

Participants in Industrial Strength Chemistry, Spring, 2004: front row: Liz Macari, Jess Roberts, Lewis Rieley, and Jason Oh; Second row: Dr. Chorghade, Ken Fountain, Professor Kenny, Ragnhild Whitaker, Tim Blicharz, Ruth Trejo, Dr. Olga Kryatova and Ryan Hayman.



## DUAL MISSION

## Education and Research

The Tufts University Department of Chemistry continues its dual mission of education and research.

### EDUCATION

#### Industrial Strength Chemistry

By Jonathan E. Kenny

On the evening of January 26, 2004, Dr. William Barney of TIAX Corporation (formerly the R&D division of Arthur D. Little, Inc.) addressed an interdisciplinary group of students and post-docs in Pearson 104. They had been drawn, to some extent, by the new-course flyers appearing around the building for the past week, which read, in part:

Industrial chemists are expected to apply science to MAKE MONEY, which IS NOT SOMETHING that most scientists learn. We will discuss aspects of the thought process involved in commercializing a technology, including:

- How much will your product (or service) cost?
- How can you be competitive?
- Is the market too big, too small, or just right for your company?

There were approximately twenty people in attendance about half of whom were formally enrolled. These included five chemistry Ph.D. candidates, three master's candidates, and three undergrads. They listened attentively as Barney began his presentation with a short professional autobiography, starting with an undergraduate career in computer science, studiously avoiding chemistry. Following graduation, while employed in computing services, Barney realized that although he could have his boss's job within two years, he did not want it. Next was an interest in the environment, particularly the atmosphere, and the realization that chemistry was the key to working in this field. This appeal resulted in a graduate program in Biogeochemistry, a post-doc working in air pollution, and an industrial job in Cambridge, Massachusetts. All this led to a

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### Chair's Corner

MARY SHULTZ

Greetings from the Chemistry Department. It is a great pleasure to report on the renovation of the East Wing of the Chemistry building. Some of the space in the East Wing of the building has not received serious attention since the building was built in the 1920s. Chemistry research has progressed tremendously since that time, so these modern laboratories provide a significant boost to the department. The East Wing houses laboratories for three existing researchers and makes available space for two new researchers. In addition, the main undergraduate laboratory received air conditioning, a major plus for early fall, late spring and summer classes. The next undergraduate laboratory to be renovated is the organic teaching laboratory, and we welcome assistance from our alums in bringing this facility up to modern day standards.

The department continues to flourish on both fronts of our dual mission with recognition of the research excellence of faculty and graduate students and growth and improvement in the curriculum. In recognition of excellence, it has almost become a tradition for one of our graduate students to win the Outstanding Academic Achievement Award and this year Ivan Korendovych received that honor. Within the university, the innovative research of Professor David Walt was recognized with a Distinguished Excellence in Research and Scholarship Award

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collaboration at Tufts and his invitation to appear at this new course. The theme of unexpected paths to an eventual career would be repeated throughout the semester.

Barney discussed academics versus industry as a career choice and gave a brief history of TIAX, including anecdotes about Arthur D. Little's glorious past. (ADL was famous for, among other things, making a silk purse out of a sow's ear and a lead balloon). He then addressed the topics

## Industrial chemists are expected to apply science to MAKE MONEY, which IS NOT SOMETHING that most scientists learn.

outlined in the flyer. He stressed knowing the market for a potential product, identifying competitive advantages, developing a successful strategy of "disrupting" the existing market with the new product, finding funding, and developing the product. He provided a list of recommended reading. The homework assignment involved choosing a new technology, and writing a plan for successful commercialization following the eight-step process which he provided. After a question and answer period, caterers brought in food and informal discussion continued throughout the meal.

**Chem 192: Industrial Strength Chemistry** is a new course, which I designed in response to a report by the Committee on Professional Training of the American Chemical Society. The report summarized the results of a survey taken by the CPT of Ph.D. chemistry professionals addressing questions of the adequacy of doctoral programs in preparing doctoral students for their careers. Perhaps not surprisingly, the survey found that academic chemists were doing an excellent job of preparing doctoral students for academic careers despite the fact that the vast majority ended up in industrial and government positions. Survey respondents stressed the need for exposure to industrial careers, interdisciplinary research, and working in teams. In addition to embracing these goals, I wanted to strengthen our department's ties with its alumni, and to improve our connections with industry in general: collaborative research, involvement of industrial chemists in Tufts courses, job opportunities for Tufts graduates, and research, internships and jobs for Tufts undergraduates. A colleague acquainted me with Dr. Mukund S. Chorghade, president of Chorghade Enterprises, who works

as a chemistry consultant and also has taught aspects of industrial chemistry to students in courses at Harvard, the University of Chicago, other universities, and at ACS meetings. In consultation with Dr. Chorghade, I came up with a game plan for the initial run of "Industrial Strength Chemistry." In addition to seven one-day "case studies" by Ph.D. chemists from industry and government, we included a core of six lectures by Chorghade as follows: 1-4. DRUG DISCOVERY AND DEVELOPMENT; 5. WORK RULES: How to be effective (interdisciplinarity, communications skills, etc.); 6. CAREER SERVICES: How to prepare resumes, interview, etc.

There were no exams; grades for the one-credit course were based on assignments, attendance and participation. Six of the seven guest lecturers and Dr. Chorghade assigned homework related to their lecture material, which was submitted and returned electronically. In addition, students conducted and transcribed one-on-one interviews with another Ph.D. chemist. The students also worked in teams of three to produce a final presentation, which was a curriculum module that might be used in a future version of the course. The topics selected addressed ethical issues, team-building, and food chemistry. The modules were presented orally to the class on "final exam" day as well as in written form to the instructors.

Tufts alumni (all Ph.D. chemists) who made presentations included Dr. George Jarvis, president of EST Enterprises, Arlington, MA; Dr. Steven Weissman, Merck Research Laboratories, Rahway, NJ; and Dr. Sean Hart, United States Naval Research Laboratories, Washington, D.C. Non-Tufts representatives of industry included Dr. Alexander Kolchinski, Rhodia-Chirex, Watertown, MA; Dr. Julian Adams, director of research at Infinity Pharmaceuticals, Cambridge, MA; and Dr. Michael Strem, president, Strem Chemicals, Newburyport, MA. Each participant (or employer) covered his own travel expenses. The dean's office and the department funded other course expenses.

In week 2, George Jarvis, our first alumnus presenter, continued some of Barney's themes regarding innovation and market considerations. He set a new precedent by conducting an in-class writing assignment. His homework assignment required students to select a new product and provide a business plan addressing legal, financial, and advertising issues, among others. The following week, Alexander Kolchinski (spouse of our Professor Rybak-Akimova) spoke on the "importance" of networking and resources for



job-hunting. Homework involved identifying companies in the Boston area that conduct specific kinds of research, including the student's own area of work.

Next came three weeks of stimulating, informative, and entertaining lectures by Dr. Chorghade who regaled us with story after story from his illustrious career in research and consulting. Dr. Julian Adams of Infinity Pharmaceuticals followed with inspiring stories of bringing to market drugs that cure diseases and improve the quality of people's lives. Another alumnus, Steve Weisman of Merck, introduced the students to the twelve principles of Green Chemistry, which is changing the chemical industry for better performance both economically and environmentally. He introduced students to "Atom Economy" and his homework assignment challenged them to discover both the advantages and disadvantages of basing process chemistry on this principle alone. Our third alumnus, Sean Hart, gave us a glimpse of work in a government laboratory as opposed to industry, and shared with us some recent advances from his own group.

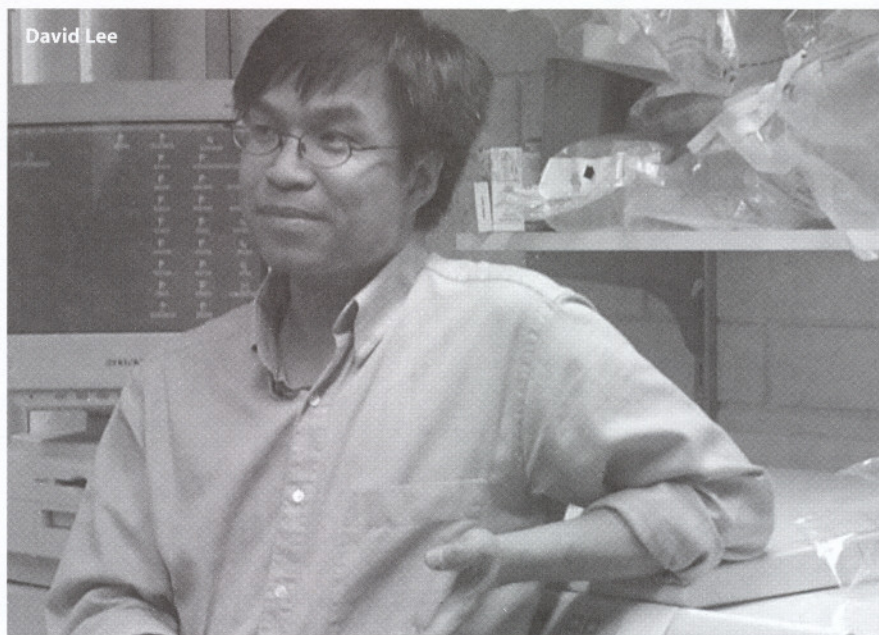
Our final visitor, Dr. Michael Strem, provided a personal biography that was simultaneously a history of his specialty chemicals company. He provided an insider's view of the small business culture and sound advice for anyone interested in following a similar path. He also introduced us to the Responsible Care guiding principles developed by the ACS and Chemical Industry. Each speaker provided a unique window on nonacademic careers in chemistry along with information and advice of general utility to the students.

Students, industrial participants, and instructors were uniformly enthusiastic about the course. A reunion of industrial participants is being planned to provide an opportunity to discuss and evaluate the first offering, and to refine plans for next time. We are also hoping to address the generation of modest funding to cover the cost of catering and other course expenses. If you are interested in participating in and/or supporting Industrial Strength Chemistry, we'd love to hear from you.

## RESEARCH

### *David Lee*

A stroll through the Lee Lab in the Michael Wing of the Chemistry complex can sometimes leave the visitor puzzled. "This looks like a biology lab!" exclaimed one guest. Indeed, the room is full of centrifuges, thermal cyclers, and gel rigs. Bacteria are growing in shakers. Students and technicians pipette microliter quantities of



enzymes and DNA. Some people view the Lee Lab as a group involved in the field of Chemical Biology, where chemical approaches are applied to biological problems. To some extent it is, but in addition the table is often turned, for the Lee lab harnesses biotechnology to study chemistry.

A large part of the Lee Lab research effort lies in devising biological strategies to solve problems in nanotechnology, an area of great interest to many chemists. That molecular structure organized at the nanoscale can lead to the emergence of new or unexpected phenomena makes this field seem decidedly chemical in nature. For example, semiconductor nanocrystals have tunable optoelectronic properties that are governed by the size and shape of the crystal. The nanostructuring of hydroxyapatite is partly responsible for the amazing strength of bone. It is easy to see though, how physicists, materials scientists, and engineers can also be interested in the nanosciences. Furthermore, in studying proteins and DNA, molecular biologists have been working at the nanoscale for their entire careers. Thus, nanoscience is not just chemical but a divergent interdisciplinary field. "I believe the most successful nano-scientists are going to be the ones who can most effectively connect these disparate fields that impact nanotechnology," says Lee. "In this regard, being both a chemist and a molecular biologist can be an extremely effective combination of talents to have in addressing questions in nanotechnology. Molecular biology is a natural, if somewhat non-traditional partner to nanotechnology since biology is replete with unparalleled examples of nanoscale machines and catalysts. Furthermore, many of the imaging techniques



used to study materials at the nanoscale are also used to study large protein machines and assemblies so it makes perfect sense to marry the two fields. The appreciation that chemists have for molecular structure however provides the foundation for that creative edge necessary to design and engineer molecules that can form functional nanoscale assemblies." With an outstanding track record in molecular design and supramolecular chemistry from the Scripps Research Institute, as

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well as training from the elite Whitehead Institute for Biomedical Research at MIT, Professor Lee is ideally suited for bridging chemistry, biology, and nanotechnology.

His group's overarching approach is to engineer biological molecules to redirect their assembly into desired nanostructures that can then be used to make nanoscale devices and nanostructured materials. One model system that his students use extensively is tobacco mosaic virus. "It's a great system for this purpose," says Lee. "It's a rod-shaped virus that is 300 nm long, a relevant size for nanotechnology. Its other advantages are that it can be produced in large quantities and is one of the best characterized viruses genetically, structurally, and biochemically. That gives us the quantity of material and the background necessary to really engineer this thing. TMV is also very stable and can tolerate many of the changes that we want to make without disturbing the overall structure too much. For example, we now have complete control over its length and have made particles as short as 12 nm!"

A second project involves engineering a class of cytoskeletal protein called intermediate filaments. Intermediate filaments are proteins that assemble to form 10 nm diameter filaments. They are important in biology because of the nanoscale scaffolds they form in the cell that organize the cytoplasm. They also perform a wide range of functions with regard to their roles in biomaterials. For example, intermediate filaments permeate the cytoplasm of lens cells and give them the mechanical strength to be stretched and compressed while your eye is focusing light. The intermediate filament keratin gives your skin mechanical strength so that it doesn't blister

easily. (Genetic diseases such as epidermolysis bullosa simplex stem from mutations in keratin that result in a weakened intracellular scaffold, leading to more fragile skin cells.) Intermediate filaments also are used to form familiar biomaterials such as wool and hair as well as harder materials such as fingernails and claws. Unlike tobacco mosaic virus however, intermediate filaments are not as well understood from a molecular structure standpoint. Thus, the Lee Lab is studying their structure and assembly to better understand how it is that this class of protein can be adapted to so many different functions. Professor Lee expects this work to have a major impact. "Not only would the resolution of this project help solve a long standing problem in structural biology but understanding the thermodynamics of the assembly process will likely shed light on the molecular basis for birth defects such as EBS. With regard to nanotechnology, the lessons learned from these studies will direct the engineering of the protein into novel biomaterials with tailored properties." This biomaterials design aspect of the project is supported by the Army Research Office.

The techniques used in the Lee Lab are as diverse as the projects. Naturally, imaging plays a central role in the lab. Transmission electron microscopy is heavily utilized by the Lee Lab, but atomic force microscopy and confocal microscopy are also used to characterize the various biomolecular assemblies, particularly materials made from engineered TMV. Spectroscopic techniques, such as circular dichroism and infrared spectroscopy, are being used to characterize the secondary structure of intermediate filament assemblies. Other techniques in use in the Lee Lab include analytical ultracentrifugation and mass spectrometry. Biological approaches include autoradiography, PCR, affinity chromatography and protein expression. The complexity of the problem also means that they sometimes need help. Their collaborators include cell biologists, cryo-electron microscopists, and x-ray crystallographers. "Our approach is to focus on the big scientific problems and adopt the right techniques, whether they be chemical, biophysical, or materials based, to solve them, and when we can't do them, we bring in the people who can," says Lee, "That's the best way to move forward."



# Faculty and Staff News

## Student Awards

**Christopher DiCesare** received an award for the best poster presentation at the 6th Annual Northeast Student Chemistry Research Conference.

**Student ACS Chapter** received an Honorable Mention Award for 2003-2004 activities.

## Faculty Award

**David Walt** received the University Distinguished Excellence in Research and Scholarship Award.

## Semester Achievement Awards

The awards for Outstanding Achievement are given semi-annually to a teaching assistant, staff member and faculty member for extraordinary contributions to the department.

### FALL 2003

#### FACULTY

Krishna Kumar

#### STAFF

Larry Aulenback

#### TEACHING ASSISTANT

Ivan Korendovych

### SPRING 2004

#### FACULTY

Jonathan Kenny

#### STAFF

Dave Wilbur

#### TEACHING ASSISTANT

Nilanjana Chakraborty

## Retirements

**Karl Illinger** retired following many years with the Chemistry Department. His research focused on intermolecular forces and collisional perturbation of molecular spectra; experimental infrared spectroscopy, with applications to environmental chemistry; experimental measurement of absolute infrared intensities and structural correlations of this and other molecular properties employing ab initio quantum-mechanical calculations. Best wishes to Professor Illinger in his retirement.



Karl Illinger

From the office, both **Arlene Chaplin** and **Janice Silva** retired this past year. Arlene and Janice were instrumental in keeping the department and office running smoothly. We wish them both the best in their retirement.



Janice Silva and Arlene Chaplin.



# Student News

## Younger Chemists Committee News

The Northeastern Section Younger Chemists Committee (NSYCC, please visit for more information [www.nsycc.org](http://www.nsycc.org)) is part of the Northeastern Section of the American Chemical Society (NESACS), a local section whose members include chemists from Eastern Massachusetts and New Hampshire. We are devoted to the professional advancement of younger chemists in industry, government laboratories, undergraduate/graduate school and post-doctoral positions. We aim to involve younger chemists in national and local ACS programs in order to help with their transition into a professional career.

Tufts University is well represented in NSYCC. Currently graduate students Ivan Korendovych, Sonia Taktak, and Viatcheslav Azev as well as Tufts alumnus Dr. Aida Herrera of MIT are NSYCC officers and are actively involved in organization of various events for younger chemists. These events include a research conference, career fair and symposium, and an exchange program.

The Northeastern Student Chemistry Research Conference (NSCRC) is organized for students by students. It is devoted to the research of undergraduate, graduate, and post-doctoral chemistry students providing a relaxed atmosphere for students to share their work. The day-long event features student poster and oral research presentations, a keynote speaker, awards, and catered

lunch. The conference encourages students to network and get feedback from their peers.

The Sixth Annual NSCRC took place at Boston University on Saturday, April 26, 2004. The event, located in the Metcalf Center for Science and Engineering, attracted over 120 participants from schools in the Boston area.

The event featured 102 oral and poster presentations by undergraduate and graduate students. The keynote address, titled: "New Fluorescent Sensors to Study Biochemical Zinc and Nitric Oxide and to Monitor Mercury in the Environment" was given by Dr. Stephen Lippard of MIT. Awards, donated by Strem Chemicals, Genzyme, Kluwer and Wiley, were given for the best oral and poster presentations. Tufts graduate student, Chris DiCesare, was awarded a prize for the best poster presentation. Dr. Charles Casey, ACS president, who delivered the welcoming address as well as concluding remarks, expressed his hope that other local sections of the ACS would try to have similar programs.

Each year, the NSYCC holds a free career symposium for younger chemists in the region. The aim of this event is to provide younger chemists with information on current trends in the job market, possible careers in chemistry, resume writing, and interviewing skills. The symposium usually consists of a panel discussion or information session and is followed by a monthly NESACS dinner and research lecture.



(From left to right) Dr. Cassandra Celatka, Lauren Wolf (NSYCC Chair), Dr. Amy Tapper (currently NESACS Chair-Elect), Dr. Charles Casey (ACS President), Ivan Korendovych (NSYCC Assistant-Chair), Dr. Aida Herrera (NSYCC Career Chair), Sonia Taktak (NSYCC treasurer)

Younger chemists are encouraged to attend the dinner at a reduced student price. One of this year's speakers, Prof. Art Utz, talked about academia, chemical education, and the importance of communicating with students.

In the spring of 2001, nine members of the German Chemical Society (GDCh) Younger Chemists Committee (JCF) traveled to Boston for a week of networking, cultural exchange, and science. This marked the beginning of a very successful annual exchange program between the GDCh-JCF and the Northeastern Section of the American Chemical Society (NESACS) Younger Chemists Committee (YCC).

Each year since the program's conception, a group of younger chemists has traveled across the Atlantic Ocean to participate in a week-long program. The program usually consists of visits to local laboratories, tours of local companies, presentations at a regional student research

conference, networking events and, of course, sight-seeing. Foreign career and educational opportunities are especially emphasized throughout the week. The students who participate in the program must apply and are selected based on their accomplishments in research, their interests, and recommendations from their advisers.

The Northeastern Student Chemistry Career Fair (NSCCF) affords younger chemists the opportunity to discuss employment and network with representatives from companies in the Northeastern region. The fair also provides attendees with free workshops on skills necessary to attaining a job. 2004 marks the first year for this beneficial event. This year more than 100 job seekers attended the Fair, where 14 companies sent representatives to select prospective job candidates for interviews. As a result, local companies hired several younger chemists.



## Chemistry Major Awards Presented 2003–2004

### The R.M. Karapetoff Cobb Chemistry Fund

Jennifer K. Wind

### The M.D. Angell & H.B. Durkee Scholarship Fund

Rachel K. Androphy

### The Durkee Scholarships

Edward K. Hamill

Eric M. Simmons

### The Max Tishler Prize Scholarship

Matthew G. Cable

Lewis Rieley

### The Class of 1947 Victor Prather Prize

Edward K. Hamill

### The Audrey Butvay Gruss Science Award

Mimi Cho

Meredith L. Kolpak

### The Anna Quincy Churchill Prizes in General Biology

Mimi Cho

Jessica L. Barrett

### The Howard Sample Prize Scholarship in Physics

Jennifer K. Wind

### Outstanding Academic Performance Award

Ivan Korendovych

## Doctoral Degrees Awarded 2003-04

### Jeremy Disch (Rybak-Akimova)

"Di- and Tetratopic Pyridine Appended Cyclidices as 'Molecular Tweezers': Structure and Carboxylic Acid Binding"

### Jason Epstein (Walt)

"Fiber Optic Microsphere-based Oligonucleotide Arrays: New Developments and Applications"

### Aida Herrera (Rybak-Akimova)

"Nickel, Copper, and Iron Complexes of Aminopyridine Macrocycles with a Modifiable Pendant Aminopropyl Arm"

## Master's Degrees Awarded 2003-04

Ericka Danielle Gates

Robert F. Ihrig

Eva Virginia Longo

Hlaing Hlain Maw

Kathleen Myers

Yuri Uvaydov

## Bachelor Degrees Awarded 2003-04

Rachel K. Androphy

Adam J. Biacchi

Joseph S. Butterfield

Alexander P. David

Thomas A. Dionne

Graham B. Griffin

Edward Kenny Hamill

Taylor A. Horst

Sudarat Infahsaeng

Brandon J. Kitchel

Kimiyoshi J. Kobayashi

Reyna R. Kodama

Viet Q. Le

Pedro Lee

Muzammil Mustufa

Stephanie Ricci

Phillip H. Sarges

Eric M. Simmons

Raghuvir Viswanatha

## CGSC News

The 2004-2005 members of the Chemistry Graduate Student Council (CGSC), Timothy Blicharz, Daniel Killelea, Ivan Korendovych, Nicholas Yoder, and Deniz Yuksel, were very busy planning fun

activities for the department over the summer and throughout the school year.

During the summer of 2004, the CGSC sponsored a department-wide cookout to celebrate the department softball team's winning season. Many people attended the cookout and had their fill of burgers, hot dogs, or vegetarian alternatives. The Chemistry Department team, the Isotopes, finished the Tufts Summer Softball League season second and fell just short of winning in the championship game.

Throughout the 2004 fall semester, the CGSC sponsored events to welcome the incoming graduate students to the department and give current graduate students a chance to take a break from their busy schedules. Numerous peo-

ple took advantage of a CGSC-sponsored rafting trip, which was truly exciting for all those involved. A bowling trip to "Lanes and Games" off Route 2 in Cambridge was also organized.



Many people took advantage of this opportunity as was evident by the amount of lanes that the department occupied! The CGSC also continued with their tradition of meeting with the first-year graduate students over donuts in October to answer any questions that the new graduate students might have about life in the

Tufts Chemistry Department. Throughout the search for new members of the Chemistry Department faculty, the CGSC collected important student feedback about the visiting candidates.

Future events that the CGSC would like to organize for the spring semester of 2005 include a "movie night" for the Chemistry Department and a skiing trip to one of the popular ski slopes in New England, among other activities.

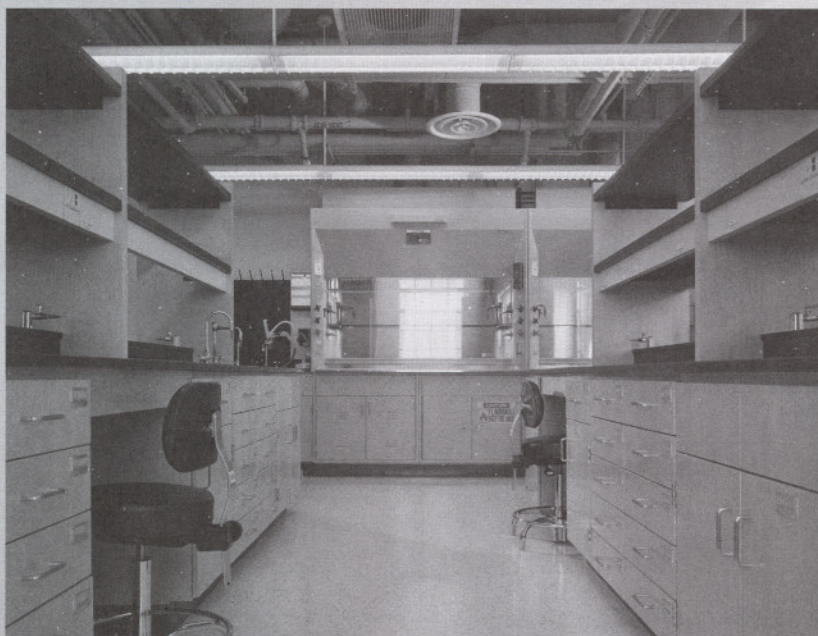


# East Wing Renovation

The Pearson building received a major renovation during the past year. The most visible portion of the change includes the completely modernized research laboratories on the first and third floor. Of major importance to the students is the addition of climate control to the recently renovated introductory chemistry laboratory. For visitors to the department, the addition of a rest room on the first floor is most welcome. Less visible, but just as important, sprinklers are now installed in the entire complex—an extremely important safety measure. Behind the scenes, the renovation included the infrastructure (service shaft, ventilation, and HVAC) needed for future renovation of the center of the building. The center of the building is the last phase of our stage upgrade of the facilities.

The renovated East Wing was opened in mid August with a reception featuring honored guests: President Lawrence Bacow, Provost Jamshed Bahrucha, and Dean Susan Ernst. We take this opportunity to thank the administration for making this investment in the department.

In addition to the completely renovated spaces, the laboratories on the ground floor received upgraded facilities, reconfiguration of space, and improved HVAC. One of the laboratories on the ground floor is designated for a new hire in physical chemistry. The search for this faculty member is underway and the space will be finished out to the new member's specifications.





## Chair's Corner

*Continued from page 1*

at the May faculty meeting. This very competitive award recognizes the long term contributions of Professor Walt's sensor technology development. Congratulations Professor Walt.

The other major faculty news is the retirement of Professor Karl Illinger. Professor Illinger received his A.B. degree from the University of Pennsylvania in 1956 and a Ph.D. degree from Princeton in 1960. His research has focused on intermolecular forces and collisional perturbation of molecular spectra, particularly in the infrared region. Infrared spectral perturbations are relevant to environmental chemistry, specifically the issue of global warming so much in the news in recent years. Enjoy your retirement Professor Illinger.

To accelerate the forward momentum of the department, we are currently searching for two more colleagues: one in physical chemistry and the other in biologically related chemistry or nano-scale materials. Our alums are great ambassadors for the department, so if you know of anyone in these areas, please point them in our direction.

On the curricular side of the dual mission, this year saw the first full implementation of our new, year-long sequence in biochemistry. This course is unique in calling upon resources from outside the department including the medical school and local Biotechnology companies. The outside influence is designed to keep the content of this course current with the fast-paced developments in this area.

This spring we implemented our first offering of a course designed to give students a clearer view of careers and opportunities in chemistry. The course, lead by Professor Jonathan Kenny, was titled "Industrial Strength Chemistry" and featured presentations by several alumni who have gone on to successful industrial careers. We see this course as an important link to our alums as well as providing valuable tools for our students.

There have been two major changes among the staff in the department. Arlene Chaplin who was the major force in bringing you these newsletters has retired. Arlene's official title was department manager, but really she kept us all on an even keel—her per-



Mary Shultz

sonal touch will be sorely missed. Janice Silva, the departmental office manager, also retired in December of last year. In addition to injecting a professional and organized air to the department, Janice kept many of the day-to-day activities humming along on a harmonious note. Rounding out this news, we are pleased to welcome Eileen Coombes as the new department manager. Eileen comes to us with many years of experience in the banking and educational sectors. Office operations have changed considerably due to technology. In keeping with these changes, Eileen and the faculty are

currently working on a reorganization of the office spaces to improve efficiency among support operations.

With all the changes that have occurred, if you have not visited the department in recent years, please stop by and see all the new environs and people. In addition, we are always interested in hearing about changes in the lives of our alums. Continue to send those updates to [eileen.coombes@tufts.edu](mailto:eileen.coombes@tufts.edu) so that you can be included in the *Class Notes*.

## The Tufts Chemistry WEB Site!

<http://chem.tufts.edu>

OUR SITE PROVIDES INFORMATION such as course listings, current course material, degree requirements, faculty/staff/student info, the graduate program, special events, links to other chemistry resources, an on-line historical archive, back issues of ChemNotes, and more detailed information about the exciting and ongoing research being carried out by our faculty. The hope is that this resource will provide information for prospective graduate students and alumni and will eventually contain links to many valuable chemistry resources within the department and throughout the world. Check us out and see what is currently going on in the department. You can access our site at: <http://chem.tufts.edu>.

We are still collecting information for several new areas including "Alumni Page" where we would like to list as many of you as possible. We would like to include not only names and e-mail addresses but items of interest and WWW links to alumni pages and your areas of current employment or involvement. So please write or e-mail us if you would like to be included. Let us know where you are and what you are doing!

*The web site was created and is maintained by Professor Samuel Kounaves. ([Samuel.Kounaves@tufts.edu](mailto:Samuel.Kounaves@tufts.edu))*



# Seminar Series

SPRING 2005

## JANUARY 18

**Prof. Lawrence Que, Jr.**

University of Minnesota  
*Oxygen Activation at Nonheme Iron*

## FEBRUARY 01

**Prof. Veronica Vaida**

University of Colorado  
*Atmospheric Organic Aerosols in Earth's Chemistry and Climate*

## FEBRUARY 08

**Prof. Amit Basu**

Brown University  
*Glycolipid Interactions at Membranes: From Fundamental Studies of Adhesion to Lipopolysaccharide Sensors*

## FEBRUARY 15

**Prof. Steven Baldelli**

University of Houston  
*Surface Spectroscopy of Room-Temperature Ionic Liquids at the Platinum-Liquid Electrochemical Interface*

## MARCH 8

**Prof. Claudia Steinem**

Universität Regensburg  
*Artificial Membranes: Tools to Address Biological Questions?*

## MARCH 10

**Prof. Andreas Janshoff**

Johannes Gutenberg-Universität, Mainz  
*Biosensors on the Microscale: From Biomimetic Surfaces To New Technologies*  
*Please Note Change in Day (Thursday)*

## MARCH 29

**Dr. Adrian Whitty**

Biogen Idec Inc.  
TBA

## APRIL 05

**Prof. Paul Davidovits**

Boston College  
*Uptake of Gas Phase Species by Organic Liquids; The Strange Interactions of Gas Phase Hydrogen Halides with Octanol*

## APRIL 12

**Prof. Neil Marsh**

University of Michigan  
*A Radical Approach to Catalysis: Coenzyme B12 and Glutamate Mutase*

## APRIL 14

**Prof. James Mayer**

University of Washington  
*Oxidations of C-H and O-H Bonds by Metal Complexes: Hydrogen Atom Transfer, Proton-Coupled Electron Transfer, and Marcus Theory*  
*Please Note Change in Day (Thursday)*

## APRIL 19

**Prof. Gregory Weiss**

University of California, Irvine  
*Reverse Engineering Biomolecular Recognition with Combinatorial Protein Libraries*

*Hosted by Undergraduate Chapter of the ACS at Tufts Chemistry*

## APRIL 26

**Dr. Michael Strem**

Strem Chemicals, Inc.  
TBA



## Visitors are welcome

All seminars are held in the Pearson Chemistry Building, 62 Talbot Avenue in Medford, Room P-106 at 4:30 p.m. unless otherwise noted. Refreshments served in Pearson thirty minutes prior to the seminar. For additional information please contact Ruthie Ayers at 617-627-6491 or [ruth.ayers@tufts.edu](mailto:ruth.ayers@tufts.edu)