



THE FILTER PRESS

Newsletter of the Georgia Section of the American Chemical Society
Volume 19, Number 9, November 2009



Melanie M Cooper

Alumni Distinguished Professor of Chemistry Education, Clemson University

Chemistry, Life, the Universe and Everything

Tuesday, November 17, 2009

Curricular reform is unfortunately often driven by personal opinions and interests, rather than by data and evidence. While there is a large and growing body of research about how people learn and how to assess what people know and can do with that knowledge, this research is rarely called upon when designing new instructional materials. If the current state of affairs were acceptable that would be one thing – but it is becoming increasingly apparent that traditional instructional techniques and materials are not effective. For example, students at all levels of the chemistry curriculum appear to have fundamental misconceptions about central ideas in chemistry. Additionally, research indicates that many students cannot go beyond problem solving using algorithms and analogies – that is they cannot apply knowledge to new situations.

In response to some of these problems we are developing a new general chemistry curriculum “**Chemistry, Life, the Universe and Everything**” which uses scientifically validated learning principles and places them within a coherent and meaningful context. The course focuses on conceptual understanding, beginning with first principles, and students’ problem-solving skills. The materials under development include a text, which uses the emergence and evolution of life as the scaffold and context for introduction of chemistry concepts, and a tightly integrated set of interactive web-based materials and assessments. This presentation will give an overview of the new curriculum, the research it is based on, and ways in which the materials can be integrated into a course.

Melanie Cooper, Alumni Distinguished Professor of Chemistry received her B.S. M.S. and Ph.D. from the University of Manchester, England. She carried out postdoctoral work in organic chemistry before turning to chemical education as her area of research. She has been a faculty member in the Clemson chemistry department since 1987, where she teaches general and organic chemistry and chemistry education courses. Her appointment was ground-breaking, not only at Clemson but nationally, in that it was one of the first tenure track appointments in chemistry education in a chemistry department. Her research has focused on problem solving in a wide variety of areas, including laboratories and large enrollment lectures. She is interested in methods to assess and improve students problem solving abilities and strategies, and has focused on interventions that promote metacognitive activity. An outgrowth of this research is the development and assessment of evidence-driven, research-based curricula. She is a Fellow of the AAAS and has received a number of awards for excellence in teaching. In 2002 she was named an Alumni Distinguished Professor. She has also held a number of elected positions within ACS and was the Chair of the Division of Chemical Education in 2007.



Reservation information on page 3



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The Filter Press went **GREEN!**

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Georgia ACS protons:

The October 19, 2009 issue of C&EN (pp 3, 43-44) featured an article about the **Herty75** events, including a photo of **Greg Robnison** discussing chemistry with high school students. The full report from Rig Hernandez, Herty75 chair, is on page 4.

The call for nominations for the **2010 Herty Medal** just appeared on page 33 of the October 26 issue of C&EN. The nomination information is posted on the section's website, <http://chemistry.gsu.edu/ACS> with a Dec 15th deadline.

Shirley Corriher, featured speaker at a 2009 Georgia Women Chemists event, has just received the Les Dames d'Escoffier Grand Dame award for outstanding achievement in the food business. "Shirley has the extraordinary talent of providing listeners with a deep knowledge of food science [chemistry] mixed with the performance of a talented stand-up comedian," said Suzanne Brown, International President of LDEI.

Election results will be announced soon.

2010 Meeting and Events Calendar coming soon.

Our section will host **SERMACS 2013** in Atlanta, GA

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November Meeting: Tuesday, Nov 17th**Melanie M Cooper**

Alumni Distinguished Professor of Chemistry
Education, Clemson University
“**Chemistry, Life, the Universe
and Everything**”

Location: [Scalini's](#)
2390 Cobb Parkway SE
Smyrna, GA 30080
(770) 952-7222
Map available [here](#).

6:30 Meet and mingle (cash bar)
7:00 Dinner (choice of one of six entrees)
8:00 Meeting and speaker

Menu

Entrées: one of six of their popular entrées
Salad, rolls, tea and coffee, dessert

RSVP by email to David Gottfried
[david.gottfried@nrc.gatech.edu] by 5:00 pm on
Tuesday, November 10th.

Price: \$25 regular
\$15 students, teachers, retirees

Payment should be made to the “Georgia Section ACS” and will be collected at the door. If you make a reservation and then don’t attend, you will be charged for the meal as we have to guarantee the number of meals.

**2009 ACS Stanley C. Israel Regional Award
for Advancing Diversity in the Chemical
Sciences: Dr. Cornelia Gillyard**

The ACS Committee on Minority Affairs selected Dr. Cornelia Gillyard, Professor of Chemistry at Spelman College, as the 2009 recipient of the ACS Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences for the Southeastern Region.

This award was presented at the SERMACS 2009 Awards Luncheon on October 23rd. Congratulations, Dr. Gillyard!

Cornelia Gillyard is Professor of Chemistry at Spelman College, where she has taught for thirty-two years. During this time, Dr. Gillyard has served in various administrative capacities, including Department Chair, Associate Provost for Science Programs and Policy, Director of the Health Careers Program, and Director of Spelman’s Women in Science and Engineering program. Her work with the ACS has been equally important. She has served in several roles, particularly with Women Chemists Committee and the Committee on Minority Affairs. Dr. Gillyard’s work has been recognized with the Spelman College Presidential Award for Outstanding Service and the NOBCCHE Henry C. McBay Outstanding Teacher Award. Cornelia Gillyard’s involvement with students includes classroom teaching, mentoring, academic advising and in directed research. She has mentored more than thirty students in directed research; twenty-three of these students have gone on to earn advanced degrees, including six PhD’s, three PhD candidates, six MD’s, three DDS degrees, one PharmD graduate and five M.S. degrees. Gillyard’s formal mentoring activities also include service with several programs, including the NASA Women in Science and Engineering (WISE Scholars), the ACS Scholars Program and the ExxonMobil Scholars Program.

For more information, go to this link
<http://www.sermacs2009.org/events/awardees/Gillyard.html>

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The Herty75 Celebration Had the Numbers & the Chemistry!

Rigoberto Hernandez, Herty75 Chair

On 75 occasions, our section has convened to recognize a chemist in the Southeast who embodies Herty's ideal of chemists who contribute to society through their work and service. On September 17-18, our celebration continued this long tradition, but we expanded it to a much larger occasion so as to mirror Herty's impact through our events. We certainly did it big! In Numbers... We had nearly 60 posters and over 100 participants at the 75th Herty Symposium. Nearly 80 participants at the Herty Banquet. Over 400 high school students from over seven Atlanta area school districts at four sites for the Future Medalists Symposia. Nearly 30 poster presentations at the Herty Medalist Undergraduate Symposium (HMURS).

Thirteen Herty Medalists returned for the event: David Boykin (1996), F. Ivy Carroll (2001), Luis Echegoyen (2007), Mary Good (1975), Craig Hill (2009), Lanny Liebeskind (2002), Fredric Menger (1997), Gordon Nelson (1998), Albert Padwa (1983), James Powers (2000), Gregory Robinson (2008), Gary Schuster (2006), and Isiah Warner (1992). The Medalists, a few local section board members and guests enjoyed a special Luncheon in the Executive Dining room on Thursday at The Coca-Cola Headquarters. All of the Medalists were given gold-plated pins to commemorate the 75th Herty Celebration. All registered participants, and many of the high school students were given replicas of the Herty75 commemorative pin.

So how is Chemistry for Life in the Southeast? Clearly alive and well! In Atlanta alone... Our local colleges and universities are among the top-ranked private and public colleges in the nation. Despite the current economic climate, we continue to be a home for prominent public and private R&D labs (such as the CDC, The Coca-Cola Company, Kimberly-Clark, and Solvay), and we have strong ties with all chemical companies. As such, our Chemical R&D efforts have to be at the center in solving the current global challenges in Human Health and Environment & Sustainability. These were, indeed, the themes of our Herty75 Symposium as we commemorated Chemistry for Life in the Southeast!

The excitement of this event even spilled over into C&EN. Quoting from Linda Raber's article (on pages 43-44 of the October 19th issue, "if the Georgia Section of the future wants to have a centennial event bigger than last month's 75th, some very forward-thinking high schooler, perhaps one whose interest was captured by chemistry demos and engaging lectures, should start figuring out how to do it—and start soon. It's going to be tough to beat the semisesquicentennial."

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