Spring/Summer 2002

the university of texas at austin

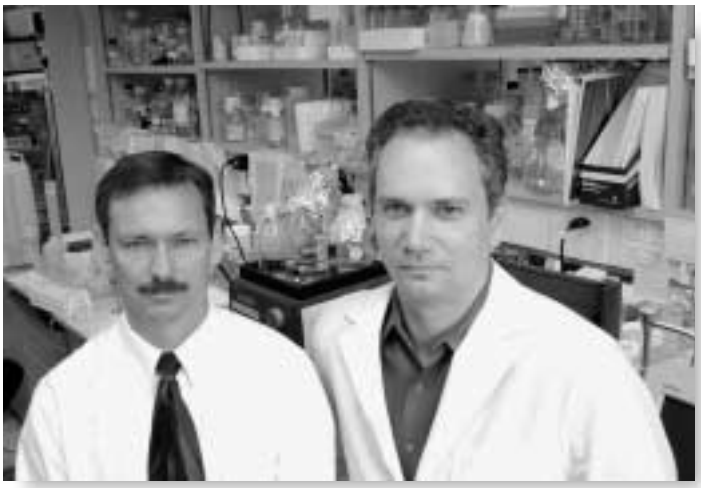
CHEMICAL Compositions

chemistry & biochemistry
departmental newsletter

Promise of a Cure
Researchers develop antibodies that may stop anthrax threat

A promising cure for anthrax based on powerful antibodies developed by biochemical engineers and chemists at The University of Texas at Austin has been announced in the June 1st issue of *Nature Biotechnology.*

A long-term collaboration between Dr. George Georgiou, professor of biomedical and chemical engineering, and Dr. Brent Iverson, professor of chemistry and biochemistry, developed the potential anthrax cure in research supported by the U.S. Department of Defense since 1997.



Dr. Brent Iverson and Dr. George Georgiou

Further trials are necessary to determine the antibodies' effectiveness in humans and the best treatment methods. The antibodies theoretically would be administered by injection to persons exposed to anthrax, and would block the toxin's deadly effects. This new antibody treatment, possibly coupled with a concurrent regimen of antibiotics, would disable both the anthrax toxin and its related bacteria.

Anthrax, the disease now synonymous with bioterrorism, is caused by a bacterium whose dormant airborne spores can enter the body by breathing or through a cut on the skin. Once inside the human system, the spores begin to actively reproduce. In the case of deadly inhalation anthrax, rapidly multiplying, toxin-laden bacteria soon make their way from the lungs to the bloodstream, and throughout the entire body. When flu-like symptoms appear a week or so after exposure, they're often disregarded at first. By the time the sufferer develops full-blown respiratory distress, it's usually too late.

"By that time, it's not enough just to kill the bacteria," Georgiou said. "You have to do something about the toxin."

Anthrax microbes possess an arsenal of three toxins. The first, called PA, binds to the body's own immune cells. Working together in groups of seven, the PA molecules carry out a complex process that eventually punches a hole through the immune cell and "injects" two other toxins, Edema Factor, which causes swelling, and the deadly Lethal Factor. The triple assault seriously disrupts the body's natural defenses and can lead to death.

The University of Texas at Austin team's approach interrupts the lethal process at the toxin delivery stage. Their strategy is to genetically engineer "sticky" antibodies that derail PA by providing an alternative, more attractive surface for the destructive antigen to adhere to. Once bonded to such substitutes, the PA is rendered inert and innocuous.

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IN THIS ISSUE

FROM THE CHAIRMAN

Teaching and Mentoring Students Remains a Primary Mission

Jim Holcombe

The University of Texas and, in particular, the Department of Chemistry and Biochemistry is well known for its research prowess and the kudos and awards bestowed upon its distinguished faculty. Similarly, the battle cry, "Publish or Perish," is well known inside and outside academia and reinforces everyone's awareness of the research pressures placed on these individuals. However, since many of you reading this epistle are departmental offspring, you realize that teaching is an integral part of what we do... and why we chose to be here rather than at a research institute. This enjoyment of working with students and wanting to transmit information and problem solving skills is all too often masked by the research reputation that the Department possesses. Let me add, before venturing further into my usually toothless "Chairman's message" that this enviable research record exists because of the hard work and creativity of the graduate and undergraduate students that are here in our laboratories. Like most of the faculty, I cherish the fresh perspectives that students bring into the lab. Scientifically naïve, they have not yet found the mental ruts that are easy to fall into. These creative students bring fresh perspectives and *inspirational triggers* that can be instrumental in solving "insoluble problems." Robert Oppenheimer once said, "There are children playing in the street who could solve some of my top problems in physics because they have modes of sensory perception that I lost long ago." I don't envy people who are faced with tough problems but lack the energy and imagination of the student resource pool that we have at the University of Texas.

The central point that I wish to make is this: educating students remains a primary focus. In the Department of Chemistry and Biochemistry we are fortunate to have some of the brightest minds effectively communicating complicated concepts to students in the classroom, even though many of these students appear to be present against their will, e.g., chemistry is a "required course" for their major. To be a bit more mathematical... although we have about 800 chemistry and biochemistry majors, which averages about 200 per incoming class, we teach general chemistry to more than 8,000 students and teach organic chemistry to almost 2,500 *each year*! Even at the junior level, we're expounding on the intricacies of analytical chemistry to over 225 per year. Hence the origin of the phrase "central science" that is often used to describe the discipline.

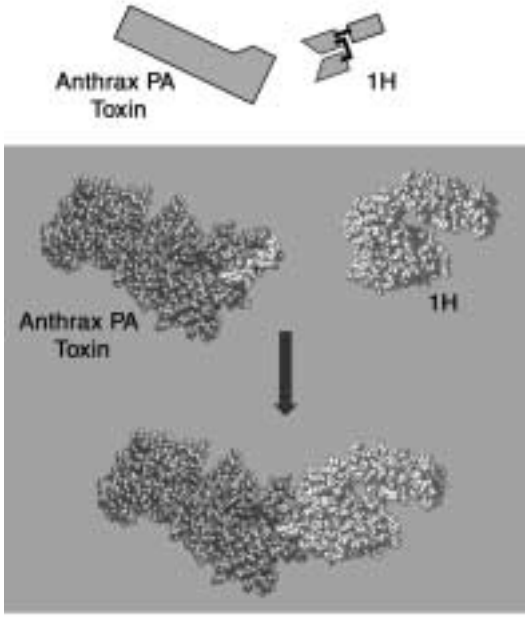
In spite of having a clientele that are not in class because "it sounds like fun," the departmental faculty has garnered an impressive number of teaching accolades that originate from student opinions. For example, the Department has five faculty members in the Academy of Distinguished Teachers (only the Department of English has more). Similarly, twenty-two percent of the recipients of the university-wide, prestigious Jean Holloway Award for Excellence in Teaching are from our Department. They are Stephen Monti, Alan Campion, David Laude, Raymond Davis, John (Mike) White, Eric Anslyn, and Brent Iverson. Most of these honors are bestowed on faculty who are involved in teaching lower division courses where the class sizes range from 200-500 students *per class* and the composition is *not* majors who enter with a lust for chemistry. While reduction in class size is a long-term objective, very effective teaching is the counter-measure we currently have in our arsenal to optimize the educational opportunities for our students.

In addition to successful teaching, there are several programs that have been initiated to foster a small-group learning environment in spite of the not-so-small group present in the lecture room. For example, Freshman Interest Groups (FIGs) are formed with about thirty incoming students per group. Although these students enroll in some of the large sections, they stick together in several of the core science and math courses and participate in their own small discussion groups.

For students who may have entered UT with high motivation and a strong interest in science, but may have had fewer academic opportunities, several programs including the Partnership for Excellence in the Natural Sciences (PENS) have been established in which cohorts of students learn in smaller classes. These small classes utilize the same curriculum and pace, but allow for added connections with the faculty. These added interactions have been shown to be a prime element in student success. Consequently, a faster teaching ramp can be employed to bring these students from their entering level to the same knowledge level expected of all freshmen at the end of their first semester of general chemistry. If done effectively - which appears to be the case thus far - these students can then participate successfully with other students in the more traditional class setting. The success of PENS has launched a new program, Texas Interdisciplinary Plan (TIP). TIP will provide Natural Sciences and Liberal Arts students with a "plan" based on demanding expectations and excellence in both the arts and the sciences. All students, but especially those with an intense interest in science, will benefit from smaller classes, accelerated instruction and academic support. For our own upperclassmen, we continue to be cognizant that special topic courses need to be made available and that independent research opportunities are key to their professional development.

In short, the Department remains dedicated to hiring and nurturing faculty who lead their field and expand the boundaries of scientific knowledge with innovative research. However, these same talented researchers have an equally important educational task. Each recognizes that teaching is our business, and an independent thinking, educated student is our product.

— Jim Holcombe



1H Binding Blocks Toxic Effects of Anthrax PA

This illustration shows anthrax's attack molecule, the PA Toxin (upper left) and the 1H Antibody (upper right). Under ordinary circumstances, PA Toxin attaches to and damages animal cells at a specific bonding site. Binding by the 1H antibody blocks the site, rendering the PA Toxin harmless until it is cleared from the body.

Dr. Catharina Maassen examines cells used to test the 1H antibody

...Continued from front page

Using modern laboratory techniques, Georgiou, Iverson and Jennifer Maynard, a then-doctoral candidate in chemical engineering, isolated thousands of potentially useful protein fragments. The researchers then isolated the best antibody in the mixture, an approach known as laboratory-directed evolution. The best protein, called "1H," was found to bind 50 times more tightly to PA than any antibody previously known.

"Having the antibody bind 50 times better means that it can hold onto the PA toxin long enough to have the entire complex cleared from the body, eliminating the toxin before it has a chance to do any damage," Iverson said. "Combined with antibiotics, this could represent an effective treatment."

"Our cells that make the 1H antibody can be grown in large quantities quickly and inexpensively, providing a ready source of the new agent," said Maynard, now a Stanford University postdoc in infectious diseases, who will join the University of Minnesota chemical engineering and materials science faculty next year.

In a series of laboratory tests conducted last summer, rats given the antibody survived dosages of anthrax toxin 10-times higher than normally lethal.

No anthrax spores were used during any phase of the experiments. The investigators worked with laboratory-synthesized toxin provided by Dr. Stephen Leppla of the National Institutes of Health in Bethesda, Md.

The rat trials were carried out at the Southwest Foundation for Biomedical Research in San Antonio under the direction of Dr. Jean Patterson.

The researchers indicated that further tests need to be conducted on primates, under conditions more closely emulating the way anthrax is contracted, before a therapeutic drug can be formulated. After that, it must be submitted to the U.S. Food and Drug Administration for approval. That process could take several years, but the researchers hope current concerns about bioterrorism will expedite the research.

"Although there is a long way to go, our current data make us very optimistic at this point." Iverson said.

In addition to anthrax, "engineered antibodies are likely to prove useful for the treatment of many other infectious diseases," Georgiou said.

Most recently, funding for the project has come from the U.S. Army SBCCOM, administered through Dr. Steven Kornguth of the Institute for Advanced Technology at The University of Texas at Austin.

— Rae Nadler-Olenick

This article was also highlighted on the UT-Austin Homepage. Photos by Charles Tischler.

Rae Nadler-Olenick

Fisher Scientific takes over management of the Chemistry Research Storeroom

This year on February 18th a time-honored university tradition went out the window at the Department of Chemistry and Biochemistry at The University of Texas at Austin. On that date Fisher Scientific, together with their subcontractor, Burgoon Company, took over private management of the Chemistry Research Storeroom. As contract operators, Burgoon and Fisher will staff the storeroom with their own employees and will own the supplies and chemicals stored there. This move is being made to take advantage of several features that will improve services and reduce overall costs.

Jim Holcombe; Steve Monti, Executive Vice Provost of UT-Austin; and Lewis Wright, UT System Associate Vice Chancellor for HUB Programs

To mark the official opening of storeroom operations, the two companies and the Department held a ribbon cutting ceremony in Welch Hall on March 4th. Officiating at the ceremony was Executive Vice Provost and member of the Chemistry faculty, Dr. Steve Monti. Sharing in the ribbon cutting duties were Department Chairman Dr. Jim Holcombe, UT Associate Vice Chancellor for Business Affairs, Lewis Wright, Fisher Corporate Account Manager Peggy Thurstlic, and Burgoon Company owner Nita Burgoon. Approximately 200 well-wishers from around the campus turned out to help celebrate the occasion, meet the Fisher and Burgoon staff, and tour the facility.

The storeroom is now under the direction of Storeroom Manager Brian Bybee and his assistants, Doug Lewandowski and Sam Watters. Tammy Moczygemba is the Fisher Sales Representative for UT-Austin including storeroom sales. Visitors are welcome to stop by the storeroom and see for themselves the changes that are taking place.

The Department has operated a research storeroom in Welch Hall since first occupying the building in 1929. Its main purpose was to be a ready supply of chemicals and equipment for the research and teaching needs of university chemists. Through the years the storeroom has come to serve scientists, engineers and others from virtually every department and activity throughout the Austin campus.

By 1999, the storeroom occupied a newly renovated, 5000 sq. ft. space on the first floor of Welch Hall. Its modern design incorporated the latest techniques to receive and store laboratory supplies and equipment safely and securely. However, storeroom objectives and distribution procedures were not keeping pace with current needs or technologies. The storeroom was not offering all the services we wanted, and costs were rising. This is are Fisher came in.

Throughout the country, private firms like Fisher, VWR Scientific, and others are already operating storerooms at several university, government, and industry labs. Their nationwide logistics muscle and well-developed lab supply expertise make these firms superior at providing what laboratories need safely and economically. It became apparent that the time had come for UT to join the trend.

In a bidding process supervised by the University Purchasing Department, the team of Fisher and Burgoon was awarded the contract to operate the storeroom at Welch. Fisher will supply and own the stock and provide the inventory management and billing operations. Burgoon will actually staff the storeroom with their employees and conduct retail sales to University customers. The participation of Burgoon, a minority-owned company, is strategically important in order for the University to meet its commitment to include historically underutilized businesses (HUB's) in its purchasing activity. Burgoon pioneered this concept of acting as an on-campus retailer for Fisher at the University of Texas Medical Branch at Galveston.

Fisher Scientific, established in 1902, is a $2.6 billion company, headquartered in Pittsburgh, with customer service locations and distribution centers throughout the U.S. Fisher has been a major supplier to the University for years and is dedicated to serving customers engaged in pharmaceutical, life science, biomedical, chemical, and other fields of research and development. Fisher initially will store about 1000 high demand products at Welch, but their full line of over 600,000 products is available for "virtual storeroom" purchases.

Instrumental in making the decision to move forward with this concept were Chairman Jim Holcombe, Department Associate Director Rick Quy, interim storeroom manager Ed Burshnick, and Department Procurement Supervisor Monika Hill. Many others throughout the University were involved in reviewing the proposals and bringing the project to fruition.

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What do we expect to gain from all this? We definitely expect a wider and more pinpointed storeroom selection, lower overall prices to researchers, reduced liability to the University, and lower Department costs. The latter include savings resulting from the transfer of storeroom staff to other jobs at the University, the sale of storeroom inventory back to Fisher, streamlined purchasing and accounting operations, and vendor rebates to the Department.

Another major benefit that will become reality soon is on-line catalog ordering through the storeroom. Once the necessary databases are in place, University customers will be able to log on to Fisher's dedicated UT website and order any of Fisher's entire line of products at special UT prices. Customers can pick up stocked items immediately from the storeroom and will be notified when non-stocked items arrive, oftentimes the next day. Buyers' accounts will be billed automatically without the delays and costs of purchase order protocol.

Look for other benefits and innovations to come in the future. One service Fisher has agreed to offer is to pack and ship hazardous materials. This will help the University insure it is in compliance when shipping routine or exotic research materials across town or across the world. As with all storeroom offerings, this service will be available to the whole University community.

— Rick Quy

Rick Quy is presented a gift from Nita Burgoon of the Burgoon Company

Faculty, staff and guests enjoy refreshments at the Fisher Research Storeroom official opening.

Staff Awards

Chemistry and Biochemistry Staff Excellence Awards

Longfei Jiang

Longfei Jiang

Longfei has worked for the department since 1991. He runs the high resolution mass spectrometers for elemental analysis. He, along with coworkers, has developed a multi-ESI, multi-nozzle mass spectrometer which may be the future of mass spectrometry.

Penny Kile

Penny has worked for the department since 1994, most notably in the Graduate Office and currently in the office of Dr. Eric Anslyn. She is the editorial assistant to Anslyn for the *Journal of the American Chemical Society*. She interfaces with numerous authors, reviewers and the ACS to ensure that the approximately 350 papers that are submitted are handled appropriately. Anslyn says that she is simply invaluable.

Penny Kile

Margaret Rodgers, nominee for College of Natural Sciences staff award, received a bouquet of roses from Dean Rankin. Helping Margaret celebrate are Marv Hackert and Barrie Kitto

Service Awards

Don O'Connor	10 Years
Danny Vinzant	10 Years
Barbara Bachman	15 Years
Ann Lockwood	15 Years
Shirley Small	20 Years
Lee Benson	25 Years
Don Carroll	25 Years
Manuel Vargas	25 Years
Kenneth George	30 Years

Kenneth George, Barbara Bachman, Shirley Small, Don Carroll

Dr. Norman Hackerman "turns 90 and keeps on going"*

On March 2, 2002, the weather was cold, but the black tie crowd at the LBJ Library was very warm in celebrating the 90th birthday of one of UT's treasures, Dr. Norman Hackerman. As the room lights darkened, candles placed on individual cakes were lit giving close to 200-candle power as the group, accompanied by Shawn Ellison at the piano, sang a robust "Happy Birthday, Dear Norman."

Many words have been written about Dr. Hackerman, not the least of which is the recent article by retired editor, Mike Heylin, in the April 1, 2002, issue of *Chemical & Engineering News.** Few words have been more sincerely said, however, than those of the select group making up the program for the gala occasion. Welcoming the crowd before dinner was University President Larry Faulkner. Following dinner, Dean of the College of Natural Sciences, Mary Ann Rankin, acting as Emcee for the evening, presented in turn Dr. Bruce Alberts, President of the National Academy of Sciences, Mr. Norbert Dittrich, President of the Welch Foundation, Dr. Don E. Carlton, President/Retired of Radian International, Dr. Alan H. Cowley, Robert A. Welch Professor in Chemistry at UT, and Mrs. Pat Berry, Dr. Hackerman's daughter.

Honoring Norm on his 90th birthday were Larry Faulkner (UT President), Alan Cowley, Pat Berry (daughter), Don Carlton (President/Retired, Radian), Norman Hackerman, Norbert Dittrich (President Welch Foundation), Mary Ann Rankin (Dean, College of Natural Sciences), Bruce Alberts (President National Academy of Sciences)

The talks were all very warm and affectionate. They pointed out not only Dr. Hackerman's outstanding scholarship and dedication to research, teaching, and administration, but also illustrated his "human side" as a father, a very loyal friend, and a formidable squash player ("still is!" comments Dr. Cowley).

Norman Hackerman was born in Baltimore, Maryland, on March 2, 1912, to immigrant parents who encouraged his education. He received a Ph.D. from Johns Hopkins University in 1935, and in 1940, married his wife, Gene Allison Coulbourn, whom he had met on the tennis courts at Johns Hopkins. Gene died January 29, 2002. The Hackermans have four children.

Dr. Hackerman's career at UT-Austin began in 1945 as an Assistant Professor of Chemistry and moved through positions in administration from Chairman of the Department of Chemistry to Dean of Research and Sponsored Programs, to Vice President and Provost, and in 1967, to President of the university where he served until 1970. To quote the program of the evening, "His pragmatic leadership and willingness to listen to students helped the university escape much of the turmoil that plagued other campuses during this period."

In September of 1970, Dr. Hackerman moved on to become President of Rice University where he remained until June 1985. Through his administrative years at both UT and Rice, he continued to maintain research laboratories focused on corrosion inhibition problems, metal oxidation, and electrochemistry in general. He taught both graduate and undergraduate students, and still today teaches a freshman seminar. From 1969 to 1989, he was editor of the *Journal of the Electrochemical Society*. He is Professor Emeritus of Chemistry at The University of Texas at Austin and President Emeritus and Distinguished Professor Emeritus at Rice University. Rice U. honored Dr. Hackerman with a celebration on March 21.

As a scientist, educator, administrator, editor, and national leader in technology, his achievements have brought great distinction to The University of Texas at Austin and to his family and friends. That group gathered at the LBJ Library took great pleasure in honoring Dr. Norman Hackerman on his 90th birthday.

— Shirley Hull

Shirley Hull

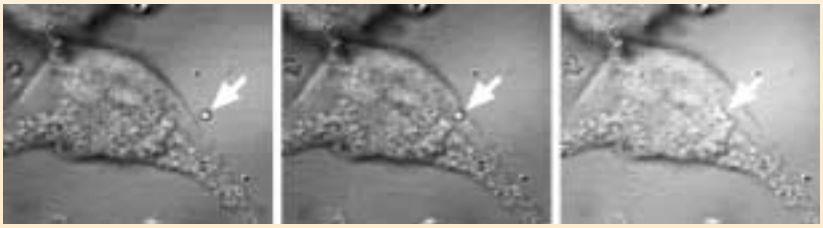
**C&E News* web site:
http://pubs.acs.org/isubscribe/journals/cen/80/i13/html/8013sci1.html

Jason Shear promoted to Associate Professor

BS, University of Texas - Austin (1989); PhD, Howard Hughes Predoctoral Fellow, Stanford University (1994); NSF Postdoctoral Fellow, Cornell University (1994-95)

The Shear laboratory is home to an ad hoc mix of physical and biological scientists with a penchant for characterizing dynamic chemical and cellular systems. In many cases, our interests outstrip our capabilities, forcing us to devise new technologies along the way. Presently, our research is focused on three main areas: the fast, the small, and the many. On the *fast* side, we have been exploring new ways in which chemical separations might be useful for probing transient products of chemical reactions. Traditionally the realm of spectroscopy, rapid analysis of reaction products using separations would expand the information that could be gleaned from unstable molecules before they pass quietly into the night. Thus far, we have determined that by applying many thousands of volts across short stretches of capillaries, we can create really large sparks and loud noises. On occasion, we also have been able to separate mixtures of transient photochemical products more than 1000-times faster than the refresh rate of your eyes as you read this sentence. Our next goal is to avoid blowing up any more high voltage power supplies: after that, we'd like to electrophoretically characterize protein-folding intermediates.

Joshua and Jason Shear



Sequence of images showing placement of a micron-diameter particle (arrow point) into a cultured neuroblastoma-glioma cell

With respect to the *small*, we have longstanding interests in characterizing and controlling the functions of neurons. Various systems are under study at the moment, including a cultured cell line derived from "biological clock" neurons. We have developed an approach for measuring extremely small quantities of redox cofactors to learn whether these compounds may be tied to the ~24-hour oscillatory behavior of these cells. Another current area of interest is wigging out neurons by placing submicron particles outfitted with enzymes at desired coordinates in the cytoplasm (shown in figure). This approach may be useful in causing various strange things to happen, such as inducing neurons to sprout axons where needed.

Among our non-cellular work on small stuff are efforts to build chemically diverse photopolymeric shapes that range in size from microns on down. Although I am not yet certain of the practical applications of this work, I have been assured by Eric Anslyn (one of our collaborators on this project) that we will definitely be able to manufacture nanoscopic internal combustion engines.

In the area of the *many*, we have worked with a number of groups to develop sensor arrays capable of simultaneously measuring multiple analytes in complex solutions, such as baby drool (a substance I can now expound on at great length). I suppose the scientific term I'm looking for is *saliva*, a fact I recently was reminded of during the process of submitting a proposal with Eric Anslyn, John McDevitt, an engineer, and a couple of dentists from Kentucky. Among my group's recent goals has been the creation of distinct chemical environments within an array, a capability that would allow incompatible sensing strategies to be used in concert on a single analysis chip.

Unlike my wife Ruth, I have not yet been recognized for teaching excellence, though not for lack of desire. Perhaps the biggest hit I've taken in student reviews is for my organizational abilities. I'm currently seeking help for this ailment, although I have frequent lapses. For example, I showed up this spring for Al Bard's Priestley Medal reception at the Littlefield House, only to learn that the invitation I found on my desk was for last year.

This really has been a great year for the Shear family. In addition to my promotion, Ruth became the department's first Senior Lecturer, and our son, Joshua, was promoted to the post of baby last November.

Angela Belcher promoted to Associate Professor

BS, U California - Santa Barbara (1991); PhD, U California - Santa Barbara (1997); Postdoctoral Fellow, U California -Santa Barbara (1997 - 99)

Biomaterials, biomolecular materials and organic-inorganic interfaces

The focus of our research is understanding and using the process by which Nature makes materials in order to design new hybrid organic-inorganic materials. Our research is very interdisciplinary in nature and brings together the fields of inorganic chemistry, materials chemistry, biochemistry, molecular biology and electrical engineering. The current research topics in our research lab include 1) biomimetic synthesis of non biological inorganic phases with novel electronic and magnetic properties directed by proteins and synthetic analogs, 2) synthesis and self-assembly of smart polymers to pattern size restricted metals and semiconductors to make devices with novel electronic and optical properties on length scales that surpass current lithographic capabilities, 3) design and synthesis of biocomposite materials that show exceptional strength and regularity and 4) surface modification of high surface area inorganic phases applied to high surface area catalysts, biosensors and environmental remediation.

Angela Belcher

Note: We are sorry to report that Dr. Belcher has accepted an offer from MIT and will be leaving UT, but we wish Angie and her husband, David, success and happiness in their move to Boston.

Faculty Awards and Honors

Brent Iverson, Amy and Mike Krische, and Jim Holcombe at College of Natural Sciences awards ceremony

ALLEN BARD ~ 2002 Priestley Medalist, was honored with a cover article in the April 8, 2002, issue of *Chemical and Engineering News* (http://pubs.acs.org/cen/coverstory/8014/8014bard.html).

Allen Bard

JENNIFER BRODBELT and **MARVIN HACKERT** ~ were chosen to fill **Executive Committee** positions by the **UT Faculty Council. Brodbelt** was elected to serve on the **Educational Policy Committee**, and **Hackert** was selected as **Chair-Elect**.

RAY DAVIS and **MARVIN HACKERT** ~ were local co-chairs for the national **American Crystallographic Association** meeting held in San Antonio May 25-30.

BARRIE KITTO ~ received awards for multimedia work in the **IITAP 2002** competition sponsored by the **Office of the Provost and the Center for Instructional Technologies**. The CD, "Biochemistry In Hand," won "Best in Category" for both "Resource Development" and "Technology Enhanced Delivery."

MICHAEL KRISCHE ~ received the **ACS Frasch Award** from the **Herman Frasch Foundation** and a UT **College of Natural Sciences Teaching Excellence Award.**

JOHN TESMER and **MICHAEL KRISCHE**~ were named **Cottrell Scholars**, two of only 14 in the nation, by **Research Corporation**, a foundation for the advancement of science.

From the Undergraduate Advising Office

A combination of excellent, motivated students and a faculty noted for its commitment to teaching makes the Department of Chemistry and Biochemistry at UT-Austin a truly special place for undergraduate education. At present, the department offers more than 50 courses to its 650 majors and literally thousands of other students who either need or desire to take some chemistry classes as part of their degree plan. While the courses offered in our department include the traditional introductory courses in general, organic, inorganic, analytical, biological and physical chemistry familiar to most readers of this newsletter, the curriculum is slowly evolving to adapt to changes and needs of the scientific world. We now offer a course in physical chemistry that is specifically tailored to the needs of those in biochemistry and the biological sciences and a course in general chemistry with an emphasis on the burgeoning field of materials science. Students having an interest in primary and secondary education can also receive credit for an outreach course in which undergraduate students visit schools in Austin and perform demonstrations, teach basic scientific principles and (most important!) convey their enthusiasm for science to the next generation of university students.

Paula Foy (Senior Academic Advisor), Carolyn Lum (Academic Advisor), Greg Browning (Office Manager), and John Stanton (Faculty Undergraduate Advisor)

Laboratory courses offered by the department include a class in biochemical techniques in which students learn to use some of the most sophisticated techniques from molecular biology. The analytical and physical laboratory courses that students typically take during their last two years at UT have been substantially improved in the last five years, almost entirely through the Herculean efforts of Ruth Shear. One of the most rewarding aspects of these courses is the opportunity for students to give oral presentations of their work to an audience of peers, and (in the analytical course) on a topic of their own choosing. In recent years, students have chosen topics ranging from an analysis of contaminants in water used by greenskeepers at nearby golf courses to the study of a dye which is harvested from Mediterranean shellfish (and required an international collaboration!).

Research

An increasingly important and vital part of the undergraduate education process is participation in research. Although research can be done for some course credit (Chemistry 206K or 369K), many of our undergraduates work in laboratories for two semesters and sometimes for several years. It is here that students learn the true excitement of carrying out a research project, and get a taste for the sort of edge-of-the-envelope research opportunities that await them in graduate school. The research of many of our undergraduates is vital enough that they are included as authors on scientific manuscripts; one exceptional undergraduate was a co-author on five papers that dealt with research done at UT!

Undergraduate Advising Staff

Dr. John Stanton became Undergraduate Faculty Advisor in Summer 2001. Two full-time advisors are now available to assist Chemistry and Biochemistry majors. The office is staffed by Paula Foy, Carolyn Lum, and Greg Browning (Adminstrative Associate/Office Manager).

Students receive the following type of assistance from Paula and Carolyn: information about degree requirements and academic policies and procedures, advice about course selection and assessment of academic progress (this includes degree audit review and assessment), assistance with registration problems, as well as referrals to other University resources for help with other types of concerns.

Scholarships

Due to the generosity of a number of benefactors and industrial partners, financial assistance based on both need and merit is available to our undergraduates, and $100,000 was awarded in the last academic year. Despite this, the sheer size of our undergraduate major population and the continual growth in the importance of chemistry in society is such that many students will continue to go through our program with pressing and unmet financial needs. Hence, efforts to increase our budget for addressing these concerns will continue to be an important focus of our office in the coming year.

An exciting new scholarship opportunity will be offered starting in the fall of 2002, with the beginning of the Pfizer Global Research and Development Scholarship program. The goal of this scholarship program is to nurture young scientists who have an interest in organic chemistry research and a possible career interest in medicinal chemistry. The Pfizer program not only offers a financial award, but also affords the recipient the opportunity to conduct laboratory research in an organic chemistry lab here at The University of Texas at Austin.

In addition, Pfizer has established a summer internship at their facility during the summer of 2003.

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New Cooperative Education Opportunity

Representatives from the Undergraduate office, Chemistry and Biochemistry Career Services representative, Joyce Thoresen, as was well as staff members from the College of Natural Sciences Career Services office collaborated to organize and implement a new cooperative education program for chemistry majors. This effort culminated in the hiring of the first Dow Chemical co-op student, who will begin his first co-op tour in the fall of 2002. It is hoped that more co-op opportunities will be available for our students in the future.

ACS-Student Affiliate News

In the past year, the American Chemical Society-Student Affiliates chapter has grown and become more diverse with its members consisting of chemistry, biochemistry, biology, physics, and engineering students. With their support, the hard work of the officers, the assistance of our faculty advisor, and the help from the department, this year has been a great success and an excellent basis for the growth of the organization in the years to come.

ACS-SA holds meetings every other Wednesday with invited speakers and free pizza and sodas. Some of the speakers included members of our department who gave various types of presentations. Dr. Stanton spoke of the lives of famous chemists, Dr. Boggs informed us of opportunities in study abroad, Dr. Meyer gave us his top 10 reasons to become a chemist, and Dr. Laude gave his annual graduate school talk. Dr. Willson and Dr. McDevitt also shared their research with the student affiliates. Throughout the year, the undergraduate advising office and career services office provided information on career opportunities including a new co-op program and organic chemistry scholarship program. Other invited speakers included members of the art history department, who are looking for chemists interested in preservation of art. Dr. John Daly, professor of communication studies and Distinguished Teaching Professor, gave advice on how to improve interpersonal communication. Also, Dr. David Enos from 3M shared his reasons for going to graduate school and pursuing a career in industry.

ACS member Brie Fuqua and Tutorial Director Harshal Gupta teach kids the science of silly putty at Explore UT

ACS-SA participated in several social events throughout the year so everyone could take a break from studying, including a bowling night, two movie nights, and an Ice Bats game. ACS-SA held an ice cream social at the department awards ceremony and sponsored the silly putty demonstration for Parents' Day and Explore UT. In addition, the ACS-SA officers greeted incoming freshmen at Gone to Texas, which is held the evening before classes begin. In celebration of National Chemistry Week, ACS-SA officers created "The Periodic Table of Cupcakes" with the help of our sponsor, Dr. Art Meyer, who helped bake ten dozen cupcakes. ACS-SA also expanded its tutorial program with the help of more volunteer tutors so students in general and organic chemistry courses could receive free help for several hours each week. Also, ACS-SA continued the tradition of selling laboratory notebooks and safety glasses at the beginning of each semester.

The ACS-Student Affiliates is continuing to grow and expand to provide more services for undergraduates in the department. It has been a pleasure to be a part of this organization for the past three years, and I hope to read in next year's newsletter about the advances the new officers will make. One exciting new project next year will be the student portion of the Southwest Regional Conference in Austin, which our chapter will host. This year has been an excellent foundation for the continued success of the organization.

— Denise Pauler
ACS-SA President

Denise Pauler

Undergraduate Degrees Awarded

Summer 2001

Biochemistry B.S.
Shihshiang Cheng
Sandra Demars
Katherine Loh
Peter Nguyen
Diana Simmons

Biochemistry B.A.
Renee Salazar
Kitty So
Nicholas Stansell
Tiep Truong

Chemistry B.S.
Emily Hueske
Jeffrey Meerdink
Jennifer Pearce

Chemistry B.A.
Jason Goodner

Fall 2001

Biochemistry B.S.
Amanda Adrean
Chloe Baldwin
Zoraida Barrera
Samir Bootwala
Ashok Chandra
Chiao-Lun Chiou
Robert Collison
Jonathan Egly
Allison Westbrook Jester
Samuel Julian
Frank Lin
Robert Reinauer
Jennifer Smith
Nicholas Stephens
Nathan Whitehouse
Chris Williamson

Biochemistry B.A.
Juan Cabrera
Elizabeth Collins
Kimberly Hughes
Yifan Yu

Chemistry B.S.
Alexis Bell
Christopher Burke
Nicole Calderon
Ryan Carrell
Chiao-Lun Chiou
Glendon Donchak
Laura Grice
Amber Guilfoyle
Emily Hoffman
Priya Jassal
Du Lo
Thuy-Vy Nguyen
Sandhya Rao
David Roe
John Zepernick

Chemistry B.S.
(Teaching)
Daniel Montgomery

Chemistry B.A.
Samuel Duff
Mika Fukuchi
Steven Strauss
Adam Walker

Spring 2002

Biochemistry B.S.
Justin Adams
Andrea Arthur
Daniel Babu
Nathan Bailey
Rebecca Brady
Hsiao-Tuan Chao
Joe Chen
Allis Cho
Judy Choe
Nancy Cooper
Richard Daniels
Robert Fernandez
Randa Galbreath
Gareth Gingell
Bianca Gonzales
Seth Hollander
Elizabeth Ihry
Emily Jen
Rania Jensen
Christina Kuo
Alice Kung
Eric Larsen
Dongwoo Lee
Stephen Martin
Enyioma Onwudiegwu
Shivani Patel
Pavithra Prasad
Stacia Rodenbusch
David Sanchez
Monty Shah
Ali Shah-Mohammadi
Jill Vilaythong
David Wynne

Biochemistry B.A.
Chrisanne Botello
Anthony Hoang
Marisa Holmes
Jennifer Hsing
Brian Maneevese
Chau Nguyen
Omonele Ohen
Tam Pham
Amanda Robinson
Dennis Sprockel

Chemistry B.S.
Tira Chaicha
Stephen Choy
Nicola Delvaille
Patty Dennis
Susan Deupree
Noah Goldberg
Erin Hogan
Nathan Hoppens
Rebecca Hunt
Benjamin Jones
Michal Klysik
Lisa McDonald
Melissa Mitchell
Carlos Montoya
Brian Pallohusky
Stephanie Parks
Maria Pham
Dana Roettinger
Adam Rosenfeld
Tim Stachowiak
Kristine Waddell
Samuel Watters

Chemistry B.A.
Leah Berg
Melanie Billimek
Megan Donahue
Amy Grassel
Cassandra Gutierrez
Phuong Ho
Efrain Jasso
Melani Jayasekera
Thien Nguyen
Aditya Paul
Thomas Sundberg

2001–2002 Undergraduate Awards and Scholarships

Dorothy Burr Banks Scholarship in Chemistry
Allis Cho
Jennifer Hsing
Shirley Huang
Emily Jen
Erin Oakman
Aditya Paul
Denise Pauler
Stacia Rodenbusch

BASF Endowed Scholarship
Amber Guilfoyle

Arnold and Mabel Beckman Foundation, Beckman Scholars
Nicholas Conley
Stella Maeng
William Renthal

Chemistry Faculty - Regents
Forrest Arp

Dow Chemical USA Centennial Endowed Presidential Scholarship
Matt Robbins
Thomas Sundberg

Dow Chemical Alumni Scholarship
Steven Strauss

Friends of Chemistry - Regents Scholarship
Patty Dennis
Erin Hogan
Omonele Ohen

Norman Hackerman Endowed Presidential Scholarship
Stacia Rodenbusch
Myrrh Sagy

Lubrizol Scholarship
Jessica Dalby

The Saul and Belle Meyer Memorial Textbook Scholarship in Organic Chemistry
Sakina Rawat
Nora Sanchez
Lindsey Vuong

Charles Morton Share Trust Undergraduate Scholarship
Thomas Sundberg

Louis Pearce Endowed Presidential Scholarship
Jessica Coté

Pirrung Scholarship
Richard Daniels

Burl Gordon Rogers Endowed Presidential Scholarship
Stalo Karageorgi
Sandhya Prashad

Marie Smith - Regents Endowed Scholarship in Chemistry
Leah Berg
Jason Seungdamrong

University Co-op Scholarship
Rebecca Brady
Pippa Cosper
Kyle Friesen
Brie Fuqua
Bianca Gonzales
Lindsay Hicks
Al Hasan Makkouk
Daniel Schneider
Jessica Steinbomer
Estrella Suarez

Various Donors Account Scholarship
Harshal Gupta

Weisberg Memorial Chemistry Scholarship
Sarah Brown
Sarah Doyle

Eva Stevenson Woods Endowed Presidential Scholarship
SzeSze Ng
Emma Onwudiegwu

Anonymous Endowed Presidential Scholarship
David Wynne

Nicholas Conley, a senior chemistry major, was named winner of a **University Co-op/George H. Mitchell Student Achievement Award** for his discovery of a way to make fullerene that results in much higher yields. Prof. J.J. Lagowski, nominating professor, stated that "Nick is most probably the best undergraduate student I have had contact with since 1959, my first year at the University."

Omonele Ohen

Pfizer Organic Chemistry Undergraduate Scholarship check presentation: Kay Thomas, Natural Sciences Corporate Relations; Angel Guzman-Perez, Pfizer; Paul Da Silva Jardine, Pfizer; Jim Holcombe, Chemistry and Biochemistry Chair; and Spiros Liras, Pfizer

Myrrh Sagy

Sandhya Prashad

Emily Jen

Sakina Rawat

Shirley Huang

Brie Fuqua

Rebecca Brady

News from the Graduate Office

Jennifer Brodbelt

The graduate recruiting season just concluded, and 55 new graduate students will be joining our program in the fall. Many thanks to our divisional representatives who evaluated each application, contacted every prospective student admitted into the program, and provided lots of information to those that visited. The divisional representatives this year included Keith Stevenson (analytical), David Hoffman (biochemistry), Rich Jones (inorganic), Brian Pagenkopf (organic), and David Vanden Bout (physical). Over one hundred prospective graduate students visited the department, with most visiting during our two weekend recruiting events. The weekends opened with an evening poster reception on Friday evening, followed by a day of faculty presentations, meetings with professors and current grad students, and a barbecue dinner. The weekends were superbly organized by Graduate Coordinator Barbara McKnight and Staff Associate Anna Shin. In addition to receiving folders packed with information, nearly each visitor left with a door prize. Several of the new students will return to Austin in the summer for an early start on their graduate careers, and we will welcome the rest in August for our weeklong orientation program. Graduate recruiting is an extremely competitive activity that requires an enormous input of time and resources, but it remains our most important investment each year.

— Jennifer S. Brodbelt

Scenes from graduate student recruiting, Spring 2002

2001-2002 Graduate Awards and Fellowships

Dorothy Burr Banks Fellowship in Chemistry
Brandy Gazo
Doo Young Kim
Piyush Shukla
Suzanne Tobey
Sheryl Wiskur
Ming Yu

Donald D. Harrington Graduate Fellows (Recruitment) Fellowship
Stephen Maldonado

Donald D. Harrington Graduate Fellows (Dissertation) Fellowship
Eric Archer

University Continuing Fellowship
Sherwin Chan
Hyonseok Hwang

University Preemptive Recruitment Fellowship
Ryan Hill
Ryan Huddleston

University Tuition Fellowship
Suzanne Tobey

University Bruton Fellowship
Cong Dung (Julie) Le

Robert E. Eakin Endowed Centennial Fellowship
Huda Suliman

Faraday Teaching Excellence Award
Brian Arneson
Kyle Felling
Xiaoming Yan

H. R. Henze Teaching Excellence Award
Brian Bocknack
Leah Eller

F. A. Matsen Endowed Presidential Fellowship in Theoretical Chemistry
Yannick Bomble

Joanne M. Ravel-Regents Endowed Fellowship
Daniel Hirschhorn

Charles Morton Share Trust-Graduate Fellowship
Aleksey Nakorchevskiy

Welch Research Award
Matthew Crowe
Courtney Sherman
Dana Wise

Welch Teaching Excellence Award
Darren Engers
William Kittleman

College of Natural Sciences Dean's Excellence Awards
Frantz Andersen
Justin Briggle
Jennifer Davoren
Thomas Doyle
Michael Griffin
Ryan Hill
Ron Houk
Ryan Huddleston
Stephen Kottmann
Stephen Maldonado
Chad Melancon
Jeffrey Munos
Chance Rainwater
Joseph Reczek

Gilbert H. Ayres-Regents Fellowship
Courtney Sherman
Jacqueline Stair

BASF Endowed Fellowship
Gwendolyn Marriner

Chemistry Faculty
Larisa Watson
Aaron Wright

Hamilton/Schoch Endowed Graduate Fellowship
Randall Hughes
Alexander Rudolph
Gabrielle Rustmann

H. L. Lochte Fellowship
Richard Barnes
Tyler Smith

Leon O. Morgan Fellowship
Patricia Melfi

Royston M. Roberts-Regents Fellowship
Guillaume Berthon
Jeffrey Gorman

Stanley H. and Kathleen F. Simonsen-Regents Fellowship
Michael Pikulski
Dana Wise

Bristol-Myers Squibb Graduate Fellowship in Synthetic Organic Chemistry
Christopher Neipp
Andreas Reichelt

Travel scholarships provided by: University of Texas Professional Development Program, John E. Mahler Endowment Fund, Clay B. Frederick-Rohm & Haas Endowment

News from the Mallet Library

Textbooks Are Still Tops

Every chemistry alum remembers his or her textbooks. Those that aren't sold back to the bookstore for a pittance still sit on office or home bookshelves, or in an attic somewhere, an ever-present reminder of undergraduate rites of passage. The author names reverberate with memories of tricky problems, impenetrable explanations, and yellow highlighters. Textbooks haven't changed that much in the last few decades, apart from adding CD-ROM supplements. New editions still appear with numbing regularity. They're still expensive, and they still weigh a lot.

David Flaxbart

Even in this online age, textbooks remain one of the most popular resources that the library offers to undergraduate students. With the average chemistry textbook priced at more than $100 today, students are understandably reluctant to purchase them. They dislike lugging them around in a backpack. And let's face it, they're not fun to read. The library's Reserves Desk lets some students avoid the first and second of these requirements - often against better advice - but the reading still has to be done.

Almost out of curiosity, we recently ran a report on the most-checked-out items in the Chemistry Library's collection. All of the top titles are textbooks, because these items may be kept on Reserve for years on end and they circulate for short periods of time, typically two hours. Student demand is quite high, often outstripping the available copies. Students have been known to hang around the desk waiting for a needed book to come back.

The list shows that physical chemistry is far and away the most "popular" field of chemistry textbooks. UT's own Mike White stands far out in front as the most-circulated author: our seven copies of his classic Physical Chemistry Laboratory Experiments (1975) have been checked out over 6,000 times since 1983! Other interesting bits of trivia:

• The single most-circulated item currently on the Reserves shelf is a copy of Harris' Quantitative Chemical Analysis, 4th edition, with 1,657 charges.

• The most-circulated item in the entire Chemistry Library collection is a copy of Francis Carey's Organic Chemistry (1987), with 1,750 charges.

— David Flaxbart

Top 15 Highest Circulating Textbooks in the Chemistry Library*:

Rank Author	Title	Total Charges
1. White, J.M.	Physical Chemistry Laboratory Experiments.	6071 (7 copies)
2. Atkins, P.W.	Physical Chemistry, 1994	4147 (7 copies)
3. Shoemaker, D.P.	Experiments in Physical Chemistry, 1989	4121 (8 copies)
4. Skoog, D.A.	Fundamentals of Analytical Chemistry, 1992	3118 (4 copies)
5. Harris, D.C.	Quantitative Chemical Analysis, 1995	2941 (2 copies)
6. Skoog, D.A.	Principles of Instrumental Analysis, 1992	2858 (6 copies)
7. Daniels, F.	Experimental Physical Chemistry, 1970	2725 (4 copies)
8. Atkins, P.W.	Physical Chemistry, 1998	2205 (4 copies)
9. Shoemaker, D.P.	Experiments in Physical Chemistry, 1996	2169 (5 copies)
10. Levine, I.N.	Physical Chemistry, 1994	1693 (5 copies)
11. Stryer, L.	Biochemistry, 1988	1610 (5 copies)
12. Stryer, L.	Biochemistry, 1981	1175 (3 copies)
13. Harris, D.C.	Quantitative Chemical Analysis, 1998	1047 (1 copy)
14. McQuarrie, D.	Quantum Chemistry, 1983	1024 (3 copies)
15. Whitten, K.W.	General Chemistry, 2000	992 (3 copies)

* Circulation statistics are from 1983 to April 2002. The library's circulation system was manual before 1983, and no records exist for pre-1983 activity.

One might wonder how a book could possibly stand up to the punishment inflicted by thousands of uses. Despite the abuse, the "shelf-life" of some textbooks in the library can be quite long, while others last just a few years. But while they last, they certainly earn their keep.

IN MEMORIAM

Philip P. Anderson, B.S. 1931, M.S. 1932 Chemical Engineering; Ph.D. (Felsing) 1936 ~ died 4 years ago. He had retired in 1996 as Vice President of Engineering at Arkla Industries, Shreveport, LA.

Robert Sydney Andrews, B.S. Chemistry 1951, M.Ed. 1964, Ph.D. Educational Psychology 1977 ~ died July 17, 2001. During his career, Dr. Andrews served as a staff psychologist at the U.S. Department of Veterans Affairs.

Talmage Talbot Callihan, B.A. Chemistry 1949 ~ passed away March 17, 2002. He was 83. Mr. Callihan was awarded the Purple Heart for injuries received in Saipan as a U.S. Marine Corps Corporal in 1944. He worked as a chemist with AMF Tuboscope. He was preceded in death by his wife Margaret. He is survived by his daughter, Dorothy Greer and husband James; his sons, John Douglas and wife Karen, and Roger Patrick; and six grandchildren.

Dewitt Coffey, Jr., B.S. Chemical Engineering 1958, Ph.D. (Boggs) 1967 ~ died June 6, 2001. He had retired from San Diego State University as Professor Emeritus in January 2000, after 32 years of service.

James Alvin Dinwiddie, B.A. Chemistry 1935, M.A. 1935, Ph.D. Chemical Engineering 1941 ~ died February 18, 2002. He worked for ExxonMobil for 33 years. He is survived by his wife Helene Wupperman Dinwiddie.

George S. Ellis, B.A. Chemistry 1943, M.D. ~ is deceased, details unknown.

Robert Thomas Foley, Ph.D. (Anderson) 1948 ~ is deceased, details unknown.

Lawrence H. Gindler, B.S. Chemistry 1974 ~ died May 1, 2002, at the age of 50. He was Director of the Computing Center at Trinity University and also held a degree from Southwest Texas State University. He is survived by his wife, Linda; mother, Marian Gindler; and brothers, Bruce Gindler and Jack Gindler.

Henry Harris Goodman, Jr., M.A. (Lochte) 1950 ~ died April 20, 2002, as a result of leukemia and complications from a 20-year battle with prostate cancer. He was 83. He is survived by his wife, Sylvia, and four daughters, Ginny Chenet, Sharon Kinnison, Susan Johnson, and June Blout.

James Edwin Kreisle, Sr., B.A. Chemistry 1939, M.D. Harvard School of Medicine 1942 ~ died May 26, 2002. He was 83. In 1943 Dr. Kreisle was commissioned as a first lieutenant in the Army Medical Corp and was awarded the Bronze Star medal for his service. He practiced Internal Medicine in Austin from 1949 until his retirement in 1991. He leaves behind Natalie, his wife of 55 years; two sons, Jim Jr. and Bill; two daughters, Helen Holzen and Margaret Clark; nine grandchildren; and other relatives and friends.

Susan Lynette Latham, B.A. Biology 1974, M.A. (Wyatt) 1977 ~ is deceased, date of death is unknown.

Mary Elizabeth Martyn, B.A. Chemistry 1938, M.Ed. 1953 ~ is deceased, date of death unknown.

William Alfred Smith, M.A. Chemistry 1930 ~ died January 29, 2002, at the age of 97.

Roy Elliott Thoma, Jr. B.A. Chemistry 1943, M.A. (Morgan) 1949 ~ died October 11, 2001.

Ruth Ann Boggs

Ruth Ann Boggs (1919 – 2002)

The UT chemistry community was saddened by the sudden death of Ruth Ann Boggs, the wife of Prof. Jim Boggs, on May 23. She suffered a stroke while en route to the U.S. from France.

Dr. and Mrs. Boggs have been generous benefactors of UT and the Mallet Chemistry Library, and established the James E. and Ruth Ann Boggs Chemistry Library Endowment in 1998. Mrs. Boggs was a former reference librarian herself, and had a lifelong interest in genealogical research and world travel. She held bachelor degrees in English and library science, as well as a masters degree in library science. She and Dr. Boggs were married in 1948, and moved to Austin in 1953 when Dr. Boggs joined the Chemistry Department. She was a charming and self-effacing lady who will be much missed.

At the family's request, memorial donations honoring Mrs. Boggs can be made to the Department of Chemistry and Biochemistry, Boggs Library Endowment Fund.

Alumni Retorts

James P. Allison

James P. Allison, B.A. Microbiology 1969, Ph.D. Biological Sciences (Kitto) 1973 ~ received the 2002 Outstanding Alumnus Award from the UT-Austin Graduate School for outstanding achievements in an academic or professional career. A $5000 Fellowship in Dr. Allison's name will be awarded to a graduate student in Biological Sciences. Dr. Allison is currently Director, Cancer Research Laboratory, UC-Berkeley; Investigator, Howard Hughes Medical Institute; and Adjunct Professor, Division of Rheumatology, Department of Medicine, School of Medicine, UC-SF.

1955

Herb Weiss, Ph.D. (Hatch) ~ although retired from Balchem Corp. in 1996, continues on several boards of directors, helps with two start-up companies, and presents business-type seminars at Rice University to graduate students as a Special Assistant to the Dean of Natural Sciences.

1973

D. Wayne Goodman, Ph.D. (Dewar) ~ currently holds a Robert A. Welch chair in chemistry at Texas A&M University, received the Arthur W. Adamson Award for Distinguished Service in the Advancement of Surface Chemistry.

Rear Admiral John D. Butler

1974

John D. Butler, B.S. (Chemistry), M.S. (Acoustic Engineering) Naval Postgraduate School ~ assumed command of the Naval Undersea Warfare Center, Newport, RI, in July 2001. Rear Admiral Butler also serves as the Deputy Commander for Undersea Technology for the Naval Sea Systems Command.

1990

Travis Gallagher, Ph.D. (Hackert) was program co-chair of the national American Crystallographic Association meeting held in San Antonio May 25-30.

1993

Karen Anderson Evans, B.S. (Chemistry), Ph.D. UCLA (Jung) 1998 ~ is currently employed at GlaxoSmithKline in Collegeville, PA, as an Investigator in the Discovery Research-High Throughput Chemistry Department, carrying out research in pharmaceutical drug discovery.

1996

Adam Urbach, B.S. (Chemistry) ~ completed his Ph.D. in Chemistry in May from the California Institute of Technology under Prof. Peter Dervan, thesis title, "Structure and Function in 1:1 Polyamide: DNA Recognition." Adam and his wife, Dana Michelle, will be moving to Boston where he has a Postdoctoral Fellowship at Harvard University under Prof. George Whitesides.

2001 - 2002 Seminars

ANALYTICAL
Paul Barbara, University of Texas at Austin
Allen Bard, University of Texas at Austin
Jennifer Brodbelt, University of Texas at Austin
James Holcombe, University of Texas at Austin
David Laude, University of Texas at Austin
John McDevitt, University of Texas at Austin
Mehdi Moini, University of Texas at Austin
Jason Shear, University of Texas at Austin
Keith Stevenson, University of Texas at Austin

ANALYTICAL/PHYSICAL
Steven Bradforth, University of Southern California
Marcos Dantus, Michigan State University
Barney Ellison, University of Colorado, Boulder
Barbara Garrison, Pennsylvania State University
Vicky Grassian, University of Iowa
James T. Casey Hynes, University of Colorado at Boulder
Matthew Jacobson, Columbia University
Howard Katz, Lucent Technologies
Anna Krylov, University of Southern California
Todd Martinez, University of Illinois, Urbana-Champaign
Craig Martens, University of California, Irvine
Ana Moore, Arizona State University
Royce Murray, University of North Carolina
Kevin Plaxco, University of California, Santa Barbara
Mary Rodgers, Wayne State University
Richard Van Duyne, Northwestern University
Evan Williams, University of California, Berkeley
Peter Wolynes, University of California, San Diego

BIOCHEMISTRY
Peter R. Chivers, Massachusetts Institute of Technology
Lila Gierasch, University of Massachusetts
Norman Hecht, University of Pennsylvania Medical School
David Russell, University of Texas Southwestern Medical School
Rick Russell, Stanford University
Douglas H. Turner, University of Rochester
Coran M.H. Watanabe, Scripps Research Institute

INORGANIC
Richard Adams, University of South Carolina
Angela Belcher, University of Texas at Austin
John Gordon, Los Alamos National Laboratory
Reginald Penner, University of California, Irvine
Warren Piers, University of Calgary
Helmut Werner, Wuerzburg University

ORGANIC
Helen Blackwell, Harvard University
Joseph DeSimone, North Carolina State and University of North Carolina
Brian Goodall, Albemarle Corporation
Michael M. Haley, University of Oregon
John Macor, Bristol-Myers Squibb
Seiichi Matsuda, Rice University
Richard McCullough, Carnegie Mellon University
Eric Meggers, Scripps Research Institute
Benjamin Miller, University of Rochester
Jonathan Parquette, Ohio State University
Vincent Rotello, University of Massachusetts
Jonathan Sessler, University of Texas at Austin
Eric Simanek, Texas A&M University
Dean J. Tantillo, Cornell University
Alice Ting, University of California, San Diego
Alex Wei, Purdue University
Steven Zimmerman, University of Illinois, Urbana-Champaign

THEORETICAL
Barbara Garrison, Pennsylvania State University
Mark Maroncelli, Pennsylvania State University

BRISTOL-MYERS SQUIBB LECTURESHIP IN ORGANIC SYNTHESIS
James Leighton, Columbia University

CENTENNIAL VISITING LECTURESHIP IN CHEMISTRY AND BIOCHEMISTRY
Royce Murray, University of North Carolina, Chapel Hill

THE CLAYTON FOUNDATION BIOCHEMICAL INSTITUTE REGENTS LECTURESHIP
Peter B. Moore, Yale University

THE F.A. MATSEN ENDOWED REGENTS LECTURESHIP ON THE THEORIES OF MATTER
Peter Wolynes, University of California, San Diego

NOVARTIS LECTURE IN SYNTHETIC ORGANIC CHEMISTRY AND BIOCHEMISTRY
Martin Semmelhack, Princeton University

JOHN E. MAHLER MEMORIAL LECTURESHIP
Max Crossley, University of Sidney

THE W. ALBERT NOYES, JR. LECTURESHIP
Paul Alivisatos, University of California, Berkeley

ROWLAND PETTIT CENTENNIAL VISITING PROFESSORSHIP
Manfred Reetz, Max Planck Institut für Kohlenforschung

VISTA CHEMICAL COMPANY-REGENTS ENDOWED MEMORIAL LECTURESHIP IN ORGANIC CHEMISTRY AND BIOCHEMISTRY
Barry Carpenter, Cornell University

THE GEORGE AND PAULINE WATT CENTENNIAL LECTURESHIP
Charles Lieber, Harvard University

Correction: The photo of Prof. Jennifer Brodbelt on page 10 of the Fall 2001 issue of *Chemical Compositions* was incorrectly identified. We are pleased to note we correctly identified all other photos in that issue.

As always, we welcome updates on your personal and professional news.

Send us an e-mail message: chemalum@mail.cm.utexas.edu
Call us: 512-471-3949
Fax us: 512-471-6835
Write us: *Chemical Compositions*
Department of Chemistry and Biochemistry
The University of Texas at Austin
Austin, TX 78712

Visit the department on the internet: http://www.cm.utexas.edu

CREDITS:

Newsletter Staff
Marvin Hackert, Jim Boggs, Jeff Evelyn
Editing/Production

Marvin Hackert, Joyce Thoresen, David Crumley
Photography

Jeff Evelyn
Proofreading

Joyce Thoresen
Editorial Coordinator

The University of Texas at Austin
The Department of Chemistry and Biochemistry
Austin, TX 78712-1167

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