the Test Tube

Newsletter 1994 (#14)
THE DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY
Texas Tech University Lubbock, Texas
Editor: Robert D. Walkup

Joe A. Adamcik: From Classroom to Bar

No, dear readers, this is not an article about postlecture imbibing. It is a story about an individual whom many of you know very well, one of the hardest working teachers that our department has seen who, upon "retirement," proceeded to embark upon a new career in law.

Deep in downtown Lubbock, a block away from the Lubbock County courthouse and across the street from a rather garishly painted Chinese restaurant called the "Shangri-La," stands an unpretentious law office building. A lawyers' enclave of this sort would normally not attract a chemist's notice, but the boldly lettered sign on the building, proclaiming that the building houses the offices of Piper, Warwick and Adamcik, nudges our memories: Adamcik? Wasn't he...?

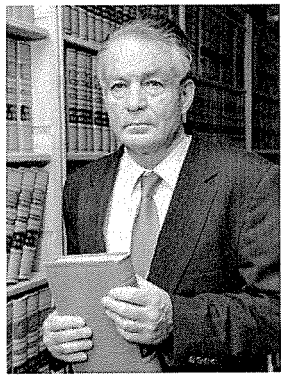
Indeed, it is the same Joe Adamcik who served on our faculty for more than 30 years as *professeur extraordinaire,* introducing thousands of eager (and some not-so-eager) undergraduates to general chemistry and organic chemistry, while indoctrinating scores of graduate students in the subtleties of physical organic chemistry, and who *then* proceeded to blow the top off of the LSAT exam, enter Texas Tech's School of Law, and graduated with his Doctor of Jurisprudence degree, *Cum Laude.*

Joe Adamcik's life is one of dedication to excellence and service. Joe was born in Taylor, Texas and grew up in Austin, where boyhood experiences with a home chemistry laboratory set stimulated him to study chemistry in college. He graduated from UT-Austin in 1951 with a B.S. in chemistry, having enlisted in the U.S. Navy's ROTC for help with his college expenses. Following his graduation, Adamcik spent two years in active duty in the Navy. At the time that Adamcik began his active duty (1951), the Navy had just instituted a new code of military justice, so Joe, being a promising new college graduate in the Navy's ranks, was sent to Naval Justice School to learn the new code. This happenstance experience was a foretoken of Joe's later career in law, and it is noteworthy that Adamcik exhibited an early talent in that area: he was an honors student at the Naval Justice School, ranking third in his class, behind two others who were already trained as lawyers in civilian life.

Another interesting aspect of Joe Adamcik's two year stint in the Navy was his service on board a destroyer in the Pacific during some of the hydrogen bomb tests at Eniwetok Atoll. The mission of Adamcik's vessel was to be on the lookout for Soviet submarines lurking in the vicinity of the bomb tests. While Joe did not get the chance to directly observe a bomb detonation, due to the Navy limiting the personnel topside during the tests, he did get to see the radar signal for an entire island disappear due to it being blown up by a bomb.

Upon leaving the Navy as a lieutenant (junior grade) in 1953, Adamcik decided to return to chemistry, and set his sights on teaching as a career. He reentered UT-Austin and earned his M.A. in chemistry in 1954, then attended the University of Illinois — the *premier* chemistry department of that time — for his Ph.D. degree, which he was awarded in 1958 after working in the area of heterocyclic chemistry under the guidance of professor Nelson Leonard, the eminent chemist best known for his work with nucleosides. During his graduate studies, Adamcik was awarded a Monsanto fellowship and a National Science Foundation fellowship.

Joe Adamcik was recruited into the faculty at what was then Texas Technological College in 1957 by Joe Dennis, the head of the chemistry department. He thus began working at Tech in the old chemistry building, which then housed both the chemistry and chemical engineering departments, and witnessed the growth of Tech's graduate program, the building of the "new" chemistry building, our current research wing, in the early '70s, and the growth of Texas Tech's chemistry faculty to its present strength of 24 chemists and biochemists, during the ensuing years of his service to Tech as assistant, then associate professor of chemistry.



During his years of teaching at Tech, Joe Adamcik impacted on the lives of thousands of chemistry students. His characteristic workload was two to three courses per semester throughout his academic career, and Adamcik was well-known on campus as a professor who truly cared for his students and who spent enormous amounts of time helping students with their studies. One ongoing legacy of Adamcik's was his preparation, during the early 1980's, of an interactive computer tutorial for organic chemistry students — a forerunner of many commercial programs of that type which have since appeared. This tutorial, originally written for Texas Instruments computers, was later converted by **John Marx** for use with IBM PC's, and is still made available, at no charge, to Tech students. In addition to his teaching duties, Adamcik pursued research in the area of cosmochemistry, publishing papers in collaboration with **Arthur Draper** on models for the chemistry of the Martian atmosphere.

A member of the American Chemical Society for over 43 years, Joe Adamcik served the ACS in numerous important ways throughout his career as a chemist. Following service to the South Plains Section during the 1960's (serving in every possible office in our local section), Adamcik became involved in the ACS at the national level, serving on numerous committees both as a member of the ACS Council and, later, as a member of the ACS National Board, ultimately serving as the elected Director-at-Large of the Board from 1980 until he retired in 1988. Among the highlights of Adamcik's service to the ACS was his membership on the Committee on Chemical Abstracts Service during the 1980's, when Chemical Abstracts was making its important extension to an easily accessible on-line service. Adamcik also helped the American Chemical Society in its efforts to adapt to the late 20th century's changes in the nature of the chemical profession by his service on ACS' Professional Programs Planning and Coordinating Committee.

After 31 years on the faculty at Texas Tech,

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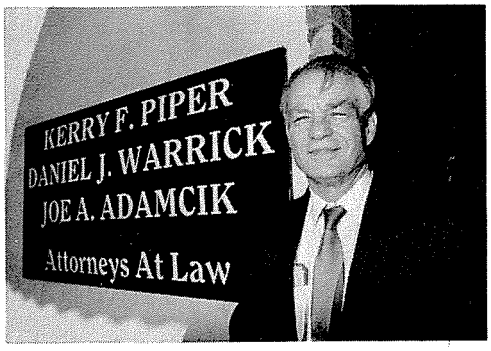
(Adamick, continued)
when most individuals would be content to rest on their laurels, Joe Adamcik decided to enter a new career, law, because of the intellectual challenge which it offered to him. Adamcik formally retired from his position as associate professor of chemistry and biochemistry at the end of the 1987-88 academic year, and entered the Texas Tech University School of Law in the fall of 1988. Adamcik proceeded to excel in law school, and graduated in May 1991, ranking 10th out of a graduating class of 175 students. It deserves noting that this accomplishment was made while Adamcik battled a severe heart ailment which has since partially responded to medication.

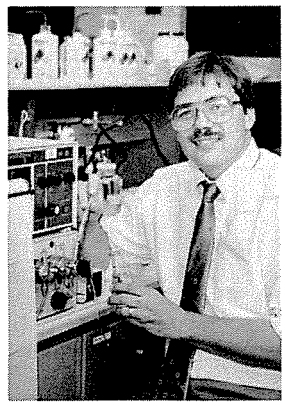
Joe Adamcik's career shift was envisioned to allow him to pursue law on a part-time basis so that he could spend more time with his family and enjoy a well-deserved slower pace in his life. However, he has found that the unpredictable pacing of the legal system does not allow a lawyer to plan his schedule for free time. During the three years since his graduation, Adamcik has been self employed, working mostly as a defense attorney. It is characteristic of Joe Adamcik's penchant for intellectual challenges (which we all recall from his seminar and cumulative exam questions!) that he enjoys handling appeals cases, which most lawyers do not relish because of their complexity and the scholarship required to prepare for them.

When asked about his advice to other chemists who might be considering switching careers to law, Adamcik is encouraging. While he points out that competition for jobs among lawyers is very high (like the case for chemists nowadays!), a lawyer who has a background in science is rare, and such a science background is very valuable in the practice of law, particularly for cases involving environmental and patent law. Moreover, Adamcik feels that a background which involves the analytical thinking associated with the practice of science is a good preparation for a career in law.



A lifelong bachelor, Joe Adamcik stays in close contact with his family in Austin and continues to pursue his personal interests in computer programming and astronomy. Not surprisingly to those who know him, Adamcik has recently returned to teaching, this time as an adjunct professor of law at the Texas Tech University School of Law, where he is currently teaching first-year law students courses in legal writing and dispute resolution. What next? Perhaps in a future issue of the TestTube you'll read of yet another career turn in the life of this remarkable man who has quietly and unassumedly played such an important role in our department's history and in the lives of so many Texas Tech students and colleagues.

W. David Nes Joins Tech's Biochemistry Division



Professor W. David Nes "shoots up" in his lab.

Our department has continued to add excellence to its faculty, one recent example being our hiring, starting in the fall of 1993, of W. David Nes as an assistant professor. Dave Nes comes to Tech with a solid reputation in the field of lipid metabolism. Prior to joining our faculty, Nes had risen to the rank of Project Leader for the Plant and Fungal Lipid Group at the U.S. Department of Agriculture's Richard B. Russell Research Center in Athens, Georgia, where he had worked for five years. Prior to that, Nes had worked for six years at the USDA lab in Berkeley, California.

David Nes has authored or co-authored over 70 papers, seven monographs, and 11 book chapters dealing with his work in the area of isopentenoid biosynthesis. While with the USDA in Georgia, he was an adjunct associate professor of chemistry at Auburn University and an adjunct research scientist in the department of chemistry at the University of Georgia. Thus Texas Tech has been fortunate to attract an established scientist to its Biochemistry division.

Nes' current research focusses on the interplay between the isopentenoid and fatty acid biosynthetic pathways in plants and fungi, and sterol metabolism in insects. One aspect of his work is aimed at the development of rationally designed synthetic inhibitors of certain enzymes involved in the sterol metabolism of pathogenic fungi for use in controlling fungal infections in crop plants. Another project in Nes' lab is the isolation and study of enzymes involved in the conversion of plant sterols into ecdysterols by pathogenic insects. One of the results envisioned from this research will be the development of highly selective and environmentally "friendly" agents for controlling agricultural pests. Nes has received substantial support for his research at Texas Tech from the BRDC Corporation, the Robert A. Welch Foundation, and the Asgrow Seed Company, and he was awarded an NSF Training Grant in Plant Biology which supplies funds to support undergraduate researchers in his laboratory.

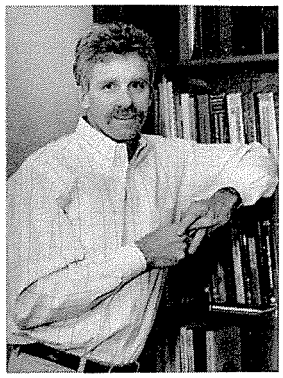
David Nes is a native of Pennsylvania. He received his undergraduate education, in biology and psychology, at Gettysburg College, followed by an M.S. degree in steroid biochemistry at Drexel University (1977) and a Ph.D. in plant lipid biochemistry from the University of Maryland (1979). Following postdoctoral work at the University of California at Berkeley and at the USDA Western Laboratory, Nes was appointed as a Research Chemist at the Berkeley USDA facility. It is interesting to note that Dave Nes' father, the late William R. Nes, was also a pioneering steroid biochemist with whom Dave collaborated early in his career as a student.

Dave and his wife, Sandra, have three children and enjoy supporting the sports interests of their offspring.

Darryl J. Bornhop Joins Tech's Analytical Chemistry Division

Another significant addition to our faculty occured in the Fall of 1994, when Darryl J. Bornhop joined our analytical chemistry division as Assistant Professor. Darryl comes to Tech with an extensive background in industry, where he spent the past seven years. He moved to Texas from Seattle, where he had been Vice President for Research and Development at MediVisions, Incorporated. Prior to working at MediVisions, Bornhop worked in Reno, Nevada, as a scientist at Linear Instruments and then at Citation Medical Corporation, and before then he was a Group Leader at Lee Scientific in Salt Lake City. While in Reno, Bornhop was an adjunct assistant professor in the department of biochemistry of the University of Nevada at Reno. He has authored or co-authored over 26 publications and six patents.

Darryl Bornhop's research interests are highly interdisciplinary, and fall into the general area of micro-spectroscopic analysis, with an emphasis on the use of electrooptics (micro-optics, fiber optics, and lasers) for chemical analysis, especially in biological systems. One focus of his group's research is the use of a micro-interferometer, developed by Bornhop, for measuring analytes in picoliter sample volumes. In addition to its advantage of analyzing small volumes, this technique is being extended by Bornhop to allow for the simultaneous measurement of absorbance, fluorescence and refractive index properties of the analytes, and work is being focussed on using it in remote analysis for use in analyzing, in situ, biological tissues.



Darryl Bornhop

Another research area of Bornhop's is in biomedical optics, and his group is pursuing research in using miniaturized optical devices to image biological tissues with the aim of developing such devices for imaging diseased tissues and even cells. An ultimate goal of this research is to develop tools for detecting disease at as early a stage as possible using minimally invasive techniques.

Darryl Bornhop is a native of the midwest. He received his B.S. (1980) and M.A. (1982) degrees in chemistry and analytical/environmental chemistry, respectively, at the University of Missouri at Columbia, then earned his Ph.D. degree in analytical chemistry at the University of Wyoming in 1987. Darryl and his wife, Patricia, have two children, Eric and Emily, and Darryl is an inveterate outdoorsman who enjoys bicycling (including the "ultimate challenge" of commuting by bicycle through Lubbock!), skiing, backpacking, and rock climbing.

Chairman's Remarks

As I write these remarks, I am just a few weeks into my sixth year as department chair. If a search committee, currently hard at work, meets its goal of selecting a successor for

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(Chairman"s Remarks, continued)
me willing to assume the position at the start of the next academic year, this will be be my last year in this position. Although I look forward to resuming a more active role in teaching at the undergraduate level, to spending more time with the graduate students, post-docs and technicians in my research group and even to the idea of an occasional relaxed dinner with my wife, the thought of stepping down inevitably carries with it a certain note of sadness. These last years have been exciting ones for the department and, as the department's future looks even brighter, I will no doubt miss being directly involved in making the decisions that will help determine the detailed direction we will travel in the immediate future. I will also miss the opportunities that chairs are fortunate enough to have in assisting (usually in a quite modest way) promising young faculty make the transition to mature scientists. Fortunately for me, the Texas Tech University administration has provided an opportunity for me to continue serving as a facilitator of our increasingly productive and sophisticated research efforts in biology, by naming me as Director of a soon-to-be-expanded Institute for Biotechnology, effective September 1, 1995. While I welcome the challenges and the opportunities of my new position, I will not soon forget the high privilege of having been involved on a daily basis with so many able and dedicated faculty and staff colleagues and students in this department.

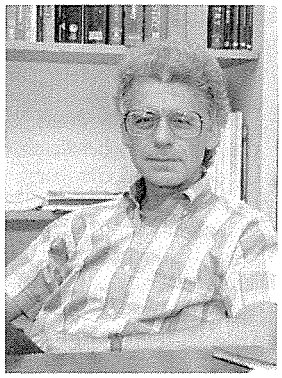
Looking back over the last five years produces a sense of real satisfaction with important goals accomplished. Our department continues to be at or near the top of Texas Tech departments in terms of research grants secured by our faculty every year. This accomplishment, at a time of ever-tightening research budgets of federal agencies, foundations and the private sector, is a real tribute to the continued quality of our research efforts and the respect with which we are viewed by our peers in the profession. What is perhaps less "splashy" is the steady improvement we have made in our teaching programs, particularly through significant (albeit modestly funded) modernizations of many of our undergraduate laboratories at a time when our undergraduate registration figures have been increasing dramatically. We have also made progress in making life substantially more convenient for our undergraduate students by providing significantly expanded opportunities for tutorial help (both of the "real live instructor" and computer-assisted varieties) and through installation of a computerized inventory system that has eliminated much of the cumbersome paperwork historically associated with lab courses. We have also made significant advances in the unglamorous but crucial area of making our building a much safer workplace (and studyplace) for students, faculty and staff.

Along with the satisfaction justly derived from these, and other, accomplishments, comes a realization of how much more needs to be done if we are to realize our full potential. I am hopeful that my successor as chair, working with our able and supportive dean, provost and president, will be able to assist us in addressing some of our most serious problems such as increasing our faculty size and helping us secure much-needed major instrumentation. There is also much need for help with other projects that, while requiring more modest funding levels, are equally crucial to our future. You will be hearing about many of these efforts in this and future issues of the TestTube and I hope that my successor as chair can look forward to an even greater support from TestTube readers for these projects than the generous levels I have enjoyed during these past five years.

In closing, let me say that among the many rewards of being a department chair are the pride in the success of the students and post-docs we help train, successes chronicled prominently in these pages every year, and the warm wishes and support of our alumni and friends. I will carry these with me when I end my term as chair and am quite confident that these successes and good wishes will continue in the future to the delight of my successor.

David Knaff

Knaff to Step Down as Chairman, Step Up as Biotech Director



David Knaff

David B. Knaff, who has served as the Chairman of our department since January of 1990, has announced his plans to step down from that position. The dean of the College of Arts and Sciences has approved the hiring of a new chairperson at the full professor rank, and an external search for this individual is currently underway.

David Knaff joined our faculty as an associate professor in 1976, coming from the department of Cell Physiology at the University of California at Berkeley, where he had spent the previous ten years. Knaff was promoted to full professor in 1980, and was designated a Paul Whitfield Horn Professor — the highest academic honor given by the university — by the Texas Tech Board of Regents in 1987. Knaff was also selected as a Fellow of the American Association for the Advancement of Science in 1984, and was awarded the Texas Tech University President's Academic Achievement Award in 1987. He has served on numerous editorial boards and grant review panels, is the author or co-author of more than 140 publications, and currently supervises a research group, funded by more than $220,000 per year in grant funds, which explores electron transfer processes associated with photosynthetic bacteria and metalloproteins, and nitrogen metabolism in plants. Readers might recall Knaff, above all, for his competent service as the department's graduate advisor during most of the 1980's, at which time he consistently amazed students by his ability to fill out registration cards while maintaining a fluid conversation with the student — a feat which his successors could never match!

Upon completing five years of service to the department as chairman, a typical "term," Knaff will return to teaching and research, as well as a new administrative challenge. He has served as the director of the Texas Tech University Institute for Biotechnology since 1993, but beginning in the fall of 1995, this directorship will be upgraded to a salaried administrative position (on a half-time basis) which will allow the Biotechnology Institute director to devote more time to the administration and promotion of the institute. Based on his excellent service to the institute, David Knaff was selected to continue as the director in this new capacity, so he will be devoting half of his time in continued service to the department (teaching and research) while overseeing a new era of growth in the burgeoning TTU Biotechnology Institute.

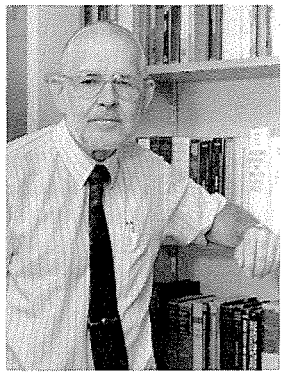
Readers may recall the article in last year's TestTube about the possibility that a "surrogate chairperson" might replace the "virtual chairperson," based on its excellent performance in carefully monitored test situations. Knaff has assured us that this had nothing to do with his decision to step down as chairman. Seriously, the department owes David Knaff a tremendous debt for his hard work as chairman during a period when a great deal of change in the complexion of our department occurred.

Wilde to Retire

Effective at the end of the 1994-95 academic year, **Richard E. Wilde** will retire from his position as professor in our department, after 32 years of service to Texas Tech University.

Dick Wilde is a native of California, where he received his secondary and undergraduate education. He earned his Ph.D. degree in 1961 at the University of Washington, then spent two years at the Johns Hopkins University as a post-doctoral fellow. He joined the Texas Tech faculty as an assistant professor in 1963, and was promoted to associate professor in 1967, then to full professor in 1979.

During his 3+ decades at Texas Tech, Dick Wilde has engaged in research in infrared and Raman spectroscopic studies of molecular and elemental forms of group 14 elements. During that time, he published 43 papers and supervised the research of thirteen graduate students and seven postdoctoral fellows. His research has been supported over the years by the Robert A. Welch Foundation and by the Department of Defense. Wilde has served the South Plains Section of the ACS in various offices, and served the ACS on a national level as a member of their Helium Task Force. He was the Associate Chairman for the department from 1986 to 1993, and played a very important and time-consuming role as the department's Safety Coordinator during that time. True to form for faculty who served our department during the '60's, '70's and '80's, Dick Wilde has taught many, many courses in General and Physical Chemistry, at all levels. Wilde can look back on a great legacy of instruction to a vast group of Texas Tech students.



Dick Wilde

Dick and Sophie Wilde are the parents of three children. Jeff, the eldest, has a Ph.D. degree in applied physics from Stanford University and is currently an entrepreneur working in the "Silicon Valley" area of California on the development of holographic

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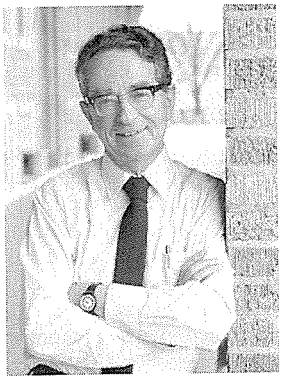
(Wilde, Continued)
data storage devices. Lori is a graduate of Scripps Institution of Oceanography, where she earned a Ph.D. in marine microbiology, and is presently a post-doctoral fellow at Oklahoma State University. Vince, the youngest, is a graduate of Texas Tech's EET program and is currently working as an engineer with Cryovac in Wichita Falls.

Dick and Sophie look forward to a more leisurely pace and to travel as Dick steps down from a "race well run" and a prominent place in the history of our department. Dick will continue pursuing research interests and writing books.

Shine to Semi-Retire

After more than 40 years of service and leadership to the department, Henry Shine has announced his plans to enter into what can be termed a semi-retirement from Texas Tech University. Beginning with the Spring 1996 semester, Shine will assume a 40% appointment, thus allowing him to continue serving the department and university while having more time available to spend with his family.



Henry Shine

Readers will recall the article in the last issue of the TestTube which described HJS' significant contributions to Texas Tech and the department of chemistry and biochemistry. All of us have considered the possibility of Shine retiring with great trepidation, because Henry has been such a strong and wise leader to us all that it is difficult to consider going on without him. Fortunately (and typical of his sage approach to all things), Henry has decided on a course which will allow us to continue to benefit from his involvement in the department's teaching, research, and administrative activities while allowing him to benefit from having more time for his outside interests.

The "Last Texan" is Moving On

Early in 1995, as this issue of the TestTube was in preparation, **Jerry Mills** announced that he will resign from Texas Tech University at the end of the 1995 Summer session. Jerry has been on our faculty since 1970, and has decided to pursue other interests after devoting a quarter of a century to excellence in teaching, research, and service at TTU. A full article in the next TestTube will profile Jerry's significant impact on our department. Meanwhile, Jerry has made it clear that his resignation is not a retirement, but a career change, so we can look forward to hearing about what Jerry is up to as the future unfolds.

The title above alludes to the fact that Jerry Mills is the last native-born Texan to be a member of our current departmental faculty. Perhaps our recruiting efforts will alleviate the obvious "Texan deficiency" that is resulting from Jerry's departure —- the Affirmative Action office at Tech will be consulted on this matter! One thing is certain to all of us: we may be able to replace Jerry Mills with another Texan, but it will be impossible for us to replace him with another Jerry Mills.

Stuart, Shoppee Pass On

The department was saddened to learn of the deaths of two of its pioneer members during the past year.

Margret Russell Stuart died on October 6, 1993 at the age of 78 and was buried at the New Hope Cemetary near Mineola, Texas. A native of Terrell, Texas, she attended Texas Tech University and Texas Christian University, then taught school at Sterley, Floydada, and Midland before joining the faculty at Texas Tech in 1946. Survivors include a brother, three nieces and a nephew. Margret Stuart's participation in the affairs of our department, which continued during the years following her formal retirement, was always marked with enthusiasm, spirit, and a keen interest in the students of Texas Tech.

Joe Dennis, one-time head of our department and a long-time colleague of Ms. Stuart's, was kind enough to share with us the following tribute that he wrote about Margret Stuart:

> The many students and friends of Margret Stuart have been saddened by her death which occurred October 6, 1993.
>
> Margret joined the faculty of the Chemistry Department in 1946, coming here from Midland and a very successful career in teaching High School Chemistry. Her career at Tech was immediately marked by outstanding service to the department and her students. In no area of the department's work was this more evident than in the time she devoted to the training and development of our premedical students. She served on the University's Premedical Advisory Committee and became its chairperson in 1968. Her devotion to and success in that position is attested by the many physicians who now gratefully acknowledge her inspiration and influence on their lives and profession.
>
> Miss Stuart's teaching was mostly in inorganic chemistry and qualitative and quantitative analysis. She also taught many sections of Freshman Chemistry and occasionally taught in other areas. Margret Stuart held the highest standards for her students, her friends and herself. For herself, she enforced them with greater exactitude.
>
> A host of grateful friends in and beyond Academe remember her with respect and affection.

It is hoped that those of you who read this and were former students of Ms. Stuart will write to us to share your remnisces of your interactions with her, for inclusion in future editions of the TestTube.

Characteristic of Ms. Stuart's devotion to the students of Texas Tech, particularly premedical students, her family has established a scholarship fund to receive donations in her memory (donations can be sent to The Margret R. Stuart Medical Student Scholarship fund, Texas Tech University, Box 4009, Lubbock, TX 79409).

Another pioneering member of our department was **Charles William Shoppee**, who died on October 20, 1994 at his home in Australia at the age of 90. Professor Shoppee was the first holder of our department's Robert A. Welch chaired Professorship, serving as Welch Professor from 1969 to 1975, thus his association with our department symbolizes the changes that occurred at Texas Tech during that time, as the department began to increasingly emphasize its research activities and graduate program.

Charles Shoppee was a renowned steroid chemist who published extensively in that field and authored the widely read monograph Chemistry of the Steroids. He was a native of London, but his career led him to three continents, finally calling Australia his home. He is survived by his daughter, four grandchildren and three great-grandchildren. His daughter, Adrienne Horrigan, was kind enough to share the following tribute (slightly abridged), which provides both personal insights and further biographical information about professor Shoppee:

> I shall dwell but briefly on personal reminiscenes —- suffice it to say that I was the cherished only child. As a female I disappointed Father for with me the name of our branch of the family, which reaches back to 1109, comes to an end. He certainly came to respect and love the name of Horrigan, especially his son-in-law, Bill, with whom he shared many a laugh and drink, both at home and at the university. To me he leaves his strict sense of duty and a restless conscience.
>
> His degrees, the volumes of books, and the awards testify to a world I only dimly comprehended. It started with his birth in 1904 into a middle class London family. Early in life he indicated a nomadic disposition —- at the tender age of 4 he slipped away to sit on the embankment contemplating the novelty of the passing trains, much to my Grandmother's consternation. He remained a globe trotter or he would not be in St. Mary's [his resting place in Australia] today.
>
> His dynamism was manifest at school, where he was School Captain, Cricket and Soccer Captain. By 19 he gained First in First Class Honours in Chemistry at the Royal College of Science in London. By 21 he had put his PhD behind him and a DSc by 27. He was appointed to a demonstratorship at the University of Leeds —- here Cupid entered the arena. My Mother was the only other love in his life beside chemistry. They were married just prior to the Depression and remained in Yorkshire until June 1939, when Father was awarded both a Rockefeller and a Leverhume Scholarship. It was either one

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(Shopee, Continued)
year in Switzerland or two at Oxford. He chose Switzerland, little realizing that within a few months the family would be trapped.

The war years passed slowly. After France was freed we returned to England. My Father was at the Royal Cancer Hospital in London, but by 1948 he took up the Chair of Chemistry at Swansea, Wales. I can remember the quiet pleasure he expressed when elected to the Royal Society of London in 1956. In the same year, however, my Mother's ill health forced him to move to a warmer climate and the saga continues at Sydney University. More champagne when he was elected to the Australian Academy in 1958.

Retirement did not mean rest. Father decided to accept the Welch Foundation Chair of Chemistry in Lubbock, Texas and remained for five fruitful years. In 1979 he made his home in Melbourne and in that year my Mother died. He continued his life quietly as an Honorary Visiting Professor at LaTrobe. A stroke was the final blow to bear.

I now recognise with hindsight how my Father's life cast the dye for me and my family — with regard to languages, family and nationality. Our family motto is SPE — hope. Father's descendents may not bear his name, but I believe that in his grandchildren and now in his great grandchildren my Father's hopes were justified. I know that we shall remember him as one who enriched our lives.

Although not a long-time member of our department, professor Shoppee will certainly be remembered by us as one who helped to set the tone of excellence which has helped us to emerge as one of the premier research departments at Texas Tech and the world.

Editor's Note

I am pleased to present the 14th TestTube newsletter to you. I gratefully acknowledge the very capable assistance of Ms. Jane Bradley in the preparation of this newsletter, and professors Bartsch, Knaff, Mills and Shine for their assistance in insuring the accuracy of the newsletter's contents, their ideas and feedback about the newsletter, and their donations of material for the newsletter. A special thanks goes to Dick Bartsch for the donation of some very useful photographs.

The period spanning the fall of 1993 through the fall of 1994, which this issue has reported on, can be characterized as one which has featured, not necessarily significant changes, but some decisions which will lead to significant changes. Chief among these decisions are, as reported elsewhere, David Knaff's decision to step down as chairman, Dick Wilde's decision to retire, Henry Shine's decision to "semi-retire," and Jerry Mills decision to leave the department. The results of these upcoming changes in the makeup of our department should be interesting to you, and will be reported upon in future issues of the TestTube.

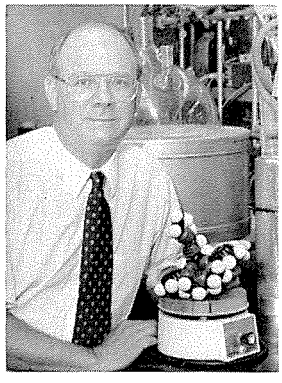
Many of you might recall my statement in the last issue of the TestTube that "if all goes as planned, you should receive TestTube #14 in the fall of 1994. Obviously, all did not "go as planned," based on your receiving this issue in 1995! The only reason for this delay in issuing this newsletter is procrastination on the part of yours truly, for which I am sorry (I know that you all have been just dying to receive your latest TestTube!). However, I hope that those of you who keep track of such things will note that the delay on this issue is much less than the delay on the previous issue, which followed a two-year hiatus! Thus, it is clear that the trend in procrastination between issues of the TestTube is improving! Nevertheless, this editor has learned his lesson: you should receive TestTube #15, the next issue approximately one week after it gets mailed out, and that's as accurate an estimate about the next newsletter as I am prepared to give! Meanwhile, let me repeat my plea to you of last year: please send me news about yourself; there are many folks, over here and out there, who would like to know what you're up to! Also, please give our pleas for financial donations to our "cause" (featured elsewhere in this issue) your most serious consideration; there is a great need for individual donations, however great or small, to help us to keep our programs up and running, to help us to fund scientific interchange by hosting seminar visitors, and to help us to financially assist qualified students of chemistry and biochemistry. Regardless of your ability to donate to our department, though, please drop me a line about yourself and about others in the Texas Tech Chemistry family, and tell me how you would like to see the TestTube improved (see the "Classnotes" response form near the back of this issue). I will see to it that your news is included in future TestTubes.

The editorship of the TestTube will be passed from yours truly to Dom Casadonte, starting with the next issue. Dom is an extremely energetic and articulate individual who will bring many needed innovations to this newsletter, so stay tuned for good things!

Best wishes for great chemistry in 1995!

Bob Walkup

C&B Faculty, Staff Honored by University



Dick Bartsch

The department of chemistry and biochemistry continues to maintain high standards for excellence in teaching, research and service, as demonstrated by the recent recognition of two faculty with prestigious awards for such excellence. On April 5, 1994, Horn professor **Henry J. Shine** was awarded the 1993-94 Texas Tech University Dads and Moms Association's Faculty Distinguished Leadership Award. Shine's awarded consisted of a certificate and a check. At the same convocation, Horn professor **Richard A. Bartsch** was awarded an Outstanding Researcher Award by the university. This award also consisted of a check and a certificate.

***

It should surprise no one that 1994 saw the recognition of one of our hardest working staff members for her contributions to the university. Alma Jewel Leuty, better known to us as **Judy Leuty**, our departmental administrative secretary, was awarded the 1994 Top Techsan Staff Award by the Texas Tech Ex-Students Association. The award consisted of a plaque and a check. Judy continues to act as a cornerstone of our department, keeping it running on an even keel despite cutbacks in personnel and funds.

Judy Leuty is presented her Top Techsan Staff Award by Bill Dean, president of the Ex-Students Association, as Donald Haragan, Executive Vice President and Provost for the University, looks on.

Judy Leuty, in the familiar confines of the departmental office, proudly displays the engraved plaque that she received as the 1994 Top Techsan Staff Awardee.

Kim Wins Song Prize

The Song Prize was established by professor Pill Soon Song, when he left our department to become chairman of the department of chemistry at the University of Nebraska, to honor the graduate student who submits the best doctoral dissertation in Texas Tech's department of chemistry and biochemistry in a given calendar year. The winner of the Song Prize, which consists of a check, is selected from nominations tendered by each division to a special committee. The choice of winners is always a difficult one — a testimony to the quality of the dissertations coming out of our department. The winner of the 1994 Song Prize was **Young Soo Kim**, for his dissertation on "Syntheses and Transformation of Tetrahydrofuran-Containing Substrates; Synthetic Approaches to the Upper Portion of Pamamycin-607," completed under the supervision of Professor **Robert D. Walkup**. Dr. Kim is currently a postdoctoral fellow in the laboratory of professor M. Frederick Hawthorne at the University of California at Los Angeles.

Outstanding Teaching Assistants Honored

Each year, the department honors two of its graduate student teaching assistants for exemplary service in this important function. In 1994, **Jeffrey Kahl** was honored with the Texas Tech University Outstanding Graduate Student Teaching Award, and **Steven E. Twaddle** was honored with Department of Chemistry and Biochemistry Teaching Assistant Award. Congratulations to these individuals for a job well done!

Jeff Kahl, Outstanding TA (left), is congratulated by a debonair David Knaff.

Steven Twaddle (right), is congratulated by our well-dressed, albeit outgoing, chairman, David Knaff, for his outstanding teaching.

Welch Scholars Program

For the fourth consecutive year, the Robert A. Welch Foundation has sponsored a special Welch Summer Scholars program at Texas Tech University. This program provides resources for a group of talented high school students from all over Texas, chosen by a competitive application process, to spend five weeks in the department receiving instruction and hands-on experience in chemical research. Dormitory housing for the scholars and resources for the departmental administration of the program are provided by the Welch Foundation. Texas Tech is one of four universities selected by the foundation to host the "Welchers." Each summer, professor **Patricia Metz** has organized a program for the Welch Scholars which includes a week of intensive instruction (including laboratory instruction, computer instruction, and problem-solving exercises), daily research seminars by departmental faculty, special field trips and cultural outings, and the core of the program: individual research projects supervised by departmental faculty.

In 1994, thirteen students attended the TTU Welch Summer Scholars program. Their names, and the names of their faculty research mentors (in parentheses) are Charu Chandrasekhar of Houston (Greg Gellene), Elijah Culpepper of Austin (Ed Quitevis), Katherine Gilliam of Dallas (Greg Gellene), Jacob Hodges of Austin (Dave Birney), Sed Keller of Austin (Bob Walkup), Gordon Klancnik of Dallas (Bruce Whittlesey), Elaine Lew of San Antonio (David Knaff), Denise Moraw of Austin (Dave Birney), Joseph Oolut of Sugar Land (Bob Walkup), Lon Porter of Sugar Land (Bob Shaw), Salvador Ramirez of Round Rock (Allan Headley), Dustin Roberts of Dallas (Ted Reid), and Cody Wright of The Woodlands (Dom Casadonte).

A large debt of gratitude is owed to Tricia Metz for her ongoing organization of the Welch Summer Scholars program, and to all the faculty, postdocs, and graduate students who gave so much of their time to supervise, advise, and otherwise share their passion for science with the Welch Scholars.

Texas Tech Chemistry Opens New Campus in Los Angeles!

Unbeknownst to the TTU administration, a veritable "remote TTU campus" has sprung up at the University of California at Los Angeles, thanks to numerous postdoctoral appointments made to recent TTU graduates by UCLA faculty.

A leading supporter of TTU grads is professor M. Frederick Hawthorne of UCLA's chemistry department, who has hired no less than five TTU Ph.D.'s as postdocs. The TTU graduates in Hawthorne's lab are **Bob Kane** (Ph.D. with Walkup), who is working on "The Synthesis and Characterization of Agents for Immunoprotein-Mediated Boron Neutron Capture Therapy," **David Harwell** (Ph.D.with Mills), working on "The Synthesis and Characterization of New Venus Flytrap Compounds for Use in the Radioimmunodiagnosis and Radioimmunotherapy of Cancer," **Gapgoung Kong** (Ph.D. with Whittlesey), "Synthesis, Reactivity, and Catalysis of Novel Metallocarboranes," **Young Soo Kim** (Ph.D. with Walkup), "Synthesis of Boron-Rich Phosphoramidites and Oligophosphates," and **Lufeng Guan** (Ph.D. with Walkup), "Synthesis and SAR of Boron-Conjugated Androgen Receptor Ligands." Professor Hawthorne has been attributed with the statement to the effect that "Texas Tech Ph.D.'s are as good as postdocs as Harvard Ph.D.'s, only they don't have an attitude."

A contingent of "Texas Tech at LA" taking a break from their postdoctoral labors to enjoy the palm trees of the UCLA campus. (Left to Right): Dr. Eun Ju Lee, Dr. Sang Woong Kim, Dr. David Harwell [standing, making the TTU "guns up" salute — a dangerous thing to do in LA!], Dr. Bob Kane [holding a "Double-T"], and Dr. Young Soo Kim.

A group of TTU-trained postdocs pose before UCLA's version of "Will Rogers and Soapsuds." (Left to Right): Dr. Gapgoung Kong, Dr. Sang Woong Kim, Dr. David Harwell, Dr. Bob Kane, Dr. Young Soo Kim, Dr. Lufeng Guan, and Dr. Maria Garcia. The sign that the group is holding shows the "Texas Tech University at Los Angeles" seal.

Other TTU graduates who are postdocking at UCLA are **Eun Ju Lee** (Ph.D. with Harman), who is working on "Eukaryotic Transcriptional Regulation Based on Derivatives of the Yeast Transcriptional Activator GAL4 and the Epstein Barr Virus Transactivator ZEBRA," **Sang Woong Kim** (Ph.D. with Walkup), who is working with professor Robert Armstrong at UCLA on "The Total Synthesis of the Natural Products Azinomycin A and Azinomycin B, and the Development of New Combinatorial Chemistry," and **Maria Garcia** (Ph.D. with Knaff), who is working with UCLA's professor Todd O. Yeates on "Studies of the Structure and Function of Proteins from Photosynthetic Organisms."

News about Faculty

David Birney was an invited participant in the NSF Workship on Physical Organic Chemistry held in July 1994 at Logan, Ohio, where he spoke on his research on the reactivity of acetylketenes.

Dom Casadonte attended the National Meeting of the American Chemical Society, held March 13-18, 1994 in San Diego, where he gave an invited presentation at the Camille and Henry Dreyfus Scholar/Fellow Symposium on "Sonochemical Production of Binary Phosphide Complexes." In June 1994, Casadonte travelled to London, Ontario for the First International Conference on Advanced Oxidation Technologies for Water and Air Remediation, where he gave an invited presentation on "Sonochemical Processing of Hydrocarbons in Aqueous Media." Casadonte and his students also presented papers at the ACS Southwest Regional Meeting in Austin in October 1993, at the Gordon Research Conference on Inorganic Chemistry in July 1994, and at the ACS Southwest Regional Meeting in Fort Worth in November 1994.

Sandy Dasgupta presented numerous invited and keynote talks during 1994. Among them are: "Membranes in Analytical Chemistry" (Eastman Chemicals Interplant Conference, Technical University of Denmark, University of Lund (Sweden), University of Umea (Sweden), University of Arkansas, and Eastman Kodak Corporation); "Air Sampling and Ionic Analysis" (Dionex Corporation); "From Capillaries to Droplets" (Dow Chemical); "Suppressors in Ionic Analysis: From Helices to Threads" (Northeast Regional Chromatography Conference); "Electroosmosis: Electrophoresis and Beyond" (77th Annual Conference, Canadian Society for Chemistry); "Flow Analysis in the Capillary Domain" (Sixth International Conference on Flow Analysis, Toledo, Spain); "Advances in Suppressed Conductrometric Capillary Electrophoretic Seperation Systems" (Dow Chemical); "Electroosmotically Pumped Flow Injection Analysis" (20th Meeting of the Federation of

(continued on page 7)

(Faculty News, Continued)
Analytical Chemistry and Spectroscopy Societies); and "Auxiliary Electroosmotic Pumping in Capillary Electrophoresis" (1993 International Chromatography Symposium). In 1994, Dasgupta was also appointed to the editorial board of Analytica Chemica Acta. Readers will also be interested to learn that Sandy Dasgupta was married to Kajori in January 1994, and is the proud father of Rivu (b. September 17, 1994).

Allan Headley presented an invited lecture in June 1994 at the 4th Chemical Research and Development and Engineering Center (CRDEC) Meeting on Solute/Solvent Interactions at the U.S. Army Chemical RD&E Center (Aberdeen, MD), on "Solute/Solvent Interactions that Affect the Basicity and Acidity of Amino Acids."

David Knaff presented seminars on "Ferredoxin-Dependent Chloroplast Enzymes" at the Department of Plant Sciences of the University of Arizona and at the Department of Biology of Kanazawa University (Japan). Knaff also spoke on "Cyclic Electron Flow in Photosynthetic Bacteria" at the Department of Chemistry of Yale University and at the Department of Biology of Tokyo Metropolitan University. Knaff was a plenary speaker at the 1993 Meeting of the Japanese Bioenergetics Society in Osaka, where he spoke on "The Role of c-Type Cytochromes in Bacterial Photosynthesis," and he was an organizer and session chairman for a meeting on "Pigment:Protein Complexes in Photosynthesis" held at UCLA in August 1994.

Ed Quitevis presented an invited seminar on "Dynamical Solvation Effects in Photoisomerization" at the Department of Chemistry of Texas Christian University in April 1994.

Bob Walkup presented invited seminars on "Attempts to Improve Upon Nature: SAR Studies of the Neuropeptide Substance P" (Department of Chemistry, University of Idaho), "Electrophile-Mediated Cyclizations of Hydroxyallenes: Substrates for the Syntheses of Antibiotics and Nucleoside Analogs" (Department of Chemistry, University of California at Davis), "Substance P: New Tricks for an Old Dog? (Studies of Substance P and Substance P Structural Analogs as Inducers of Epithelial Cell Growth and Smooth Muscle Contraction)" (Syntex Research). In addition, Walkup submitted presentations on "Substance P Bearing Phenylalanine Analogs: The Effects of Subtle Spatial Differences Upon Substance P's Ability to Stimulate Smooth Muscle Contraction and Epithelial Cell Growth" (1994 Gordon Conference on Peptides and the 207th National American Chemical Society Meeting at San Diego) and "Syntheses of Tetrahydrofuran Building Blocks for Nucleosides Having Novel Branched 5'-Sidechains or C-Nucleoside Moieties" (207th National American Chemical Society Meeting at San Diego). Walkup also served as an ad hoc member of the Medicinal Chemistry Study Section for the National Institutes of Health in October 1993, and he was selected by the Texas Tech University's provost's office to participate in a workshop on teaching in the fall of 1994.

Research and Development Grants Awarded to Faculty

Darryl Bornhop was awarded a grant of $4,500 from the TTU College of Arts and Sciences (Research Enhancement Fund) for "A Simple Refractometer of Capillary Dimensions."

Dominick Casadonte was awarded a grant of $20,182 from Sandia National Laboratories for "Removal of Bubbles in Viscous Melts Using Ultrasound: Phase II." He also received a grant of $24,000 from the Camille and Henry Dreyfus Special Grant Program in the Chemical Sciences for "Teaching Chemistry Students Career-Relevant Skills: The Materials Laboratory."

Sandy Dasgupta has been awarded the following grants recently: $20,000 from the Rancho Los Amigos Educational Institute for "Effect of Expired Ammonia in Inhalation Toxicologic Studies of Acid Aerosols with Human Volunteers;" $16,441 from the Tennessee Valley Authority for "Design and Construction of a Fast Responding Formaldehyde Monitor for Ground-Based and Helicopter-Based Deployment;" $60,624 from the Texas Advanced Technology Program for "Inexpensive Remotely Addressable Soil Moisture Sensors, Phase II;" $301,144 from the Office of Naval Research for "Airborne Measurement of Trace Gasses in Marine Atmospheres: Development of Instrumentation for Fast Measurement of the Composition of Marine and Coastal Aerosols;" and $43,000 from Dionex Corporation for "Air Sampling and Ionic Analysis."

Allan Headley was awarded $49,000 from the National Science Foundation for "Analysis of Weak Hydrogen Bonds by FTIR Matrix Isolation."

David Knaff was awarded $108,826 from the Texas Advanced Research Program for "Novel Electron Transfer Pathways in Bean Sprouts" and $150,000 from the USDA for "Electron Flow in Photosynthetic Bacteria."

John Marx was awarded $96,000 from the Robert A Welch Foundation for "Total Synthesis of Biologically Active Terpenes."

Ed Quitevis received $139,644 from the Texas Advanced Research Program for "Molecular Dynamics of Liquids in Restricted Geometries," and $96,000 from the Robert W. Welch Foundation for "Femtosecond Chemistry: Probing Coherence in the Condensed Phase."

Bob Walkup was awarded $12,900 from Scios Nova Corporation for "Synthetic Studies Related to NPC 17731," and $96,000 from the Robert A. Welch Foundation for "Synthetic Methodology via Cyclizations of Allenes."

News about Alumni and Former Faculty and Staff

Richard O. Banner (B.A., '65) is currently the Medical Director for the Waianae Coast Comprehensive Health Center at Waianae, Hawaii. He writes that he has "enjoyed the updates about my professors, Dr. Shine and Dr. Dennis."

Ronald J. Biediger (Ph.D., '92) completed a postdoctoral stint in the laboratories of Bob Holton at the Florida State University, where he was one of the team that completed the first total synthesis of the important anticancer drug, taxol. Ron is currently employed as a Research Scientist by Texas Biotechnology Corporation in Houston.

P. Douglas Boatman, Jr. (Ph.D., '90) completed a postdoctoral stint in the laboratories of Bob Holton at the Florida State University, where he was one of the team that completed the first total synthesis of the important anticancer drug, taxol. Doug is currently employed as a Research Scientist by Molecumetics in Bellevue, Washington.

We were delighted to receive the following news from **John H. Crow** concerning his wife, **Billie May Cohea Crow** (B.S., '46): "[Billie May Cohea] taught Freshman General Chemistry at Texas Tech beginning with the Spring semester 1947 through the first Summer semester 1949. She married John H. Crow, a chemical engineering major, on Dec. 29, 1949. He graduated in May 1949. Billie is now confined to bed with multiple sclerosis which was diagnosed in 1971. She has been wheelchair bound since about 1976. She has two sons and three grandchildren. We have many fond memories of the Chemistry Building and Drs. Goodwin, Dennis, Craig, Schneider, and Oberg, and Mrs. Marshall, Mr. Slagle, Miss Stuart, Mrs. Menaul, and others whose names escape me now. I assisted in several chemistry labs but met my wife away from the Chemistry Building, playing tennis."

Victor L. Davidson (Ph.D., '82) is currently an Associate Professor in e Department of Biochemistry at the University of Mississippi Medical Center in Jackson.

William R. Heineman (B.S., '64) of the University of Cincinnati, has been selected to receive the 1995 Charles N. Reilley Award from the Society for Electroanalytical Chemistry.

Ken Jacks (B.S., '76; M.B.A., '89) is currently a Project Leader/Statistical Analyst at the Southwest Research Institute in San Antonio.

Leete Jackson III (B.A., '65; D.D.S., '69; M.D., '74) is currently a maxillofacial surgeon in private practice, with teaching affiliations, in Dallas. Dr. Jackson writes that he has been married to Jane Jackson for 24 years, and that they have three children (Leete IV, Brent, and Shannon) who all have or are attending UT-Austin(!) Jackson is the immediate past president of the American Board of Oral and Maxillofacial Surgery, and is currently president of the Southwest Society of Oral and Maxillofacial Surgery.

Oscar Branche Jackson, Jr. (B.A., '67) is self-employed as a pediatric ophthalmologist in Austin. Jackson writes that he is "using my chemistry degree as owner of a small Hill Country boutique winery, the Middle Creek Ranch and Vineyard."

Sang Woong Kim (Ph.D., '93) is currently a postdoctoral fellow in the laboratory of Rob Armstrong at the Department of Chemistry & Biochemistry at UCLA.

Young Soo Kim (Ph.D., '93) is currently a postdoctoral fellow in the laboratory of Fred Hawthorne at the Department of Chemistry & Biochemistry at UCLA.

Dustin McMinn (B.S., '92) is currently a graduate student in Mark Greenberg's group at the department of chemistry at Colorado State University.

Vipin Menon (B.S., '91) is curently a graduate student at the department of chemistry of Texas A&M University, however, Vipin writes that "I'm **not** an Aggie! Always a Red Raider!"

Judith English Morehead (B.A., '35; M.A., '53 [UT-Austin]) writes from Austin that "there were two girls in my class in '35. The numbers don't seem to have increased much in 60 years!"

Michael D. Mosher (Ph.D., '93) is currently

(continued on page 8)

(Alumni News., Continued)
a visiting assistant professor at the Deparment of Chemistry of the University of Idaho.

Tetsuo Onada (Former Visiting Researcher with Dasgupta) was awarded the Young Scientist of the Year award by the Japan Society of Analytical Chemistry.

Amy Arrant Polillo (B.S., '92) is currently a medical student at the UT Southwestern Medical School in Dallas. Amy was one of our Biochemistry graduates in 1992 — a fact that we unfortunately omitted in our listing of chemistry and biochemistry graduates in the last issue of the TestTube.

Gregg Puluka (B.A., '93) is a Research Scientist at Hoffman La Roche in Branchburg, New Jersey.

Will S. Rees (B.S., '80) has moved from Florida State University to Georgia Tech University, where he is currently an Associate Professor of Inorganic and Materials Chemistry.

Deboleena Roy (Ph.D., '93) is working as a synthetic chemist at Isotope Products Laboratories in California.

Jeff W. Seale (B.A., '88; Ph.D., '92) has recently completed a two-year postdoctoral fellowship in the laboratory of professor George Rose at the Washington University in St. Louis, where he studied structural determinants of alpha helix formation. Jeff has been appointed to another postdoctoral position, in the laboratory of Paul Horowitz at the University of Texas Health Sciences Center at San Antonio, where he will study the interactions of chaperonins with protein folding intermediates.

Savita Shankar (Ph.D., '93) has recently accepted a position as a Research Scientist in the Department of Biology at the University of Florida.

Hideharu Shintani (Postdoc with Dasgupta) is currently the Director of Japan's National Institute of Hygienic Sciences in Tokyo. Dr. Shintani writes that "it is not favorable news to the USA, but I am right now fighting with the AAMI and the FDA for ISO documents as a delegate for Japan."

Hideharu Shintani

Michael R. Smith (B.A., '80) is currently self-employed as a physician in San Antonio.

The department was saddened to learn of the untimely death of **Brian Walker** (B.S., '82) on September 1, 1993. Walker was employed at the department from 1982 to 1993 as the technician in charge of laboratory preparations for the general chemistry program. He left the department early in 1993, and was enrolled in the graduate program at Texas Tech's English department at the time of his death.

James O. (Jim) Whatley (B.S., '55) writes that he is now retired, "living a life of luxury in the Texas Hill Country!" Jim expressed his appreciation for the news, reported in the last issue of the TestTube about the late Dr. Goodwin: "He helped me through his organic chemistry course and I have always appreciated him!"

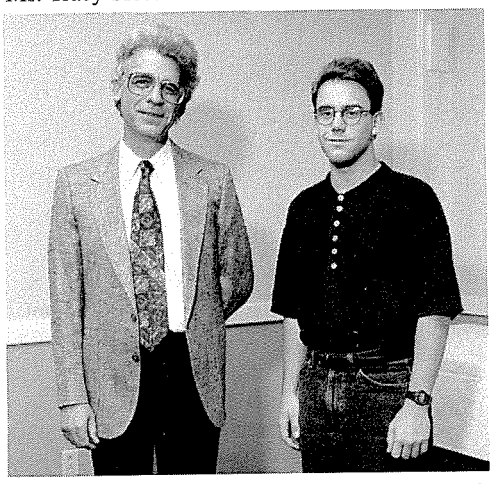
Max Wynn (Ph.D., '86) is currently an Assistant Professor of Internal Medicine at the UT Southwestern Medical Center in Dallas.

Dachuan Zhao (Postdoc for professor Shine, 1989) has been appointed a Research Chemist in the Method Development Laboratory at Novopharm, Markham, Ontario.

Scholarships and Awards in Chemistry & Biochemistry

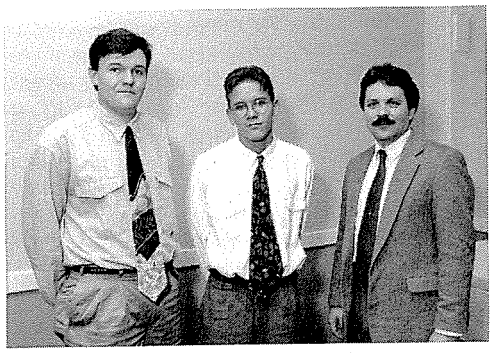
It is a pleasure to acknowledge the generous support of our scholarship programs by Dow Chemical USA, Hoechst Celanese Corporation, and Phillips Petroleum Company in 1994. Such contributions allow us to recognize the accomplishments of, and to offer encouragement to, many of our excellent undergraduate students in a meaningful way. In addition to the support offered by our friends in industry, funds for scholarships are available from the interest generated by the generous endowment given to us a number of years ago by Dr. and Mrs. Joe Dennis. Also, interest from funds donated in the memories of Samuel Hunt Lee and Walter J. Chesnavich, two of our late colleagues, are used to fund the Samuel Hunt Lee Memorial Award for the outstanding organic chemistry student for the year and the Walter J. Chesnavich Memorial Award for the outstanding physical chemistry student for the year. There is no way to exactly measure the "returns" which will come from these "investments" in the careers of promising chemists, but there is no doubt that they are, and will continue to be, substantial.

Samuel Hunt Lee Memorial Award
Stephen Hester
Walter J. Chesnavich Memorial Award
David Bessire
1994 Jeanette and Joe Dennis Scholarships
Ms. Janel Short
Ms. Amy Croft
Mr. Mohammed Ayoub
Ms. Amanda Malouf
1994 Dow Chemical USA Scholarships
Ms. Elizabeth Phillips
Mr. Jason Montgomery
Mr. John Collette
Mr. Timothy Mooring
1994 Hoechst Celanese Scholarships
Mr. Patrick Proffer
Ms. Vikki Van Duzee
Mr. Matthew Dewitt
Ms. Lisa Stephens
1994 Phillips Petroleum Scholarships
Ms. Tamara Slosser
Ms. Tracy Slosser



David Knaff with the 1994 winner of the Samuel Hunt Lee Memorial award, Brent Hester.

David Knaff with the 1994 Jeanette and Joe Dennis Scholarship awardees. (Left to Right): Dr. Knaff, Mohammed Ayoub, Amanda Malouf, Janel Short, and Amy Croft.



David Babb (right), of Dow Chemical Company, with two of the 1994 Dow Chemical USA Scholarship awardees, Timothy Mooring (L) and Jason Montgomery. Awardees not pictured were Elizabeth Phillips and John Collette.

Mary Smith and Alphonse Walker (center), of Hoechst Celanese Corporation, with two of the 1994 Hoechst Celanese Scholarship awardees, Vikki Van Duzee and Patrick Proffer. Awardees not pictured were Matthew Dewitt and Lisa Stephens.

Our omnipresent chairman, Dr. Knaff, with the 1994 Phillips Petroleum Scholarship winners, Tracy and Tamara Slosser.

Donations to the Department and the Alumni Scholarship Fund

Thanks to our supporters who have generously donated to our department, including those who are helping us to reach the $10,000 goal needed to endow our first Alumni Scholarship. We are pleased to acknowledge the following individuals who have contributed generously to our programs. (Please contact us if your name should have appeared here; we may have missed you due to a recordkeeping error!).

John H. and Billie May Cohea Crow
Judith English Morehead
Hemanta K. Sarkar
Hideharu Shintani
Michael Ray Smith, M.D.
Larry A. Spino (matching funds from Solvay America, Inc.)
Linda Bagwell Wofford

1993 and 1994 Chemistry & Biochemistry Graduates

The following students completed their degrees in Chemistry or in Biochemistry since the last report in the previous TestTube newsletter (Please send corrections to this information to the TestTube editor). Congratulations to each, and will all Chemistry and Biochemistry alumni please stay in touch with us?

Bachelor of Science in Chemistry

August 1993
Gregory Bennett Howard
Derrick Edward McGowen
James Bryon Nichols

December 1993
Jeffrey Allen Kennar
Jeffrey Paul Klein
Brian Scott Livengood
Randall William Pak

May 1994
Joel Nathan Glasgow
Robert Eugene Hanes
Kenneth Wayne Kelly
Zachariah Matthew Lorenzini
Sonya Lyrice Myles
Shawn Almadani Schulze

December 1994
Sean Michael Christian
Kyle Carter Levy
Ron F. Motley
Li Ann Oh
Christopher Joe Roden
Sharon Lynn Sanderson

Bachelor of Arts in Chemistry

August 1993
Keith Lee Clark
Sheryl Nichole Ivy
James Philip Wagner

December 1993
Andres Hernandez Chavira

May 1994
Craig Wayne Barker
Katherine Lea Biediger
Angela Michele Dyer
Karen Belinda Earhart
Sean Arthur Jackson
Maria Tina Martinez
Allen Gray Swift
Stephen Thomas Watts

August 1994
Kathi Ann May

December 1994
William Murray Calvert
David Edward Doucette
Kerry Charles Latch
James Patrick Leif
Brittney M. McDaniel
Wendy Eileen Morton
Jason Nathaniel Risley
Jimmy Don Threet
Craig D. Wright

Bachelor of Science in Biochemistry

December 1993
Jeffrey Lee Wells

May 1994
Christopher James Angerer
Christian Paul Atallah
Blaine Drake Barton
David Michael Beck
Richard Bui
Steven Alexander Campbell
Matthew Wade Gatlin
Van T. Ha
John Robert Hickox
Mark Christopher Porter

August 1994
Aaron Thomas Fullerton
James Todd Rose
Zachariah Matthew Lorenzini

December 1994
Matthew Wade Gatlin

Bachelor of Arts in Biochemistry

August 1993
Meifan Chen

December 1993
Ronald Christopher Auvenshine
Christian Emil Davis
Maria Louise Russell

May 1994
Ashley Denise Lowder
Jill Ann Shackelford
Jay Robert Woody

December 1994
Scott David Modderman
Derrick Rodney Mott

Master of Science in Chemistry

August 1993
Andrew John Bessire (Inorganic - Dr. Holwerda. "Reactivity of Chloroanilatobis(acetonitrile)palladium(II) with Aliphatic and Aromatic Amines")

May 1994
Lokman Torun (Organic - Dr. Bartsch. "New Crown Ether Compounds and Their Metal Ion Complexation")
Hong Zheng (Analytical - Dr. Dasgupta. "Concentration and Optical Measurement of Aqueous Analytes in an Organic Solvent Segmented Capillary Under High Electric Field")

August 1994
Xiaomeng Huang (Organic - Dr. Birney. "Thermal Reactions of Acetylketene and Imidoylketene")
Xiaowu Huang (Organic - Dr. Bartsch. "Synthesis of Cyclic and Acyclic Polyether Ligands")

December 1994
Xin Li (Biochemistry - Dr. Nakashima. "Genetic Abnormalities as Molecular Markers for Cancer")
Hong Qin (Biochemistry - Dr. Knaff. "Spectroscopic and Binding Studies of the Cytochrome bc_1 Complex")
Kimberly Jo Smith (Chemical Education - Dr. Metz. "Implementation of a General Chemistry Discovery Laboratory Course in a Large University Setting: A Qualitative Case Study")

Doctor of Philosophy in Chemistry

August 1993
Sherri Denice Fugate Clark (Biochemistry - Dr. Shaw. "Site-Directed Mutagenesis of Bacterial Metallo-beta-lactamases")
David Earl Harwell (Inorganic - Dr. Mills. "Design, Synthesis and Characterization of Polydentate Polyphosphine Ligands for Actinide and Lanthanide Extraction")
Jong Seung Kim (Organic - Dr. Bartsch. "Synthesis and Conformational Studies of Proton-Ionizable Polyethers")
Sang Woong Kim (Organic - Dr. Walkup. "Syntheses of Tetrahydrofuranoid Molecules for Use in the Preparation of Ionophores and Natural Products")
Gapgoung Kong (Inorganic - Dr. Whittlesey. "Synthesis of Organometallic Complexes Containing Group 13 Elements and Transition Metals")
Michael David Mosher (Organic - Dr. Walkup. "Palladium-Mediated Cyclizations of Gamma-Oxoallenes: Synthesis of Structurally Modified Nucleic Acids")
Barbaros Nalbantoglu (Biochemistry - Dr. Knaff. "Cloning of Higher Plant Glutamate Synthase Genes")
Savita Shanker (Biochemistry - Dr. Knaff. "Characterization of the *pet* Operon of *Rhodospirillum rubrum* ")

December 1993
Hyunho Cho (Inorganic - Dr. Whittlesey. "Preparation of New Mixed-Metal Complexes Containing Transition Metals and Group 13 Elements")
Virginia Kathleene De Marquis (Inorganic - Dr. Mills. "Proton-Capped Tripod Triphosphines and their Oxides and Sulfides: Synthesis and Characterization")
Young Soo Kim (Organic - Dr. Walkup. "Syntheses and Transformation of Tetrahydrofuran-Containing Substrates; Synthetic Approaches to the Upper Portion of Pamamycin-607")
Eun Ju Lee (Biochemistry - Dr. Harman. "Mutagenesis of the Cyclic AMP Receptor Protein of E. coli: Targeting Positions 83, 127,

(continued on page 10)

(C & B Graduates, Continued)
and 128 of the Cyclic Nucleotide Binding Pocket")
Yavuz Onganer (Physical Chemistry - Dr. Quitevis. "Photodynamics of Merocyanine 540 in Liquid and Membrane Systems")
Deboleena Roy (Organic Chemistry - Dr. Birney. "Bifunctional Chiral Catalyst for Diels-Alder Reaction and Pseudopericyclic Reactions and Reactivity of Formylketene with Acetylene")
John Charles White (Organic - Dr. Bartsch. "Poly(dibenzocrown Ether) Resins: Synthesis and Ion-Pair Sorption")
Yueh Wang (Organic - Dr. Shine. "Reactions of Thianthrene Cation Radical with Alcohols and Diols: Scope and Mechanism")

May 1994
Kelly Sullivan Griffith (Physical - Dr. Gellene. "A Study of Unusually Large Oxygen Isotope Effects in: (1) the Formation of the Di-oxygen Dimer Ion, and (2) the Predissociation of a New High Energy Metastable State of Molecular Oxygen")
Deborah Clayton Koeck (Analytical - Dr. Shelly. "Microencapsulated Dyes as Opto-Mechanical Sensor")

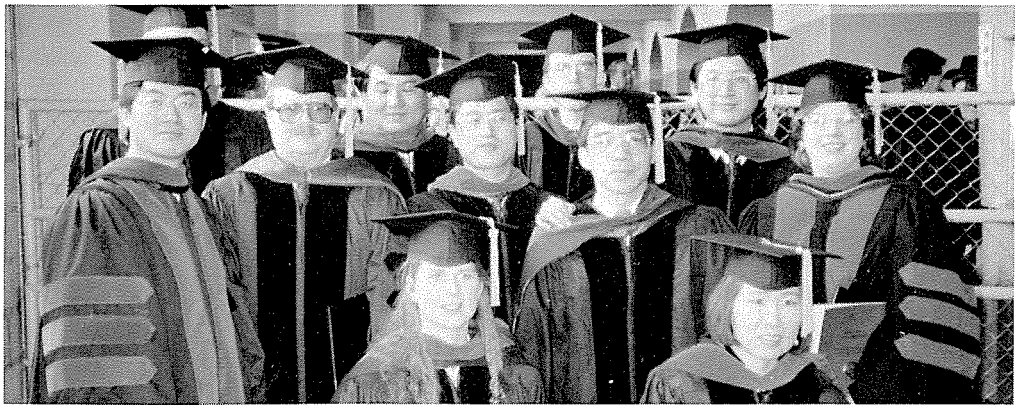
August 1994
Lufeng Guan (Organic - Dr. Walkup. "Studies on the Development of Novel Synthetic Methodologies: Preparation and Transformation of Substituted Vinyltetrahydrofurans")

December 1994
Matthew Granholm Hankins (Analytical - Dr. Bartsch. "Metal Ion Separations by Acyclic and Cyclic Polyethers and Their Polymers")
Evelyn Elizabeth Laney (Analytical - Dr. Bartsch. "Synthesis and Metal Ion Sorption by Proton-Ionizable, Acyclic and Cyclic Polyether Resins")
Simon K. Poruthoor (Analytical - Dr. Dasgupta. "Automated Instrumentation for the Measurement of Atmospheric Trace Gases and Particles")

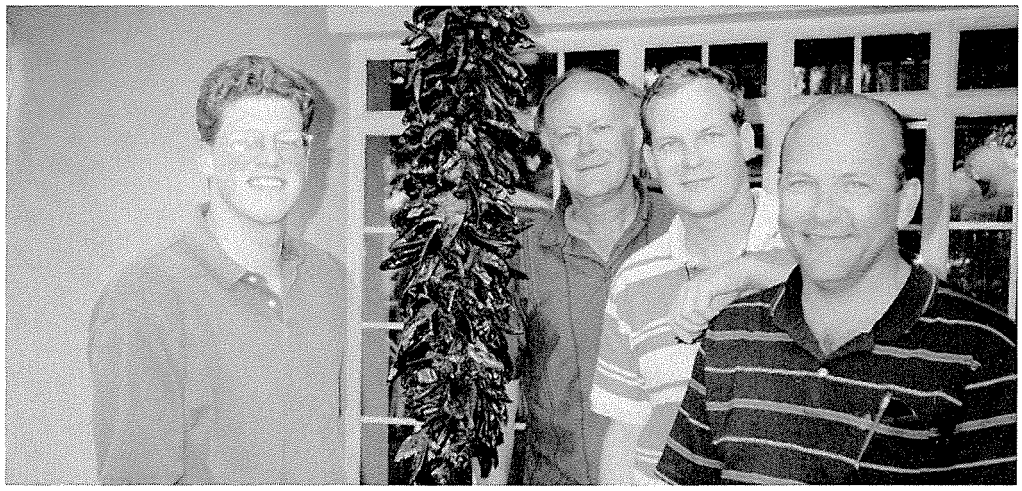
Top: *Dr. Witold Charewicz, a 1994-95 Visiting Professor from the Technical University of Wroclaw, Poland, poses for the camera with Sellie and Henry Shine at the departmental holiday party hosted in December 1994 by David and Joyce Knaff.*

Center: *Joyce Knaff at the 1994 departmental holiday party which she and David graciously hosted.*

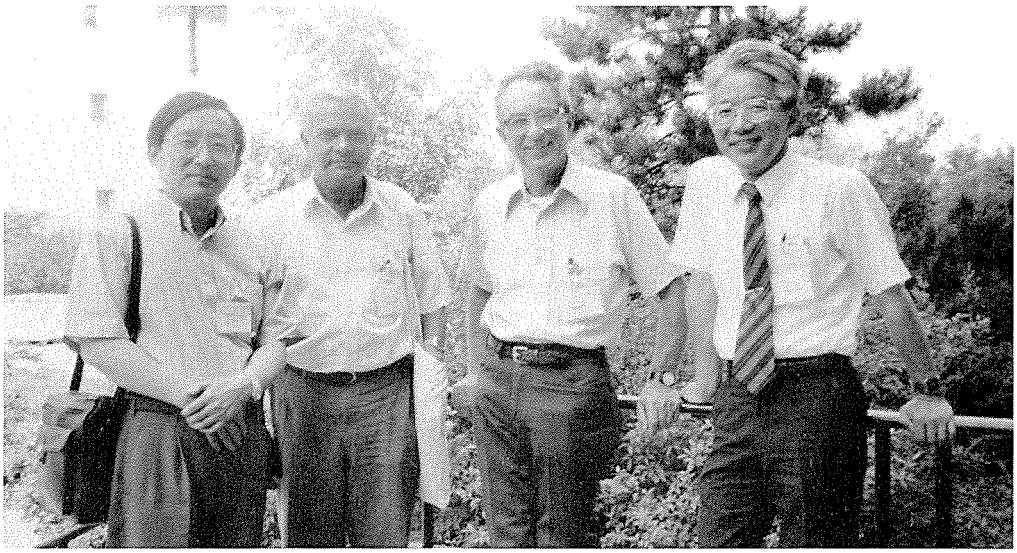
Bottom: *Dick and Sophie Wilde enjoy food and fellowship at the 1994 departmental holiday party.*



TTU Chemistry & Biochemistry Ph.D. graduates at the December 1993 commencement exercises. *Standing (Left to Right): Jong Seung Kim, Mike Mosher [behind Jong Seung], John White, Young Soo Kim, Hyunho Cho, David Harwell, Sang Woong Kim, Wang Yueh, Sherri Clark. Knealing (Left to Right): Ginger DeMarquis, Eun Ju Lee.*



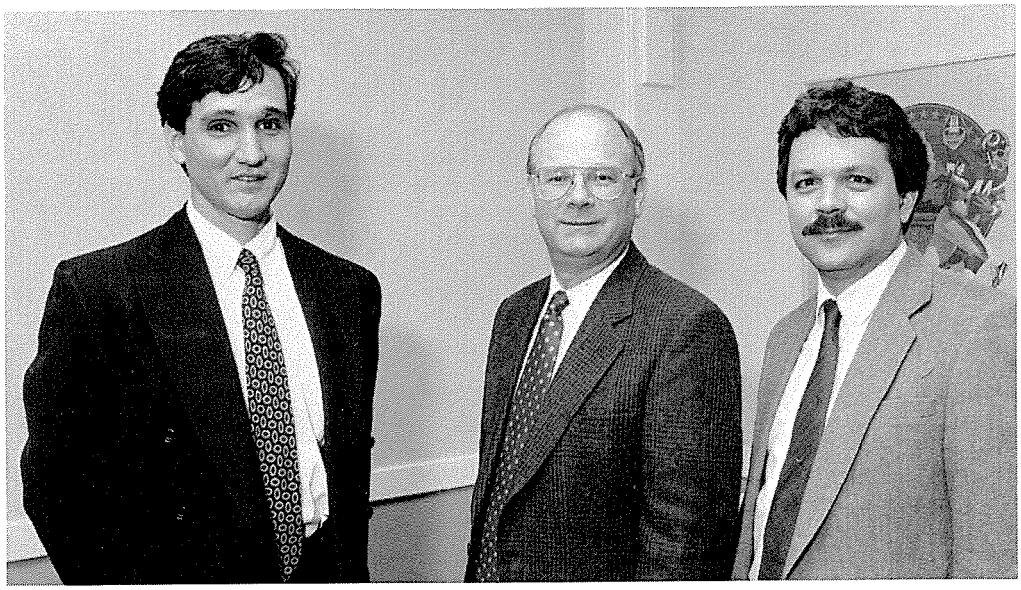
A Bunch of Chemists and a Bunch of Chile Peppers. *Jerry Mills (second from left) poses with a current student, Steven Twaddle (left) and two former students, Rick Kemp and Larry Avens (left to right) at Los Alamos, New Mexico in June 1994, following a research meeting to discuss collaborative efforts between TTU and Los Alamos National Laboratories to develop novel lanthanide complexing agents. The chile peppers were reported missing under mysterious circumstances soon after this photograph was taken.*



Rendezvous in Merseburg. *This photograph shows Henry Shine with a group of former TTU coworkers at the 16th International Symposium on the Organic Chemistry of Sulfur, held in Merseburg, Germany, in July 1994. (Left to Right): Professor Kyongtae Kim of Seoul National University, who received his Ph.D. with Shine in 1975; Professor Hiriyakkanavar Junjuppa, of North Eastern Hill University in India, who worked for Shine as a postdoc in 1969-70; professor Shine; and Professor Tadashi Okuyama of Osaka University, who worked for Shine as a postdoc in 1970-71. All four of these individuals gave talks at the symposium, including plenary lectures by Junjappa and Okuyama.*

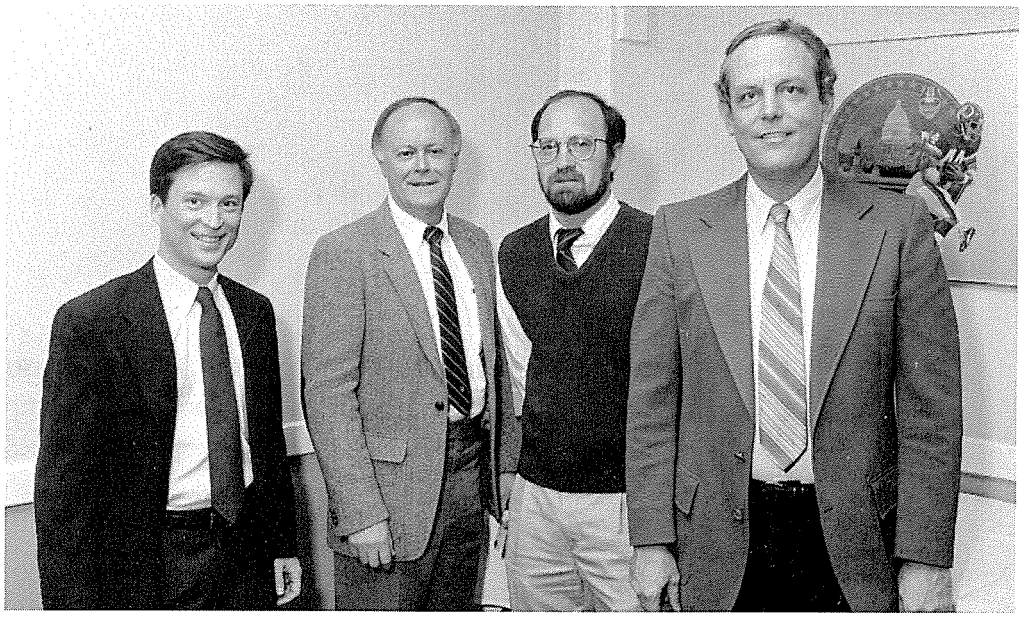
Seeking Advice. *Bob Walkup (left) demonstrates typical TTU faculty politics, as he entreats Horn Professor Henry Shine for pearls of wisdom at the 1994 departmental Awards Banquet. Professors Headley and Bartsch look on, while Joe Adamcik (right) pretends that he isn't part of the group.*

Organic Chemistry Powerhouse. *Members of the Organic Chemistry Division pose at the 1994 departmental Awards Banquet. (Left to Right): Bob Walkup, Allen Headley, Henry Shine, Dick Bartsch, Joe Adamcik, and John Marx.*



Dick Bartsch proudly poses with two of his former students, Mike Pugia (Ph.D., 1986) (left) and David Babb (Ph.D., 1985) at the 1994 departmental Awards Banquet.

Tech Graduate Entertains the President! *Larry Avens (Ph.D. with Mills, 1982), third from left, is shown describing to president Clinton "how I'm spending taxpayer dollars" during a visit by Clinton to Los Alamos National Laboratories in May 1994. The individuals to the left of Dr. Avens in the photograph are Siegfried Hecker, the Director of Los Alamos National Laboratory, and Department of Energy Secretary Hazel O'Leary. Avens' project, on the development of techniques for removing plutonium and uranium contaminants from soil using magnetic separation, was selected for presentation to the president on the basis of "luck more than anything else," according to Avens, who also indicated that his meeting with the president was "an extremely exciting experience." We have been assured that Clinton and O'Leary's action to freeze all DOE salaries, taken one week after they met with Avens, was not related to the "Hillary jokes" that Avens shared with the president during his visit.*



Inorganic, But Very Much Alive. The TTU inorganic chemistry division poses at the 1994 departmental Awards Banquet. (Left to Right): Bruce Whittlesey, Jerry Mills, Dom Casadonte, and Bob Holwerda.

Dear Family, We are fine, please send money.

Our department is, more than ever, dependent upon non-state sources of funding in the form of endowments and personal donations. The continued success of and improvement in our department depends upon the establishment of a stable endowment-based foundation. Would you please consider helping us in this crucial endeavor? Contributions in any amount would be welcome. Furthermore, contributions designated for any "cause" related to the department, or those designated for unrestricted use, are welcome. Among some specific aims for departmental development which would be appropriate for designated gifts are (1) the continued growth of the **Alumni Scholarship**; (2) new endowments (or one-time contributions) for **Undergraduate Student Scholarships**; (3) endowments (or one-time contributions) for the establishment of **Graduate Student Scholarships**; (4) endowments (or one-time contributions) for the establishment of **Lectureships** (funding to cover expenses for visits to TTU by eminent seminar speakers); and (5) endowments (or one-time contributions) for **Equipment Purchases for Teaching or Research Laboratories**. Of course, you might have other specified donations in mind. All are welcome.

Please consider helping Chemistry and Biochemistry at TTU as it strives to be one of the premier teaching and research departments in the United States and the world.

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Dear Family, We are fine, how are you?

Please let us hear from you, whether it be a quick "hello," a lengthy epistle, or a cool note to correct my errors about you! It would be a tremendous help to us if you could help us to update our information about you and that, in turn, would help you to be better informed about what's going on here at Tech. Please, at least, fill out the form below and send to the TestTube editor.

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Year(s) of Degree(s) _____

(please give name of research advisor for graduate & postdoc positions, and school, if not TTU)

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