



# Mudd In Your Eye

Newsletter of the Department of Chemistry, Lehigh University

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*“Great importance is given to chemistry as an elementary branch of learning.” — Lehigh Register 1866*

## DEPARTMENT FACULTY RECOGNIZED FOR EXCELLENCE

Associate Professor Natalie Foster and Assistant Professor Tianbo Liu were recognized for excellence at the annual Lehigh faculty dinner on May 3. These awards are generated by independent nominations at the administrative level and are determined by a faculty committee. Foster received the Christian R. and Mary F. Lindback Award for Distinguished Teaching, the second chemist to be so honored since the award was first established in 1961. (Retired Professor Charles S. Kraihanzel received the award in 1993.) The award is presented annually to a senior member of the faculty for “distinguished teaching during the academic year.”

Foster admits being very surprised when she learned of the award. “But,” she adds, “we are all very lucky. We get to come to a place and do what we love. Quite frankly, that’s enough, but to have an acknowledgment of what one does from other practitioners is very satisfying.”

The Eleanor and Joseph F. Libsch Early Career Research Award was presented to Tianbo Liu of the chemistry department and Nelson Tansu of electrical and computer engineering. Initiated in 2005, the award highlights faculty members who are early in their research career, rewards those who have demonstrated the potential for high-quality research and scholarship done at Lehigh, and places research and scholarship on an equal footing with teaching and university service in the annual University awarding of recognition.

As Liu explains, the Sloan Fellowship (see accompanying article) was a competition among chemist and science-related disciplines nationwide. The Libsch Award was a competition among junior faculty across all disciplines within the university. He considers the recognition by the University “very important” to have as it establishes that his work among his local colleagues was worthy of recognition.

## TIANBO LIU AWARDED SLOAN RESEARCH FELLOWSHIP

The Alfred P. Sloan Foundation has selected Assistant Professor Tianbo Liu as a recipient of a 2008 Sloan Research Fellowship. It is the first time in the 53-year history of the award that a member of the Lehigh faculty has received this honor in any of the seven eligible fields—chemistry, physics, mathematics, neuroscience, economics, computer science, and computational and evolutionary molecular biology. Sloan Research Fellows

on campus who received the award before coming to Lehigh include interim vice provost for research Bruce Koel and Huai-Dong Cao, A. Everett Pitcher professor of mathematics.

In recognizing Liu and 117 other awardees from 64 academic institutions, Foundation president Paul L. Jaskow said, “The Sloan award is only given to support the work of exceptional young researchers early in their academic careers, and often at pivotal stages in their work.” Lehigh Chemistry Department Chair Robert Flowers adds, “The Sloan award is a clear

recognition of the impact and importance of Tianbo’s work. His ability to succeed at such a high level shows that first-rate science is being done at Lehigh.”

For Liu, the recognition of a junior faculty member by the chemical community at large and the Sloan award committee of distinguished chemistry professionals is a valuable indication that his research is making a significant contribution to the body of knowledge of chemistry.

Liu was awarded a National Science Foundation Career Award grant two years ago (see *Mudd in Your Eye* No. 31, July 2006). His research focuses on understanding the solution behavior of macroions which form a single-layer, hollow, spherical structure he has named a “blackberry.”



*Natalie Foster and Tianbo Liu share a moment with Frederick M. Fowkes (Chemistry Department Chair 1968 – 1981) in the Mudd Lobby.*

“They represent,” Liu says, “a new area of research connecting the traditional areas of simple ions with the larger particles like colloids.”

Liu will use the two-year \$50,000 Sloan grant to help expand his research from inorganic macroions to biological macroions. “Many important biomolecules like proteins and DNA are also macroions and therefore they should follow the same rules,” Liu predicts. “The unique behavior of macroions might be critical for many biological functions, even the evolution of life,” he adds.

Liu’s research group is still expanding. Currently, there are three senior research fellows; a new post-doctoral fellow and a visiting research scientist will be added this summer. Four graduate students are in Liu’s group, but he hopes to increase that number up to eight, since education is the mission of the department. Six undergraduates, mostly Lehigh students, start their work during the academic term, so they either get credit or a stipend for their research. “They help a lot,” Liu says, “and some of the Lehigh students are extremely good.” As an example he cites the work of Anish Bhatt, who worked two summers and part of the academic year and coauthored several important papers in the *Journal of the American Chemical Society* and *Physical Review Letters*.

Managing a large research group requires good organization and a layered hierarchy of supervision, although exceptional undergraduates may be given independent study. Liu emphasizes to his students through weekly group meetings and a “journal club” that it is important to not only understand your own field but also related fields. Liu says he greatly appreciates his students and his postdoctoral associates “for their hard work and continuous high motivations in pursuing these fundamental research projects” and the important help provided by his chemistry department colleagues.” For more information see the web page of Liu’s research group at <http://www.lehigh.edu/~inliu/>.

## FLOWERS RECEIVES ENDOWED CHAIR

Chemistry Department Chair Robert A. Flowers II has been awarded the Danser Distinguished Faculty Chair in Chemistry. The Distinguished Chair is awarded for excellence in research, teaching, and service. In making the announcement, College of Arts and Sciences Dean Anne Melzter said, “In addition to advancing the field of chemistry, Bob’s distinguished record of research provides both national and international visibility to the department and the university and has played a significant role in the growth and development of the chemistry department. Bob’s excellence in research is matched by his dedication to teaching and mentoring both undergraduate and graduate students in research. Bob truly exemplifies the teacher-scholar, the model for all faculty at Lehigh. Since joining the faculty in 2003, Bob has served as department chair of chemistry. He has worked tirelessly and exhibited outstanding leadership to renew and grow the department. Bob is exceptionally deserving of this award.”

## CHAIR’S MESSAGE

The Department is off to a great start in 2008. In February, we learned that Tianbo Liu was awarded a prestigious Alfred P. Sloan Research Fellowship. Tianbo joins a list of 118 outstanding young scientists, mathematicians and economists representing 64 colleges and universities in the United States and Canada who were named fellows for 2008. His ability to succeed at such a high level shows that first-rate science is being done at Lehigh and this award will allow us to continue recruiting outstanding faculty to the Department. In April, Natalie Foster received the Christian R. and Mary F. Lindback Award for Distinguished Teaching and Tianbo Liu received the Eleanor and Joseph F. Libsch Early Career Research Award. Both were honored for their achievements at the annual faculty dinner in May.

During the past spring, the graduate admissions and advisory committee chaired by Greg Ferguson initiated a summer undergraduate research program with the assistance of CESAR Fellows in the Department. In this collaborative program, visiting undergraduate scholars are co-mentored by a faculty member and a retired industrial or academic chemist. The National Science Foundation (NSF) funded a portion of the program to study this approach for mentoring young chemists and Greg is spearheading the submission of a full proposal to the NSF this summer. We now have over twenty undergraduates carrying out research in the Department this summer. Our graduate program is steadily growing as well and we will have over forty graduate students on campus during the upcoming academic year.

While the highlights above are intended to give a snapshot of recent events, the faculty is continuing our tradition of excellence in research and teaching and we are very excited about the recent progress in the Department.

As always, I thank all of you for your letters containing updates and news. We enjoy hearing from our alumni and friends. Please don’t hesitate to stop by and visit on your next trip to the university.

—Robert A. Flowers, II



Vahan S. Babasianian, Prof. of Organic Chemistry, 1905 – 1939. Photo taken by R. D. Billinger in 1926.

## ALUMNI NEWS

Two Lehigh chemistry alumni were recently named by the American Chemical Society to the Editorial Boards of two technical journals. **Diane Harris Boschelli** (B.S. 1977) and **Guy T. Carter** (B.S. 1971, Ph.D. Univ. Wisconsin 1976) were appointed respectively to the boards of the *Journal of Medicinal Chemistry* and the *Journal of Natural Products Chemistry*. Both Carter and Boschelli are employed by Wyeth Pharmaceuticals in Pearl River, NY.

Two Lehigh doctoral graduates presented their research at the 16th Biennial Conference on Medical Defense Bioscience held 2–5 June 2008 at Hunt Valley, MD, under the sponsorship of the U.S. Army Medical Research and Materiel Command. **George Famini** (Ph.D. 1999) was a co-presenter of a poster on “The Chemical Security Analysis Center Assessment of the Hazards of Chemical Terrorism.” Maurice L. Sipos (Ph.D. 1995) was co-presenter of a poster on “Repeated Exposures to Low Levels of Nerve Agents.” Famini and Sipos are employed in military research by the U.S. Army at its Aberdeen Proving Ground in Maryland.

**Gary Calabrese** (B.S. 1979, Ph.D. MIT) has left his position at Rohm and Haas to join Corning, Inc. as vice president of science and technology. He is quoted in the recent American Chemical Society annual report, “Chemistry is changing in that it used to be that new discoveries were more easily turned into solutions to problems. Today, new discoveries such as nanotechnology seem to be waiting for problems to solve. This means that today’s chemist or engineer has to be more in tune with the problems than ever before, so that whatever discoveries are made can ‘find a home’ as a solution as quickly as possible.”

**Tracy Holbrook** (M.S. 2008) is the Chemical Technology Lead Instructor at Cape Fear Community College in Wilmington, NC. She is in charge of the program, textbook ordering, laboratories, lectures, and other part-time and full-time lab tech employees. “Our program trains students to become lab techs in pharmaceutical and industrial settings. We give them experience on AA, AE, UV/VIS, GC, HPLC, IR, automated titrators, and other analytical instrumentation used in the field. My experience with Lehigh was extraordinary!”

**Angie Mendel Hunter** (M.S. 1999) returned to her position at AstraZeneca after being on maternity leave for six months. She reports that AstraZeneca has excellent maternity benefits, and when she returned part-time with day care on site, “it was the best of both worlds.” Two weeks after giving birth to Grace Catherine, Angie and her husband Jeff moved into a new house in Mickleton, NJ.

**Louis Jany** (B.S. 1972) is currently the Senior Manager of Quality for Essroc Cement Corporation at the Corpo-

rate Office in Nazareth, PA. He has been in the cement industry since graduation and has worked at several companies as a plant chemist, quality manager, new product development manager and production manager. For the last ten years he has been working in Essroc's Corporate Office (Division of Italcementi) as Corporate Quality Control Manager and for the last two years overseeing all of the quality operations of our ten North American manufacturing facilities. Jany is a member of ASTM C1, C9 and C12 committees, the program chairman for the International Cement Microscopy Association and the President of Saylor Cement Preservation Society. He is also a member and past chairman of Whitehall Township's Zoning Hearing Board.

**Lucius Kemp** (M.S. 2001) has relocated from a position in Tech Sales for ChemSpeed Corporation (Monmouth Junction, NJ) to a position as Product Specialist in Applied Informatics for Mettler-Toledo Corp (Columbia, MD). Lucius is a software specialist who works with academic and industrial analytical chemists in the collection and treatment of data from multiple laboratory instruments.

**Sandra Kopp** (B.S. 2003, M.S. 2004) graduated from UMDNJ (University of Medicine & Dentistry of New Jersey)-Robert Wood Johnson Medical School this year and will be doing her internship at St. Vincent's Hospital in New York City and then her dermatology residency at UMDNJ-RWJMS Camden, Cooper University Hospital starting in 2009.

**Brian Kozlowski** (M.S. 2005) and **Christopher John** coauthored “Specialty Automation Groups and Implementation of Automated Dissolution” in *American Pharmaceutical Review* **2008**, *11*, 51–55. Kozlowski is a Lehigh distance ed graduate and John is still enrolled as a distance ed graduate student. Both are at Merck West Point.

**John Kuchna** (M.S. 1989) spent eighteen years in the pharmaceutical industry, starting with Pharmacia, where he was in regional and national operations management, and transitioned into Director of U.S. Training. He continued that expertise with Yamanouchi Pharmaceuticals as Head of U.S. Training, developing and facilitating corporate curricula for sales representatives and management. Based on this experience, Kuchna has started Strategic Outcomes ([www.strategicoutcomes.com](http://www.strategicoutcomes.com)) which specializes in the curriculum development for representatives, district managers and regional directors in the pharmaceutical industry.

**Jeffrey LaGrassa** (B.S. 1994) was recently promoted to Principal Research Technician at Air Products and Chemicals, Inc. located in Allentown, PA. He celebrated his tenth anniversary with the company in November of last year. As a member of the Process and Separations

group, he supports research activities in transport-driven processes such as heat transfer, mixing and dispersion, and formulations for various chemical product lines. He was married in June, 2005, and he and his wife Alicia make their home in West Lawn, PA.

**Elyse MacDonald** (M.S. 2004) graduated in May with a Pharm.D. from Creighton University (Omaha, Nebraska) and assumed a Pharmacy Practice Residency at the Philadelphia Veterans Administration Medical Center. Elyse is also teaching pharmacy part-time at the University of the Sciences in Philadelphia.

**Robert A. Outten** (Ph.D. 1987), now in Regulatory Affairs at Sandoz, had a paper published in *Angewandte Chemie International Edition* ("Reagent directing group controlled organic synthesis: total synthesis of (R,R,R)- $\alpha$ -tocopherol," **2007** 46(45), 8670–8673, with Christian Rein, Peter Demel, Thomas Netscher and Bernhard Breit). Based on work he did long ago at Roche, his use of a palladium catalyst to form the chroman ring and which eventually led to Vitamin E was an idea that developed from his Ph.D. research with Doyle Daves at Lehigh.

**James Peers** (M.S. 2006) was a research chemist at Sanofi-aventis Pharmaceuticals in Bridgewater, N.J. and is now in medical school at Nottingham University in the U.K.

**Kerry Riffel** (Ph.D. 2007) and her husband Don welcomed the birth of their first child, a 9 lb 10 oz daughter named Laura Evelyn Riffel, on 27 March 2008. Kerry is a research chemist at Merck West Point.

**Richard Wyne** (B.S. 2006) is now in the dental school at the University of Maryland, class of 2011.



*Purification of Mercury  
Display at a chemistry department open house  
April 20, 1934*

## IN MEMORIAM

**William E. Adams** (Ph.D. 1976) died of sudden cardiac arrest at his home in Bradford, MA, on March 2, 2008. He was born in Red Bank, NJ, on December 22, 1945, to the late William and Mayflower Adams and grew up along the New Jersey shore. A graduate of Bucknell University, he earned his Ph.D. in organic chemistry at Lehigh with a



*Photo courtesy  
Lorraine Adams*

thesis on "Derivatives of alloxan as potential pancreaticotropic agents."

After a postdoctoral position at Dartmouth Medical School and two years as a research chemist in the radiochemical field, Adams joined the Salem State College (Salem, MA) faculty in 1980. He taught general, organic and biochemistry courses, served as chair

of the Department of Chemistry and Physics for one two-year term, and was Professor of Chemistry there at the time of his death. Bill met his wife Lorraine through a Lehigh friend as he was doing post-doctoral research at Dartmouth. Married in 1978, Bill and Lorraine lived in their home in Bradford, working hard to update their 1880s Queen Anne farmhouse. Adams was an active member of the American Chemical Society and regularly traveled and accompanied students to scientific meetings. The Department of Chemistry and Physics at Salem State has established the William Adams Award, presented to the most outstanding junior student studying biochemistry. The first recipient named for 2008, Joseph Baglieri, will receive an all expense-paid trip to a Northeast Regional ACS Meeting. In addition to his wife, Adams is survived by two daughters, Elizabeth and Emily.

**Michelle M. DeMenno** (B.S. 1977) died on March 30, 2008 in Lehigh Valley Hospital. She was born in Fountain Hill, PA. in 1956, the daughter of the late Theodore C. and Theresa H. Csuk Sattler. DeMenno was a graduate of the Wilson Area High School and was in the third class of women to enter Lehigh after it became coed in 1971. She did an undergraduate research project in organic analysis and upon graduation joined the research staff of Air Products and Chemicals as an analytical chemist. With increasing family demands she committed her energies to raising her four children (Christopher, Jonathan, Michael and Katherine) who survive her, as well as her husband Don.

## NEW ALUMNI – CLASS OF 2008

### PH.D. CHEMISTRY

**Joseph Anthony Teprovich, Jr.** – *Dissertation:* The Reactivity of Samarium (II) Complexes.

**Chunli Zhao** – *Dissertation:* Operando Spectroscopic and Kinetic Study of the Selective Oxidation of Propylene to Acrolein Over Well-Defined Supported Vanadium Oxide Catalysts.

### PH.D. PHARMACEUTICAL CHEMISTRY

**George Che Ngwa** – *Dissertation:* Chromatographic and Electrophoretic Nano-Regime Analysis and Separation of: (A) Benzodiazepines in Oral Fluid and (B) Gold nanoparticles in Solution.

### M.S. CHEMISTRY

Melanie Dawn Gilliland Anderson, Shawn R. Branning, Jatin Prakash Gupta, Melissa Francine Hamm, Peter J. Harrison, Tracy Lonzie Lee Holbrook, Jin Woo Lee, Lily Liu, Nouredine Maher, Amber Rae Mantz, Brian Christopher Marks, John Edward Martin, John R. Nicholson II, James William O'Brien, Joseph M. Pigga, Amelia Lucia Rothrock, Daryl Alanna Scherzer, Kelly-Ann Sondra Schlegel, Corinne Cheryl Stobbe, Kyle C. Wagner.

### M.S. PHARMACEUTICAL CHEMISTRY

Colette Hee Sang Ahn, Victoria Cofré, Cynthia Akpene Fianu, Cathy Lee Gordon, Danielle Timby Graden, Ryan William Lutz, Veronica Louise Neff, Christina Marie Resuello, Monica Devan Rieth, Robert F. Roache, Alexander Duncan Smith, Robert Malcolm Todd Wooley.

### B.A. CHEMISTRY

Katherine Elizabeth Gallo, Michael Hui.

### B.S. CHEMISTRY

Ernest C. Amouzou, Maggie Rose Berndt, Megan Brynn Conrad (highest honors).

### B.S. BIOCHEMISTRY

Elizabeth Anne Brown (high honors, Eckardt Scholar), Scott Nathan Mlynarski (honors), Stephanie Maria Pappastephanou, Kumar Manoj Shah (high honors), Ernst Young-Min Tchoi, Erica Marie Vaccari (honors), Larry L. Zhang (high honors).

## STUDENT HONORS - 2007

**Kumar M. Shah** — American Chemical Society Award presented to the outstanding senior major in chemistry.

**Scott N. Mlynarski** — American Institute of Chemists Award presented to an outstanding senior majoring in chemistry, chemical engineering or biochemistry.

**Erica M. Vaccari** — Merck Index Award presented to an outstanding senior chemistry major who has been active in student affairs.

**Elizabeth A. Brown** — Harry M. Ullman Chemistry Prize presented to the highest-ranking senior in chemistry.

**Megan B. Conrad** — William H. Chandler Senior Chemistry Prize, established in 1920 by Mrs. Chandler, presented to a high ranking senior in the chemistry department. The Chandler Prize is also awarded to a high ranking chemistry major in the sophomore and junior classes.

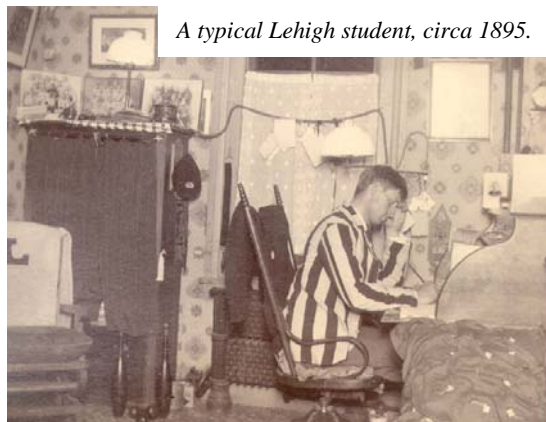
**Melanie J. Rudnick** — Alpha A. Diefenderfer Award presented to the highest-ranking junior in analytical chemistry, sponsored by the American Chemical Society Division of Analytical Chemistry.

**Hana Lim** — Hybercube, Inc. Scholar Award presented to a senior chemistry major who has shown outstanding promise in theoretical chemistry and molecular modeling.

**Joseph Pigga, Cecilia Diefenderfer, and James Devery** — Lehigh University Chemistry Department Fellowship, established in 1927 as the first research scholarship in the department of chemistry.

**Rajni Singh** — Dean's Summer Research Fellowship (College of Arts and Sciences).

**Danielle Ringhoff** — Nemes Fellowship, a private scholarship awarded to a senior graduate student nearing the completion of the Ph.D.



*A typical Lehigh student, circa 1895.*

## UNDERGRADUATE RESEARCH SYMPOSIUM

The fourth annual Lehigh undergraduate research symposium was held at the University Center on April 24, 2008. Organized by chemistry department faculty member Keith Schray with assistance from Jeanne Berk and the Lehigh chapter of Alpha Chi Sigma, this year's poster session drew 125 attendees who had the opportunity to see 32 presentations from 17 departments, including English, Entrepreneurship, International Relations, Journalism, and Urban Studies as well as chemistry and other science departments.

Examples of the research diversity can be found at <http://cas.lehigh.edu/casweb/content/default.aspx?pageid=338>, which showcases papers from the last several years. Most research titles are active links to the actual poster shown at the symposium.



*Stephanie Papastephanou explaining her work on the "Enzymatic and Chemical Hydrolyses of an Ester-Carbonate Drug." Her research advisor was Ned Heindel.*

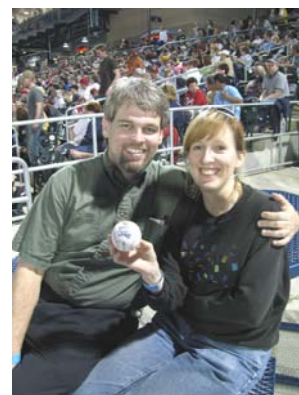
## T-SHIRT SALE

Drawing on their history as the second oldest student organization on campus, the Lehigh Student Affiliate chapter of the American Chemical Society will hold a T-Shirt sale this fall. The front of the shirt (shown at right) will feature the original logo of the "Lehigh University Student Chemical Society" when it was founded by William Chandler in 1871. The back of the shirt is shown at right, lower. If you are interested in supporting the student group and would like to order a shirt, contact Jeanne Berk at [jrb3@lehigh.edu](mailto:jrb3@lehigh.edu) or call her at 610-758-3469.

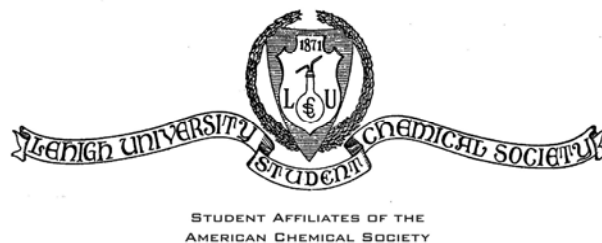
## THE IRONPIGS

The Lehigh Valley has a new AAA baseball team affiliated with the Philadelphia Phillies and playing in Coca-Cola Park in Allentown. "The name "IronPigs" is derived from pig iron and pays homage to the Valley's roots. This is raw iron ore that is melted down, refined and then used to make steel. The iron was called pig iron because as it was melted it ran into molds said to resemble a row of piglets" (from the team's web page at <http://www.ironpigsbaseball.com/ironpigs/origin/>).

On April 18, 2008, the American Chemical Society Student Affiliate group at Lehigh sponsored an outing to the ball park. Jennifer Moore, the wife of chemistry professor David Moore, threw out the first pitch at the game with the Toldeo Mud Hens.



*Some Lehigh chemists with the IronPigs mascot Ferrous (left) and his best friend FeFe.*



*Promoting Chemistry  
at Lehigh Since 1871*

## SPOTLIGHT ON ALUMNI: PATRICK C. WERNETT

It all began with a bang, literally, when six-year old Patrick Wernett received a Big-Bang® Cannon and wanted to know what made the “fun noise” when water was added to the Bangsite® ammunition. (The carbide cannon was first patented in 1907 by William S. Franklin, a Lehigh physics professor, as a safe alternative to fireworks. It is still being made today.) When he received a chemistry set several years later, Wernett was convinced that he would pursue a science career.

During his first chemistry class with Mr. Osterstock at Easton High School, Wernett says that “everything just clicked. I was fascinated by how compounds are formed and what chemical compounds react or don’t react and why. It could all be predicted.” He selected West Chester University (WCU) for his undergraduate school, steered in that direction partly by his guidance counselor but also because WCU had an “excellent chemistry program with faculty who were accessible and engaging. Besides,” Wernett adds, “WCU had a well-rounded education in a variety of areas and I thrive on diversity.”

During his Junior year, Wernett was doing research with Joel Ressler at WCU, synthesizing and characterizing organometallic complexes. Ressler, a Lehigh alumnus, suggested to Wernett that he apply for a summer undergraduate intern program at Lehigh, and Wernett admits, “Thankfully, I took his advice.” The following summer Wernett came to Lehigh, where he worked with John Larsen, characterizing the structure of coals to improve their efficiency and environmental impact as an energy source.

Wernett kept in touch with Larsen throughout his senior year, and Larsen ultimately offered him a research assistantship in his group, which brought Wernett to Lehigh for his graduate work. He found Larsen’s work in coal science interesting and knew that “this area would introduce me to a multitude of different scientific disciplines.” As Wernett explains, “coal is a glassy polymer and there is a lot of polymer chemistry that can be related, especially thermosets, which I use now in my current position.”

“Larsen really challenged his graduate students and was an excellent mentor,” Wernett declares. “He stimulated scientific discussion and debate and taught his stu-

dents how to approach research problems logically and think through all aspects of experimental design, data interpretation and the steps necessary to prove your hypothesis. John’s group was hard-working, focused, dedicated, and very supportive of one another. I couldn’t have asked for more.”

While finishing up his thesis (*Characteristics of the Pore Structure of Coals*), Wernett was convinced by Robert Flowers, another Larsen student (and current chemistry department chair) to join him as a post-doc with Ned Arnett at Duke University. Unsure whether to follow an industrial or academic career, Wernett used the year at Duke to make the decision. In 1992, upon the recommendation of Mick Herman, a Lehigh alumnus,

Wernett joined Speciality Minerals Inc. at their Bethlehem facility, where he has spent his entire career.

Starting as a research chemist, he established an organic testing laboratory while still doing fundamental R & D work. Promoted to senior research chemist in 1997, he managed a research group focused on organic chemical research directed at developing new products for the paper coating and paper filling markets. This resulted in three patents on a water-soluble polymer where one part binds to the cellulose and the other to the calcium carbonate particles to increase paper strength.

In 1999, Wernett was made a senior scientist in sealants and adhesives.

Here he developed new low-moisture and high-efficiency precipitated calcium carbonate based products to act as

thixotropic rheological modifiers for construction and automotive sealants. As Wernett describes, “in a caulking gun you want the caulk to flow smoothly out of the gun, but once it is applied it should build viscosity and set up quickly. SMI makes the additives that provide the shear-thinning behavior.”

When he became technical manager for plastics in 2002, Wernett laughs, “now I am in charge of everything.” SMI develops microparticle impact modifiers, increasing the stiffness of thermoplastics while providing impact resistance. Currently Wernett is director of performance minerals R & D, the non-paper side of the business. In this capacity he is in charge of health care products, paints and coatings, sealants, plastics, and building products.

“Simply put,” Wernett concludes, “Lehigh and especially the chemistry departments has been instrumental in allowing me to achieve a fulfilling and rewarding career in chemistry.”



*Patrick Wernett in London*

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## ***WE WANT TO HEAR FROM YOU***

**Do you know who this student is?**

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