS '08

Faculty Spotlight: Dr. Paul Rosenberg



In July 2007, Dr. Paul Rosenberg became the new head of the chemistry department. Dr. R graduated with a bachelors degree from Bridgewater State College in 1977 and then earned his PhD at the University of New Hampshire in 1981. He joined the RIT faculty in 1981, then left for industry in 1989. He rejoined the RIT faculty in 2000 and has been with us ever since. Now with the summer and one full quarter under his belt as department head, it was time to talk. Never at a loss for words, here's what Dr. R. had to say:

What is your favorite aspect to your new appointment as chair? Getting to work with the students more. **What element best describes your personality?** Iron, because it's not very fancy but it is a common structural support-type material. **What are some of your hobbies?** Spending time with the grandchildren and reading. **What is your favorite class to teach at RIT?** Chemical Separations because it's the area of chemistry I enjoy the most and it's an important area of industry. I also get a chance to work with a wider variety of students as opposed to strictly chemistry students. **What are some words of advice you would give to incoming first year students?** Take full advantage of the chemistry program and work hard in your studies. **If you could be anything other than a chemist what would you be?** A high school teacher.....you didn't say I couldn't be a teacher! **What is your favorite feature on your PDA?** It reminds me that I have to be places. **If you won the lottery what would you do with the money?** Share it with my kids, save for retirement and perhaps travel a bit more. **What was your most amusing teaching experience?** One day a student fell asleep in my instrumental analysis lecture and I told a story about an AA blowing up and I purposely yelled BANG! The kid almost fell out of his chair.

-Jennifer Swartzenberg '09

Where are they now?

Karen L. Warren received her BS ('74) and MS ('79) in Chemistry from RIT. She is currently Technical Leader of Systems Verification and Validation within R&D at Ortho Clinical Diagnostics, a Johnson & Johnson Company. Career highlights include the development of over fifteen thin film assays utilizing ion selective electrode, colorimetric, enzyme rate, and competitive binding immunorate techniques. Currently she is specializing in the

verification and validation for FDA clearance of high speed random access blood analyzers. She has numerous patents and publications. She is married to her husband Skip (see below) and has one daughter, Jane (RIT, COB '05) and one son, Matt.

Harold C. (Skip) Warren received his BS ('74) and MS ('79) in Chemistry from RIT. He is currently Director of Women's Health and Cardiology within R&D at Ortho Clinical Diagnostics, a Johnson & Johnson Company (OCD). Career highlights include the synthesis of numerous novel compounds used in detection systems in various thin film chemistries, the establishment of protein chemistry and nucleic acid labs within OCD, and the establishment of a reagent process engineering group. Skip's most recent accomplishment is the development of the first commercial assay for Chagas disease to be used for the screening of blood donations in the US. He has over thirty US patents. He is married to his wife Karen (see above) and has one daughter Jane (RIT, COB 05) and one son Matt.

Chemical Humor

Q: If a mole of moles were digging a mole of holes, what would you see?

A: A mole of molasses.