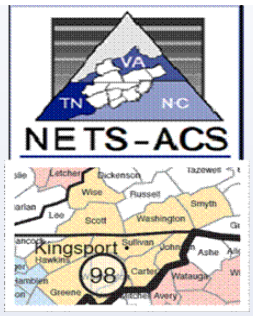
Volume 1 / Issue 1

NORTHEAST TENNESSEE SECTION OF THE ACS NEWSLETTER



Recent Activities

A Narrative History of NETS-ACS is now available on our website!

Dr. Erin C. Smith discussed Astrochemistry using the JWST!

NETS-ACS celebrates Earth Week with ETSU, Hands-On Discovery Center, and the Girl Scouts!

NETS-ACS Awards Ceremony completed on April 21st, 2021.

Upcoming Activities and Announcements

National Chemistry Week is October 18th- 24th. Stay tuned for details!

NETS-ACS Officer Elections are this Fall. Look for a call for nominations in July/August!

ACS Fall National Meeting in Atlanta, GA is August 22nd – 26th.

Contact Us

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Greetings and Salutations! It is my privilege to welcome you to the Northeast Tennessee Section of the American Chemical Society (NETS-ACS) Newsletter. We are honored to have your readership, and look forward to providing you with announcements, updates, and information regarding our organization's activities throughout the year. We look forward to connecting Chemistry to our Community!

- *Dayton P. Street, Newsletter Editor*

MESSAGE FROM THE CHAIR

Hello ACS members! Welcome to the first NETS-ACS newsletter in quite a while! This first newsletter is a visible output of an incredibly productive start to 2021 for our section. I wanted to take my space in this first newsletter to thank the officers, program leaders and many other volunteers that have started this year by injecting excitement, engagement, and renewal for the section.

Accomplishments to date include:

-Documentary history of NETS-ACS has been prepared by our ACS Fellow Bob Maleski.

-Awards and Recognitions have been conferred by Dane Scott.

-Preparation of a financially solid budget was processed under the stewardship of Treasurer Soma Mukherjee and audited by Jennifer Lloyd Stapleton.

-Management of our meetings and Zoom programs by Secretary Gaurav Amarpuri.

- Development of a highly functional website spearheaded by webmaster Brendan Abolins.

- Invaluable navigation through ACS processes and procedures by Councilor John Engelman.

- Constant basis of support and wisdom provided by our Chair-elect Mary Engelman and members-at-large Steve Perri, Bob Maleski and Ned Moore.

In addition to the accomplishments we have made thus far, we have also organized numerous task teams to focus on upcoming events and to increase our exposure to the community.

Task teams include:

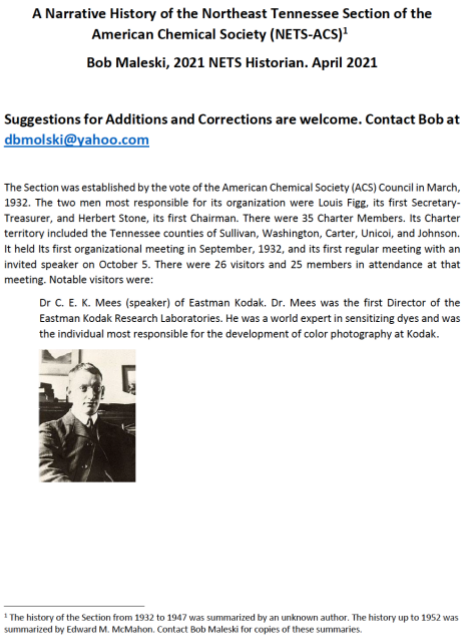
- Developing our section's Publicity (Brendan Abolins, Bob Maleski and recent newsletter editor Dayton Street) in order to connect with our community.
- Section Renaming Initiative (Bob Maleski, Van Daniel, and John Engelman) as we look to overhaul our organization.
- Planning and execution of Earth Day celebration (Debra Wilkinson)
- National Chemistry Week events (Shawn Dougherty and Jennifer Lloyd Stapleton).

In future newsletters we will talk about "Why ACS" and the benefits of membership. But first, I just want to recognize all our members. Please pause for a moment to think about the far-reaching benefits to society provided by our chemical, engineering and allied sciences. Thank you for promoting a healthier, safer, and cleaner world for our children with your innovations, mentoring and science instruction.

Joe Jernigan, 2021 Chair

A NARRATIVE HISTORY OF NETS-ACS IS NOW AVAILABLE

Did you know that Perley Wilcox introduced the speaker at the first NETS-ACS dinner meeting in 1932? That the speaker was C. E. K. Mees of Eastman Kodak, the world's leading expert in sensitizing dyes for color photography at the time. Check out the entire document which can be found History tab on our website (use link below!) to learn more in a "Narrative History" of the NETS-ACS Section. The section historian, Bob Maleski, recently finished the narrative history, but recognizes that the document is by no means perfect and would appreciate any feedback, additions, and corrections. Please contact Bob Maleski with additions, corrections, or feedback regarding the document.



A Narrative History of the Northeast Tennessee Section of the American Chemical Society (NETS-ACS)[1]

Bob Maleski, 2021 NETS Historian. April 2021

Suggestions for Additions and Corrections are welcome. Contact Bob at dbmolski@yahoo.com

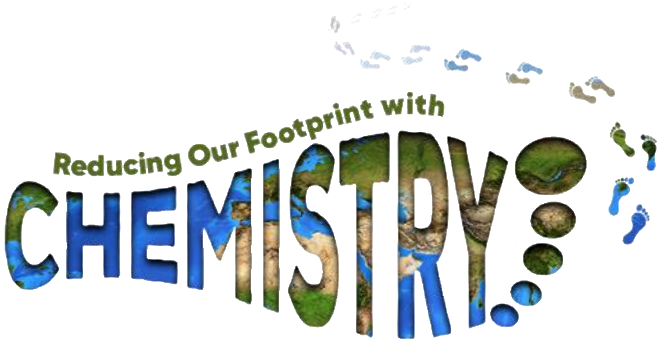
The Section was established by the vote of the American Chemical Society (ACS) Council in March, 1932. The two men most responsible for its organization were Louis Figg, its first Secretary-Treasurer, and Herbert Stone, its first Chairman. There were 35 Charter Members. Its Charter territory included the Tennessee counties of Sullivan, Washington, Carter, Unicoi, and Johnson. It held its first organizational meeting in September, 1932, and its first regular meeting with an invited speaker on October 5. There were 26 visitors and 25 members in attendance at that meeting. Notable visitors were:

Dr C. E. K. Mees (speaker) of Eastman Kodak. Dr. Mees was the first Director of the Eastman Kodak Research Laboratories. He was a world expert in sensitizing dyes and was the individual most responsible for the development of color photography at Kodak.

[1] The history of the Section from 1932 to 1947 was summarized by an unknown author. The history up to 1952 was summarized by Edward M. McMahon. Contact Bob Maleski for copies of these summaries.

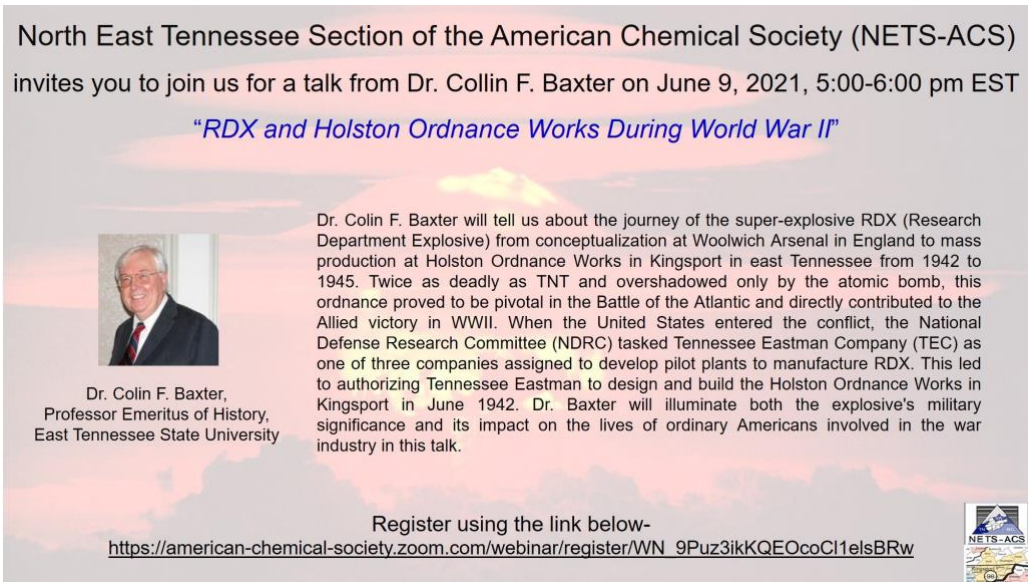
A Narrative History of NETS-ACS

CHEMISTS CELEBRATE EARTH WEEK



On Saturday, April 17th 2021 NETS-ACS participated in a virtual event with ETSU's Chemistry and Geosciences Department and scientists from the Hands on Discovery Center to celebrate Earth Week. The focus of this year's event examined how our ecological footprint can be reduced via chemistry and experiments were centered on the properties of water and water quality. Specifically, several demonstrations were completed that highlighted the properties of adhesion, cohesion, and surface tension. For example, these principles were demonstrated by pouring water down a length of string into an empty container, covering a jar of water with different covers (cloth, screen wire) then turning the jar upside down with the result of most of the water staying in the jar, and disrupting surface tension with a surfactant. In total, 38 Girl Scouts from various troops from the Tri-Cities region, Greeneville, and Knoxville were able to attend (virtually).

RDX AND HOLSTON ORDNANCE WORKS DURING WORLD WAR II



Dr. Collin F. Baxter, Professor Emeritus of History, ETSU

On June 9th, 2021 Dr. Collin F. Baxter gave a talk that covered the development and implementation of the highly energetic compound known as RDX, or cyclotrimethylenetrinitramine, into ordnance systems, and how our local region supported this effort. Below is a synopsis of the description and abstract provided by Dr. Baxter regarding the webinar:

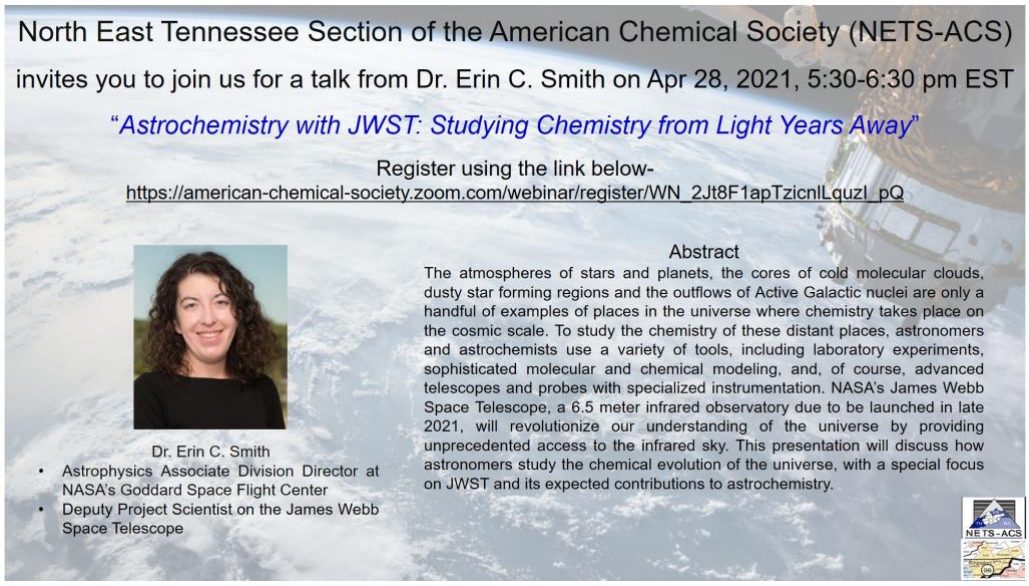
In the shadow of what happened at Oak Ridge during World War II, it is not completely surprising that the events that occurred in Kingsport and at Holston Ordnance Works have largely gone unnoticed and unrecorded in the history of global conflict. And yet, only 150 miles from Oak Ridge, the men and women of this area accomplished one of the production miracles of World War II---the mass production of the super-explosive RDX which was the most powerful explosive in the world until the atomic bomb.

Although researchers at the Woolwich Arsenal are responsible for producing the highly sensitive compound, cyclotrimethylenetrinitramine, which is called it RDX for short. The process they developed, known as the Woolwich process, was inefficient for large-scale production. Specifically, the Woolwich system required 11 pounds of nitric acid to produce 1 pound of RDX and was limited to small-scale reactions.

When the United States entered World War II the National Defense Research Committee task three companies to establish pilot plants to manufacture RDX. One of these companies was the Tennessee Eastman Corporation (TEC). Due to their success, the TEC became responsible for the development and operation what became known as "the giant Holston Ordnance Works."

Use the link to watch the presentation: RDX and Holston Ordnance Works During World War II

ASTROCHEMISTRY WITH JWST: STUDYING CHEMSITRY FROM LIGHTYEARS AWAY



Dr. Erin C. Smith, Astrophysics Associate Division Director, NASA

Astrophysicists study the chemistry of distant atmospheres of stars and planets, the cores of cold molecular clouds, dusty star-forming regions, and the outflows of active galactic nuclei. You may ask, "How do they study these from light years away?" Good question…

Similar to a "who done it" murder mystery, astrophysicists ask what happened, how did it happened, and when and where did it happen. The tools of this CSI team – **C**osmic **S**cience **I**nvestigators - include inductive reasoning, models, spectral databases, laboratories (to recreate the scene of the crime), and observational data using imaging and emission spectroscopy. The crime scenes include star-forming regions, star-collapsing regions and the huge background of atoms, molecules, cold dust, and ice that exists in the medium in between the billions of galaxies. Infrared databases have helped astronomers fingerprint the existence of polycyclic aromatic hydrocarbons (PAH's), carbon monoxide, ethane, formic acid, acetonitrile, and even amino acids in molecular clouds surrounding collapsing and forming stars.

The Hubble, Kepler and Spitzer space telescopes have provided the CSI teams with initial insights regarding composition of cosmic matter, the existence of now countless exoplanets, and amazing imagery of the deep universe and its structure. Now, NASA's James Webb Space Telescope (JWST) will take this understanding of the universe to the next level.

The JWST is a 6.5 meter infrared observatory designed to revolutionize our understanding of the universe by providing unprecedented access to the infrared sky. (Thanks to expansion and the red shift, infrared is the only light that reaches us from the "cosmic dawn".) Unlike the Hubble, the JWST's unobstructed views, sun-shielding design and larger mirror will enable it to collect over six times more light. Since JWST's field of view is 15x Hubble's, JWST's incredible resolution will allow users to observe

an exoplanet's transient passage across the face of its home star, and by spectral difference, determine the composition of its atmosphere. Very cool indeed!

Big questions the JWST should examine:

1) When did stars and galaxies first began to form as space became transparent after the big bang?
2) What makes up exoplanet atmospheres? (Are we alone?!)
3) Can we observe births of stars that are currently shielded by dust?
4) What is the full history of galaxy formation over time (what, how, when)?

Stay tuned! The JWST is slated to launch on **October 31!**

Use the link to watch the presentation: Astrochemistry with JWST: Studying Chemistry from Light Years Away

NATIONAL CHEMISTRY WEEK

National Chemistry Week is observed from October 17th - 23rd nationally, however currently no live-event is scheduled. At the moment, our plan is to send *Celebrating Chemistry* magazines to local schools so that they can celebrate in their classrooms. A link to chemistry demonstration videos will be provided in the magazine. This will allow teachers to watch and decide if shared content is something that they wish to show their students. (Due to the nature of the virtual demonstrations, volunteers will not be needed for this year's celebration.) Please note, this is a tentative plan and is subject to change. Interested parties should keep an eye out for updates regarding this event.

2021 BLUE RIDGE HIGHLANDS SCIENCE FAIR

After 30 years, the Blue Ridge Highlands Science Fair continues to promote and recognize scientific explorations undertaken by young scientists in Southwest Virginia. Through both poster and oral presentations, students are asked to present their STEM-oriented projects to a panel of judges. The entire process, from completing their experiments to conveying their results to judges, provides an exceptional experience in scientific research. While we are proud of all the young scientists who participated in this year's science fair, we would like to take a moment to recognize the winners of the Chemistry Division. More information regarding the Blue Ridge Highlands Science Fair, including the *Program Book*, a link to the awards ceremony, and how to support the science fair can be found at the link below.

First Place

402 Killian Woods

The Difference of the Chemical Composition of Peppermint Essential Oils Between Market Brands

Southwest Virginia Governor's School

Sponsor: Jared Brown

Second Place

401 Sarah Abraham

Comparing the Use of Granular Activated Carbon to Other Water Purification Technologies in Full-Scale Drinking Water Purification Plants

Southwest Virgina Governor's School

Sponsor: Jared Brown

Blue Ridge Highlands Science Fair

2021 ANNUAL NETS-ACS AWARD CEREMONY

On April 21, 2021 NETS-ACS held its annual award ceremony virtually via zoom. Awards presented at this year's annual awards ceremony included **ACS Member Service Awards**, the **NETS-ACS Salutes to Excellence Award**, the **National Chemistry Week Recognition Award**, the **NETS-ACS Chemical Technician Award**, **NETS-ACS Outstanding Chemistry Student Awards**, and the **NETS-ACS Distinguished Member Award**. For more information on the description of each award and selection criteria for section awards please visit the resource page of the NETS-ACS website (see link below). Congratulations to our Awardees!

AWARD CATEGORY	AWARDEES	
70-Year ACS Member Service Award	Mr. Clayton Wise	
60-Year ACS Member Service Award	Dr. Curtis Diebert	Dr. Melvin Farmer
50-Year ACS Member Service Award	Dr. Gerald Cassell	Dr. Gerald Tustin
NETSACS Salutes to Excellence Award	Eastman Technology c/o Steve Crawford	Hands On! Discovery Center and Gray Fossil Site c/o Sarah Leposky and John Krekelburg
National Chemistry Week Recognition Award	Dr. Shawn Dougherty	
NETSACS Chemical Technician Award	Mr. David Arnold	

NETSACS Outstanding Chemistry Student Awards	Sylvia Meredith (ETSU)
	Madison Blanton (Milligan College)
	Mckenzie Peters (Northeast State)
	Jesse Shaffer (UVA Wise)
NETSACS Distinguished Member Award	Dr. Casey Elkins (Eastman Chemical)

NETS-ACS Annaul Awards Ceremony 2021

2021 NETS-ACS Officers

Position	Name	Email
Chair	Joe Jernigan	jcjern@charter.net
Chair Elect	Mary Engelman	mkmoore123@gmail.com
Past Chair	Dane Scott	scottdw@etsu.edu
Treasurer	Soma Mukherjee	soma.pst@gmail.com
Secretary	Gaurav Amrapuri	gaurav.amarpuri@gmail.com
Program Chair	Joe Jernigan	jcjern@charter.net
Councilor	John Engelman (2020-2022)	JHEngelman@gmail.com
Alternate Councilor	Shawn Dougherty (2020-2022)	shawn1103marie@gmail.com
Member at Large	Steve Perri (2019-2021)	sperri@eastman.com
Member at Large	Bob Maleski (2020-2022)	dbmolski@gmail.com
Member at Large	Ned Moore (2021-2023)	nedmoore@chartertn.net

2021 NETS-ACS Committee Chairs

Committee	Name	Email
Awards	Dane Scott	scottdw@etsu.edu
Historian	Robert (Bob) Maleski	dbmolski@gmail.com
Career Services	John Engelman	JHEngelman@gmail.com
Education	Vacant	
Membership	Vacant	
Nomination and Leadership	Dane Scott	scottdw@etsu.edu
Publicity	Brendan Abolins	babolins@gmail.com
Public Outreach	Sen Li	senli@eastman.com
Program	Joe Jernigan	jcjern@charter.net

Long Range Planning	Vacant

Who We Are

The Northeast Tennessee Local Section of the American Chemical Society (NETS-ACS) was established in 1932. The mission of NETS-ACS is to advance chemical activities, develop social relations among those interested in chemical and engineering sciences, promote general welfare of the members in Northeast Tennessee and Southwest Virginia region, and cooperate with ACS and with other local and general technical associates, groups, and societies. Our activities focus on the advancement of chemistry as a profession, promotion of chemical research and advancement of applied chemistry in versatile areas.

Join Us!

NETS-ACS Officer Elections are this Fall. Look for a call for nominations in July/August! Positions to be filled are:

- Chair Elect
- Alternate Councilor
- Member at Large
- Treasurer
- Secretary

In addition to ACS Officer positions, we are also looking for highly motivated individuals to fill support roles. Please contact us for more information!

Want to learn more about the responsibilites of each position? Consult the “Job Manual” posted on our resource page (see link below).

NETS-ACS Resources