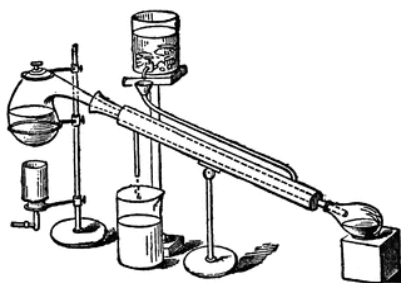




SOUTHWEST RETORT



SEVENTY-FIRST YEAR

FEBRUARY 2019

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Chemists, Chemical Engineers
and Chemistry in this area*

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FIFTY YEARS AGO IN THE SOUTHWEST RETORT

The ACS tour speakers for the month of February are Dr. Donald J. Lyman of Stanford Research Institute and Dr. H. R. Schreiner of Union Carbide's Linde Division. Dr. Lyman's talk is on "The Artificial Kidney and its Future: The Role of Biomedical Polymer Research," while Dr. Schreiner's will present "Man and the Resources of the Sea."

In the Dallas-Ft. Worth ACS Section, Dr. Paul Jones of North Texas State University (now UNT) received a PRF starter grant and a Cottrell grant from Research Corporation. Dr. C. G. Skinner received both an NSF grant and a Welch Grant. Dr. James Marshall received a three year Welch grant.

Dr. C. T. Skinner of SMU was named Analyst of the Year by the Dallas Society of Analytical Chemists. At the Mobil Field Research Lab Dr. James C. Melrose gave seminars at the University of Victoria, B. C. and at the Petroleum Recovery Research Institute in Calgary, Alberta. Dr. Brinkley S. Snowden, Jr. presented seminars at SMU and Stephen F. Austin College. At UT-Arlington Drs. G. Lee Johnson, Andrew T. Armstrong and Harold G. Burman attended the ACS Southwest Regional Meeting in Austin. Dr. Johnson and Dr. Robert Francis have received Welch Grants.

In the Heart o' Texas ACS Section the January speaker was Dr. John K. Stille of the University of Iowa speaking on the topic "Advances in Condensation Polymerization: Tailor-Made Macromol-

ecules." At Baylor recent seminar speakers were Dr. J. D. Edwards of the University of Southwest-

ern Louisiana, Dr. Benjamin Plummer of Trinity University, and Welch Professor Joe L. Franklin of Rice University. Baylor has received a \$36,000 NSF grant to support a Summer Institute for high school science teachers.

In the South Plains ACS Section, the new officers are: Chair, John A. Anderson; Chair-Elect, Henry J. Shine; Secretary, Roy E. Mitchell; Treasurer, W. Avery Fix; Councilors, Joe A. Adamcik, Richard E. Wilde.

In the Southeastern ACS Section, Rice University reports that the following individuals have received new Welch Foundation Grants: Dr. John L. Margrave, Dr. Joe L. Franklin, Dr. Edward S. Lewis, Dr. R. F. Curl, and Dr. Graham P. Glass.

In the San Antonio ACS Section, Welch Grants have been received by Drs. Benjamin Plummer, Dale Clyde, and John Burke.

*contributed by
E. Thomas
Strom*





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dmerkle@sciconsult.com

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From the ACS Press Room

Why flamingos are cooler than you think (video)

WASHINGTON, Jan. 24, 2019 — To many people, flamingos are synonymous with Florida, tacky lawn ornaments and cocktails on the beach. But their silly reputation belies their incredible survival skills. Flamingos are adapted to live and breed in some of the harshest environments on Earth. In this video, Reactions explains why flamingos deserve more credit: <https://youtu.be/rbjnvYVX4Oc>.



Structural colors, without the shimmer

“Facile Synthesis of Monodispersed SiO₂@Fe₃O₄ Core–Shell Colloids for Printing and Three-Dimensional Coating with Noniridescent Structural Colors”

ACS Omega

Structural colors, like those found in some butterflies’ wings, birds’ feathers and beetles’ backs, resist fading because they don’t absorb light like dyes and pigments. However, the iridescence that enhances their beauty in nature is not always desirable for some applications, such as paints, color displays or printer inks. Now, researchers have developed a new method to produce structural colors that don’t change with the angle of viewing. They report their results in *ACS Omega*.

Dyes and pigments absorb and reflect particular wavelengths of visible light, causing them to appear the same color as the reflected light. In contrast, structural colors do not absorb light but instead reflect it from microscopic structures, such as the scales on a butterfly’s wing. The wavelengths of reflected light depend on the orientation of the object and the viewer’s angle, causing the shimmery, color-shifting

effect of iridescence. Previously, scientists found that they could make non-iridescent structural colors by reflecting the light from less-well-ordered microstructures, but their methods have practical limitations. Dongpeng Yang, Shaoming Huang and colleagues from Guangdong University of Technology wanted to develop a quick and simple way to produce non-iridescent structural colors that could be used in color printing and to paint 3D objects.



In their new method, the researchers coated spherical silica particles with a thin shell of iron oxide (Fe₃O₄) nanoparticles. They then placed a solution of the particles onto a surface and heated the

samples to quickly evaporate the liquid. The resulting film contained closely packed particles that lacked the long-range order necessary for iridescence. As a result, the surfaces appeared the same color regardless of the viewer’s angle. The color could be controlled using different silica particle sizes. The team showed that they could print text and images and also coat a 3D object (a toy dinosaur) with the colors.

These authors acknowledge funding from the National Natural Science Foundation of China.

February meeting of the ACS DFW Local Section

Registration open Now for the On-site and via Webinar Program

"Chemical Lab Safety: What Can You Do?" by Kirk Hunter
Member - ACS Committee on Chemical Safety
Formerly (Retired - Dec 2017 after 33 years)
Associate Professor and Department Chair
Chemical Technology Department Texas State Technical College - Waco

Eventbrite, Registration Link:

<https://www.eventbrite.com/e/acsdw-221onsite-meeting-remote-webinarschemical-safety-what-can-you-do-tickets-56390086266?aff=ebdssbdestsearch>

On-site/In-person program will be held in the Fusion Room of TCC's South Campus. Follow the instructions on your eventbrite receipt, rather than Google maps. Please note that the ACS dinner meeting schedule was modified to give better timing for the webinars:

- 6p- 7p Social Hour with Heavy Hors d' oeuvres (@ TCC)
- 7p- 8p Talk by Kirk Hunter
- 8p- 9p Reception with Desserts

\$20 Attendee | \$10 Student/In Transition

Webinar sites are at SMU in Dallas and McMurry University in Abilene, and will be offered at no charge to viewers, but registration is requested!

McMurry U Webinar Info:

Co-sponsored by the McMurry University ACS student section.

- Room 226, Finch-Grey Science Building, McMurry University,
- Parking off of Hunt Street near tennis courts

- Light refreshments will be served

Organizer: Dr. Edward Donnay, Science 217, 325-793-3878, donnay.edward@mcm.edu

SMU Webinar Info:

- Fondren Science Building (room TBD)
- Snacks!

Organizer: Brandon S. Chance, MS, CCHO
Director of Environmental Health and Safety
Sustainability Committee Chair
Office of Risk Management 214.768.2430
bchance@smu.edu

Join the TCU Chemistry and Biochemistry Department
celebrate the International Year of the Periodic Table

Professor Emeritus
James L. Marshall
Department of Chemistry
University of North Texas



“Rediscovery of the
Elements. What it felt like
to track down and visit all
of the discovery sites.”

Thursday February 21, 2019

5:30 p.m.

Lecture Hall 2

Sid Richardson Science Building

The second edition of “Rediscovery of the Elements” is available to the general public:

<http://www.chem.unl.edu/~jimm/REDISCOVERY%207-09-2018/index.htm>



Contact Heidi Conrad (h.conrad@tcu.edu) for more information.

DFW Section

Nominations are invited for awards: Doherty, Schulz, and Chem Ambassador



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.

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. lectures at a fall meeting of the section.

The Chemistry Ambassador Award is newly instituted by the DFW Section to recognize an outstanding Section member who has made a significant impact via promoting chemistry to the community. The 2019 Chemistry Ambassador of the Year award is based on peer or self-nominations to the selection committee. Submissions should be one page in length and address the community outreach activities either through teaching, service, or working with legislators to affect public policy. Submissions will be evaluated on the impact made, which may include but not limited to how many people were reached, impact on individual people in the community, and exemplary commitment to the promotion of chemistry in the community.

Remember, a continuous flow of nominations is needed to maintain the quality of awards. Each nomination should contain completed nomination form, cover letter highlighting the nominee's accomplishments, and a copy of the CV. One seconding letter may accompany nominations. The nomination package should be sent by email as a single pdf file to Sean O'Brien at sobrien@ti.com. Nominations remain active for five years but should be updated annually.

Complete information and nomination forms are available at

<https://dfw.sites.acs.org/awards.htm>

Deadline May 15



ACS Local Section
Dallas-Fort Worth

52nd Annual Meeting-in-Miniature



Saturday, April 27, 2019

We invite and encourage graduate and undergraduate students to submit abstracts for 10-12 minute oral presentations, with an additional 3-5 minutes for questions. Submit your abstract using the link below.

The submission deadline is **April 5, 2019**, although earlier is better.

All presenters and attendees must register no later than **April 5, 2019**, although earlier is better.

Please note that there is NO fee to attend the meeting. Registration is required because lunch will be provided by the Department of Chemistry (at no cost to the attendees), so we need an accurate head-count.

Visit our website to submit your abstract and register for the DFW-ACS Meeting-in-Miniature

<https://chemistry.unt.edu/meeting-in-miniature>



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9:00-9:30AM	Check-in
9:30-11AM	Session 1
11:00-11:15AM	Morning break
11:15-12:45PM	Session 2
12:45-1:45PM	Lunch
1:45-3:15PM	Session 3
3:15-4:00PM	Entertainment (TBA)
4:00PM	Awards Ceremony

From the ACS Press Room

A ‘greener’ way to take the bitterness out of olives

“The Use of Amberlite™ Macroporous Resins to Reduce Bitterness in Whole Olives for Improved Processing Sustainability”

Journal of Agricultural and Food Chemistry

Olives are staples of the Mediterranean diet, which has been linked to a reduced incidence of cardiovascular disease, Alzheimer’s disease and other conditions. However, freshly picked olives are very bitter and require curing or processing to make them palatable, using lots of water and, sometimes, harsh chemicals. Now, researchers have found a more environmentally friendly way to remove bitter phenolic compounds from olives. They report their results in *ACS’ Journal of Agricultural and Food Chemistry*.

The bitter taste of phenolic compounds such as oleuropein and ligstroside may help protect olives from herbivores and pathogens. To make olives edible, commercial processors typically destroy these compounds by soaking the fruit in a dilute lye solution, followed by washing several times. However, this process consumes large amounts of water and produces toxic wastewater. Alyson Mitchell and Rebecca Johnson wanted to develop a more environmentally sustainable method to remove the phenolic compounds from olives.

The researchers evaluated four different types of Amberlite™ macroporous resins for their ability to soak up phenolic compounds from whole olives during typical brine storage. After 76 days, one of the resins, called FPX66, reduced the concentration of oleuropein in whole olives to a level that was even lower than that of commercially processed, California-style black olives. The resin also reduced levels of the phenolic compounds ligstroside and oleuropein aglycone. Afterwards, the researchers treated the resin with ethanol to recover the olive phenolics, which were still intact. They say that the recovered phenolics can be used later as high-value ingredients or supplements.



The authors acknowledge funding from the John Kinsella Endowment in Food and Nutrition.

Layered cocktails inspire new form of male birth control

"A Cocktail-Inspired Male Birth Control Strategy with Physical/Chemical Dual Contraceptive Effects and Remote Self-Cleared Properties"

ACS Nano

For decades, women have shouldered most of the burden of contraception. However, long-term use of female birth control pills could increase the risk for side effects such as blood clots or breast cancer. Now, inspired by colorful layered cocktails, researchers have developed a medium-term, reversible male contraceptive. They report their results in the journal *ACS Nano*.

Common forms of male contraception are either short-term (condoms) or long-term (vasectomy). However, condoms can fail, and vasectomies, while effective, are not often reversible. Xiaolei Wang and colleagues wanted to devise a medium-term, reversible form of male contraception. They drew inspiration from cocktails, such as the Galaxy, that bartenders make by layering colorful liquids in a glass. If the beverage is stirred or heated, the layers combine into a uniform liquid. Wang and colleagues wondered if they could use a similar approach to inject layers

of materials to block the vas deferens, the duct that conveys sperm from the testicle to the urethra. Applying heat would cause the layers to mix, breaking them down and “unplugging the pipeline.”

The team tested their approach in male rats. They sequentially injected four layers of materials into the vas deferens: a hydrogel that forms a physical barrier to sperm; gold nanoparticles, which heat up when irradiated with near-infrared light; ethylenediaminetetraacetic acid (EDTA), a chemical that breaks down the hydrogel and also kills

sperm; and finally, another layer of gold nanoparticles. The injected materials kept the rats from impregnating females for more than 2 months. However, when the researchers shone a near-infrared lamp on the rats for a few minutes, the layers mixed and dissolved, allowing the animals to produce offspring. The researchers say that while this pilot experi-

ment is promising, more research is needed to verify the safety of the materials.

The authors acknowledge funding from the National Natural Science Foundation of China, the Science Foundation of Jiangxi Provincial Department of Education and Nanchang University Seed Grant for Biomedicine.



IN MEMORIUM PAST DFW CHAIR JIM KELLY



A memorial service was held on Jan. 19 at First Congregational United Church of Christ for past DFW ACS Chair Henry C. (Jim) Kelly. Dr. Kelly died on Jan. 2. He was 88 years old.

His wife Lu had predeceased him. He was survived by children Luanne Cullen, Nancy Kelly, and Curtis Kelly and grandchildren Lindsay Kelly, Ross Kelly, and Rachel Forster. Kelly was a retired faculty member at TCU, and the TCU flag was hung at half staff on Jan. 18 in his honor.

Kelly grew up in Rhode Island and received a BS in chemistry in 1951 from Bates College in Maine. It was at Bates where he met his future wife Lucille Mainland. They married in 1956 and were married for 62 years.

After working for several years at Metal Hydrides, Inc., in Beverly, MA, Kelly entered graduate school at Brown University, where he received a Ph.D. in 1962. He joined the faculty of TCU in 1964. He retired in 1998. He served the DFW ACS Section as Chair in 2001.

Kelly's career at TCU included teaching freshman chemistry and advanced inorganic chemistry, research in chemical reaction kinetics and research on reaction mechanisms. He collaborated with colleagues in England and Canada while on sabbatical leaves and spent two summers lecturing in chemistry at the Universidad de los Americas in Puebla, Mexico. At TCU he served as Chair of the Chemistry Department for six years and Director of the Honors Program for seven years. After retirement, he and his wife enjoyed extensive travel. He also served on the board of Stage West Theatre.

In his eulogy at the memorial service, his son Curtis cleared up one mystery. Where did the name Jim come from? His mother dutifully gave him the family name of Henry Curtis, but her favorite boy's name was Jim. Therefore, that was what he was called when he was growing up, and the name stuck.

Jim Kelly's life was marked by love of his family and service to education and to his profession. He will be greatly missed.

Around the Area

UTA

Welch Professor Daniel Armstrong was awarded a Doctor Honoris Causa Degree (Honorary Doctorate) in November from the Slovak University of Technology. He received a European Research Council grant of 50,000 Euros to study “Chiral Separations.” During the last eleven months he has given eleven plenary or keynote lectures

An article written by Dr. Alex Bugarin and coworkers has been selected to provide the front-cover artwork for the journal Organic Chemistry Frontiers. The exact reference is Org. Chem. Front., 2019, 6, 152-161.

Dr. Jimmy Rogers has written a textbook titled “Chemistry for Engineers.” It is available through Stipes Publishers.

Dr. Krishnan Rajeshwar has been appointed Editor in Chief of the Electrochemical Society journal ECS Journal of Solid State Science and Technology.

Dr. Robin Macaluso has been named a Fellow of the Virtual Inorganic Pedagogical Electronic resource (VIPeR) in an innovative study to develop, test and refine flexible, foundation-level inorganic chemistry course. As one of the first 20 faculty members selected for this ground breaking project, she will join inorganic chemists from across the US in a

community of practice dedicated to improve student learning.

ACS Volunteerism: Let Me Know!

The American Chemical Society exists to promote all branches of chemistry and those who work in them. Local sections such as ours here in the Dallas-Fort Worth LS are yet more responsible for supporting their members.

So—since I have an entire Chair year to work with the Executive Committee and ACSDFW members to optimize the benefit of belonging to the ACS and the Local Section specifically, please let me know what you're thinking about ACS membership and the issues—positive and negative- that affect your view of participation in ACS.

What programs would you most enjoy? What information would be useful? Is the local section what you need?

Let me know!

denise lynn merkle, phd

2019 ACSDFW Chair (among other things)

dmerkle@sciconsult.com

From the editor

All right, so I got carried away by the flamingo article. I had no idea that these birds live in soda lakes, alkaline, high ionic strength, etc. Just recently, flocks of breeding lesser flamingos in South Africa left their chicks because of drought...bringing destructive changes in the already “salty” water.

<https://www.forbesafrica.com/current-affairs/2019/01/31/drought-threatens-thousands-of-flamingo-chicks-in-south-africa/>

Don't forget the awards nominations and the up-coming Meeting-in-Miniature.

*Best regards,
Connie*