



ALI "QUOTES"

Volume 19, Issue 4

THE NEWSLETTER OF THE PRINCETON ACS

September/October 2009

Website <http://www.princeton.edu/~pacs>

2009 Executive Officers & Committee Chairs

Chair:

David Carrick
dcarrick@comcast.net

Chair-Elect:

Kathryn Wagner
(609) 258-2937
kmwagner@princeton.edu

Past-Chair:

Andrew Bocarsly
(609) 258-3888
bocarsly@princeton.edu

Secretary / Treasurer:

Sharon Sibilis
(609) 520-1288
sharon.sibilis@verizon.net

Councilor (2009-11):

Lynne Greenblatt
(732) 274-4549
greenbl1@wyeth.com

Councilor (2008-10):

Louise Lawter
louise.lawter@gmail.com

Webmaster:

Jonathan Chun
(732) 355-1234
jchun@alliantechgroup.com

Alt. Councilor (2009-11) & Earth Day :

Schuyler Antane
antanes@wyeth.com

Alt. Councilor (2008-10) & Outreach:

Bill Barnard
Zev4US@yahoo.com

National Chemistry Week :

Kathryn Wagner
(609) 258-2937
kmwagner@princeton.edu

Government Affairs:

Lynne Greenblatt
(732) 274-4549
greenbl1@wyeth.com

AliQuotes & Public Relations:

Louise Lawter
louise.lawter@gmail.com

Chemagination:

Louise Lawter
chemagination@yahoo.com

Monthly Dinner Meeting

Tuesday, September 29, 2009

our guest speaker will be

Richard P. Wool, Ph.D.

University of Delaware,
Department of Chemical Engineering and Center for Composite Materials

"Green Materials for Renewable Energy"

Time: 6:00 PM
Lecture: Frick Laboratory, Room 120, Princeton University
Dinner: Triumph Brewery, Nassau St. (following lecture)

Abstract

Recent advances in genetic engineering, composite science, and natural fiber development offer significant opportunities for new, improved green materials from renewable resources that are optionally recyclable, biocompatible and biodegradable, thereby enhancing global sustainability. When such biobased resins are combined with natural fibers (plant and poultry) starch and lignin, new low-cost composites, pressure sensitive adhesives, elastomers and foams are produced that are economical in many high-volume applications. These high performance composites can be used in wind turbines, solar integrated energy efficient housing, hydrogen storage, hurricane resistant housing, agricultural equipment, automotive sheet molding compounds, civil and rail infrastructures, marine applications, electronic materials, and sports equipment. The development of biobased materials is consistent with the principles of Green Chemistry and Engineering, which pertain to the design, commercialization and use of processes and products that are technically and economically feasible while minimizing the generation of pollution at the source and the risk to human health and the environment.

Biography

Richard Wool is a Professor of Chemical Engineering and Director of the ACRES Program and past Director of the Center for Composite Materials at the University of Delaware. He was Chairman of the ASTM committee for Biodegradable Plastics and was PI of the DoE Project to develop new "Biobased materials from optimized plant varieties" in collaboration with industry, KSU and Sandia National Labs. He is the Chairman-Elect of the Gordon Research Conference on Composites. He is author of the books "Bio-Based Polymers and Composites" with XS Sun, and "Polymer Interfaces: Structure and Strength". Professor Wool is a Fellow of the American Physical Society and member of the American Chemical Society and American Institute of Chemical Engineers. He is President and founder of Cara Plastics Inc [www.caraplastics.com]

which manufactures bio-based polymers and composite resins from plant oils.

Reservations

The meeting will be held in Frick Laboratory, Kresge Auditorium (room 120), Princeton University (note: if the main door is locked, please enter by the side door on the right front of the building). The seminar is at 6 PM followed immediately by dinner at Triumph Brewery, 138 Nassau St. Princeton, NJ. The seminar is free and open to the public. Reservations are required for dinner, which is \$20 for full members and \$10 for students. All reservations will be billed, for the section pays on the number of reservations, not the number of attendees. Please contact Denise D'Auria at denised@princeton.edu or (609) 258-5202 or by Tuesday, September 22 to make or cancel reservations.



2009 OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER AWARD

The Trenton and Princeton ACS sections have been jointly sponsoring the Outstanding High School Chemistry Teacher Award since 2006. The purpose of the award is to recognize the work and dedication of chemistry teachers in area schools. Two "Outstanding Teachers" are selected, one representing each section.

Early in the year, teachers and science supervisors from area schools were asked to nominate teachers they felt were worthy of special recognition. The criteria considered in selecting the teachers were teaching quality, ability to challenge and inspire students, extracurricular work in chemistry, including science fairs, science clubs, and other activities that stimulate the interest of young people in chemistry and related sciences, a willingness to keep up-to-date in the field, and evidence of leadership and/or active involvement within the profession.

We are proud to announce that this year's winners are Jeannette Jones from Hunterdon Central Regional HS and Brian Patterson from West Windsor-Plainsboro HS South. Presentation of the awards took place on Thursday, May 14, 2009 at the meeting of the Princeton ACS. Each awardee received a plaque and check for \$250.

Jeannette Jones has a BA in Chemistry with minors in German and Education from Luther College, Decorah, Iowa. She began teaching in 1968 and has been a teacher at Hunterdon Central Regional HS since 1986. She has participated in numerous

extracurricular activities including Chemistry Olympics advisor 1987-2004 and program developer



Photo: Jeannette Jones (on left) being presented award by PACS Award Chair, Louise Lawter

and advisor for "Science on Line" magazine (student created web pages featuring articles in physics, chemistry and biology) from 1995-2000. In recent years she has helped to create and perform what has become an annual chemistry demonstration at Hunterdon Central.

As described in her nomination letter "she has a terrific sense of humor, a wonderful rapport with her students and uses positive reinforcement constantly in her classroom. She sets high expectations that prepare students for the rigor of future chemistry courses as evidenced by her students' performance on the ACS exam."

Brian Patterson received a BA in Chemistry in 2000 and an MEd in Science Education in 2001 from Rutgers University. He has been teaching chemistry at West Windsor-Plainsboro HS South since 2001. He is an advocate for the thoughtful use of technology in education and has developed a number of web based lab activities for Chemistry Honors and other curriculum. He is a GLOBE

Certified teacher (Global Learning and Observations to Benefit the Environment) and as part of a NASA grant is developing teaching material that utilizes GLOBE resources, emphasizing an Earth Systems Science approach.

In his nomination letter he was described as “an engaging, caring and talented teacher..... He can explain the most complex chemistry concepts in language that students understand.”

Photo: Brian Patterson being presented award by PACS Award Chair, Louise Lawter



~~~~~

## **50 & 60-Year PACS Members Recognized**

Each year, the ACS gives special recognition to those members that have served the society for fifty years. As an added reward for meeting this milestone, they are entitled to receive C&EN at no cost, pay no ACS annual dues and pay no ACS National Meeting registration!

The fifty-year members of the Princeton Section for 2009 are:

Dr. Richard I. Bergman  
Dr. David P. Jacobus  
Dr. Gert P. Volpp

In addition, the following members have served for sixty years:

Dr. Arthur R. Lyding  
Dr. Milton D. Yudis

In honor of this achievement, they were invited to be our guests for dinner at the June 18<sup>th</sup> Princeton Section meeting. We were pleased that Dr. Arthur R. Lyding and Dr. Richard I. Bergman were able to join us for this occasion! Certificates of Recognition were presented.

*Photo: Dr. Richard Bergman (on left) being presented certificate by PACS Chair, Dr. David Carrick*



*Photo: Dr. Arthur Lyding (on left) being presented certificate by PACS Chair, Dr. David Carrick*



~~~~~



2009 ALYEA AWARDS

The namesake of this award, Hubert Alyea, was a Professor of Chemistry at Princeton University who was world renowned for his scientific demonstrations, his enthusiasm, and his love of scientific discovery.

This award, which is given to area high school students on an annual basis, is unique in that it leaves the criteria for the award at the discretion of the Science Department of each high school. The one stipulation made by the Award Committee is that the selection not be based on test scores or grade point averages. The Section seeks to recognize the student who is excited by scientific discovery, as was the award's namesake, Hubert Alyea. The awards consist of a plaque and check for one hundred dollars.

We are pleased to announce this year's winners:

Anand Shah - Ewing High School
Lily Healey - Hamilton High School West
Kristen Lawlor - Hopewell Valley Central HS
Chris Chuang - Hun School
Adnan Cheema - Lawrence High School
Zev Rosengarten - Lawrenceville School
Anna Shaw - North Hunterdon High School
Daniel Bruder - Nottingham High School
Brian Fishbein - Princeton Day School
David Thomas - Princeton High School
Alex Angilella - SciCore Academy
Bella Wight - Steinert High School
Roxana Amirahmadi - Stuart Country Day School
Natasha Nayar - The Pennington School
Jessie Lee Cunningham - Trenton Catholic HS
Shruti Varma - West Windsor-Plainsboro HS South



Local Sections Sponsor

"Careers in Chemistry" Symposium

by Danielle Jacobs, Event Chair

On Saturday, May 2nd, 2009, the first "Careers in Chemistry" symposium was held at Rider University. The event was organized by Danielle Jacobs, assistant professor of organic chemistry at Rider and jointly hosted by the Princeton and Trenton Sections of the ACS. It was further funded through an ACS Innovative Projects Grant.

Undergraduate students rarely understand the variety of careers that can be open to them with a degree in chemistry and feel they may be limited in scope. This can detract students from studying chemistry in college but twenty-eight local chemists with very diverse careers were able to dispel this myth for one hundred-twenty area high school, undergraduate, and graduate students.

Represented professionals included pharmaceutical chemists, industrial chemists, government chemists, science historians, chemical salespeople, teachers, professors, science writers, medical writers, consultants, food chemists, flavors chemists, fragrance chemists, cosmetics chemists, doctors, patent lawyers, and forensics chemists.

Students listened to the various professionals speak during 20-30 minute panel discussions, and networked over lunch in small groups with a professional of their choosing. This open and relaxed forum allowed them to learn about the litany of jobs that a person could pursue with a degree in chemistry, right here in the Central Jersey/Philadelphia region. It is hoped that this and future "Careers in Chemistry" programs will initiate increased enrollment in chemistry programs at local universities, as well as keep our chemists in our area post-graduation.

The Trenton and Princeton sections wish to thank all the speakers, attendees, organizers and other volunteers who helped to make this event a success.





ACS Benefits for Unemployed Members

During these tough economic times it's more important than ever to belong to the American Chemical Society. Unemployed members can tap into a host of valuable benefits and services that help them get back in the workforce. And, members in good standing may qualify for an unemployed member dues waiver, allowing them to renew their memberships and keep their member benefits at no cost. Contact ACS at service@acs.org, 800-333-9511 or 614-447-3671 for complete details.

Other valuable benefits that help ACS member get back in the workforce include:

- Free registration at ACS National Meetings and registration fees at Regional Meetings of just \$25. Meetings offer ACS Career Fairs with on-site interviews.
- Special discounts for ACS/Harvard courses, ACS ProSpectives and Short Courses, and the ACS Leadership Development System.
- Membership in the ACS Network, your online resource to connect and communicate with friends, colleagues, and potential employers
- Free Guidance from ACS Career Consultants – ACS mentors offer resume reviews, job search strategies, and interview tips that make you stand out from the rest.
- Free access to InterviewStream, an online tool that will sharpen your interview skills
- Members-only access to the ACS Salary comparator.
- And more!

Contact ACS customer service today at service@acs.org, 800-333-9511 or 614-447-3671 today and let us know how we can help.



ACS Matters

Keeping Up with the News

Who reads every article – all 33,600 of them – destined for publication each year in ACS's 34 peer-reviewed scientific journals? We do.

Each day, the science writers of the ACS Office of Public Affairs sift through about 130 galleys or ASAPs, searching for newsworthy items that will be tomorrow's headlines and sound bites around the globe. Now, you can join more than 2,000 journalists worldwide who rely on this insider information to get the scoop on the latest and most compelling science news from the ACS journals and from Chemical & Engineering News.

How? Subscribe to the ACS News Service Weekly PressPac. It's free and easy. And while you're at it, sign up for Daily NewsBriefs—a sweeping digest of how our news and information is scoring hits with the press and resonating with the public. It's free, too.

To get the PressPac and NewsBriefs, email newsroom@acs.org with "subscribe" in the subject line and your name and email address in the message.

Here is an article from the latest PressPac:



Bioethanol's impact on water supply 3x higher than once thought

Journal: Environmental Science & Technology

Journal Article: "Water Embodied in Bioethanol in the United States"

At a time when water supplies are scarce in many areas of the United States, scientists in Minnesota are reporting that production of bioethanol — often regarded as the clean-burning energy source of the future — may consume up to three times more water than previously thought. Their study appeared in ACS' journal Environmental Science & Technology.

Sangwon Suh and colleagues point out in the study that annual bioethanol production in the U.S. is currently about 9 billion gallons and note that experts expect it to increase in the near future. The growing demand for bioethanol, particularly corn-based ethanol, has sparked significant concerns among researchers about its impact on water availability. Previous studies estimated that a gallon of corn-based bioethanol requires the use of 263 to 784 gallons of water from the farm to the fuel pump. But these estimates failed to account for widely varied regional irrigation practices, the scientists say.

The scientists made a new estimate of bioethanol's impact on the water supply using detailed irrigation data from 41 states. They found that bioethanol's water requirements can be as high as 861 billion gallons of water from the corn field to the fuel pump in 2007. And a gallon of ethanol may require up to over 2,100 gallons of water from farm to fuel pump, depending on the regional irrigation practice in growing corn. However, a dozen states in the Corn Belt consume less than 100 gallons of water per gallon of ethanol, making them better suited for ethanol production. "The results highlight the need to take regional specifics into account when implementing biofuel mandates," the article notes.

Chemical Consultants Meeting

Wednesday, September 9, 2009

Location: The Cynwyd Club, Bala Cynwyd, PA

Time: Networking, 5:30 PM; Dinner, 6:30 PM;

Talk and Business Session, 7:30 PM

***THE BUSINESS OF SUSTAINABILITY:
OPPORTUNITIES FOR CONSULTANTS***

TRUDY HELLER, Ph.D, Wharton School

www.chemconsultants.org

Email your confirmation to:
CCNReservations@aol.com

Joint Meeting of Princeton ACS & Central Jersey AIChE

Tentative date

Wednesday, October 21, 2009

our guest speaker will be

Anndria Gaerity
PSEG Power

"Nuclear Engineering"

Time: 6:00 PM

Lecture: Friend Auditorium, Princeton University

Dinner: Kalluri Corner, Nassau St.

(check our website for updated information
<http://www.princeton.edu/~pacs>)

2009 National Chemistry Week Events

If you are interested in educating the community about chemistry, National Chemistry Week presents a fine opportunity. If you would like to organize, help organize, or help execute programs for National Chemistry Week, October 18-24, 2009, or October 17-23, 2010, please contact NCW coordinator Kitty Wagner, kmwagner@Princeton.edu, 609 258-2937. The theme for 2009 is "Chemistry—It's Elemental." The theme for 2010 is "Behind the Scenes with Chemistry."

Seeking Volunteers for Program Committee

In an effort to provide better service to our members, the Princeton Section is establishing a program committee to help plan our monthly meetings and other events. If you are interested in serving on the committee, or if you just have a really good idea for a program, please contact chair-elect Kitty Wagner at 609 258-2937 or kmwagner@Princeton.edu.

THE 31st ANNUAL PRINCETON ACS FALL ORGANIC CHEMISTRY SYMPOSIUM

Friday, September 18, 2009

Registration 12:00-1:00 p.m.

Symposium 1:00-8:30 p.m.

Forsgate Country Club
Monroe Township, New Jersey

**1:00pm-Symposium Opening
Symposium Chair**

Professor Spencer Knapp
Department of Chemistry & Chemical Biology
Rutgers University

1:05pm

Professor Phil S. Baran

"Aiming for the Ideal Synthesis"
Department of Chemistry
The Scripps Research Institute

2:00pm

Professor Masakatsu Shibasaki

"Recent Progress in Asymmetric Two-Center Catalysis"
The Graduate School of Pharmaceutical Sciences
The University of Tokyo

3:00pm-Coffee Break

3:30pm

Professor Timothy M. Swager

"Polymer Electronics for Chemical Sensors"
Department Of Chemistry
Massachusetts Institute of Technology

4:30pm-Reception/Cocktail Hour

6:00pm-Dinner

7:30pm

Professor Richard Lerner

"The Chemistry of a Disease"
Department of Chemistry
The Scripps Research Institute

Registration/Reception/Dinner: \$95.00 (\$25.00 students/postdoc)

Please visit the symposium website at <http://www.pacsfocus.org> for more information.
(There is currently no on-line registration. Checks must be mailed.)