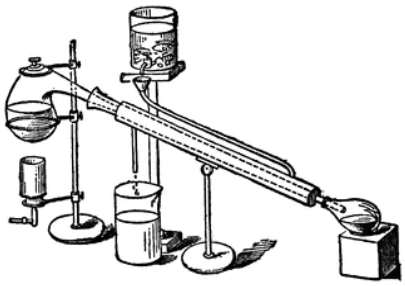
SOUTHWEST RETORT



SIXTY-FIFTH YEAR **MAY 2013**

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

published by
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FIFTY YEARS AGO IN THE SOUTHWEST RETORT

The ACS May tour speakers are **Dr. Saul Kit** from the UT-M. D. Anderson Hospital and Tumor Institute in Houston and **Dr. Louis F. Hatch** from the chemistry department at the University of Texas. Dr. Kit's topics include "The Acquisition of New Enzymes by Virus Infected Cells," "DNA Structure and Function: Density Gradient Centrifugation Experiments," and "Viruses, Genes, and Cancer." Dr. Hatch speaks on "Petrochemicals of the Future" and "Professors, Pyramids, and Petrochemicals."

The ACS Permian Basin Section received the ACS member relations award at its March meeting. The award was presented by **Dr. W. O. Milligan** from Houston to chairman **Jim Hutson**. The award was for 1961 when **Jess Looney** was chairman. At a time when on average only 5% of local section members attend meetings, Permian Basin had an average of 50% or more attending meetings.

Dr. Kenneth Pitzer, President of Rice University, was the speaker at a joint meeting of the Brazosport ACS Section and the Texas Dow Institute. His topic was "False Impossibilities."

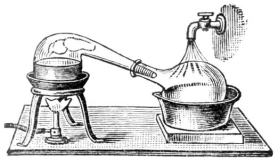
Visiting University of Texas Professor **W. A. Noyes** attended a symposium in Rochester in honor of his 65th birthday. **Dr. Norman Hackerman**, Vice President and Provost of the University of Texas, served as chairman of a symposium on "Inhibitors" held at the Second International Conference on Metallic Corrosion in New York Mar. 11-15.

The chemistry department at TCU will begin offering a Ph.D. degree in Sept., 1963. Several promising doctoral students have already been admitted to the program. **Dr. J. E. Hodgkins** was recently promoted to full professor. **Dr. W. H. Watkins** attended the recent ACS national meeting held in Los Angeles.

The Texas A&M-Baylor ACS Section now has 139 total members. At Baylor **Drs. Charles E. Reeder** and **A. G. Pinkus** plus graduate student **Patrick G. Waldrep** attended the Los Angeles ACS meeting. **Dr. Thomas C. Franklin** attended the Electrochemical Society meeting in Pittsburgh April 15-18.

At the University of Arkansas **Dr. Robert F. Kruh** has been appointed chairman of the chemistry department for 1963-66, succeeding **Dr. Samuel Siegel**. Those attending the Los Angeles ACS meeting were **Drs. Edward S. Amis, George D. Blyholder, Arthur Fry**, and **Dr. Samuel Siegel**. Drs. Amis and Blyholder gave papers. **Dr. Paul Kuroda** presented a paper at the Oak Ridge Radioisotopes Conference held April 1-3 at Gatlinburg, TN.

Contributed by E. Thomas Strom



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46th ACS DFW Meeting-in-Miniature

TAMU-Commerce

Undergraduate

Session 1

1st Place - Hunter Scarborough, TCU

2nd Place – Cindy Nguyen, UTD

Session 2

1st Place – Kevin Bruemmer, SMU

2nd Place – My Linh Van, UTD

Session 3

1st Place – Ruperto Mariano, UTD

2nd Place – Peter O'Brien, University of Dallas, Irving

Graduate

Session 4

1st Place – Mohammad Hossain, UTA

2nd Place – Sripragna Burugupalli, Texas A&M University–Commerce

Session 5

1st Place – Mathew Carlson, UNT

2nd Place – Sahila Perananthan, UTD

Session 6

1st Place – Roy McDonald, Jr., UNT

2nd Place – Venkata Adiraju, UTA

Session 7

1st Place – Anne Marti, UTD

2nd Place – Chris Jeffrey, UNT

SESSION 8

1st Place – Alysia Lowe, UTD

2nd Place – Ashutosh Pudasaini, Southern Methodist University

SESSION 9

1st Place – Sumudu Wijenayake, UTD

2nd Place – Hongzhang Han, SMU

SESSION 10

1st Place – Subhash Chand, UTA

2nd Place – Kinyanjui Sophia, UNT

Approximately 150 people attended the 46th ACS DFW MiM at Texas A&M-Commerce on April 27, 2013. Symposium attendees were provided with a program booklet of total 108 presentations (30% undergraduates).

The program began with registration and check-in at 7:45 am (light breakfast was served). The morning sessions started at 8:30 am. There were three undergraduate sessions and seven graduate sessions with 15-min talks. There were 2 judges in each session, with one of the judges serving as session chair.

A planetarium show was scheduled from 3:45-4:30 pm. During the planetarium show, judges tallied their marks, decided on the awards, made out the award checks and printed award certificates. Each session was awarded a first place and second place winner. The symposium concluded with an awards session from 4:30-5 pm.

During the awards session, the President of TAMU-C (Dr. Dan Jones) and the Dean of the College of Science, Engineering and Agriculture (Dean Grady Blount) welcomed all the participants.

The DFW-ACS Section President (Dr. Moji Bonakdar) then made the student award presentations. First place winners received a certificate and a $100.00 award, second place winners received a certificate and a $50.00 award. A group photo of the award winners was then taken with Drs. Jones, Blount and Bonakdar to conclude the event.

The Conference Organization Team included the following:
Conference Chair: Allan Headley
Conference Secretary: Qianying Zhang
Program Chair: Stephen Starnes
Abstract Coordinator: Bukuo Ni
Judge Coordinator: Laurence Angel
Activity Coordinator: George Nixon
Dept Support: Linda Gilley, Shatavia Thomas, Danyelle Butts, and graduate assistants.

November 17-20, 2013

Waco Convention Center

American Chemical Society

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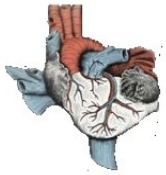

69th Southwest Regional Meeting
November 17-20, 2013
Waco Convention Center

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High-school program (Saturday 11/16)
Undergraduate program including posters, oral presentations, and demo fair
Awards banquet
Mixers, Expo, and Grad School Fair
W. Dial Black Family Lecture - Stephen Fesik (Vanderbilt)
Gooch – Stephens Lecture - *t.b.a.*
The Stone Symposium - Synthetic and Structural Inorganic Chemistry
Numerous technical symposia including:

- Bioinorganic Chemistry
- Advances in Computational and Theoretical Chemisty
- Recent Advances in NMR in Chemistry
- Organic Synthesis and Catalysis
- Atmospheric Chemistry
- Chemical Biology in Texas
- Chemistry on Surfaces and Interfaces
- Fundamental Aspects of X-omics & Mass Spectrometry Studies
- Applications of Modern X-omics Mass Spectrometry
- Targeting the Tumor Microenvironment
- Reaction Dynamics in Condensed and Gas-Phases
- Chemical Neuroscience
- Spectoscopic Methods for Atmosphere & Combustion
- Electroanalytical Chemistry
- Energy Symposium
- Frontiers in Nucleic Acids

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...AND ANOTHER THING…

By Denise L. Merkle

Innovative Little Devils

A few years ago in a discussion of a possible business venture, it became clear that there exist people who do not possess an entrepreneurial mindset. This was a total revelation. Total. Breathtaking. Astonishing. Revelation. How on earth could one function without constantly improving and inventing - and then sharing with the world? How would one converse without, 'What if we modified...?' or, 'You know what would be good?' In that revelatory talk, I had asked an accountant friend to be a part of a team to develop and market a new autosports-focused product line. 'No.' Me: 'No?' Friend: 'No.' Wow. I was rendered nearly speechless, which, as anyone could tell you, is no mean feat.

In my stunned condition, I realized that I had not actually met anyone who didn't invent like crazy, or who didn't incessantly think, 'Hmmm, *that* might work.'. Scientists, of course, always hypothesize, test, conclude, revise, hypothesize, test, *ad infinitum*; in fact a scientist who isn't inventive is not much of a scientist. As far as I knew, though, all my buddies, all my relatives - scientists by training or not- spent quite a chunk of their time thinking, 'Hmmm, *that* might work' - until that fateful conversation with my CPA friend. It is, of course, possible to be entrepreneurial without being innovative, and, conversely, to be innovative without an eye on commercial success, but in either case the acknowledgement of potential is right there, tangibly spurring thoughts of publications, market share, pristine laboratories with infinite bench space, company logos imprinted on labels for meds - or car parts; the fantasy and the adrenaline rush of accomplishment, bonded covalently into a giant molecule of success—or total failure.

And therein lies the issue, the electron-withdrawing group of innovation. What about the failure? Failure's right there, all the time. Looming or quiescent, vanquished or dominant, waiting to derail the project, sink the company, invalidate the patent. Just yesterday morning - in conversation- another glimmer of anti-inventiveness arose. A proposed solution to a problem was completely dismissed. 'What about X?' 'What about Y?' 'Do you know this will work?' Me: 'No, but it can't hurt to try.' Maybe it can't hurt, and maybe it can. Failure hurts.

What is the point of all this, you ask? The point is that, Failure happens, but invention and innovation drive the world. An overarching entrepreneurial spirit propels medical advancements, safer automotive equipment, more efficient water purification, more abundant food - *all* aspects of life. Sometimes things work, and sometimes they do not, but there is always another option - another modification to save the day. And if contributing weren't enough, there's nothing quite like the thrill of setting eyes on one's first ribbon patent*. Adrenaline fuels all the Innovative Little Devils. Be brave, Innovative Little Devils. Now —**Go Invent**!

Many, many thanks to John A. Fortkort, of Fortkort -Houston, himself an Innovative Little Devil, for all the support and expert legal advice. Without John, the joy of seeing so many ribbons would have been nearly impossible!

From the ACS Press Room

Greener methods for making popular nanoparticle

Greener Techniques for the Synthesis of Silver Nanoparticles using Plant Extracts, Enzymes, Bacteria, Biodegradable Polymers and Microwaves

ACS Sustainable Chemistry & Engineering

Already renowned for its beneficial effects on human health, green tea could have a new role — along with other natural plant-based substances — in a healthier, more sustainable production of the most widely used family of nanoparticles, scientists say. Published in *ACS Sustainable Chemistry & Engineering*, their Perspective article concludes that greener methods for making silver nanoparticles are becoming available.

Rajender Varma, Mallikarjuna Nadagouda and colleagues explain that silver nanoparticles are used in a host of products, especially for their ability to kill bacteria and ward off undesirable odors. Those products include antibacterial socks, undergarments and other clothing. Existing processes for making silver nanoparticles require potentially hazardous substances, use a lot of energy and leave behind undesirable byproducts that require special handling. With production expected to increase, scientists are seeking greener ways to make silver nanoparticles.

The article describes how extracts from plants — such as green tea plants, sunflowers, coffee, fruit and peppers — have emerged as possible substitutes that can replace toxic substances normally used to make the nanoparticles. In addition, extracts from bacteria and fungi, as well as natural polymers, like starches, could serve as substitutes. "These newer techniques for greener AgNP synthesis using biorenewable materials appear promising as they do not have any toxic materials deployed during the production process," the scientists say.

The authors acknowledge funding from the U.S. Environmental Protection Agency.

DFW Section News

DFW Chemists win grant to explain climate change to the public

Members of the Dallas-Fort Worth Local Section of the American Chemical Society (ACS) are winners of a $3,000 grant to help public audiences better understand the science behind climate change. The announcement was made at the Society's recent national meeting in New Orleans.

According to Dr. Moji Bonakdar, chair of the Dallas-Fort Worth Local Section, the local section will collaborate with Texas' network of experienced community college teachers to bring more climate change science concepts from the ACS Climate Science Toolkit into their classrooms. A team has already been assembled to carry out the planned activities.

Dr. Bob Landolt, Emeritus Professor of Chemistry at Texas Wesleyan University, wrote the proposal and will administrate the grant activities for the DFW Section.

The ACS Climate Science Toolkit (**www.acs.org/climatescience**) is a web-based resource that explains the chemistry and physics of climate change. Launched last December, it was one of the major initiatives of 2012 ACS President Bassam Z. Shakhashiri.

Dallas-Fort Worth is one of 12 of the Society's local sections that will receive the first ACS Presidential Climate Science Challenge Grants.

Shakhashiri explained that the mechanisms of climate change are based on fundamental concepts that may not be familiar to scientists working in disciplines unrelated to climate change. They need a robust understanding themselves in order to help others who are not scientists understand the issues relevant to maintaining a livable climate.

"These inaugural grants will encourage ACS members to take up the mantle as scientist-citizens and reach out with climate science information to their colleagues and others," said Shakhashiri. "These include teachers, college and university faculty, industrial scientists and business leaders, civic and religious groups, professional science and educational organizations, and elected public officials at all levels and in all branches of government."

The grants, $3,000 each, were awarded to the following ACS local sections: Central New Mexico; Dallas-Fort Worth; Illinois Heartland; Iowa; Kalamazoo, Mich.; Maine; New York; Northern W.V.; Portland, Ore.; Puerto Rico; Puget Sound; and Wakarusa Valley in Kansas.

ACS Chemistry for Life®

Around the Area

UTD

Associate professor **John Sibert** is among the first 12 individuals chosen to join the new University of Texas System Academy of Distinguished Teachers, which recognizes outstanding educators at UT's nine academic institutions.

The members of the academy will serve as a system-level advocacy group dedicated to enhancing teaching, fostering innovation in the classroom and promoting interdisciplinary perspectives on education.

South Plains Section

The South Plains local section had its annual awards banquet on April 16 this year. TTU emeritus Professor **Richard Wilde** was recognized for 50 years of service to the ACS. Awardees were recognized for their achievements in the South Plains and Southeastern New Mexico Regional Science Fairs. The local section also acknowledged student achievements at Eastern New Mexico University, Lubbock Christian University, South Plains College, Texas Tech University, and Wayland Baptist University. The section also awarded **Janet Kitten** of Trinity Christian High School in Lubbock the annual Outstanding High School Chemistry Teacher award.

It was also announced that Dr. **John Marx,** TTU Professor emeritus, who passed away in December, had also achieved 50 years of ACS service. Dr. Marx took an active role in the South Plains science fairs for over a decade and was past chair of the local section awards committee.

Oher awards for 2012-2013:

South Plains Regional Science Fair Winners

Elementary: **Caleb Wood**, "Fats and Opinions," Honey Elementary

Junior High: **Nikki (Dominique) Diaz,** "The Effect of Drought on Turbidity and Dissolved Oxygen Levels in Water Samples," Christ the King School

Senior High: **Jerrod Jaquess** , "Up in Flames!," O'Donnell High School

John Marx Excellence In Chemistry Award: **Sarah Wanjura**, "The Compositional Difference Between Conventional and Organic Beef," Christ the King School

Southeastern New Mexico Regional Science Fair Winners

Junior Division: **Logan Antipora**, "The Electrolysis Indy 500," P.R. Leyva (Carlsbad, NM).

Senior Division: **Michael Dugas**, "The Search for Silver Superconductivity, Phase II," Carlsbad High School

cont. next page

South Plains cont.

Outstanding High School Teacher

Janet Kitten Trinity Christian High School, Lubbock, TX

Eastern New Mexico University Awards
Outstanding Student in Beginning Chemistry
Michael Butler

Outstanding Student in Organic Chemistry
Joseph Metcalf

ACS Outstanding Graduating Senior
Krista Jones

Lubbock Christian University Award

ACS Outstanding Graduating Senior
Daniel Whitefield

South Plains College Awards

Outstanding Student in General Chemistry
Antonia Stuebler

Outstanding Student in Organic Chemistry
Nathan Robertson

Wayland Baptist University Awards

Temple Scholar **Jessica Kenneson**

Outstanding Chemistry Major
Jessica Kenneson

ACS Outstanding Graduating Senior
Taylor Eaves

Chemistry Olympiad

Coronado High School **Guy Edwards**

ACS Service Award

50 Years of Service
Prof. Richard Wilde

UNIVERSITY OF ARKANSAS

Charles Wilkins attended and chaired a session at the 9th North American FT-MS Conference in Key West, April 28-May 1.

In March, **Peter Pulay** presented "Ultrafast Quantum/Molecular Mechanics Calculations: Applications to Halide Ions near the Air/Water Interface" at Hong Kong City University, Zhejiang University in Hangzhou, China, Tsinghua University, Beijing, and Xi'an Jiaotong University, Xi'an, China. He also presented "Selection of Active Spaces for Multiconfigurational Wavefunctions" at Xian Jiaotong University, Xi'an, China and Peking University.

Matt McIntosh gave seminars at the Univ. of TN Health Science Center, Memphis, and at St. Jude's Children's Research Hospital, Memphis, TN, entitled "Toward a Pharmaceutically Relevant Claisen Rearrangement."

Presentations at the 245th ACS meeting, New Orleans, April 7-11:

Neil Allison presented "Study of the development and implementation of organic chemistry animations in the classroom to facilitate learning" in the CHED section, co-authored with **J.T. Allison**.

Colin Heyes presented "Radiative and Non-radiative lifetime engineering of quantum dots for quantifying biomolecules in complex environments."

Feng Wang gave an invited talk, "Predicting phase transitions in water at coupled cluster quality with simple energy expressions" in

cont. next page

University of Arkansas cont.

the symposium "Accurate Characterization of Non-covalent Interactions: From Small Molecules to Supramolecular Chemistry."

Christena Nash presented "Redox-magnetohydrodynamic pumping and stirring with PEDOT-modified electrodes," co-authored with **Ingrid Fritsch**.

Benard Omogo made an oral presentation "Connecting structural defects and optical properties of core-shell quantum dots induced by interfacial lattice strain," co-authored by **M. Benamara** and **C.D. Heyes**.

Sarah Phillips presented "Perfusion fluid additives and affinity agents to improve recovery in micro-dialyis," co-authored with **Julie Stenken**.

Leanne Mathurin presented a poster "Synthesis of Au/Ag-CdS Hybrid Nanostructures as Efficient Phootocatalysts, co-authored by **J. Chen**.

Parth Patel, F. Gao, A.D. Kight, R.L. Goforth, R.L. Henry, & Colin Heyes authored the poster presentation "Immobilizing and characterizing the interdomain conformational dynamics of cpSRP43 proteins on PEG-modified surfaces."

Publications

Katherine Self, Huajun Zhou, Heather Greer, Z. Ryan Tian, Wuzong Zhou: "Reversed Crystal Growth of ZnO Microdisks." Chem. Commun. 2013, DOI:10.1039/C3CC41208C.

Huaun Zhou and Z. Ryan Tian: "Recent advances in multistep solution nanosynthesis of nanostructured three-dimensional complexes of semiconductive materials." Progress in Natural Science: Materials International 2013. (accepted).

Awards and Accomplishments

Neil Allison was nominated as a 2013 Outstanding Faculty by UofA Associated Student Government and Students Residents' Interhall Congress.

Wei Shi has been named recipient of a Robert C. and Sandra Conner Endowed Faculty Fellowship. This fellowship is to support career advancement of faculty who provide the highest quality teaching, research and service to the college.

Julie Stenken is a recipient of one of this year's Fulbright College Master Researcher Awards.

UTA

Shimadzu Center Donation/New Director:

On February 28, Shimadzu Scientific Instruments donated $7.5 million to UT-Arlington to support the Shimadzu Institute for Research Technologies. The Institute will house $25.2 million in Shimadzu equipment. **Dr. Joe A Barrera** will be the new director of the Institute. Dr. Barrera earned his doctorate in cell and molecular biology from the UT-Southwestern Medical Center in 2009. Most recently he was a postdoctoral fellow in the UT-Southwestern Department of Pediatrics.

Faculty Achievements/Honors: At the 2013 Pittsburgh Conference in

cont. next page

UTA cont.

Philadelphia, **Dr. Kevin Schug** was presented with the 2013 ACS Division of Analytical Chemistry Young Investigator in Separation Science Award. An awards session was organized in which **Dr. Sandy Dasgupta** was one of the speakers. Additionally, one of Dr. Schug's students, **Ms. Li Li**, gave a talk on her research. Dr. Dasgupta (as co-organizer) and Dr. Schug attended the First Collaborative on Oceanographic Chemical Analysis meeting in Honolulu at the end of March. The meeting, funded by NSF, was designed to bring chemical oceanographers and analytical chemists together in an effort to devise new solutions to some of the most challenging problems in oceanography.

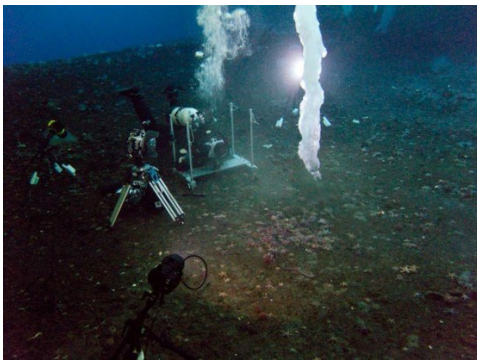
Dr. Sandy Dasgupta was accepted into the UTA Academy of Distinguished Scholars, while Assistant Professor **Dr. Brad Pierce** received the President's Award for Excellence in Teaching. **Dr. Krishnan Rajeshwar** received an award for Faculty Mentoring, while **Dr. Rasika Dias** received an award for McNair Scholars Faculty Mentoring. **Dr. E. Thomas Strom** received an award for Excellence in Teaching from the UTA chapter of the National Institute for Leadership and Success.

Student Achievements/Honors: Munuve Mwania was awarded the Howard J. Arnott 2013 Student Competition Award for the best oral presentation at the meeting of the Texas Society for Microscopy held on April 20. At the ACES (Annual Celebration of Excellence by Students) meeting on Mar. 27, **Nagham Alatrash** received the $200 President's Poster Award for graduate students, while **Sabra Ramirez** received the President's Poster Award for undergraduate students. **Hui Fan** received the $300 President's Award for outstanding oral presentation.

Additional student awards were as follows: CRC Handbook Award for Outstanding Freshman, **Alexa Dean**; Robert F. Francis Award for Outstanding Sophomore, **Ruona Ebiai**; R. L. Hoyle Award for Outstanding Junior, **Hiep Nguyen**; John T. Murchison Award for Outstanding Senior, **Akinde Kadjo**; ACS Award for Outstanding Chemistry/Biochemistry Major, **Khoa Nguyen**; Outstanding Chemistry Clinic Tutor Award, **Hassan Kanani**; Chemistry and Biochemistry Society Outstanding Member Award, **Clifford Bautista**; Undergraduate Research Award, **Amanda Dark**; Graduate Teaching Award, **Nicole Khatibi**; President Spaniolo Graduate Research Award, **Aaron Chen**; Charles K. Baker Graduate Fellowship Award, **Charles Shelor**.

From the ACS Press Room

Sea stalactites provide clues to origin of life



Life on Earth may have originated not in warm tropical seas, but with brinicles: weird tubes of ice — sometimes called "sea stalactites" — that grow downward into cold seawater near the Earth's poles.

Brinicles as a Case of Inverse Chemical Gardens

Langmuir

Life on Earth may have originated not in warm tropical seas, but with weird tubes of ice — sometimes called "sea stalactites" — that grow downward into cold seawater near the Earth's poles, scientists are reporting. Their article on these "brinicles" [brine icicles] appears in ACS' journal *Langmuir*.

Bruno Escribano and colleagues explain that scientists know surprisingly little about brinicles, which are hollow tubes of ice that can grow to several yards in length around streamers of cold seawater under pack ice.

That's because brinicles are difficult to study. The scientists set out to gather more information on the topic with an analysis of the growth process of brinicles.

They are shown to be analogous to a "chemical garden," a standby demonstration in chemistry classes and children's chemistry sets, in which tubes grow upward from metal salts dropped into silicate solution. But brinicles grow downward from the bottom of the ice pack.

The analysis concluded that brinicles provide an environment that could well have fostered the emergence of life on Earth billions of years ago, and could have done so on other planets. "Beyond Earth, the brinicle formation mechanism may be important in the context of planets and moons with ice-covered oceans," the report states, citing in particular two moons of Jupiter named Ganymede and Callisto.

The authors acknowledge funding from the Spanish Ministerio de Ciencia e Innovación.

From the ACS Press Room

Fighting bacteria with a new genre of antibodies

Photothermal Colloid Antibodies for Shape-Selective Recognition and Killing of Microorganisms

Journal of the American Chemical Society

In an advance toward coping with bacteria that shrug off existing antibiotics and sterilization methods, scientists are reporting development of a new family of selective antimicrobial agents that do not rely on traditional antibiotics. Their report on these synthetic colloid particles, which can be custom-designed to recognize the shape of specific kinds of bacteria and inactivate them, appears in the *Journal of the American Chemical Society*.

Vesselin Paunov and colleagues point out that many bacteria have developed resistance to existing antibiotics. They sought a new approach — one that bacteria would be unable to elude by mutating into drug-resistant forms. Their inspiration was the antibodies that the immune system produces when microbes invade the body. Those antibodies patrol the body for microbes and bind to their surfaces, triggering a chain of events in which the body's immune system attacks and destroys the microbes.

Paunov's team describes development and successful tests of synthetic colloid particles, called "colloid antibodies." Colloids are materials in which tiny particles of one material are dispersed in another material. Milk is a colloid in which globules of fat are spread throughout water and other materials. The colloid antibody particles are shells packed with a killing agent. They are designed to recognize and bind to specific bacteria.

Laboratory experiments showed that the

colloid antibodies attached to and inactivated only their intended targets without harming other cells. "We anticipate that similar shape selective colloid antibodies can potentially become a powerful weapon in the fight against antibiotic-resistant bacteria," say the researchers. "They can also find applications as non-toxic antibacterial agents, preventing growth of harmful bacteria in various formulations."

The researchers acknowledged funding from the BBSRC, UK.

FIVE QUESTIONS FOR...

Our interviewee for the last '5 Questions' of the 2012-2013 school year is ACS Fellow ***Connie M. Hendrickson,*** PhD, owner and Research Director of Arkon Consultants, specializing in surfactants, primarily in industrial cleaning, and Director at Badderloch Woad, Inc., an intellectual property development company pursuing diverse and interesting inventions. Dr. Hendrickson holds a BA from Louisiana Tech, and a PhD from LSU.

Dr. Hendrickson currently contributes to the local section as the Editor of The Southwest RETORT, and has extensively served chemistry and the ACS on local and national levels: ACS DFW Chair-Elect/Chair 1987-88, and Program Chair of the 2004 Southwest Regional Meeting, as well as division Newsletter editor, 1987-88; Executive committee, 1988-89; Publications chair, 1989; and Treasurer, 1990-99, of the ACS National Division of Business Development and Management (formerly Chemical Marketing and Economics).

In addition, Dr. Hendrickson is active in the American Institute of Chemists, holding positions of Treasurer 1990, President-Elect 1996-97, President 1998-99, and Chair of the Board 2000-01, and 1992-95 chair of the AIC National Certification Commission for Chemists and Chemical Engineers.

Dr. Hendrickson also served as Chair of the ad hoc AIC Committee for Certification Advancement, which created a certification program and examination for chemical technicians.

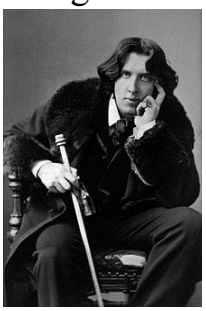
1) How old were you when you realized you wanted to be a scientist?
I honestly don't know...always, I think. There was a little newsletter we got in school called Science News or something like that, published by the old Weekly Reader, and I was always doing projects (in and out of school) or planning new ones: raising frogs, breeding tropical fish, training planaria, raising carnivorous plants, etc. (I have to say that the planaria tanks kept my mother out of my room for three years.) In early high school, I read an essay by Jean Henri Fabre on the private life of crickets, and raised them under my bed in a glass tank. I was pretty much confined by to biology type projects until I got older, when I gravitated to geology and hands-on mineralogy, and thus to chemistry. If there was a defining moment, an epiphany, it was in freshman chem, doing inorganic qual: holding a test tube against the window, I watched silver chloride appear from the invisible interface of two solutions and spiral lazily downward in the late afternoon light.

2) What aspects of chemistry do you enjoy the most?
Bench work, hands down, no contest.

3) You've successfully applied your diverse expertise to many different career areas - often simultaneously. Is there a particular trait or piece of knowledge that contributes to success, regardless of the field or area in which one is working?
Never say never…***never*** say that's not going to work. Never say, "I can't do it." And

always be ***fascinated***…with life, with chemical reactions, with colors, bugs, bubbles, crystals, fungi.

The great Oscar Wilde said, "Life is far too serious to be taken seriously."—have fun with science. In the 60s, back in my worm-running days (training planaria—I was 11), I wrote to James McConnell, editor of the ***Worm Runners' Digest***, which included satirical articles with the serious ones, and he very kindly sent me copies. (This was a man who understood the concept of not taking life too seriously; when other scientists complained the two types of articles were indistinguishable, he printed the satirical articles upside down at the back of the publication.) The American Psychological Association site recounts the furor caused by his "memory molecule" research, which is what I read about in the science newsletter: **http://www.apa.org/monitor/2010/06/memory-transfer.aspx**



4) If you could change anything about the process of pursuing a career in the sciences, what would it be?

My science education was pretty traditional, with solid grounding in the basics, and it has served me very well. Right now I can't think of anything I would change—not even pchem.

5) Who is your Science Hero? and why?

I have to say Agnes Pockles (1862-1935). She truly exemplifies my "Never say never" philosophy. She was interested in science and wanted to study physics, but back then, women could not attend universities or even use the university library or bookstore. Her brother, who attended the University of Gottingen, supplied her with books and scientific literature. It is a treasured legend among surfactant chemists (and is maybe even true) that Agnes observed the phenomenon of surface tension while doing dishes and looking at the interactions of soap and impurities in the dish water. As a consequence, she designed the Pockels trough, precursor to the Langmuir scale. In 1891, her first paper, ***Surface Tension,*** appeared in **Nature** (it had to be submitted by Lord Raleigh). She was given the Laura Leonard Award in 1931, along with Henri Devaux, by the Colloid Society. The Technische Hochschule Braunschweig (Technical University at Brunswick) granted her an honorary PhD degree in 1932. There is a nice article on the American Physics Society website with a summary of her life and times: ***Agnes Pockels.***

Dr. Pockels' portrait hangs on my office wall; she reminds me to keep trying when I get discouraged--and to always, ***always*** be curious about the way things work. Do you realize all that came about from looking at dirty dishwater?

Many thanks to Dr. Hendrickson for the interesting answers! '5 Questions' will return in the first e-Retort of the 2013-2014 school year. Best wishes for a rewarding summer! As always, to be interviewed for 5Q, please contact info@acsdfw.org.

From the editor

This issue of the RETORT highlights a number of local activities:

The 46th DFW Meeting-in-Miniature at TAMU-Commerce was a great success, with over 100 presentations, both graduate and undergraduate (pg. 6-7);

The 69th annual Southwest Regional Meeting is scheduled for November in Waco, courtesy of the Heart o' Texas section;

The DFW section received one of the first twelve ACS Presidential Climate Science Challenge Grants, via a proposal written by Bob Landolt of Texas Wesleyan.; and

We have four pages of Around-the-Area news!

I think that this month I've already said everything I could possibly think of in the "5 Questions" column. So let me just say have a good summer and the RETORT will return in September.

Best regards,
Connie