

# THE Central Arkansas



CHEMIST

The Newsletter of the Central Arkansas Local Section of the American Chemical Society

March, 2003

## General Meeting

Monday, March 10

Location: Room 150, McInteer Building  
Harding University  
Searcy, AR

6:00 p.m. Dinner with Speaker  
Ryan's Family Steakhouse  
3608 East Race, Searcy

7:30 p.m. Program  
Dr. Edmond W. Wilson, Jr.  
"Development of Sensors for Space  
Exploration"

*To obtain driving directions, visit  
[membership.acs.org/c/centralarkansas](http://membership.acs.org/c/centralarkansas)*

For our March meeting, we welcome our Local Section's Councilor, Dr. Ed Wilson of Harding University.

## DEVELOPMENT OF SENSORS FOR SPACE EXPLORATION

Diode lasers make excellent sensors for space exploration missions. One application is measurement of water vapor concentrations in the atmosphere near the Martian surface. Diode lasers are small, have low power requirements and provide unequivocal identification of atmospheric gaseous species. Mars is an ideal environment for diode

laser spectroscopy. The low atmospheric pressure minimizes the effects of pressure and doppler broadening of spectroscopic transitions. Low temperatures cause diode lasers to become super efficient requiring minimal energy. Low temperatures also improve signal to noise ratios because of the reduction in thermal noise in laser diode source, detector and electronic circuitry.

A review of past and future Mars missions by NASA will be discussed and a tour of Mars will be included in the presentation. Evidence for past or present life on Mars will be presented. Space enthusiasts of all age groups are invited and encouraged to attend.

## Speaker's Biographical Sketch

Dr. Edmond W. Wilson, Jr. is Professor of Chemistry in the Department of Physical Science at Harding University in Searcy, Arkansas. He earned a Bachelor of Science in Chemistry at Auburn University, Auburn Alabama and received the Master of Science and Doctor of Philosophy degrees in Physical Chemistry from the University of Alabama, Tuscaloosa, Alabama.

Dr. Wilson spent two years as a Research Associate in the Department of Chemistry at the University of Virginia in the area of biophysical chemistry doing spectroscopic studies of biochemical systems. He also spent two summers at Jet Propulsion Laboratory as a NASA/ASEE Summer Faculty Fellow working in atmospheric spectroscopic studies. He presently teaches physical chemistry at Harding University as well as conducts and supervises research in the areas of diode laser spectroscopy and atmospheric chemical kinetics.



Dr. Wilson has received recent grants from the American Chemical Society Petroleum Research Fund, Arkansas Science and Technology Authority, Research Corporation, Arkansas Space Grant Consortium and the NASA EPSCoR Program and has published fifteen scientific papers.

Dr. Wilson is a member of Phi Eta Sigma and Sigma Xi Research Societies, American Association for the Advancement of Science, Planetary Society, National Space Academy, American Institute of Aeronautics and Astronautics, American Chemical Society and the Arkansas Academy of Science.

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## Looking Ahead

April 15     Awards Banquet, UALR

**Note:** Undergraduate travel grant recipients will be expected to present their posters at the banquet.

Ever at a loss as to what's going on in the section? Simply visit the section's website:

<http://membership.acs.org/c/centralarkansas>

You'll find the section's meeting schedule, announcements, and information about services provided by the section, along with other useful links.

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## Local Section News

We had a diverse turnout for our last section meeting at the Center for Toxicology and Environmental Health (CTEH) with members from Harding University, Henderson University, Arkansas Tech University, Great Lakes Chemical, CTEH, RINCO, and the Arkansas State Crime Laboratory. Dr. Stanley Gross, a toxicologist from the EPA, lectured on "Crisis in Perception of Chemical Health Risks." Door prizes were awarded to Lex Mitchell and Steve Zimmer.

For those who want to get a head start on National Chemistry Week, the dates have been set for Oct. 19-25 with the topic, "Earth's Atmosphere and Beyond!"

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## National News

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### New Green Chemistry Education Materials Available

Green chemistry is sometimes called preventive medicine for the environment. It is the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances. You can teach or learn more about green chemistry with relevant, stimulating, and hands-on materials from the ACS Education and International Activities Division.

A new lab manual for undergraduate chemistry, two beautiful poster designs, and a set of FREE introductory readings in green chemistry are now available. These products mark the conclusion of our cooperative agreement with the U.S.

Environmental Protection Agency to develop materials that relate green chemistry to standard topics in the chemistry curriculum. Other products available from ACS include an introductory video, an activity book for introductory chemistry, green chemistry case studies, and a FREE searchable bibliography. Full descriptions of these products are available online at [www.chemistry.org/education/greenchem](http://www.chemistry.org/education/greenchem), or contact us at 202-872-4523 or [education@acs.org](mailto:education@acs.org) for more information.

## The American Chemical Society Offers Two Types of Continuing Education Courses Online

### Instructor-Led Courses-ACS Webcast Short Courses

Now you can take an ACS Short Course at your desktop. Make your plans now to attend an ACS Webcast Short Course from the convenience of your office or home. These courses meet during scheduled times and are directly guided by expert instructors.

Webcast Short Courses scheduled for 2003:

- Interpretation of Mass Spectra
- Infrared Spectral Interpretation, I
- Effective Technical Writing

For more information visit <http://chemistry.org/elearning>.

### Self-Paced Courses-ACS Internet Courses

Register in and start a course anytime. These courses are completely self-paced. Help from an instructor is available by e-mail.

ACS Internet Courses include:

- § Basic Statistical Analysis of Laboratory Data
- § **NEW!** *Chemical Laboratory Techniques*
- § **NEW!** *Starting with Safety-An Introduction for the Academic Chemistry Laboratory*

To review a complete on-line catalog, visit the ACS Virtual Campus at <http://www.vcampus.com/acs>.

Need more information or don't see what you're looking for? Let us know what topics you would like for us to add by sending an e-mail message to [c\\_gerson@acs.org](mailto:c_gerson@acs.org).

## **Hertz** ACS Members Receive a World of Benefits!

As a member of the American Chemical Society, you can receive reduced rates on your next rental car at Hertz. Hertz offers special membership savings on your business and leisure rentals. And the name Hertz means more service in more places all around the world. To receive your membership savings, use your Hertz **CDP# 0083855** when making a reservation. Then present your membership card for identification at the time of rental.

For reservations, call your travel agent, call Hertz at **1-800-654-2200** or visit Hertz at [www.hertz.com](http://www.hertz.com).

## **AVIS** Take Advantage of Reduced Rates on Your Next Rental Car!

When it comes to member benefits, **ACS** and **Avis** “**Try Harder**” by offering low, competitive daily rates along with special discounts for both leisure and vacation rentals. Most Avis rentals come with free unlimited mileage, too! You'll appreciate the many convenient airport locations and timesaving services, like Avis Express and Roving Rapid Return, that can make renting and returning and Avis car fast and easy.

For more information and reservations, call your travel consultant or an employee-owner of Avis, toll free: **1-800-879-2847** or visit <http://www.avis.com/>. And be sure to mention your Avis Worldwide Discount (AWD) number **B120700**.

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## Perspective

*“All these fifty years of conscious brooding have brought me no nearer to the answer to the question ‘What are light quanta?’ Nowadays every rascal thinks he knows, but he is mistaken.”* –Albert Einstein, letter to Michel Besso, 1951.



If you have an article or job posting that you would like to have considered for publication in our newsletter, send it to [perrym@obu.edu](mailto:perrym@obu.edu) for review.

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The *Central Arkansas Chemist* is published as needed by the Central Arkansas Local Section of the American Chemical Society. Section Chair, Cindy Moran, Arkansas State Crime Laboratory, 501-227-5747, [cindy.moran@ascl.state.ar.us](mailto:cindy.moran@ascl.state.ar.us); Chair-Elect, Cheryl Lichti, University of Arkansas for Medical Sciences, 501-526-5978, [lichticheryl@uams.edu](mailto:lichticheryl@uams.edu). Address all correspondence to the Section Secretary, Marty Perry, Ouachita Baptist University, 870-245-5217, [perrym@obu.edu](mailto:perrym@obu.edu). Newsletter contributions should be sent directly to the Section Secretary in electronic form. The Central Arkansas Local Section Web site is <http://membership.acs.org/c/centralarkansas>

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