

**MARCH D-FW ACS MEETING**  
**ALCON LABORATORIES,**  
**FORT WORTH**  
**WEDNESDAY, MARCH 12, 2008**  
**Dr. E. Gerald Meyer,**

**“Energy for the 21<sup>st</sup> Century”**

**About the Talk:** The US has adopted a life style that is profligate in its use of petroleum products. The author will discuss the pluses and minuses of other energy scenarios to take the US deep into the 21<sup>st</sup> century.

**About the Speaker:** Professor E. Gerald Meyer received his B.S. and M.S. degrees (1940 and 1942) from Carnegie Tech. During World War II he served as a naval officer at the U.S. Naval Research Laboratory. He received his Ph.D. from the University of New Mexico in 1950 and is currently Emeritus Professor and Emeritus Dean of Arts and Sciences at the University of Wyoming. He received the 2006 ACS Award for Volunteer Service. At age 85 he rode his Harley 360 miles to Fairbanks, Alaska, to present a paper at the ACS Northwest Regional Meeting.

**Times:** Social Hour 6-7 p.m.; Dinner 7-8 p.m.; Lecture 8-9 p.m. All are in the main cafeteria of Alcon Labs.

**Reservations/Dinner:** Make reservations to Danny Dunn, Alcon Labs, R7-22, 6201 South Freeway, Fort Worth, TX 76134, e-mail: danny.dunn@alconlabs.com, Phone: 817-551-8195. Deadline is 5 p.m., Friday, Mar. 7. Dinner is a barbecue buffet and costs \$14. Members are financially responsible for reservations made but not used!

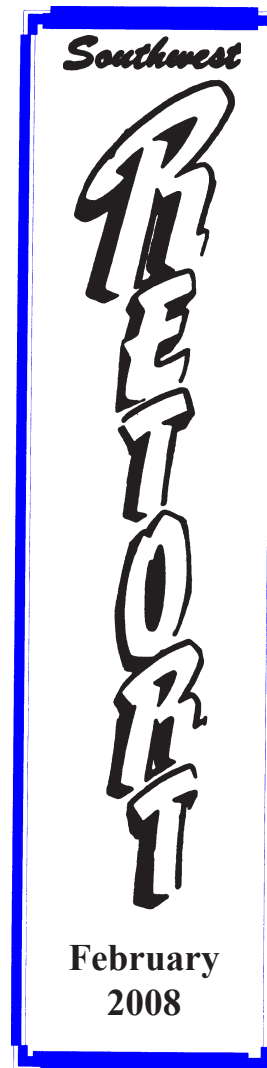
**Prizes:** A prize will be given to the student affiliate group with the most attendees!

**How to Get There:** Alcon Labs is in Fort Worth and is just south of the intersection of I-35W and I-20/I-820. From I-20/I-820 in either direction, take the I-35W exit southbound. Exit on the first exit (#44), Alta Mesa Blvd. At the light, turn left (east) to go under the bridge. Go through the light on the other side of the bridge, and Alcon will be seen on the left. Approximately ½ mile down Alta Mesa will be a small guard building on the left marking the main entrance. Turn left to check in at the guard gate, and ask for directions to the main cafeteria.

**April Meeting:** Saturday, April 19, Meeting-in-Miniature, SMU.

**STAMPS OF APPROVAL**

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**PERIODICAL**

# FIFTY YEARS AGO IN THE SOUTHWEST RETORT

The ACS Southwest tour speaker for this month is **Professor Arthur Rose** of Penn State University. His tour topics include "Automatic Digital Computers," "New Design Procedures for Continuous Distillation," and "Theory vs. Experiment in Evaluating Vapor Liquid Equilibrium Data."

The Science Club at Arlington Heights High School in Fort Worth was featured. Their teacher, **Flavin Arseneau**, six years ago left an industry job and took a \$1500 a year salary cut to begin teaching high school biology. During the six years the Science Club has been in existence, it has sent a winner to the National Science Fair the four years that the National Fair has been offered. Arseneau is a native of Fort Worth with a BS degree in biology from TCU. He teaches at Texas Wesleyan College during summers and works at a downtown department store during the Christmas season to make ends meet. He also has managed to get a master's degree in education. One of his fine students, **John Falkenbury**, is already an honorary member of the Texas Academy of Science. Last year his exhibit on "Fatherless Frogs" won him 1st place in the Regional Science Fair and 4<sup>th</sup> place in the National Science Fair.

**Dr. John J. Banewicz** of SMU will receive a \$6,600 grant from the Robert A. Welch Foundation to study nickel sulfides. His grant is part of \$1,106,993 being given to nine Tex-

as schools for fundamental research. At Texas Woman's University, **Dr. Helen Ludeman** spent part of the Christmas holidays with relatives in Chattanooga, TN. **Dr. Harold Baker** and his family spent holidays in Minnesota. **Dr. R. C. Fuson** of the University of Illinois and **Dr. W. O. Milligan** of the Rice Institute visited TWU on behalf of the Welch Foundation. Dr. Fuson gave a talk on "Steric Hindrance as a Research Tool."

In the Southeastern Texas Section **R. B. Williams** of Humble gave a seminar in December at the University of North Carolina on "Analytical Application of Nuclear Magnetic Resonance. The University of Houston hosted two Welch Foundation lecturers: **George Kistiakowsky** speaking on "Shock and Detonation Waves" and **R. C. Fuson** speaking on "Steric Hindrance as a Research Tool."

At Texas A&M, the Welch Foundation announced two-year extensions of research grants given to **Drs. A. W. Jache, F. W. Jensen, H. K. Zimmerman, and C. K. Hancock**. On Dec. 13, the Baylor ACS Student Affiliate group heard faculty member **Dr. Charles Reeder** talk about his experiences working for Campbell Soup over the summer. His talk was titled "Better Tomatoes Through Chemistry."

At the University of Arkansas **Dr. Samuel Siegel** has succeeded

\*\*\*\*Continued on Page 15\*\*\*\*

Mass Spectrometry in Clinical Enzymology: Toward Newborn Screening for Inborn Errors of Metabolism." **Mar 28**, Richard Bartsch, Texas Tech University, "Complexation and Separation of Metal Ions with Calix[4]arene Compounds." **Apr 4**, Ed Rosenberg, University of Montana, "Experimental and Computational Studies in N-H and C-H Activation in Trimetallic Clusters." Seminars are normally at 3:30 p.m. in Room 106, Chemistry Building.

**TCU.** **Mar 4**, Bert Chandler, Trinity University, "Dendrimer Templates for Supported Au and NiAu Catalysts." **Mar. 6**, Rick Kemp, University of New Mexico, "Divalent Main Group Metal Amides and their Reactions with Small Molecules." **Mar 25**, Joseph Ready, UT-Southwestern Medical Center, TBA. **Mar 27, Welch Lecture**, Kit Cummins, MIT, TBA. **Apr 3**, Edward Rosenberg, University of Montana, "Silica Polyamine Composites: Advanced Materials for Heavy Metal Recovery and Remediation." Seminars are normally at 11 a.m. in Lecture Hall 4, Sid Richardson Science Bldg.

**SMU.** **Mar 3** (Time to be announced.) Cameron Jones, Monash University, Victoria, Australia, "Bulky Guanidines: New Ligands for the Stabilization of Very Low Oxidation State Metallacycles." **Mar 28**, Jungmo Ahn, UT-Dallas, TBA. Seminars are normally at 2 p.m. in Room 152, Fondren Science Bldg.

**UT-Southwestern - Biochemistry.** **Mar 6**, Grant Jensen, Cal

Tech, "How Electron Cryotomography is Opening a New Window into Bacterial and Viral Ultrastructure." **Mar 13**, Gabriele Varani, University of Washington, "Peptidomimetic Inhibitors of Transactivator Protein-RNA Complexes Are New Potent Inhibitors of HIV-1 Replication." **Mar 20**, Yang Shi, Harvard, "Histone Demethylases and Regulation of Histone Methylation Dynamics." **Apr 3**, Cori Bargmann, Rockefeller University, TBA. Seminars are normally at 12 noon, Biochemistry Lecture Hall L4.176.

**UT-Southwestern - Biological Chemistry.** **Mar 11**, Scott Gilbertson, UT-Medical Branch, TBA. **Mar 18**, Wei Wang, University of New Mexico, TBA. **Apr 1**, Kevin D. Moeller, Washington University, TBA. Seminars are normally at 6 p.m., Biochemistry Library L4.162.

\*\*\*\*Continued from Page 2\*\*\*\*

**Dr. R. R. Edwards** as chairman of the chemistry department. **Dr. Edward S. Amis** has been elected a Fellow of the New York Academy of Sciences.

\*\*\*\*Continued from Page 7\*\*\*\*

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Tarleton State taking the second prize. Faculty members at our various area academic institutions are urged to promote meeting attendance to their undergraduate chemistry and biochemistry students.

**TCU.** **Dr. Lihua Liu**, formerly a postdoctoral fellow with TCU faculty members **David Gutsche** and **Tracy Hanna**, has moved with **J. Fraser Stoddart** from UCLA to the new Center for the Chemistry of Integrated Systems at Northwestern University. His wife **Dr. Xiangyang Lei**, who received her Ph.D. at TCU with **Manfred Reinecke**, has accepted a post-doctoral appointment with **Scott Franzblau** at the University of Illinois-Chicago.

**UT-Arlington.** **Professor Pernendu Dasgupta** and coworkers published an article in *Environmental Science and Technology* which has garnered worldwide publicity. They tested 88 samples and found that 53% of them did not meet the U.S. Food and Drug Administration standards for iodine levels. Thus, the most vulnerable subgroups, pregnant and nursing women, babies, and young children, may not be getting the required amount of iodine in their diets. Iodine is important in the production of thyroid hormones and critical to normal brain development in newborn infants and babies.

**Dr. Kevin Schug** gave a seminar on Jan. 17 at Texas A&M-Commerce titled "The Need for Speed: Towards High Throughput Binding Determinations by Electrospray Ionization Mass Spectrometry." **Dr. Carl Lovely** gave a seminar on Feb. 15 at UNT on "Marine Natural Products as

a Driving Force for the Development of New Synthetic Methods."

## MARCH METROPLEX SEMINAR SCHEDULE

*Seminars are occasionally postponed or cancelled. Call the department or check the departmental websites before attending.*

**UT-Arlington.** **Mar 7**, Mark Watson, University of Kentucky, "Fluorinated Organic Electronic Materials." **Mar 14**, Gary E. Kiefer, Macrocyclics, "Lanthanide Chemistry in Medicine--Developing Applications through Ligand Architecture." **Mar 28**, Gary M. Hieftje, University of Indiana, "New Tools and Techniques for Chemistry and Bioscience." **Apr 4**, Kenneth Brown, Ohio University, "Cage Effects and Diastereomeric Control in the Making and Breaking of Carbon-Cobalt Bonds in Organocobalt Corrinoids." Seminars are normally at 2:30 p.m. in room 114, Baker Chemical Research Building.

**UT-Dallas.** **Mar 4**, Benny D. Freedman, UT-Austin, "Gas Separation." **Mar 19** (Note change of day.), Wei Wang, University of New Mexico, "Organic Chemistry." **Mar. 25**, Vladimir M. Agranovich, UTD NanoTech Institute, TBA. Seminars are normally at 3:30 p.m. in Room JO 3.516, Johnson Building.

**UNT.** **Mar 7**, Frank Turecek, University of Washington, "Tandem



## Southwest Retort

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40 Zr 91.224	41 Nb 92.906	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 101.07	46 Pd 106.42	47 Ag 107.87	48 Cd 112.41	49 In 114.82	50 Sn 118.71	51 Sb 121.76	52 Te 127.60	53 I 126.90
72 Hf 178.49	73 Ta 180.95	74 W 183.84	75 Re 186.21	76 Os 190.23	77 Ir 192.22	78 Pt 195.08	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.2	83 Bi 208.98	84 Po (209)	85 At (210)
104 Rf (261)	105 Db (262)	106 Sg (266)	107 Bh (264)	108 Hs (277)	109 Mt (268)	110 Ds (271)	111 Rg (289)	112 Cn (285)	113 Nh (284)	114 Uuq (289)			

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and oral papers will be presented in the following areas: Analytical, Chemical Education, Environmental, Inorganic/Organometallic/Catalysis, Organic/Biochemistry/Nanotechnology, and Physical/Computational. Following are the Chairs for the meeting: General, Ann Nalley; Program, P. K. Das; Arrangements, Tom Dealy; Exhibits, Arron Karcher; Registration, Chris Hansen. Special Halliburton rates for attendees are available at the Chisholm Suites Hotel and the Holiday Inn in Duncan.

### South Plains

#### Texas Tech University.

Associate Professor Dennis C. Shelly gave the B. M. Das Memorial Lecture Jan. 24 at the Central Leather Research Institute in Chennai, India. In addition he gave a research presentation on "Recent Trends in Collagen" on Jan. 25 at a special symposium on collagen research. He judged posters and participated in the Leather Research Industry Get-Together Jan. 27-30. He also lectured at Demeed University.

### Dallas-Fort Worth

#### NSF REU Summer Program at

**A&M-Commerce.** The NSF funded REU (Research Experience for Undergraduates) program at Texas A&M-Commerce is now accepting applications for summer 2008. The ten-week program will run from May 28 through Aug. 1 with an application deadline of Mar. 15. The REU program is specifically designed for ONLY two-year college students from the Northeast Texas area.

However, this includes not only two-year colleges in the East Texas Section, but such colleges in Denton, Collin, Tarrant, and Dallas Counties. Each of the ten students selected will receive a \$3,000 stipend in addition to paid housing, meals, tuition, travel, research supplies and more. For more information contact **Ms. Chess Johnson** (903-886-5392) or e-mail **Dr. Ben Jang** at ben\_jang@taaamu-commerce.edu.

**Local Correspondent.** Our readers in the D-FW area are urged to remember that **Dr. Tracy Hanna** of TCU is our local correspondent. Her e-mail address is T.Hanna@tcu.edu. Without pointing fingers at anyone, your Editor is aware of certain staff changes and awards that should have been publicized in our magazine. Please be diligent in informing Tracy of events at our various institutions.

**Science Cafes.** The D-FW Section has received a grant from ACS for a Science Café, an event to reach the public-at-large to discuss important issues involving science and the public. Your section's Executive Committee is open to proposals as to how to do this. Members are urged to e-mail a one-page proposal to our Chair, Dr. Mary Anderson at Texas Woman's University. Mary's e-mail address is meandersfun@yahoo.com.

**Student Prizes.** The section has recently been giving out prizes to the ACS student affiliate chapter that has the most attendees at local section meetings. At the January meeting, the first prize went to the students from UTD, with students from

# AROUND-THE-AREA

## University of Arkansas

**Section Officers.** The following U of A faculty members are the new ACS section officers for this year: Chair, **Suresh Kumar**; Chair-Elect, **Julie Stenken**; Secretary-Treasurer, **Bill Durham**; Councilor, **Neil Allison**; Alternate Councilor, **Matt McIntosh**.

A 2000 paper by **Xiaogang Peng** was recognized as a "Highly Cited Paper" by *J. Am. Chem. Soc.* Highly cited papers are articles in the top 1% of the most-cited papers over the last ten years. Peng is Scharlau Professor of Chemistry. He joined U of A in 1999 and was promoted to full professor in 2005. **Bill Durham** attended the McGraw-Hill General Chemistry Symposium in Tucson, AZ Feb. 7-10. **Roger Koeppe** was an invited speaker at the 8<sup>th</sup> International Symposium on Biochemical Roles of Eukaryotic Cell Surface Macromolecules in Hyderabad, India, Jan. 21-25. Doctoral candidates **Sue Brand** and **Ryan Dossey** defended their theses.

## Heart o' Texas

**Baylor University.** Prayers are needed for long-time faculty member **Dr. Al Pinkus**, who has been taken gravely ill. **Shen-En Chen** defended his Ph.D. thesis on Feb. 13. Colloquium speakers: Feb. 1, **Ralph P. Mason**, UT-Southwestern; Feb. 8, **Michael Van Dyke**, M. D. Anderson; Feb. 15, **Ronald MacFarlane**, Texas A&M; Feb. 22, **Janet**

**Bleumel**, Texas A&M; Feb. 29, **Scott Gilbertson**, UTMB.

## East Texas Section

The February meeting is to be held Feb. 26 at Northeast Texas Community College in Mt. Pleasant. ACS tour speaker **Dr. Suzanne Quillen Lomax** will give a lecture on "The Application of Chemistry to the Examination of Works of Art." The March meeting will be held at Ana-Lab in Kilgore. Tour speaker **Gerry Meyer** will give a talk on "Energy for the 21<sup>st</sup> Century."

The NSF-REU program at Texas A&M-Commerce is now accepting applications for summer, 2008. The REU program is intended ONLY for two-year college students from Northeast Texas. Further details are present elsewhere in this issue in the first item for the Dallas-Fort Worth part of Around-the-Area.

## Wichita Falls-Duncan

**2008 Oklahoma ACS Pentasectional Meeting.** The 53<sup>rd</sup> Annual Oklahoma ACS Pentasectional Meeting will be held on Saturday, Mar. 8, at the Halliburton Technology Center, 2600 South 2<sup>nd</sup> Street in Duncan, OK. The theme of the meeting is "Greening the Petroleum Industry." A mixer with hors d'oeuvres is planned for Friday evening, Mar. 7, at the Chisholm Trail Heritage Center in Duncan. There will be a symposium on "Energy and Environment." Poster

# Southwest

# Retort

SIXTIETH YEAR

FEBRUARY 2008

## STAMPS OF APPROVAL

by Dr. Lyman R. Caswell  
e-mail (ruthandlyman@earthlink.net)

Twenty years ago I published an article called "Let's Give Our Scientists a Stamp of Approval" (*The Southwest Retort*, Vol. 41, No. 5 (May, 1988), pp. 5,11) in which I noted the failure of the United States to issue stamps to honor outstanding American scientists. Five years later a vigorous effort on the part of many of us resulted in a stamp to honor natural products and oil chemist Percy Lavon Julian (1899-1975) as part of the Black Heritage series of stamps ("Percy Lavon Julian, African-American Chemist," *The Southwest Retort*, Vol. 46, No. 2 (February, 1993), pp. 5-6).

The United States Postal Service has finally commenced a series of stamps to honor American scientists. The first set of four, issued in 2005, depicted Richard Phillips Feynman (1918-1988), John von Neumann (1903-1957), Barbara McClintock (1902-1992), and Josiah Willard Gibbs (1839-1903). Feynman shared

the 1965 Nobel Prize for physics with Sin-Itiro Tomonaga and Julian Schwinger for work in quantum electrodynamics, and is well known for his popular and amusing autobiography, "Surely You're Joking, Mr. Feynman." Hungarian-born mathematician John von Neumann developed the theory of games and contributed significantly to the development of the computer. Geneticist McClintock received the 1983 Nobel Prize for physiology or medicine for her discovery of what the prize citation called "mobile genetic elements," better known as "jumping genes," in her work with the genetics of corn.

I was particularly pleased by the recognition of Gibbs, an obscure person whose name is unknown to anyone who has not been exposed to thermodynamics---and not considered with pleasure by many who have. Yet Gibbs has to be considered one of the greatest theoretical scientist of

the nineteenth century---definitely the greatest American one. It has been said that if he had lived just one year longer (he died in 1903), he would have been the first American Nobel laureate. He probably would have been surprised by the identification, "thermodynamicist," on the stamp honoring him. He regarded himself as a mathematician. (*Editor's Interjection: Our readers need to remember Jim Melrose's two articles on "The Reception of Gibbsian Thermodynamics in Early Physical Chemistry" published in the October and November, 2005 issues of The Southwest Retort.*)

The second set of stamps in the American Scientists series is due to be released on March 6 of this year. (It may already be out by the time this article sees print.) (*Editor's Comment. Not if I can help it!*) The people to be honored are astronomer Edwin Powell Hubble (1889-1953), physicist John Bardeen (1908-1991), chemist Linus Carl Pauling (1901-1994), and biochemist Gerty Theresa Cori (1896-1957). With Hubble and three Nobel laureates, this is indeed a "stellar" group.

Hubble was the discoverer of the relationship between galactic distance and velocity, as well as other major contributions to modern cosmology. Bardeen remains the only person to received two Nobel prizes for physics. The first he shared in 1956 with William Shockley and Walter Brattain for the discovery of the transistor effect. The second he shared in 1972 with Leon Cooper and Robert Schrieffer for their theory of superconductivity.

Pauling, of course, is well-known to all of us. He received the 1954 Nobel prize for chemistry for his work on molecular structure. His second Nobel award, the 1962 peace prize, was for his efforts on behalf of the nuclear test ban treaty. I recall a photograph of Pauling participating in an anti-nuclear test demonstration outside the White House on the same day that he dined with the President.

Czech-born Gerty Cori and her husband Carl Ferdinand shared the 1947 Nobel prize for physiology or medicine for their work on the conversion of glycogen. There is an error in the design of the stamp honoring Gerty Cori, but I'm not going to tell you what it is. If you are a good chemist, you will spot it immediately. The error will not make the stamp more valuable, just more interesting.

So we have finally given some of our most important scientists "stamps of approval." Go to your post office and buy several sets of these stamps. Use them on your mail, if you still send mail through the postal service. Save a set for yourself.

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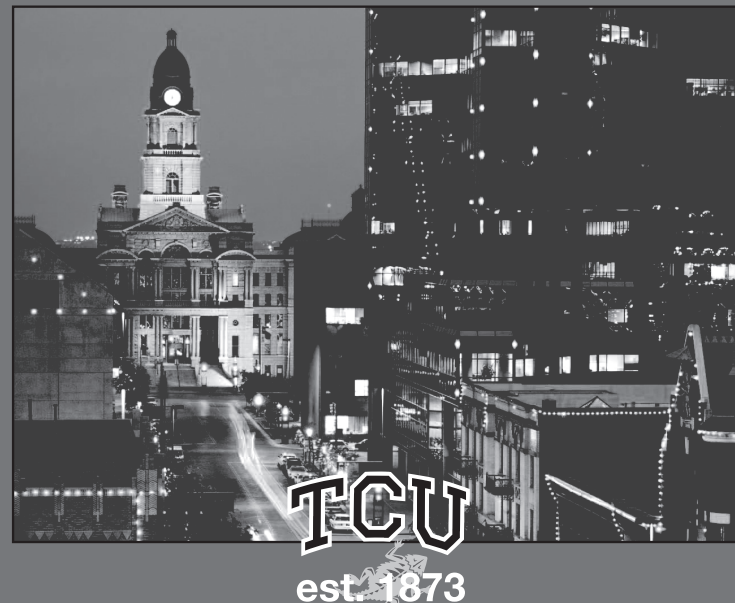
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hundred and twenty six units or objects. As a consequence, changing the position of a digit in a number changes its value as, for example, in 888. Which, by the way, according to the Sybil of Cumana has the same numerical value as that of the letters spelling the Sweet name of Jesus, when written in Greek. In that number, there are eight units, eight decades and eight hundreds. The same can be said of the number 666; however, its meaning is quite different, since it is the number of the Antichrist, as prophesized by St. John, in Chapter 13 of his Apocalypse. 6666 is another example, which is the number of a Legion." Enough examples!

On p. 18, we are informed that definition 22, of the 7<sup>th</sup> book of Euclid, says that a PERFECT number is one whose value equals the sum of its divisors (**excluding itself, in modern terms**). For example,  $6 = 1 + 2 + 3$  and  $28 = 1 + 2 + 4 + 7 + 14$ .

From the Internet we learn "of the twenty-eight numbers listed by Pedro Bungo in Chapter 28 of "The Mystery of Numbers" Father Mariano Mersenne says that only eight are PERFECT; namely, 6; 28; 496; 8,128; 33,550,336; 8,589,869,056; 137,438,691,328 and 2,305,843,008,139,952,128 up till now." **MY Notes (Meaning Prof. Bernal): (a) the latter number contains 19 digits! I can't believe they could compute this (b) it would appear that Marsenne missed the next three after 8128. (for a complete list, see <http://amicable.homepage.dk/perfect.htm>).**

**Mersenne explored the possibility that the equation  $2^p - 1 = n$  would produce all the  $n$  prime numbers, where  $p$  itself is a prime, which is not the case, since, if  $p = 11$ , the number generated ( $2047 = 23 \times 89$ ) is not prime.**

It is clear that the computational ability of Mersenne and successors was incapable of doing the required arithmetic, which was eventually left for computers to do. As of 2004, there were only 41 Mersenne primes, the last one being that for which  $p = 24,036,583$ . On Feb.18, 2005, Dr. Martin Nowak from Germany found the new (No. 42) largest known prime number,  $2^{25,964,951} - 1$ . The prime number has 7,816,230 digits! It took more than 50 days of calculations on Dr. Nowak's 2.4 GHz Pentium 4 computer.

Final comments. Mersenne published his work in 1644, yet a professor of mathematics in Valencia in 1699 publishes a book in which he discusses Mersenne numbers. How fast did scientific information diffuse in the mid-to-late 17<sup>th</sup> century, especially when dealing with such esoterica as Mersenne numbers? Cocharan certainly mixed mathematics, numerology, magic, witchcraft, etc with religion about 200 years after the discovery of the American continent. What is the current importance of Mersenne numbers? It seems that it is curiosity, unless they can be used for encoding somehow. Finally, as of Jan. 22, 2007, the number of perfect numbers known is 44. See the above website for an up-to-date list.

# UTD'S BAUGHMAN ELECTED TO NATIONAL ACADEMY

It was announced this month that UTD's Welch Professor Ray Baughman has been elected to the National Academy of Engineering (NAE). In my profile of Ray, published in the March, 2004, issue of *The Southwest Retort*, pp 5-7, 9, I predicted that Ray with the help of his colleagues would bring the Nano-Tech Institute (now named the Alan G. MacDiarmid NanoTech Institute after the late Nobel Laureate and UTD faculty member) into the forefront of nanoscience. This shows the accuracy of my prediction, which, admittedly, was not particularly "gutsy." Ray was one of two Texans so honored, the other being Rebecca Richards-Kortum of Rice. Obviously Ray was honored for his nanotechnology work, specifically for his achievements in pioneering novel applications of conjugated polymers and related materials.

This honor is just the most recent of a series of recognitions for Ray. Among the awards he received in 2007 were the Kaptiza Metal of the Russian Academy of Natural Sciences, the Alumni Distinguished Achievement Award of Carnegie Mellon University, the University of Texas System Chancellor's Entrepreneurship and Invention Award, and the Nano 50 Award from *Nanotech Briefs* magazine for Fuel Powered Artificial Muscles.

I was able to catch up with the

globetrotting Ray recently just before his trip to Australia, which, after a brief break, was to be followed with a



trip to Austria. Ray was deeply honored by the recognition, but he focused on the uses of his work for education. Because of his personal experience working in a crystallography lab when he was in high school, Ray had started at UTD a NanoExplorers program for high school students and a NanoScouts program for students in elementary and middle schools. He told me, "One of the reasons I love research is the opportunities it provides to inspire students---students that are in our NanoExplorers program and our undergraduate and graduate students. They become Knights of the Nano-Tech Institute and use the opportunity to do exciting, original research."

Ray joined the UTD faculty in 2001 after some 31 years in industry. He holds 58 US patents and has more than 280 publications. A significant recent invention was that of artificial muscles powered by alcohol instead of electricity, which could be 100 times stronger than natural muscles. However, I bet that with this talented

\*\*\*\*Continued on Page 15\*\*\*\*

# CHEM GEMS AND JOULES

**Chemistry Olympiad.** Our section will once more be participating in the 2008 National Chemistry Olympiad. This testing is open to any current high school student either taking or having taken high school chemistry. To sign up, contact Dr. Jon H. Hardesty at Collin County Community College's Preston Ridge Campus in Frisco. E-mail contact is preferred. Dr. Hardesty's e-mail address is JHardesty@CCCCD.EDU. The local exam will be given at the Preston Ridge Campus on Saturday, Mar. 29, from 10 a.m. till noon. Based on the results of the local section exam, eleven students will be invited back for the national exam on Saturday, April 19.

**ACT2 Biennial Conference Aug. 3-7.** High school teachers should be sure to make their plans for the ACT2 Biennial Conference to be held at Robert E. Lee High School in Tyler, TX, with housing at Camp Tyler on Lake Tyler (alt. housing in town at a hotel). Among the featured presenters are Jeff Hepburn from IA, Paul Price (recent D-FW Schulz Award winner and SW Regional Award winner) from TX, Penney Sconzo from GA, and John Mauch from MA. There will be field trips to the Delek Refinery, Kiperson Vineyard and Winery, and the East Texas Oil Museum. There will be a Round Table "Share-A-Thon" with three-minute presentations of teaching tips, labs, activities, demonstrations, or anything else. The highlight of the

conference will be the workshops. Registration and ACT2 dues are \$110. Housing at Camp Tyler and all meals will be \$80. For registration and information check out <http://www.statweb.org/ACT2>.

**Welch Summer Science Program.** This program is designed for students finishing their junior year in high school who are interested in pursuing research in chemistry during the summer. The dates for the program this year are June 8-July 12. The deadline for applying is Feb. 28. There are several locations throughout the state of Texas. Students are residents at the university where they are assigned. Information on the application process including printable applications are available at the website: <http://www.utexas.edu/research/chemed/lagowski/WSSP/>.

Send material for this column to Mary Teasdale at [owlcritic75@yahoo.com](mailto:owlcritic75@yahoo.com) or Tom Strom at [tomstrom@juno.com](mailto:tomstrom@juno.com).

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## D-FW Meeting-in-Miniature April 19

The D-FW Section's 41<sup>st</sup> annual Meeting-in-Miniature will be held on Saturday, April 19, in the Fondren Science Building at SMU. The abstract deadline is Thursday, April 3. The Chair for the meeting is Mike Lattman. For further details contact Mike at 214-768-2467 or by e-mail at [mlattmen@smu.edu](mailto:mlattmen@smu.edu). Additional information is available at: [www.smu.edu/chemistry/MIM](http://www.smu.edu/chemistry/MIM).

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## THE USES OF OLD BOOKS

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**Editor's Foreword:** Our new correspondent is renowned crystallographer Ivan Bernal, recently retired from the University of Houston, although he is still professionally active. Dr. Bernal has interests in scientific history, as is demonstrated here.

My father loved browsing through old books and bought such as were available which he could afford. I inherited some of them and, perusing through a particular one, found the following (the translation is mine): "Theoretical, Practical and Illustrated Mathematics and its Business Applications", which it says: Explains coinage, weights and measures of the Greeks, Romans, and the Kingdoms of Spain. It is by Juan Bautista Cocharan, Professor of Philosophy, Dr. in Sacred Theology and Chair of Mathematics at the University of Valencia, his country, 1699, Barcelona: Juan Piferrer, Printer, and Plaza Del Angel. My copy is from the edition of 1719.

On p. 7 the author explains the positional value of digits. "For example, the number 826: 6 is located in a position in which its values is six units. 2 corresponds to two decades and 8 signifies eight hundred units. Total, then is eight