
Conference Program

**165th 2YC3 Conference
Middlesex Community College, Lowell, MA
November 14-15, 2003**

Integrating Food Chemistry, Health Science and Technology into the Chemistry Curriculum

<http://www.middlesex.cc.ma.us/2YC3>

The theme of the 165th conference is Food Chemistry, Health Science, and Technology. The conference program is organized around three major areas:

- 1) Chemical Interactions between Health and Diet
- 2) Innovative Laboratory Experiments
- 3) Use of Technology and Active Learning in Chemistry Education.

Massachusetts' wealth of educational and industrial institutions have contributed mightily to a program balanced between cutting edge research and how-to methodology.

For the first time, the conference brings together three groups with a common mission: 2YC3, New England Association of Chemistry Teachers (NEACT), and the Science Teachers Area Resource Sharing (STARS), as well as two sister institutions, Middlesex Community College and the University of Massachusetts Lowell (UmassLowell)! We hope you will join your colleagues to learn and share in historic Lowell, often referred to as the Venice of America. Come earlier, stay later...there's a lot to do here.

Professional Development Points (PDPs) and Continuing Education Credits (CEUs) will be available.

Friday, November 14, 2003

- 8:15-10:00 **Registration and Complementary Continental Breakfast
Doubletree Hotel Belvedere Room**
- 9:00-9:15 **Welcome and Opening Remarks**
- 9:15-10:00 **Panel: The Controversy and Chemistry of Genetically Modified Foods**
- 10:00-10:30 **Refreshment Break - Exhibits Area at Middlesex Lower Cafeteria**
- 10:00-4:00 **Registration and Exhibits - Middlesex Lower Cafeteria**
- 10:30-11:45 *The Challenges of Determining Mercury Contamination in Biological
Organisms: A Platform to Demonstrate Abstract Chemistry Concepts:
Presentation and Demonstration Using Cold Vapor AA and freshly caught fish!*

Barbara A. Eddy, Chemist, Wall Experimental Station, Mass. Dept. of Environmental Protection; Adjunct Professor, Middlesex Community College

- 10:30-11:15 **Concurrent Sessions**
A.. *Developing Students' Deep Understanding of the Scientific Method*
Dr. Judith Kelley, UMassLowell
- B. Grant Writing Panel *How to Follow the Rainbow*
- 11:15-11:45 **Concurrent Sessions**
A. *Using Webquests to Teach Chemistry*
Mark Michalovic, Chemical Heritage Foundation (Tentative)
- B. *How Safe is Your Laboratory? Tips for Safe Laboratory Design*
- 11:45-12:15 **Concurrent Sessions**
A. *Cutting Edge Research: Is Diet a Major Factor in the Occurrence of Alzheimer's Disease?*
Thomas B. Shea, PhD, Center for Cellular Neurobiology and Neurodegeneration Research, UMassLowell
- B. *An Interdisciplinary Team Taught Course: Forensics and Chemistry*
Paul Patev, Professor of Biotechnology, Middlesex Community College (tentative)
- 12:15-1:30 **Lunch and walk to Jack Kerouac Park (two minutes from campus).** Enjoy Lowell's ambience and our numerous ethnic restaurants.
- 1:30-4:45 Tour of U.S. Army Natick Research, Development and Engineering Center (Natick Laboratories) (limit 14)
- 1:30-4:00 Tour of the Nuclear Research Reactor at the UMassLowell (limit 20)
- 1:30-2:00 *Cutting Edge Research: Can Carotenoid Supplementation Increase Risk of Lung Cancer and Total Mortality? Results from Epidemiological and Animal Studies that Every Smoker Should Know.*
Heather Mernitz, Tufts University Nutrition and Cancer Biology Laboratory., Friedman School of Nutrition and Public Policy
- 2:00-2:30 **Refreshments in Exhibit Area**
- 2:30-4:15 Workshop: *Engaging Students with Active Learning*
Jessie Klein, PhD, Margie Larrousse, Middlesex Community College
- 6:00 - 7:00 **Social Hour - Wine, Cheese and Conversation**
- 7:00 - 9:00 **Banquet and Presentation:** *Chemistry and the Evolution of Lowell - From Textile Chemistry to Information Technology to a Center for Arts and Culture*

Saturday, November 15, 2003

- 8:15-4:00 Registration in Exhibits Area - Middlesex Lower Cafeteria**
- 8:15-9:00 Continental Breakfast - Middlesex Lower Cafeteria**
- 9:00 -9:45 Concurrent Sessions**
- A. *Writing to Learn Using Calibrated Peer Review with Web-Based Technology*
Todd Wimpheimer, PhD, Department of Chemistry and Physics, Salem State College
- B. *The Latest Research on Feeding the U.S. Military*
Jeannette Kennedy, Food Technologist, U.S. Army Natick Research, Development and Engineering Center.
- 9:45-10:15 **Break and Exhibits.**
- 10:15-12:15 **Concurrent Workshops**
- A. *What's All the Fuss about Fats? Teaching General Chemistry in the Context of Dietary Fats and Human Health*
Heather Mernitz, Nutrition and Cancer Biology Lab, Tufts University, Friedman School of Nutrition Science and Policy
- B. *The Titration Project: Find Meaning and Have Fun Learning Acid/Base and Redox Chemistry*
Cary Kilmer, Research Experience for Teachers (RET) Program at M.I.T. Langer Laboratory
- 12:15- 1:30 **Lunch and Concurrent Meetings of 2YC3 and NEACT**
- 1:30- 3:30 *Determination of Acid and Enzyme Activity as Indicators of Processing Efficiency in Food*
Sarmad Saman, PhD, Massachusetts Bay Community College
- 1:30-2:30 *Engaging Students in Inquiry-Based Science Using "Science and Our Food Supply", an Interactive Curriculum.*
Lanny Whitten, Kennebunk High School and NEACT Northern Division Chair
- 2:30-3:15 Panel and Discussion: *Hybrid (Face-to-Face and Online) Courses: Teaching Chemistry Using Technology:*
- 3:15-3:45 **Discussion and Closing Remarks**
Open Discussion: *How can our organizations collaborate to build a chemistry educators community? What value have you derived from attendance at 2YC3 and NEACT and STARS meetings? What do you want to see in the future?*

For all those who are interested, we plan to have dinner together on Saturday in Lowell at one of Lowell's many interesting restaurants (kids welcome). If you are game for more activity after dinner we also have an excellent repertory theater, good music clubs, and the Lowell Lock Monsters, a professional hockey team. . On Sunday morning, we can explore the historic Concord and Lexington area or

take an interesting tour of the Lowell area before you head back to parts unknown.

Visit <http://www.middlesex.cc.ma.us/2YC3> for abstracts and updates to the program and for numerous opportunities to play and learn in the Greater Lowell area.. For more information email Dotty Stumpf at stumpfd@middlesex.cc.ma.us