



American Chemical Society

Nebraska Section Newsletter

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Special thanks to Abby Jackson
for her help preparing this
Newsletter.

ACS Nebraska Section News

Dear Local Section Members and Friends,

Thanks to all who participated in the local section elections. Congratulations to Prof. Mark Griep (UNL), the incoming section chair, and our new incoming Board Member, Prof. Robert Powers (UNL). My special thanks to our outgoing Councilor, Prof. Andrea Holmes (Doane College), and outgoing Board Member, Prof. Moses Dogbevia (Hasting College). I appreciate your service.

Dr. Griep comes into office with an exciting agenda for the Section, and I encourage members to get involved. Among the important items to be addressed, the Nebraska Section Bylaws, last amended in 1977, are in need of update and revision. Revising the Bylaws requires the participation of both the officers and the members. I ask that, when Mark calls, you assist in this important process.

In this newsletter, read about some of the highlights from UNL Prof. Rebecca Lai's entertaining and informative October seminar entitled, "*A Professor's Guide to Harry Potter's Chemistry*". Dr. Lai's energy and infectious enthusiasm made for an interesting mix of history, alchemy and chemistry relating to the chemistry of gold, the sorcerer's stone and the elixir of life. A lively, enthusiastic crowd of students and chemists were in attendance. If you or someone you know in the section would like to give a general interest chemistry talk at a future meeting, I am certain that Dr. Griep would like to hear from you.

The University of Nebraska-Kearney hosted 111 area high school students, an event supported by local section funding. These young people travelled from Callaway, Ansley, Giltner, Elm Creek, Blue Hill, Arnold, Sargent, Loup City, and Harvard to come to the Kearney campus and have a day of authentic scientific laboratory experiences. The visitors rotated through five different sessions, including water analysis with chemistry students and faculty. Our thanks to UNK Prof. Amanda Glass for organizing the event and assembling the highlights for the Newsletter. Local section officers are eager to consider requests to support other similarly worthwhile projects.

In August, I attended the Philadelphia ACS National meeting Council meeting as substitute Councilor and gained a new appreciation for the important role local sections play in ACS governance. I am the incoming Councilor for the Section and look forward to the opportunity to represent the Sections' interests at future council meetings.

Jim Takacs
2012 ACS Nebraska Section Chair and 2013 Councilor
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A Professor's Guide to Harry Potter's Chemistry



The ACS Nebraska local section organizes Seminars and Events to educate public and interested students. The October seminar was organized by Prof. Jim Takacs at the University of Nebraska-Lincoln. The speaker, Dr. Rebecca Lai, is Associate Professor of Chemistry at UNL. Her seminar was entitled "A Professor's Guide to Harry Potter's Chemistry" was based on the popular honors seminar Prof. Lai teaches at UNL. J. K. Rowling's series of Harry Potter books has captured the imaginations of millions of readers of all ages, including many engineers and scientists. Although J.K. Rowling did not major in chemistry in college, she has substantial knowledge of alchemy and has incorporated many chemistry concepts into her books, in

particular, the first book titled "Harry Potter and the Sorcerer's Stone". In her lecture, Dr. Lai aimed at introducing both Harry Potter fans and avid chemists to the magic of Hogwarts that exist in our own world (aka chemistry). Specifically, she addressed the relationship between the alchemical concepts used in the books with modern chemistry. The main topics covered included the chemistry of gold, the sorcerer's stone, and the elixir of life.



Innovations in Fuel Cycle Research Awards Program

The Office of Fuel Cycle Technologies of the U.S. Department of Energy is sponsoring the fourth annual Innovations in Fuel Cycle Research awards competition for students. The program is designed to:

1. award graduate and undergraduate students for innovative fuel-cycle-relevant research publications and
2. demonstrate the Office of Fuel Cycle Technologies' commitment to higher education in fuel-cycle-relevant disciplines.

In addition to cash prizes, the top-ranked award winners will present in a special session of the 2013 ANS Winter Meeting. Depending on availability, additional travel/conference/presentation opportunities may be provided.

The application process is easy. Go to www.fuelcycleinnovations.org and complete the simple online application. Then convert your publication to a PDF file and submit as an email attachment to innovations@wtamu.edu. Note that the application deadline is midnight, Sunday, March 3, 2013.

University of Nebraska-Kearney for Science Day

In early November, the University of Nebraska-Kearney hosted 111 area high school students. These young people travelled from Callaway, Ansley, Giltner, Elm Creek, Blue Hill, Arnold, Sargent, Loup City, and Harvard to come to the Kearney campus and have a day of authentic scientific laboratory experiences. The visitors rotated through five different sessions, including tagging fish with the biology department, water analysis with chemistry students and faculty, and building a simple motor with the department of physical science and physics.



The ultimate goal of Science Day was to expose high school students and teachers to authentic science experiments. Although the short periods of time, just over an hour for each rotation, did not lend itself to an extensive discussion of laboratory technique, scientific theory, or details calculations and analysis, it did give the students the opportunity to do some real science. In the chemistry laboratory, students worked with burets and other chemistry glassware, most for the first time. The students and teachers brought samples of water from their locale and carried out a simple EDTA (ethylene diamine tetraacetic acid) titration to determine how “hard” their water was.

Each session began with a brief discussion of laboratory technique with burets, including reading the meniscus, as well as precision in measurement and laboratory safety. Then students got to jump right into the laboratory experiment.

In addition to participating in the laboratory experience, students were also given a bag of free “goodies” from the American Chemical Society Local Nebraska Section and the American Chemical Society Scholars Program. Students received a pocket-sized Periodic Table of the Elements, a stress “Having a Ball with Chemistry” ball, an ACS pencil topped with a chemistry Avogadro, Milli or Meg mole eraser, and literature about the ACS Scholars program.



By giving students an authentic laboratory experience, we hoped to whet their interest in the sciences. Providing them with free fun chemistry-related materials made their experience that much better. Indeed, many students were very excited to “have a ball” with their chemistry-themed stress balls!

Thank you to the Nebraska Local Section for donating funds to encourage the next generation of students that science is fun, relevant, and exciting.

(Prepared By Amanda Glass, University of Nebraska-Kearney Assistant Professor of Chemistry)

PS: Local section officers are eager to consider requests to support other similarly worthwhile projects.

Advancing Graduate Education in the Chemical Sciences

The ACS Commission on Graduate Education Report (www.acs.org/gradcommission) is the 21st century's first major analysis of the education of chemical scientists, whose work impacts basic research, medicine, drug discovery, energy, materials science, and virtually every other field of science. The report's recommendations are intended to ensure that our technological leaders have the skills necessary to ensure future U.S. innovation, job creation and competitiveness.

The five major conclusions of the 22-member Commission are:

1. Current educational opportunities for graduate students, viewed on balance as a system, do not provide sufficient preparation for their careers after graduate school.
2. The system for the financial support of graduate students, as currently operated by private, institutional, state, and federal funds, is no longer optimal for national needs.
3. Academic chemical laboratories must adopt best safety practices. Such practices have led to a remarkably good record of safety in the chemical industry and should be leveraged.
4. Departments should give thoughtful attention to maintaining a sustainable relationship between the availability of new graduates at all degree levels and genuine opportunities for them. Replication in excess is wasteful of resources and does injustice to the investment made by students and society.
5. Postdoctoral training and education is an extension of graduate education that is important for success in a variety of career paths, particularly for faculty appointments. Postdoctoral associates should be treated as the professional scientists and engineers they are. A postdoctoral appointment should be a period of accelerated professional growth that, by design, enhances scientific independence and future career opportunities.

ACS 2013 HEROES OF CHEMISTRY

The Heroes of Chemistry program highlights the vital role of industrial chemical scientists and their companies in improving human welfare through successful commercial innovations and products. It presents an ideal opportunity to enhance the public image of the chemical and allied industries.

Initiated in 1996, the Heroes of Chemistry Program honors scientists whose work in traditional or nontraditional fields of chemistry and chemical engineering has led to the successful innovation and development of commercial products based on chemistry. These industrial scientists are celebrated for their innovative contributions to their companies, to the chemical enterprise, and to humankind.

Each year, Heroes of Chemistry are nominated by their own companies to recognize their talent, creativity, and innovation in the chemical enterprise. Heroes of Chemistry have excelled in innovation at prominent international corporations and developed many commercial products that demonstrate strong financial performance. The commercial success of their products in the marketplace is an important criterion for this honor, because we recognize that good business results follow good science.

All nominations must be received by Friday, March 29, 2013 (http://portal.acs.org/portal/PublicWebSite/funding/awards/industry/heroes/CNBP_026765)