

# Technical Program

The bulk of the 18th BCCE technical program is a mixture of symposia, poster presentations, plenary lectures, keynote addresses, workshops, and Birds-of-a-Feather sessions.

## Symposia

Symposia are organized around a variety of educational themes. Our symposium sessions start on Sunday at 1:30 p.m. and go through Thursday noon. Most symposia consist of a series of oral presentations accompanied by PowerPoint presentations to support visual presentation of data and ideas. Most presentations are allowed a maximum of 20 minutes, with 5 minutes for discussion. Other formats for symposia include panel discussion, demonstrations, and caucuses. All symposia sessions except for those that involve chemicals, will be in Scheman Building or Molecular Biology Building.

## Poster Presentations

Poster presentations (4' x 6') will be on display on the second floor of the Scheman Building (see maps pp 13-14). Posters will be grouped by topics and displayed together. Our 18th BCCE poster sessions are Monday afternoon 1:30 p.m.–3:30 p.m., Monday evening at the Sci-Mix session 7:00 p.m.–9:00 p.m., and Tuesday morning from 9:45 a.m.–11:45 a.m.

## Workshops

Workshops offer individuals the opportunity to learn about a topic in-depth from science experts and or award-winning teachers. Our workshop sessions start at 9:30 a.m. on Sunday and go through Thursday. Workshops focus on wet and dry chemistry topics, teaching and learning with technology, discussion sessions, chemical instrumentation, chemistry demonstrations, and variety of other themes. Most workshops have a fee to cover the costs of the materials, supplies, audio-visual equipment and service, computers and computer service, chemicals, and chemical waste disposal associated with the workshop. For all workshops, a modest ISU administration and conference service fee of \$10 is applied. **You must pay an 18th BCCE conference registration fee to participate in a workshop.** All workshops that involve chemicals or chemistry instrumentation will be in Gilman Hall. Workshops requiring participants to work on computers are scheduled in computer classrooms in various buildings.

## Birds-of-a-Feather Sessions (BOAFS)

BOAFS are available for 18th BCCE participants to hold informal discussion of areas of interest. For example, at recent BCCes, participants have requested BOAFS on Chemistry in the Community, high school/college interface, computers in chemistry, chemistry laboratory coordinators, advance placement chemistry, women in chemistry, favorite chemistry web sites, etc. Several of these sessions will be scheduled during the lunch hour or during the dinner hour in the Maple-Willow-Larch Dining Hall. To schedule a BOAF at the 18th BCCE, contact Jodye Selco, California State Polytechnic University, Pomona, 3801 W. Temple Ave., Pomona, CA 91768, (909) 869-

4552, jiselco@csupomona.edu, **no later than May 21, 2004.** While you are at the 18th BCCE, check your pocket program book and the 18th BCCE newsletter "The Daily Corn and Soybean Report" for BOAF details (topics and meeting times).

# Symposia

*Only the title and symposium organizer are listed below. To see a complete listing of the papers presented for each symposium, please visit the 18th BCCE Web site.*

**Sunday, July 18, 2004**

**1:30 p.m. – 4:00 p.m.**

GILMAN 1810

### **Forensic Science Courses and Programs I.**

Edward Kremer, Kansas City Kansas Community College.

MOLECULAR BIOLOGY 1414

### **Effective Teaching and Learning for College Chemistry Instructors I.**

Norbert Pienta, University of Iowa; and Melanie Cooper, Clemson University, SC.

GILMAN 1652

### **New Approaches for Teaching General Chemistry.**

Annie Lee, Dale Harak, Philip Colombo, James Chapman, Rockhurst University, MO.

GILMAN 1312

### **Safety in Academic Science Settings.**

Jack Gerlovich, Drake University; Dennis McElroy, Graceland University; Ken Hartman (Ret.), Ames High School, IA.

GILMAN 0312

### **Peer Led Team Learning in the Two-year College: Model Programs, Practices, and Research.**

Victor Strozak, CUNY; Madeline Adamczeski, San Jose City College, CA.

GILMAN 1002

### **KISS Keep It Short and Sweet Demo Share-A-Thon.**

Bette Bridges, Bridgewater-Raynham High School, MD.

MOLECULAR BIOLOGY 1420

### **Using Course Management Systems in Large Chemistry Classes.**

Neil Kestner, Louisiana State University; Nancy Konigsberg Kerner, University of Michigan.

MOLECULAR BIOLOGY 1424  
**General Papers: Outreach Programs.**  
TBA.

MOLECULAR BIOLOGY 1428  
**General Papers: Issues in Organic Chemistry.**  
TBA.

**Monday, July 19, 2004**  
**9:25 a.m. – 12:00 noon**

GILMAN 1352  
**Exploring the Molecular Vision.**  
Jerry Bell, American Chemical Society, Washington, D.C.;  
John Clevenger, Truckee Meadows Community College, NV.

SCHEMAN 240  
**New Approaches for Teaching General Chemistry II.**  
Annie Lee, Dale Harak, Philip Colombo, James Chapman,  
Rockhurst University, MO.

SCHEMAN 230  
**Effective Teaching and Learning for College Chemistry Instructors II.**  
Norbert Pienta, University of Iowa; Melanie Cooper,  
Clemson University, SC.

SCHEMAN 150 / 154  
**Forensic Science Courses and Programs II.**  
Edward Kremer, Kansas City Kansas Community College.

SCHEMAN 260 / 262  
**Research in Chemical Education I.**  
Renee Cole, Central Missouri State University; Chris  
Bauer, University of New Hampshire.

SCHEMAN 220  
**Student-Centered Learning Throughout the Curriculum I.**  
Rick Moog, Jim Spencer, Franklin & Marshall College, PA.

SCHEMAN 250 / 252  
**Delivering Course Content via the Web: Options, Opportunities, and Challenges I.**  
Carolyn Collins, Community College of South Nevada;  
Renee Cole, Central Missouri State University.

SCHEMAN 299  
**Implementations from the MID Project: Materials and Methods for Chemistry Reform I.**  
Eileen Lewis, University of California–Berkeley; Brock  
Spencer, Beloit College, WI.

BENTON AUDITORIUM  
**K-16 Collaborations I.**  
Penny Gilmer, Iowa State University.

SCHEMAN 175  
**Assessing Laboratory and Problem Solving Skills Using Laboratory Practicals I.**  
Jimmy Reeves, Charles R. Ward, University of North  
Carolina.

SCHEMAN 275  
**Women in Chemistry Education I.**  
Jodye Selco, California State Polytechnic University–  
Pomona; Cathy Middlecamp, University of Wisconsin–  
Madison; Dan Libby, Moravian College, PA; Cecilia  
Marzabadi, Seton Hall University.

SCHEMAN 179  
**Visualization in Chemistry I.**  
Donald Franceschetti, University of Memphis; George  
Bodner, Purdue University, IN.

GILMAN 1002  
**George Hague Memorial AP/IB Chemistry Symposium I.**  
Harvey Gendreau, Framingham High School, MA.

SCHEMAN 208  
**Managing Large General Chemistry Laboratory Programs.**  
Steven Brown, University of Arizona–Tucson; Rich Bauer,  
Arizona State University.

SCHEMAN 167  
**Fostering Critical Thinking in Chemistry.**  
David Pushkin, St. John's University, NY.

SCHEMAN 204  
**Oversimplifications and Perpetual Myths in General Chemistry Textbooks.**  
Michael J. Sanger, Middle Tennessee State University.

SCHEMAN 171  
**General Papers: Chemistry Lab and Lecture Innovations.**  
TBA.

**Monday, July 19, 2004**  
**1:30 – 4:00 p.m.**

SCHEMAN 230  
**Effective Teaching and Learning for College Chemistry Instructors III.**  
Norbert Pienta, University of Iowa; and Melanie Cooper,  
Clemson University, SC.

SCHEMAN 260 / 262

**Research in Chemical Education II.**

Renee Cole, Central Missouri State University; Chris Bauer, University of New Hampshire.

SCHEMAN 220

**Student-Centered Learning Throughout the Curriculum II.**

Rick Moog, Jim Spencer, Franklin &amp; Marshall College, PA.

SCHEMAN 250 / 252

**Delivering Course Content via the Web: Options, Opportunities, and Challenges II.**

Carolyn Collins, Community College of South Nevada; Renee Cole, Central Missouri State University.

SCHEMAN 299

**Implementations from the MID Project: Materials and Methods for Chemistry Reform II.**

Eileen Lewis, University of California–Berkeley; Brock Spencer, Beloit College, WI.

SCHEMAN 175

**Assessing Laboratory and Problem Solving Skills Using Laboratory Practicals II.**

Jimmy Reeves, Charles R. Ward, University of North Carolina.

BENTON AUDITORIUM

**K-16 Collaborations II.**

Penny Gilmer, Iowa State University.

SCHEMAN 275

**Women in Chemistry Education II.**

Jodye Selco, California State Polytechnic University–Pomona; Cathy Middlecamp, University of Wisconsin–Madison; Dan Libby, Moravian College, PA.

SCHEMAN 179

**Visualization in Chemistry II.**

Donald Franceschetti, University of Memphis; George Bodner, Purdue University, IN.

GILMAN 1002

**George Hague Memorial AP/IB Chemistry Symposium II.**

Harvey Gendreau, Framingham High School, MA.

SCHEMAN 204

**Undergraduate Transitions: Enhancing Student Success I.** (poster session)

Jodi Wesemann, Yvonne Curry, American Chemical Society, Washington, D.C.

SCHEMAN 150 / 154

**Chemical History and its Applications to Chemical Education I.**

Seth Rasmussen, North Dakota State University; David Lewis, University of Wisconsin–Eau Claire.

SCHEMAN 240

**New Ideas for First Year Undergraduate Chemistry I.**

Bob Blake, Texas Tech University.

SCHEMAN 171

**Fun Activities for the Chemistry Classroom.**

Al Hazari, University of Tennessee.

SCHEMAN 167

**Appropriate Courses in Chemistry for Prospective Elementary Teachers.**

Dorothy Gabel, Indiana University.

**Tuesday, July 20, 2004****9:25 a.m. – 12:00 noon**

SCHEMAN 260 / 262

**Research in Chemical Education III.**

Renee Cole, Central Missouri State University; Chris Bauer, University of New Hampshire.

SCHEMAN 220

**Student-Centered Learning Throughout the Curriculum III.**

Rick Moog, Jim Spencer, Franklin &amp; Marshall College, PA.

BENTON AUDITORIUM

**Undergraduate Transitions: Enhancing Student Success II.**

Jodi Wesemann, Yvonne Curry, American Chemical Society, Washington, D.C.

SCHEMAN 150 / 154

**Chemical History and its Applications to Chemical Education II.**

Seth Rasmussen, North Dakota State University; David Lewis, University of Wisconsin–Eau Claire.

SCHEMAN 240

**New Ideas for First Year Undergraduate Chemistry II.**

Bob Blake, Texas Tech University.

SCHEMAN 250 / 252

**Best Practices: On-Line Teaching and Improvement of Learning I.**

Nancy Konigsberg Kerner, University of Michigan; Neil Kestner, Louisiana State University.

SCHEMAN 167

**Inorganic Chemistry Teaching Experiences I.**

Tim Zauche, University of Wisconsin–Platteville; David Finster, Wittenberg University, OH.

SCHEMAN 204 / 208

**Applying the Peer-Led Workshop Model Across the Undergraduate Chemistry Curriculum I.**

Morton Hoffman, Boston University; Jack Kampmeier, University of Rochester, NY.

SCHEMAN 230

**Learning to Teach Chemistry: The Preparation and Professional Development of College Chemistry Teachers I.**

Cheryl Frech, University of Central Oklahoma; Mary Kay Orgill, University of Missouri–Columbia.

SCHEMAN 175

**Integrating New Information Technology into Biochemistry I.**

Patricia Draves, Monmouth College, IL; Thomas Kim, Youngstown State University, OH.

SCHEMAN 179

**Digital Libraries in Chemical Education I.**

John Moore, University of Wisconsin–Madison; Jon Holmes, *Journal of Chemical Education*.

SCHEMAN 275

**Scientific Literacy for the New Century I.**

Gabriela Weaver, Purdue University, IN.

SCHEMAN 171

**Chemistry Learning Opportunities for the Disabled.**

Leslie Hersh, Delta College, MI.

**Tuesday, July 20, 2004**

**1:30 p.m. – 4:00 p.m.**

SCHEMAN 260 / 262

**Research in Chemical Education IV.**

Renee Cole, Central Missouri State University; Chris Bauer, University of New Hampshire.

SCHEMAN 220

**Student-Centered Learning Throughout the Curriculum IV.**

Rick Moog, Jim Spencer, Franklin & Marshall College, PA.

SCHEMAN 150 / 154

**Chemical History and its Applications to Chemical Education III.**

Seth Rasmussen, North Dakota State University; David Lewis, University of Wisconsin–Eau Claire.

SCHEMAN 240

**New Ideas for First Year Undergraduate Chemistry III.**

Bob Blake, Texas Tech University.

BENTON AUDITORIUM (2:00 – 3:30 p.m.)

**Undergraduate Transitions: Enhancing Student Success III.**

Jodi Wesemann, Yvonne Curry, American Chemical Society, Washington, D.C.

SCHEMAN 250 / 252

**Best Practices: On-Line Teaching and Improvement of Learning II.**

Nancy Konigsberg Kerner, University of Michigan; Neil Kestner, Louisiana State University.

SCHEMAN 167

**Inorganic Chemistry Teaching Experiences II.**

Tim Zauche, University of Wisconsin–Platteville; David Finster, Wittenberg University, OH.

SCHEMAN 204 / 208

**Applying the Peer-Led Workshop Model Across the Undergraduate Chemistry Curriculum II.**

Morton Hoffman, Boston University; Jack Kampmeier, University of Rochester, NY.

SCHEMAN 230

**Learning to Teach Chemistry: The Preparation and Professional Development of College Chemistry Teachers II.**

Cheryl Frech, University of Central Oklahoma; Mary Kay Orgill, University of Missouri–Columbia.

SCHEMAN 175

**Integrating New Information Technology into Biochemistry II.**

Patricia Draves, Monmouth College, IL; Thomas Kim, Youngstown State University, OH.

SCHEMAN 179

**Digital Libraries in Chemical Education II.**

John Moore, University of Wisconsin–Madison; Jon Holmes, *Journal of Chemical Education*.

SCHEMAN 275

**Scientific Literacy for the New Century II.**

Gabriela Weaver, Purdue University, IN.

SCHEMAN 171

**New Approaches for the Organic Chemistry Laboratory I.**

Christina N. Hammond, Vassar College, NY.

SCHEMAN 299

**Use of the Arts and Humor for Enhanced Understanding of Chemistry.**Nancy Konigsberg Kerner, University of Michigan;  
Nirit Glazer, University of Michigan.**Wednesday, July 21, 2004****9:25 a.m. – 12:00 noon**

SCHEMAN 260 / 262

**Research in Chemical Education V.**

Renee Cole, Central Missouri State University; Chris Bauer, University of New Hampshire.

SCHEMAN 220

**Student-Centered Learning Throughout the Curriculum V.**

Rick Moog, Jim Spencer, Franklin &amp; Marshall College, PA.

SCHEMAN 171

**New Approaches for the Organic Chemistry Laboratory II.**

Christina N. Hammond, Vassar College, NY.

SCHEMAN 230

**Using Technology in the Classroom I.**

Laura Slocum, University High School of Indiana.

SCHEMAN 275

**The Right Stuff: What Chemistry Content and Skills Do Nurses Need Today? I.**

John Dunkle, Roxi Finney, Loretta Jones, University of Northern Colorado.

SCHEMAN 220

**Nanotechnology in Chemical Education I.**

Keenan Dungey, Gary Trammell, University of Illinois at Springfield.

SCHEMAN 150 / 154

**Teaching Quantum Concepts in Chemistry: Why? When? How? I.**

Peter Garik, Alan Crosby, Boston University.

SCHEMAN 204 / 208

**Learning to Teach Chemistry: The Professional Development of High School Chemistry Teachers I.**

Stacey Lowery Bretz, Youngstown State University, OH.

SCHEMAN 299

**Informed Student, Informed Teacher: Integrating 21st Century Information Skills into the Chemistry Curriculum I.**

Bartow Culp, Song Yu, Purdue University, IN.

SCHEMAN 299

**Implementations from the MID Project: Materials and Methods for Chemistry Reform III.**

Eileen Lewis, University of California–Berkeley; Brock Spencer, Beloit College, WI.

GILMAN 1002

**Science Magic.**

John Fortman, Wright State University, OH.

SCHEMAN 250 / 252

**Assessing Student Outcomes in a Web-based Learning Environment.**

Janice Chadwick, Fullerton College, CA.

SCHEMAN 175

**Writing to Learn Chemistry.**

Brian Hand, Iowa State University.

SCHEMAN 240

**Analogies and Illustrations in Chemistry.**

Patrice Williams-Gordon, Northern Caribbean University.

SCHEMAN 179

**Chemical Technology: Everywhere!**

John Kenkel, Southeast Community College, NE.

**Wednesday, July 21, 2004****1:30 p.m. – 4:00 p.m.**

SCHEMAN 230

**Using Technology in the Classroom II.**

Laura Slocum, University High School of Indiana.

SCHEMAN 275

**The Right Stuff: What Chemistry Content and Skills Do Nurses Need Today? II.**

John Dunkle, Roxi Finney, Loretta Jones, University of Northern Colorado.

SCHEMAN 220

**Nanotechnology in Chemical Education II.**

Keenan Dungey, Gary Trammell, University of Illinois at Springfield.

SCHEMAN 150 / 154

**Teaching Quantum Concepts in Chemistry: Why? When? How? II.**

Peter Garik, Alan Crosby, Boston University.

SCHEMAN 204 / 208

**Learning to Teach Chemistry: The Professional Development of High School Chemistry Teachers II.**

Stacey Lowery Bretz, Youngstown State University, OH.

SCHEMAN 299

**Informed Student, Informed Teacher: Integrating 21st Century Information Skills into the Chemistry Curriculum II.**

Bartow Culp, Song Yu, Purdue University, IN.

SCHEMAN 250 / 252

**Teaching Sophomore Organic Chemistry: What Concepts and Skills Should Students Learn? What Should We Leave Out? I.**

Somnath Sarkar, Central Missouri State University.

SCHEMAN 171

**Combinatorial Chemistry in the Undergraduate Curriculum.**

C. Fredrick Jury, Collin County Community College, TX.

BENTON AUDITORIUM

**Getting Published: A Panel Discussion with Editors from Key Journals.**

William Harwood, Indiana University.

GILMAN 1002

**The Best of CHEM Ed.**

Andy Cherkas, Stouffville District Secondary School, Ontario.

SCHEMAN 260 / 262

**Implementing Inquiry-based Instruction and Assessing Student Outcomes.**

Daniel Lewicki, Sage College of Albany, NY.

SCHEMAN 167

**General Papers: Curriculum to Work.**

TBA.

SCHEMAN 167

**General Papers.**

TBA.

**Thursday, July 22, 2004****9:15 a.m. – 12:00 noon**

SCHEMAN 260 / 262

**Research in Chemical Education VI.**

Renee Cole, Central Missouri State University; Chris Bauer, University of New Hampshire.

SCHEMAN 250 / 252

**Teaching Sophomore Organic Chemistry: What Concepts and Skills Should Students Learn? What Should We Leave Out? II.**

Somnath Sarkar, Central Missouri State University.

GILMAN 1002

**Teaching Chemistry Using Discrepant Events.**

Diana Mason, University of North Texas.

SCHEMAN 230

**Unconventional Methods of Teaching Chemistry.**

Sapna Gupta, Park University, MO; Vic Shanbhag, NOVA Southeastern University, FL.

SCHEMAN 275

**NSF-Sponsored Faculty Workshop Series and Their Role in Curriculum Development.**

David Collard, Georgia Institute of Technology.

SCHEMAN 240

**Incorporating Applied Topics into Traditional Chemistry Courses.**

Maria Oliver-Hoyo, North Carolina State University.

SCHEMAN 204 / 208

**Chemical Handbooks Go Digital.**

Erja Kajosalo, Massachusetts Institute of Technology.

SCHEMAN 220

**Integrating the General and Organic Chemistry Curricula.**

Richard Morrison, Charles Atwood, University of Georgia.

SCHEMAN 167

**General Papers: Software Resources.**

TBA.

SCHEMAN 171

**General Papers: Web-based Resources.**

TBA.

SCHEMAN 150/154

**Chemistry in the Classroom and in the Community: The Challenge of Citizenship for the Teacher.**

Bassam Z. Shakhshiri, University of Wisconsin–Madison.

# Workshops

For a complete description of each workshop, please visit the 18th BCCE Web site.

## PRE-CONFERENCE Thursday, July 15, 2004

### **W1: Developing, Testing, and Assessing On-Line Intercollegiate Cooperative Learning Activities.**

Theresa Julia Zielinski, Monmouth University, NJ; Marcy Hamby Towns, Ball State University, IN. *Four days.*

Capacity: 10-22; Fee: paid for by sponsor (see p.10)

### **W2: ACS "Chemistry" Workshop.**

Laura Eisen, The George Washington University at Mount Vernon College; Ellen F. Verdel, University of South Florida; Marta Gmurczyk, American Chemical Society, Washington, D.C. *One and a half-days.*

Capacity: 25; Fee: paid for by sponsor (see p.10)

## Friday, July 16, 2004

### **W1: Developing, Testing, and Assessing On-Line Intercollegiate Cooperative Learning Activities.**

(CONTINUED)

### **W2: ACS "Chemistry" Workshop.**

(CONTINUED)

### **Critical Issues and Effective Practices in Chemistry-Based Laboratory Technology Education.**

Sam Stevenson, American Chemical Society, Washington, D.C. This conference is sponsored by the American Chemical Society and focuses on developing national industry and academic alliances. Representatives from industry and academe are invited to attend this conference. Partial participant subsidies will be provided by ChemTechLinks. The conference precedes the 18th BCCE and begins Friday, July 16 and lasts until Sunday, July 18, 2004. It will be held at the Hotel at the Gateway Center. **To register and get more information, visit [www.chemtechlinks.org](http://www.chemtechlinks.org).** *Two and a half-days.*

This is not part of the BCCE. (see p.9)

## Saturday, July 17, 2004

### **W1: Developing, Testing, and Assessing On-Line Intercollegiate Cooperative Learning Activities.**

(CONTINUED)

### **Critical Issues and Effective Practices in Chemistry-Based Laboratory Technology Education.**

(CONTINUED)

## CONFERENCE

## Sunday, July 18, 2004

9:30 a.m. – 5:00 p.m.

### **W1: Developing, Testing, and Assessing On-Line Intercollegiate Cooperative Learning Activities.**

(CONTINUED)

### **Critical Issues and Effective Practices in Chemistry-Based Laboratory Technology Education.**

(CONTINUED)

### **W3: The "Chemistry is in the News" Project.**

Rainer Glaser, University of Missouri-Columbia; Susan Schelble, Colorado University-Denver.

Capacity: 8-50; Fee: \$45

### **W4: A Laboratory Course for Introductory Inorganic Chemistry.**

Dave Berry, Kelli Fawkes, University of Victoria, British Columbia.

Capacity: groups of 4, 16 to 32; Fee: \$55

### **W5: Essentials of Chemistry in the Community (ChemCom).**

Angela Powers, American Chemical Society, Washington, D.C.; Cece Schwennsen, National Institute of Standards and Technology, MD.

Capacity: 8-24; Fee: \$25

### **W6: Visualizing Biological Macromolecules: Generating Animated, 3-Dimensional Views of Protein and Nucleic Acid Structures.**

Manfred Philipp, Lehman College / City University of NY.

Capacity: 5-19; Fee: \$20

9:30 a.m. – 12:30 p.m.

### **W7: Getting Started with Microscale Gas Chemistry.**

Bruce Mattson, Michael Anderson, Creighton University, NE; Susan Mattson, Underwood Public School, IA.

Capacity: 10-30; Fee: \$35

### **W9: Calibrated Peer Review — An Introductory Workshop.**

Tim Su, City College of San Francisco; Arlene Russell, UCLA; James Rudd, California State University-Los Angeles.

Capacity: 10-20; Fee: \$30

**W10: Juxtaposing High School and College Chemistry through Inquiry Based Laboratories.**

Carmen Gauthier, Florida Southern College; George Sellers, The Vanguard School, FL.  
Capacity: 20; Fee: \$10

**W11: Nuts and Bolts of Chemical Education Research Series: A Primer of Statistics for Research.**

Diane Bunce, Katherine Havanki, The Catholic University of America, Washington, D.C.  
Capacity: 7-25; Fee: \$35

**W12: Living By Chemistry — How Do We Make Sense of the World Around Us?**

Angelica Stacy, Jan Coonrod, University of California–Berkeley.  
Capacity: 15-32; Fee: \$25

**W13: Undergraduate and High School Applications of FT-NMR — Session I.**

Frank Contratto, Anasazi Instruments Inc; Amy Abe, Lake Forest College, IL.  
Capacity: 10-40; Fee: \$10

**2:00 p.m. – 5:00 p.m.**

**W14: Interactive Web-Based Computer Simulations, Inquiry Activities, and Using the Science Writing Heuristic for General Chemistry.**

Brian Hand, Jason Pooch, Thomas Greenbowe, Iowa State University.  
Capacity: 7-20; Fee: \$15

**W15: More Microscale Gas Chemistry!**

Bruce Mattson, Michael Anderson, Creighton University, NE; Susan Mattson, Underwood Public School, IA.  
Capacity: 10-30; Fee: \$35

**W16: ACS Exams and Meeting State Standards for High School Chemistry.**

Thomas Holme, University of Wisconsin–Milwaukee.  
Capacity: 10-25; Fee: \$10

**W17: Nuts and Bolts of Chemical Education Research Series: Preparing a Research Manuscript for Publication.**

Diane Bunce, Jessica VandenPlas, The Catholic University of America, Washington, D.C.  
Capacity: 7-25; Fee: \$25

**W18: Hands-On Nanotechnology Laboratory Experiments.**

George Lisensky, Beloit College; Karen Nordell, Lawrence University.  
Capacity: 10; Fee: \$40

**W19: Living By Chemistry — What Does Molecular Structure Have To Do With Smell?**

Angelica Stacy, Jennifer Claesgens, University of California–Berkeley.  
Capacity: 15-32; Fee: \$25

**W20: Undergraduate and High School Applications of FT-NMR — Session II.**

Frank Contratto, Anasazi Instruments Inc; Amy Abe, Lake Forest College, IL.  
Capacity: 10-40; Fee: \$10

**Monday, July 19, 2004**

**9:30 a.m. – 5:00 p.m.**

**W21: The Model–Observe–Reflect–Explain (MORE) Thinking Frame: Prompt Student Reflection in Your Laboratory.**

Dawn Rickey, Colorado State University; Lydia Tien, Monroe Community College, NY.  
Capacity: 4-24; Fee: \$10

**W22: Getting Your Money's Worth Out of Other People's Grants.**

Carol White, Athens Technical College, GA.  
Capacity: 10-20; Fee: \$15

**9:30 a.m. – 12:30 p.m.**

**W23: Molecular Modeling in Chemistry Education.**

Warren Hehre, Sean Ohlinger, Wavefunction, Inc.  
Capacity: 10-40; Fee: \$10

**W24: Outreach or Teaching with Polymers for Grades 2-8 — Part I.**

Mary Harris, John Burroughs School, MO; Barbara Walker, Ottumwa Alternative High School, IA; Cora Salumbides, Jefferson High School, CA.  
Capacity: 10-30; Fee: \$15

**W25: What Are JCE Classroom Activities?**

Erica Jacobsen, *Journal of Chemical Education*/University of Wisconsin–Madison; Diana Mason, *Journal of Chemical Education*/University of North Texas.  
Capacity: 10-30; Fee: \$10

**W26: Science and Our Food Supply.**

Sally Mitchell, East Syracuse–Minoa High School, NY.  
Capacity: 10-24; Fee: \$10

**W27: Now that the Lab is Digital — What Do We Do with All that Data?**

Estel Sprague, University of Cincinnati; Bobby Stanton, University of Georgia.  
Capacity: 4-24; Fee: paid for by sponsor

**W28: Captivating Chemistry Using Household Substances.**

Brian Rohrig, Jonathan Alder High School, OH.  
Capacity: 10-50; Fee: \$45

**W29: Workshop on Peer-Led Team Learning (PLTL).**

Pratibha Varma-Nelson, Ana Fraiman, Northeastern Illinois University.  
Capacity: 15-40; Fee: \$10

**W30: Virtual Organic Chemistry Experiments.**

Allen Schoffstall, Barbara Gaddis, University of Colorado at Colorado Springs.  
Capacity: 20; Fee: \$30

**W31: Hands-On Chemistry with Vernier.**

Dan Holmquist, Robyn Johnson, Vernier Software & Technology.  
Capacity: 20; Fee: \$10

**W32: Affordable, High Quality Instrumentation for General Chemistry.**

Amy Gottfried, University of Michigan; Jeff Bush, Poway Unified School District, CA.  
Capacity: 20; Fee: paid for by sponsor

**2:00 p.m. – 5:00 p.m.**

**W33: High School and/or College Mentoring Activity — Integrating Children's Literature and Chemistry in the K-3 Classroom.**

Dale Wheeler, Samuella Sigmann, Appalachian State University, NC.  
Capacity: 10-40; Fee: \$25

**W34: Visualizing and Exploring Quantum Concepts with Interactive Computer Software.**

Peter Garik, Alan Crosby, Boston University.  
Capacity: 10-30; Fee: \$15

**W35: Authoring Kinemages in Undergraduate Biochemistry; 3-D Teaching Tools for Protein Structure and Function.**

Steven Weiner, Muhlenberg College, PA.  
Capacity: 5-20; Fee: \$15

**W37: Using Environmental Issues to Learn Chemistry.**

Brock Spencer, George Lisensky, Beloit College, WI.  
Capacity: 10-30; Fee: \$25

**W38: Molecular Level Laboratory Experiments in Chemistry.**

John Gelder, Oklahoma State University; Michael Abraham, University of Oklahoma.  
Capacity: 5-20; Fee: \$25

**W39: Hands-On Chemistry with Vernier.**

Dan Holmquist, Robyn Johnson, Vernier Software & Technology.  
Capacity: 20; Fee: \$10

**W40: Affordable, High Quality Instrumentation for General Chemistry.**

Amy Gottfried, University of Michigan; Jeff Bush, Poway Unified School District, CA.  
Capacity: 20; Fee: paid for by sponsor

**Tuesday, July 20, 2004**

**9:30 a.m. – 5:00 p.m.**

**W41: Process Analytical Chemistry in the Classroom.**

Lynn Melton, University of Texas at Dallas.  
Capacity: 5-30; Fee: \$10

**W42: You Can Produce Interactive Computer Materials for Your Own Classroom.**

I. Dwaine Eubanks, Clemson University, SC.  
Capacity: 10-20; Fee: \$40

**9:30 a.m. – 12:30 p.m.**

**W43: Outreach or Teaching with Polymers for Grades 7-12 — Part II.**

Wayne Goates, Dwight D. Eisenhower Middle School, KS; Ron Case, Garside Junior High School, NV; Marie Sherman, Ursuline Academy, MO; William Bleam, Radnor High School, PA.  
Capacity: 10-30; Fee: \$15

**W44: Fantastic Experiments with the Fizz-Keeper.**

Brian Rohrig, Jonathan Alder High School, OH.  
Capacity: 10-50; Fee: \$35

**W45: Collaborative Chemistry Activities for the High School Chemistry Laboratory.**

Ken Hartman, Ames High School (Ret.), IA; Jeff Hepburn, Des Moines Public Schools, IA.  
Capacity: 10-35; Fee: \$10

**W46: Polymers: Holding the World Together (Using Inquiry-Based Learning to Teach Experimental Design).**

Gina Barrier, The Science House, North Carolina State University.  
Capacity: 10-50; Fee: \$10

**W47: Introduction to Process Oriented Guided Inquiry Learning: POGIL.**

Andrei Straumanis, College of Charleston; Jennifer

Lewis, University of South Florida.

Capacity: 6-60; Fee: \$10

**W48: Easy Ways to Metric Literacy for Your Student.**

Sally Mitchell, East Syracuse-Minoa High School, NY.

Capacity: 10-24; Fee: \$10

**W49: Teaching with OWL: On-Line Web-based Learning.**

Steven Brown, University of Arizona.

Capacity: 5-20; Fee: \$15

**W50: Creating and Validating an Energy Level Model of the Atom.**

John Eix, Upper Canada College (Ret.), Ontario.

Capacity: 6-25; Fee: \$15

**W51: Hands-On Chemistry with Vernier.**

Dan Holmquist, Robyn Johnson, Vernier Software & Technology.

Capacity: 20; Fee: \$10

**2:00 p.m. – 5:00 p.m.**

**W52: Writing More Effective Proposals.**

John Dwyer, Elizabeth Dorland, National Science Foundation, VA.

Capacity: 10-40; Fee: \$10

**W53: Setting Up a Weblog to Facilitate Peer-to-Peer and/or Student Interaction On-Line.**

Edward W. Fedosky, University of Wisconsin-Madison/  
*Chemistry-Journal of Chemical Education.*

Capacity: 5-20; Fee: \$15

**W54: Two Easy Electrochemistry Labs.**

Susan Zawacky, Sewickley Academy, PA.

Capacity: 10-26; Fee: \$25

**W55: Checkerboard Chromatography.**

Charles Smith, Our Lady of the Lake University, TX.

Capacity: 8-30; Fee: \$10

**W56: Flinn ChemTopic™ Labs Workshop — Experiments and Demonstrations in Chemistry.**

Irene Cesa, Flinn Scientific Inc.

Capacity: 30-60; Fee: \$10

**W57: Caveman Chemistry: Hands-On Projects in Chemical Technology.**

Kevin Dunn, Hampden-Sydney College, VA.

Capacity: 10-30; Fee: \$45

**W78: WebAssign — I Wouldn't Teach Without It!**

Peg Gjertsen, Web Assign, Raleigh, NC; Dee Dee Allen, Shaw University, Raleigh, NC.

Capacity: 15-30; Fee: paid for by sponsor

**Wednesday, July 21, 2004**

**9:30 a.m. – 5:00 p.m.**

**W60: A Successful Approach to Introducing Electrochemistry to the Undergraduate Student in Lecture and Laboratory.**

Timothy Wooster, Eastern Nazarene College.

Capacity: 6-16; Fee: \$35

**9:00 a.m. – 12:30 p.m.**

**W59: Developing and Using Pre-Lecture Explorations (PLE).**

John Gelder, Oklahoma State University; Michael Abraham, University of Oklahoma.

Capacity: 5-20; Fee: \$15

**W61: Teaching with OWL: On-Line Web-based Learning.**

Steven Brown, University of Arizona.

Capacity: 5-20; Fee: \$15

**W62: Show Me The (Elements In) Money!**

Al Hazari, University of Tennessee.

Capacity: 15-25; Fee: \$35

**W63: Promoting Reflective Thinking in Chemistry Classes.**

Dave Finster, Wittenberg University, OH.

Capacity: 10-45; Fee: \$10

**W64: Amazing Experiments with the Neodymium Mega-Magnet.**

Brian Rohrig, Jonathan Alder High School, OH.

Capacity: 10-50; Fee: \$35

**W65: Learning by Doing.**

Adele Mouakad, St. John's School, Puerto Rico; Marian DeWane, Centennial High.

Capacity: 20-26; Fee: \$25

**W66: Practice and Drill: Using the WE-LEARN System for Organic Chemistry.**

John H. Penn, West Virginia University.

Capacity: 1-20; Fee: paid for by sponsor

**W67: Hands-On Chemistry with Vernier.**

Dan Holmquist, Robyn Johnson, Vernier Software & Technology.

Capacity: 20; Fee: \$10

**W68: Advanced POGIL Workshop: Designing Activities for a Process-Oriented Guided-Inquiry Learning Environment.**

David Hanson, Stony Brook University, NY.

Capacity: 6-36; Fee: \$15

**2:00 p.m. – 5:00 p.m.**

**W58: Using and Authoring Virtual Lab Activities for Introductory Chemistry.**

David Yaron, Michael Karabinos, Carnegie Mellon University, PA.

Capacity: 5-40; Fee: paid for by sponsor

**W69: Teaching and Learning with *Chemistry in Context*.**

Lucy Pryde Eubanks, Clemson University; Catherine H. Middlecamp, University of Wisconsin-Platteville.

Capacity: 10-20; Fee: \$15

**W70: Chemistry of Tie-Dyeing.**

Dr. Dharshi Bopegedera, The Evergreen State College, WA.

Capacity: 10-25; Fee: \$55

**W71: Workshop on Peer-Led Team Learning (PTL).**

Pratibha Varma-Nelson, Northeastern Illinois University, Ana Fraiman, Northeastern Illinois University.

Capacity: 15-40; Fee: \$10

**W72: Advanced POGIL Workshop: The Web-Based LUCID Learning & Assessment System.**

Troy Wolfskill, Stony Brook University; Candice Foley, Suffolk County Community College, NY.

Capacity: 6-36; Fee: \$15

**W73: Advanced Logger Pro 3.**

Dan Holmquist, Robyn Johnson, Vernier Software & Technology.

Capacity: 20; Fee: \$10

**W74: Molecular Modeling in Chemistry Education.**

Warren Hehre, Sean Ohlinger, Wavefunction, Inc.

Capacity: 20; Fee: \$10

## Thursday, July 22, 2004

**9:00 a.m. – 5:00 p.m.**

**W75: Demonstrations and Student Experiments in Chemistry (and Physics).**

Irwin Talesnick, Professor Emeritus, Queen's University.

Capacity: 20-100; Fee: \$110

**9:00 a.m. – 12:30 p.m.**

**W76: Calibrated Peer Review — An Advanced Workshop: Implementation and Authoring.**

Tim Su, City College of San Francisco; Arlene Russell, UCLA; James Rudd, California State University-Los Angeles.

Capacity: 10-20; Fee: \$30

**W77: Advanced POGIL Workshop: Using and Designing POGIL (Process-Oriented Guided Inquiry Learning) Laboratory Activities.**

Frank Creegan, Washington College, MD.

Capacity: 6-30; Fee: \$10

## Special Events

### Sunday, July 18, 2004

**11:30 a.m. – 1:00 p.m.**

**18th BCCE Golf Outing.**

Veenker Golf Course, Ames, Iowa.

Reserved tee times are between 11:30 a.m. and 1:00 p.m. Fees are \$26.50 per person walking and \$39.50 per person with cart. Veenker is a very hilly course — carts are recommended.

To make a reservation, call (515) 294-9493. Be sure to say you are with BCCE. To get more information about Veenker, visit, [www.fpm.iastate.edu/veenker](http://www.fpm.iastate.edu/veenker).

### Sunday, July 18, 2004

**Afternoon**

**Creighton University Chemistry Demonstration Show for Adults and Children.**

Location TBA.

Creighton University students will perform a chemistry demonstration show.

### Wednesday, July 21, 2004

**3:30 p.m. – 5:00 p.m.**

**Magic Show and Chemistry Demonstration Show.**

Location TBA.

Jeff Hepburn, Des Moines Central Academy, is our resident magician. He will perform for 30 minutes. Iowa State's Society for Chemistry Undergraduate Majors (SCUM) will perform a chemistry demonstration show.

# Open Meetings

## *Tentative Schedule for the Open Meetings for Committees of the Division of Chemical Education*

Room assignments for the Open Meetings will be listed in the Program Book, in the Pocket Guide, on our Web site, and in the "Daily Corn and Soybean Report". We are planning for these open committee meetings to take place in assigned alcoves of the Maple-Willow-Larch Dining Hall during the lunch hour or just before the dinner hour.

Much of the work of the Division of Chemical Education occurs in its committees. One purpose of the open committee meetings is to provide an opportunity for you to learn more about the mission of the committees, to meet the committee members, and to make suggestions to the committees. The committee members look forward to meeting you, listening to your ideas, and answering your questions.

### **4:30 p.m., Sunday, July 18, 2004 New Member Committee (NMC)**

The CHED Division New Member Committee will hold an open meeting from 4:30 - 5:30 p.m. on Sunday, July 18, 2004. This committee is responsible for developing techniques and strategies for welcoming and educating new members to the Division of Chemical Education. If you are not a member of the Division of Chemical Education and you would like to learn about the activities of the Division, this is a good meeting to attend. The organizers have promised that both new and prospective members who attend this meeting will not be assigned to work on a committee.

**Pratibha Varma-Nelson**, Chair

Department of Chemistry, Physics and Earth Science,  
Northeastern Illinois University, Chicago, IL 60625  
Varmanelson@neiu.edu

### **12:10 p.m., Monday, July 19, 2004 The Committee on Computers in Chemical Education (CCCE)**

The Committee on Computers in Chemical Education (CCCE) will hold an open meeting at 12:10 p.m. on Monday, July 19, 2004. This committee organizes on-line meetings and courses, publishes a newsletter, organizes symposia at national meetings and regional ACS meetings, and organizes workshops at BCCE meetings. For more information, visit <http://www.ched-ccce.org/>

**Donald Rosenthal**, CCCE Chair

Department of Chemistry, Clarkson University,  
Potsdam, NY 13699-5810  
rosen@clvm.clarkson.edu

### **5:00 p.m., Monday, July 19, 2004 Membership Committee (MC)**

The Membership Committee (MC) will hold an open meeting at 5:00 p.m. on Monday, July 19, 2004. The purpose of the membership committees is to assess the effectiveness of the standing committees, to disband committees that are no

longer needed, and to recruit individuals to join committees of the Division of Chemical Education. The co-chairs of this committee welcome one and all to contribute ideas for attracting new members to join the Division of Chemical Education. If you are not a member of the Division of Chemical Education, this is a good meeting to attend to learn about what DIVCHED can do for you and what you can do for it.

**Adele Salerno**, Co-Chairperson

5449 Carolyn Ln, Milford, OH 45150

Amndsal@aol.com

**Julie Smist**, Co-Chairperson

Department of Chemistry/Biology, Springfield College,  
Springfield, MA 001109

jsmist@spfldcol.edu

### **5:00 p.m., Monday, July 19, 2004 Graduate Students in Chemical Education (GSICE) Committee**

The Graduate Students in Chemical Education (GSICE) Committee will hold an open meeting at 5:00 p.m. Monday, July 19, 2004. This is an open meeting for all undergraduate and graduate students working in the field of chemical education. No professors allowed. Meet other students. Share information about research experiences and job hunting prospects. Interest groups will be formed.

### **5:00 p.m., Monday, July 19, 2004 The Long Range Planning Committee (LRPC)**

The Long Range Planning Committee (LRPC) will hold an open meeting at 5:00 p.m. on Tuesday, July 20, 2004. The purpose of the Long-Range Planning Committee is to monitor internal and external trends, and to develop plans that will allow the Division to evolve and adapt to changes in technology, in science, and in the needs and expectations of Division members. The LRPC has the responsibility to assess the strengths and weaknesses of the Division, assess the opportunities and threats it faces, and identify ways to use the strengths and opportunities to mitigate the weaknesses. This includes the process of monitoring and reporting on technological trends that may impact the way in which Division members practice their profession. In addition, the LRPC has the responsibility to identify emerging areas of interest in chemical education that are related to Division interests and provide recommendations as to how these areas can be incorporated into Division programs and activities. The LRPC works with Division committees to implement changes to activities and programs in response to identified trends.

**Sue Nurrenbern**, Chair LRPC

Department of Chemistry, Purdue University,  
West Lafayette, IN 47907-2084

nurrenbe@purdue.edu

**12:10 p.m., Tuesday, July 20, 2004**  
**Two-Year College Chemistry Consortium (2YC<sub>3</sub>) Committee**

The Two-Year College Chemistry Consortium (2YC<sub>3</sub>) Committee will hold a membership meeting at 12:10 p.m. Tuesday, July 20, 2004. Matters to be discussed at the meeting include activities since the last meeting; update of membership, budget; a look at upcoming meetings.

**Sonja E. Davison**, 2YC<sub>3</sub> Chair

Department of Chemistry, Tarrant County College,  
 Hurst, TX 76054

SONJA.DAVISON@tccd.edu

**12:10 p.m., Tuesday, July 20, 2004**  
**Committee on Personnel and Nominations**

The Committee on Personnel and Nominations will hold an open meeting to discuss nominations for division committees, boards, and offices. In order to represent all constituencies of the Division of Chemical Education, the committee welcomes suggestions from interested division members.

**Carol White**, Chair

Athens Technical College, Athens, GA 30601

cwhite@athenstech.edu

**5:00 p.m., Tuesday, July 20, 2004**  
**Chemical Education Research Committee (CERC)**

The Chemical Education Research Committee (CERC) promulgates higher standards of conducting chemical education research, the presentation of results of chemical education research at professional meetings, and the publication of chemical education research in peer reviewed journals. The CERC invites anyone interested in doing chemical education research to attend the meeting.

**Amy Phelps**, Chair CERC

Department of Chemistry, Middle Tennessee State  
 University, Murfreesboro, TN 37132

ajphelps@mtsu.edu

**5:00 p.m., Tuesday, July 20, 2004**  
**The High School Committee (HSC)**

The High School Committee (HSC) of the Division of Chemical Education invites high school teachers to an open meeting at 5:00 p.m. on Tuesday, July 20, 2004. The purpose of this committee is to promote the pre-college viewpoint and needs within the Division of Chemical Education. For example, we would like to generate ideas for gaining a greater presence at the Biennial Conferences on Chemical Education, the National and Regional ACS meetings, and in the *Journal of Chemical Education*. This meeting is an opportunity to meet the committee members and to share common problems and their potential solutions. The High School Committee serves as a voice to the Division for high school teachers. The committee works with DivChed Executive Committee and program committees of regions and the Division to plan activities that provide professional development opportunities for high school teachers. These activities are enhanced by mem-

bership in the Division. Therefore, the committee works to encourage membership in the Division. At the meeting, the committee will discuss its plans for activities for the next three years. All are welcome.

**Claire Baker**, Chair HSC

Brebeuf Preparatory School, Indianapolis, IN 46268

cbaker@brebeuf.org

**12:10 p.m., Wednesday, July 21, 2004**  
**Biennial Conference on Chemical Education Committee (BCCEC)**

The Biennial Conference on Chemical Education Committee (BCCEC) will hold an open meeting at 12:10 p.m. on Wednesday, July 21, 2004. This committee selects the sites for the BCCEs and provides support and communication between those conducting previous BCCEs and those developing future conferences. The committee is working on a variety of ways to improve the assistance we can offer to prospective hosts in planning and managing BCCEs. Join us to offer your ideas and suggestions for future BCCEs. If you have ideas for programming or plenary speakers, this is the meeting to attend. Also, if you are considering the possibility of hosting a future BCCE or being the program chair of a future BCCE, or recommend a site, we are interested in talking with you. If you are interested in serving on this committee (many consider this committee to be the best DIVCHED committee to serve on), then "come on down".

**George Kriz**, Chair BCCEC, General Chair of the 17th BCCE  
 Department of Chemistry, Western Washington

University, Bellingham, WA 98225

George.Kriz@wwu.edu

**5:00 p.m., Wednesday, July 21, 2004**  
**Finance Committee (FC)**

The finance committee (FC) will hold an open meeting at 5:00 p.m. on Wednesday, July 21, 2004. The ACS DIVCHED Operations manual indicates that the responsibilities of this committee are to: Recommend to the Division Executive Committee a fiscally sound operating budget derived from input from Division committees and officers. Evaluate Division programs and activities for overall financial impact (expenses versus revenues). Monitor internal and external trends that will impact or influence Division finances (meeting attendance, publication sales, competition, member behavior, price increases, etc.). Monitor the Division budget versus actual expenses and revenues to ensure that spending authorities and income revenues are performing as expected; make recommendations to the Division Executive Committee for adjustments to the budget, as necessary. Ensure that the appropriate Division committees perform periodic audits (publications, awards, etc.).

**William R. Robin**, Past Chair, Division of Chemical  
 Education, ACS; Chair, FC

Department of Chemistry, Purdue University,  
 West Lafayette, IN 47907-2084

wrrubin@purdue.edu

# Plenary Lecture and Keynote Address Schedule

## SUNDAY, JULY 18, 2004

**Plenary Lecture** 7:30 p.m. / C.Y. Stephens Auditorium  
*"Six Intense Minutes and a Lifetime of Memories:  
 The Landing of the Mars Exploration Rovers"*

**Dr. Firouz Naderi**, Director of Solar System Exploration Programs and Manager of the Mars Exploration Program  
 NASA Jet Propulsion Laboratory

## MONDAY, JULY 19, 2004

**Plenary Lecture** 8:00 a.m. / C.Y. Stephens Auditorium  
*"Models and Modeling in Chemical Education"*

**Dr. John Gilbert**, University of Reading, UK;  
 Editor, *International Journal of Science Education*

**Keynote Address** 4:00 p.m. / Benton Auditorium  
*"How Policy and Practice Influence Student Learning"*

**Dr. George Boggs**, President and CEO of the American Association of Community Colleges

## TUESDAY, JULY 20, 2004

**Plenary Lecture** 8:00 a.m. / Hilton Coliseum  
*"Challenges for Graduate Education in Chemistry"*

**Dr. Charles Casey**, Professor of Chemistry, University of Wisconsin–Madison; 2004 President of the American Chemical Society

**Keynote Address** 4:00 p.m. / Benton Auditorium  
*"Student Understanding of Thermal Physics:  
 Microscopic Particles and Macroscopic Processes"*

**Dr. Paula Heron**, Associate Professor of Physics,  
 University of Washington–Seattle

## WEDNESDAY, JULY 21, 2004

**Plenary Lecture** 8:00 a.m. / C.Y. Stephens Auditorium  
*"Discipline-Based Education Research: The Key to  
 Student Learning in the Sciences"*

**Dr. Lillian McDermott**, Professor of Physics, University of Washington–Seattle

**Keynote Address** 4:00 p.m. / Benton Auditorium  
*"Effective Use and Evaluation of Interactive  
 Multimedia Resources for Learning"*

**Dr. Roy Tasker**, Professor Chemistry, School of Science,  
 University of Sydney, NSW Australia

## THURSDAY, JULY 21, 2004

**Keynote Address** 9:15 a.m. / 150/154 Scheman Building  
*"Chemistry in the Classroom and in the Community:  
 The Challenge of Citizenship for the Teacher"*

**Dr. Bassam Shkhashiri**, Professor of Chemistry,  
 University of Wisconsin–Madison

# 18th BCCE Mole Breakfast

## 6:02 a.m., Wednesday, July 21, 2004 Maple-Willow-Larch Dining Hall

Yes, it is too early in the morning, but by golly, you just can't properly honor Avogadro and his number any other way but at 6:02 a.m. This is a BCCE and ChemEd tradition. This year we are placing a bounty on BCCE participants who have never attended a Mole Breakfast. Be prepared for our early morning round-up! And, think again ... you are in Iowa ... we have roosters and chickens, and we know how to use them.

prizes, skits, jokes, songs, dance, magic tricks, mole demonstrations, and fun camaraderie. There will be a mole share-a-thon. Learn how you can plan and organize a Mole Day event for your chemistry class on October 23, 2004. Participants share fun ways of getting the mole concept across to their students. Learn a new song, "Pi A-La-Mole."

At the 17th BCCE in Western Washington there were 90 attendees at the Mole Day Breakfast. The 18th BCCE is out to set the record for the most attendees. The Maple-Willow-Larch Dining Hall will open at 5:45 a.m. You need to be seated before 6:02 a.m. **This event requires a Mole Breakfast ticket, \$16, see Registration Form II-A (p.18), II-B (p.19), or Guest Registration Form (p.21).** Discounts are available if you are eligible and seated before 6:02 a.m. [www.chem.iastate.edu/bcce](http://www.chem.iastate.edu/bcce).

Mole Breakfast tickets can be purchased on the registration form, or at the 18th BCCE Registration Desk; a limited number of tickets will be available at the door the morning of the breakfast. A special Mole Day Breakfast shuttle bus will be available for BCCE participants staying at Frederiksen Court. The bus leaves Frederiksen Court from the Hawthorn Market at 5:35 a.m. There will be a van at 5:45 a.m. for those of you who miss the bus. There will also be transportation to the MWL Dining Area provided for BCCE participants staying at the Gateway, Baymont, or Comfort Suites. There is no dress code for this event. Come as you are.

What goes on at a Mole Breakfast? Lots of good food, coffee,