

**TABLE OF CONTENTS**

Fifty Years Ago .....	2
An Editor's Farewell .....	5
Update those ACS E-Mail Addresses.....	9
Greetings from New <i>Retort</i> Editor .....	9
Real or Leg Pull? .....	10
New ACS Fellows .....	11
In Memorium: Bill Lowry .....	15
New Science Building at TWU .....	17
Around-the-Area.....	17
U of A.....	17
Heart O' Texas/In Memorium: McAtee .....	19
South Plains .....	19
D-FW / Meeting-in-Miniature.....	20
In Memorium: Benham and Schram .....	21
Bobbit to Arkansas .....	23
From The Chemist's Bookshelf.....	24
D-FW Section September Meeting Notice .....	27

**INDEX OF ADVERTISERS**

American Polymer Standards .....	3
ANA-LAB .....	4
Huffman Laboratories .....	3
Minuteman Press .....	3
<b>Sponsor Members</b> .....	1
Texas A&M University-Commerce .....	3

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# FIFTY YEARS AGO IN THE SOUTHWEST RETORT

A new company, Instru-Chem, Inc., has been organized in Dallas to provide expert repair of microscopes and other laboratory equipment. The officers are **C. V. Peterson**, President, and **Roscoe Libecap**, Secretary-Treasurer. The company also has a chemical division which handles a number of chemical products which Libecap has developed. Plans are also underway for distribution through Instru-Chem of a cosmetic line developed by Libecap.

Shell Development E&P Research Division in Houston now has one of the few laboratories in the world where guesswork on age-dating has been reduced. The lab does both radiocarbon dating and stable isotope dating.

The May ACS tour speaker is **Dr. William Stericker** of the Philadelphia Quartz Co. His topic is "Soluble Silicates---Their Properties and Applications."

Eight chemistry majors are graduating from East Texas Baptist College this academic year. Six of the group are planning on doing graduate work in chemistry: **Robert Yue, Bob Ford, Jerry Barrett, Gary Yeargain, Barbara Wilson, and Carolyn Jones.**

At Rice University **Professor Richard B. Turner** was appointed Chairman of the Chemistry Department. New postdoctoral fellows in the department and their mentors are: **Ole Buchardt, Otto Roos, and V. L.**

**Simmons (Turner); William Glaze and Calvin D. Ritchie (E. S. Lewis); Toshio Sakurai and Paul Schmidt (W. O. Milligan); and M. G. Krishna Pillai (R. F. Curl).** The Ph.D. thesis of Dr. Glaze from the University of Wisconsin on organolithium compounds was written up in the Oct. 20, 1960, issue of *C&EN*. Welch grants were given to faculty members **Richard B. Turner, John E. Kilpatrick, and Zevi W. Salsburg.** A Sloan Foundation grant was awarded to **R. F. Curl.** Dr. Milligan recently imported a new Siemens electron microscope.

**Dr. James E. Lovelock** from the National Institute for Medical Research in London is spending six weeks on the University of Houston campus working with **Dr. Albert Zlatkis** in the field of gas chromatography.

The local section meeting of the Texas A&M-Baylor ACS Section was held on Mar. 22 at Texas A&M. The lecture was given by **Dr. Gilbert H. Ayres** of the University of Texas (now UT-Austin) on "Fundamentals of Spectroscopy." Early in April two nationally known research groups moved into the A&M Chemistry Department. They are the American Petroleum Institute (API) Project 44 and a similar project of the Manufacturing Chemists Association (MCA), Inc. The API project involves preparation of physical and

\*\*\*\*Continued on Page 24\*\*\*\*



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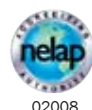
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## AN EDITOR'S FAREWELL

Reminiscence by E. Thomas Strom

This May (yes, I know it's September) issue is my last as Editor of *The Southwest Retort* after 27+ years. My name went on the masthead with the January, 1984, issue after then D-FW Chair Bob Roe asked me to become Editor. Actually I had been functioning as Editor for several months before, and I had taken a strong leadership position in the magazine since 1975. In 1975 I was Chair of the D-FW section, and we had a big scare when our Southeastern Texas ACS Section (effectively greater Houston) threatened to pull out of subscribing to *The Retort*. I felt the loss of our biggest subscriber base would make our magazine less attractive to advertisers, so I reasoned that we should try to make the magazine more interesting. I decided that we would have a feature article each month in the magazine, and I took it upon myself to write them. I started out with a



series of profiles on our Welch Professors in Texas. There were only a handful then, so it was no great problem to interview the group. They all graciously submitted to telephone interviews with me, and they were interesting people. Of course, the number of Welch Professors has skyrocketed since then, so I have had to confine myself recently to fewer schools. Right now my goal is to cover just the Welch Professors in the D-FW Metroplex, and I still have five to go.

After that early effort to produce profiles of Welch Professors, I also did profiles of winners of our D-FW awards, the Doherty and later the Schulz. Then I branched out with profiles of winners of the Southwest Regional Award and the Southwest Regional Award for High School Chemistry Teachers. (There also I have fallen behind the last couple of years.) When Wichita Falls-Duncan started subscribing to *The Retort*, I added an annual profile

on the winner of the Oklahoma Chemist Award. However, there wasn't a new award winner every month, so I was driven to write pieces on professional matters, opinion pieces, interviews with nonaward winners (examples---Ray Bradbury, Madeleine Jacobs, Norman Hackerman), and book reviews. Also, when our long-time Managing Editor Jean Roberts retired, I took on more and more of what Jean used to do, writing out local section reports and odds and ends. Eventually I wound up typing, not writing but typing, all *Retort* copy. The Managing Editor still had to fit everything together to fit a multiple of four pages in the magazine, and his/her task was made all the more difficult because I never got the knack of figuring out how many of my pages of 12 pt type made exactly how many *Retort* pages.

During a too short period of financial prosperity for the magazine, we expanded to add three other departments. I always thought how neat it was that *Nature* magazine had those columns for "Fifty Years Ago" and "One Hundred Years Ago." Since I had all the old *Retorts* to draw material from, the minute our magazine had its fifty year anniversary I started a section on "Fifty Years Ago in *The Southwest Retort*." Our younger readers may find this section obscure, but older readers have told me they really enjoy this section, as it brings back memories of former colleagues and teachers.

A number of years ago the D-FW ACS section decided to mail our

magazine gratis to ACT2 members in the Metroplex. Master Teacher George Hague volunteered to provide a column he called Chem Gems & Joules so that high school chemistry teachers would be sure to find something of interest in our magazine. George wrote the column faithfully as long as he was alive, and he even sent me a column the month he died of leukemia. Since George's death, it has been difficult to find any one individual to keep the column going consistently.

The third department I added was a Metroplex Seminar Schedule, modeled on one I had seen in the newsletter of the Northeastern ACS Section. My thought was that chemists could read about interesting seminars in the area and then attend them. I guess I hoped this would draw an industrial chemist to an academic seminar once in a while, and maybe some academic chemists would on occasion attend a seminar on another campus. It certainly was interesting to see the variety of speakers our various universities host, but I think my reasoning was flawed. There is very little cross pollination because now almost all of our universities schedule their seminars for Friday afternoon.

I sought relief from having to write a feature article every month by having friends and acquaintances provide them or by getting permission from a magazine/journal to reprint a piece. Many of these turned out wonderfully. I hate to cite any of these for fear of leaving someone out, but I will risk it. Nobel Laureate

Dudley Hershbach gave me permission to reprint a piece of his, "Imaginary Gardens and Real Toads." I used the occasion of J. Willard Gibbs being honored with a US postage stamp to ask Jim Melrose to write a piece. Jim responded with a wonderful two part article on Gibbs. Much earlier Jim had written a series for *The Retort* on the polywater affair. Over a number of years Lyman Caswell, now retired from Texas Woman's University, provided around a half dozen articles spiced up by Caz's dry sense of humor plus some straight articles on history of chemistry. John Spessard also wrote a number of pieces in which he cast an engineer's cold eye on projects beloved of chemists, demonstrating that the numbers and economics often didn't add up. István Hargittai and his publisher gave me permission to reprint his fine article "When Resonance Made Waves" about that time in the past that resonance theory underwent a devastating political attack from elements in the Russian chemistry establishment. B. S. Thyagarajan gave me permission to publish some of his poetry. Ruthanne Thomas wrote a three part article on her trip to Antarctica, and very recently undergraduate student Amanda Strickland gave us a two-part article on Lavoisier. I also published material from Erwin Klingsberg, Denise Merkle, and Bob Lyle. I suppose I have left out some volunteer authors, but my memory has run dry.

We also had articles twice from people who actually attended the Nobel Prize ceremonies in Stockholm.

The first article, "Nobel Week" by P. B. Ross, appeared in the January, 1995, issue of our magazine. Phyllis Ross was a librarian at the Mobil library. Her husband was a postdoc with Al Gilman at UT-Southwestern, a co-winner of a 1994 Nobel Prize. Both Phyllis and her husband got to travel to Stockholm for the festivities. Phyllis just wanted to use her initials so that readers wouldn't know if the article was written by a man or a woman. I didn't have the heart to tell her that, with all the material she described about women's dresses, it was a dead give-away that the writer was a woman. Our other Nobel Week article was a twoparter in the January and February, 1997 issues of the magazine. The Nobel Prize for Chemistry in 1996 was given for the synthesis and identification of Buckminsterfullerene. Our author was Sean O'Brien, this year's Doherty Award winner and one of the co-discoverers of the compound.

You *Retort* readers will know that some of the material that I wrote wasn't very good. The problem was that I had a regular job which had to come first. Consequently, I was always scrambling to make the deadline. The first draft of an article was always in my head. I would work out the title, the opening and closing paragraphs, and the outline before ever typing anything. The second draft came when I typed the material for the first time. I would shorten, polish, and correct as the typing went on. If there had been time for a third draft, I think a lot more of my pieces would have been

pretty decent, but generally that time wasn't available.

My favorite piece was "The Case of the Missing Nobel Prize," published in September, 2002. My great departed friend Don Woessner had been after me for two years to write a piece on the lack of a Nobel Prize for nmr imaging. Since I planned it during the summer for the September issue, I was able to do that third draft for a change. I interviewed a number of nmr experts, among them future Nobel Laureate Paul Lauterbur. I also circulated that third draft to some of those experts, who made helpful comments. Consequently, I had a fourth draft. The very next year the Nobel Prize for Medicine was given to Paul Lauterbur and Peter Mansfield for nmr imaging! My feeling is that my article was sent by some individual to the Swedish committee dealing with the Nobel Prize for Medicine, and they said, "Oh, yes, we have overlooked that. We must give a Nobel Prize in that area next year." It's my fantasy, and I'm sticking to it.

Another piece that came out well was "Cold Fusion is a Hot Subject" published in the May, 1989, issue. It was a combination opinion piece and a report on the April 12 symposium on "Nuclear Fusion in a Test Tube" held at the Dallas ACS National Meeting. This was one of the few times that my master's degree in nuclear chemistry was actually useful. I also was very fond of my memoir, "When Science Became Cool," published in the October, 2003, issue. This was a tribute to the

fine Rick Brant Science Adventure books of my youth, written by Harold Goodwin under the pen name of John Blaine. That memoir has later appeared on the Rick Brant website. I also feel fortunate to have published interviews in *The Retort* with the last eight ACS presidents. My friend Bill Carroll, himself a past president, feels that, from a chemical history standpoint, it is useful to interview these individuals at the President-Elect stage to see how they feel about policy matters before reality sets in.

One great thing about being *Retort* Editor is that I have been able to make the acquaintance of a lot of fine chemists. I tried to see that events in the D-FW area were well covered, and this meant contacting a lot of people. It was difficult to cover events in the other five ACS sections taking *The Retort*, but I did my best to develop contacts outside D-FW. I was touched and very grateful to D-FW Chair Patty Wisian-Nielsen for arranging for a wonderful engraved plaque to be given to me at the May 19 local section meeting. *The Southwest Retort* is an all-volunteer organization. I am grateful to past Managing Editors such as Jean Roberts, Rhonda Watson, Jim Marshall, and recently Mary Teasdale. Mary had to



somehow make my complicated copy fit into a multiple of four pages (we print four pages to a sheet), and she did so wonderfully.





Business Manager Kirby Drake had to manage a budget in which cash flow was erratic. I can't say enough about John, Sharon, and Beth at our wonderful printers Minuteman Press. Sometimes they carried us for months when our sections and advertisers were slow pays. If you want printing done quickly, well, and reasonably priced, you can't do better than Minuteman Press of Irving.

Connie Hendrickson will be the new Editor, and Mary Teasdale and Kirby Drake will continue in their usual positions. Will I feel bad about no longer having a hard copy *Retort*? No, because I will have a hard copy! When I get an e-mail notice and a link about the September issue, I will use the link and then hit print. When the issue prints, I will staple the pages together and then read the issue. Then that issue will be filed on top of my previous print issues. You see, I may be in the 21<sup>st</sup> century, but I am not of the 21<sup>st</sup> century.

## URGENT! UPDATE THOSE ACS E- MAIL ADDRESSES

As we mentioned in the last issue, it is crucial that our readers update their ACS e-mail addresses to see that they work. D-FW ACS members have an easy check to see if their e-mail address is operative. If

they haven't received an e-mail blast this calendar year, it isn't! An accurate e-mail address is necessary for you to receive notice when the online *Retort* is available. We also want our subscribers in our five other member sections -- East Texas, South Plains, Heart o' Texas, Wichita Falls-Duncan, and University of Arkansas -- to also see that their ACS e-mail addresses are accurate.

What about our members who don't have e-mail capability? Certainly it is possible to access the D-FW website and the online *Retort* at local libraries. If you need a hard copy of the online *Retort* mailed to you, we suggest you contact either D-FW Chair Patty Wisian-Nielsen or new *Retort* Editor Connie Hendrickson to make such arrangements.

## GREETING FROM NEW EDITOR CONNIE HENDRICKSON

Until the advent of Johannes Gutenberg's printing press, hand transcription was the only method of reproducing books. Scribes feared loss of income! Government and church officials feared anarchy! as the common people learned to read and



obtained information not readily available previously. (There was nothing to read before....). Sixty years after the advent of the printing press, there were 200 million books in existence.

Until recently, paper and ink were our only form for transmission of information, and the words “book” or “magazine” or “journal” referred to that physical form only. Now there is a new form of book: electronic communication...by e-mail, by electronic book (the much loved or despised Kindles and Nooks). (Don’t make me give my Kindle talk, now: an electronic book is a **real** book. Is a church the building? Is the Senate a building? Is a book simply the physical form? The answer to all of those is no, it is not, it is the thoughts and contents and actions: the book itself is simply the form of the transmission).

For a wonderful article...an interview with Gutenberg on this very subject, look at: <http://focus2011.org/2011/05/interview-with-johannes-gutenberg-by-dr-charles-j-margeson/>.

And now, starting with the September issue, we will have a new form of *The Southwest Retort*: it will be electronically generated and distributed via e-mail to our participating sections. *The Retort* will be instantaneously available and searchable, and I assure you it will be the same *Retort*...only the form will be different. Please continue to send your news items to [retort@acsdw.org](mailto:retort@acsdw.org).

## REAL OR LEG PULL?

Your Editor gets the *ARKIVOK* monthly newsletter, probably because Dennis Marynick, Brinkley Snowden, and I published a paper there as part of the Henry Shine tribute issue. The newsletter contains titles of accepted papers and formula abstracts plus a listing of new volunteers who help make this online journal work.

The July newsletter with a date of July 31 included a listing of new members of the Editorial Board of Referees. This list just has the name and geographic location of the new members. Normally my eyes glaze over at this point, but one name grabbed my attention. That was Dr. Rex Tyrannosaurus of the Spratly Islands. I think you readers will agree with me that no one has the last name of Tyrannosaurus, although I certainly would be tempted to give such a child the first name of Rex. The Spratly Islands are in the South China Sea. There are no native inhabitants, but about 45 of the islands are occupied by military forces from China, Vietnam, Taiwan, Malaysia, and the Philippines.

Alerted by the presence of Dr. Tyrannosaurus, I reread the list. Just above Rex’s name was that of Antro Silverstein IV, located at Kingman Reef. This reef is found in the North Pacific, about midway between the Hawaiian Islands and American Samoa. Only three acres of the reef are dry land, and this land is

only five feet above sea level. I wonder how easy it is for Dr. Silverstein to get e-mail there.

So, is this real or a leg pull? My vote is for the latter.

## **BALKUS, LARSEN, MARSHALL, MASON AND SMITH NEW ACS FELLOWS**

The ACS Fellows program is designed to honor members who have demonstrated excellence in their contributions to the chemical enterprise coupled with distinctive service to ACS or to the broader world of chemistry. This year's class of fellows includes five chemists from the Dallas-Fort Worth Metroplex. So far as we can tell, there were no new fellows from the other five sections served by *The Southwest Retort*. Please let us know if we are in error about this omission. I do have to make one pertinent observation. Of the nine ACS Fellows in the D-FW Metroplex, four of them are from UNT, which seems greedy on that university's part.

**Professor Kenneth J. Balkus, Jr.** of the University of Texas at Dallas (UTD) is a renowned expert in zeolite chemistry. Ken received his undergraduate training at Worcester Polytechnic Institute (WPI) and his Ph.D. in inorganic chemistry from the University of

Florida under the direction of Russell Drago. After a post-doctoral appointment at the University of Pennsylvania, he joined the faculty of UTD in 1988.

His pioneering work on zeolite host guest materials provided alternative ways to encapsulate reactive species. Synthesis of the host zeolites around the guests led to the exploration of metal complexes as structure directing agents. Ultimately this led to the synthesis of the huge UTD-1, a zeolite with a 14-membered ring pore system. Ken also contributed to the evolution of mesoporous molecular sieves with his DAM-1 family of materials as well as to novel applications ranging from drug delivery to fuel cells. For example, the Balkus group was the first to immobilize enzymes and proteins in mesoporous molecular sieves. He has more than 200 publications, has received nearly \$8 million in grants, and has directed the Ph.D. research of 46 students. He also holds 27 patents with six more pending. He received an NSF Presidential Young Investigator Award in 1991, the first one given to a UTD faculty member, and in 2008 he won the W. T. Doherty Award of the D-FW ACS Section.

Along with these sterling research efforts, Ken has been very active in ACS affairs. As an undergraduate he was president of WPI's ACS affiliate chapter. He made his first research presentation at a Northeastern Regional ACS Meeting. He continued to participate at Florida and at Penn. His first service to D-FW was on the Long

Range Planning Committee. He served our section as Alternate Councilor in 1992-1995, and as Councilor from 1995 until 2001. Ken had Project Seed students working in his laboratory early on, so it was logical for Ken to serve on the ACS National Committee on Project Seed. After serving on the committee for ten years (1997-2007), he moved on to the ACS National Committee on Chem Abstracts in 2008, and he serves on the slot still.

Organometallic chemist **Dr. Robert D. Larsen** is from Alcon Labs in Fort Worth. Rob received his B. S. degree in chemistry from the University of Michigan-Dearborn and his M.S. and Ph.D. degrees from the University of Michigan. His mentor was Professor Joseph P. Marino. He joined Merck in Rahway, NJ, in 1982, in the area of process research, where he rose to the position of Senior Director of Process Research. He then joined Amgen in Thousand Oaks, CA, where he became Executive Director of Chemical Process R&D. He came to Alcon in 2010 where he is Director of Process Development.

Rob has authored 90 papers and eleven reviews and has edited one book. He holds 31 patents. He is a member of the Editorial Advisory Board for the journals *Organic Process Research and Development* and *Organic Letters*. He has been very active in the ACS Division of Organic Chemistry and has arranged a number of symposia. He was National Program Chair in 2003-2006, and he is currently Chair-Elect.

He will be serving as Chair in 2012.

**Dr. Diana Mason** of the University of North Texas (UNT) is from Dallas and a graduate of Bryan Adams High School. She received a B.A. degree in zoology from UT-Austin, after which she wanted to work in a lab in Austin dealing with health care. When no such job opened up, she began work as a substitute teacher. This evolved into a permanent substitute position teaching all levels of math. However, her lack of formal teaching credentials caused her to switch gears and enter a cytotechnology program at UT-Southwestern Medical School. She became a registered cytotechnologist, but then she went back to graduate school at East Texas State University (now Texas A&M-Commerce). Wanting to return to the classroom, she wound up for ten years teaching math and chemistry at Dallas Jesuit. With encouragement from Joe Lagowski, she quit at Jesuit to work toward a Ph.D. in science education with emphasis in chemistry at UT-Austin. After completing her doctorate, she received a tenure-track appointment in science education at UT-San Antonio. After making tenure there, she accepted a position as Associate Professor of Chemistry at UNT.

At UNT she has published a book and 14 peer-reviewed articles, served five years as the Secondary School Editor of the *Journal of Chemical Education* publishing 44 editorials, and has garnered more than \$1.4 million in external funding. She currently holds her second NSF

grant used to support scholarships for undergraduate students in the Science Technology Engineering Mathematics (STEM) fields. She is also one of several senior investigators on the five-year \$2.4 million Teach North Texas (TNT) grant at UNT. Six of her graduate students have completed their Ph.D.s in chemistry along with eleven M.S. students in chemistry education. Her current research group consists of one M.S. and three Ph.D. students who continue to study how students learn to learn chemistry and how successful outcomes can be improved.

Diana has been very active in community service projects. She has organized and hosted at UNT two international conferences for chemical educators, ChemEd 07 and ACS BCCE 2010. She also hosted two statewide ACT2-Welch Biennial Meetings and serves as a member of the Board of Trustees of the Fort Worth Regional Science Fair. When she was in San Antonio, she served as Chair of the local ACS section. She is a founder of the Mean Green Chemistry Demo Team. The team was performed shows in five states for state and national organizations, and the team was invited to perform in Qatar in 2008, where Diana gave the keynote address on the importance of teaching science. Over the past 15 years she has presented more than 120 combined professional papers and research seminars.

**Dr. James L. Marshall** is Professor of Chemistry at UNT. He was born in Denton, TX, where his

father Madison Marshall was a faculty member at the Texas State College for Women (now Texas Woman's University). Jim received his B.S. degree in chemistry from Indiana in 1962 and his Ph.D. from Ohio State in 1966. After an NIH Postdoctoral Fellowship at the University of Colorado, he joined the faculty of UNT. He carried out a research program in carbon-13 nmr and published a book on carbon-13 coupling constants in conformational analysis. He rose through the ranks in nine years to become full professor. He then left UNT for two stints in industry. After six years he returned to UNT and has held several administrative positions in chemistry and material science.

By this time Jim's interests had turned to chemical education and the history of chemistry. This led to his landmark endeavor, carried out with his wife Virginia (Jenny), on "Rediscovery of the Elements." The Marshalls realized that, with availability of portable, accurate GPS apparatus and the fall of the Iron Curtain, the actual discovery sites of the elements could be revisited. He and his wife spent ten summers visiting and documenting those real sites. Each summer's un-reimbursed expenses ran about \$20,000. Jim and Jenny came up with the money by living frugally throughout the academic year. The photography (6500 photos from a base of 25,000) and documentation (354 maps, 33 background articles) from this project would have resulted in a coffee table book capable of

crushing the average coffee table. Instead Jim and Jenny made the results of their ten years of work available in a comprehensive DVD titled "Rediscovery of the Elements." Thus, teachers of chemistry at the university and secondary levels now have an inexpensive (~\$50) way of teaching the origin and chemistry of the elements.

Not unexpectedly, the Marshalls' project has garnered a great deal of publicity. *C&EN* gave several pages to the Marshalls' travels, and *Nature* magazine published a two page feature on the Marshalls ("In Their Element") in 2005. Even the chemophobic *Dallas Morning News* wrote a feature on Jim and Jenny.

Jim also has been active with ACS. He has served the D-FW Section as Chair, and he has been an Alternate Councilor for the ACS Division of the History of Chemistry. He was Managing Editor of *The Southwest Retort* from 1995 until 2003. As Editor, I was amazed by his ability to turn my ragged copy into a finished magazine in 24 hours. He has been a consultant on the PBS/Chemical Heritage Foundation series on "The Mystery of Matter" during the 2008-2011 time period. He has tirelessly served the ACS as a tour speaker, thus far participating in 64 individual tours.

**Dr. Patricia B. (Trish) Smith** is currently a Plasma Etch Process Engineer at TriQuint Semiconductor in Richardson. Trish received her Sc.B. degree from Brown University and her M.A. and Ph.D. degrees from Princeton. Working with her mentor

Steven Bernasek and also with Jeffrey Schwartz, she was among the first persons to use organometallic chemistry to selectively modify the properties of metal oxide surfaces. She published four papers describing this breakthrough approach to surface modification. Since then, the Bernasek and Schwartz groups have had ten additional students work in this area with 42 papers resulting. This was all initiated by Trish's excellent experimental work and her willingness to take on a project that at that time seemed impossibly difficult.

Trish joined TI in 1986 and worked there until 2007. To note just a few of her accomplishments, she developed sequential HgCdTe remote plasma cleanup and dielectric passivation for capacitor and diode infrared device structures, instituted the use of nondestructive, optical spectroscopies for screening certain heterojunction bipolar transistor structures, invented oxygen-free photoresist strip and dry clean processes for copper-based logic devices, and invented and developed plasma clean and removal processes compatible with low k dielectric materials and Cu. In 2001 she was selected as a Distinguished Member of the Technical Staff, a level attained by less than 2% of the eligible technical staff. During her TI career she received seven patent incentive awards given for patents of significant importance in manufacturing processes. In 2001 she received the ACS SW Regional Industrial Innovation Award, and in

2005 she became the first woman to receive the Dallas-Fort Worth ACS Section's W. T. Doherty Award. From 2007 to May, 2011, she was the Director of Research and Development at Fresnel Technologies, Inc. in Fort Worth. In June of this year she joined TriQuint Semiconductor. She holds 30 patents and has authored 26 scientific publications.

Trish has done yeoman service for the D-FW ACS local section. She has served on the D-FW Awards Committee and has served six two-year terms as Secretary of the local section. She recently has overseen a revision of the section's bylaws. She has given numerous career-oriented speeches to physics and chemistry classes at girl's high schools such as Hockaday and Ursuline Academy as well as at Plano and Princeton High Schools. She has also talked about science to Girl Scout and Boy Scout groups. She participated for several years in Saturday mentoring programs called "Expanding Your Horizons" in Tyler, TX, which were designed to stimulate middle-school girls to think about a career in science.

Surely there are many more chemists in the six sections served by *The Retort* that deserve to be chosen as ACS Fellows. Any ACS member can nominate one other ACS member for Fellow. Sections can nominate a number equal to the section's numbers of councilors. Divisions can nominate a number equal to double the number of the division's councilors. Note that technical accomplishments are important, but

equally important are contributions to ACS or to the broader world of chemistry. If you know of a deserving candidate and don't wish to nominate him/her yourself, contact your local section or division chair with his/her name.

## REMEMBERING BILL LOWRY



Your Editor must have been asleep at the switch or, more likely, out of town, because I had been completely ignorant of the death of D-FW ACS stalwart **Dr. William T. Lowry** on June 14, 2010, until I was recently notified. Bill Lowry was a big supporter of *The Southwest Retort*, maintaining a Sponsor Membership for around ten years. He also served the D-FW Section as Chair in 1989. Having a capable section chair was vital in 1989, for Dallas hosted the ACS National Meeting that April. Bill served in this important position with energy and distinction. What follows are my memories of Bill coupled with information given to me by his widow Mary Lowry.

Bill was born in Hobbs, NM, on Dec. 11, 1942, but he grew up on a farm in Texas just outside of Commerce. The practice at that time and in that place was to call people by two names, so growing up he was called Bill Tom. He preferred Bill or

William and eschewed the title Dr. unless he was dealing with a professional matter. He received his bachelor's and master's degrees from East Texas State University (ETSU), now known as Texas A&M-Commerce. At ETSU he met his future wife Mary. He received his Ph.D. from Colorado State and did a post-doc at Virginia Tech. Then he went to work for the FBI.

Back then J. Edgar Hoover was still Director of the FBI, and he decreed that even new employees destined to wind up in labs still had to serve one year in the field as a working agent, carrying a gun. Before Bill's year was up, Hoover died, and his successor instituted a policy of no transfers. Bill had not gone to school all that time to stay in the field, so he amicably parted from the FBI to return to Texas, working for the Dallas Medical Examiner in the Institute of Forensic Sciences. This also involved teaching toxicology at UT-Southwestern Medical School.

While work in the Institute was fascinating, it did involve working with dead people all the time, something that wears on one's morale. The crash of the Delta airliner in Aug., 1985, was particularly distressing, as the Forensic Institute staff worked long hours to see that the deceased were identified so they could be returned to their loved ones. After twelve years there Bill left the Forensic Institute in Dec., 1985, to start his own business consulting in industrial and environmental toxicology. Now his new emphasis

was on helping people stay healthy and alleviating problems.

Bill's new business grew rapidly, and he crisscrossed the country as a valued toxicology consultant. He also taught toxicology in night school at UTA and later chemistry at Brookhaven. His early classes consisted of 20-25 students, later growing to classes of 200, possibly because of all the forensic chemistry TV programs or more likely because Bill was an outstanding teacher. He had had a severe heart attack in his '30's, but from then on he seemed in extraordinary good health. He worked hard and long on his consulting practice, but there was always time for his family and his church. Early in June, 2010, he suffered severe chest pains. The diagnosis at the hospital was that his heart had cratered and that he needed immediate hospice care. Up to then Bill had stayed away from red meat and only had an occasional glass of wine. Now there was no point to continuing that regimen, so at the hospital he ordered a hamburger and had a glass of Scotch. He then remarked, "I've had a great day and a great life!" A devout Christian, he fell asleep and woke up three days later in the arms of Jesus.

Bill is survived by his wife Mary C. Lowry, daughter Alison Gillespie and husband Ben, son William B. Lowry and wife Maureen, and a host of friends from his church and from his profession. He leaves behind memories of that handsome guy who did quality work and was a quality person.



# NEW TWU ANN STUART SCIENCE COMPLEX

On April 1 the new Ann Stuart Science Complex at Texas Woman's University was dedicated. It was also announced that Chancellor Stuart was donating \$200,000 to the university to establish the Ann Stuart & Ray R. Poliakoff Celebration of Science Series, a 20-year program that will explore the wonders, truths, and mysteries of science. Mr. Poliakoff was a World War II veteran who married Dr. Stuart in 1980. Poliakoff, who passed away in 2005, used the GI Bill to go to college and law school. He spent most of his career in the oil, gas, and mineral industries. Dr. Stuart is a published scholar in English literature and technical communication. She came to TWU in 1999 as president and chancellor.



The new building is 80,000 square feet and includes 18 laboratories that feature state-of-the-art equipment for teaching and research in biology, molecular biology, physics, and “green” chemistry. An automated greenhouse---seldom found in a university setting--- supports cutting-edge research into the role of plants in the prevention of cancer. The building was constructed to LEED (Leadership in Energy and Environmental Design) standards in keeping with TWU's goal of reducing its carbon footprint. The “smart building” design uses a high-performance HVAC control system, energy efficient glass, reclaimed steel and recycled materials in the floors, ceiling tiles, and carpeting. The TWU Central Plant also provides utility services with a high-efficiency system that reduces costs and saves energy.

Congratulations to TWU for this big step forward in science education!

## *Around-the-Area*

### University of Arkansas

Chair Bill Durham Returns to Teaching, Advising, and Researching. After more than a

decade as Chair, Bill Durham is giving up the position. During his tenure the first African American faculty member and first full female professor were hired or

promoted, and research grants reached an all-time high. The Chemistry Building was also finally renovated. Evidenced by his 114 publications, he will easily revert back to researcher focusing on electron transfer in metalloproteins, development of new transition metal complexes with potentially useful photoredox properties, and applications of analytical chemistry to forensic problems. Starting July 1 the new Chair will be Distinguished Professor **Bob Gawley**. Vice Chair **Neil Allison** is returning to full time teaching and research. His replacement will be Professor **Dan Davis**.

Last year 25% of all chemistry majors made the Dean's List with a 4.0 GPA. The average GPA of department undergraduates was 3.35 with 57% maintaining a 3.5 GPA or above. As one can imagine, many students received awards and are listed here.

*ACS Awards:* **Amy Carr, Stephen Dalby, Arshan Dehbozorgi, Samuel Dunn, Rebekah Langston, Kelsey Sparks, Molly Steen;** *Barbara Wertheim Campbell Awards:* **Joseph Courtney, David Hopkins, Ethan Latimer, Leah Ramey;** *A. W. Cordes Teaching Awards:* **Geoffrey Keeber, Matthias Knust, Scott Morris;** *DuPont Scholarships:* **Grant Meredith,**

**Ashley Rosenberg, Molly Steen;** *Arthur and Lois Fry Scholarship:* **Gayatri Suresh Kumar;** *Octa N. High Scholar:* **Ethan McBride;** *Coulter Jones Award:* **Anna Fielder, Casey Henderson, Ashley Martfeld, Julie Tran;** *Fredrick A. Kekulé Award:* **Michael Mullarkey, Colby Smith;** *Kathy Noland Chemistry Award:* **Samuel McLelland;** *William K. Noyce Scholarship:* **Ross Harmon, Jonathan Schmidt, Mary Smith;** *Jacob Sacks Award:* **Rachael Pellegrino;** *Jacob Sacks Scholarship:* **Christopher DuVall, Shannon Mumma, Ettore Rastelli;** *Honorary Scholars:* **Emily Crossfield, Chris Duvall, Taylor Gohman, Lauren Hall, Ross Harmon, Hannan Henson, Sigrid Johannesen, Alta Johnson, Thomas Jones, Matthew McMahon, Devin O'Dea, Kaila Pianalto, Andrew Price, Derek Pyland, Sunshine Robertson, Spencer Shinabery, Christopher Sonntag, Jake Usery, Megan Wary.** Joseph Courtney also has received an NSF Graduate Fellowship, while **Kelsey Sparks** received the inaugural W. Ves Childs Science Education Scholarship.

**Vitaly Vostrikov** was awarded the Sigma Xi Aubrey E. Harvey Graduate Research Award. The Phi Beta Kappa Alpha Chapter of Arkansas inducted 16

chemistry majors into the society May 13<sup>th</sup>. They were **Amir Francis, Lauren Hall, Ali Haydar, Hannah Henson, Nicholas Tinquist, Daniel Vo, Sigrid Johannesen, David Lee, Grant Meredith, Rhys Moore, Shannon Mumma, Omar Salem, Kirby Welston, Caitlin Williams, Samuel Dunn, Devin O'Dea**. Graduate students **Matthias Knust** and **Christena Hooten Nash** have passed the seven cums necessary to be admitted to doctoral candidacy. Graduate students **Bill Tyree, Timothy Kum Beng, Lindsay Rutherford, Christopher C. Saunders, Esra Seyran, Joseph Smeal, Vitaly Vostrikov, and Jerri Nicole Webb** have successfully defended their theses.

**Julie Stenken** was the editor and symposium coordinator for a special issue of the *Journal of Diabetes Science and Technology*. Julie and **Charles Wilkins** attended the ASMS meeting in Denver in June and Julie and grad student **Geoff Keeler** attended the Society for Biomaterials Conference in Orlando in April. Grad students presenting posters at the ASMS meeting were **Evgenia Akhmetova** and **Sasi Murugantham**. Grad student **Tomasz Janowski** presented a poster coauthored by **Peter Pulay** in May at the Southeast Theoretical Chemistry Association annual

meeting held at Mississippi State. Grad students **Kola Ayinuola** and **Brian Walker** attended the National Organic Symposium held in June at Princeton, with Kola presenting a poster. **Matt McIntosh** gave a talk in June at the Accelerating Discovery Conference held in Telluride, CO. **Frank Millett** and postdoc **Jeff Havens** attended the Bioenergetics Gordon Conference at Proctor Academy, NH, June 26-July 1. Both presented posters.

## Heart o' Texas

### Baylor University. In Memorium James L. McAtee.

Dr. James L. McAtee, former Chair of the department, passed away at age 87 on June 28. Dr. McAtee was graduate of Waco High School. He came to Baylor from industry. He taught physical chemistry and had research interests in clay minerals.

Baylor chemistry faculty **Kenneth W. Busch** and **Dennis Rabbe** have received a patent for a new polarimeter with no moving parts.

## South Plains

Texas Tech. The Summer Research Academy in Theoretical and Computational Chemistry was held at Texas Tech from June

13<sup>th</sup> to July 8<sup>th</sup>. It was organized by **Dr. Jorge A. Morales** along with **Drs. David Birney** and **Bill Poirier**. Five students and one teacher were chosen from Lubbock High School to work along with the organizing faculty on research projects supported by NSF, PRF, and the Welch Foundation. At the end of the program, the high school students presented their research results in a public session at the chemistry department followed by a closing dinner. Bill Poirier organized a workshop on "Origins, Carriers, and Implications of Mass-Independent Fractionation of Sulfur Isotopes (S-MIF)" held in Alexandria, VA, June 12-14. Also participating from the department was **Dr. Juske Horita**. The workshop was supported by NASA and NSF.

**Dr. David Birney** presented an invited lecture on July 16 at the Simulation in Organic Chemistry Conference held in Vigo, Spain. **Dr. Jorge A. Morales** chaired a lecture section and gave presentations at the 11<sup>th</sup> International Workshop in Quantum Reactive Scattering held in Santa Fe, NM.

## **Dallas-Fort Worth**

**Meeting-in-Miniature.** The 44<sup>th</sup> annual Meeting-in-Miniature of the D-FW Section was held on

Saturday, April 16, at Tarleton State University in Stephenville. Coordinator Dr. Linda Schultz wants to express her thanks to the Tarleton State Student Affiliate ACS chapter, whose efforts helped make the affair run smoothly.

There were a total of 56 presentations: 42 graduate and 14 undergraduate. The universities represented and their number of presentations were as follows: Abilene Christian (ACU), 2; Baylor, 4; SMU, 3; TCU, 5; Tarleton (TSU), 1; UNT, 10; UTA, 4; UTD, 26; and UT-Southwestern, 1. Separate awards were given for two different graduate sessions. The cash awards for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place were, respectively, \$100, \$75, and \$50.

The winners were as follows:

Undergraduate 1. **Li-Hsing J. Loh**, ACU; 2. **David K. Kempe**, ACU; 3. **Lindsey K. Snyder**, Baylor. Graduate Session 1. **Cemile Kumus**, SMU; 2. **R. J. K. Udayana Ranatunga**, UTD; 3. **Amanda Riojas**, UNT. Graduate Session 2. **Shuai Chen**, UTA; 2/3. **Emir Hubijar**, UTD and **Michele Russell**, TCU.

Lunch for the participants was free. Extra activities consisted of a tour of the new Regional Dairy Center at lunch and a Planetarium show at the end while scores were calculated. Coffee breaks were

sponsored by the Dean.

A number of area chemists helped support the effort by serving as session chairs or judges. Session chairs were **Dr. Benjamin Janesko**, TCU; **Dr. Reuben Walter**, TSU; and **Dr. Harold Rathburn**, TSU. Judges were **Dr. Leslie Lesikar**, TCU; **Dr. Frank Foss**, UTA; **Dr. Edward Donnay**, McMurry; **Dr. Jason McAfee**, Howard College; **Dr. Charles Garner**, Baylor; **Dr. Denise Merkle**, SciConsult; **Dr. Ellen Steinmiller**, University of Dallas; **Dr. Kayla Green**, TCU; and **Dr. Manfred Reinecke**, TCU.

If our listing of host universities is correct, next year's event will be held at the University of Dallas.

**In Memorium: Ann Benham and Alfred Schram, Sr..** We sadly report the recent deaths of two long-time area academicians. Ann Benham was a faculty member at UT-Arlington from 1960 until she retired in 1991. She was born Nov. 3, 1923 as Anna Mae Heuer in Pontiac, IL. She was raised in a small farming community called Free Soil in Mason County, MI, near Lake Michigan. Her early education was in a one-room schoolhouse. She decided early on that she wanted to go to college and was the first person, male or female, from her community to graduate

from college. She arranged to live with a maiden aunt in Cleveland to attend a college prep school and graduated 5<sup>th</sup> in her class from West Technical High School. Ann worked her way through the University of Michigan, earning a B.S. in chemistry in 1945 and an M.S. in 1947. There she met Clarke Benham, a student glass-blower, and she married him in 1948. They relocated to Ft. Worth where Clarke worked as an aircraft engineer for Convair, which later became Lockheed-Martin. Ann worked in the labs of Armour in the stockyard. They had four children: Linda, Scott, Janice and Brett.

Ann had been a teaching fellow at Michigan, and she returned to academia when she became an instructor at UT-Arlington. She was promoted to Assistant Professor in 1968, Associate Professor in 1973, and voted Professor Emerita upon retirement. During her career she taught freshman chemistry, analytical chemistry, chemistry for med tech, and forensic chemistry. She wrote grant proposals that focused on teaching methods for chemistry and science. As part of those proposals, she became a speaker on a national circuit. Long before PowerPoint existed, she gave

colorful slide presentations. Each hand-drafted illustration was photographed with a special close-up camera setup which her husband built. Then she used Ektachrome chemicals to develop Kodachrom slides to produce exotic coloring.

About 1980 Ann started working directly with the Dean of Science. She was a co-founder of the College of Science's Science Learning Center, in operation to this day. She served as President of the Texas Academy of Science. When she was hospitalized in later years, many of the hospital staff and doctors had attended her classes or knew her from the Science Education and Career Center. She died in Fort Worth on Mar. 29, 2011. Her husband Clarke preceded her in 2004. Two scholarship funds were recently endowed in her memory---one for an upcoming science teacher through UTeach and the other for Women in Science students. Our thanks go to **Dr. Tom Cogdell, Linda Benham Richardson, and Brett Benham** for the information in this obituary.

Former University of Dallas faculty member Dr. Alfred F. Schram, Sr., passed away July 1, 2011. Dr. Schram was born July 9, 1919, in Lawton, OK. He was first in his family to earn a college degree. He received bachelor's

and master's degrees from the University of Oklahoma. He was the first Oklahoma graduate to receive Ph.D. degrees in both mathematics and chemistry. During World War II he worked for Conoco doing gasoline research. He worked for Skelly Oil Co. before joining the faculty of Texas A&M in 1954. He moved to North Texas in 1960 and joined the faculty of the University of Dallas. Among his accomplishments were the synthesis of Cytolipin H, a cancer drug, and with an associate the development of the first micro-chip etching material for TI. He retired from the University of Dallas about 35 years ago. He is survived by his son Alfred Schram, Jr., his daughter Margaret Schram Hodgkins, and two grandchildren.

**UT-Dallas. Baughman Honored.** Welch Professor Ray Baughman has been ranked as one of the decade's top 100 material scientists by Thomson Reuters. He was ranked 30<sup>th</sup>. Baughman is a member of the National Academy of Engineering, the Academy of Medicine, and an academician of the Russian Academy of Natural Sciences. Along with his Welch Professorship, Baughman is Director of the Alan G. MacDiarmid NanoTech Institute at UTD.

### University of North Texas.

At POLYCHAR 19 held in Kathmandu, Nepal, Mar. 20-24, **Tea Datshvili** won the Bruce Hartmann Prize for a Young Scientist for her presentation on "Well-Ordered SiO<sub>2</sub> Rods and Recycled Polyethylene + Silica Functionalized Wood Composites." **Dr. Witold Brostow** of the UNT Material Science Department who organized the first POLYCHAR meetings at UNT continues as an organizer of this important event.

**UT-Arlington. Bobbit to Arkansas; Elsenbaumer to Provost.** Bioanalytical Professor and Provost **Dr. Donald R. Bobbit** is returning to Arkansas to become president of the University of Arkansas System. His successor as provost will be **Dr. Ronald L. Elsenbaumer**, currently Vice President for Research and Federal Relations. Dr. Elsenbaumer earlier had served as chair of the UTA chemistry department.

**Dr. Kayunta Johnson-Winters** has received a two year, \$200,000 NSF Research Initiation Grant for Broadening Participation. She has recently purchased a Stopped-Flow spectrophotometer from TgK Scientific. **Dr. Carl Lovely** has received a new three year, \$242,084 NIH grant to study "Total Synthesis of Marine-

Derived Alkaloids of the Nagelamide Family." **Dr. Krishnan (Raj) Rajeshwar** presented an invited talk at the 5<sup>th</sup> Gerischer Symposium in Berlin June 20-22. He also attended the 3<sup>rd</sup> International Conference on From Nanoparticles and Nanomaterials to Nanodevices and Nanosystems (IC4N) in Crete, where he organized a symposium on energy, presented and invited talk, and chaired one of the plenary sessions.

**Dr. Kevin Schug** will assist in a new study to examine rural well water from areas near natural gas drilling sites to gain information about the potential impact of chemicals used in the extraction processes. Schug, ten of his students, and a recent Ph.D. presented posters at the 2011 ACMS Conference on Mass Spectrometry and Allied Topics held in Denver June 4-9. The group included undergrads **Caleb Hodge, Jonathon Bobbitt, Lauren Tedmon, Heather Tippens** and **Aaron Morgan**, grad students **Doug Carlton, Samuel Yang, Jeremy Barnes, Hui Fan, Li Li**, and **Dr. Hien Nguyen**. Hodge and Tedmon participated in a special undergraduate poster competition, with Tedmon winning the \$300 first prize. Tedmon's work was done in collaboration with the

UNT Health Science Center and with UT-Southwestern.

\*\*\*Continued From Page 2\*\*\*  
thermodynamic tables relating to hydrocarbons, while the MCA project involved similar preparations on all other chemical com-

pounds. The research will be directed by **Dr. Bruno J. Zwolinski**, who will be a Professor of Physical Chemistry in the department. When the moves are completed, some fifteen persons will be employed on these two projects.

## *The Chemist's Bookshelf*

by Danny L. Dunn

**Judging Edward Teller: A Closer Look at One of the Most Influential Scientists of the Twentieth Century**, by Istvan Hargittai, Prometheus Books, Amherst, NY 2010, 575 pages, \$30.00 (ISBN: 978-1-61614-221-6)

Istvan Hargittai is a professor of chemistry at the Budapest University of Technology and Economics and head of the George A. Olah School of Chemistry and Chemical Engineering. He has written several books about famous scientists. **Judging Edward Teller** is an extremely thorough and thought provoking book. There are many facets of Teller's life that are not well known and will interest the reader.

Edward Teller was born in Budapest, Hungary in 1908. He received his doctorate at the University of Leipzig in 1930 four months after his 22 birthday. His mentor was Werner Heisenberg. Teller originally studied chemistry, but because of his interest in physics and mathematics, became one of the first physical chemists. He continued working with Heisenberg until 1933. Since Teller was Jewish, he was forced to leave Germany when the Nazis started taking control. He first went to Copenhagen (where he worked with Niels Bohr), then London (University College), and finally Washington, D.C. (George Washington University).

While at GWU, Teller determined the barrier energy required for the methyl groups in ethane to rotate around the central C-C bond. He determined that 3 kilocalories were required which was controversial in the 1930's, but well accepted today. He also developed the BET equation to describe the multilayer adsorption of gases on solid surfaces. Since the amount of absorption depends on the surface area, this



equation is still used to determine the effective surface area of porous materials. He also described the Jahn-Teller effect which predicts a change in the symmetry in some molecules that are incompletely filled with electrons. Today, the Jahn-Teller effect is used as a starting point to predict high-temperature superconductors. In about 1938, Teller became interested in nuclear physics. Initially, he was interested in understanding the nuclear processes that occurred in stars and published several papers in this area.

Teller became a US citizen in March 1941 which was fortunate because after the Pearl Harbor attack he would have been considered an enemy alien. In 1942, he was recruited by Robert Oppenheimer to work at Los Alamos. When Seth Neddermeyer suggested a plutonium bomb based on implosion, John von Neumann and Teller performed the symmetry and compression calculations which demonstrated the feasibility of such a device and eventually lead to a successful Trinity Test.

The dropping of atomic bombs on Japan was (and still is) a controversial decision. Hargittai provides an excellent discussion of this issue. Teller was in favor of a demonstration of the atomic bomb before actually using it on Japan. Whether or not this would have led to a Japanese surrender is still a subject of debate.

After the Japanese surrender, most of the Los Alamos scientists lost interest in further nuclear bomb development. However, Teller had always been interested in the development of a hydrogen bomb and wanted to continue. The idea was to use a fission bomb to start the fusion reaction of deuterium into helium. Unfortunately, the technology needed to develop a hydrogen bomb was still unknown and many scientists were skeptical that it was even possible. In August 1949, the Soviet Union exploded their first nuclear device and everything changed. The United States no longer had a monopoly on nuclear weapons. Teller argued that it was now vital for the United States to develop a hydrogen bomb in order to stay ahead of the Soviet Union whom he considered an even bigger threat than the Nazis. In January 1950, Truman announced the decision that the United States would continue research on all atomic weapons including the hydrogen bomb.

Teller was in favor of a classical design where a cylinder of liquid deuterium (which had to be cryogenically cooled) was ignited by a fission bomb. However, calculations showed that this design was probably not feasible. On May 8, 1951 the “George” test was performed

on the Enewetak Atoll in the Marshall Islands. However, it did not look like a bomb, but more like a house. Its purpose was to show the feasibility of a fusion bomb and was successful because the presence of a thermonuclear reaction was detected. Stanislaw Ulam and Teller then developed a concept where the deuterium fuel was compressed before ignition. Ulam first suggested compression by shock waves, but Teller realized that the x-rays emitted by the primary fission bomb could produce an even more efficient compression. On November 1, 1952 the "Mike" test was performed at Enewetak Atoll with cryogenically cooled deuterium, but using the Ulam-Teller design. The result was a 10.4 megaton explosion (the Trinity Test was 18.6 kilotons) and a fireball more than three miles across (the Hiroshima fireball was one-tenth of a mile). Later refinements used lithium deuteride fuel (which removed the cryogenic requirements and made a much smaller bomb possible) produced a 15 megaton explosion at Bikini in 1954.

Throughout the development of a thermonuclear bomb, Teller was unhappy with Los Alamos slow progress and their overall attitude toward the hydrogen bomb. He started lobbying for a second weapons laboratory, arguing that competition was a good thing and would accelerate nuclear research. With the backing of the Air Force and Ernest Lawrence, the Lawrence Laboratory was established in Livermore, California in 1952. Unfortunately, this resulted in a long, bitter rivalry with Los Alamos.

In 1954 (this was the time of McCarthyism), a hearing was held to review Oppenheimer's security clearance. Teller, unhappy because Oppenheimer did not support development of the hydrogen bomb, was the only scientist to testify that it would be in the best interests of the United States if Oppenheimer's security clearance was removed. When Oppenheimer's security clearance was subsequently removed, it resulted in Tellers isolation from most all of the other nuclear scientists for the rest of his life.

Teller was also interested in finding peaceful uses for nuclear energy. After the war, various designs were developed for nuclear powered airplanes and trains, but these were finally rejected as too dangerous. In 1957 the Atomic Energy Commission established Project "Plowshare" to find peaceful uses for nuclear energy. Some suggestions were: making a new deep-water harbor in Alaska (which was seriously con-

**\*\*\*\*Continued on Page 28\*\*\*\***

*The Southwest Retort and Meeting Announcements will henceforth be available only on the web at the DFW ACS Section's URL: <http://acsd fw.org/>*

# September DFW ACS Meeting

## *The Doherty Award Lecture*

and

## *Honoring 50 and 60 Year Members*

University of Texas at Dallas

Thursday, September 29, 2011

800 West Campbell Road, Richardson, Texas 75080

Student Union - Galaxy Room C

**Dr. Sean O'Brien**

*Texas Instruments*

**"Our Micromechanical and Nanotech World"**

**About the talk:** In his 25 year career Sean O'Brien has been involved in cutting edge research in both academia and industry. During graduate school he worked with Rick Smalley on the discovery of the fullerenes. As a postdoc he studied femtosecond molecular dissociation. At TI he has studied ultraclean surface preparation, 248 and 193nm photolithography, resolution enhancement technology, immersion lithography, and DLP MEMS.

**Social Hour:** 6:00 - 7:00 p.m. (*hosts NanoTech Institute and Dr. Dennis Smith*)

**Dinner:** 7:00 - 8:00 p.m.

**Lecture:** 8:00 - 9:00 p.m.

**Reservations:** Dinner cost is \$20. Dinner consists of Chicken Forestiere served with Scalloped Potatoes, Vegetables, Salad, Rolls, Dessert, and tea/water/coffee. [lcrane@utdallas.edu](mailto:lcrane@utdallas.edu) or 972-883-2901 by **noon on Monday, September 26, 2011**. Note the early notification deadline required by the caterer! Payment by cash or check will be accepted at the meeting. Members are financially responsible for reservations made but not used. It is **not** necessary to attend the dinner in order to attend the lecture.

**Directions and Parking:** map <http://acsd fw.org/> **From Central Expressway (US 75):** Exit Campbell Road. Go west to University Parkway (between Floyd Road and Waterview Parkway). Turn north on University Parkway to Armstrong Dr., Park in Lot G. **From George Bush Turnpike (SH 190):** Turn south on Independence Park-way to Campbell Road. Turn east on Campbell Road to University Parkway. Go North on University Parkway to Armstrong Dr., Park in Lot G.

**\*\*\*\*\*Continued from Page 26\*\*\*\*\***

sidered until radioactive fallout became an issue), digging a canal through the Sinai Peninsula in Israel, connecting the Tombigbee River in Mississippi and Alabama with the Mississippi River, and digging a canal across Greece. One of the most acceptable ideas was to blow-up asteroids on a collision course with earth.

Hargittai's discussion of Teller's life is very comprehensive. I enjoyed the science more than the political discussions, but since Teller was involved with developing science policy with many different presidents (i.e., the Star Wars policy under Reagan), politics had to be discussed. Even though Teller's life is complicated, Harittai clearly discusses each important event. Overall, I found many new and interesting ideas presented in this definitive work.