Chemical Compositions

Fall 2005

INSIDE THIS ISSUE

From the Chair

Allow me to begin by extending greetings to you, our alumni and friends, from our faculty, staff, and students. This is the first time I have communicated with you since assuming the demanding role of Chair of the Department of Chemistry and Biochemistry in September 2004, and I am embarrassed to admit that it has been too long since we updated you with our departmental newsletter, *Chemical Compositions*. I could offer many excuses, but I would then have no space to tell you about recent developments and challenges in the Department of Chemistry and Biochemistry. Please accept my apology along with my promise to do a better job of staying in touch.

The past year has been an exciting, yet challenging, time in which numerous changes have affected our department, most of which have been for the better. For example, we have added three outstanding junior and one senior faculty members, whose research interests add breadth and depth to our already strong program. They are Chris Bielawski (p. 6), Graeme Henkelman (p. 7), Brad Holliday (p. 7), and Dick Crooks (p. 6). In the coming year, we anticipate adding several new Assistant Professors and are conducting an active search to fill the newly endowed Welch Chair of Science with an established scholar.

The addition of these new faculty members is critical to maintaining excellence in teaching and research and to replace retiring and departing faculty. Indeed, Dick Lagow, Nate Bauld, and Steve Webber retired this past year, and Ray Davis is completing "phased retirement." We wish all of them well. John Tesmer and Brian Pagenkopf recently moved to other academic institutions to pursue their careers. It is with sadness that I inform you that Dan Ziegler (p. 19), one of our distinguished biochemical colleagues, passed away in November 2005. I remember Dan from my first days at UT, as we often discussed possible mechanisms of oxidations catalyzed by flavin-containing monooxygenases. He stimulated my early thinking as my group began its first research project at the interface of synthetic organic chemistry and biochemistry. He was a tremendous mentor who taught me (with only limited success), and my group (with much greater success) the intricacies of enzyme kinetics. We shall all miss his presence.

Members of our department have collected many accolades and awards over the past year, and many of these are summarized on pp. 12-13. All of these are important, but I think Al Bard's receipt of the prestigious 2004 Welch Prize for his major accomplishments in the field of electrochemistry and the effect of these on the discipline of chemistry, and Grant Willson's selection as a 2005 Hero of Chemistry by the American Chemical Society for his demonstrated excellence in the research and development of a commercial product are especially noteworthy. Graduate and undergraduate students alike continue to be recognized for their outstanding achievements by awards from various companies as well as both public and private foundations. Members of our staff have also been recognized for their outstanding service to our department and the university. We are extremely proud of all of these individuals as together they help us move toward our goal of being one of the top departments in the country.

(From the Chair continued p. 2)

THE UNIVERSITY OF TEXAS AT AUSTIN
Chemistry Biochemistry

From the Chair (continued)

We are now experiencing some of the pitfalls of being in such a position. Over the years, we have prided ourselves with hiring the best young faculty we can find and helping them develop their professional careers and programs. The downside is that we risk raids by predatory departments, and in the past year six of our faculty received very attractive outside offers. I am pleased to announce that we lost only one of these battles, owing in significant part to the incredibly strong support of the entire UT administration. As a critical element of a "cluster retention" strategy, we embarked on an exciting new initiative called the Texas Institute for Drug and Diagnostic Development (TI-3D) (p. 2). The objective of this enterprise is to marshal the collective talents of faculty in the Colleges of Natural Sciences, Pharmacy and Engineering with those of faculty in several medical schools in the state to facilitate translational medical research in Texas. Both The University of Texas and The Robert A. Welch Foundation have contributed generously to this novel concept in biomedical research, and I look forward to describing future developments.

Being a top department clearly brings with it other challenges. Contemporary education and research is becoming more interdisciplinary, and the department must adjust to these changes in a variety of ways. Indeed, we would like to be one of the national leaders in forging new directions for education and research. Toward the former, we are beginning to reevaluate how undergraduate courses in general and organic chemistry are taught and how we can improve the undergraduate experience. Initiating novel types of broadly-based research collaborations such as TI-3D will enable us to capture federal and industrial funding for our research programs.

However, there are critical problems we must face and solve. Welch Hall has served us well over the years, but it is no longer adequate to meet the needs of a modern, top-ranked department. Extensive renovation is necessary so faculty and students can pursue their educational and research interests in an adequate environment. Attracting and retaining top faculty is a priority, and now more than ever we need endowed positions to provide faculty with research funds so they can undertake risky projects that will lead to exciting new discoveries and eventual external funding. Students are an essential part of the fabric of our department, and attracting the best graduate students to our program requires the additional incentive of fellowships. Scholarships help support our undergraduates and may allow them to spend time gaining an experience in research rather than flipping burgers or busing tables at local restaurants. Excellence funds are needed to ensure that worthy departmental projects and needs can be funded. For example, our library lacks electronic back files for many journals that are routinely used by members of our department.

To address these challenges, we have launched several initiatives, and I hope to apprise you of our progress in future issues of *Chemical Compositions*. In the meantime, we appreciate your support and welcome your comments. We look forward to hearing from you and invite you to drop by and reconnect on a future visit to Austin.

Cheers,
Stephen Martin

TI-3D: *Moving UT Ahead of the Curve in Biomedical Research*

A letter published recently in *Science* put it best, "Universities invest many millions in basic research,…yet few have invested in the infrastructure required to put their discoveries to the test." (A. Ivinson, *Science*, vol. 310, Nov. 4, 2005, p.. 77). This comment mirrors a growing awareness that key breakthroughs in biomedical research are occurring in academic laboratories, but seldom do those breakthroughs make it past the proof-of-concept stage.

Several faculty from the Department of Chemistry and Biochemistry have been instrumental in providing the vision and securing resources for the creation of a major new initiative that will be called the Texas Institute for Drug and Diagnostics Development, or TI-3D. Put simply, the purpose of TI-3D is to establish an organization and infrastructure that will facilitate and provide coordination for translational medical therapeutic and diagnostic research efforts between the University of Texas at Austin, Texas medical schools, and private companies. This marks the first time that chemists and biochemists from our department will collaborate *at the institutional level* with researchers at medical schools on exciting and important human health problems at the forefront of the medical sciences. Discoveries and technologies emerging from these efforts will be transferred to the commercial sector to foster the speedy development of breakthroughs into products that directly help patients.

New facilities will be created and staffed on the UT Austin campus to aid in translational medical research. For example, facilities for proteomics, structural biology, and high throughput screening of compound libraries are being planned. In addition to the obvious scientific and medical benefits of TI-3D, participating postdoctoral fellows, graduate students, and undergraduate students will be exposed to the interdisciplinary nature of the pharmaceutical industries. The TI-3D will therefore provide a much more comprehensive and valuable educational experience for UT alumni, giving them a decided advantage on the pharmaceutical research job market. Finally, we anticipate that the very existence of TI-3D will stimulate biotechnology and pharmaceutical research in the state.

We were most fortunate in having the enthusiastic support of Dean Mary Ann Rankin, Provost Sheldon Ekland-Olsen, and President Larry Faulkner and their commitment of substantial resources to the TI-3D initiative. In addition, the Welch Foundation has awarded a generous $3.5 M grant to provide critical early stage funding for TI-3D. "We expect TI-3D to become a national model for close cooperation among research universities, medical schools, and commercial entities in the development of important new tools to fight and diagnose disease," says Dean Rankin. "We are extremely grateful for the Welch Foundation's gift. Their investment confirms that this institute is visionary. Their gift will help the people of Texas and the world by giving our researchers more opportunity for discovery."

We are excited by the development of TI-3D and look forward to providing you with news of our progress in the future.

Brent Iverson
Interim TI-3D Director

Dr. Larry R. Faulkner Says "Good Bye" After Eight Remarkable Years as University President

This past June, President Larry Faulkner announced his resignation from the University of Texas at Austin. Faulkner was appointed the university's 27th president by the Board of Regents in 1997, and he took office the following year. Only two presidents in the university's history have served longer, and it would be hard to say whether any have accomplished as much in their time. In giving his reasons for leaving, Dr. Faulkner explained that he and his wife, Mary Ann, feel that this is the best time for a change of leadership. "We perceive our choice as one between committing to service through and beyond the legislative session of 2007, or stepping down on a schedule that leaves time for a successor to prepare for that session," Faulkner stated in his formal statement to the university community. "Given the alternatives, it is clear to us that this is the moment for change."

The Board of Regents has conducted a nation-wide search for a new president, and Faulkner will transfer the position directly to William C. Powers, Dean of the UT Law School, on February 1, 2006. Faulkner will then serve as president of Houston Endowment, Inc., a private foundation in Houston that generates funds for charitable organizations and educational institutions. Houston Endowment's chairman, D. Kent Anderson said of Faulkner's appointment, "After a nationwide search, we are pleased to have identified someone who is so knowledgeable about this region. His outstanding record of performance fits well with the principles we value at Houston Endowment."

Outstanding record of performance, indeed, for Dr. Faulkner has quite a lengthy list of accomplishments both before and during his eight-year presidency. After receiving a Ph.D. in chemistry at The University of Texas, Faulkner joined the faculty at Harvard University for four years. He then moved on to The University of Illinois at Urbana-Champaign where he served as provost, dean of the College of Arts and Sciences, and head of the Department of Chemistry. He conducted research in the areas of electrochemistry and analytical chemistry, and coauthored "Electrochemical Methods: Fundamentals and Applications," for which he has received national recognition. Dr. Faulkner received the Distinguished Alumnus Award and a Doctor of Science Honoris Causa from Southern Methodist University where he received his undergraduate degree, and was elected to the American Academy of Arts and Sciences in 2003.

His significant achievements here at the University of Texas are numerous and it is difficult to narrow them down to just a few. Under his leadership vast improvements have been made at university, community, and state levels. From the re-opening of the observation deck of the campus Tower on the university's 116th birthday to the development of the Blanton Museum of Art, President Faulkner has given the university community—as well as Austin's residents—several things of which to be proud. He implemented a flat-rate tuition program for the Colleges of Liberal Arts and Natural Sciences in 2002 with the aim of improving our four-year graduation rate. As for university employees, Faulkner is responsible for a faculty expansion program to generate 300 new positions over ten years and annual salary increases for faculty and staff members.

Many of his successes as president have been felt specifically in the Department of Chemistry and Biochemistry. In 2001 the Department of Biomedical Engineering, and the Center for Nano and Molecular Science and Technology (of which our own Dr. Paul Barbara is director) were established. In 2004 we gained high status in federal funding for research, making us second only to MIT in funding to non-medical universities. This year the university formed a partnership with Mexican institutions on nanotechnology, and President Faulkner helped make Austin the destination for next year's World Congress Information Technology Summit which has been referred to as the "Olympics of Technology." The event is expected to generate $44 million for the local economy.

Perhaps the greatest triumph of the last eight years is the capital campaign, launched by President Faulkner, which will have raised nearly $2 billion by the time he leaves office. For this and all other advances made by the university during his time here, the entire university will likely be sad to see him go. James R. Huffines, the chairman of the University of Texas System Board of Regents, articulated the general sentiment in response to Faulkner's announcement of resignation: "I think that all the members of the Board agree with me when I say that Larry Faulkner is the very best president of a national research university in the country—period. He has been an invaluable asset to UT Austin, to the System and to Texas. His announcement today marks the conclusion not only of his tenure as president, but a historic milestone for this institution. Larry Faulkner's remarkable legacy to UT is that he has not only achieved great things, he has established a very solid foundation for the future."

April Wright

Nano Science and Technology Building Nears Completion


January 2005


February 2005

The Center for Nano- and Molecular Science and Technology (CNM), founded in October 2000, is a multidisciplinary nanotechnology research center. The Center's mission is to foster research, education, and outreach in nanotechnology at the University of Texas at Austin (UT Austin). The CNM has made substantial progress toward establishing UT as one of the leading university programs in Nano-science and Nanotechnology.

The CNM has extensively fostered nano research at UT through Development and operation of a top-ten nano shared research facility, Direct participation in faculty recruiting and retention, research leadership on campus, graduate education, community outreach, and direct research funding.

Some 107 faculty members are currently affiliated with CNM, of whom 25 are from the Chemistry and Biochemistry Department.

CNM Shared Research Facilities:

The CNM shared instrumentation facilities offer a broad range of state-of-the-art tools for nanoscience and nanotechnology for hands-on use by UT students, faculty and staff. The available instruments include a high-resolution transmission electron microscope (TEM), dual bean system (FIB/SEM), electron beam lithography (EBL), atomic force microscope (AFM), molecular force probe microscope (MFP), several thin film deposition systems, other tools for device fabrication and testing, laser spectroscopy etc. The facilities now include over $12 million worth of equipment purchased with the funding from the SPRING Program, The Welch Foundation, NSF, The Keck Foundation and the NRL.

The facilities are used by over 300 postdoctoral and student researchers from 55 faculty groups, in 12 departments and three colleges at UT for a total usage of over 1,500 hours per month. The shared facilities are among the best at any university in the country and are an important tool for faculty recruitment and retention. They also represent a clear competitive advantage for research and educational activities of our faculty and students.

The CNM has already enabled over 160 refereed publications since 2003, in most cases, in entirely new research areas for UT:

CNM Facilitated Publications

Year	Publications
2001	23
2002	27
2003	34
2004	57
2005	88

Doctoral Portfolio Program in Nanotechnology:

In 2004, the CNM introduced a doctoral portfolio program in nanotechnology. This certification program provides a formal mechanism for recognizing and rewarding students who obtain the broad educational background necessary to become leaders in nanotechnology after graduation. This program is an efficient and effective introduction to nanotechnology for students from a wide range of technical disciplines. Over 49 students from 7 departments have enrolled in the program since its inception in fall 2004. Students in the program complete 12 semester hours of coursework and attend a nanotechnology seminar every week.


June 2005


August 2005


April 2005


May 2005

CNM Building Project:

The construction for the new $35 million Nano Science and Technology building (NST) broke ground in March 2005. The building includes a sub-basement, five floors of accessible space, and a mechanical penthouse- total top-out height of 131'- 4". The five-story, 64912 sq. ft. building will have 22,111 sq. ft. of assignable space for office and laboratories including a 2500 sq. ft. clean room.

This new NST building, located on the north side of the Experimental Science Building, will open in summer 2006. The unique interaction spaces and research laboratories in the NST will create several key opportunities for program development which promise to propel UT's nanotechnology program to the top ranks in this field. The NST will contain a greatly expanded and enhanced CNM shared instrumentation facility, including a unique bio-nanotechnology Keck clean room facility. The NST facilities will accelerate nanotechnology research and education, faculty collaboration, knowledge transfer, and outreach activities.

University of Texas Nanotechnology Initiative (UTNI):

UTNI is a university-wide planning and coordination process to establish the UT Austin as a leader in nanotechnology by enhancing research, education, and knowledge transfer in nanotechnology at UT and with partners in other universities, in industry, and in the public sector. UT already has a highly active and well-recognized nanotechnology effort which has had many recent successes. UTNI strives to make even more rapid progress and thereby position UT among the top few programs in Nanotechnology world-wide.

CNM provides organizational support and funding for UTNI programs that are designed to more effectively integrate and coordinate nanotechnology efforts on campus. This includes the *NanoNews@UT* newsletter, the Nanotechnology Seminar Series Program, Nano-Night (university-wide nanotechnology poster session for UT students) and strategic planning effort for UT nanotechnology programs.

Outreach Programs:

CNM is also diligent in the effort to increase public literacy in nanotechnology. In 2004-05, CNM organized outreach activities for the Austin Children's Museum, Huntington High School, Austin Community College, UT Science Undergraduate Research Group and Explore UT participants. Our outreach initiatives are designed to expose a general audience, regardless of age or educational background, to nanotechnology through lab tours, presentations and hands-on activities.

The informative presentations and lab tours are part of a community outreach program. Presentations include an explanation on the basics of nanotechnology, a brief history of semiconductor technology and a discussion of the societal implications of nanotechnology. Tours of the CNM include a display of the characterization and fabrication instruments as well as a hands-on demonstration using lasers, fiber optics, atomic force microscope or scanning electron microscope.

Syed Kamal


November 2005

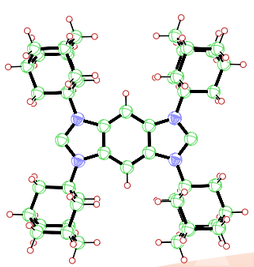

Architect's Rendering

Christopher W. Bielawski

After completing my B.S. in chemistry with Jeffrey S. Moore at the University of Illinois at Urbana-Champaign, I took my Ph.D. in chemistry with Robert H. Grubbs at the California Institute of Technology. Before coming to UT, I completed a postdoctoral research fellowship with David A. Tirrell, also at the California Institute of Technology.

Here's an interesting statistic: plastics and other man-made polymers are currently used more than steel, aluminum, and copper combined. If you stop and look around, it's easy to believe - for better or worse, they have become a major part of your life. Everything from high-temperature engine components to contact lenses to (less tasty) milkshakes contain some type of polymer that was, at one point, made in a laboratory like those found in Welch Hall. This is even more impressive when you consider that the field of synthetic polymer chemistry is still relatively young. One of my heroes, Wallace Hume Carothers (considered by many to be the father of this field) invented Neoprene - the first rationally-designed synthetic polymer - in the late 1920s while working at DuPont. Importantly, this material played a critical, and some argue decisive, role during WWII. It was used as a rubber-replacement for tires, life-jackets, and other important military equipment when the Axis Powers were unwilling to share natural resources with Allied Forces.

I find the connection between functional polymeric materials and basic chemistry extremely stimulating and use it as a driving force for my own research interests and endeavors. In particular, I am interested in responsive polymers – that is, polymers which sense changes in their local environment and respond by altering their physical properties. For example, one exciting project we are working on is the development of self-healing conductive polymers. Imagine traveling to a far-away location (personally, that would probably be somewhere in the Mojave Desert). In this day and age, you will undoubtedly bring with you an electronic device of some sort (like a GPS or a cell phone). The last thing you want is for that device to fail because of faulty manufacturing (or worse, if you're like me and you drop it half way up the face of a large rock) because, well, there is simply no way to run to your favorite electronics shop and buy a replacement. (On a far more serious note, numerous aborted space missions have been attributed to electronic failure.) It turns out that most of these types of failures are due to stress-induced microcrack formation which ultimately leads to "shorted" electronic circuits. I believe we can solve this problem with responsive polymers. Through the synthesis of new conjugated monomers that can undergo a reversible polymerization, we are working on the development of electronic materials which are capable of sensing when their structure has been compromised and respond with an autonomic-repair mechanism.



When I'm not in lab, I'm usually thinking about…coming back to lab. However, occasionally, and as my research program has progressed, even less than occasionally, I can be found at the Hyde Park Gym (an Austin original) throwing weights around or in the Mecca of rock-climbing (Joshua Tree, California) trying to garner enough skill to hopefully, one-day, lead a 5-10.

Richard M. Crooks

I began my research career as an undergraduate at the University of Illinois in Urbana studying electrochemistry with Prof. Larry R. Faulkner before moving on to graduate school at UT with Prof. Allen J. Bard in 1981. For the last 12 years I've been on the chemistry faculty at Texas A&M University, so although I'm a new faculty member I've spent many years in Texas and have lots of friends and collaborators at UT.

My research group's interests include electrochemistry, nanomaterials, catalysis, and biosensing. For example, we are interested in learning how the physical and chemical properties of metallic and bimetallic catalysts affect their selectivity and efficiency. Nanoscale catalysts in the 1-3 nm size range are of particular interest, because very slight changes in the size of these materials can dramatically affect their catalytic properties. The group also has a long-standing interest in chemical and biological sensors. In recent years this effort has focused on the design of microfluidic and nanofluidic sensors. For example, we have found that it is possible to fabricate biosensors using membranes containing a single channel that is derived from a carbon nanotube. An interesting aspect of these devices is that they detect the presence of particles one at a time. At present, we are using nanotube-based sensors to detect biomaterials such as viruses and DNA. Along these same lines, we are studying biosensors based on microfluidic systems. The idea here is to develop electrochemical detection methods for array-based sensors that have low limits of detection similar to those normally associated with fluorescence.

My wife, Julie, is also a UT-Austin graduate, and she's reconnecting with the University by running the UT editorial office of the ACS journal Langmuir. I've been a senior editor for Langmuir, which is the ACS journal of colloids and surfaces, for about two years.

It's great to be back in Austin, and I'm looking forward to many years of collaborating on teaching and research projects with UT students and faculty. Julie and I will also probably find some time to go for a swim at Barton Springs, listen to music at Antone's, or take in a sunset from Mt. Bonnell.

Bradley Holliday

My first formal exposure to the subject of chemistry came when I was a sophomore in high school. Luckily for me my first chemistry teacher was one of the best teachers I have ever encountered…he also happened to be my uncle. His passion for chemistry and educating was contagious and I was hooked. In fact, the teaching bug is in my blood coming from a family of teachers on various levels. Based on this, I had little doubt when I enrolled at Allegheny College in Meadville, Pennsylvania that I was going to major in chemistry and at the time I was set to follow in my uncle's footsteps as a high school chemistry teacher. A summer research experience at the University of Kentucky after my sophomore year ignited my interest in academic research which was further fueled by work in Professor Russell Hughes's Laboratory at Dartmouth the summer of my junior year at Allegheny.

After deciding on Northwestern University for graduate school based on the wide continuum of active research in Inorganic Chemistry that was underway there, I joined the group of Professor Chad Mirkin to pursue my interests in organometallic chemistry. My work there focused on the synthesis, characterization, and reactivity of a series of homobimetallic and mononuclear Rh(I) complexes. These were assembled utilizing hemilabile ligands and the Weak-Link Approach to supramolecular coordination chemistry. My time at Northwestern was both productive and very enjoyable and Chicago became one of my favorite cities (Go CUBS!).

I chose to work with Professor Timothy Swager at the Massachusetts Institute of Technology for my post-doctoral research experience. I made this choice in order to gain exposure to organic/polymer materials chemistry with the aim of diversifying my background. My postdoctoral research was focused broadly on the development of mechanically active and sensory devices based on conducting polymer materials.

My current research interests are diverse ranging from classic organometallic chemistry issues of transition metal bonding and reactivity to the synthesis of complex inorganic/organic hybrid structures and metallopolymers. Initial research efforts in my laboratory will be focused on using conducting metallopolymers as catalytic, separation, and light-emitting materials. The incorporation of active metal complexes directly into the backbone of conducting polymers has the potential to produce new hybrid materials which take full advantage of the properties of both components. Long term goals of this research include the development of novel polymer supported catalysts, light-emitting diodes, and photovoltaics based on conducting metallopolymers.

When I'm not in the lab I enjoy watching both college and professional football (Hook'em Horns and Go Steelers!) and getting to know Austin and the surrounding areas with my wife, Sherlaine.

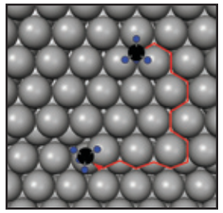
Graeme Henkelman

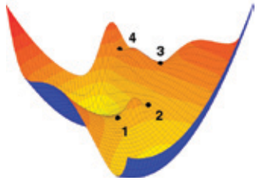
I joined the chemistry department in the summer of 2004. After doing a Ph.D. in Seattle and post-doctoral research at the laboratory in Los Alamos, My wife Beth and I are happy to be settled in Austin.

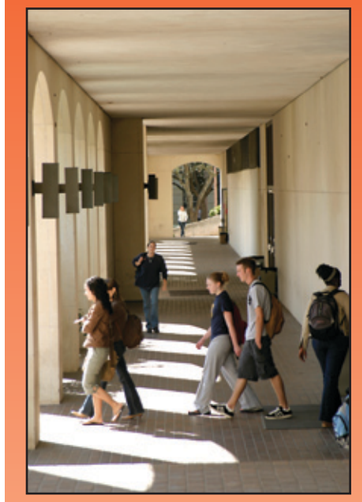
I am one of five theoretical chemists in the department. Austin is fortunate to have such a large group of theorists, both in chemistry and related fields. The interdisciplinary institutes such as the Institute for Theoretical Chemistry, the Texas Materials Institute, and the Computational and Applied Mathematics program make Austin an exciting place for a theorist to start a research group.

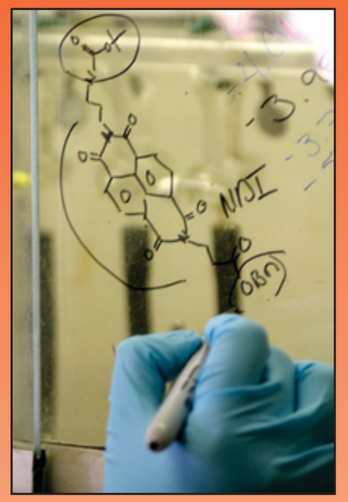
Research in our group is centered around understanding atomic scale dynamics at surfaces and in materials. One of the important challenges in theoretical chemistry is bridging the gap between the fast time scale on which atoms move and the human time scale on which interesting dynamics take place. A focus of the group is to develop computational methods to extend the time scale of dynamics simulations. One such method involves using idle computers in the department, on campus, and across the internet to find and calculate the rate of many possible microscopic events taking place on the surface of materials. This system, called EON, is currently being used to study the formation of small metal nanoparticles supported on oxide surfaces. A better understanding of the process by which nanoparticles form and coalesce will help aid in the design of novel catalytic materials.

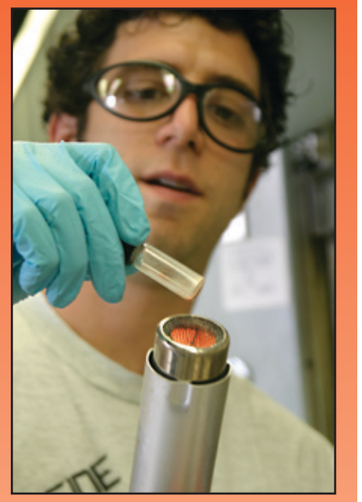
One of the reasons that supported nanoparticles are interesting to chemists is that small metal particles can be more reactive than bulk metals. I am collaborating with surface scientists and electrochemists to better understand the details of reactions at nanoparticle catalysts. An exciting project currently underway at UT Austin involves a multidisciplinary effort to understand how nanoparticles and bimetallic particles can produce better and cheaper catalysts for fuel cells. Theoretical studies are an integrated part of this effort, and one that will be evermore important as better computational methods are developed.











Development News

In order to take the department to the next level and to meet the needs outlined in this newsletter's "From the Chair" article, Steve Martin has appointed a development committee to define our goals, assess our needs and map out a development plan. The committee has begun its work and has set a five-year goal to be nationally recognized as one of the top three chemistry departments at a public university. We are in the process of identifying specific needs and we have been working closely with development officers in the College of Natural Sciences and the University to craft a strategic plan. We look forward to sharing elements of the plan as soon as it has been finalized but we can safely say that we will focus on both endowments and annual giving. The importance of annual giving cannot be overstated. Generating $50,000 of income a year would require a million dollar endowment so you can see why we seek and appreciate annual giving as much as we do. We will keep you posted as our plan evolves and we appreciate your continued interest in, and support of the Department of Chemistry and Biochemistry at the University of Texas.

Alan Campion

How can you HELP the Department of Chemistry & Biochemistry at UT?

We hope that you are as proud of our department and the university as we are, and your help is what enables us to build on that pride. Gifts from our alumni and friends help to enhance the quality of our education, work, and research, enabling us to constantly raise our standards of excellence. If you choose to be a part of our success by donating, you will have the opportunity to determine how your gift is dispersed. Every gift is significant and appreciated!

Ways to donate:

Annual Giving

Yearly gifts from alumni and friends can be directed to the Office of the President (for university-wide disbursement), or any of the university's schools, colleges, or departments. Here are a few of the ways your annual gift may be used:

- Facilitating innovative new programs
- Providing scholarships to students in need
- Supplementing professional opportunities and faculty awards
- Enhancing classroom technology

For more information, or to make a gift online, visit *www.utexas.edu/supportut/how_support* or call toll free 1-866-875-9651.

Matching Gifts

Many companies support the charitable contributions of their employees by doubling or tripling their donation! Does your employer match gifts? To find out, visit our quick and easy matching service at *www.matchinggifts.com/utexas*.

Endowments

Gifts for endowments are invested by the university, and the interest generated is used for whatever purpose you wish. You may take up to five years to fund an endowment, and they are managed in such a way that they will increase over time. Here are some of the ways in which endowments are used:

- Financial aid
- Student merit awards, scholarships, and fellowships
- Funding for exploratory research
- General Excellence awards
- Book funds for research libraries
- Professorships and Chairs

For more information, or to set up an endowment, visit *www.utexas.edu/supportut/endowments* or call toll free 1-866-4UTEXAS.

Gift Planning

Many UT alumni and friends have chosen to include a gift to a department, college, or the university in their estate plans. Our Office of Gift Planning has the knowledge and expertise required to answer your questions, and help you secure your family's future, in the way that is most beneficial to you.

Visit them online at *www.utexas.edu/supportut/giftplanning* or call toll free 1-800-687-4602.

In Return

Every gift to the university makes a difference, and we honor those who contribute to our goals and achievements. By donating to the Department of Chemistry and Biochemistry at The University of Texas, you may be eligible for membership to one of many special organizations, such as:

- The Texas Leadership Society
- The Littlefield Society
- The President's Associates
- The Chancellor's Council

To learn more, visit *www.utexas.edu/supportut/recognition*.

Be sure to specifically designate your gift to The Department of Chemistry and Biochemistry.

CORPORATE AND FOUNDATION DONORS
September 2003 to August 2004

DIAMOND ($100,000+)
The American Chemical Society
The David and Lucile Packard Foundation
Foundation for Research
Nucryst Pharmaceuticals, Inc.
The Robert A. Welch Foundation
San Antonio Area Foundation
Thermo Finnigan, LLC

PLATINUM ($50,000 - $99,999)
Eli Lilly & Company
The Herman Frasch Foundation
IGEN International, Inc.
Kraft Foods, Inc.
Pfizer, Inc.

PALLADIUM ($10,000 - $49,999)
The Alfred P. Sloan Foundation
American Cancer Society
Arnold & Mabel Beckman Foundation
The Communities Foundation of Texas
DHL Analytical
Merck & Company, Inc.
Taylor & Francis Publishing Services, Ltd.
The University Co-operative Society
Veeco Metrology Group, LLC
Xidex Corporation

SILVER ($1,000 - $4,999)
American Chemical Society—Student Affiliates
American Electric Power Service Corporation
BP International, LTD
Bristol-Myers Squibb Company
The Dow Chemical Company Foundation
ExxonMobil Foundation
Ferro Corporation
The Lubrizol Foundation
The McGraw Hill Companies
National Action Council of Minority Engineers
Research Corporation
Rohm & Haas Company
Schering Aktiengesellschaft
Shell Oil Company Foundation

COPPER ($500 - $999)
Houston Press, L.P.

PEWTER (Donors to $499)
Center for the Improvement of Human Function
Chevron Corporation
Integrative Dermatology P.C.
Proctor & Gamble Fund

CORPORATE AND FOUNDATION DONORS
September 2004 to August 2005

DIAMONDS ($100,000+)
The American Chemical Society
Arnold & Mabel Beckman Foundation
Foundation for Research
LabNow, Inc.
The David and Lucile Packard Foundation
The Robert A. Welch Foundation
The Shive Foundation

PLATINUM ($50,000 - $99,999)
IGEN International, Inc.
Johnson & Johnson Company
Merck & Company, Inc.

PALLADIUM ($10,000 - $49,999)
American Cancer Society
Boehringer Ingelheim Pharmaceuticals, Inc.
Bristol-Myers Squibb Company
Camille & Henry Dreyfus Foundation, Inc.
The Communities Foundation
Dresdner Bank AG
E.I. du Pont de Nemours and Company, Inc.
The Herman Frasch Foundation
NOVARTIS Institutes for Biomedical Research
Nucryst Pharmaceuticals, Inc.
The University Co-operative Society
San Antonio Area Foundation

GOLD ($5,000 - $9,999)
Advanced Materials Research Center, LLC
Maxygen, Inc.

SILVER ($1,000 - $4,999)
Ambion, Inc.
Beckman Coulter, Inc.
The Lubrizol Foundation
Monsanto Company
Pearson
Pfizer, Inc.
Pioneer Hi-Bred International, Inc.
Research Corporation
Temple-Inland Foundation

COPPER ($500 to $999)
Halliburton Foundation, Inc.
Harcourt, Inc.
The McGraw Hill Companies
SEMATECH, Inc.

PEWTER (Donors to $499)
Shell Oil Company Foundation
Thomson Learning
VWR International

Donor records are accurate to the best of our knowledge.
If you feel there is a discrepancy, please contact us at (512) 471-3949.

INDIVIDUAL DONORS
September 2003 to August 2004

PALLADIUM ($10,000-$49,999)
Ronya Kozmetsky

SILVER ($1,000 - $4,999)
David Medley
Michael J. DiPierro

COPPER ($500 - $999)
Shelton Clark
Philip DeShong
Jack and Lucia Gilbert
Martin Hands
Joe Levine
Stephen F. Martin and Fay Evans-Martin
Ed and Luella Wheeler
Bonnie Kollenberg

PEWTER ($250 - $499)
Cheng-Yuan Chou
George Rufus Haynes
Shih-Yen Ho
Jeanne Lagowski
John B. and Eleanor T. Otto
David Russell
David Webber

SILICON (Donors to $249)
Eric Anslyn
Richard and Mary Kathryn Arnold
Jett Arthur
Durward Baggett
Susan Brown
Jeff Brumfield
Sri Kiran Chennupati
Marlon Cowart
Pam Crain
Richard Darst
Nanlin Deng
Cecil Dybowski
Richard Eakin
Bill Finch
Eugene Friedman
Harlie P. Gillespie III
John Goodpasture
Tom Grula
Sharon Hamilton
Ronald Jandacek
John F. Knifton
Prasanna Kolatkar
Carolyn Lara-Braud
Diane Lipsitz
Joy Lock
Perry Lyons
Janis O'Mary
Peter Riley
Dan Seilheimer
Patricia G. Solley
Anthony Stuart
Steve Tedder
Mark Warnack
Herbert Weiss
Patrick Worth
Steven and Julia Young
Sang Yul Yun

INDIVIDUAL DONORS
September 2004 to August 2005

PALLADIUM ($10,000-$49,999)
John W. Hobson
Yoshihiro Ishimaru

GOLD ($5,000-$9,999)
Gwyn Shive

SILVER ($1,000-$4,999)
Jack and Lucia Gilbert
Doris H. Levine (Estate)
Stephen F. Martin and Fay Evans-Martin
David Medley

COPPER ($500-$999)
Philip DeShong
Yu-Si Fok
Ed and Luella Wheeler

PEWTER ($250-$499)
Shelton Clark
Terry Copeland
Gordon Gruetzmacher
Thomas E. Grula
Ron Powell

SILICON (Donors to $250)
Carolyn Lara-Braud
Ramon Cardona
Joe Clark
Harold A. Dieck
Richard Eakin
Jerome Edelson
Eugene Friedman
George Rufus Haynes
Constance Hill
Prasanna Kolatkar
Darren Magda
Jane Park
Ann Ratliff
Christine Sledge
David Templeton

Donor records are accurate to the best of our knowledge.
If you feel there is a discrepancy, please contact us at (512) 471-3949.

Faculty Awards

Dr. Eric Anslyn
Arthur C. Cope Scholar Award for 2006
For outstanding achievement in the field of organic chemistry

Dr. Alan Bard
2004 Welch Award
Dr. Allen J. Bard was awarded the 2004 Welch Prize in Chemistry "For his major accomplishments in the field of electrochemistry and the effect of these on the discipline of chemistry itself."

Dr. Alan Cowley
Gauss Professorship from Goettingen Academy of Sciences
Awarded to important scientists in one of Gauss's fields of interest

Dr. James R.Chelikowsky
David Adler Lectureship Award
Dr. Chelikowsky will be receiving the David Adler Lectureship Award at the 2006 March meeting of the American Physical Society in Baltimore, MD.

Dr. Norman Hackerman
National Associate of the National Academies
For extraordinary service to the National Academies in its role as adviser to the Nation in matters of science, engineering, and health.

Department Helps Celebrate Norm Hackerman's 93rd Birthday: *In March, friends and colleagues gathered to honor Norm's 70-year career as a successful teacher, researcher and administrator. Norm is a former chair of our department, former president of UT, former president of Rice University and was awarded the National Medal of Science among his many other honors. On hand to help celebrate were President Larry Faulkner, Chairman Stephen Martin, Dean Mary Ann Rankin and long-time friend and colleague Alan Cowley.*

Dr. Jim Holcombe
Fellow of the Society for Applied Spectroscopy
For service to the Society and for exceptional contributions to spectroscopy

Dr. Brent Iverson
2005 Arthur C. Cope Scholar Award
For excellence in organic chemistry

Dr. Mike Krische
The Society of Synthetic Chemistry, Japan, 2005 - Lectureship on Organic Synthesis; Johnson & Johnson Focused Giving Award for basic biomedical research

A toast to (L -R) David VandenBout, Dimitrii Makarov, Svetlana Leytner

Dr. Svetlana Leytner and Dr. Dmitrii Makarov
Novartis Graduate Fellowship in Organic Chemistry for Minorities and Women

Dr. Ben Liu
Elected Fellow of the American Association for the Advancement of Science
For exploiting nature's strategies of glycodiversification and enzyme catalysis, and for outstanding contributions to a new era of bio-organic chemistry.

Dr. Stephen Martin
Elected Fellow of the American Association for the Advancement of Science.
For distinguished contributions to the fields of synthetic organic, natural product, and biorganic chemistry.

Dr. Jason Shear
Arthur F. Findeis Award for Achievements by a Young Analytical Scientist, American Chemical Society

Dr. Keith Stevenson
2006 SEAC Young Investigator Award
For significant accomplishments during the first seven years of his career

Dr. Grant Willson
Hero of Chemistry, American Chemical Society for work in semiconductor process technology; 2005 Hero of Chemistry, American Chemical Society for excellence in the research and development of a commercial product that has led to the advancement, welfare, and progress of humanity.

Alan Lambowitz Elected to the National Academy of Sciences

Alan Lambowitz was elected to the National Academy of Sciences in spring 2004 and a celebratory reception was attended by his many colleagues and friends. Dr. Lambowitz holds joint appointments in the Department of Chemistry and Biochemistry and in the section of Molecular Genetics and Microbiology in the School of Biological Sciences. Dr. Lambowitz is also director for the Institute for Cell and Molecular Biology (*http://www.icmb.utexas.edu*). Dr. Lambowitz's work on self splicing group II introns has lead to the development of systems that allow genes to be placed into precise locations within a genome and has applications in biotechnology development including gene therapy.

Student Awards

Emily Barton
Top prize of $20,000 in the University Co-op / George H. Mitchell Undergraduate Student Awards for Academic Excellence

Keith Stevenson, Emily Barton, Dean Mary Ann Rankin

Jennifer Davoren
Hoffman-La Roche Inc. Award for Excellence in Chemistry

Martin Pettersson
Bristol-Meyers Squibb Graduate Fellowship in Synthetic Organic Chemistry

Anna Smith
Novartis Graduate Fellowship in Organic Chemistry for Minorities and Women and the National Science Foundation Graduate Research Fellowship

Staff Awards

We are pleased to announce that several of our dedicated staff members have been awarded Staff Excellence Awards this year. The department is fortunate to have an excellent support and technical staff that assist us in reaching our research and teaching goals.

2005 Staff Awards group photo, (L to R) Sylvia Jean, Monika Hill, Sandra Godfrey, Donna Reber, Vladmir Mastryukov, Terry Watts

Sylvia Jean
Terry Watts
University of Texas Staff Excellence Award

Jeff Evelyn
College of Natural Sciences Staff Excellence Award

2005 Staff Awards, Sylvia Jean, Jeff Evelyn

David Korts
Terry Watts
Department of Chemistry and Biochemistry Staff Excellence Award

2005 Staff Awards (L to R) Monika Hill, Larry Faulkner, Sandra Godfrey, Donna Reber

Nathan Bauld Retires

Nathan Bauld retired from the university in August, 2005 after 44 years of dedicated service. Nathan L. Bauld was born in 1934 in Clarksburg, West Virginia. He graduated from Victory High School in 1952 and then attended West Virginia University, receiving his BS in chemistry in 1956. He then moved to the University of Illinois to study organic chemistry, receiving his Ph.D. in 1959 under Professor E.J. Corey, and then did postdoctoral work with Professor P.D. Bartlett at Harvard University from 1959-60. After one year as a research scientist at the Rohm and Haas Company in Philadelphia, he came to the University of Texas as an instructor (1961), but was rapidly promoted through the academic ranks – Assistant Professor (1963), Associate (1966) and Professor (1972).

Nate's research interests have been in the general area of physical-organic chemistry and in organic synthesis. His group is best known for their contributions to ion radical chemistry. Most recently, his research group has developed new cation radical chemistries in which the cation radical is viewed as a generalized catalytic entity capable of supporting a wide variety of extremely fast, selective, and synthetically useful organic reactions. This concept has proven efficient in promoting pericyclic and non-pericyclic chemistry. Using this chemistry, a fundamentally new mechanism for polymerization, cation radical chain cycloaddition polymerization, was developed. His latest research, a collaborative effort with the research group of Professor Michael Krische, has developed new methods for anion radical chain cycloaddition.

Steve Webber and Nathan Bauld together at retirement ceremony

During his 44 years with the Chemistry Department, Nate authored or coauthored 150 scientific publications, one book and three book chapters, supervised about 30 PhD students and 10 Masters students, and mentored numerous undergraduate students in his laboratory. His teaching contributions included, besides the usual array of sophomore organic courses, graduate reactions mechanisms, ion radical special topics, and molecular orbital theory.

Nate married Jane Scoggins in 1971. They have five children and seven grandchildren. Jane, an English major, retired from teaching after 30 years to focus on her writing and issues related to child advocacy. She is an accomplished author of over 20 children's books, including the very successful *Hector's Escapades: First Night Out* and *Rights for Children*. Nate says that while he thoroughly enjoyed his 44 years at UT, he is now equally enjoying having more time to spend with Jane and his family and to pursue his long-term interest in bible teaching and, more recently, his interest in bible apologetics.

Marv Hackert

Raymond E. Davis Retires

Raymond E. (Ray) Davis will retire from teaching at the end of this academic year after 40 years with the department. We want to alert you to the fact that there is a symposium on crystal engineering in honor of Ray being held on the UT campus on Saturday, April 29th, 2006. For more information about the Ray Davis Retirement Symposium/Celebration, contact Bobby Barnett (*bobby.barnett@uc.edu*) or Joel Oliver (*joliveer@bcremc.net*) and look for information on registration and the program on our web site at *http://bioninst.cm.utexas.edu/davis_sympos.*

Richard J. Lagow Retires

Richard J. Lagow, Louis Nicolas Vauquelin Regents Professorship in Inorganic Chemistry, retired in January, 2005 after nearly 29 years of service to the Department. Dick was born in 1945 in Albuquerque, New Mexico. In 1963 he matriculated at Rice University where he lettered in football and received his BS in Chemistry in 1967, and a PhD also from Rice in 1969 working with John Margrave. After receiving his doctor's degree, Dick moved directly to MIT where he was an Assistant Professor from 1970 until 1976 when he joined the faculty of the University of Texas as an Associate Professor. Dick was promoted to Full Professor in 1980. He was holder of the Louis Nicolas Vauquelin Regents Professorship in Inorganic Chemistry in the Department for many years.

Dick led a multifaceted research group with interests in fluorine chemistry, carbon chemistry, lithium chemistry with applications to synthesis, materials science, and polymer chemistry. His group is best known for their broad contributions to inorganic and fluorocarbon polymers, high temperature synthesis, polylithium organic compounds, synthetic bone materials, new forms of carbon and metal alkyl synthesis. His research group had a long history of using fluorine in inorganic and organic synthesis to develop new materials. More recently, they were also exploring ways to study long chain linear carbon, $R(C{=}C)_nR$, a carbon allotrope which is both a highly reactive form of carbon and a good electrical conductor, thus showing promise in new materials. His laboratory developed a ceramic artificial bone material of calcium hydroxyphosphate with the unique property that osteoblasts take this bioceramic and convert it into living bone in animals and in humans over a period of time.

During his 29 years with the Chemistry Department, Dick authored or coauthored over 200 scientific publications, had 44 US patents and supervised approximately 95 PhD and Masters students, and mentored numerous undergraduate students in his laboratory. In addition to his appointment as the Vauquelin Professor, Dick was recognized with the *ACS Award for Creative Work in Fluorine Chemistry* in 1997 and the *ITI Straumann Award* in 1991 for producing a porous bioceramic material that achieved the record for bone ingrowth. His primary area of teaching responsibility was freshman and inorganic chemistry.

Marv Hackert

Brian Pagenkopt Moves to Ontario

Dr. Brian Pagenkopf has moved his research group to the University of Western Ontario. Dr. Pagenkopf was an Assistant Professor in our department from 1999 to 2005. His group was well recognized for studies on asymmetric aldol transformations, synthetic methods for substituted pyrroles using donor-acceptor cyclopropanes, and the creation of highly colored and tunable chromophores based upon silole five membered rings. During Dr. Pagenkopf's career, he graduated one Ph.D. and two M.S. students, and supervised three post-doctoral associates. Currently, three students are still working in our department, and they are anticipated to graduate with their doctoral degrees in spring of 2006. Our department wishes him success in all future endeavors.

Eric Anslyn

Stephen E. Webber Retires

Stephen E. Webber, William H. Wade Endowed Professor in Chemistry, retired in August, 2005 after 40 years of service to the department. Steve was born in 1940 in Springfield, Missouri. He graduated from Monett High School in 1958 and attended Washington University, receiving his BA in Chemistry in 1962. He then moved to the University of Chicago where he was a Woodrow Wilson and NSF Pre-doctoral Fellow in physical chemistry working with Stuart Rice, receiving his Ph.D. in 1965. Before joining the faculty as an Assistant Professor in 1965, he took a leave his first year to do post-doctorate work with David Craig as a NSF Postdoctoral Fellow at University College - London He was promoted to Associate (1971), Professor (1983), and named holder of the William H. Wade Professorship in Chemistry in 1998.

Steve's research interests have been somewhat varied over the years. In the early years at UT the emphasis was on the photophysics of molecular crystals. This evolved into a study of photophysical processes in polymers and polyelectrolytes and polymer self-assembly with an emphasis on the synthesis and characterization of photoactive polymers. His group is best known for their contributions to excited state processes in polymers, such as electron transfer quenching, energy transfer and the use of fluorescence to characterize polymer assemblies. In collaboration with P. Munk they studied polymer micelles in solution and later the self-assembly of polymer micelles (1990s to 2005). Steve was part of the "gang of six" (with Bard, Campion, Fox, Mallouk, and White) working on solar energy research in the 1980s as well as other collaborations within the Department (Rossky, Willson) Steve was a charter member of the Texas Materials Institute and the Center for Nano- and Molecular Science and Technology.

During his 40 years with the Chemistry Department, Steve authored or coauthored about 210 scientific publications, coedited one book (with P. Munk and Z. Tuzar), *Solvents and Self-Organization of Polymers*, and supervised 26 doctorate students, four masters students, eight postdocs and mentored numerous undergraduate students in his laboratory. He has hosted 13 visiting faculty or scholars. In addition to the Wade Professorship, Steve was Visiting Professor, University de Paris-Sud in 1986 and Visiting Professor, Ecole Polytechnique Federale de Lausanne, Switzerland in 1983. His primary area of teaching responsibility was physical and polymer chemistry. He served the department as both undergraduate and graduate advisor, Chairman of the Space and P&T Committees, oversaw the renovation of the 1929 wing of Welch Hall and served on the College of Natural Science P&T Committee.

Steve married Josephine Kanevsky in St. Louis in 1962. Their three children are Stephanie Perry (who is an AISD elementary art teacher and with husband Brad has two children, Cynthia and Benjamin); David (who is with the Webber-Hanzlik architecture firm in Austin); and Michael (who is with the RAND corporation, Santa Monica, and has two children, Evelyn and David and one on the way with his wife, Julia). Steve and Jo divorced in 2001. In June of this year Steve married Elena Dormidontova, who is a theoretician, specializing in soft condensed materials and polymer physics at Case Western Reserve University, Cleveland, Ohio, where they now reside. Steve maintains a home here in Austin and returns as frequently as possible to visit family and friends.

Marv Hackert

John Tesmer Heads to Michigan

The department lost a great new associate professor this spring when John Tesmer accepted a position at the University of Michigan. John's work in the area of structural biology of signal transduction membrane proteins is highly regarded by the scientific community. One of John's graduate students, David Lodowski (PhD, 2004), was awarded an outstanding dissertation award by the Graduate School for his dissertation titled, "Structural Basis for the Regulation of GRK2 by Gβγ", which was published in *Science (2003)* 300: 1256-1262. John, Val and their boys moved their laboratory and household to Ann Arbor in late June and were given a great send off with gifts to remember UT and Texas (and to irritate Michigan footballs fans!).

Dr. John Tesmer anticipating his move to the University of Michigan.

Hurricane Katrina Brings New Faces to the Department

This fall, 2005, Professors Sessler and Anslyn are playing host to Professor Bruce Gibb from the University of New Orleans. Professor Gibb's expertise lies in the synthesis and properties of cavitands (bowl-shaped host molecules) and nano-capsules. His group, now straddled between the Sessler and Anslyn groups, is endeavoring to keep their research going after evacuating New Orleans with hurricane Katrina bearing down on the city.

As was probably the case with most of the people from New Orleans, Dr. Gibb planned for a three or four day evacuation with his wife Corinne (the group's lab manager) and daughter Naomi. Having watched the disaster unfold in a Mississippi motel, they sorted out their personal lives and sent out emails and phone messages to their friends and colleagues in the supramolecular chemistry field. By the time Dr. Gibbs had located his group members, he had received offers of laboratory and office space from a dozen members of the supramolecular community. Undoubtedly, many of the offers came from people who had seen Bruce, only a few weeks earlier, conclude his talk at the International Conference on Calixarenes with a five-minute discussion on the dangers that hurricanes posed to New Orleans! Ultimately, Bruce and Corinne chose Austin because of the expertise the department has in supramolecular chemistry, and because it is close enough to New Orleans without being too close to the aftermath.

With the heart-warming help of a myriad of strangers and new friends, equipment from the Sessler and Anslyn groups, a technician from MicroCal to fix the group's Isothermal Titration Calorimeter (another victim of Katrina), and a funding loan from Dr. Sessler until an NSF Supplemental Grant kicked in, the Gibb group is up and running. Perhaps not on all cylinders, but it's moving forward, rather than being stuck in the post-Katrina ooze.

Dr. Gibb says there are several take-home messages from the adventure. First, always appreciate normality. Both on a personal and a professional level, it is difficult to keep your head above water when your house has failed miserably on that count. Second, look for those silver linings. Growth on the professional level is difficult when nature socks you one, but there are other ways to develop. And finally, never, *never* – especially during hurricane season – give a five-minute synopsis at international meetings on hurricanes and what they might do to New Orleans!

Bruce Gibb, edited by April Wright

aT PLay wItH CheMistry

A family enjoys the wonder of their own homemade bubbles!

A child has a messy good time making a rubber bouncing ball.

Chuck Luman, a post-doc in Chemistry, demonstrates the principles of water tension and cohesion.

Chemistry grad student volunteers (from L to R) Carolyn Mazzitelli, Carina Gunder, Jacque Stair concocting homemade slime.

Each fall the American Chemical Society encourages children of all ages to explore the wonders of chemistry during National Chemistry Week. This year the Austin Children's Museum featured a community event called "The Joy of Toys" which took place on October 19th in downtown Austin. Several UT Chemistry & Biochemistry graduate students were on-hand to help the visiting youngsters take part in their own experiments. The experiments, many of which included take-home activities, demonstrated various principles of Chemistry at a level which the children could comprehend. Take a look at these activities, as well as a wide array of resources for parents and teachers, on the American Chemical Society's web site for kids at *www.chemistry.org/kids.*

Two girls listen intently to the instructions for making rubber bouncing balls.

Departmental M.A. and Ph.D. Graduates

M.A., Fall 2003
Bridgette Kunst (Martin)

Ph.D., Fall 2003
Carla (Armorgan) Bailey (Laude)
Sherwin Yum-Yat Chan (Appling)
Jai-Pil Choi (Bard)
Rosario Fico (Fox)
Yuan-Te Fu (Lagow)
Jungseok Hahn (Webber)
Rebecca Lai (Bard)
Beth Paschal (Liu)
Todd McEvoy (Stevenson)
Corey Trahan (Wyatt)
Seung-Wuk Lee (Belcher)
Sheldon Williams (Brodbelt)
Yongchao Zhang (Heller)

M.A., Spring 2004
Matthew Cashion (Lagow)
Ryan Richard Huddleston (Krische)
David Price (Stanton)
Lucille Mullins (Cowley)
Alexander Rudolph (Martin)

Ph.D., Spring 2004
Joseph Manimala (Anslyn)
Janine Mauzeroll (Bard)
Wendi Suzanne Wagner (Robertus)
Jen-Hau Wan (Goodenough)
Charles Wells (Magnus)

M.A., Summer 2004
Nikhilesh Desai (Holcombe)
Warren Hoe (Robertus)

Ph.D., Summer 2004
Deqiang An (Sessler)
Svetlana Borisova (Liu)
Jijumon Pavithran Chelliserrykattil (Ellington)
Gregory Gabriel (Iverson)
Joseph Imhof (Vanden Bout)
Ashley Johnson (Holcombe)
Jamie Jones (Cowley)
Karin Keller (Brodbelt)
Romana Kristelly (Tesmer)
Lisa Malachowski (Holcombe)
Hilary Plake (Martin)
Manjula Rajendran (Ellington)
Junmei Zhang (Brodbelt)

M.A., Fall 2004
Richard Barnes (Dalby)
Sarah Faulkner (Ellington)
Javier Juarez (Lagow)
Chance Rainwater (Anslyn)

Ph.D., Fall 2004
Brandon Ashfeld (Martin)
Brian Bocknack (Krische)
Wyeth Callaway (Sessler)
David Cauble (Krische)
Erin Gooch (Belcher)
Jeremiah Hanes (Johnson)
Lin Hong (Liu)
Brian Osborn (Willson)
Letha Jane Sooter (Ellington)
Gloria Brown Wright (Lagowski)
Feng Yan (Liu)
Ming Yu (Pagenkopf)

M.A., Spring 2005
Sangik Cho (Rossky)
Alison Lynn Chambers (Magnus)
Nadia Martinez (Hackert)
Qiaoyin Wu (Anslyn)

Ph.D., Spring 2005
Charles Chambers (Willson)
Leah Eller (Sessler)
Greg Felton (Bauld)
Hui Li (Martin)
Ioana Pavel (Belcher)
Matthew Pinnow (Willson)
Jason Schraff (Campion)
Courtney Sherman (Brodbelt)
Deborah Walker (Lagowski)
Dana Wise (Shear)

M.A., Summer 2005
Laura Millspaugh (Martin)
Bradley Rowland (Wyatt)
Eva-Marie Strauch (Georgiou)
Addie Walkup (Appling)

Ph.D., Summer 2005
Jehrod Brenneman (Martin)
Justin Briggle (Lagowski)
Won-Seob Cho (Sessler)
Matthew Crowe (Brodbelt)
Hegui Gong (Krische)
Karl Griswold (Iverson)
Pavel Golubkov (Hackert)
Brad Herrick (Lagowski)
Hye-Young Jang (Krische)
David Javier (Shear)
Janarthanan Jayawickramarajah (Sessler)
Sungwook Kim (McDevitt)
Cong-Dung Le (Pagenkopf)
Harold Lee (Johnson)
George Mabry (Iverson)
Kenneth Matthews (Magnus)
Alesky Nakorchevskiy (Marcotte)
Binh Nguyen (Anslyn)
Bobbi Rubin (Sessler)
Abdul Waheed (Jones)
Wei Wei (White)

In Memorium

Maria Ana Curelaru, 10/14/1966 – 9/19/2005

Maria Ana Curelaru, 38, died of cancer Monday, September 19, 2005 in Des Moines, Iowa. Maria was born in Bucharest, Romania. Her father was a physician and her mother a physicist. She moved to Gothenburg, Sweden with her family in 1976 and lived there for five years. Her parents divorced in 1977 and she moved to Salt Lake City, Utah with her mother, brother, and grandmother in 1981. She graduated from Murray High School in 1985, received her B.S. in chemistry from The University of Utah in 1989, her Ph.D. in chemical physics from The University of Texas at Austin in 1994, and her M.B.A. from St. Louis University in 2000.

Maria worked at Sigma Aldrich from 1994 to 2000, Dupont Protein Technologies / Solay from 2000 to 2005, and taught statistics at St. Louis University during spring semester 2005. She began work at Kemin Nutrisurance in February, 2005 and was looking forward to beginning her new life in Des Moines.

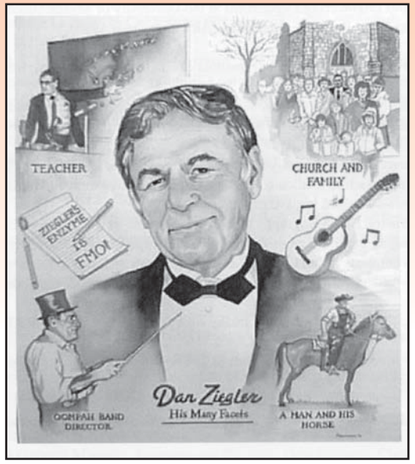
Maria is survived by her father Ioan, her mother Irina, and her brother John.❖

Doris H. Levine, 5/18/1918 – 2/20/2005

Mrs. Doris Levine of Houston passed away in February 2005 at the age of 87. Mrs. Levine received her bachelor of science degree in education at The University of Texas in 1938, and stayed on to pursue a bachelor of arts degree in chemistry the following year. She was a regular donor to the College of Natural Sciences Annual Fund, which was redirected to the Chemistry Department. She also left an estate gift to our department for which we are very grateful. Mrs. Levine's support and generosity will not go unnoticed. We thank her and her family. ❖

Daniel M. Ziegler 7/6/1927 – 11/9/2005

The Department of Chemistry and Biochemistry at the University of Texas at Austin is sad to report the loss of one of our dearest colleagues and friends this past November, Dr. Dan Ziegler. Dr. Ziegler led a distinguished career in our department from 1961, to his retirement in 1997. He is best known for his discovery of the first FMO (flavin-containing monooxygenase) – commonly called the "Ziegler Enzyme." These enzymes are used by the body for detoxification by catalyzing the conversion of nutritionally useless compounds to polar metabolites for excretion in bile or urine. During his career, Dan won numerous awards, including a USPHS Career Development Award from 1965-1975, the Bernard B. Brodie Award in Drug Metabolism from the American Society for Pharmacology and Experimental Therapeutics in 1990, and a Humboldt Research Award in 1991, and again in 1995. In the fall of 1990, the Fifth International Symposium on the *N*-Oxidation of Drugs in Munich, Germany was dedicated to Ziegler for his contributions to the field. In 1996, the International Society for the Study of Xenobiotics at San Diego held an entire symposium to honor his career and presented him with their highest honor, an Honorary Life Membership. After publishing over one hundred research articles and serving on several different committees, in several different positions, Professor Ziegler retired with the intent of doing more research, writing, traveling and devoting more time to his family, hobbies, and interests. Shortly thereafter, to honor his accomplishments in our department, an endowment was created in his name. Until the time of his death, Dan would frequently be on campus to visit with colleagues in the Experimental Science Building and Welch Hall. Dr. Ziegler will be remembered as a successful, hard-working, and humble teacher, colleague, and friend. Our thoughts are with his wife of 53 years, Mary Alice, their four children, and eight grandchildren. ❖



Chemical Compositions
Fall 2006

The University of Texas at Austin
Chemistry and Biochemistry Department
1 University Station, A5300
Austin, TX 78712

Address Service Requested

Non Profit Org.
U.S. Postage
PAID
Austin, X
Permit No. XXX

The University of Texas at Austin
Chemistry Biochemistry

As always, we welcome updates on your personal and professional news. Reminiscences of student experiences are appreciated also.

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
1 University Station A5300
Austin, TX 78712-0165
Visit the department on the internet: http://www.cm.utexas.edu

CREDITS

Stephen Martin, Chair

Newsletter Staff
Marvin Hackert, M.A. Sims, April Wright
Photo Credits
Kirk Brown, Marvin Hackert, Marsha Miller, April Wright
Proofreaders
Angie Carter, Tiffany Grady, Betsy Hamblen