The Test Tube

The Newsletter of the Department of Chemistry and Biochemistry

NEWSLETTER 2006

THIS ISSUE'S TOP STORIES

INSIDE THIS ISSUE

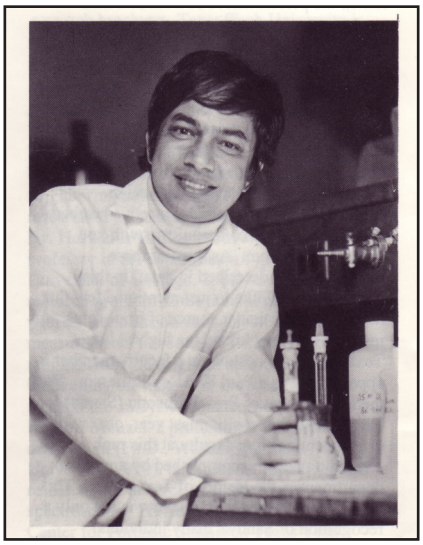
Saying Farewell to a Treasured Colleague

A Tribute to Dr. P.K. Dasgupta by Dr. Shaorong Liu

After 25 years of excellent teaching, research, and service in the Department of Chemistry and Biochemistry at Texas Tech University, Paul Whitfield Horn Professor **Purnendu K. (Sandy) Dasgupta** is now undertaking new challenges as the Chairman of the Department of Chemistry and Biochemistry at the University of Texas at Arlington. While we all will miss Sandy dearly here at TTU, we are happy for him, as he is able to extend his success to the administrative arena.

Sandy is a native of India and was educated in a college founded by Irish missionaries. Having spent most of his life, virtually all of his adult life, in the US, Sandy has never been quite sure what to do with himself. In his mother tongue, Bengali, he is a well-published poet, in various magazines as well as a set of collected works in a book. He managed to get a diploma as a TV mechanic, but finally found salvation in his love for analytical chemistry.

Sandy received his Ph.D. from Louisiana State University (LSU) in 1977. After post-doctoral appointments at LSU and University of California at Davis, he joined the Texas Tech faculty in 1981. He earned a Paul Whitfield Horn Professor title in 1992, the youngest person to be so honored at the time.



In September of 1992, Dr. **Sandy Dasgupta** became the 44th professor in Texas Tech history to be designated as a Paul Whitfield Horn Professor.

Dr. **Henry Shine** with Dr. **Sandy Dasgupta** at the Farewell & Birthday Party the Department held in Sandy's honor on December 5, 2006.

He has written more than 300 papers/book chapters, and holds 17 US patents, including the electrodialytic reagent generation and suppression technologies on which current ion chromatography is based.

Interestingly, Sandy's name is in the British law books. In 1994, he testified as the principal expert witness in the Royal High Courts of Justice for Hoechst-Celanese against British Petroleum. The case involved the purification of acetic acid to remove iodide impurities by ion exchange resins. The judgment, £120 million against BP, was the highest ever awarded in a patent lawsuit in Britain.

Sandy has received numerous awards, including the Dow Chemical Company Traylor Creativity Award, the Ion Chromatography Symposium Outstanding Achievement Award (twice; once in 1989, once in 2005), the Benedetti-Pichler Memorial Award in microchemistry, William J. Probst Lecturer Award, Achievement Rewards for College Scientists (ARCS) Scientist of the Year Award 2004-2005, and Best Science Paper of the Year Award by *Environmental Science and Technology*, 2005. He was the Royal Australian Chemistry Institute roving analytical chemistry lecturer in 2003. He is currently the Editor of *Analytica Chimica Acta*, a major international journal in analytical chemistry.

Sandy has contributed tremendously in many areas of analytical chemistry. In ion chromatography (IC), his technique on electrodialytic eluent generation and suppression (*Anal. Chem.* 1991, 63, 480-486) establishes the basis for the state-of-the-art IC products. His device [continued on back page]

The Chair Conformation

by Dr. Dominick Casadonte

It is now the end of my first year as Department Chair, and I can truly say that it has been an "interesting time". I have had to learn, among other things, the ins and outs of departmental budgets, merit review procedures, and expectations from the upper administration. Through this whole process I have been guided by the wisdom, skill, and expertise of our marvelous faculty and staff. They make my job so much easier, and they really show off the Department.

We have had a number of faculty who have received significant honors and awards this past year. Dr. **Sandy Dasgupta** was the corresponding author on a paper concerning the natural formation of perchlorates that was chosen by *Environmental Science and Technology* as the best science paper of 2005. The paper was a joint effort of co-authors from many disciplines. Work that he, Walter Borst in Physics, and chemists from Chiang Mai University in Thailand published in *Analytical Chemistry* was highlighted by the prominent science magazine *Nature* earlier this year. Sandy's graduate student, Mr. **Qingyang Li**, received the 2006 "Graduate Student in Environmental Chemistry" award from the Environmental Chemistry Division of the American Chemical Society. This is the third consecutive year that a Texas Tech student has received this prestigious award, with the other two students coming from Professor Dasgupta's group. Robert A. Welch Professor Dr. **William (Bill) Hase** was honored not with the citation of one article, but with an entire journal devoted to aspects of his work. Bill was acclaimed with a Festschrift special issue (volume 110, February 2, 2006) of *The Journal of Physical Chemistry A* in celebration of his 60th birthday. Locally, Bill received one of the Apple Polishing Awards from Mortar Board for his contributions in the classroom and for making a difference in the life of graduating seniors. Dr. **David Knaff** and Dr. **Dominick Casadonte** were also recipients of an Apple Polishing citation.

And speaking of citations, Dr. **David Nes** was awarded the Barnie Rushing Research Award from the Texas Tech Association of Parents in the Spring of 2006. This is one of the top two research awards given at Texas Tech, and highlights David's continuing research excellence and productivity throughout his years at Tech.

"Eighty-eight proposals were funded by the state out of 454 submitted. TTU received nine of 22 single-institution awards, and the Department received four of these."

Dr. **Shaorong Liu** has been named a "Nano 50 Award" winner for his innovative research in the area of nanotechnology. Presented by *Nanotech Briefs* magazine, this award recognizes the top 50 technologies, products, and innovations that have significantly impacted or are expected to significantly impact the state of the art in nanotechnology. Shaorong has also recently received an RO1 NIH grant for $1.5 million for the next four years. Shaorong and three other faculty members (Drs. **Sandy Dasgupta, Dom Casadonte**, and **Michael Mayer**) were also successful in the recent Advanced Research Program grant competitions hosted by the state of Texas. Eighty-eight proposals were funded by the state out of 454 submitted. TTU received nine of the 22 single-institution awards, and the Department received four of these.

Dr. **Paul Paré** has been named a Fulbright Senior Scholar to Brazil for the 2006-07 year. He will be heading to Brazil during the Spring semester of 2007 to conduct research in the area of Plant Biochemistry concerning signaling mechanisms initiated by soil bacteria and their metabolites that trigger promotion of plant growth, particularly in indigenous South American strains.

The Chair Conformation (continued)

Every year has its share of transitions and of ups and downs. On the up side, since the publication of the last Test Tube, Dr. **Lionel W. (Bill) Poirier** has been tenured and promoted to Associate Professor, and Dr. **Guigen Li** has been promoted to Full Professor. Also moving to increase our potential (energy, of course!), **Kazimierz Surowiec**, a former postdoc with Dr. **Richard Bartsch**, has joined our Department as a new staff member. Kaz will spend part of his time coordinating our upper-division labs and part of his time running our Mass Spectrometry facility. Dr. **Michael Jones** has rejoined our family after being the Assistant Director for the Center for Biodefense, Law, and Public Policy at the TTU Law School for the past year. Michael will coordinate our Organic Labs as well as teach Organic Chemistry courses. On the down side, Instructor Dr. **Pramod Chopade** left TTU to take a postdoc at the University of Utah. Pramod taught Organic and General Chemistry courses and acted as the Organic Lab Coordinator during his time at Texas Tech.

Speaking of ups and downs, the show "Knight School" on ESPN had ties to the Department. Out of all the applicants to try out for a walk-on position on Coach Bob Knight's basketball team next year, Arvin Zeinali, a BA Chemistry major and Tyler Hoffmeister, a BA Biochemistry major, made the cut of sixteen that were chosen for the TV show. Both Zeinali and Hoffmeister were in the final four. Zeinali and another player were released when the four became two. The final choice was between Hoffmeister and Dustin Richardson, a Texas Tech baseball pitcher. Hoffmeister was the winner of the competition, and played with Coach Bob Knight's team this year.

Dr. **Dominick Casadonte** giving a science demonstration to a group of 5th graders from North Elementary School in Lamesa, Texas.

On a final note, we are in the beginnings of a major fundraising and development effort in the department. I would like to develop a $20 million Departmental Endowment Fund for use in new faculty hires and set up and in the purchase of major instrumentation. Associate Chair Dr. **Robert Shaw** has agreed to take on the role of chief Development Officer. We are in the process of setting up a Chair's Council to help guide the Department and to give us ideas about what we need to be doing to better prepare our students to enter into their desired careers. We will also look to the Council for suggestions about fundraising. With this development, alumni recognition opportunities coming on board next year, and two new faculty hires on the horizon for the coming year, it is an exciting time to be a part of the Department. If you haven't been back to Tech or to the Department in a while, don't hesitate to contact Bob Shaw or me for a tour. I think you will like what you see.

Sincerely,
Dominick Casadonte
Professor and Chair

Who is "ν" (that's c/λ, of course!) on the Faculty?

We are in that rare state where there are no new tenure-track faculty to report this year. However, next year we hope to report the addition of two faculty to our ranks, in materials chemistry and medicinal chemistry.

Dr. **Michael Jones** has rejoined the department as an Instructor and Coordinator of our Organic Chemistry labs.

Faculty Departures

- Instructor, and Organic Lab Coordinator Dr. **Pramod Chopade** is currently working as a Postdoctoral Fellow at the University of Utah.
- Horn Professor Dr. **Sandy Dasgupta** has moved to Arlington, TX to become the new Chairman of the Department of Chemistry & Biochemistry at the University of Texas at Arlington.

Faculty & Staff Service Awards

5 years
Brandon Sheehan
Dhandapani Sadasivam
Jeremy Mason
Andrea Kirk
In Yong Eom

10 years
W. David Nes

15 years
Dennis Shelly

45 years
Henry Shine

Drs. **Henry Shine** and **Richard Redington** and Theresa Redington have a chat at the Dasgupta Farewell/Birthday Reception in December 2006.

Top: Drs. **Henry Shine, Richard Bartsch**, and **David Knaff** let loose! All three have served the department as Chairman.

Below: Business manager, **Yesenia Sanchez** hides behind a balloon bunch. We see you!

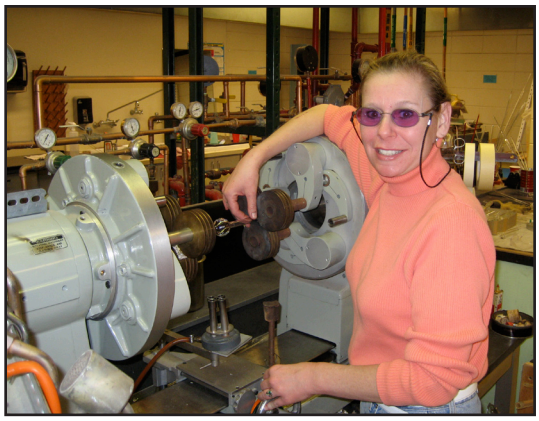
Family Matters

Dr. **Michael Mayer** and his wife, Fay, have a new baby boy. James David was born at 1:50 am on Wednesday, December 14, 2005. He was 8 lbs, 6 oz and 20 inches tall.

Brandon Sheehan and his wife, Monica, are proud to announce the birth of their daughter, Elizabeth Claire. Elizabeth was born at 1:40 p.m., Wednesday, December 14, 2005. She was 6 lbs, 14 oz, and 20 inches tall.

Dr. **Dimitri Pappas** and his wife, Mimi, have a new baby boy as well. Micah Benjamin was born on Wednesday, June 28, 2006 at 2:04 pm. He was 20.5 inches long and weighed in at 6 lbs, 14 oz.

Congratulations to all of the proud parents and their new family additions!



Staff Role Call

We had several staff changes during the 2005-06 school year. **Amy Peterman** left the department to work in another department on campus. **Adelina Loya** has moved from the Business Office and is now the Departmental Receptionist. **Nina Pruitt** became a full-time Senior Business Assistant for the Business Office. With the creation of the new Information Office, **Whitney Green** is now the Information Administrator. The Department has taken on **Dr. Kazimierz Surowiec**, former post-doc for Dr. Bartsch, to work with Mass Spectrometeric Instrumentation.

Our newest staff members are **Pam Cox**, Senior Business Assistant for the Academic Office, and **Cheryl Essery**, Glassblower for the Department.

Top to Bottom: The Department's new Glassblower, **Cheryl Essery**, hard at work in the Glass Shop. The Department has not had a Glassblower on staff since July of 2002.

Pam Cox, the new Academic Office Secretary, takes a quick break from helping students.

Below: Drs. **Chris Truitt** and **Michael Jones** will be the lab coordinators for the 2006-2007 Academic Year.

Departmental Staff, 2006-2007

Academic Office
Pam Cox
LaQuetta Purkiss

Administrative Office
Cheryl Blasingame
Adelina Loya

Building and Shops
Cheryl Essery
Jim Hildebrand
Duane Hindes
Brandon Sheehan
Noah Solis
Jerry Walton
Vince Wilde

Business Office
Nina Pruitt
Yesenia Sanchez

Graduate Office
Kathy Jones

Information Office
Whitney Green

Mass Spec. Instruments
Kazimierz Surowiec

NMR Spectrometers
David Purkiss

Stockroom
Justo Adame
Debbie Martinez

Lab Coordinators Named for 2006-2007 Academic Year

Instructor Dr. **Christopher Truitt** will remain the General Chemistry Lab Coordinator for the 2006-07 academic year.

The Department is happy to have Instructor Dr. **Michael Jones** back from the Texas Tech University Law School. He has been named the Organic Lab Coordinator for the 2006-07 academic year.

Student Honors and Scholarships

Scholarship Awards for Academic Year 2006-2007

Jeanette & Joe Dennis Scholarships
Michael D. Buckberry
Samuel D. Edwards

Robert C. Goodwin Scholarships
Dawn E. Cline
Jake A. Everett
Matthew A. Reyes
Ann E. Simmons

H. Earl & Countess Fore Archer Scholarships
Kimberly A. Ferris
Kristi L. Louder
Jarrett D. Kirk
Stephen L. McDonald
Laci M. Singer

Walter J. Chesnavich Scholarship
Joshua G. Albritton

Chemistry/Biochemistry Undergraduate Scholarship
Anthony J. Lewis

Department of Chemistry Scholarship
Geneva R. Peterson

Samuel Hunt Lee Scholarship
Kweku D. Hazel

Alumni Scholarships
Christianah Layode
Shaughn M. Nunez

Student scholarship and award winners with faculty at the ACS South Plains Section Awards Banquest in April 2006. kneeling, l to r: **Dr. Dominick Casadonte**, and **Patrick McLaurin**; second row, l to r: **Laci M. Singer, Samuel D. Edwards, Joshua G. Albritton, Dana Dang, Asama Tanaudommongkon,** and **Dr. Sandy Dasgupta**; back row, l to r: **Charlotte N. Sisk, Geneva R. Peterson, Colin T. Jennings, Jarret D. Kirk, Shaughn M. Nunez,** and **Dr. Bob Blake**

Academic Awards for the 2005-2006 Academic Year

Houghton-Mifflin First Year Award
Nicholas Bergfeld

Outstanding Seniors
Colin T. Jennings
Asama Tanaudommongkon
Irin Tanaudommongkon

Outstanding General Chemistry Teaching Assistants
Charlotte N. Sisk (Fall 2005)
Patrick McLaurin (Spring 2006)

2006 Song Dissertation Prize Awarded to SM Rahmat Ullah

The Song Dissertation Award, established by Professor Pill Soon Song when he left our department to become chairman of the Department of Chemistry at the University of Nebraska, honors the graduate student who submits the best doctoral dissertation in Texas Tech's Department of Chemistry & Biochemistry in a given calendar year.

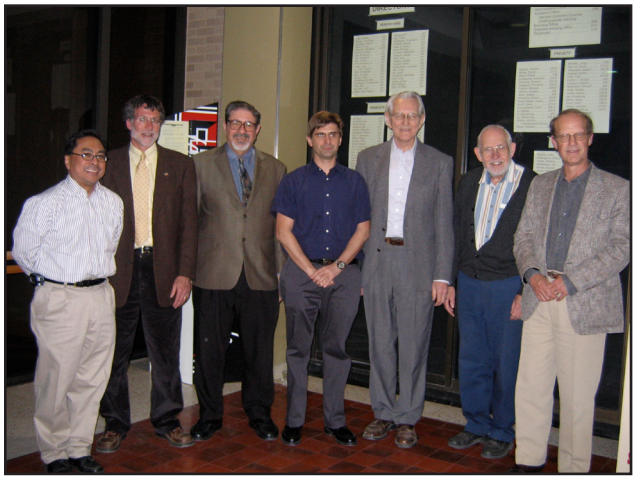
The winner of the 2006 Song Dissertation Prize was Dr. **SM Rahmat Ullah**. His research was completed under the direction of Horn Professor **Sandy Dasgupta**. Dr. Ullah received his PhD degree on December 17, 2005; the title of his dissertation was, "Development of Membrane Based Devices and Ion Chromatography Systems and Their Applications in Atmospheric Measurements". He is currently working as a Senior Research Chemist at ChemTrace Corporation in Fremont, CA.

The 2006 Welch Summer Scholar Students have fun with their program leader, Dr. **Chris Truitt**. Nice hair, Chris!

Departmental Chair's Council

The Chair's Council will consist of a number of successful chemists and biochemists from industry and academia, many of whom are TTU alumni. Currently, we have fourteen members who have agreed to serve on the first council. The purpose of the council is to advise the Chairman and faculty on issues concerning the future development of the department. The first meeting of the council is scheduled for April, 2007 on the TTU campus.

Dr. **Thomas George** is one of the inaugural members of the Chair's Council. He graduated from Texas Tech with a BS in Chemistry in 1962, and he received his Masters in 1965 under the professorship of Dr. A.L. Draper. Dr. George retired in May 1997 as President, Executive Vice President, and General Manager for the Semiconductor Products Sector ("SPS") of Motorola, Inc., a global communications leader of seamless mobility.



Below: Drs. **Ed Quitevis, Greg Gellene, Jorge Morales, Richard Redington, Richard Wilde**, and **Bill Hase** stand with Dr. Richard Zare (third from left), the guest speaker of the Department's 2006 Robinson Endowed Lecture Series.

Welch Summer Scholars Program

Since 1991, Texas Tech has been one of five sites to coordinate the Robert A. Welch Foundation's summer research course for bright and talented high school students. Each June, a small group of high school juniors and seniors spend twenty-nine program days in an intensive course in basic chemical research.

During the first week, we train the students in the more important research skills, such as microchemistry, literature searching, writing scientific papers, and keeping a scientific notebook. They choose a mentor by the second week and are then responsible for conducting "independent" research.

This year the faculty involved were Drs. **Richard Bartsch, Sandy Dasgupta, Bill Hase, Louisa Hope-Weeks, Guigen Li, Jorge Morales, David Nes**, and **Ed Quitevis**.

Above: Dr. **Robert Shaw** and Dr. **Thomas George**, the first member of the newly formed Chair's Council. Dr. George graduated from Texas Tech with a BS in Chemistry in 1962 and a Masters in 1965 under A.L. Draper. He received his PhD from Northwestern University in 1968.

Departmental Lecture Series: 2006 Robinson Endowed Lecture Series

The fourth G. Wilse Robinson Endowed Lecture Series was held on Wednesday, April 27, 2006. Dr. Richard N. Zare gave two talks. His technical talk was entitled, "Make It Count!," and his public talk was titled "How to Succeed in Research."

Dr. Zare, Marguerite Blake Wilbur Professor in Natural Science, Department of Chemistry, Stanford University received his BA in 1961 and his PhD in 1964 from Harvard University. Professor Zare is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Philosophical Society. He is also a foreign member of the Royal Society of London, the Swedish Academy of Sciences, and the Chinese Academy of Sciences.

Transition States: Graduations

PhD Degree in Chemistry

August 2005

Kent Alan Chambers
(Chemical Education-Blake)
Improving Performance in First Year Chemistry

December 2005

Chuqiao Tu
(Organic-Bartsch)
Synthesis of New Proton-Ionizable Macrocyclic Ligands

SM Rahmat Ullah
(Analytical-Dasgupta)
Development of Membrane Based Devices and Ion Chromatography Systems and Their Applications in Atmospheric Measurements

Hui Zhou
(Organic-Bartsch)
New Macrocyclie Multidentate Ligands for Metal Ion Complexation

May 2006

Mohsina Islam
(Analytical-Korzeniewski)
Methanol Electrochemical Conversion to Formaldehyde Over Bulk Metal and Supported Catalysts

Sri-Ranga S. S. Kotti
(Organic-Li)
Modern Synthetic Strategies: Organo-metallics, Ionic Liquids and Peptides

Dhandapani Venkatram Sadasivam
(Organic-Birney)
Theoretical and Experimental Studies of Some Unusual Potential Energy Surfaces and Pseudopericyclic Reactions

Xin Shen
(Organic-Bartsch)
Synthesis of Novel Proton-Ionizable Calixa[4]arenes

James Cody Timmons
(Organic-Li)
Novel Olefin Additions and Carbon-Carbon Bond Formation Reactions

August 2006

Qingyang Li
(Analytical-Dasgupta)
Development of Spectroscopic Field Analytical Systems

Paramakalyani Martinelango
(Analytical-Dasgupta)
Oxalate and Perchlorate: Two Trace Components in the Environment

Masters Degree in Chemistry

August 2005

Mitchel Lee Cottenoir
(Biochemistry-Shaw)
Inhibition of Metallo B-Lactamase by Double-stranded DNA

Li Guo
(Organic-Li)
New Electrophilic Addition and Asymmetric Halo Aldol Reactions

Ye Hou
(Inorganic-Casadonte)
Ultrasound-Mediated Reformatsky Chemistry

Junying Liu
(Organic-Li)
New Asymmetric Umpolung Reaction and Electrophilic Olefin Addition Reaction

Xiaomei Zhou
(Organic-Reid)
The Conformation Study of a Bioactive Peptide by Reverse-Phase HPLC, CD and NMR

December 2005

May 2006

Syed Javed Ali
(Organic-Birney)
Development of Green and of Polymer Supported Oxidizing Agents for Oxidation of Alcohols

Xiaodong Liu
(Organic-Bartsch)
Synthesis of New Proton-Ionizable Lariat Ethers and Calix[4]arenes for Separation of Metal Cations

Sara Monica Molina
(Inorganic-Hope-Weeks)
Surface Functionalization of a Cantilever Sensor

Jennifer Marie Nodorft
(Physical-Gellene)
A Quasi-Classical Trajectory Study for Kinetic Isotope

August 2006

Yanping Gao
(Inorganic-Hope-Weeks)
Synthesis and Characteristic of Doped Cadimum Sulfide Aerogel

Kunyu Li
(Biochemistry-Paré)
Studies in Plant Chemistry and Organic Synthesis

Lauren McPherson
(Organic-Li)
New Synthetic methodologies: Diamination and Aza Diels-Alder

Hien Nguyen
(Analytical-Shelly)
Rapid Quantitative Assay for Bacterial Protease Activity

Transition States: Graduations

Bachelor of Arts in Biochemistry

August 2005
Stuart Wayne Griffith

December 2005
Jason Massoud Faghih
Sammy James Mills
Juan Roberto Rodriguez
Jeremy Cole Spears

May 2006
Brittany Ann Buckmaster
Ryan Michael Downey
April Danielle Farris
Natalie Alexandra Hill
Kim Catherine Styrvoky
Jennifer Leigh Thomas
Ty Elliott Whisenant

August 2006
Thurston Evans Dean, IV
Amy Michele Hill
Chadd Lima Ikaika Toshio Kawata

Bachelor of Arts in Chemistry

August 2005

December 2005

May 2006
Christopher Kyle Belcher
Joshua Heath Brown
Aberdeen Christian Freo

Michael Aaron Garcia
Kevin Bryce Johnston
Sarah Elizabeth Roland

August 2006

Bachelor of Science in Biochemistry

August 2005
Amani Hassoun
Matthew David Johnson
Paul Andrew O'Leary

December 2005

May 2006
Jonathan Reid Allan
Michael Austin Clemons
Stephen Anthony Fernandez
Eleece Nicole Holland
Scott Alan Letbetter
Christopher Robert McMillan
Megan Elizabeth Shannon
Jody Leeann Smith
Vandon Dale Vest
Bangshing Wang
Cacey L Wilhoit

August 2006
Weston Neil Bradley
Marc Daniel Macaluso
Michelle Lynn Morsbach
Jared Wayne Thornhill
Nathan Tate Wilson

Bachelor of Science in Chemistry

August 2005

December 2005
Rita Vanessa Barboza
Antonio Donicio Garcia
Bryan Reid Parks
Kelly Jo Sulzener

May 2006
Stacey Debra Dalton
Karla Alfonso Evora
Julian Mansanales Gallardo, III
Colin Terence Jennings
Thomas Scott Mosley
Andrew Jacob Raines
Asama Tanaudommongkon
Irin Tanaudommongkon

August 2006
Susan Marie Daniel
Joshua James Larry
Isaac L. Vigil

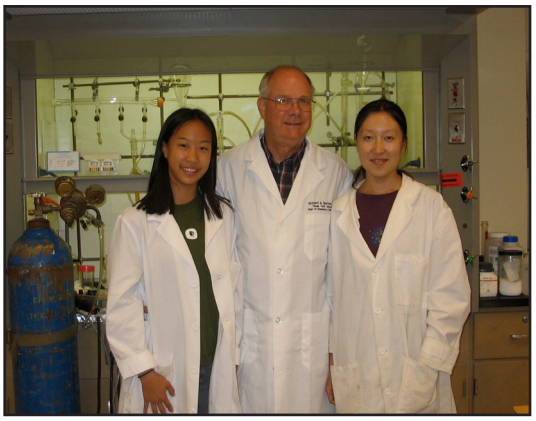
Transition States: In Memoriam

- Dr. **Felix Pettey Ballenger,** BA Chemistry 1934, from Lubbock, TX, died April 20, 2000.
- **Audrey Newell Bennett,** BA Chemistry 1942, from Lubbock, TX died on December 6, 2004.

Faculty News & Notes

Richard Bartsch, Analytical and Organic:

- helped organize a symposium on "Recent Development of Sensing Chemistry and Chemical Separation Systems for Innovation in Chemical Analysis," at the 2005 International Chemical Congress of Pacific Basin Societies (Pacifichem 2005) held in Honolulu, Hawaii December 15-20, 2005. Every five years the chemical societies of the U.S., Japan, Korea, Canada, New Zealand, and Australia hold this meeting. Pacifichem 2005 attracted more than 9000 participants from 58 countries.
- presented two papers at Pacifichem 2005 entitled, "Metal Ion Extraction by Di-ionizable Calix[4]arene-crown Ether Ligands" (in the Symposium on Recent Development of Sensing Chemistry and Chemical Separation Systems for Innovation in Chemical Analysis); and "Convenient Synthesis of Perdeuterated Ionic Liquids" (in Symposium on Ionic Liquids: Perspectives of the Present and Visions for the Future).
- received a three-year renewal grant from the Chemical Sciences, Geosciences, and Biosciences Division of the Office of Basic Energy Sciences of the US Department of Energy. Funding in the amount of $345,000 will be provided to investigate "New Proton-Ionizable, Calixarene-Based Ligands for Selective Metal Ion Separations."
- received a 6-month, $30,000 contract from the Idaho National Laboratory for "Synthesis of Calixcrown Ligands for Acid-Side Cesium Extraction".
- visited Baylor University in February 2006, and presented a seminar entitled "New Proton-Ionizable, Calixarene-Based Ligands for Selective Metal Ion Separations" in their Department of Chemistry and Biochemistry Spring Colloquium Series.



Dr. **Richard Bartsch** stands in his lab with his 2006 Welch Summer Scholars student, Emily Lim, and his graduate student, **Dongmei Zhang**.

David Birney, Organic:

- presented a paper at the Fifth International Chemical Congress of Pacific Basin Societies (Pacifichem 2005) held in Honolulu, Hawaii on December 15-20, 2005, entitled, "Pseudopericyclic Ketene Cycloadditions" (in the Symposium on The Centennial of Ketenes).
- gave a seminar entitled "Monkey Saddles, Pseudopericyclic Reactions, and Other Peculiarities" at University of North Texas (February 24), Princeton University (February 28), and Lehigh University (March 1).
- was listed by May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.

Drs. **Henry Shine, David Birney, Richard Bartsch, Michael Mayer, Guigen Li, Michael Fuertes**, and **Satomi Niwayama** gather around Dr. **Pramod Chopade** for a farewell celebration in his honor.

Dominick Casadonte, Inorganic:

- was awarded $100,000 from the Advanced Research Program (ARP) for 2006 for his proposal, "Sonochemical Synthesis of Nanometric Carbide Ceramic Armor Materials."
- was inducted into the Chi Chapter (TTU) of Phi Beta Delta, the Honor Society for International Scholars.
- was listed by May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.
- was honored at the annual Apple Polishing ceremony put on by Mortar Board, a senior honor society at Texas Tech. The idea of the Apple Polishing is to honor faculty who have made a difference in the lives of these exceptional students during their time at TTU.

Pramod Chopade, Organic:

- was named "Professor of the Semester" for Fall 2005 by Gamma Beta Phi honor society of Texas Tech University in recognition of an "exceptional job, not only in his capacity as a teacher, but as a member of the Texas Tech community."
- was listed by December 2005 & May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.

Purnendu Dasgupta, Analytical:

- presented three papers at the Fifth International Chemical Congress of Pacific Basin Societies (Pacifichem 2005) held in Honolulu, Hawaii on December 15-20, 2005, entitled, "Hybrid Flow Analyzer for the Measurement of Atmospheric Trace Gases" (in the Symposium on Recent Developments in On-Site Instrumentation and Analysis); "Chemiluminescence-based Sequential Flow Analyzer for Arsenic" (in the Symposium on Flow-Based Analysis: State-of-the-Art Flow Methods in Analytical Chemistry); "Perchlorate: Why, Wherefrom and What Now?" (in the Symposium on Recent Development of Sensing Chemistry and Chemical Separation Systems for Innovation in Chemical Analysis).
- had a paper chosen on the natural formation of perchlorate as the best science paper of 2005 by the journal *Environmental Science and Technology*. This is a new effort of the journal to identify some of the top papers in science, technology, and policy published in *ES&T* each year. He was a corresponding author of the perchlorate paper, which was a joint effort of co-authors from many disciplines at TTU.
- had a paper highlighted in the journal *Nature* (Vol. 440, Issue 7802). The research, using soap bubbles to automate the detection of trace gases, was a joint effort of TTU's Department of Chemistry and Biochemistry and Department of Physics, and the Department of Chemistry at Chiang Mai University in Thailand.
- was awarded $100,000 from the Advanced Research Program (ARP) for 2006, for his proposal, "Perchlorate and iodide intake and excretion in breastfed infants."
- was inducted into the Chi Chapter (TTU) of Phi Beta Delta, the Honor Society for International Scholars.
- gave a seminar entitled, "Perchlorate, Wherefrom, Wherein, and Where Do We Go From Here?" on Friday, December 2, 2005 for the Chemical Engineering Seminar Series at Texas Tech University.
- had two articles listed in the Top 20 Most Accessed Articles for January-June 2005 of the American Chemical Society's journal *Environmental Science and Technology*. Both articles resulted from interdisciplinary efforts with several other Texas Tech departments and faculty. The first article on the *ES&T* list was actually published in 2002 and became popular only recently because of other reasons. Articles number 2 and 16 (which would rank numbers 1 and 15 of those published in 2005) both came from research on perchlorate conducted in Dr. Dasgupta's lab.

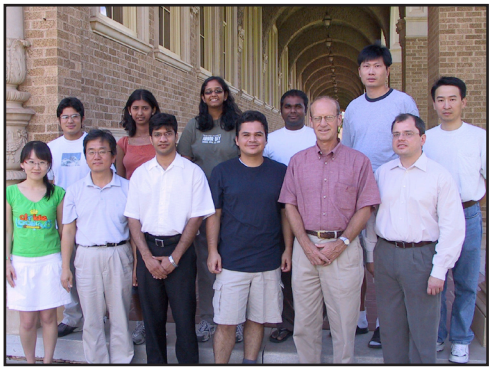
Drs. **Sandy Dasgupta** and **Dominick Casadonte** after the induction ceremony into the Chi Chapter of Phi Beta Delta, TTU's Honor Society for International Scholars.

Gregory Gellene, Physical:

- was listed by May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.

William Hase, Physical:

- was listed by December 2005 & May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.
- was honored with a Festschrift special issue (volume 110, February 2, 2006) of *The Journal of Physical Chemistry A* in celebration of his 60th birthday. Festschrift literally means "celebration publication", and is a way for friends and colleagues to honor Dr. Hase's scientific accomplishments. Dr. Hase's research spans many important chemical processes including intramolecular dynamics and unimolecular reactions, bimolecular reactions, and reactions on complex surfaces and at interfaces. In addition to over 200 research publications, Dr. Hase has written textbooks, reference books and many book chapters.



Dr. **Bill Hase** [front row, second from right] stands with his research group.

- presented the Plenary Lecture at the 6th Annual Centre for Research in Molecular Modeling (CERMM) Symposium held at Concordia University, Montreal, Canada, February 10-12, 2006. The theme of this year's Symposium was "Exploring the Synergy Between Mass Spectrometry and Computational Chemistry" and the title of Bill's lecture was "Chemical Dynamics Simulations of Energy Transfer, Fragmentation, and Soft-Landing in Protonated Peptide Ion Collisions with Hydrocarbon Surfaces."
- was honored at the annual Apple Polishing ceremony put on by Mortar Board, a senior honor society at Texas Tech. The idea of Apple Polishing is to honor faculty who have made a different in the lives of these exceptional students during their time at Texas Tech, whether in or outside of the classroom.
- gave a Plenary Lecture entitled "Direct Dynamics Simulations of Atomic-Level Gas-Phase Organic Reactions. Post-Transition State Dynamics" at the Conference on Electronic Structure: Principles and Applications (ESPA 2006), held in Santiago de Compostela, Spain, July 18-21, 2006.
- received a three-year renewal grant from the National Science Foundation on his research project "Computer Simulation of Chemical Dynamics" for an amount of $426,000. With this renewal, Bill will have 34 years of continuous support from NSF for this project.

David Knaff, Biochemistry:

- was honored at the annual Apple Polishing ceremony put on by Mortar Board, a senior honor society at Texas Tech. The idea of Apple Polishing is to honor faculty who have made a difference in the lives of these exceptional students during their time at Texas Tech, whether in or outside of the classroom.
- was awarded funding for two years on a proposal to the USDA/Southwest Consortium on Plant Genetics and Water Resources entitled "Role of HOS15 and Its Associated Proteins in Stress-Responsive Gene Repression through Chromatin Remodeling". This project has been selected for support at the level of $40,000 per year.

Dr. **David Knaff** and the newest addition to his family, Ella, stopped by the office to say hello.

Carol Korzeniewski, Analytical:

- was listed by May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.

Guigen Li, Organic:

- was promoted to Full Professor effective September 1, 2006.
- was awarded a three-year renewal grant of $60,000 per year from the Welch Foundation.

Drs. **Shaorong Liu, Carol Korzeniewski**, and **Ed Quitevis** at Dr. Sandy Dasgupta's Birthday & Farewell Party on December 5, 2006.

Shaorong Liu, Analytical:

- was awarded $100,000 from the Advanced Research Program (ARP) for 2006, for his proposal, "Toward Comprehensive Understanding of Ion Transport Through Nanochannels."
- was named a Nano 50 Award winner, for his innovative research in nanotechnology, "Nanochannel-Based Fuel Cells." The Nano 50 Awards, presented by *Nanotech Briefs* magazine, recognize the top 50 technologies, products, and innovators that have significantly impacted, or are expected to impact, the state of the art in nanotechnology. The Nano 50 awards was presented at a special reception and awards dinner during NASA Tech Briefs National Nano Engineering Conference at the Boston Marriott Newton, November 9-10, 2006.
- was the 2006 winner of the Chancellor's Research Award, the highest award given to young researchers at Texas Tech. It carries a $5,000 unrestricted cash prize.
- received a $1,544,683 grant from NIH for his project entitled "Hybrid Chip Device for Automated 2-D Protein Separation." The project is funded from 8/1/06 to 7/30/10.

Michael Mayer, Organic:

- was awarded $100,000 from the Advanced Research Program (ARP) for 2006, for his proposal, "Catalytic Synthesis of Polyrotaxanes and Multicatenanes."
- was awarded a new three-year grant of $50,000 per year from the Welch Foundation.

W. David Nes, Biochemistry:

- was the 2006 winner of the Barnie E. Rushing, Jr. Faculty Distinguished Research Award for Excellence in Research. This award recognizes research excellence at Texas Tech University and has a cash prize associated with it. It is sponsored by the Texas Tech University Association of Parents and is based on excellence in research, with publication of the research playing a strong role in its presentation.
- was awarded a three-year renewal grant for $50,000 per year from the Welch Foundation.

Dr. **David Nes** [middle row, center] and his research group standing on the steps outside the Chemistry building.

Satomi Niwayama, Organic:

- presented a paper at the Fifth International Chemical Congress of Pacific Basin Societies (Pacifichem 2005) held in Honolulu, Hawaii on December 15-20, 2005, entitled, "Highly Efficient Selective Monohydrolysis of Symmetric Diesters" (in the Organic Chemistry General Poster session).

Dimitri Pappas, Analytical:

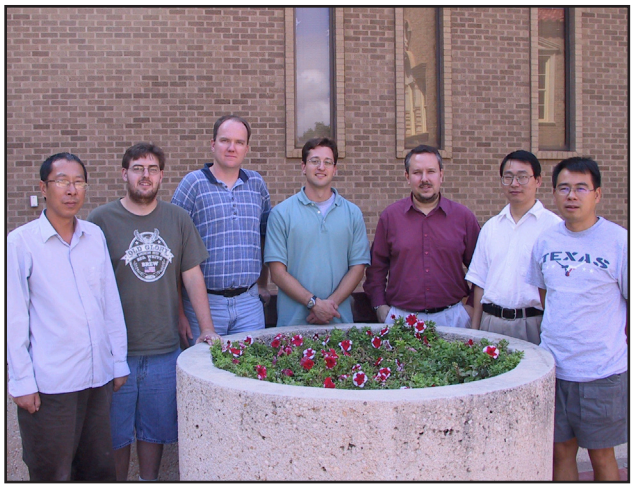
- was listed by May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves

Paul Paré, Biochemistry:

- was awarded funding under the Fulbright Scholar Program to conduct research in the area of Plant Biochemistry at a governmental research facility in Sao Paulo, Brazil. In collaboration with researchers at Kennedy Space Center and Auburn University, members of the Paré laboratory are currently studying signaling mechanisms initiated by soil bacteria via volatile odors that trigger plant growth promotion. Research instigated in Brazil will allow for the exploration of bacterial metabolites from strains endogenous to South America that are biologically active in promoting growth of agricultural crops. The Fulbright Scholarship will coincide with a TTU faculty developmental leave scheduled for Spring 2007.
- was awarded a three-year renewal grant of $50,000 per year from the Welch Foundation.

L. William Poirier, Physical:

- was listed by December 2005 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.
- was promoted to Associate Professor and received tenure effective September 1, 2006.



Dr. **Bill Poirier** [third from right] stands with members of his research group.

Edward Quitevis, Physical:

- gave a seminar at the Department of Chemistry & Biochemistry at Arizona State University on February 20, 2006. The title of his talk was "Intermolecular Dynamics of Liquids Studied by Ultrafast Optical Kerr Effect Spectroscopy: From 'Simple' Molecular Liquids to Complex Fluids."

Robert Shaw, Biochemistry:

- made a series of presentations with members of his research group at the 100th Anniversary National Meeting of the American Society of Biochemistry and Molecular Biology (ASBMB) during April 1-5, 2006 in San Francisco, CA. The title of Bob's presentation was "Novel Nucleic Acid-Based Inhibitors of the Bacillus cereus 5/B/6 Metallo-ß-lactamase."
- has taken on the role of chief Development Officer in the Department. He is in charge of setting up a Chair's Council consisting of Texas Tech Chemistry alumni who will be asked to provide ideas on how the Department can better prepare our students to enter into their desired careers. The Council will also provide suggestions about fundraising.

Huazhong Shi, Biochemistry:

- was awarded funding for two years on a proposal to the USDA/Southwest Consortium on Plant Genetics and Water Resources entitled "Role of HOS15 and Its Associated Proteins in Stress-Responsive Gene Repression through Chromatin Remodeling". This project has been selected for support at the level of $40,000 per year.

Christopher Truitt, Biochemistry:

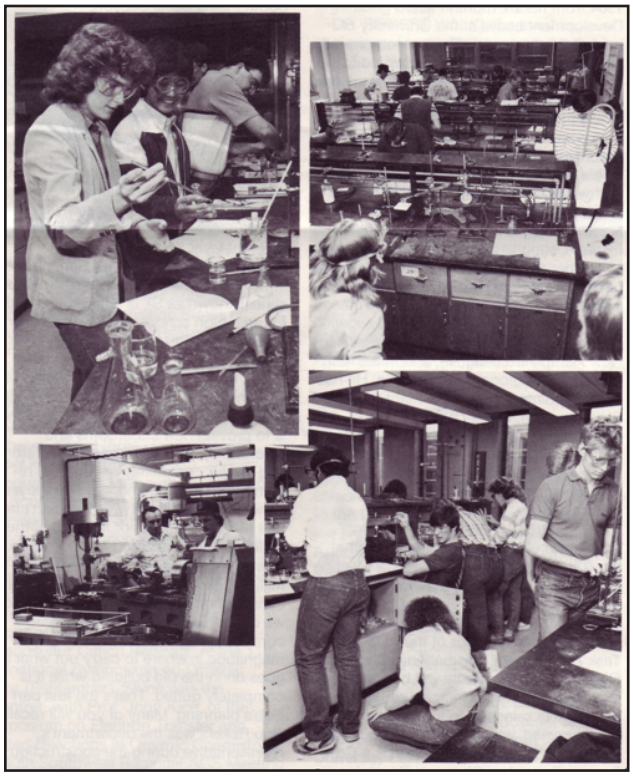
- was listed by May 2006 graduating seniors as having made a difference for them during their time at Texas Tech. This recognition of teaching excellence is especially significant, as it comes not from external sources, but from the students themselves.

Bruce Whittlesey, Inorganic:

- spent the Spring 2006 semester teaching three undergraduate Chemistry courses abroad. He taught the Chemistry & Society, Descriptive Inorganic, and Advanced Inorganic Chemistry courses at the Texas Tech University Center in Sevilla, Spain.

Dr. **Bruce Whittlesey** took this photo of the Museo de Artes y Costumbres Populares in Sevilla, Spain during the Spring 2006 semester.

Pictures From The Past



Above: Laboratory photo collage taken from the 6th edition of the Test Tube published in 1985.

Upper Left: The Chemistry Building in 1929. It was one of the first buildings on campus, and originally housed not only Chemistry, but also Geology, Physics, and Biology.

Left: Our very own Nina Pruitt, [then Nina Rowan], gets all dolled up for the 1970 Miss Texas Tech University pageant.

Student Awards

Three chemistry graduate students, **Ademola Idowu, Paramakalyani (Kalyani) Martinelango**, and **Lauren McPherson**, were awarded Summer 2006 Dissertation/Thesis awards from the Texas Tech University Graduate School. Ademola and Kalyani were doctoral students in the analytical research group of Horn Professor **Sandy Dasgupta** and Lauren was part of Dr. **Guigen Li**'s organic group.

Two chemistry graduate students won awards for their posters in the Biological Sciences I division at TTU's 5th Annual Graduate School Poster Competition. **Ademola Idowu** won 2nd Place, and **Charlotte Sisk**, won 3rd Place. Ademola is in Horn Professor **Sandy Dasgupta's** analytical group; Charlotte is in **Louisa Hope-Weeks**' inorganic group.

Qingyang Li was selected for a 2006 "Graduate Student Award in Environmental Chemistry" from the Environmental Chemistry Division of the American Chemical Society. Qingyang, a Ph.D. candidate in Horn Professor **Sandy Dasgupta's** group, graduated from TTU in August 2006. This is the third consecutive year that a TTU student has won this prestigious award; previous winners were **SM Rahmat Ullah** and **Kalyani Martinelango**, also from Prof. Dasgupta's research group.

Dr. **Bob Blake** presents the International Center for Undergraduate First-Year Chemistry Award, Sponsored by Houghton Mifflin. to undergraduate, **Nicholas Bergfeld**. Nicholas also won the book, *Fast Food Nation,* from Houghton Mifflin.

Chemistry Ph.D. students, **Simerjeet Gill** and **Kalyani Martinelango,** were awarded First and Second Place (respectively) in recognition of Outstanding Presentations in the PhD Category at the First Annual India Students Association Graduate Research Day (ISAGRD 2005) held at Texas Tech University, December 3, 2005. Simerjeet is in the inorganic research group of Dr. **Louisa Hope-Weeks**, and Kalyani is in the analytical research group of Horn Professor **Sandy Dasgupta**.

Graduate student, **Cynthe L. Sims**, presented "Inhibition of Co(II)-Reconstituted Bacillus cereus 5/B/6 Metallo-ß-lactamase by DNA" at the 100th Anniversary National Meeting of the American Society of Biochemistry and Molecular Biology (ASBMB) during April 1-5, 2006. Cynthe works for biochemistry professor Dr. **Bob Shaw**.

HHMI undergraduate student, **Susan E. Wozniak**, presented "In vivo Trials of a Nucleic Acid-Based Metallo-ß-lactamase Inhibitor" at the 100th Anniversary National Meeting of the American Society of Biochemistry and Molecular Biology (ASBMB) during April 1-5, 2006. Ms. Wozniak participated in the normal poster session and also in the 10th Annual ASBMB Undergraduate National Poster Competition. She received an Honorable Mention Award (one of only 23 awards made to over 160 undergraduate participants). This award, based on the impact and quality of the research performed, was presented to Ms. Wozniak by Nobel Laureate Dr. Thomas Cech, President of the Howard Hughes Medical Institute. Susan is one of Dr. **Bob Shaw**'s undergaduate students.

Undergraduate **Susan E. Wozniak** stands with Nobel Laureate Dr. Thomas Cech, President of the Howard Hughes Medical Institute.

Products in High Yield: Alumni News

Gaurav Arora (MS Bartsch 2006) has joined Pfizer in Groton, CT.

Larry Bratton, (BS Chem 1986, MS Bartsch 1989) works for Pfizer Global R&D, as a Medicinal Chemist discovering new drugs for the treatment of skin related diseases.

Wenwu Chen, (Postdoc Poirier) has taken a job with the National Institute for Standards and Technology in Gaithersburg, Maryland.

Sergei Dzyuba, (PhD Bartsch 2002) has accepted a faculty position as Assistant Professor in the Chemistry Department at Texas Christian University. Dr. Dzyuba has held postdoctoral positions at MIT and Columbia University.

Mohammed Farag (PhD Pare 2004) was previously working as a Faculty member of Pharmacy at Cairo University in Cairo, Egypt. He now works as a post doc at the Brown Cancer Center at the University of Louisville in Louisville, KY. He and his wife are expecting their first baby in June.

Dr. **Mohammed Farag** and his wife, Maggie. They are currently living in Louisville, Kentucky while she works towards her Ph.D.

Rob Hanes (PhD Bartsch 1999) and his wife Jennifer and daughter Darby have moved to Lee's Summit, MO. Rob has started his own company, Chemical Solutions with a website of www.chemicalsolutionsonline.com.

Richard Lombardini (PhD Physics Poirier 2006) is now a postdoctoral researcher at Rice University, working for Bruce Johnson.

Lauren McPherson (BS Chem 2004, MS Li 2006) works for Pfizer at the Research Technology Center in Cambridge, MA as an associate scientist in the synthetic chemistry group.

Nick Miersma (BS Chem 2005) is a master's student at Southern Baptist Theological Seminary in Louisville, KY. He also works at the University of Louisville, School of Medicine in the Department of Anatomical Sciences & Neurobiology as a Research Technician and Lab Manager. He married **Jennifer Green** (BS 2001 Human Sciences & former Student Assistant in the Dept.) in December of 2005, and they are expecting their first child in July.

Tom Mosley (BS Chem 2006) has started a Mead-making business in Lubbock, TX.

William S. Rees, Jr. (BS Chem 1980) has been named Deputy Under Secretary of Defense, Laboratories and Basic Sciences (DUSD LABS) for the U.S. Department of Defense. He will serve as a scientific leader through management oversight, as well as policy guidance and coordination of more than $1.3 billion in annual research programs. Rees had previously served as program manager for the CBRNE Countermeasures and the Critical Infrastructure Protection Portfolios at the Homeland Security Advanced Research Projects Agency, in the Department of Homeland Security Science and Technology Directorate.

Chris Stetson (PhD Bartsch 1995) after six years with Bayer Healthcare, has joined IDEXX Laboratories, Inc. in Westbrook, ME, as Senior Manager for Assay Technical Manufacturing. Chris and his wife Kerry live in Portland, ME.

Corey Trahan (Postdoc Poirier) is now working in Austin doing statistical modeling for a consultant company called Sight Software, Inc.

Marty Utterback (PhD Bartsch 1992) resigned his position at Georgia Pacific in Atlanta to join Chevron Phillips Chemical in The Woodlands, TX. Marty and his wife Wendy live in Spring, TX, and welcomed a daughter Lauren to their family in June 2006. Older children are sons Garon (5) and Evan (4).

Bing-Jun Zhao (Postdoc Shine) left TTU in February 2006 and is now working with Organix INC, Woburn, MA.

Alumni & Friends Update Form

Name _____
Last *First* *Middle* *Maiden*

TTU Degree(s): *Please circle* BA Chem BA Bich BS Chem BS Bich MS PhD

Year(s) of Degree(s): _____

Research Advisor: _____

(Please provide for graduate and postdoc positions; if not at TTU, please give school name)

Former Employee: *Please circle* Faculty Staff Postdoc

Years Employed/Position: _____

Current Address: _____

_____

_____

❑ Check here if this address is different from the one printed on your *Test Tube* label.

E-mail Address: _____

Web page URL: _____

Employer: _____ **Position:** _____

Business Address: _____

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Comments, Corrections, News (photos are welcome!):

Please return this page to: Whitney Green, Texas Tech University, Department of Chemistry & Biochemistry, Box 41061, Lubbock TX 79409-1061

OR submit the online form: www.depts.ttu.edu/chemistry/alumniform.html

OR e-mail info & JPG photos to: whitney.green@ttu.edu

OR Fax this completed page to: 806-742-1289

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Please make checks payable to the ***Department of Chemistry and Biochemistry - TTU***
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❑ Jerry Mills Endowed Scholarship
❑ Dasgupta Lectureship Endowment
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Please return this page, and your donation, to:

Dr. Dominick J. Casadonte, Jr., Chairman
Texas Tech University
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Lubbock TX 79409-1061

Thank you for supporting Texas Tech University's Department of Chemistry and Biochemistry.

NEWSLETTER 2006

The Test Tube

Editor:
Whitney Green

Volume # 22

SMOKE ON THE WATER

Dr. Dominick Casadonte helped create a picture-perfect opportunity during a photo shoot for the new Undergraduate recruiting brochure.

Saying Farewell to a Treasured Colleague

(continued from front cover)

on asymmetric membrane-fiber based carbon dioxide removal (*Anal. Chem.* 2004, 76, 7084-7093), is now widely used, permitting the use of carbonate eluents in ion chromatography with sensitivities rivaling those of hydroxide eluents. In molecular sensing, his invention of the liquid core waveguide (*Anal. Chem.* 1999, 71, 1400-1407) resulted in several new analytical instruments with unparalleled detection sensitivity.

Recently, Sandy's collaborative work on perchlorate, an environmental contaminant, has attracted worldwide attention. In 2005, he was asked to brief the U.S. Congress on the significance of the widespread occurrence of perchlorate in human milk. His paper published in *Environmental Science & Technology* (2005, 39, 2011-2017) has established the widespread presence of perchlorate in human milk and concomitant reduction of iodide. Another paper of his in the same journal (2005, 39, 1569-1575) conclusively showed both the natural origin of perchlorate and traced it to passage of NaCl through lightning; this paper was selected as the best science paper of the magazine in 2005.

The list of Sandy's accomplishments can go on and on, but I must stop due to the limited space. With his new position as the Chair of the Department of Chemistry and Biochemistry at the University of Texas at Arlington, this list will grow not only longer but more colorful. As his former student and colleague, I am honored to write this short tribute. I wish for him to be successful and shining, but most importantly, to be happy.

Dr. **Sandy Dasgupta** with his wife, Kajori, and their son, Rivu, at the Farewell & Birthday reception the Department held in Sandy's honor in December.

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