



Fall 2007 Newsletter



Message from the Chair

Hi, Folks! Halfway through the year already! I hope everyone was able to stay cool this summer and that you are ready to get back into NETSACS activities. We have a nice slate of events lined up for this fall. In September we welcome ACS president Dr. Catherine Hunt to east Tennessee. We have a member dinner with the president Thursday Sept 13, and Dr. Hunt will present an open seminar Friday September 14. Let's give a warm Tennessee welcome to Dr. Hunt and thank her for taking time out of her busy schedule to visit our section.

Our regular dinner meetings begin for the fall season Sept. 20 with John Fortman, presenting on Colonial Chemistry (see pg. 6). October is always a busy month for the section. Our October dinner meeting will be with Dr. Dorit Noether speaking on the ubiquitous topic of water (see pg. 7).

October holds many **National Chemistry Week** events, including the two-day Chemistry for 4th Graders Event at Eastman and the ETSU ACS Student Affiliate Event at the Hands on Museum. Lots of work is already underway planning these events, but it's not too late to jump in and be a part of NCW 2007.

Fall is also the time for **NETSACS elections**. Unfortunately we have had several resignations, so there are many opportunities for people to **get involved** or re-involved in NETSACS in both big and small roles. Our regular executive committee election slate includes chair elect, secretary, treasurer, councilor, and member at large. This doesn't have to be an election-by-arm-twist! If you think you might be **interested in being an officer**, contact me to find out more about it.

A number of our committee chairs are ready to take a break, leaving numerous openings for some of our key committee chair and other support roles. As you can see, we are in need of a **newsletter editor**. You were probably wondering why it's been a while since you've received a newsletter and why it doesn't look as nice this time! This is what happens when your Chair attempts to play newsletter editor! So let's get a real editor quick!

The section also needs a **webmaster**. I know there is someone out there with that particular dual interest in chemistry and computers who could really snazz up things at www.netsacs.org.

What could be more rewarding than being the one to ensure that our stellar members and students receive recognition for their hard work? NETSACS **Awards Chair** would be a great first step for a new member wishing to get plugged in to NETSACS. The role of Awards Chair doesn't take big time commitment, and the bulk of the effort is focused around the spring awards meeting.

There are some openings that would be terrific opportunities for members with children. Do you have an elementary aged child? Will your child be attending NCW Chemistry Day for 4th Graders event this year, or maybe next year? Why not show the ultimate appreciation that this event exists for our local children by volunteering to be **NCW Chair**? It's a big job for someone with great organizational skills and motivation, and I know we have some enthusiastic members out there who could really shine in this as NCW chair or co-chair.

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Chair, continued from page 1

On the high school level, NETSACS needs someone to head up the **Chemistry Olympiad**. This is a written and lab examination to identify the top high school chemistry students in our area, with the best moving up to the national level. What a great opportunity for our local kids! And it all starts with Chemistry Olympiad Chair to coordinate the testing.

Finally, we have been without a **hospitality chair** for quite a while. Are you tired of the selection I choose for our dinner meetings? Do you wish you had a shorter drive to get to meetings? I bet you have some ideas for booking better venues and caterers! Why not give it a shot?

Thank you to all of you who already put your time and energy into serving NETSACS! You are invaluable, and I have enjoyed working with you throughout the year! It's the great work of many volunteers that make our section able to support so many different programs. I hope to see you all at one of our upcoming dinner meetings or supporting other NETSACS events this fall.

Debra Tindall
2007 NETSACS Chair

NETSACS Fall 2007 Calendar

September 13-14 (Thursday - Friday)	***Special visit and lecture*** by ACS President, Dr. Catherine Hunt, and Theresa Laranang-Mutlu, ACS Assistant Director of Industry Member Programs. Thursday - NETSCAS Dinner with our special visitors - NETSACS members are invited to dinner with Dr. Hunt and Ms Laranang-Mutlu, at 6:30 at Pacific Grill, 453 E. Main St., Kingsport. Dinner is Dutch treat off the menu. 6:30 social, 7:00 dinner. RSVP required. Friday - Seminar "The American Chemical Society: Bridging the Gap, Transforming the Future" - All NETSACS members, and interested students, teachers and scientists are encouraged to attend Dr. Hunt's seminar Friday at 2:30 at Meadowview Convention Center in the Crocket Amphitheater. There will be time after the seminar to meet and interact with our visitors.
September 20 (Thursday)	Dinner meeting: Dr. John Fortman " John Adams, Saltpeter, & Black powder: A Lighthearted Look at Colonial Chemistry " - 6:00 at Golden Corral, Kingsport.
October 8 (Monday)	Dinner Meeting with speaker Dr. Dorit Noether " Water a 360 degree View " 6:00 - Eastman Lodge, Kingsport, RSVP for dinner.
October 21-27	National Chemistry Week. Theme: "The Many Faces of Chemistry" Various events throughout the week. Stay tuned for more info on Hands On Museum and ETSU Student Affiliate demos and activities.
October 23-24	National Chemistry Week 4 th Grader event at Eastman. Over 1200 eager fourth graders will spend the day learning about chemistry by visiting booths that highlight chemistry demonstrations and local industries. Special chemistry show by Francis Webster of Radford University. * Help with Demos - Contact Terri Carvagno tcarvagno@eastman.com * Be an Escort - Contact Trudy Williams gwilliams@eastman.com
October 24-27	SERMACS - Greenville, SC. http://www.sermacs2007.org Students are encouraged to attend the Eastman sponsored graduate student mixer on Thursday.
November 5 (Monday)	Dinner meeting with speaker Charles Deak " Forensic Chemistry in the Private Sector " - 6:00 - Eastman Lodge, RSVP for dinner.

NET-TAG Brilliant in Boston

Daphne Eggers received the Distinguished Service Award from the American Chemical Society's (ACS) Division of Chemical Technicians at the ACS National Meeting in Boston on August 22nd. This Award is for an individual that has given *excellent* service to the Division of Chemical Technicians (TECH). Daphne has been extremely active on both the local and national level with the ACS. She was one of the founding members of the Northeast Tennessee Technician Affiliate Group and has served in numerous division leadership and committee roles within the ACS. Her accomplishments reflect the exceptional quality of her work. Her dedication and commitment has been instrumental in highlighting the professionalism of the technician role throughout industry and the ACS.



National Chemistry Week

Sign up Now to Help With Chemistry for 4th Graders!!

October 23-24 - Spend a morning or afternoon spreading the joy of chemistry and science to over 1200 fourth graders when you sign up to help with the National Chemistry Week 4th Grader event at Eastman. No previous experience necessary. Enthusiasm is the only requirement!

Demos - Contact **Terri Carvagno** tcarvagno@eastman.com 229-3296
Escorts - Contact **Trudy Williams** gwilliams@eastman.com 229-1620

WISE GRITS

No, we're not talking about smart Southern breakfast food. What we are talking about is a smart, ambitious woman who is working to make a difference by challenging the stereotypes in math and science and reversing the trend of girls falling out of these fields, relative to boys, as they grow up. Dr. Judith Iriarte-Gross, professor of chemistry at Middle Tennessee State University, has focused her passions for science and mentoring into several programs with a determination to encourage girls to seek more education in math and the sciences and to better prepare young women to enter successful careers in science and technology. Stay tuned to hear more from Dr. Iriarte-Gross and about these programs in the future!

GRITS (Girls Raised in Tennessee Science)

GRITS is a new National Science Foundation grant with the goal of disseminating information on math and science to both middle school and high school girls to raise their awareness and interest in science, technology engineering and math ("STEM") fields. GRITS seeks to connect not only with teen girls, but also with their parents, educators and counselors, increasing their effectiveness in their roles supporting girls' education and career pursuits. One specific goal is to bring teenage girls together with role models such as female college students who are pursuing degrees in science and math. *GRITS is a new southern tradition of girls in math and science in the state of Tennessee!* www.mtsu.edu/~grits

WISE (Women in Science & Engineering)

WISE is an organization that helps young women prepare for and engage in science and math related careers. WISE instills confidence in women about the importance of females in scientific and technical fields, and seeks to ensure equal opportunity for women in science. <http://mtsu32.mtsu.edu:11017/>

WISOR (Women in STEM (Science, Technology, Engineering and Mathematics) Online Resources)

The WISOR website helps professionals and researchers examine different issues as they relate to women in science, technology, engineering, and mathematics. WISOR also helps women interested in these disciplines to become more familiar with careers and opportunities. <http://wisor.mtsu.edu/>

EYH (expanding Your Horizons in Science and Math)

EYH is an annual science, math and technology conference targeted toward middle school girls. The conference includes hands on workshops, interaction with women role models, and other activities to foster the girls' interests in science and math during this influential time in their development. There are also workshops for adults such as educators and scout leaders who play a role in influencing young girls in their choices of classes and careers. The 11th EYH Conference will be October 27, 2007 at MTSU. <http://mtsu32.mtsu.edu:11094/>

FYI Info on Girls, Science & Math

(from EYH website <http://mtsu32.mtsu.edu:11094/>)

- Studies show that as girls progress through school their interest, achievement, and enrollment in science courses declines-relative to that of boys.
- At age nine, girls and boys perform about the same on science assessments, except in physical sciences.
- By age 11, boys show a more positive view of science on interest surveys than do girls.
- By age 13, an achievement gap materializes in most science content areas, AND
- By age 17, girls achieve at a significantly lower level than boys, especially in physics. Girls at this age have developed more negative attitudes about science.
- Girls tend to drop out of the science pipeline earlier than boys. This winnowing in high school means fewer females than males are adequately prepared for college science or for scientific and technical careers.

Middle school aged girls:

- Learn best when they are interested in the topic being presented and if they can connect new experiences and information with what they already know about the world (How many breaths does Leonardo DeCaprio take a day??? Is much more interesting than how many breaths a typical person takes a day....HA!)
- Learn more when they DO science and math, with ample opportunities to participate, ask questions, discuss, and reflect on findings.
- Like to link new information to what they already know
- Like to cooperate rather than compete in math activities
- Are susceptible to peer pressure and social situations
- Are developing a sense of 'who they are', 'how they want to be perceived', and 'what they want to be'.
- In one survey, 21% of students cited teachers as why they liked science; on the flip side 1/3 cited instruction- such as too much lecturing- as reasons they disliked science.

**“John Adams, Saltpeter, and Black Powder:
A Lighthearted Look at Some Colonial Chemistry”**

John Fortman

Date: Thursday, September 20, 2007

Time: Social 6:00 PM ~ Dinner 6:30 PM ~ Lecture 7:30 PM

Location: Golden Corral restaurant, 1910 N. Eastman Rd. Kingsport, TN
(across from East Stone Commons Shopping Center)

Abstract: Portions of a videotape of the musical “1776” will present correspondence between John and Abigail Adams concerning the colonial army’s need for saltpeter. An old household procedure for making saltpeter and using it to prepare black gunpowder will be shown. A disadvantage of using black powder as a propellant will be demonstrated. If the room is suitable, additional demonstrations illustrating the difference between burning and exploding will be done.

Biographical Sketch: John Fortman is Professor Emeritus of Chemistry at Wright State University where he retired in 2001 after 36 years of teaching freshman and inorganic chemistry. In 1998 he was appointed the Robert J. Kegerreis Distinguished Professor of Teaching, and he has won seven different teaching awards over the years at Wright State, including the CMA Catalyst Award for Outstanding Teaching of College Chemistry. He has published over 50 papers on chemical education in addition to his research publications. With Ruben Battino he has produced three sets of videotapes of chemical demonstrations, and he enjoys performing chem demo outreach shows for middle and high school students in the Dayton area. He has instructed workshops around the country on teaching and demonstrations. He has designed alternative courses for chemistry, and his course for non-science students was cited as a model in the 1990 AAAS report on “The Liberal Art of Science: Agenda for Action”. The course has been characterized as being taught inside-out, upside-down, and backwards. Dr. Fortman’s interests, in addition to demonstrations and course content and organization, include the use of analogies and videotaped material. He has been an ACS member since 1962 and was Councilor for the Dayton Local Section from 1996 to 2004. Since he became an ACS Tour Speaker in 1991, he has given over 280 section talks, visiting all 50 states and Puerto Rico.

Meal: Golden Corral offers an extensive buffet, which should please most palates. The private room is offered to us for no charge with the understanding that the majority of our party will purchase a meal. The all-you-care-to-eat buffet is \$9.29 (\$8.59 seniors) + tax. Drinks are \$1.59. You may pay individually for your meal as you enter the restaurant, then join our group in the private room, which is located near the dessert area. Please RSVP, even though no payment is needed up front.

Please RSVP by Noon on Monday Sept 17 to:

Warren Jackson: warrenjk@eastman.com, 229-1713

Eastman Chemical Company B-150B, PO Box 1972 Kingsport, TN 37662-5150

569th Meeting of the Northeast Tennessee Section of the American Chemical Society

“Water: A 360-Degree View”

Dorit Noether

Date: Monday, Oct 8, 2007

Time: Social 6:00 PM ~ Dinner 6:30 PM ~ Lecture 7:30 PM

Location: Eastman Lodge, Kingsport, TN

Abstract: The message from space has been received and deciphered: “What’s the stuff that covers most of your planet’s surface? Is it inert? How does it affect you? Do you use it? How?” The answer to the first question is easy: “It’s H₂O, with some stuff dissolved in it.” At least that’s what we chemists would say. But what about your local Congressman or a Hindu aesthetic? John Dalton, Beethoven, Frost, and van Gogh would never have agreed with such an answer. Matters become even more complicated when we try to answer the other questions. As with any real problem, there are different solutions depending on the point of view. Water, the Greek element, is vital to all life from aardvarks to zinnias and plays a role in all our creative efforts from constructing allegories to zeolites. In this talk I use water to demonstrate the pragmatic importance of music and poetry and the exquisite beauty of science and technology.

Biographical Sketch: Dorit L. Noether was associate editor of the American Chemical Society’s (ACS’s) CHEMTECH magazine for about 20 years and continues her association with the magazine as a contributor to the “Heart Cut” column. Previously, she served as special consultant for masterplanning at the New Jersey Department of Higher Education. There she helped develop masterplans for environmental science, the fine and performing arts, educational media, and teacher education. Prior to that time she was a member of the chemistry faculty at Rutgers University, New Brunswick, N.J., for 10 years and served as the sole chemistry instructor at C.W. Post College during its early years. She retired in spring 1993 to devote more time to writing, lecturing, and painting. Encyclopedic Dictionary of Chemical Technology (VCH), which she co-authored with her husband, Herman, was published in 1993. Dorit studied at Radcliffe College (B.S.) and Columbia University (M.S.) before interrupting to raise a family. She earned a Ph.D. in chemistry at Rutgers when her three children were in their teens. She is active in the ACS and has arranged a number of symposia at national and regional meetings. She is a councilor, a member of the Women Chemists’ Committee and the Committee on Copyrights and a national ACS tour speaker. She chaired the North Jersey Section in 1985 and is currently its treasurer.

Menu: Barberito’s - Taco bar with beef, chicken, black beans, soft and hard shells, salsa, chips. Sweet & unsweet tea. Dessert surprise by Debby.

Meal Cost: \$8.00 for everyone. No charge to attend the lecture. Make check to “NETSACS” RSVP’s are fine with the understanding that payment will be made at the meeting.

Please RSVP by Noon on Tuesday Oct. 2 to:

Warren Jackson: warrenjk@eastman.com, 229-1713,

Eastman Chemical Company B-150B, PO Box 1972 Kingsport, TN 37662-5150

ACS Volunteers Needed!

Consider getting involved with NETSACS in one the following roles:

- **Newsletter Editor** – Compile 2-3 newsletters / year and ensure that they are distributed to the members and website.
- **Webmaster** – Upkeep of the NETSACS website; Refresh website design; Recommend software needed to keep the website running smoothly.
- **Public Relations** – Ensure that the section's good work and efforts don't go unnoticed by working with local media and national ACS.
- **Member at Large** – Have a say in section programs and activities. A good first step if you'd like to get more involved.
- **National Chemistry Week 2008 Chair** – Oversee the section's NCW events, especially the 4th Grader Day, which aims to inspire 1200 kids in science and chemistry.
- **Awards Chair** – Coordinate the section's awards. Order plaques, document award winners, coordinate award winners at spring awards meeting.
- **Chemistry Olympiad Chair** – Coordinate with local high schools to select students to take ACS exam and lab practical. Coordinate with the Awards chair to recognize finalists at the awards meeting.
- **Hospitality Chair** – Book venues and catering for NETSACS monthly dinner meetings. Man the check in table at the dinner meetings.

Contact Debra Tindall dtindall@eastman.com (423)229-4821 for questions.

*** Now collecting newsletter articles and items for November mailing ***

**** Now soliciting for election nominees ****

*** Submit to Debra Tindall ***

Mark Your Calendar for 6.02 x 10²³



That's right, Mole Day is celebrated each year at 6:02 October the twenty third! Mole Day is a day to celebrate chemistry and recognizes the work of Amedeo Avogadro, who in 1811 published his hypothesis relating volume, mass, and molecules for different gasses. His work contributed to some of the basic laws and measures used by chemists, including the concept of molecules and atomic weights and the ideal gas law. Avogadro's number is the number of molecules or units in one mole. One mole is the amount of substance that weighs its molecular weight. So, a mole of water is the quantity water that weighs 18 grams, and that's 6.022×10^{23} molecules of H_2O .

Mole Fun Facts: It would take 3 moles of M&M's to fill the volume of world's oceans. But with only 146 billion M&M's produced annually, it would take 12 trillion years to produce enough M&M's. By the way, that many moles of water would fit in a $\frac{1}{4}$ cup measure. There are 1.03×10^{18} molecules of NaCl in a grain of table salt.