



ACS Local Section
East Texas

March 2019

Next Section Meeting

Date: Thursday, March 28
Time: Social time and refreshments @ 6:30pm
Meeting @ 7:00
Location: Room 101, Science Building
Texas A&M University @ Texarkana
7101 University Ave
Texarkana, TX 75503

Novel Applications of Fourier Transform Orbitrap Mass Spectrometry – Mass Mapping for Complex Mixtures and Restricted Spectral Accuracy for Identifying “Unknowns”

Dr. Robert Strife
Procter & Gamble Miami Valley Labs
Sierra Analytics

The invention and commercialization of the Orbitrap in the first decade of the twenty-first century revolutionized the ability to obtain mass spectral data at ultra-high mass resolution (with accurate m/z). Because of its simple design and low maintenance requirements, it became a dominant technology in many qualitative analysis laboratories. A unique application of the technology is generalized, multi-dimensional, mass mapping of complex mixtures with thousands of components. Using novel software algorithms, easily interpreted maps can be created. The maps are useful for raw material (RM) definition and quality control. Sometimes impurities (i.e. “unknowns”) need to be identified in RM, and the first step is assignment of elemental composition. Under the right trapping conditions, heavy-isotope, fine-fingerprint patterns (from the natural content of ^{15}N , ^{13}C , ^{18}O , ^{34}S etc.) are revealed above the principle mono-isotope line of a compound. Again, using novel software algorithms, restricted spectral accuracy scoring of these fine lines can readily associate the mono-isotope line’s accurate m/z with the single, correct elemental composition (EC), which typically occurs in a substantial list of possible formula answers. This outcome is especially desirable when dealing with new chemical entities.

Dr. Robert Strife is a career mass spectrometrist with over 34 years of experience in upstream technologies research and problem solving for the Procter & Gamble Company. He obtained his BS Chemistry degree from Rensselaer Polytechnic Institute (1976) and a Ph.D. from Purdue University, Dept. of Medicinal Chemistry (1981). He finished his Ph.D. at the Mayo Clinic in Rochester, MN (Pharmacology Dept., Research Fellow, 1979-1981 with Prof. Ian Jardine) and subsequently did post-doctoral studies with Prof. R.C. Murphy



at the University of Colorado Medical School, Clinical Mass Spectrometry Facility (1981-1983) in Denver. He then joined P&G's upstream Corporate Research Division Mass Spectrometry group in 1983 at the P&G Miami Valley Labs. He was the principle advocate of ion trapping technologies, starting with unique applications of low-resolution quadrupole ion traps in 1986. More recently, with the advent of simplified, ultra-high-resolution, Fourier transform orbital trapping, he spent the last ten years developing novel applications of Orbitrap FTMS for P&G. This approach now dominates P&G's qualitative mass spectrometry facility. Dr. Strife is the author of over thirty publications, three book chapters and co-author on more than ten P&G patents and applications. He recently retired from P&G and is now a consulting senior scientist at Sierra Analytics for advanced mass mapping programs.

Upcoming Dates

March 31-April 4	ACS National Spring Meeting, Orlando, FL
April 1	Abstract submission deadline for student presentations @ UT-Tyler
April 16	Student Presentations @ UT-Tyler
April 21-27	Chemists Celebrate Earth Week
August 23-27	ACS National Fall Meeting, San Diego, CA
September	Melanie Moser, Texas A&M-Galveston @ Stephen F. Austin University
October 3	Yvette Fobian, Pfizer Inc. @ Wiley College
October 21-27	National Chemistry Week
November 13-16	Southwest Regional Meeting, El Paso, TX

September date is in the process of being finalized.

2019 Section Officers

Chair	Ruth Hathaway	ruthhathaway@msn.com
Chair-elect	Ronda Howe	rhowe@kilgore.edu
Treasurer	Jerome Stavinoha	jstavinoha@gmail.com
Secretary	Mike Sheets	mike.sheets@texarkanacollege.edu
Councilor	Philip Verhalen	philip.verhalen@gmail.com
Alt. Councilor	Mike Sheets	mike.sheets@texarkanacollege.edu

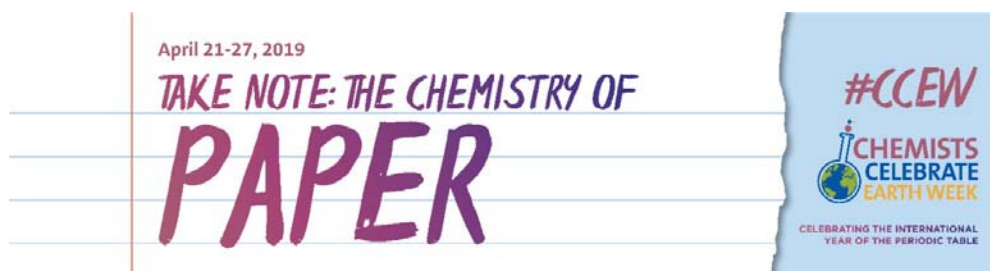
Section Website: <http://easttexasacs.sites.acs.org/>

Web Master/Marm Needed

We are in need of a person to keep our website updated – current officers, meetings and newsletter. If you are interested, contact Ruth Hathaway at ruthhathaway@msn.com. We do pay (not a lot) for this position.

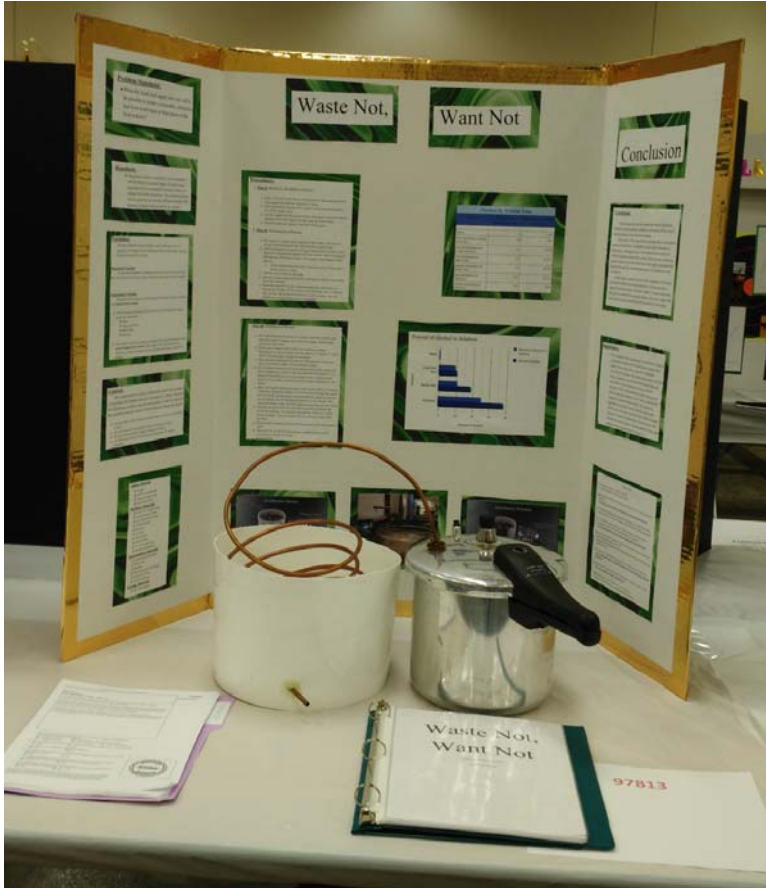
Call for Papers Undergraduate Poster Session

If you are involved or have students involved in research, the April 16 meeting is for you. Sean Butler is accepting abstracts for students wanting to present their research at the Section meeting. Poster title, authors, and a brief abstract should be sent to Sean Butler at sbutler@uttyler.edu by April 1. Posters are limited to a 3' x 4' space.

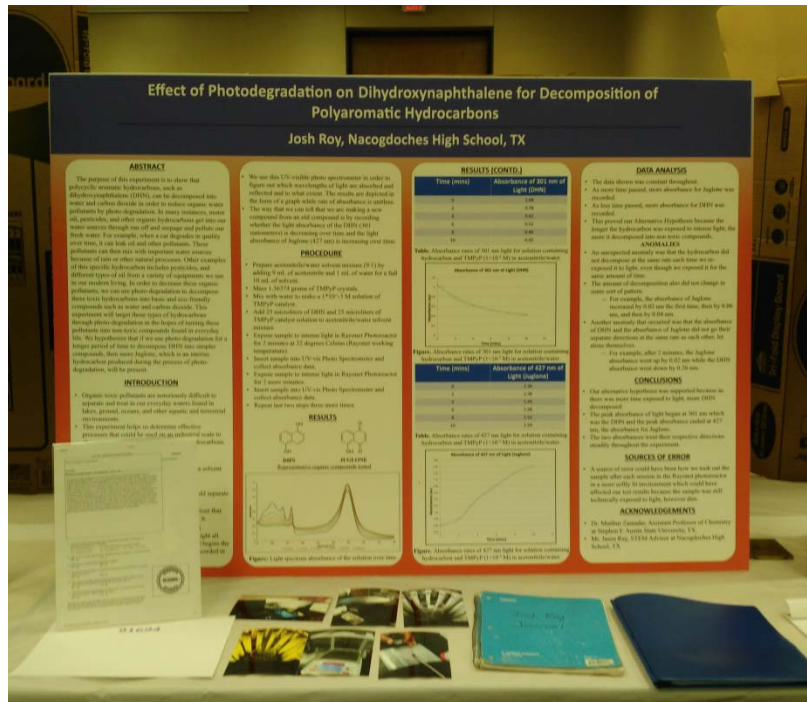


During 2019's [International Year of the Periodic Table](#), CCEW will be celebrated April 21-27, 2019 with the theme, "Take Note: The Chemistry of Paper." If you would like copies of the CCEW 2019 edition of *Celebrating Chemistry* (English or Spanish) contact Ruth Hathaway (ruthhathaway@msn.com). The section has a limited supply available until depleted.

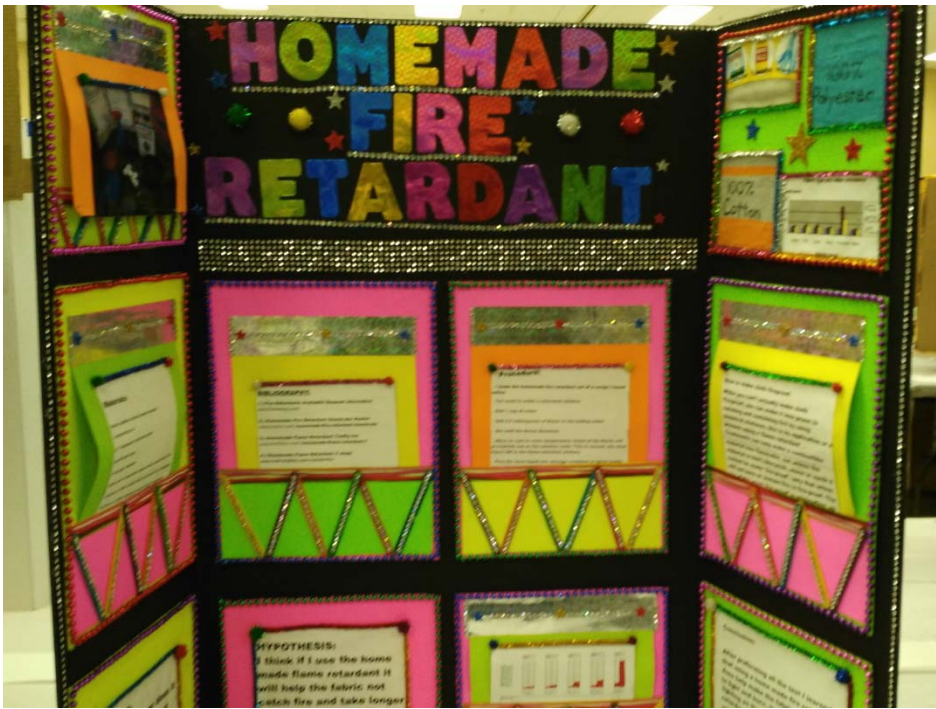
2019 East Texas ACS Science Fair Winners
East Texas Regional Science Fair



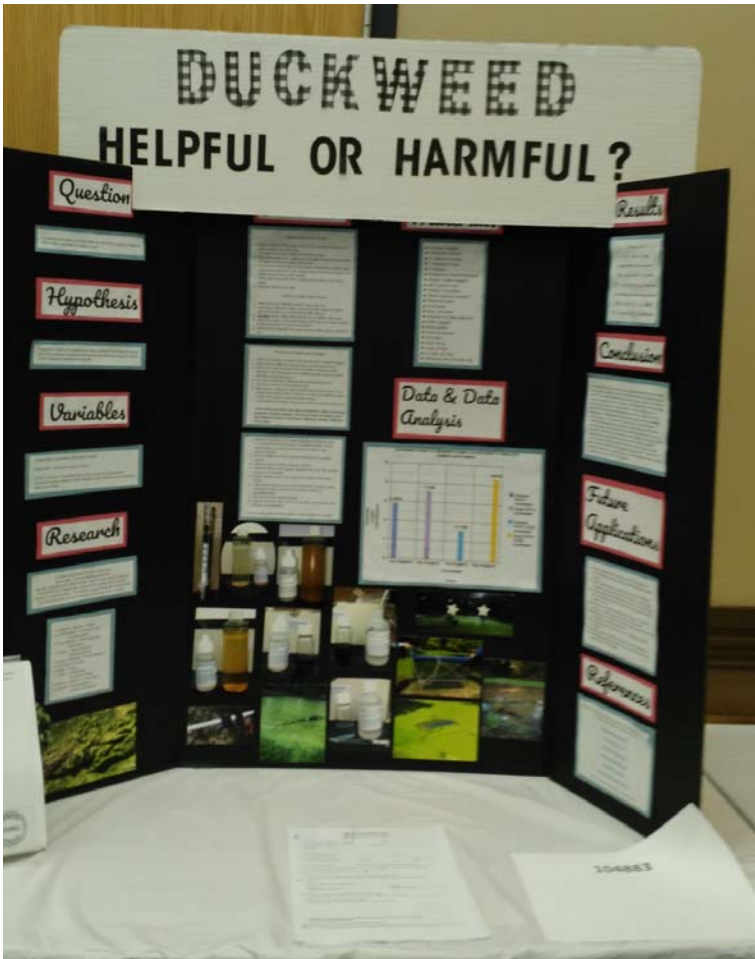
Alishban Khan
Lufkin High School



Josh Roy
Nacogdoches High School



Christopher Hickmon
Navasota Junior High School



Darbi Davis
Texas Middle School

Van Gogh at Work: His Materials and Techniques

Dr. David Bomford, Chair, Dept. of Conservation, MFAH

Dr. David Bomford arrived at the MFAH in 2012. He has been a distinguished figure in conservation for more than forty years, as senior restorer at the National Gallery, London, and as secretary general of the International Institute for Conservation. During his career at the National Gallery, he worked with many of the great masterworks of Western art, including Vincent Van Gogh's *Sunflowers*, Peter Paul Rubens' *Samson and Delilah*, Manet's *The Execution of Maximilian* and numerous Rembrandts.



Saturday
March 23, 2019
3:00 PM

Lecture admission is free. Seating limited to 350. Auditorium doors open 30 minutes prior to lecture.



Reception sponsored by the Greater Houston Section of the American Chemical Society to follow in the Museum Café, lower level, The Audrey Jones Beck Building

Brown Auditorium Theater, The Caroline Wiess Law Building
The Museum of Fine Arts, Houston
1001 Bissonnet, Houston, TX 77005

ACS Webinars™

ACS Webinars™ is a free, weekly online event serving to connect ACS members and scientific professionals with subject matter experts and global thought leaders in chemical sciences, management, and business. The ACS Webinars are divided into several series that address topics of interest to the chemical and scientific community; these series include careers, business and innovation, professional growth, joy of science, extreme chemistry, entrepreneurial initiative, green chemistry, and more. Each webinar is 60 minutes in length, comprising a short presentation followed by Q&A with the speaker. The live webinars are held on Thursdays from 2-3pm ET. Recordings of the webinars are available online and upcoming events are posted at <http://acswebinars.org/>.

March 14

Is Biodegradability a Solution to Plastic Waste Pollution in the Ocean and on the Land?

<https://www.acs.org/content/acs/en/acs-webinars/technology-innovation/biodegradability.html>

Marine biodegradable straws and products, biodegradable in landfill, oxo-biodegradable are headlines in print, TV, and E-media. Journal articles report findings of macro-organisms like meal worms and wax moth as solutions for plastic waste management. Furthermore, biodegradability in closed loop managed disposal systems like composting using certified compostable plastics offer an environmentally responsible end-of-life to plastics waste. However, “biodegradable” has become a much misused and hyped term with many misleading claims in the marketplace.

Join Ramani Narayan, Distinguished Professor in the Department of Chemical Engineering and Materials Science at Michigan State University, to discover the science of biodegradability and compostability, as well as identify facts vs. hype so that you can ask the right questions.

March 20 (in Spanish)

Búsqueda de Antioxidantes Multifuncionales: Etapa Computacionalre

<https://www.acs.org/content/acs/en/acs-webinars/spanish/antioxidantes-multifuncionales.html>

Actualmente el estrés oxidativo ha sido relacionado con el desarrollo de muchas enfermedades multifactoriales de alto impacto, como los desórdenes neurodegenerativos. Es por ello que la búsqueda de antioxidantes multifuncionales es un área de investigación con posibles implicaciones terapéuticas. La Dra. Annia Galano Jiménez del Departamento de Química de la Universidad Autónoma Metropolitana Unidad Iztapalapa describe un protocolo computacional diseñado para la búsqueda de antioxidantes multifuncional con potencial aplicación como neuroprotectores.

March 21

Advocating for Yourself: Stop Looking for Yoda to Advance Your Career

<https://www.acs.org/content/acs/en/acs-webinars/professional-development/advocating-wcc.html>

What barriers exist for women and other underrepresented groups within the chemical community and most importantly, how can you overcome these impediments?

Become the “Jedi Master” of your own career advancement during this free interactive broadcast that will be beneficial to all scientists desiring to promote themselves throughout their professional lives. Join accomplished and diverse panelists like the Associate Provost and Dean of the Graduate School at Michigan Technological University Pushpa Murthy and ACS Board of Directors Kathleen Schulz and Dorothy Phillips as well as moderator Amy Balija of Radford University for a discussion on how to recognizing career hurdles and how to advocate for yourself.

Science Seminars at LeTourneau University

LeTourneau University will hold a series of science seminars on Thursdays at 11:00 am in Berry Auditorium of the Glaske Center for Engineering, Science, and Technology. The series will include topics in physics, engineering, chemistry, mathematics, and intellectual property law for engineers and scientists. For a complete schedule with the latest updates please go to www.letu.edu/scienceseminars.

March 21 *Cosmology and Multiverses*

Gerald Cleaver, Department of Physics Baylor University, Waco, TX

March 28 *Forensic Chemistry*

Cameron Hartzler, Department of Chemistry and Physics LeTourneau University, Longview, TX

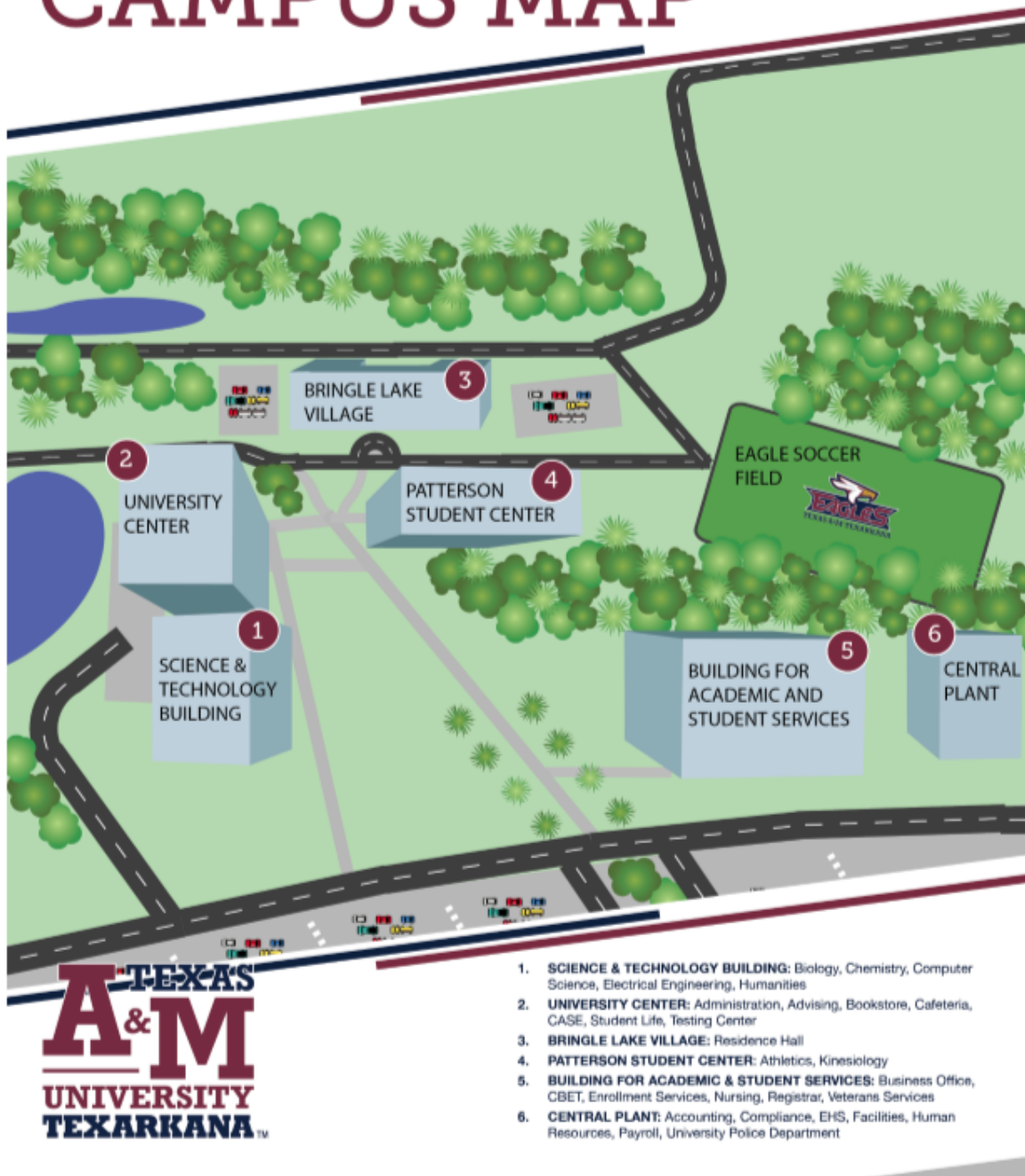
April 4 *Deep Space Exploration: the future challenge in engineering*

Kornel Nagy, NASA - Johnson Space Center, Houston, TX

April 11 *A Photometric Study of the Eclipsing Binary V574 Lyra*

Abbey Rickards, Department of Physics, Stephen F. Austin University, Nacogdoches, TX

TEXAS A&M UNIVERSITY-TEXARKANA™ CAMPUS MAP



Directions to FM 2878/University Ave: (From **interstate 30** east or west)

Head north on Farm to Market Rd 2878 / University Ave toward W Park Blvd. Continue to follow Farm to Market Rd 2878 go (2.4 mi) total 2.4 mi

Continue onto University Ave go 315 ft total (total 2.5 mi)