

An IUPAC student poster award was given to **Haley E. Hagg Lobland** (research advisor **Witold Brostow**) for her paper "Flocculation of Iron-Ore Containing Suspensions." This paper was presented at POLYCHAR 16 held April 16-20 in Buzios, Brazil. *

Continued from Page 2
University. Recent seminar speakers were **Dr. John C. Bailer** of the

University of Illinois and **Dr. Sydney Ross** of Rensselaer Polytech.

ERRATUM

The name of the UT-Arlington student receiving the Outstanding Undergraduate Research Award was misspelled in the April issue. That student is Nathan Roehr.

SEPTEMBER D-FW ACS MEETING

FRIDAY, SEPTEMBER 14, 2007

ACS TOUR SPEAKER

DR. J. ERNEST SIMPSON

CALIFORNIA STATE POLYTECHNIC UNIVERSITY,
POMONA

"The Chemistry of Wine"

About the Speaker. Dr. Simpson joined the Chemistry Department at California State Polytechnic University, Pomona, in 1968 after completing his B.S., M.S., and Ph.D. (organic chemistry) degrees at the University of New Mexico and after spending one year as visiting chemistry professor at Pomona College. In 1973-74 he was a visiting research associate in the Department of Enology and Viticulture at UC. Davis. He is an active member of the American Society for Enology and Viticulture. He also has published a California wine guide. His research interests are in the areas of polycyclic aromatic hydrocarbons, carbon-13 labeled compounds, and phenolic compounds, especially in grapes and wine.

About the Talk. The talk will include an overview of wine and wine making and more detailed descriptions of the chemical composition of grapes and wine, laboratory methods for analysis of grapes and wines, sensory and organoleptic methods used for wine, the role of tannin and other phenolic compounds in wine, and some potential health aspects of wine.

Location, Times, and How to Get There. These items have yet to be determined. They will be on the section's website as soon as they are known. Furthermore, a detailed September meeting notice with this information will be included in the election packet to be mailed to all section members in August.

Petroleomics:.....p. 5; Hackerman:.....p. 9

Southwest

RETORT

May-June
2007

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PERIODICAL

Fifty Years Ago in the Southwest Retort

The May ACS tour speaker was **Dr. Morris Jacobs** from the new Department of Air Pollution Control for the city of New York. His talks will be on either "Air Pollution Control" or "The Regulatory Chemist in Protection of Public Health."

Price Truitt, D-FW local reporter from North Texas State College (*now UNT*), presented a paper at the ACS National Meeting in Miami on "Benzo(d)pyrido(a)benzimidazole-5, 12-quinone" co-authored by F. M. Wood and J. E. Cooper. Also attending from North Texas were **Drs. Spurlock and Perkins**. Magnolia Petroleum (*later Mobil*) was represented with a paper on "Separation of Saturated Hydrocarbons Extracted from Recent Marine Sediments" as part of the symposium on "Analytical Contributions to Research in Petroleum Geochemistry" with authors Ernest Evans, George Kinney, Warren Meinschein, and Ellis Bray.

Faculty members from the University of Texas (*now UT-Austin*) attending the Miami ACS meeting were **William Shive, L. O. Morgan, Royston M. Roberts, P. S. Bailey, W. H. R. Shaw, James E. Boggs, George W. Watt, Lewis F. Hatch, and Roger J. Williams**. This group presented nine papers. On May 9 **Norman Hackerman** assumed the presidency of Electrochemical Society. He presented a paper at the Society's meeting on "Electrical Double

Layer Capacities at Solid Metal—Solution Interfaces."

At Baylor **Dr. Virgil Tweedie** (*see obituary elsewhere in this issue*) reports that his new home is near completion. **Dr. John S. Belew** has received a grant from Research Corporation for his work on ozonolysis. **Dr. Thomas C. Franklin** attended the Miami ACS meeting. **Dr. William B. Cook** has resigned to accept the chairmanship of the department of chemistry at Montana State University. Chemistry faculty made a trip to McGregor for a tour of the Rocket Fuels Division of Phillips Petroleum. Attending were **Drs. W. R. Stephens, V. L. Tweedie, Leone Cockerell, John S. Belew, and A. G. Pinkus**. The speaker at the local section meeting was **Dr. Ralph G. Pearson**, whose talk was on "Reaction Mechanisms of Complex Ions."

At the University of Arkansas, **Dr. Edward S. Amis** has received an invitation to present one of the main lectures at a symposium on "Solvent Effects and Reaction Mechanisms." This symposium, sponsored by The Chemical Society, will be held July 8-9 at Queen Mary College in London. **Dr. Jacob Sacks** has returned from a one-month stay in Venezuela, where he conducted a one-month course in the use of radioisotopes.

Construction will be initiated next fall on a new wing for the chemistry building at Texas A&M

****Continued on Page 20****

graph-electrospray ionization-ion trap- time-of-flight- mass spectrometer. The successful proposal was headed by **Dr. Kevin Schug** and also included **Drs. Sanjay Awasthi, Daniel Armstrong, Subhrangsu Mandal, and Jongyun Heo**.

UT-Arlington's Bruker electron spin resonance spectrometer was recently upgraded to replace all components except the magnet and magnet power supply.

Three poster papers were presented by the **Carl Lovely** group at the Spring ACS Meeting in Chicago. Presenters were **Lesley Schmid**, "Synthetic Studies Towards a Key Enzyme Inhibitor in the Detoxification Cycle of Mycobacterium Tuberculosis," **Sabuj Mukherjee**, "Synthetic Studies Towards Monomeric Pyrrole-Imidazole Alkaloids-Cycloroidin and Agelastatin," and **Nora Hernandez**, "Progress Towards the Total Synthesis of Axinellamine A and Massadine."

UT-Dallas. The University was well represented at the North American Membrane Society Annual Conference, NAMS 2007. Graduate students **Edson Perez, Yanfeng (Henry) Zhang, Grace Kalaw, and Ann Chacko** gave oral presentations and along with **Joeie Ordenez** they also participated in the student poster competition. Joeie Ordenez's poster was judged meritorious, so she was presented with one of the ten student poster awards, which included a monetary prize.

Dr. Donovan Haines gave a talk on "Faster than a Speeding Bullet: New Insights into Natural Fusion

P450s" at the 6th SW P450 meeting, and student **Mussie Alemseghed** presented a poster at that meeting.

Drs. Kenneth J. Balkus, Jr. and John W. Sibert were awarded three-year Welch Foundation research grants. **Dr. Paul Pantano** was awarded a one-year UTSW-UTD Collaborative Research Grant with **Dr. Harold "Skip" Garner**.

UNT. The ACS Division of Computers in Chemistry has selected the work of **Drs. Angela Wilson, Tom Cundari, and post-doc Nathan de Yonker** as one of the five finalists in the "Emerging Technologies in Computational Chemistry" competition for their development of a new computational chemistry composite approach. Dr. Wilson will make a presentation about this work at the Awards Symposium at the Fall Boston ACS Meeting.

Dr. Stephen Cooke won a "Ralph E. Powe Junior Faculty Enhancement Award" administered by the Oak Ridge Associated Universities. Visiting Dr. Cooke's group this summer will be Prof. **Sean Peebles**, Eastern Illinois, who will be working on "Rotational Spectroscopy of the Platinum-Ethene Complex." Sean is supported as a PRF/ACS Summer Research Fellow.

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Dallas-Fort Worth

Meeting-in-Miniature. The 40th annual D-FW Meeting-in-Miniature was held at TCU on April 28. There were a total of 73 papers, 55 graduate and 18 undergraduate, from nine schools in the D-FW ACS section.

First place in the graduate division went to **Grace Jones** of the Department of Chemistry and Nanotech Institute at UTD. Her paper was on "Novel Polysilsesquioxane Hybrid Membranes for Proton Exchange Membrane Fuel Cell (PEMFC)." Her coauthors were **D. Kalaw, Zhiwei Yang, Inga Musselman, Duck-Joo Yang, Kenneth Balkus, Jr., and John Ferraris**. Second place was a tie. One prize went to **Chalita Ratanatawanate** of UTD for "TiO₂-Based Nanotubes for Photodegradation of Organic Dyes" (coauthors **Chunrong Xiong and Kenneth Balkus, Jr.**). The other prize went to **Eranda Wanigasekar** of UT-Arlington for "Nitric Oxide Release: A Supramolecular Approach" (coauthor **Dmitry Rudkevich**).

First place in the undergraduate division went to **Mary K. Finch** of UTD for "Electrospun Mesoporous Bridged Polysilsesquioxanes" (coauthor **Kenneth Balkus, Jr.**). Second place went to **Thushara Galbadage** of TCU for "Synthesis of Precursors of Biologically Active 1,1-Bisphosphinates and GABA Analogs" (coauthor **Jean-Luc Montchamp**). The value of the awards was \$150 for 1st place and \$125 for 2nd.

The meeting was organized by Professor **Manfred Reinecke**.

Judges were **Jean-Luc Montchamp, Onofrio Annunziata, Laetitia Coudray, and Sergei Dzyuba** of TCU; **Sivappa Rasapalli** and **Jennifer Telez** from UT-Arlington; and **Stanley Stevens** from the UNT Health Sciences Center.

LOCAL SECTION SCHOLARSHIP AWARD WINNERS.

The D-FW ACS Section each year gives \$100 awards to the outstanding senior chemistry students at the ten universities in our area. This year six of these institutions proposed awardees. The awards went to **Brad Fulfer**, Abilene Christian; **Olivia Wise**, UT-Arlington; **Mallika Doss**, SMU; **Terri Rockenhaus**, University of Dallas; **Beth Martine**, UNT; and **Vanessa Urteaga**, Texas Wesleyan.

SMU. **Brent Sumerlin** was awarded the ORAU Ralph E. Powe Junior Faculty Enhancement Award that will fund research to develop new methods of preparing novel polymer-protein bioconjugates. **Patty Wisian-Neilson** attended the Chicago ACS Meeting where she and **Ken Wynne** served as organizers and chairs of a day long session honoring Professor Harry Allcock, winner of the 2007 ACS Award for Applied Polymer Science. She also gave a talk on "Cyclic and Polymeric Alkyl/arylphosphazenes." Patty spoke on "Careers in Science" at TAMU-Commerce on April 26.

UT-Arlington. An equipment grant of \$200,000 was recently awarded from Shimadzu Scientific Instruments, Inc. to UT-Arlington for a high performance liquid chromatograph.



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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 106.36	47 Ag 107.87	48 Cd 112.41	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	82 Pb 207.2	83 Bi 208.98	84 Po (209)	85 At (210)	
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02008

Eight chemistry majors were among the 46 U of A students awarded State Undergraduate Research Fellowships (SURF) for the 2006-2007 academic year. The SURF awards are available to any undergraduate with a 3.5 grade point average who is planning a research or artistic project for the coming year. These majors were **Natalie Anderson, Rachel Ellis, Aircal Haley, Nicole Hart, Khalil Ibrahim, Shelly Kaufman, Tara Teff, and Whitney Tharp.**

The renovated chemistry building was rededicated on June 2. First construction began on the building in July, 1934, with the original dedication on June 10, 1935. Renovation of the building, listed on the National Register of Historic Places, began in May, 2004.

East Texas

Applicants for the East Texas scholarship sponsored by Eastman Chemical need to apply by June 30. You should apply by e-mail to Mike Buttram at: mbuttram@texarkanacollege.edu

South Plains

Texas Tech University. Assistant Professor **Dmitri Pappas** has received a three-year, \$150,000 Welch grant to study "Single Molecule Investigations of Energy Transfer and Light Harvesting of Phycobiliproteins." Horn Professor **Richard A. Bartsch** has received a three-year, \$150,000 renewal grant from the Welch Foundation to study "Synthetic

ic Hosts for Recognition of Ionic and Molecular Guests." Assistant Professor **Huazhong Shi** has been awarded a \$349,143 research grant from the USDA National Research Initiative (NRI) competitive program. The three-year grant starts from July 14 and is for the study of "Characterization and Molecular Identification of soil Suppressors in Arabidopsis."

Heart o' Texas

Baylor University. Dr. Kevin Pinney gave a seminar at UTD on April 18. He was accompanied to the UTD campus by graduate student **Madhavi Sriram** and post-doc **Rajshekhar Guddneppanavar**. The colloquium speaker on April 27 was **Dr. Keith Solomon** of the University of Guelph, Ontario, Canada.

Wichita Falls – Duncan

Tom Dealy from the Halliburton Energy Center in Duncan presented two papers at the International Cement Microscopy Association Annual Conference Held in Quebec City, Canada, on May 21. The papers were "The Effect of Varying Amounts of Ferric Iron in Cement Mixing Water" and "Microscopy as a Potential Tool for Evaluating Sulfate Resistance of Hydrating Cements and Blends- Part II." He also presented a course in June on "Cement and Additive Chemistry" to Halliburton engineers and scientists in Lafayette, LA, and Houston, TX, and via teleconference to Latin America.

lab are post-doc **Galiina Dubinina** from Kiev National Taras Shevchenko University in the Ukraine and visiting professor **Hideki Furutachi** from Kanazawa University in Japan.

Bob Gawley attended the Lake-land Conference on Heterocyclic and Synthetic Chemistry May 10-14, presenting a paper coauthored by **Kwangyul Moon**. Later in May Gawley presented seminars at the Universities of Manchester, Liverpool, and Sheffield. He attended the International Conference on Carbanion Chemistry June 6-10. This conference was also attended by **Taher Yousaf, Daniel Eddings and Tiffany Ellison**. Eddings presented a paper coauthored by Gawley. Finally, Gawley attended the Gordon Conference on Mycotoxins and Phycotoxins June 17-20.

Roger Koeppe spoke at a research symposium on June 5 in San Francisco celebrating the career and 65th birthday of his mentor Robert M. Stroud. **Ryan Tian** gave invited talks in Shanghai and Sichuan, China, and in Tokyo May 19-June 5.

Charles Wilkins, Rohana Liyanage and Jennifer Glidden attended the 55th ASMS Conference on Mass Spectrometry held June 3-7 in Indianapolis. Liyanage presented two posters with coauthors **Sagaya T. Leena, Cynthia R. Sides, Nagarjuna Devarapalli, Osamu Matsushita, Jackson O. Lay, Jr., Joshua Sakon, and Bill Durham**.

Professor Emeritus **Lester Howick** passed away on April 8 in Fayetteville. He joined the department in the '50's, working in analyti-

cal chemistry, and served as chair in the '70's.

For the fifth straight year, chemistry majors are among the top students selected as Barry M. Goldwater Scholars. They were **Natalie Anderson and Randy Carney**. There have been 36 U of A Goldwater Scholars since the program began with 16 of them chemistry majors. A large number of chemistry students received department awards. The A. W. Cordes Teaching Award for the top graduate student instructor went to **Lindsay Rutherford**. The Kekulé Award for the Outstanding Sophomore Chemistry Major went to **Nathan Tobey**. The Barbara Wertheim Campbell Award is given to graduating chemistry majors who intend to pursue a chemistry career. The recipients were **Shelly Buffington, John Faver, Jana Gertsch, Aireal Haley and James Kasbohm**. Chemistry and Biochemistry Achievement Awards are given to scholastically and professionally active chemistry majors beyond their freshman year. Those honored were **Rebecca Adair, Andreas Chen, Kyle Blair, Christopher Carter, Juan Chipollini, Miles Ritter, Michael McLaughlin, Nasiem Niroumand, Rachel Thomas, Christopher Sichmeller, and Laura Wilson Pratt**. ACS achievement awards were given to outstanding chemistry majors **Heather Ainsley, Natalie Anderson, Peter Davis, Megan Evans, Eric Flagg, Nicole Hart, Kristin Nagle, Clark Smith and Blake Williams**.

Southwest *Retort*

FIFTY-NINTH YEAR

MAY-JUNE 2007

PETROLEOMICS— A COUNTERPART TO GENOMICS? A REVIEW OF THE BOOK *ASPHALTENES, HEAVY OILS AND PETROLEOMICS*

Reviewer E. Thomas Strom

"Asphaltenes, Heavy Oils, and Petroleomics," Editors: Oliver C. Mullins, Eric Y. Sheu, Ahmed Hammami, Alan G. Marshall, Publisher Springer, ISBN 10: 0-387-31734-1; ISBN 13: 978-0387-31734-2, 2007, 669 pp., Cost \$129.

The term "genomics" has been kicking around for about 20 years. The term was proposed by Victor A. McKusick and Frank H. Ruddle from a suggestion by T. H. Roderick. It simply means the study of genes and their function. Genomics aims to understand the structure of the genome. With the actual reading of the human genome in 2003 with its 30,000 some genes, genomics is in full-flower. It is not necessary to know the structure of every one of the 30,000 genes to gain useful information impacting human health.

The term "petroleomics" has been promulgated by coeditor Alan Marshall and coworkers. A particular

crude oil may contain up to 20,000 discrete chemicals. Modern analytical techniques may allow the identification of all 20,000, but what of it? Do we just have a bunch of trees, or can we discern the forest? Petroleomics posits that we can perhaps reduce these 20,000 compounds to 20 or 30 structural units, the identities of which will allow us to understand the characteristics of the particular crude oil.

The components of crude oil can best be visualized by the term "SARA": Saturates-Aromatics-Resins-Asphaltenes. Any chemist knows what is meant by saturates and aromatics, but the last two terms may

be unfamiliar. This book mainly deals with asphaltenes. Historically, asphaltenes have been defined phenomenologically through their solubility characteristics. When I first joined Mobil, working in the petroleum geochemistry group, I worked with asphaltenes. I isolated them in the following manner. I would take a given volume of oil, mix in an equal volume of toluene, and then I would add ten volumes of pentane. I would stick the beaker in the refrigerator overnight. In the morning, I would scrape off the shiny black precipitate from the bottom of the beaker. These were the asphaltenes. What remained in the pentane solvent was the maltenes. Other chemists might use 20 or 40 volumes of aliphatic hydrocarbons. Other people might use hexane or heptane. Some people would thoroughly agitate the mixture, while others would insure that a blanket of an inert gas covered the mixture. There are all kinds of ways to isolate asphaltenes, but, if you believe that "like dissolves like" (and I do), then asphaltenes must be aromatic rich. Furthermore, this behavior indicates that contact of a crude oil with a gas flood or with hydrocarbon comingling may result in plugging of a formation or plugging of lines in a refinery from asphaltene precipitation. Clearly, learning more about the asphaltenes in crude oil has practical implications.

Over the past forty years the "go to" person for knowledge of asphaltenes has been Teh Fu (Dave) Yen of the University of Southern California. In recent years Senior Editor

Oliver Mullins of Schlumberger appears to have received the asphaltene torch. This magnificent monograph consists of 23 chapters, seven of them coauthored by Mullins, in which almost every modern analytical technique is brought to bear on the mysteries of asphaltene structure. There are a total of 46 contributors to this work. Among the techniques used are fluorescence depolarization, FT-ICR-MS, carbon X-ray Raman spectroscopy, high resolution transmission electron microscopy, ultrasonic spectroscopy, AC conductivity, diffusion measurements via NMR, isothermal titration calorimetry, small angle X-ray scattering, wide angle X-ray scattering, dynamic light scattering, and near IR spectroscopy.

It has become apparent in recent years that previous estimates of asphaltene molecular weight have been in error. The problem has been the opposite of that plaguing Hermann Staudinger in his efforts to convince people of the existence of polymers. Chemists pooh-poohed Staudinger's high molecular weights, arguing that these were an artifact from molecules bound together by weak colloidal forces. However, asphaltenes really do form aggregates from weak forces, so that some earlier estimates of molecular weights in the thousands or greater were far too high. More recent experiments indicate that monomeric asphaltene molecular weights are mostly below 1000 Daltons.

Space does not allow a discussion of all 23 chapters, so I will focus

water and alcohols. With this catalyst one could actually run the polymerization in alcohol!

Perhaps his most significant discovery was finding a method of trimerizing ethylene to 1-hexene. Many transition metals can oligomerize ethylene to 1-alkenes, but you get a mixture which is only 15-20 % 1-hexene. Ron and his coworkers developed a chromium(II) catalyst which gave 93% yield with 99% purity. Phillips markets a copolymer of ethylene and 1-hexene, so this discovery was of great economic importance to Phillips. With the support of Phillips R&D management and despite the doubts of managers on the business end, Ron led a ten-year effort to develop the process. A commercial plant using the

process came on stream in Qatar in 2003. The process was selected by *R&D Magazine* as one of the 100 Most Technologically Significant New Products of the Year 2000. Writer of 14 publications and holder of 23 U.S. patents, Ron also received the 2000 Phillips Technology Award for Innovations in Chemicals and Plastics Research.

Ron and his wife Beth have five children, two boys and three girls, none of whom followed him into science. They reside in Bartlesville, OK. Ron's hobbies are reading, gardening, and woodworking. *The Southwest Retort* salutes Ron Knudsen for winning this prestigious award and apologizes for this late recognition.

Around-the-Area

University of Arkansas

More than 300 physical chemists attended a conference May 29-June 3 on Margaret Island, Budapest, Hungary to honor **Peter Pulay**. The conference was titled "Molecular Quantum Mechanics-Analytic Gradients and Beyond: An International Conference in Honor of Professor Peter Pulay."

T. K. S. Kumar is part of a team that received a \$450,000 DOE grant to continue research in protein targeting. He gave an invited talk at the Maine Medical Center on May 24. Paul Adams will chair the opening session of the July Gordon Conference on "Enzymes, Coenzymes, and

Metabolic Pathways." In April he gave an invited talk at the University of Arkansas-Pine Bluff. That month he also attended the National Organization of Black Chemists and Chemical Engineers Conference in Orlando and participated in an NSF Panel Review in the Molecular Biochemistry Cluster.

Denise Greathouse attended the Workshop on the Biophysics of Membrane-Active Peptides in Lisbon, Portugal, April 1-4. She also presented a paper coauthored by **Juan Chipollini, Melisa Dougan, Nicole Hart, and Taylor Ladd**. **David Vivic** gave a talk in March at the University of Southern Mississippi. New researchers joining the Vivic

STRINGING ETHYLENES TOGETHER

RON KNUDSON IS 2006 OKLAHOMA CHEMIST

by E. Thomas Strom

Each year *The Southwest Retort* does a profile on the winner of the \$1000 Oklahoma Chemist Award, but somehow the timing of these profiles seems to slip. This month we are profiling **Ron Knudsen**, the 2006 winner, far too late but better late than never. To avoid this happening again, we will profile **Ziad El Rassi** of Oklahoma State, the 2007 Oklahoma Chemist, in our September, 2007 issue.

Dr. Ronald D. Knudsen is a retired chemist from Phillips and currently is a consultant for Chevron Phillips Chemical Co. Ron was born in San Francisco, CA in 1943, spent part of his boyhood in Provo, UT, and graduated from high school in Ukiah, CA. He was turned-on to science by outstanding high school mathematics and chemistry teachers. He started out at Brigham Young University as a math major, but the exposure to his first chemistry course convinced him to switch majors.

Ron received his B.S. Chem degree from Brigham Young in 1960 and stayed on there to obtain a Ph.D. in organic chemistry in 1974, working with Jerald Bradshaw. There followed

post-docs at Illinois with Harold Snyder and at UT-Austin with Karl Folkers. He joined Phillips Petroleum Company in 1977, retiring in 2000.

Much of his career at Phillips involved polymers and polymerization catalysts. I will describe just three of his important accomplishments in these areas. It had been speculated that chromium oxide



catalyzed polymerization of ethylene might result in some long chain branching (LCB), but in the '80's there was no credible evidence for its existence. Knudsen proved

that it took place at the ppm level, and it had a significant impact on the rheological behavior of the polyethylene. Surprisingly, small amounts of LCB resulted in improved melt strength, provided one could control the amount formed.

Ron also made a significant discovery in nickel catalysis. He discovered a nickel catalyst that would produce a linear polyethylene (other nickel-based catalysts do not), and this catalyst was immune to polar poisons. Chromium catalysts normally are terribly sensitive to

on just a few. One of the most impressive is the chapter by Ryan Rodgers and Alan Marshall of the National High Magnetic Field Laboratory at Florida State University. These workers apply Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (FT-ICR MS) to crude oils, petroleum deposits, and asphaltenes to get unprecedented resolution of thousands of compounds in a particular sample. The use of positive-ion electrospray identifies the most basic species, while negative-ion electrospray picks out the most acidic species. With resolution > than 300,000, components can be sorted out to an unprecedented degree. The authors show a mass spectrum of an unchromatographed South American crude oil in which 6,118 negative ion components are resolved and 11, 127 positive ion components are resolved. As an example of the resolving power available, the authors show the fine structure in this South American crude between 588.25 and 588.55 mass units. At least 25 compounds can be resolved in this small increment! Homologues of a particular reaction type should be separated by 14.01565 Daltons (a $-CH_2-$ group). The use of Kendrick plots exploits these spacings to identify members of the same class with varying carbon number. The analyses of Canadian bitumen indicate ready multimer formation with monomers having molecular weights clearly below 1000 Daltons.

Another interesting chapter is that by Henning Groenzin and

Mullins on the use of time-resolved fluorescence depolarization to determine asphaltene size and shape. By this technique, the authors were able to obtain the molecular rotational correlation time of a large variety of asphaltenes. They find molecular weights in the range from 500 to 1000 Daltons, with a mean around 750.

With my agnostic view of the utility of theory in this realm, I was prepared to sneer at the chapter on molecular orbital calculations on asphaltenes and polynuclear aromatic hydrocarbons written by Yosadara Ruiz-Morales. Instead I found myself impressed. Starting with Clar's model of the most important representation of a polyaromatic hydrocarbon (PAH) the author calculates the HOMO-LUMO gap for a number of model PAH's, correlating his results with the optical absorption of model compounds and asphaltenes. He then presents the most likely candidates for asphaltenes containing five, six, or seven aromatic rings. These theoretical structures jibe very well with current thinking as to the chemical structure of asphaltenes.

What is that chemical structure? The current weight of evidence is that your hand is a good model for an asphaltene molecule. The palm represents a fused aromatic system of five to seven fused rings. The fingers represent alkane substituents which also contain varying amounts of sulfur and nitrogen.

Space will not permit me to discuss a fine chapter on micellization by Stig Friberg nor an excellent

chapter on asphaltene solubility by Jill Buckley, Jianxin Wang, and Jefferson Creek. The last chapters in the book are more in the line of petroleum engineering, but even here chemical analyses drive the engineering.

Do I have any criticisms? The book is an alphabet soup of letter-driven descriptors. Consider the following examples: PAH, ICR, HRTEM, SAFT, STO. Most chemists would be able to figure out the first two, but who but someone from the oil patch would know that STO stands for stock tank oil. Certainly all abbreviations are defined the first time they show up, but many pages into the chapter who can remember what they mean and where the definition is located. An appendix in which every shorthand descriptor was defined would make reading the book easier.

However, this is a minor criticism. At a time when I am still recovering from sticker shock that my poor organic students are going to have to pay \$140 for the umpteenth edition of their organic text, the price of \$129 for this magisterial 669 page, multi-authored monograph seems eminently reasonable. You can probably buy the book for even less on the Internet. Any chemist interested in the details of petroleum structure should own this book, and all chemists should feel pride that their science has made such progress in unraveling that complex, important mixture that we know as petroleum.✕

ANA-LAB CORP. HONORED AGAIN

Ana-Lab Corp. in Kilgore received the American Council of Independent Laboratories (ACIL) Seal of Excellence for the fourth consecutive year. Ana-Lab also earned a Top Ten rating for customer satisfaction. The ACIL Seal of Excellence program provides customers with a mechanism for evaluating environmental testing laboratories. Participants are committed to ensuring the integrity of data, meeting customer's quality needs, and setting the standards of performance for the testing laboratory industry. "This award continues to set Ana-Lab Corporation apart from other laboratories in the country by demonstrating our company's continued commitment to quality and customer service," said Dr. C. H. Whiteside, President.

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CHEM GEMS & JOULES

Chemistry Olympiad

As a result of the local exams on April 14, eleven students were invited to take the National Chemistry Olympiad Exam on April 28. Following is a listing of the students, their schools, and their chemistry teachers: **Ryan Edwards** and **Anthony Rau**, Bishop Lynch High School, *Sr. Cecilia Sehr*; **Chris Holloway** and **Will Pyburn**, Denison High School, *Dr. Jane Johnson-Carr*; **Mark Pivlyukovsky** and **Jack Finney**, Guyer High School, *Paula Robinson*; **Louis Atsaves**, The Oakridge School, *Kathleen Holley*; **Nathan Yee** and **Alexander Huang**, Plano Senior High School, *Robyn Shipley-Gerko*; **Kevin Melin** and **James Eldred Pascoe**, Texas Academy of Math and Science, *Jean Schaake*.

UNT and ACT² Host ChemED Conference

This July 29 to August 2, the University of North Texas will be home to chemical educators from around the world who will be attending the 2007 International ChemEd Conference. This forum for sharing ideas, tips, techniques, and networking began in Canada in 1973. The format of the conference has something for most everyone: workshops, presentations, demonstrations, and strategy sessions, field trips, and a country store! Best of all, ChemEd 07 is a family affair. Many of the attendees bring their families, so there are activities for children and spouses.

Register for the conference or get more details on it at the following website: www.chem.unt.edu/chemed07. Cost of the conference is \$275 prior to July 6th and \$310 for late or on-site registration. Preservice teachers and students may attend for the discounted cost of \$150. Housing and some events such as trips and tours need separate registration, but all forms can be found at this website. There is a lot of page nesting, so be patient when paging through this website.

Chemistry in the Community, New Digital Talking Book

In collaboration with gh, LLC, (an assistive technology company) the American Chemical Society has converted its high school chemistry textbook *Chemistry in the Community* into a digital talking book format. The first of its kind on the market, it is designed to help students who are blind, visually impaired, or have reading difficulties. Release is expected this fall.

Send material for this column to Mary Teasdale at owlcritic75@yahoo.com or to Tom Strom at tomstrom@juno.com.

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MARYNICK SYMPOSIUM

AUGUST 31

Renowned theoretical chemist and UT-Arlington Jenkins Garret Professor of Chemistry Dennis S. Marynick retired as of the end of the 2006-2007 academic year. The Marynick Symposium on Computational and Theoretical Chemistry will be held on Aug. 31 in honor of Dennis' retirement. A tribute to Dennis will appear in the September issue of The Southwest Retort.

The Symposium will be held in Conference Room 303 on the top floor of the Chemistry and Physics Building, directly above the Planetarium. Parking is available in the Parking Garage on S. West Street. The event is free and open to the public. However, if you plan to attend, you should send an e-mail saying so to handley@uta.edu. There is also a website about the Symposium : http://www.uta.edu/chemistry/html/marynick_symposium.html. Organizing committee members are Sandy Dasgupta (Chair), Rasika Dias, Fred MacDonnell, and Zoltan Schelly.

The symposium program is the following: 9:30 a.m., Coffee and Donuts; 10 a.m., Henry F. Schaefer III, University of Georgia, "Combustion Chemistry: The Evanescent NCCO Radical"; 10:40 a.m., David Woon, University of Illinois at Urbana-Champaign, "Extraterrestrial Alchemy: Computational Studies of Ice-Bound Astrochemistry"; 11:20 a.m., Agnes Derecskei-Kovacs,

Millennium Chemicals, "Exploratory Molecular Modeling Studies of Interactions between Oligomers of Cellulose and Its Derivatives with Ionic Liquids"; 12-1:30 p.m., Lunch; 1:30 p.m., David Dixon, University of Alabama, "Recent Advances in Computational Inorganic Chemistry"; 2:10 p.m., Thomas Albright, University of Houston, "Electrocyclic Ring Openings and Haptotropic Rearrangements in Organometallic Chemistry"; 2:50 p.m., Break; 3 p.m., Gary Kinsel, Southern Illinois University at Carbondale, "Experimental Probes of Equilibrium Conditions in Laser Desorbed Plumes of Material"; 3:40 p.m., Peter Kroll, Aachen University of Technology, Germany, "Random Goes Order: Domain Formation and Nanoclusters in Amorphous Materials"; 4:20 p.m., Break; 4:35 p.m., Dennis Marynick, UT-Arlington, "There and Back Again. A Computational/ Physical/ Inorganic/ Analytical (!) Chemist Returns One More Time"; 5:15 p.m., Final Remarks; 6 p.m., Dinner.

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FAREWELL TO AN ICON:

NORMAN HACKERMAN

Just as we were going to press, we were informed of the death on Saturday evening, June 16, of former UT-Austin and Rice President **Norman Hackerman**. He had gone into the hospital on the Wednesday preceding. Dr. Linda Domelsmith of the Texas Higher Education Coordinating Board told me that she had seen him on Friday evening, and he was just as alert and interested as ever. She thought that he looked and sounded good enough to go to work on Monday, but somehow he failed drastically on Saturday. Services were June 21 at University United Methodist Church in Austin. Former UT President Larry Faulkner once called Hackerman the most important figure in science in Texas. That seems to me to be exactly correct. Norman was a friend to me for forty years, but he was a friend to science all his life. There will be a fullscale tribute to Hackerman in our September issue.

IN MEMORIAM: TWEEDIE,

SKINNER, AND WARNER

Chemistry in the Southwest suffered a triple loss with the deaths in the last few months of Baylor Professor-Emeritus Virgil Tweedie, UNT Professor-Emeritus C. Gordon Skinner, and retired Mobil chemical engineer Bert Warner. All three had long, illustrious careers in the Southwest.

Virgil Tweedie died Dec. 17 in Waco. He was born Feb. 18, 1918, in Norborne, MO. He grew up on a farm in Stet, MO, and received bachelor's and master's degrees in chemistry from the University of Missouri-Columbia. He obtained his Ph.D. in organic chemistry from UT-Austin in 1951.

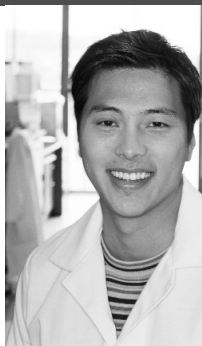
Tweedie taught chemistry at Baylor from 1946-48 and 1950-1988. He taught approximately 10,000 students and supervised several doctoral graduates throughout his 40-year career. He was faculty sponsor of the Beta chapter of Alpha Epsilon Delta at Baylor and chaired Baylor's Premedical/Predental Advisory Committee for 24 years. He was a 60-year member of ACS and was a founding member of the Texas Association of Advisors for the Health Professions.

In 1943 Tweedie married his childhood friend and sweetheart, Helen Hultz. The marriage lasted 55 years, ending when Helen preceded him in death in 1998. Survivors include daughters Cheryl Pearce and Martha North and son Ken Tweedie, six grandchildren and one great-grandchild.

Charles Gordon Skinner, known by all his friends as "Gordon,"

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passed away in April in Denton. Born in 1923 in Dallas, he obtained his B.S. in chemistry at North Texas State College (now UNT) in 1943 and was called to service in World War II in Germany. There he was involved in the Battle of the Bulge during the winter of 1944-45.

He returned to North Texas where he obtained his M.S. under Dr. J. J. Spurlock in 1947. He then studied at UT-Austin under Dr. Henry R. Henze, obtaining a Ph.D. in synthetic organic chemistry. After a brief stint in industry (Celanese 1949 -51), Skinner worked as a Research Associate with Dr. William Shive at UT-Austin for many years, synthesizing pharmaceutical bioanalogs.

Skinner came to UNT in 1964, working until 1993. He was chair of the department of chemistry during 1969-76 and chair of the department of basic health sciences from 1970-1987. He was an ACS councilor in 1975 and an active member of Alpha Chi Sigma and other professional organizations. He was the winner of the D-FW Section's Doherty Award in 1978.

His research interests included synthesis and biological testing of metabolite antagonists as potential chemotherapeutic agents, study of intermediary metabolism, and the study of synthetic and natural factors affecting plant growth regulation. He once quipped that he chose to work on plants because he was too "chicken" to test animals. His retirement years were spent in the wood-working shop, where he signed all his work as "Dr. Metric" (c-g-s), or

with his friends at the bridge table. Those of us who knew him remember him as a jovial, warm friend, and will miss him dearly.

Bert Joseph Warner died on May 10. He was born in Ardmore, OK, on June 15, 1925. The family moved to Amarillo, TX in 1926, where Bert graduated from high school. The family then moved to Houston, where Bert attended Rice on a scholarship. In 1944 he was drafted into the U.S. Army, where he served in a Chemical Mortar Battalion Company in the Philippines. After the war he returned to Rice, where he received a Bachelor of Chemical Engineering degree in 1949.

He joined Mobil in 1950 in Columbia, South America. Apparently Columbian native tribes did not take kindly to Mobil exploration crews, for there is a picture of Bert with an arrow in his leg after an exploration venture. While on a vacation to visit his family in Amarillo, he met and married Mary Lyvers.

In 1955 Bert transferred to the Mobil Field Research Laboratory in Dallas. He was a resident of the Oak Cliff area of Dallas the rest of his life. He became a group leader in the production section and had a reputa-

tion as an excellent manager. Mobil employees who presented problems were often transferred to Bert's group, because upper management felt that Bert could straighten them out. He retired after 35 years with the company.

Bert was a prolific inventor, not only of inventions expected of someone in an oil company, but of inventions outside Mobil's purview. One of his inventions, a uniquely designed floating fishing/boating pier, has been installed in ponds, lakes, and tanks all over Texas. He and his son formed a company to manufacture these piers. Bert was happiest with his family and many beloved dogs at their farm and lake near Sulfur Springs. He is survived by his wife Mary, daughter Jinger Michels, son Joe Warner, three grandchildren, and two great-grandchildren.

[Insert Kelly Sci ad here]

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The Southwest Retort is pleased to welcome new Sponsor Member RLIP Pharmaceuticals. We will publish more information about this fine company in our September issue.