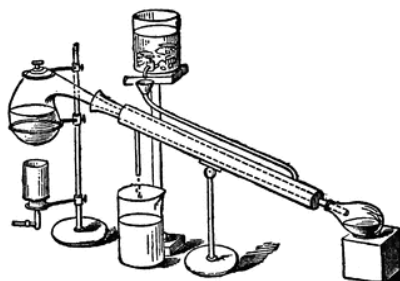




SOUTHWEST RETORT



SIXTY-FIFTH YEAR

JANUARY 2013

*Published for the advancement of
Chemists, Chemical Engineers
and Chemistry in this area*

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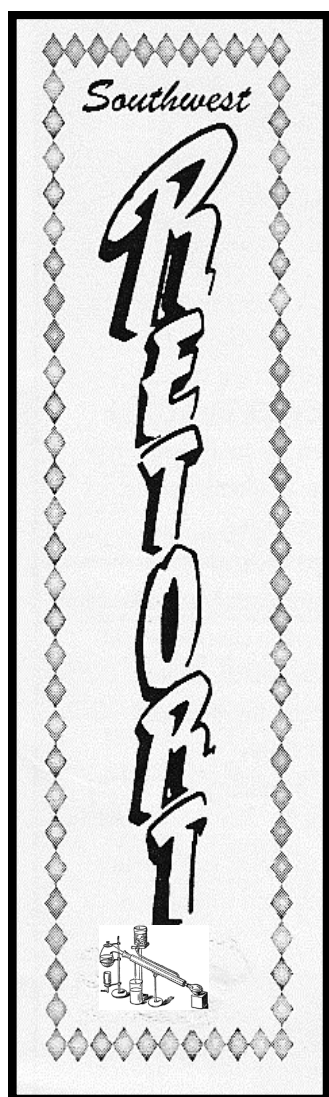


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FIFTY YEARS AGO IN THE SOUTHWEST RETORT

The ACS Southwest Regional Meeting held in Dallas last month had a final registration figure of 1020, which makes it the biggest Southwest Regional Meeting yet held.

The January ACS tour speakers are both from Texas. **Mr. Nugent Chamberlain** of Humble Oil and Refining Co. in Baytown will be presenting a slate of three talks. They are "Analytical Applications of NMR," "Quantitative Analysis by NMR," and "Characterization of Hydrocarbons." The other tour speaker is **Dr. Norman Hackerman**, Vice President and Provost at UT-Austin. His topics are "Molecular Structure and Organic Corrosion Inhibitors" and "Fuel Cells."

The new Chairman of the Southeastern Texas ACS Section is **Dr. W. F. Hammer** of Monsanto Chemical Co. Other new officers are Chair-Elect, **Dr. Albert Zlatkis**, of the University of Houston; Secretary, **Dr. James T. Richardson**, Humble Oil and Refining Co.; and Treasurer, **Mr. B. B. Smith**, W. H. Curtin Co.

Dr. John L. Margrave has joined the faculty of Rice University as Professor of Chemistry. He comes from the University of Wisconsin.

The American Oil Co. has decided to close the R & D group in Texas City. A number of the staff will be leaving American Oil, while others will transfer to their Whiting, IN laboratories.

Chemistry faculty from Baylor attending the ACS Regional Meeting in Dallas were **T. J. Bond, Leone Cockerell, Thomas C. Franklin, James L. McAtee, Charles E. Reeder, Virgil Tweedie, and A. G. Pinkus.**

At Texas A&M, **Dr. A. F. Isbell** has received a one year renewal for \$21,505 of an NIH grant for "Synthesis of Amino Phosphonic Acid." **Dr. R. A. Zingaro** has received \$6000 from the Selenium-Tellurium Development Committee in support of his research on selenides and tellurides. **Dr. Fred Sicilio** served on an NSF scientific panel in Washington Nov. 5-6.

At the University of Arkansas, **Dr. P. K. Kuroda** was one of 16 US scientists selected to speak at the International Atomic Energy Agency Symposium on Radioactive Dating held in Athens, Greece. Faculty members attending the Dallas ACS Regional Meeting were **Professors Amis, Blyholder, Cordes, Kruh, Noyce and Siegel.** Next month **Dr. Fred Basolo** of Northwestern University will visit U of A to speak on his work in inorganic kinetics.

CONTRIBUTED BY E. THOMAS STROM



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T104704201

Comparing Academic and Industrial Laboratory Safety Programs

By John Spessard



The recent very serious laboratory accidents at UCLA and Texas Tech have caused searching examinations of academic research laboratory safety programs. I have worked in both academic and industrial research laboratories, and I am old enough to be relatively unbiased, not “having a dog in that fight.” So I am offering observations, comments and recommendations.

Safety programs in industrial research laboratories are much stronger and more effective than the academic research laboratories. I worked eight years in the American Potash and Chemical Company (Ampot) and Kerr-McGee (merger) research laboratories. With up to 200 people employed, there was one Lost Time Accident. The chemist involved was judged by his peers to having been stupid above and beyond the call of duty. Soon afterwards, he obtained other employment. For 13 years I worked for an environmental consulting firm (IT Corporation after mergers and name changes). Most of our work was behind a desk, but we also went into plants and conducted field activities such as installing groundwater monitoring wells. There were no lost time accidents. (In fairness, I encountered no similar accidents in the academic labs I worked in. However, none of us worked with chemicals as dangerous as those used at UCLA and Texas Tech.)

Ampot had an active safety program. It had the FULL support of laboratory management. One strong feature was the Friday Afternoon Safety Inspection. A Professional and Hourly Employee would be a team touring the laboratory looking for potential safety hazards. Their report went to the Group Leaders and Laboratory Manager. Each week, two fresh sets of eyes looked at the laboratory. Their reports were taken very seriously. One benefit of this was that everybody believed that it was THEIR safety program. The inspectors did not feel in the least intimidated. My Group Leader had been involved in a serious accident at another employer, and he told us that if you go from your desk into the laboratory to retrieve a pencil, you WILL wear safety glasses.

At IT Corporation, if we went into a plant, we were subject to the plant’s safety program. If we deviated, it was our fault. If going out into the field to drill or sample a monitoring well, at the job site, before any work was begun, we had a “Tail Gate Safety Meeting.” We determined that everybody had the required safety glasses, safety shoes, gloves and hard hat. We reviewed the potential hazards we might encounter. We determined what hospital we would take an injured person to and what roads and streets to get him/her there.

There are no such programs in academic research laboratories. Implementing similar programs presents a challenge. Nevertheless, there should be the same or similar programs.

A problem in the academic laboratory is determining who is in charge. The Department Chair is often more administrative than supervisory or may be the first among equals. In a facility safety inspection, how free would a student or tenure track professor feel to point out a safety problem in a tenured professor's laboratory? In the industrial laboratory the Laboratory Manager is definitely in charge. It is not as clear cut in an academic department. Certainly there should be established procedures in advance for dealing with serious accidents.

In laboratory classes, handling the situation is relatively clear cut. The Professor teaching the laboratory is in charge and responsible. The Teaching Assistants are the Professor's on site eyes and ears. I question to what degree the Department Chair should be involved. This may depend on to what extent is the chair a Manager. Postdocs (if any) should be expected to provide safety guidance to the graduate and undergraduate students. But the ultimate responsibility lies with the PI. Part of the evaluation of a research proposal should be the in-place safety program and an awareness of potential hazards. This would be the responsibility of the granting institution.

As a graduate student I became involved in a feud between two tenured faculty (a story for another day). A regular laboratory inspection would be a good idea. I have doubts about

every PI cheerfully accepting a Postdoc or student bringing safety shortcomings to his/her attention. Still, this is a necessary part of an effective safety program. Perhaps the potential for legal and possibly criminal action could provide motivation. We will see how the proposed criminal actions at UCLA play out.

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CALL FOR NOMINATIONS

Doherty and Schulz Awards:

Nominations are invited for the 2012 Wilfred T. Doherty and Werner Schulz awards. Nomination forms are available online at acsdfw.org. **Nominations are due by April 15.** You may contact the Awards Committee chair for more information: Steven Twaddle 817-655-7163 or email Steven.Twaddle@LMCO.com. Each nomination should contain a cover letter highlighting the nominee's accomplishments; seconding letters may accompany nominations. Nominations remain active for five years, but should be updated annually.

The **Doherty Award** is given for excellence in chemical research or chemistry teaching, meritorious service to ACS, establishment of a new chemical industry, solution of pollution problems, and advances in curative or preventive chemotherapy. Nominees may come from industry, academia, government, or small business. The nominee should be a resident member in the area served by the DFW

Section, and the work should have been done here. The award is \$1500 and an engraved plaque. A photo of the Doherty Award winner will be displayed permanently in the Gallery of Doherty Award winners, Berkner Hall, UT-Dallas.

The **Schulz Award** is given to high school chemistry teachers, who, like the late Dr. Werner Schulz, bring that something extra to the teaching of chemistry. The nominee and/or nominator need not be ACS members. Nominees should show excellence in chemistry teaching as demonstrated by testimonials from students and fellow teachers, results in student competitions, and diligence in updating and expanding scientific/teaching credentials. A photo of the Schulz Award winner will be displayed for one month at the Science Place in Dallas, and then be displayed permanently in the Gallery of Schulz Award winners, Science Bldg., Tarleton State University. A traveling plaque stays at the winner's high school for the year of the award. Winners will normally receive their awards and give their lectures at fall meetings of the section.

Remember, a continuous flow of nominations is needed to maintain the quality of awards!



In Memoriam William B. Smith 1927 - 2012

William B. Smith passed away peacefully Sunday, June 24, 2012, at the age of 84 at the James L. West Alzheimer Center in Fort Worth, Texas. William "Bill" was born Dec.



13, 1927, in Muncie, Ind. He earned his B.A. in chemistry from Kalamazoo College in 1949 and a Ph.D. in organic chemistry from

Brown University in 1954. After postdoctoral fellowships with Jack Leffler at Florida State University and Morris Kharasch at the University of Chicago, Bill joined the Chemistry Department at Ohio University in 1955, rising to the rank of Associate Professor. In 1960 Bill was a Robert A. Welch Foundation Visiting Scientist at Texas Christian University, where in 1961 he was hired as a Full Professor and Chair of the Chemistry Department. Bill oversaw the formation of TCU's Ph.D. program in chemistry, for which he obtained one of the first Varian A-60 NMR spectrometers in Texas. He published over 125 papers on physical organic chemistry and NMR and three books: "*A Modern Introduction to Organic Chemistry*" (1961), "*Molecular Orbital*

Methods in Organic Chemistry HMO and PMO; An introduction" (1974) and "*Introduction to Theoretical Organic Chemistry and Molecular Modeling*" (1996). Bill stepped down as department Chair in 1981 to spend a sabbatical research leave with Sir John Cornforth at the University of Sussex in England. He formally retired in 1998 but continued to do research until 2006. Bill Smith served on the Editorial Advisory Board of the journal *Magnetic Resonance in Chemistry* and was recipient of the 1989 TCU Chancellor's Award for Research and Creative Activity and the 1990 W.T. Doherty Award of the Dallas-Fort Worth Section of the American Chemical Society. He was also a Fellow of the Royal Society of Chemistry of Great Britain and a 63-year member of the American Chemical Society. Bill was also a water color artist, musician and an avid sailor who raced competitively at the Fort



Worth Boat Club. He is survived by his wife of 57 years, Marian, sons Mark and Frederick of Fort Worth and a daughter, Mary Felise Smith-Peters of Chico, California and their families.

Contributed by Manfred Reinecke

...AND ANOTHER THING...

By Denise L. Merkle

Hungry

A superficial internet search of 'US Economy 2013' yielded more than 600,000 hits, which were approximately equally divided among, 'We're never going to make it,' 'Things are looking up,' and 'Hmmm'. It's a challenge to predict what will happen to our economy—and our country—in this new year. Will workers get jobs? Lose jobs? Secure low mortgage interest rates? Pay more- or less- for tomatoes? Shoes? Education? Doctors' visits? For all these and more, we will have to wait and see. Not easy. One thing we do not have to wait for, though, is the realization that for all the upheaval in the US lately- even that caused by natural disaster and violence- we have the luxury (yes, the luxury) of being intelligently reactive and, if we wish, indignant. We are *fortunate* to have the problems we have.

This isn't 'Clean your plate, there are children elsewhere who are starving' illogic, or Pollyanna rainbows-and-puppies thinking, nor does it minimize personal tragedies. This is, 'Look at what we have and what others do not,' an attitude that is especially important in a world where annually more people die of hunger than from AIDS, TB and malaria - combined.* Imagine being so hungry, so poorly nourished, that you die. It doesn't make the threat of layoffs any more pleasant, or diminish the aggravation of dealing with the IRS, but it provides a

bit of perspective as to what we're actually enduring. The current Syrian Civil War, for example, is estimated to have displaced more than a million people. Envision Fort Worth, San Francisco, or Baltimore** empty (or at least empty of those who could afford to flee). The Syrian people, displaced or not, have limited -or no- access to food, fresh water, medical care, shelter, heat, or safety.

Anyone who lives near military bases knows well the sound of fighter jets. Although its night flights haven't been acknowledged, the F35 is one loud aircraft—can you imagine if it were incessantly bombing your home? What if you crept from your pile of rubble to seek the necessities for life, only to suffer personal, physical attack? War exists. Military personnel spend their lives in terrible situations - but most people in the USA do not. We have resources; what if they were *gone*?

What is the point of all this, you ask? To broadcast random musings of a maudlin chemist who's been listening to too much NPR and BBC, The World? Maybe. The maudlin chemist would argue that many of our priorities are not helping solve the world's issues. This lack of focus on things outside our isolated little bubbles of minutiae, coupled with a disinterest in international events, limits even the recognition that we have privilege far beyond that of a

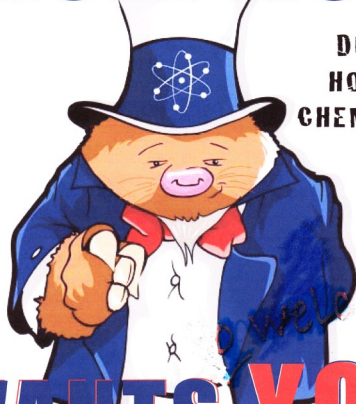
statistically significant number of our fellow earthlings. We can whine, quibble, and move complacently along, but the sooner we choose to understand the world beyond our borders and possibly even act, the sooner our minor discomforts will be just that - minor - and maybe, at some point, the privations and violence that claim so many, will not.

* World Food Programme <http://www.wfp.org>

** www.google.com/publicdata 2011 US Census Bureau

And Another Thing...is meant to inspire thought and discourse. In no way is it intended to criticize the efforts of those who devote their time and energy to improve others' opportunities.

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If you send a news item or contribution to the **RETORT** and do not receive an acknowledgement, we didn't get it! This sometimes happens, with attachments and with simple messages. In such case, just send it again.

From the ACS Press Room

Nature-inspired advance for treating sensitive teeth: Mussel-inspired substance could reduce pain by preventing sensitivity to hot, cold, sweet or sour foods and drinks



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“Polydopamine-Induced Tooth Remineralization”

ACS Applied Materials & Interfaces

Taking inspiration from Mother Nature, scientists are reporting an advance toward preventing the tooth sensitivity that affects millions of people around the world. Their report on development of the substance, similar to the adhesive that mussels use to attach to rocks and other surfaces in water, appears in the journal *ACS Applied Materials & Interfaces*.

Quan-Li Li, Chun Hung Chu and colleagues explain that about 3 out of every 4 people have teeth that are sensitive to hot, cold, sweet or sour foods and drinks. It occurs when the hard outer enamel layer on

teeth and the softer underlying dentin wear away, stimulating the nerves inside. Some sugar-free gums and special toothpastes can help reduce that tooth hyper-sensitivity. However, Li and Chu cite the need for substances that rebuild both enamel and dentin at the same time. To meet that challenge, they turned to a sticky material similar to the adhesive that mussels use to adhere to surfaces. They reasoned that it could help keep minerals in contact with dentin long enough for the rebuilding process to occur.

They describe laboratory tests that involved bathing human teeth with worn-away enamel and dentin in liquid containing the sticky material and minerals. Teeth bathed in the sticky material and minerals reformed dentin and enamel. However, teeth bathed just in minerals reformed only enamel. The gooey substance “may be a simple universal technique to induce enamel and dentin remineralization simultaneously,” they concluded.

The authors acknowledge funding from [NSFC](#) RGC grant, the Outstanding Youth Fund from the Board of Education of Anhui Province and the Youth Foundation of the Anhui Provincial Natural Science Foundation.



Around the Area

DFW Section

DFW to host SWRM 2014

Volunteers Needed! As many of you know, the Dallas-Fort Worth Local Section will host the 2014 Southwest Regional Meeting (SWRM 2014). Local sections within the Region typically host SWRM every 10 years. SWRM 2004 was quite successful, and we look forward to maintaining the same high standard in 2014.

Volunteers will form the backbone of success for SWRM 2014. We are in the planning stages for SWRM 2014, and we need volunteers to serve in a variety of capacities. We are looking for volunteers related to PR, funding, exhibits, as well as a program chair. If you would like to organize a symposium or event, that would be great. No effort is too small to make a big contribution.

There will be a planning meeting during the first week of October to discuss the plans, next steps and ways to participate. If you would like to be involved in any way in SWRM 2014, please contact me as soon as possible at swrm@acsdfw.org. More details about the planning meeting will be circulated via email soon.

Participating in a SWRM is a unique and rewarding experience, and I encourage you all to consider how you can play a part! **Kirby B. Drake, General Chair SWRM 2014**

SMU



David Son presented a talk entitled, "Synthesis of Thiolated Alkoxysilanes and their Potential Application in Thiol-ene Chemistry" at the Silicon-Containing Polymers and

Composites workshop sponsored by the ACS Division of Polymer Chemistry. The workshop was Dec. 9-12 in San Diego, CA.



Bio-Synthesis Inc./Sigma-Aldrich

Eunice Murage recently joined Sigma Aldrich in Houston. A 2010 Ph.D. in

Chemistry from UTD, Dr. Murage worked as a research scientist at Bio-Synthesis Inc. at Lewisville, TX, before joining Sigma-Aldrich in December.

UTA

Welch Professor Dan Armstrong received a Phase II NIH grant for \$990,000 and also received a continuing Supelco Grant of \$26,000 per year. Dan recently received the UTA Award for an Distinguished Record of Research

address at the Society of Analytical Chemistry Pittsburgh meeting held at Duquesne University on Sept. 10. He also gave the opening and plenary lecture at COLACRO in Florianopolis, Brazil, on Oct. 3-4.

Dr. Alejandro Bugarin has received a \$22,000 water purification solvent system. He also received a donated ozonizer from Alcon, which will be available for all the organic labs.

Dr. Tom Strom of UTA, and **Dr. Jim Marshall** and **Hannah Tarver** of UNT are working to get the entire group of printed issues of *The Southwest RETORT* online in the UNT data base in a keyword-searchable format. Much of it is available already, and the entire archive should be available in 2013.

UNT

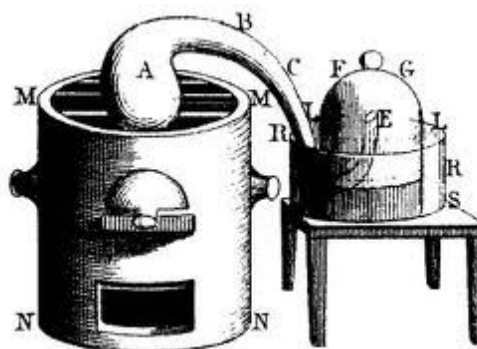
Wes Borden spent the fall in Kyoto, Japan, at the Fukui Institute for Fundamental Chemistry as a Fellow of the Japanese Society for Promotion of Science. He gave lectures in Japan at Kyoto, Tokyo, Gifu, and Hiroshima Universities. He also spent nine days in China, lecturing at Peking, Soochow, and Nanjing Universities and at the Eli Lilly-PKU International Symposium on Organic Chemistry at Peking University, in the SETAC/ACS ENVR student exchange program. The program is designed to improve the professional and scientific interactions of student members of the two participating organizations and to promote networking between the members.

SOUTH PLAINS TEXAS TECH

Together with three other collaborators at the University of Maryland and the University of New Mexico, Professor **Bill Poirier** of the Texas Tech Department of Chemistry and Biochemistry has received a three-year, \$1.35M grant from the NASA Astrobiology program. This project will apply rigorous theoretical and experimental quantum dynamics techniques to precisely understand isotope effects in the photodissociation dynamics of sulfur dioxide. The resultant data is considered crucial for elucidating the "Oxygen Revolution" that took place 2.4 billion years ago, giving rise to higher life forms and to other profound changes in the Earth's climate and geology.

HEART O' TEXAS

The Heart O' Texas section will be hosting the 2013 Southwest Regional ACS meeting. Organizing of symposia will begin soon, under the direction of **Dr. Bob Kane** of Baylor University's Chemistry Department.



From the ACS Press Room

Sustainable way to make a prized fragrance ingredient:

Bacteria could make a sustainable alternative to a prized natural ingredient in many perfumes

“Toward a Biosynthetic Route to Sclareol and Amber Odorants”

Journal of the American Chemical Society

Large amounts of a substitute for one of the world’s most treasured fragrance ingredients — a substance that also has potential anti-cancer activity — could be produced with a sustainable new technology, scientists are reporting. Published in the *Journal of the American Chemical Society*, the advance enables cultures of bacteria to produce a substitute for natural ambergris, which sells for hundreds of dollars an ounce.



Laurent Daviet, Michel Schalk and colleagues explain that ambergris, a waxy substance excreted by sperm whales, has been prized as a fragrance ingredient for

centuries. Ambergris has a pleasant sweet and earthy scent of its own, and it enhances other scents in high-end perfumes. With sperm whales an endangered species, and natural ambergris not used in perfumes in the U.S., perfume makers have turned to substitutes. One is made from sclareol, obtained from the Clary sage plant. But the

plant contains only small amounts of sclareol, and it is laborious to extract and purify. That’s why the scientists looked for a better way of making



large amounts of sclareol.

Their report describes isolating the genetic material (DNA) that produces the two Clary sage enzymes needed to make sclareol. They put the DNA into



bacteria, which made large amounts of sclareol in bioreactors.

[More about ambergris and its structure](#)

FIVE QUESTIONS FOR...

Our interviewee for January 2013 is William F. Carroll, Ph.D., Vice President of Industry Issues for Occidental Chemical Corporation and former President (2005) of the American Chemical Society. Since 2012, Dr. Carroll has Chaired the ACS Board of Directors, having previously served the



American Chemical Society on numerous task forces and committees, including the *International Activities* (Chair); *Executive Compensation*; *Executive*; and *Public Relations and Public Affairs* Committees.

1) How old were you when you decided to be a chemist? Was there an event that triggered your interest in chemistry? If so, what was it?

First inkling was early grade school—I had a lot of interest in astronomy/space travel and archaeology. But I also loved speech and debate and politics and wanted to hold public office. So that sounded like being a lawyer.

But when I took high school chemistry from Bob Conard in 1967 in Crown Point, Indiana, school was out, so to speak. I did experiments in my basement just like we all did. Nitrogen triiodide. Wonderful stuff.



My favorite was heating mercury and iodine together. It went from silver liquid and purple solid, to a boiling, pulsing metal ball and purple gas, and then—FOOP—a red-

orange solid. And my CRC Handbook (1965 edition) clearly identified it as a mix of HgI and HgI_2 . Heaven only knows what the site cleanup cost when they demolished our old house. (*Dr. Carroll's recollections are not to be taken as encouragement to experiment with Hg in the basement.*)

2) Did your chemistry education prepare you for a career in industry? If not, what training would you have added to your skills?

The canonical answer is “no,” because I did way different things in industry. The logical answer is “it couldn’t” for the same reason. The real and unobvious answer is “yes,” because in grad school I learned how to do research, and teach myself what I didn’t know. So what if I never did electrochemistry again once I got to industry—that’s not the point. I understood research and I could teach myself polymer chemistry and emulsion chemistry, and a bit of engineering, and a few other things because I’d been educated.

Einstein said “Education is what remains after one has forgotten everything one learned in school.” It’s true.

3) Has your service to the ACS benefitted your career? In what way(s)?

Clearly the network. I know people now in all parts of the field, and I’m way more broadly knowledgeable because of it. As a result, I get asked to do things that not a lot of people from industry get to do. And the benefit has been personal as well as profes-

sional. Chemists are a pretty interesting bunch of people to hang with.

And the real basis of my career was that I was a good enough scientist, but I was pretty good at speaking, writing and explaining technical things to non-technical people. I'd like to see more emphasis on communication skills in graduate education.

4) *It seems like there are always more and more issues that chemists have to surmount in order to enjoy lives in science. What is the most significant challenge facing ACS members? What might we do to decrease its effects?*

I believe happiness—enjoyment—is something totally under your control. Outside things don't make you happy: you make you happy. There are always issues. There are always challenges. Shockingly, people other than chemists have them, too. Enjoying your life, particularly a life in science, is independent of issues or challenges. As an aside, I don't think the rest of the world is as negative about chemistry as we think they are, especially when we take the time to speak simply to them about what we do.

What ACS does best, in my mind, is buried in the answers to questions 2 and 3: ACS can help each scientist to continue to grow, learn, develop and advance. Now, each of us is in control of that, but ACS is a resource to help make that happen. The fundamental value of a professional society in the 21st century is the network, and the network lives among us in ACS. If it's true that "all of us" is smarter than "any of us" then the more of us you know, the smarter you are. If you don't know something, it's wonderful to be able to ask somebody who

does. Approximately 40% of the jobs today are filled by word-of-mouth. That's the network, too.

5) *Who is your Science Hero? And why?*

Hero: A model or ideal; brave and noble. I've been blessed to know quite a few, but if I can only have one, it's someone you probably don't know. Gordon McCarty



came from a career in academia at West Virginia University to become university relations manager for Bayer in Pittsburgh. He chaired numerous important committees at ACS and was a

staunch supporter and mentor to Chemical Technicians as they worked to find a home in ACS. When he retired from Bayer, he started teaching organic to a quite diverse student body at the University of South Carolina in Beaufort. I succeeded him in his ACS Board seat, and he died in 2011. I still sometimes ask "What would Gordon do?" Gordon was wry and pleasant; wise and direct. A bit reserved like his Kansas background and a sharp, fun guy. Brave and noble. A model, and an ideal. I miss him.

Thank you, Dr. Carroll, for your interesting remarks! Interviewees for 2013 are needed; to participate, contact the

RETORT.

retort@acs.dfw.org



From the ACS Press Room



Frog-in-bucket-of-milk folklore leads to potential new antibiotics: Secretions from the skin of the Russian brown frog, once used to preserve fresh milk, promise new antibiotics.

“Composition and Antimicrobial Activity of the Skin Peptidome of Russian Brown Frog *Rana temporaria*”

Journal of Proteome Research

Following up on an ancient Russian way of keeping milk from going sour — by putting a frog in the bucket of milk — scientists have identified a wealth of new antibiotic substances in the skin of the Russian Brown frog. The study appears in *ACS’ Journal of Proteome Research*.

A. T. Lebedev and colleagues explain that amphibians secrete antimicrobial peptides through their skin. These compounds make up the majority of their skin secretions and act as a first line of defense against bacteria and other microorganisms that thrive in the wet places frogs, toads,

salamanders and other amphibians live. A previous study identified on the skin of the Russian Brown frog 21 substances with antibiotic and other potential medical activity. Lebedev’s team set out to find more of these potential medical treasures.

They used a sensitive laboratory technique to expand the list of such substances on the frogs’ skin, identifying 76 additional substances of this kind. They describe lab tests in which some of the substances performed as well against *Salmonella* and *Staphylococcus* bacteria as some prescription antibiotic medicines. “These peptides could



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Thinkstock

be potentially useful for the prevention of both pathogenic and antibiotic resistant bacterial strains while their action may also explain the traditional experience of rural populations,” the scientists concluded.



From the editor:

In a month where everybody is just coming out of hibernation after the holiday season, AND a surprise for north Texas, you've got to take a look at this video by the ACS:



SNOWFLAKES

A video by the American Chemical Society on snowflakes, their formation, and structures

It's that time of year again...time to get in your nominations for the Doherty and Schulz awards sponsored by the Dallas-Fort Worth section. Applications are viable for five years, but if you submitted a nomination last year and want it re-considered, be sure to let the awards committee know.

This month I cannot decide which ACS press article I like the best: mussels for teeth, ambergris, or the Russian frog-in-a-bucket. Hmmm...I think I have to vote for the article on ambergris. I didn't know much about it to start, but now I know maybe more than I really wanted. A mixture of high molecular weight waxy alcohols, ambergris starts out as fishy-smelling fecal matter or vomitus expelled by sperm whales. The wax is thought to form around an irritating particle in order to make it easier for the whale to expel it as previously noted. After aging by floating around in the ocean or washing up on the beach, subject to biodegradation and oxidation, it develops a sweet, rich odor, at which point it is used as a fixative for high-end perfumes.

Best regards,

