



STUDENT FELLOWSHIPS

ACADEMIC YEAR 2006–07

McCormick Fellowships

Pedro Brugarolas Norman Marshall
Yunus Turkmen Keya Zhang
Ye Zhu

Freud Fellowships

Alex Dickson Loren Greenman
Laura Hawk Britni Ratliff
Frank Roberts

NSF Fellowships

Rebecca Pompano Adam Rothman

NIH Predoctoral Training Grants

Jason Kreutz Ralph Petty III

ACS Novartis Fellowship

Matthew Boxer

Abbott Labs Fellowship

Jianwei Sun

Glaxo-Smith-Kline Fellowship

Gerri Hutson

ACADEMIC YEAR 2007–08

McCormick Fellowships

Ryan Brown Jonathan Foley
Andreea Stuparu Dmitri Usanov
Elizabeth Wiltrout

Freud Fellowships

Toan Huynh Mark Maienschein-Cline

NSF Fellowships

Catherine Poor Britni Ratliff

NIH Predoctoral Training Grant

Laura Hawk

Molecular and Cellular Biology Training Grant

Jouko Virtanen

Bristol-Myers Squibb Fellowship

Gerri Hutson

FROM THE CHAIRMAN

I am pleased to be reinstating the Chemists Club newsletter after a lapse of a couple of years. Many of you have commented that you enjoyed receiving the newsletter, so it is back by popular demand. I hope that all of you will send along your own news to be included in future issues.

For those of you who have not recently visited campus, the Chemistry Department has been undergoing dramatic changes in our physical space. The Searle building is being entirely refurbished thanks to the generosity of the Searle family and therefore the building is currently unoccupied. We plan to reopen the building when the renovation is complete in 2009.

In addition, many of our faculty and students have moved into the newly constructed Ellen and Melvin Gordon Center for Integrative Science, a 430,000-square-foot building that brings together faculty and research from the Biological and Physical Sciences, and research institutes including the Howard Hughes Medical Institute, the James Franck Institute, and the Institute for Biophysical Dynamics.

During the last ACS meeting held in Chicago, we hosted an alumni event in the Gordon Center for Integrative Science. I was delighted that some of you were able to attend, and we plan to try and host alumni events at future ACS meetings.

It is a very exciting time to be a member of the Department of Chemistry at the University of Chicago. The list of achievements and awards printed in this issue is just one indication of the caliber of our current faculty and students. We have also been fortunate that so many alumni have remembered the department in their wills. Over the past six months we have been informed of many bequests that will significantly enhance the fellowship money available to support our students.

Please take a moment to remember those alumni we have lost over the past couple of years and review their widely ranging contributions to the field.

Best regards,

Michael D. Hopkins
Professor and Chairman

NAMED LECTURES

April 14, 2008

LECTURE: Stieglitz
SPEAKER: Professor Jean Frechet
(Berkeley)

May 19, 2008

LECTURE: Lee
SPEAKER: Professor David Milstein
(Weizmann Institute)

May 5, 2008

LECTURE: Kharasch
SPEAKER: Professor Dan Kahne
(Harvard)

American Chemical Society honors authors of scientific papers and breakthrough findings

By Steve Koppes

After completing tours of duty as a combat engineer in Germany and the Philippines during World War II, Harvey Fisher resumed his studies at Chicago in the autumn of 1947. Working under the mentorship of Professors Frank Westheimer and Birgit Vennesland six years later, Fisher became the first author of a landmark paper published in the *Journal of Biological Chemistry*.

“It was done with only one explosion and two hospitalizations,” quipped Fisher, now a professor of biochemistry and molecular biology at the Kansas University Medical Center. But the paper’s scientific reverberations continue.

“This particular paper published in 1953 changed the face of chemistry forever,” said Jeffrey Seeman, former chair of the American Chemical Society’s Division of History of Chemistry and originator of the award program. The ACS Division has now commemorated the influence of that 1953 paper, “The Enzymatic Transfer of Hydrogen,” by unveiling a plaque at a ceremony held Monday, March 26, in the Gordon Center for Integrative Science.

The paper is one of the first 10 scientific works the society has honored in its Citations for Chemical Breakthroughs award program. So honored as well is a 1974 *Nature* paper on the formation and decomposition of ozone co-authored by Chicago alumnus F. Sherwood Rowland. That paper helped earn Rowland, the Bren Research Professor of Chemistry at the University of California, Irvine, a share of the 1995 Nobel Prize in Chemistry. Rowland received his PhD in chemistry from the University in 1952.

“Many awards go to individuals,” Seeman said. “This award goes to the institution so that as students, visitors and faculty walk down the hall and see these plaques, they will be reminded of the great science that was done and is still being done here.”

Fisher considers his own most significant chemical discovery to be the mind of his co-mentor Westheimer. “He thought up the idea, and that was the important thing,” Fisher said of the experiment that led to their 1953 paper. “The rest was just a matter of getting the chemistry done.”

Westheimer, who passed away recently, was a professor in chemistry at Chicago; at the time the work was undertaken he was at Harvard University. Co-authoring the paper with Fisher and Westheimer were Eric Conn and Vennesland. A professor in biochemistry before taking an appointment in Germany, Vennesland died in 2001. Conn, a former instructor in biochemistry at Chicago, now is a professor emeritus of biochemistry, molecular and cellular biology at the University of California, Davis.

The 1953 Chicago paper marked the discovery of the pro-chirality concept that pervades all of chemistry and biology today, said Brice Bosnich, the Gustavus F. and Ann M. Swift Distinguished Service Professor Emeritus in Chemistry and the College.

The paper described an experiment showing that an enzyme—a protein molecule that drives chemical reactions—can distinguish

between atoms that differ only in their chirality, or handedness, much the way the right hand differs from the left. By removing one of two seemingly identical hydrogen atoms from a molecule, an enzyme could produce versions of a chemical product that differ in their handedness. But if it removed the other atom, a different product resulted.

“It was a very subtle thing that told you that all the processes of life are chiral,” Bosnich said. As plants and animals form new cells, convert fuel into energy, or perform myriad other chemical reactions, chirality plays a key role every step of the way.

“These transformations are very complex, and Westheimer was one of the earliest to begin to understand how these extraordinary transformations occur,” Seeman said.

As part of a flood of war veterans who attended college on the GI Bill, Fisher and many of his fellow students brought about a different kind of transformation to Chicago.

“We were a most unusual graduate class. The faculty didn’t know quite what to make of us. They didn’t think we knew very much,” said Fisher, who received his Chicago PhD in biochemistry in 1952. “We’d come back from Germany and the South Pacific, and we weren’t much concerned with any threats from the state of Illinois.

“This award goes to the institution so that as students, visitors and faculty walk down the hall and see these plaques, they will be reminded of the great science that was done and is still being done here.”

Angry chairmen didn’t phase us much. We were very confident.”

One of Fisher’s classmates, Robert Langdon (SB’44, MD’45, PhD ’53), collaborated with Konrad Bloch, a member of the Biochemistry and Biophysics faculty from 1948 to 1954. The work on cholesterol synthesis helped earn Bloch the 1964 Nobel Prize in Physiology or Medicine.

Another classmate, Theodore Rall (PhB’47, SB’48, PhD’52), soon began collaborating with Earl Sutherland at Case Western Reserve University. Rall contributed to hormonal research that earned Sutherland the 1971 Nobel Prize in Physiology or Medicine.

A third classmate, Irwin “Ernie” Rose (SB’48, PhD’52), shared the 2004 Nobel Prize in Chemistry for discovering how cells degrade proteins.

“Out of a class of 14, we weren’t too shabby,” Fisher said.



SEARLE TO BE RENOVATED

As mentioned in the Chairman's column, the Searle Chemistry Laboratory is currently undergoing a total renovation. This \$32 million project, funded in part through a gift from the Searle family, will result in two and one-half floors of first-class research space for synthetic chemistry, including 64 fume hoods, an integrated NMR/mass-spectrometry facility, an X-ray diffraction laboratory, and shared lounge/meeting rooms to stimulate interactions among faculty and students from different research groups. In addition, there is substantial space being set aside for future shared instrumentation (including a high-bay space for a high-field NMR spectrometer) and for new shared facilities and research laboratories focusing on nanoscience problems. The Chemistry Department administrative offices will also be located in Searle, moving from their current home in Jones Chemical Laboratory. In addition to the changes to the interior of the building, the exterior appearance of Searle will also change noticeably, as the main entrance will be moved to the south end of the building in order to provide a more direct path to the new Gordon Center.

In late summer, contractors removed asbestos and other hazardous materials from Searle, and with that work complete are now completely gutting the interior and repairing the exterior



masonry. Construction of the new interior will commence in early 2008. It is anticipated that Searle will reopen in early 2009.

This renovation follows the partial renovation of Jones, which was completed earlier this year.

ALUMNI NEWS

Barbara Knight Warren, SM'69, PhD'73, recently competed in the 2007 National Senior Games and placed in five of her six events. Warren, 60, hopes to be an inspiration to others her age.

Warren has battled medical problems for years and overcame two ankle operations to compete in the games, which were held in Louisville, Kentucky. The Charleston, West Virginia native qualified after competing at the West Virginia Senior Sports Classic last summer. Her six events at the National Senior Games were long jump, high jump, 100-meter dash, 200-meter dash, 400-meter dash, and 800-meter dash.

Warren holds a PhD in physical organic chemistry from the University of Chicago.

Gene Zeffren, SM'65, PhD'67, is counting on the memories of American women as the University City, Missouri native prepares to relaunch the Salon Selectives hair care line in the first quarter of 2008. Although the brand has been off the shelves since Unilever bought Helene Curtis and let the product die off in the middle of 2004, it is said to have an 80 percent brand awareness among women.

"They still remember when it was in its heyday," said Zeffren, whose group and RiverWest Brands of Chicago have become 50-50 joint venture partners in Selective Beauty Brands LLC.

RiverWest is a company that revives dead brands, and is trying to wrest the Burger Chef label from, or partner with, Hardee's to revive that brand.

"RiverWest was negotiating for rights to the brand with Unilever since the last quarter of 2006 and needed a management team, and they got connected with us—several Helene Curtis executives," the Washington University undergraduate and University of Chicago chemistry PhD said.

"I was president of Helene Curtis U.S.A.," said the 65-year-old Zeffren. "I had developed most of the products since 1979, and had my fingerprints all over Suave, Finesse, Degree, and Salon Selectives."

At its peak, Salon Selectives had \$275 million in U.S. sales, and between a 6 and 7 percent share in daily hair care.

Zeffren, who graduated from University City High School in 1959, said the product will be produced by "a couple of upper Midwest contract manufacturers." He looks to add products to the line.

DO YOU HAVE NEWS TO SHARE IN THE NEXT CHEMISTS CLUB NEWSLETTER?

Information of interest might include: company for which you work, job description, promotions, research, awards, publications, and of course news of your family. Please use the enclosed card for such information. Thank you!



CONGRATULATIONS

BA & BS RECIPIENTS

Spring 2007

BA

Brett Bassett
Sully Paz
Robert Racadio
Peter Stavros

Doran Bennett
Ream Qato
Robin Scheffler
Ryan Vass

BS

David Adamson
Marie Bell
Benjamin Capraro
Zachary Gates
Stephanie Gove
Dmitry Minkovsky
Debarshi Mustafi
Chandani Patel
Daniel Rabe
Jessica Robbins
Valeriy Shubinets
Rafal Sobota
Carl Streed Jr
Alison Wendlandt
Jonathan Yin

Alison Affinati
Daniel Betts
Amy Chonghasawat
Anand Gopalsami
Stephen Joy
Keeley Mui
Megan Olmsted
Pranjal Patel
David Rawling
Elizabeth Santori
Nicole Sindy
Andrew Stergachis
Vuk Talijan
Amy Winans
Fang Zhao

MS RECIPIENTS

Fall 2006

Cheol Hong Cheon

Summer 2006

Eduardo Alberch Gracia
James Becker
Meghan Bush
Changle Chen
Wenxun Gan
Jason Kreutz
Xiaoli Liao
Anshu Pandey
Ralph Petty III
Sergey Pronin
Juan-Jose Sanchez-Cortes
Zhongliang Shen
Murat Sunbul
Seraphine Wegner
Chengqi Yi

Wonho Bae
Vikram Bhat
Kathleen Cao
Albert DePrince III
Zachary Gurard-Levin
Pingfan Li
Yihan Lin
Joshua Payette
Rebecca Pompano
Adam Rothman
Feng Shen
Hae Jung Son
Olesya Ulanovskaya
Jingyi Wu
Hanqiu Yuan

Winter 2007

Hau Ho

Spring 2007

Doran Bennett

PHD RECIPIENTS

Summer 2006

Gergely Gidofalvi
David Kendall
Sachin Rane

Jelena Janjic
Ambarish Nag

Winter 2007

Nima Panahi
Kisam Park

Spring 2007

Allan Barlan
Jeff McGilvra
Guoyao Xia
Yanhua Zhang

Kristi Lazar
Jason Montgomery
Wei Zhang

FACULTY KUDOS

Steve Sibener was elected a Fellow of the American Association for the Advancement of Science and a Visiting Fellow of JILA.

David Mazziotti received a 2007 NSF CAREER Award and was named a recipient of a 2007 Camille Dreyfus Teacher-Scholar Award.

The PNAS Editorial Board has selected the paper "Modular chemical mechanism predicts spatiotemporal dynamics of initiation in the complex network of hemostasis," PNAS (2006) 103:15747-15752, by Christian Kastrup, Matthew Runyon, Feng Shen, and Rustem Ismagilov, for recognition with the 2006 Cozzarelli Prize. This prize recognizes one paper per year in each of the six PNAS

organizational classes (here, Physical and Mathematical Sciences) for "outstanding scientific excellence and originality."

Hisashi Yamamoto has been named a recipient of the 2007 Japan Academy Prize. The prize is awarded (in a ceremony attended by the emperor and empress) to persons who have achieved notable research landmarks or who have authored particularly outstanding academic papers or books.

Hisashi Yamamoto is also the recipient of a 2007 Humboldt Research Award from the Alexander von Humboldt Foundation.

Ka Yee Lee was named a recipient of a 2007 Llewellyn John and Harriet Manchester Quantrell Award for Excellence in Undergraduate Teaching.

Karl Freed has been elected as a Fellow of the American Academy of Arts and Sciences. He is one of only eight chemists so honored this year, and among the nine Chicago faculty elected (including President Zimmer).

Greg Engel has been named the recipient of a 2007 Camille and Henry Dreyfus New Faculty Award.

Jun Yin was named the recipient of a 2006 Camille and Henry Dreyfus New Faculty Award.



KRAWETZ PROFESSORSHIP ENDOWED

The department is pleased to announce that Dr. Arthur A. Krawetz, SM'53 (Chemistry), PhD'55 (Chemistry), has generously established and endowed the John, Grace, and Arthur A. Krawetz Professorship Fund in his estate. Dr. Krawetz was inspired to create this new endowed chair in the Department of Chemistry by his wish to support the ongoing excellence of Chicago's chemists. He remembers his years at Chicago fondly, and Dr. Kharasch in particular made a lasting impression on him.

Dr. Krawetz is president of Phoenix Chemical Laboratory in Chicago. His firm specializes in testing and analyzing chemicals, fuels, lubricants, plastics, greases, and additives for various performance and physical properties.

Please join us in thanking Dr. Krawetz for his extraordinary generosity on behalf of the department.

BREAKING NEWS FROM THE DEPARTMENT

In September, Chemistry faculty member Rustem Ismagilov was awarded a research grant by the National Institutes of Health (NIH). As an NIH Director's Pioneer Award recipient, Ismagilov, Associate Professor in Chemistry, will receive \$2.5 million to conduct biological research over the next five years. He is among 12 recipients of the 2007 Director's Pioneer Awards, which are designed to support individual scientists of exceptional creativity who propose pioneering approaches to major challenges in biomedical or behavioral research. The award to Ismagilov is notable for its recognition of the health care implications of a physical scientist's research efforts.

Ismagilov, who joined the Chicago faculty in 2001, specializes in microfluidic technology—the flow of fluids through channels thinner than a human hair—to understand and control complex chemical and biological systems at critical times and locations. With his Pioneer Award, he will develop droplet-based microfluidic technologies for quantitative studies of protein aggregation diseases and aging at the molecular level and in entire organisms. In addition to his Pioneer Award, Ismagilov also has been named the recipient of the 2008 Award in Pure Chemistry from the American Chemical Society. The award goes to scientists no older than 35 in North America who have accomplished research of unusual merit and creativity. Ismagilov will receive the award next April at the ACS National Meeting in New Orleans.

OUR LOSSES

ZARAH AINBINDER, PhD'63
July 12, 1937-July 29, 2006

Zarah Ainbinder received his PhD in chemistry from the University of Chicago in 1963. He worked for the DuPont Company as a chemist and later as a patent agent in the Central Research Department, retiring in 2000. Dr. Ainbinder served as a member of the Brandywine School Board and the Brandywine Citizens' Finance Committee. He was president of the Adas Kodesch Shel Emeth School Board and a member of the Gratz School Committee. He took classes and was a teaching assistant at the Academy of Lifelong Learning.

Dr. Ainbinder was married for 44 years to his loving wife, Harriet. He is remembered by two daughters and their husbands, and two grandchildren.

OLE KLEPPA, Professor of Chemistry
February 4, 1920-May 27, 2007

Ole Kleppa, the author of more than 350 scientific publications, began working at the University of Chicago in 1947 as a research fellow and instructor in the Institute for the Study of Metals, now called the James Franck Institute. He rose through the professorial ranks, attaining full professorship in 1962. Kleppa also served as Director of the interdisciplinary James Franck Institute from 1971 to 1977. He spent his entire career at Chicago, except for three stints abroad, and retired as a professor emeritus in 1990. He is survived by his wife, two daughters, three grandchildren, and his sister.

DANIEL E. KOSHLAND JR., PhD'49
March 30, 1920-July 23, 2007

A prominent biochemist who made critical contributions to the understanding of enzymes and protein chemistry, Daniel E. Koshland Jr. received his PhD in organic chemistry from the University in 1949. Dr. Koshland spent most of his career teaching at the University of California, Berkeley, where he provided vital leadership as an advocate of the sciences and as architect of a major reorganization of biology at the school in the 1980s. From 1985 to 1995 he was editor of the country's leading scientific journal, *Science*. Among his many awards were the National Medal of Science in 1990 and a Lasker Award for Special Achievement in Medical Science in 1998.

STANLEY L. MILLER, PhD'54
March 7, 1930-May 20, 2007

A student of Professor Harold Urey while at Chicago, Stanley L. Miller went on to a distinguished career teaching at the University of California, San Diego. However, he remained best known for an experiment he conducted as a graduate student showing how organic compounds could be generated from simple chemicals present in the earth's early history. Dr. Miller's discovery electrified the scientific community and opened new approaches to the study of the origin of life on earth.

Dr. Miller was a member of the National Academy of Science and a recipient of the Oparin Medal for important contributions to the study of the origins of life.

FRANK WESTHEIMER,
Professor of Chemistry
January 15, 1912-April 14, 2007

A member of the Chemistry faculty at Chicago for nearly 20 years, Frank Westheimer was a pioneer of the field of biochemistry. Originally a physical organic chemist, Dr. Westheimer is credited with inventing molecular mechanics, a mathematical approach to predicting the rates of chemical reactions that is widely used today. He went on to make numerous further important discoveries and insights in enzyme-catalyzed reactions and is considered a father of the chemical study of life processes. A recipient of the National Medal of Science in 1986, Dr. Westheimer chaired the National Academy of Sciences Committee for the Survey of Chemistry and served as a science adviser to President Lyndon Johnson.

AMADOU CISSE, 1978-2007

In the early morning of Monday, November 19, 2007, Chemistry graduate student Amadou Cisse was tragically killed while walking to his off-campus apartment. A memorial service was held on November 30, 2007, in Bond Chapel. Cisse, a native of Dakar, Senegal, had completed his work for his PhD, and the University awarded his degree posthumously. A University fund in his memory has been created. For further information, contact Angela Bowen (abowen@uchicago.edu).



THANK YOU TO CHEMISTS CLUB DONORS

GIFTS UP TO \$99

Zarah Ainbinder, SM'60, PhD'63
Allan S. Abramson, SM'65, PhD'71
Frank L. Lambert, PhD'42
Amos J. Leffler, PhD'53
Sanford Lipsky, SM'52, PhD'54
Jose Serafin Pulido, SB'76, SM'77
George J. Rotariu, SM'40
William M. Saltman, PhD'49
Raymond M. Stachniak, SM'61

GIFTS \$100-\$999

Elinor (Wade) Arendt, AB'64
Iu Yam Chan, PhD'68
Hee Cho, PhD'72
Gary C. DeFotis, PhD'77
Russell R. Dickerson, AB'75
Theodore C. Frankiewicz, SM'71, PhD'72
Kwok Hang Fung, SM'77, PhD'80
Roger K. Graham, PhD'53
Jan Gryko, Friend
Balawant S. Joshi, Friend
William J. Klapproth, SM'49, PhD'49

Bernard D. (SB'76, PhD'82) and
Nancy (Fritsch) Leipzig (SM'80)
Paul Melius, SM'52
George Papatheodorou, SM'68, PhD'69
Gene C. Robinson, PhD'49
Murray Senkus, PhD'38
Alan J. Strauss, SB'46, PhD'56
George H. Thomson, PhD'63
John J. Tyson, PhD'73
Stephan P. Velsko (PhD'81) and
Carol Ann Molini-Velsko (SM'79, PhD'83)
Grant D. Venerable, SM'67, PhD'70
Arlen E. Viste, PhD'62
Thomas Wartik, PhD'49

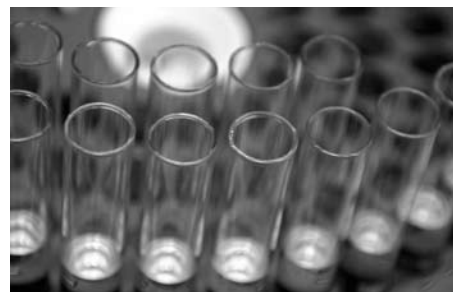
GIFTS \$1,000-\$2,499

Mayland Frida Chang (PhD'86) and
Shahriar Mobashery (PhD'85)
Edward D. Goldberg, PhD'49
Norman E. Phillips, PhD'54
Robert A. Plane, SM'49, PhD'51
Ariel G. Schrodt, SM'49, PhD'54

FROM THE ARCHIVES

Published in *Time* magazine on September 25, 1950

Every drop of ordinary water contains about 2,000 atoms of tritium, a key ingredient of the hydrogen bomb. This seemingly startling discovery was announced last week by Drs. Willard F. Libby of the University of Chicago and A. V. Grosse of Temple University. But no one need swear off drinking water—at least for that reason. Only one quintillionth (1/1,000,000,000,000,000,000) of its hydrogen atoms are tritium. An explosion is not likely.



7735 SOUTH ELLIS AVENUE
CHICAGO, ILLINOIS 60637

THE UNIVERSITY OF
CHICAGO
DEPARTMENT OF CHEMISTRY

