

The Carnegie Mellon Chemist

CHEMISTRY ALUMNI NEWSLETTER



CARNEGIE MELLON UNIVERSITY
DEPARTMENT OF CHEMISTRY
February 2000

No. 10

Chemistry Undergrads

1999 Graduating Class

A survey of the 1999 graduating class of Chemistry majors reveals an increasing number of students taking advantage of the specialized programs offered at Carnegie Mellon. Of the 15 students who received undergraduate degrees in Chemistry at the May 1999 Commencement, 13 earned BS degrees (two with Departmental Honors), two earned BA degrees. One other student associated with Chemistry earned, as part of a Student Defined Major, a BS degree in Environmental Science. Two students earned dual degrees (Chemistry and Chemical Engineering, and Chemistry and Creative Writing), five students earned minors along with their Chemistry degrees (minors in Ethics, Computer Science, Psychology, French, and English), four students earned degrees in Chemistry with additional majors (two in Environmental Policy, one each in Biological Sciences and Technical Writing). Five Chemistry majors were awarded Senior Leadership Awards by the University and one was a finalist for the Judith Resnick Award. Six students graduated with University Honors and six with College

Continued on p. 3 

Chemistry Teaching Labs

The Carnegie Mellon Administration announced on January 10, 2000, that an agreement has been reached with the architectural firm of Burt Hill Kosar Rittelmann to proceed with the design of an extensive renovation and addition to Doherty Hall at a cost of approximately \$23 million. According to the announced schedule, site preparation will begin this summer and actual construction will begin in March 2001, with completion of the new laboratories in twelve months. The project will renovate three floors of space in the west wing of Doherty Hall, and extend the west wing towards Wean Hall from ground level through the 3rd floor of DH; see the schematic drawing on p. 7 for a rendition of the affected spaces on Level 2. The space to be renovated is currently occupied by the Departments of Architecture and Physics, and the School of Computer Science. The project will give the Chemistry Department three floors of undergraduate laboratories comprising existing and new space: an Analytical Laboratory (Labs I and IV), an Organic Chemistry Laboratory (Labs II and III), on levels 1 and 3, respectively, and a Freshman Science

Continued on p. 7 

Carlin Remembered

Robert B. Carlin, Becker Professor of Organic Chemistry Emeritus, contributed much to Carnegie Mellon during his 35 years of service. These, and other attributes of his life were remembered by friends and colleagues following his death on January 1, 2000. Bob Carlin arrived at Carnegie Mellon in 1946, served as head of the Department of Chemistry from 1960 to 1967, when he became associate dean of the College of Engineering and Science, a position he held for several years while continuing to teach; he retired in 1981. It is his teaching style and effectiveness that many of you will remember; he received the Carnegie Teaching Award in 1953. Long-time Departmental administrative officer Anton ("Tony") J. Streiff remembers that "He was so clear in his explanations of organic chemistry. He was just one of the best teachers that I have ever heard, and he had a great memory for limericks. He was well known for that. He could give you a limerick at the drop of a hat." In addition to his classroom teaching, Bob advised 40 PhD graduates from 1948 to 1978, and jointly advised several more with Philip Southwick.

Continued on p. 5 



The Department Head's Column

On behalf of the Chemistry Faculty, I am happy to address the Alumni and to share with you some of the highlights of the department's activities over the past year and our plans for the future.

We have had an exciting year in research and in growing recognition for our accomplishments. Terry Collins and his group received the Presidential Green Chemistry Challenge Award and traveled to Washington to receive the award from Vice President Gore. Guy Berry was the 1999 Distinguished Lecturer for the Materials Research Institute at the University of Connecticut. Kris Matyjaszewski continued to build the ATRP Consortium supporting the Center for Macromolecular Engineering. In addition to our long-standing reputation for excellence in polymer chemistry, we continue to develop an internationally known strength in bioinorganic and biophysical chemistry. Miguel Llinás and Eckard Münck continue their work in NMR and Mossbauer spectroscopy, respectively, with international collaborations and strong NIH support. Overall, the department has a research budget of \$3.5 million, including over \$1 million in matching funds that show the outstanding university support for our programs.

The undergraduate program has also had an impressive year. As detailed in the story on page 1, the University is ready to break ground for a \$20-25 million renovation of the undergraduate laboratories in Doherty, with completion expected in Fall 2002. The improved space will enable us to continue to attract the superb caliber of students we see in the Class of 1999 and our current 67 majors.

In addition, the department is making growing contributions to chemistry education. Dave Yaron's IrYdium project to develop simulation-based software for introductory chemistry received a \$420,000 NSF grant this year and has begun a collaboration with the Instituto Tecnológico y de Estudios Superiores de Monterrey, in Mexico. We also have leaders in educational outreach, with Carnegie Mellon hosting the Governor's Institute for Physical Science Teachers for the second year, and a Science Van Outreach program which reached over 4000 students last year.

I am also pleased to announce two new hires: Dr. Catalina Achim, an inorganic chemist, as Assistant Professor to begin in Fall 2001; and Dr. Rea Freeland as Associate Head, assisting with a wide range of administrative matters (see p. 4). Both are alumnae of the department.

The Chemistry Department is in an exciting time. The University's strategic plan to emphasize Biotechnology, Computation, and Environmental focus areas fits well with our own strategy to build our department through ties to colleagues across disciplines, and will help us increase the national and international prominence of our interdisciplinary research. We are continuing our searches in other areas with the expectation of hiring faculty in organic, polymer, and computational chemistry in the near future--up to 10 new faculty in total. Our faculty are invited speakers at prominent international conferences; they receive national and international awards, and continue to be outstanding educators and advisors. We look forward to expanding that tradition as the faculty grows.

Richard D. McCullough

Chemistry Faculty:

B. A. Armitage
G. C. Berry
T. J. Collins
S. T. Graul
M. P. Hendrich
M. Kaplan

P. J. Karol
H. J. Kim
M. Llinás
K. Matyjaszewski
R. D. McCullough
E. Münck

G. D. Patterson
L. A. Peteanu
S. W. Staley
R. F. Stewart
K. H. Stump
C. H. Van Dyke
D. Yaron

Resident Emeriti

A. A. Bothner-By
E. F. Casassa
A. A. Caretto Jr.
J. Dadok
R. L. Kay
T. P. Kohman

Faculty Profiles

This issue features profiles of two of our long-time members:

Morton Kaplan

joined the Chemistry Department in 1970 as a tenured faculty member, coming from the Chemistry faculty at Yale University. He set up a laboratory for experimental research in hyperfine interactions, utilizing nuclear phenomena as chemical probes. His students produced PhD theses in Mossbauer resonance spectroscopy and in perturbed angular correlations of gamma rays. While he has taught a variety of undergraduate and graduate courses, Mort currently routinely teaches the second term of first-year general chemistry. In 1971-72, he was on Sabbatical leave at the Clarendon Laboratory, University of Oxford (UK), where he measured nuclear magnetic moments of short-lived radioactive nuclides by combining magnetic resonance techniques with nuclear polarization at ultra-low temperatures. In the late 1970's and early

Continued on p. 6 

Guy C. Berry

is Professor of Chemistry and Polymer Science, and has been at Carnegie Mellon (or one of its progenitors, Mellon Institute) since 1960, following his receipt of a PhD from the University of Michigan. His research interests center on the physical chemistry and physics of polymers and their solutions, with special emphasis on light scattering and rheological behavior of solutions. His studies have included systematic studies on the thermodynamic and hydrodynamic properties of well-defined linear and branched polystyrenes over a wide range of molecular weight and temperature, the characterization of semiflexible polyelectrolyte polymers, including polymers able to form a nematic phase in moderately concentrated solutions, and the rheological and rheo-optical behavior of examples of the latter in both isotropic and nematic phases. He has advised 19 Ph.D. graduates and worked with 35 postdoctoral associates. Research and review articles on these subjects are cited on his home page, which may be accessed via the

Continued on p. 6 

Chemistry Undergrads

Continued from page 1

Honors. Four were inducted into Phi Beta Kappa, one each into Phi Kappa Phi and Pi Kappa Lambda. Of the sixteen graduating seniors, six are attending graduate schools, and nine have accepted or are pursuing positions in industry. One student is teaching in China. Graduate schools include Northwestern, MIT, Case Western, and the Heinz School at Carnegie Mellon. Industrial positions are with Merck, Bristol-Myers Squibb, and an Environmental Group in Washington, DC.

Other Awards

Two Chemistry juniors were named Beckman Scholars: Scott Vignon (working with Stu Staley) and Duane Prasuhn (working with Terry Collins). Juniors Evan Beach and Duane Prasuhn shared in the Presidential Green Chemistry Award which Terry Collins and his group received for the development of oxidation catalysts (see p. 5). Certificates of participation were received from Vice President Gore at the ceremony at the National Academy of Science.



Awards for Duane Prasuhn (rgt) and Evan Beach (lft)

Supramolecular Chemistry

Bruce Armitage is currently leading a new discussion-format course on Supramolecular Organic Chemistry. The course introduces students to an area of rapidly expanding research through analysis of the current literature, similar to a special topics course for graduate students.

According to Bruce, the distinction and challenge is that teaching a special-topics course to sophomores is exciting, since most of them have been exposed to chemistry only through introductory courses. Reading the literature and talking about not only the specifics of a given research project but also the underlying issues of just how one goes about research in general, is an eye-opening experience for students. One of the big motivations for developing this course was to give our chem majors the opportunity to study an advanced topic in greater depth than is possible in the introductory courses, and to do so in a small group. Allowing the class to grow much beyond about 15 students would make it much more difficult to foster the interactive environment that is essential for a discussion course. The final project for the course will involve the students working together as a group to design an original research project. They will submit a written proposal and defend it before a group of the Chemistry faculty.

Off-Campus Activities

Study Abroad is becoming a popular option for Chemistry majors. Beth Litzinger, senior, spent last year in Germany. Rick McCullough is sending one of his students, Kris Stokes, to Denmark for a year to do research. We have other students looking into programs in Africa and Australia. In another activity abroad, Michael O'Kelly, a senior, used a portion of his Christmas break for research with CMU's cosmology group at the South Pole. He worked on Corona, a receiver for Viper, a microwave telescope maintained by CMU and other institutions at the Pole. It is being readied for observations during the fast-approaching Antarctic winter. Viper's primary purpose is observation of the cosmic microwave background, an almost perfectly uniform field of radiation

left over from a phase change the entire universe experienced about 300,000 years after its beginning. Corona will be the first instrument to examine polarization in the microwave radiation. Michael O'Kelly expects to receive three BS degrees this year: Mathematics, Physics, and Chemistry. The photo below is one of several from Michael's web site, at the url: www.andrew.cmu.edu/~mokelly



Michael O'Kelly at the South Pole

Chemistry Traditions

Chemistry undergrads continue some traditional activities and test potential new traditions. The firesides in faculty homes continued this year with Stu Staley and his wife hosting about 16 chemistry majors in their home, for "more food than they could possibly imagine", and a hike in the mountains to wear off some of the calories.

The junior class piloted a new program last spring which they call "The Undergraduate Lounge". They invited faculty for informal conversation on a topic of the faculty member's choice. Bruce Armitage, Stu Staley and Karen Stump participated as guests this year.

In another new activity, Gary Patterson accompanied a group of Chemistry undergraduates for a rafting excursion on the Youghiogheny River near Ohio-pile. Guided by Whitewater Adventurers, a group of ten students and Gary braved the

mighty Youghiogheny in frigid April temperatures and water almost too high for legal rafting. All survived in high spirits, thanks to good wetsuits, along with plenty of hot chocolate, and lunch at the end of the run. Another trip is planned for 2000.



Rafting on the Youghiogheny

Paul E. Snyder Chemistry Scholarship

The first recipient of the newly created Paul E. Snyder Scholarship Award was Kristopher Stokes, an honors chemistry major working with Rick McCullough in the field of polythiophenes. This new scholarship for undergraduate chemistry majors was established by Dorothy Snyder through the Pittsburgh Foundation in memory of her brother, the late Dr. Paul E. Snyder. Dr. Snyder earned three chemistry degrees from Carnegie Institute of Technology (BS 37, MS 38, and PhD 44), with Professor Harry Seltz his PhD research advisor in the area of physical chemistry. He was employed for many years by Westinghouse Electric and Manufacturing Company and did much of his graduate work as a part time student. He was an instructor in the Chemistry Department for several years, principally teaching in the evening program.

Joint Undergrad Program

A joint program between the Mellon College (MCS) of Science and the College of Humanities and Social Sciences (H&SS) was initiated in Fall 1999. A competitive selection of entering students were offered the opportunity to enroll in a pilot

Science and Humanities Scholars program. The current 44 first-year students will either select one of the traditional departments in MCS and H&SS as their home department, or elect one of the two new cross-college programs as their home: Mathematical Statistics or a unified double-major of the Biological Sciences and Psychology Departments. An enrollment of 60 first-year students is targeted for the next entering class.



Graduate Program

Our graduate program enrolled ten new students this academic year, while graduating eight with PhD degrees. The graduates took positions at Burham Institute, Yale University, Kansas State University, Carnegie Mellon University, Confocal Microscopy Facility of the University of Vermont School of Medicine, Harvard University, Bayer Corporation, and Albany Molecular Research. A tabulation of our graduates may be found at the Chemistry web site (see p. 9)

Their dedication to excellence in teaching bore fruit in awards to several graduate students: Len Vuocolo (University Graduate Student Teaching Award); Rob Loewe, Ivaylo Ivanov, Rob Patterson and Missy Pasquinelli. (Departmental TA Award); Dan Savin and Nadine-Fattaleh-Diggs (Teaching Fellows for the Eberly Center for Teaching Excellence). The University Graduate Student Teaching Award has been given seven times since its inception and Chemistry has had four winners (Yunil Huang, Joanne Kehlbeck, Greg Martin and Len Vuocolo and two students who received Honorable Mention, Kim Kostka and Shawn Williams). Missy Pasquinelli is working with Academic Development overseeing portions of the Supplemental Instruction Program.

Scott G. Gaynor, PhD 97, received the 1999 Unilever Award for Outstanding Graduate Research in Polymer Chemistry of the ACS divisions of Polymer Chemistry and Polymeric Science & Engineering. The award recognizes a recent graduate who has completed an outstanding PhD thesis. The award, consisting of a plaque and \$2,000 prize, was presented at the Fall ACS national meeting. Kris Matyjaszewski was Scott's thesis advisor. Scott, who has been the Assistant Director of the ATRP Consortium with Kris in the Department of Chemistry will leave soon for a new position with Dow Chemical in Texas.



Scott Gaynor receives
1999 Unilever Award



A Special Profile

Rea Freeland has been appointed Associate Department Head beginning in January 2000. She earned a BS in Chemistry from Carnegie Mellon in 1981. Her career since then has focused on teaching and learning issues in science, and more broadly on improving university teaching. She studied learning and retention of organic chemistry in her PhD in Psychology, also from Carnegie Mellon. After post-doctoral work in math and physics education at the University of Massachusetts Amherst, Rea was an Assistant Professor of Psychology at Harvey Mudd College in Claremont, CA, for several years. Most recently, she has served as Associate Director of Carnegie Mellon's Eberly Center for Teaching

Excellence, specializing in teaching support for TAs and future faculty, and individual consultations for faculty. As Associate Head, Rea will work on a wide range of administrative issues, and particularly on enhancing the graduate program. She will also continue collaborating with Dave Yaron on the development of educational software for introductory chemistry, see <http://www.ir.chem.cmu.edu/>.

• •

Faculty Affairs

Mark E. Bier demonstrated the remote control of a mass spectrometer (MS) for teaching purposes in a CMU Chemistry class in April. In collaboration with Dr. **Karl Kauffmann** (then a Research Associate), a system was developed to permit Mark to control the MS, located in the Center for Molecular Analysis in the MI Building, from a Doherty Hall Lab IV classroom, ca. 0.5 miles away, using a laptop PC and a remote Internet connection. Students viewed the MS control window and spectrum display on a 5' X 6' screen, along with a "real-time" video display of Karl at the spectrometer. The electrospray MS was used remotely to determine the molecular weight of a peptide, angiotensin I, and a protein, cytochrome-c, along with MS-MS data for an ion of angiotensin I while controlling the collisional activation energy. It was such a success that a similar Lab IV class is planned for late March 2000. This project is an example of more complex projects in the Virtual Mass Spectrometer Laboratory (VMSL), an interactive Internet educational tool currently under development through a grant awarded in 1999 from the National Science Foundation to Mark and Joseph Grabowski (Univ. Pittsburgh); see mass-spec.chem.cmu.edu/VMSL/.

Kris Matyjaszewski received the 1999 Alexander von Hum-

boldt Prize for US Senior Scientists and was the 1998/9 recipient of the Elf Chair of the French Academy of Sciences. He also organized a symposium on Controlled Radical Polymerization at the 1999 ACS National Meeting in New Orleans.

Terrence J. Collins received the 1999 Presidential Green Chemistry Challenge Award, along with members of his group, including **Colin Horwitz** and students (see p. 3). The award recognized the development of oxidant activators used in the general activation of hydrogen peroxide for "green oxidation technologies". This chemistry was described in the January 1999 issue of the *Alumni Newsletter* (available online, see below). Terry has now developed tetraamido-macrocyclic ligand (TAML™) catalysts that may be used in micromolar concentrations in applications such as peroxide activation in the laundry field. For more information, see Terry's web page, via the Chemistry Department web page (www.chem.cmu.edu).

Richard McCullough has become a member of the Technology Advisory Board for BF Goodrich.

Guy C. Berry was the 1999 Distinguished Lecturer for the Institute of Materials Science, University of Connecticut.

• •

Outreach Programs

MCS was host to the first annual Pennsylvania Governor's Institute for the Physical Sciences which brought 40 K-12 teachers from across the state to campus for a two week institute this past summer, focusing on content enrichment in the physical sciences and application of the draft Pennsylvania state science standards. Chemistry faculty involved were Karen Stump as on-

site director, Garry Warnock and Hugh Carr as faculty, and Rick McCullough as a keynote speaker. Bruce Armitage and Mort Kaplan spoke with teachers about their research.

Stu Staley gave lectures in Archaeological Chemistry in an outreach program last spring for teachers from the Pittsburgh Public Schools, and Guy Berry presented a lecture on Polymer Chemistry to the Education-Group of the Pittsburgh Section of the Am. Chem. Soc.

• •

Carlin Remembered

(continued from page 1)

A complete tabulation of these may be found via the departmental web site (see p. 8 for the url). Many of you will know that his passion for teaching and research was at least matched by his love of golf. His lifelong love of golf grew at the University of Minnesota as he worked to earn a BS degree in 1937 and a PhD in 1941, and blossomed at the Oakmont Country Club, where he was a member with a single-digit handicap. He served as a board member and in several other capacities, including head of the scoring and handicap committees. Bob served the American Chemical Society locally and nationally on a number of committees and was chairman of its Pittsburgh section; he received the *Pittsburgh Award* from the Pittsburgh Section of the ACS in 1981. He also served as president of the Pittsburgh Chemists Club. In 1952, Time magazine named Bob one of Pittsburgh's "One Hundred Young Men of Tomorrow", and he was a Peter J. Reilly Lecturer at the University of Notre Dame in 1956. He also was a Fellow of the American Association for the Advancement of Science.

• •

Faculty Profiles (Continued from p. 2)

Berry

Departmental web site. Berry has held visiting professorships at the University of Tokyo, the University of Kyoto, and Colorado State University. He received the 1990 Bingham Medal of the Society of Rheology and the 1994 Pittsburgh Prize of the Pittsburgh Section of the American Chemical Society, and is a Fellow of the American Physical Society. He has served as Head of the Department of Chemistry, as well as Acting Dean of the Mellon College of Science of Carnegie Mellon, and has been co-editor with Edward F. Casassa of the *Journal of Polymer Science: Polymer Physics*, serves on the editorial boards of a number of journals, and maintains an active consulting schedule.

Kaplan

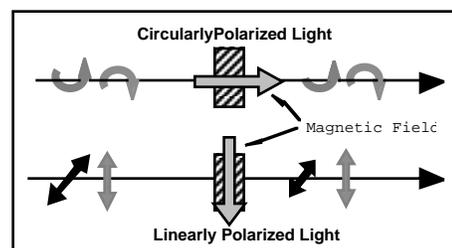
1980's his research expanded into nuclear reactions induced by energetic heavy-ion beams, a rapidly developing field spurred by the startup of numerous heavy-ion accelerator laboratories in the U.S. and Europe. His work emphasized on-line measurements of charged particles emitted in the deexcitation of very hot nuclei formed in heavy-ion collisions, using the charged-particle signatures to track the evolution of statistical degrees of freedom in the reactions. An NSF funded

research proposal with John Pople and Bob Stewart for computational chemical research on minicomputers led to the acquisition of the first Digital Equipment Corp. VAX-11/780 computer in 1978.

Mort's current research is focussed on the STAR project, an international collaboration to probe the primordial chemistry of the early universe extant roughly one microsecond after the "big bang". This is an entirely new regime of science, never before observed in the laboratory. The objective is to discover, identify, and characterize the transient state of matter called the "quark-gluon plasma", predicted to be formed under extreme conditions when quarks, the most fundamental particles of matter, are released from the gluons that bind them into protons and neutrons. Mort is involved in the development and construction of the now nearly completed \$60M STAR Detector, installed at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory (STAR = Solenoidal Tracker At RHIC). This mammoth, multicomponent detector will provide 3-D tracking of the large number of fragments produced in high-energy nuclear collisions. In the spring of 2000 the RHIC accelerator will begin producing colliding beams of Au ions at energies of ~40 trillion eV, and the STAR detector will begin recording data at a continuous rate of ~20 Mbytes/sec. The data will require large computational resources for analyses and simulations to extract the underlying physics and chemistry.

A Research Profile

James Peterson and **Emile L. Bominaar** are collaborating to create a new tool for the study of metalloproteins. Jim, a Visiting Professor, is developing the experimental technique and Emile, a Research Scientist collaborator of **Eckard Münck**, is working on theoretical aspects of the method. The Münck Laboratory specializes in the spectroscopic studies of metalloproteins. The new tool utilizes magnetic fields to exert inductive forces on electrically charged particles in motion, such as electrons in atoms and molecules, to cause changes in associated electronic absorption spectra. The strongest effect, *Magnetic Circular Dichroism* (MCD), is observed when a magnetic field is applied parallel to a beam of circularly polarized light. Magnetically induced dichroism, or differential absorption of right- and left-hand circularly polarized light is commonly used in the study of metalloproteins. A much weaker effect, called *Magnetic Linear Dichroism* (MLD), results when the field is perpendicular to a light beam of plane polarized light. The intrinsic weakness of MLD had prevented its detection, apart from a few cases where exceptionally sharp electronic transitions are observed--*i.e.* matrix-isolated atoms and rare-earth ions. Now, for the first time, Jim has succeeded in observing MLD of a frozen molecular solution, using a number of hemoprotein derivatives as examples. Parallel with the instrumental work, Emile has



Schematic for MCD (upper) and MLD (lower)

developed MLD theory. A principal motivation for these studies is to create a new tool for the study of metalloproteins, particularly those with paramagnetic metal centers: MLD and MCD provide complementary information about the electronic structures of biologically active sites, which determine such properties as valency, electron spin, ligand binding (*i.e.* substrates, inhibitors, products) and exchange couplings between paramagnetic sites. These data, which can be obtained for initial states, final states, and reaction intermediates, are essential for determining the mechanisms of biological processes at the sub-molecular level. In the first application of the new technique, Jim and Emile resolved an old controversy concerning the magnitude of the electric ring currents in the first electronic excited state of cytochrome c, a hemoprotein involved in biological electron transfer. In future studies, they intend to apply the new spectroscopy to multicenter metalloproteins

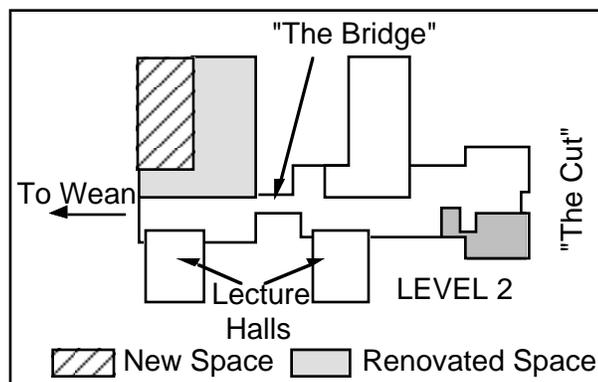
in which the MCD of the active site is obscured by the signals of other remote cofactors. This application will provide insight in the biochemistry of the final component of the respiratory chain in aerobic organisms, the oxygen-to-water reducing enzyme cytochrome *c* oxidase.

• •

Chem Teaching Labs

(Continued from page 1)

Laboratory on level 2. This space will be used initially for the Introduction to Chemistry Lab, but will eventually serve a wider purpose to provide hands-on laboratory experience to freshman in MCS. There will also be a central chemical storage and solution preparation facility at ground level. In addition to the renovations for Chemistry, Physics will get new and renovated space for its freshman program, faculty offices and ancillary support, and the Art Department will have new studios for courses in printmaking. The Freshman Science Laboratory is intended to open a new laboratory experience in science for all MCS students.



Schematic of renovations/additions on Level 2

• •

ALUMNI NEWS

Your generous responses to the questionnaire in the *Newsletter* and requests for new issues are much appreciated--we now have heard from 270 of you (many more than once as you update us on your whereabouts and careers)--keep it coming!

Ruth E. Keller, BS 27, is retired in "every sense of the word" at age 93 yrs. She writes to express her gratitude to Margaret Morrison Carnegie College and Carnegie Mellon University and the scholarships for the education she received. Her career took the path of social worker for the Sacramento County Social Services Area and Mental Health Department.

Virginia Schalles, BS 41, writes to remark on the changes in chemistry since she received her BS in 42, as exemplified in the last newsletter. She earned a BS in Nursing in a 5-year program in conjunction

with West Penn Hospital, and taught at various schools of Nursing during a career of 41 years.

David R. Lide, BS 49, continues as Editor-in-Chief of the CRC Handbook of Chemistry and Physics, recently completing the first CD-ROM edition.

Leon L. Lewis, BS 50, retired from the Tech. Center of the USS Division of USX in '91, remains active in a variety of volunteer activities.

Robert L. MacLeod, BS 54, is now retired in Wellington, FL, from a career in international sales that took him on many journeys in the US and Asia; he still enjoys foreign travel--next stop: Turkey, this year

Charles R. Rousseau, BS 55, joined MI after graduating from CIT, and has since been with several companies around the US, moving twice from coast to coast. He is having "too much fun" to retire.

John Olmsted, BS 59, Professor and Chair, Department of Chemistry & Biochemistry, California State University, was named Outstanding Professor of the Fullerton campus 97-8. The third edition of his "Chemistry, the Molecular Science" on general chemistry will appear in 2000.

Frank J. Millero, MS 64/PhD 65, Associate Dean of Rosenstiel School Marine & Atmospheric Science of the Univ. of Miami, has been elected Fellow of the American Geophysics Union and received the Provost's Research Award in 1999 and the Faculty Scholar Award in 1996. He is currently conducting research on CO₂ input to oceans from fossil fuel combustion.

Lee Ringler, BS 65, is practicing bankruptcy law in Augusta, GA. He is Board Certified in Consumer Bankruptcy Law.

William H. Mapes, BS 69, retired in '98 from a position as a Senior Engineer with General Electric. He now consults in lubrication and hermetic chemistry.

Margaret I. (Peggy) Johnston, BS 72, sends a copy of *AIDS Agenda*, a newsletter of the National Institute of Allergy & Infectious Diseases, announcing her return as the Assistant Director for the HIV/AIDS Vaccines at NIAID, and Associate Director of the Vaccine and Prevention Research Program in NIAID's Division of AIDS. She has primary responsibility for NIAID's extramural research programs and those on HIV/AIDS vaccines, topical microbicides, and other biomedical prevention approaches.

Kimberly A. Ames, BS 81, has moved to Pusan, South Korea, to become a lab manager with Nike, working with factories to improve product quality and performance. She has developed several rubber compounds since used on millions of shoes and currently has several patent applications pending.

Andrew Sicree, BS 83/MS 85, was awarded the PhD in Geochemistry and Mineralogy in May 1999.

He is the Curator of the Earth & Mineral Sciences Museum of Penn State. The museum has the country's most extensive collection of paintings and sculpture depicting mining and related industries, as well as the world's most extensive collection of mineral property exhibits. He and wife Rebecca (née Marshall, MS EE '87) have five children.

Laura Schick Zapanta, BS 89, was awarded a PhD in biochemistry from Penn State Univ. in August of '98. She and her husband now live in Austin TX.

Jeffrey A. Leone, BS 92, currently runs a Montell Polyolefins joint venture in advanced materials for the PRC, Taiwan and Hong Kong. The materials involved are based on polypropylene for the automotive, appliance and packaging sectors. Jeff would like to hear from alumni, especially those in China.

Amy Ratnaparkhi, BS 92, who received a PhD in organic chemistry from University of Pennsylvania in 1998, now works in medical communications, in a division of regulatory affairs, for Berlex Laboratories. She and her husband live in Tarrytown, NY.

Tara S. Williams, BA 93, engaged in a Pediatric Residency training program after completing medical training at the University of Pittsburgh School of Medicine in 1999. She and husband James Williams (Physics BS 94) have three girls.

GRADUATE STUDENTS

Paul Numerof, PhD 49, went to work for the Chemical Development Division of E. R. Squibb and Sons in New Brunswick, NJ after completion of doctoral studies. Using his experience with radioactive materials from the Manhattan Project at Los Alamos in 1944/45, he promoted and became the first head of a laboratory using radioactive materials in 1951. He helped influence Squibb's entry to nuclear medicine, managing that area until 1973. At that time, he joined Pace University, Westchester Campus, where he remained until his retirement in 1990 to Vail, CO. Retirement has been exciting for Dr. Numerof and his wife; they have visited every continent except Antarctica—with a trip scheduled there this year.

Anne B. Dunlap, MS 59, is currently doing research at Duquesne University. She reports that she is now a grandmother of three.

Raymond P. Wagner, PhD 61, retired from the Los Alamos National Laboratory in November, 1993. He would like to contact chem alums, especially those of the Loyola of Chicago Group.

James R. Noyce, MS 69, advises us to check Marquis' Who's Who in Science and Engineering, '98-99 edition for a run down on his activities.

Mary Ann Finch, PhD 73, does marketing projects for a group of companies in the photonics industry.

Theresa Thewes, PhD 87, was named full Professor in the Chemistry Department of Edinboro University in Pennsylvania in September 1998. She is chair of the Task Force for National Chemistry Week Program of the American Chemical Society.

Mohan Srinivasarao, PhD 90, has moved to the School of Textile and Fiber Eng. of Georgia Tech.

• •

Chemistry Newsletter on the Web

Recent issues of the *Chemistry Newsletter* may be found on the Chemistry Department Web site:

<http://www.chem.cmu.edu>

The Home Page includes

- Graduate Studies
- Undergraduate Studies
- Faculty Research Interests

along with many other items. Take a look, and send us your suggestions to make it more useful to you and others.

THANKS FOR YOUR SUPPORT!

We want to thank the many Alumni who have made gifts to the University and/or Department. These are extremely important to our efforts to provide a quality educational experience to our students. Tax-deductible gifts may be made directly to the Chemistry Department by explicit request to that effect, or by instructions that your gift be directed to Chemistry. The Department has many activities in both undergraduate and graduate education that benefit from your generosity, including:

- Grants for undergraduate and graduate students for travel to scientific meetings
- Support for Departmental Colloquia
- Support for undergraduate research projects
- The Annual Chemistry Department Retreat

This year we have established an Alumni Fund for student travel to scientific meetings. It is very difficult to get funds to send our students to meetings; almost no money is available in normal grants. This robs our students of participation in national and international meetings--a critical part of their education. Please donate to this fund by mailing your contributions directly to the Chemistry Department. Some of you may be able to take advantage of gift-matching programs at your place of employment. In any case, thanks again for thinking of us!

• •

Chemistry Alumni Directory

Many of you responded affirmatively to our offer to oblige your classmates in locating you from our files. If you have not responded, and wish to do so, please check the "Yes" box in the Questionnaire on page 9.

• •

2000 ALUMNI QUESTIONNAIRE

Please Complete and Return to
Department of Chemistry
Carnegie Mellon University
Mellon Institute, Box 166
4400 Fifth Avenue
Pittsburgh, PA 15213-2683

NAME:
(Name at CMU if different):

ADDRESS:

PERSONAL HIGHLIGHTS & COMMENTS

BUSINESS TEL:

HOME TEL:

FAX :

e-mail:

Make address available to Chem Alumni?

Yes

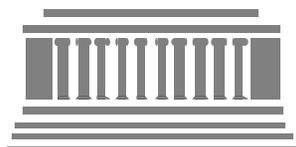
No

CLASS/Degree:

(Please include your degree)

Department of Chemistry
Carnegie Mellon University
Mellon Institute, Box 166
4400 Fifth Avenue
Pittsburgh, PA 15213-2683

ALUMNI NEWSLETTER
DEPARTMENT OF CHEMISTRY
CARNEGIE MELLON UNIVERSITY



Editor: G. C. Berry
gcberry@andrew.cmu.edu