



# American Chemical Society

## Nebraska Section Newsletter

<http://nebraskaacs.nebrwesleyan.edu/>

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## November Speaker: Dr. Ramon Barnes

Tuesday, November 10, 2009

*“Environmental Forensics and Analytical Atomic Spectroscopy”*

**Venue:** Ockinga Conference Center, UNK Campus

**Time:** 6:00 pm social, 6:30 pm dinner (Italian buffet-style), 7:00 pm talk

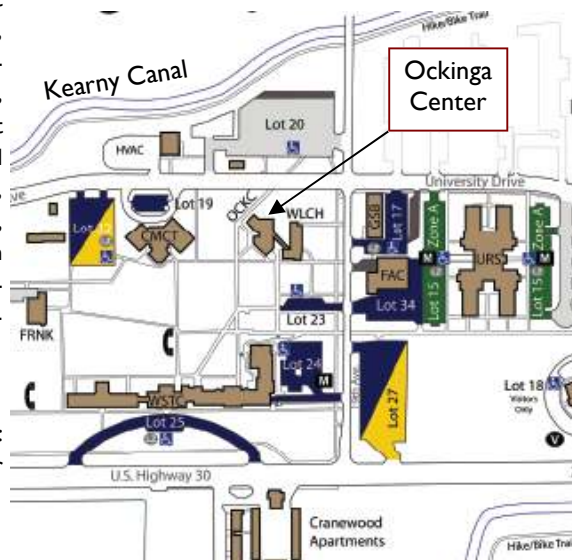
**Cost:** \$8 for ACS Members/ \$12 for Non-members/ \$4 for students (RSVP November 4)

Environmental forensics is a new subject area relating to courtroom or litigation proceedings and the fact basis for mediated or negotiated transactions involving environmental matters.

Environmental forensic investigations often deal with historical release of contaminants and attempt to establish who caused the contamination, when and how the contamination occurred, how extensive the contamination was, what levels of contamination exposure existed, and how valid the test results were. Plasma spectrochemical analysis has been applied to a large variety of environmental and forensic materials to identify and quantify their elemental concentrations, isotopic compositions, and metal compound forms. Specifically, inductively coupled plasma (ICP) atomic emission (ICP-AES) and mass spectrometry (ICP-MS) provide powerful elemental analysis tools for air monitoring, biota analysis, soil and sediment analysis, radionuclide determinations, and water and ecological monitoring. The features of plasma spectrochemistry will be described, and ICP analyses of environmental and forensic materials will be reviewed with emphasis on chemometric data interpretation for source identification. The unique applications of laser ablation (LA-ICP-MS) for microsamples and especially crime scene samples will be demonstrated. Elemental speciation with combined separation and ICP-MS tools also will be introduced.

*Biographical Sketch:* Ramon Barnes is director of the University Research Institute for Analytical Chemistry, Professor Emeritus of Chemistry at the University of Massachusetts, editor of the ICP Information Newsletter (1975-), and chairman of the Winter Conference on Plasma Spectrochemistry (1980-). He received a Ph.D. in analytical chemistry from the University of Illinois, Champaign/Urbana, in 1966, an A.M. in chemistry from Columbia University, New York, in 1963, and was a post doctoral research fellow at Iowa State University, Ames, in 1968 and 1969. He served as an Army Captain at NASA Lewis Research Center, Cleveland, from 1966 to 1968. From 1969 to 2000 he taught analytical chemistry and maintained an international research program at the University of Massachusetts, Amherst. He has published more than 300 papers, edited four books, and continues an active research interest in fundamentals and applications of inductively coupled plasma (ICP) discharges for spectrochemical analysis.

For questions and RSVP (by November 4), contact: Mike Mosher, mosherm@unk.edu (308) 865-8385 or Scott Darveau, darveusa@unk.edu (308) 865-8491.



## UNK — New Bruner Hall of Science

October 2009 marked the completion of the construction of the new Bruner Hall of Science (BHS) complex on the University of Nebraska at Kearney (UNK) campus. This \$14.5 million project involved the razing and rebuilding of the classroom building to the north of the original Bruner Hall of Science. In addition, the entire science building was renovated from the floor to the ceiling. The result is 94,420 square feet of space to house the science departments at UNK.

The Department of Chemistry, which finds its home on the 4th floor of BHS, was completely redesigned to be a more efficient use of the square footage of the building. "This redesign", said Dr. Michael Mosher, Chair of the Department of Chemistry, "closely mimics the educational mission of the department. Students and faculty have more freedom to work one-on-one in ways that make sense for the education of our students."

The original 'race-track' hallway design for the department has been replaced with a central corridor. Teaching laboratories line the south side of the building while research laboratories line the north side of the building. Faculty offices have been dispersed throughout the floor based on the specialty of each particular professor (i.e., Organic Chemistry faculty are located in close proximity to their own research laboratories, the organic chemistry teaching laboratory, and instrumentation laboratories that support organic chemistry.)

The new 2-story building constructed to the immediate north of the original Bruner Hall of Science is home to 5 medium-sized classrooms (50 students each), the Health Sciences Center, and the new planetarium. Due to the architectural design of the building, the planetarium is most striking when observed from outside of the building. While the classrooms and Health Sciences Center are currently in use, the grand opening of the planetarium isn't scheduled until later this year.

Bruner Hall of Science and Mary Morse Lecture Hall were originally constructed in the late 1960's and dedicated to two of the influential science educators of that time. Originally built to house all of the science departments, expansion of the science majors at UNK has resulted in the new BHS complex serving only the Biology, Chemistry, and Physics Departments and the Health Sciences Program.



Artist rendering of new construction. The planetarium is clearly visible as the "ball in the box".



Fourth Floor - New Layout  
Scale: 1" = 20'-0"

Floor plan of the new Department of Chemistry on 4th Floor Bruner

# Merck Indexes

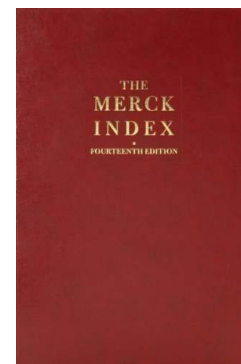
Merck & Co., Inc. has donated over 12,000 Merck Indexes to local sections around the United States. The book contains chemical, pharmaceutical and biomedical information on more than 18,000 compounds that we know as drugs, fragrances, cosmetics, food supplements, pesticides and organic chemicals used in research. It has a number of additional tables, a glossary, structures and reactions of interest to students and teachers, as well as a periodic table of the elements.

The Nebraska Section received 50 indexes to be distributed to area high schools, community colleges, and undergraduate and graduate insti-

tutions. If your institution (or you know someone) who would like to receive a Merck Index, please notify Kerry Lucas at Doane College (402.826.8243 or [kerry.lucas@doane.edu](mailto:kerry.lucas@doane.edu)).

Merck & Co., Inc. is a global research-driven pharmaceutical company dedicated to putting patients first. Established in 1891, Merck discovers, develops, manufactures and markets vaccines and medicines to address unmet medical needs. The Company devotes extensive efforts to increase access to medicines through far-reaching programs that not only donate Merck medicines but help deliver them

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## Get Involved in the ACS Celebration of IYC 2011: Support the U.S. Commemorative Stamp Campaign

The ACS is working to urge the United States Postal Service to adopt chemistry as a theme for a commemorative stamp in 2011 in view of the contributions of chemistry to the wellbeing of humankind in the U.S. and worldwide and on the occasion of the 2011 International Year of Chemistry.

The USPS gets 50,000 subject requests per year and awards only 25 commemorative stamps per year - Your efforts to contribute to this cause this year are very important and very much appreciated!

How to get involved:

- Visit [www.acs.org/iyc2011](http://www.acs.org/iyc2011) to download the petition
- Distribute the petition for signature among your colleagues, students, and friends (all chemists and friends of chemistry are encouraged to sign!)
- Mail or FAX completed petitions to the ACS Office of International Activities no later than November 1. (see petition for fax number and address)

To learn more about IYC 2011 and to contribute ideas to the ACS celebration of this historic event, visit [www.acs.org/iyc2011](http://www.acs.org/iyc2011).