

WCCTA 12th Annual Conference

2YC3 168th Conference

October 14-16, 2004

*Sleeping Lady Mountain Retreat
Leavenworth, Washington*

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Future Site of New WCCTA Logo

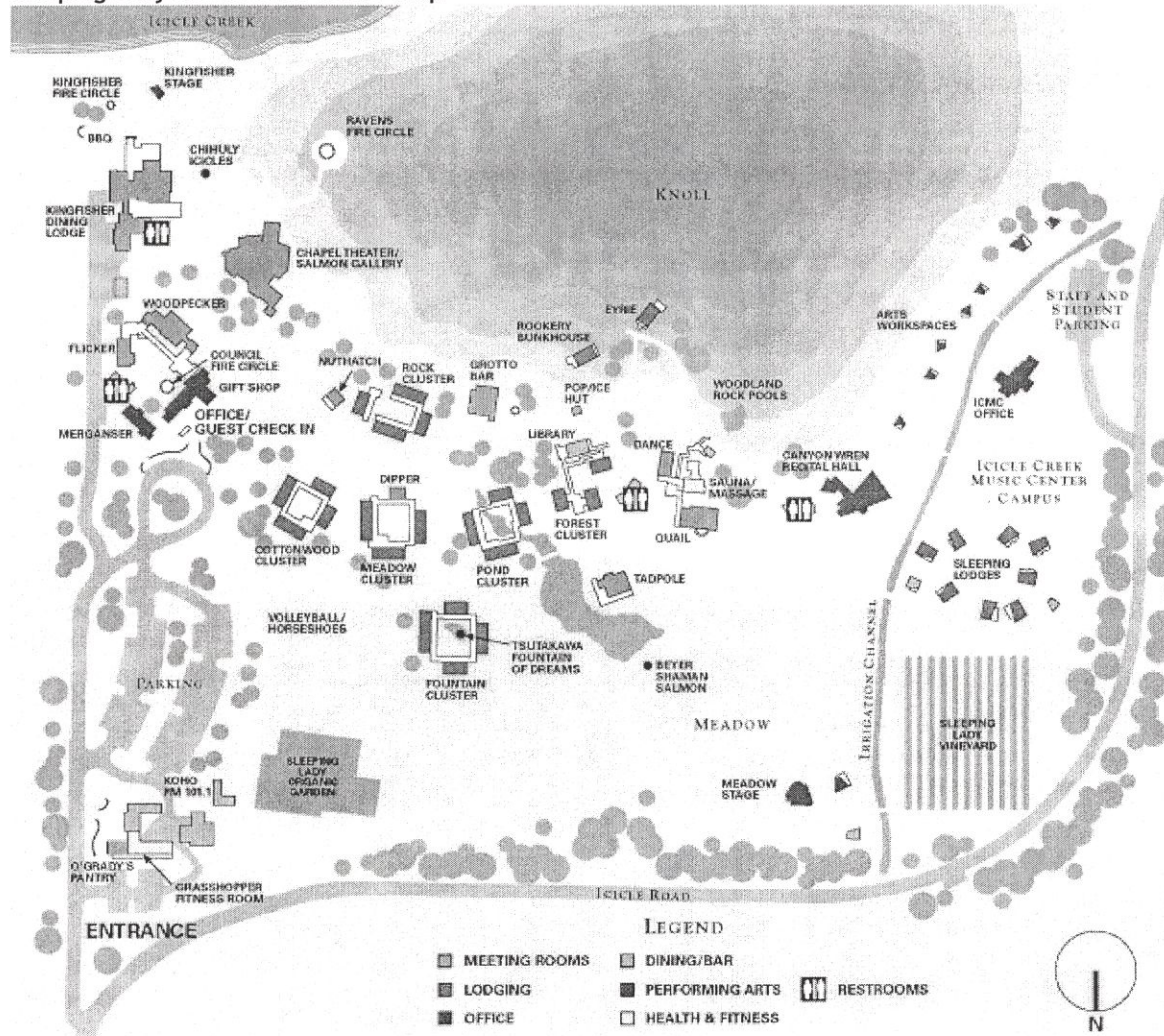
2004 WCCTA Fall Conference

Conference Program

Thursday October 14

3:00 pm - 10:00 pm	Check-In Sleeping Lady Office
4:30 pm - 10:00 pm	Registration Woodpecker
4:30 pm - 6:00 pm	Informal Gathering Grotto Bar
6:00 pm - 7:00 pm	Dinner Kingfisher Dining Hall
7:00 pm - 10:00 pm	Evening Social. No -host bar Woodpecker

Sleeping Lady Conference Center Map



FRIDAY, October 15

7:30 am - 8:30 am	Breakfast Kingfisher Dining Lodge			
8:45 am - 10:15 am	Between the Covers: Forces that Create and Change General Chemistry Texts Steve Gammon, Western Washington University Chapel Theater			
10:15 am - 11:15 pm	Exhibits Open	Vendor Break Chapel Theater Lobby		
11:15 pm - 12:00 pm		Flicker	Woodpecker	Chapel Theater
		Introducing Forensic Investigation into the Chemistry Laboratory Karen Stevens	Cooperative Project in Liberal Arts Chemistry: Invite a Chemist to Breakfast George Kriz	A New Look at Colorimetry - and Some Other Things You Can Do with Computers John Amend
12:00 pm - 1:00 pm		Lunch Kingfisher Dining Lodge		
1:10 pm - 1:55 pm		Improve Comprehension in Your Chemistry Classes Lance Mayhofer	Using Virtual Lab Activities for Introductory Chemistry David Yaron & Mike Karabinos	A Unique Blended Program for Engineering and Science Majors Robin Terjeson
2:00 pm - 2:45 pm		Teaching Accuracy, Precision, and Graphing Using Rubber Bands Ralph Morasch & Nancy Barker	Solving Problems in Freshman Chemistry Labs: A Model for Interdisciplinary Collaboration Timothy Sorey	OWL – Online Web-Based Learning John Holdcroft
2:45 pm - 3:30 pm		Afternoon Break		
3:30 pm - 4:10 pm	Undergraduate Research Experiences for Community College Students at the UW Mary Whitfield & Hilary Loeb	New Instrumentation for Undergraduate Teaching & Basic Research in Spectroscopy & Chromatography Jerry DeMenna	Poster Presentations Linda Kuehnert & Karen Kreutzer	
4:15 pm - 5:30 pm	The Write-Chem Learning Community vs. Stand-Alone Chem 100: Gains, Losses and Extras Rachel Wang	Real-World Hands-on Experiments with the BUCK/FUN-SCI Academics Program Jerry DeMenna	Using Vernier Probeware in College Chemistry Robyn Johnson	
5:30 pm - 6:30 pm	Break			
6:30 pm - 7:30 pm	Dinner Kingfisher Dining Lodge			
8:00 pm - 9:00 pm	Chemistry Collaboration with a Developing Country: Field Study of Coffee Fermentation on Farms in Matagalpa, Nicaragua Susan Jackels, Seattle University Woodpecker			
9:00 pm - 11:00 pm	Evening Social and No Host Bar Woodpecker			

SATURDAY, October 16

8:00 am - 9:00 am	Breakfast Kingfisher Dining Hall		
	Flicker	Woodpecker	Tadpole
9:00 am - 9:40 pm	BOAF Topic TBD	WCCTA Advocacy	POGIL Workshop (requires preregistration)
9:45 am - 10:30 am	Journal Paper Discussion Mary Whitfield	Issues Related to Requirements for Washington State Nursing Programs Kathy Ashworth & Sara Selfe	
10:30 am - 11:00 am	Check-out		
11:00 pm - 11:45 pm	Undergraduate Research Discussion Group Karen Grant & Tim Hubler	BOAF Topic TBD	
12:00 pm - 1:00 pm	Lunch Kingfisher Dining Lodge		
1:00 - 2:00 pm		Business Meeting	POGIL Workshop (requires preregistration)
1:00 - 5:00 pm			

WCCTA/2YC3 ABSTRACTS 2004

FRIDAY, OCTOBER 15, MORNING SESSIONS

Keynote Address, Chapel/Theater, 8:45 am -10:15 am

Between the Covers: Forces that Create and Change General Chemistry Texts

Steve Gammon, Western Washington University, Bellingham, WA

11:15 am -NOON, Flicker

Introducing Forensic Investigations into the Chemistry Laboratory

Karen Stevens, Whitworth College, Spokane, WA

Abstract: We have attempted to introduce several forensic experiments into our chemistry laboratory curriculum, from introductory courses to upper division. One example of this is the determination if an unknown liquid is ethyl alcohol via 2 different methods. We explain the difference between "breathalyzers" and "Intoxilyzers" and how each method works. Students then create their own "breathalyzer" and test its action on a control and on an unknown. Students also test their unknown using an "Intoxilyzer" and see if their results for the unknown assigned to them concur with one another.

These experiments provide numerous opportunities to explore many chemical phenomena such as redox reactions, limiting reagents, sample handling, and vibrational frequencies. The difficulty and number of variables used can make similar exercises relevant for first year or for junior/senior courses.

11:15 am -NOON, Woodpecker

Cooperative Project in Liberal Arts Chemistry: Invite a Chemist to Breakfast

George Kriz, Western Washington University, Bellingham, WA

Abstract: A collaborative project in liberal arts chemistry, involving faculty in chemistry and science education, will be described. The project includes various components: an introductory test to examine students' perceptions of scientists, a group library research exercise, oral and written presentation of results of the library research, a presentation by a guest scientist, and a final evaluation of the experience by the students. Planning, implementation, and evaluation of the project will be discussed. Trials of this project extend over a three-year span. This paper describes a project that was introduced at the NORM/WCCTA meeting in 2001 and continues to evolve. Ideas for other innovative projects that can be used in this type of class will be solicited as a discussion topic from the audience.

11:15 am -NOON, Chapel/Theater

A New Look at Colorimetry - and Some Other Things You Can Do With Computers

John Amend, Montana State University, Bozeman, MT

Abstract: Laboratory time is the most costly time in education. Laboratory serves two purposes in the sciences. One is to demonstrate and confirm known principles and to apply these to solve real problems. The other is to learn to design experiments and to synthesize new ideas and concepts from experimental data. How can we develop both the skills of discovery and solid understanding of chemical principles in time and cost-limited situations that face many institutions today?

This presentation will demonstrate new computer-based tools and laboratory learning strategies that build solid understanding of chemical principles and engage students in experiment design in time-limited situations. The demonstrations will include a unique ten-wavelength scanning colorimeter that makes simultaneous measurements of transmission, absorbance, scatter, and fluorescence in less than one second.

FRIDAY, OCTOBER 15, AFTERNOON SESSIONS

1:10 pm-1:55 pm, Flicker

Improve Comprehension in Your Chemistry Classes

Lance Mayhofer, Pasco Scientific

Abstract: What if your students could perform simple chemistry experiments that improved their comprehension of challenging chemistry concepts? Learn how handheld dataloggers, sensors and software can be used to create a more meaningful chemistry learning environment. Find out how students can use a pressure and temperature sensor to study the ideal gas law, use a colorimeter to study Beer's Law or determine the order of a reaction, or use the new high-accuracy drop counter to improve the success of titration experiments.

1:10 pm -1:55 pm, Woodpecker

Using Virtual Lab Activities for Introductory Chemistry

David Yaron & Mike Karabinos, Carnegie Mellon University, Pittsburgh, PA

Abstract: Attendees will obtain hands-on experience with Carnegie Mellon's Virtual Chemistry Laboratory (<http://ir.chem.cmu.edu/>), a flexible on-line tool that allows students to choose from hundreds of standard reagents and manipulate them in a manner that resembles that of a real lab. Instructors can choose from existing activities or create their own using our authoring tools. Activity types range from pre-lab assignments that prepare students for the physical lab, to on-line homework where students perform or design their own experiments. These activities provide a bridge between the algebraic calculations of the lecture course and laboratory chemistry. Authoring an activity is similar to setting up a physical lab; the instructor simply selects the reagents and instruments to make available to the student.

1:10 pm -1:55 pm, Chapel/Theater

A Unique Blended Program for Engineering and Science Majors

Robin Terjeson, Clark College, Vancouver, WA

A unique set of programs for bachelor's degrees in biology, engineering and computer science now exist at WSU Vancouver Engineering and Science Institute. It is a venture with WSU Vancouver, and Clark and Lower Columbia Colleges. Many issues and concerns were addressed in the planning process, and work continues to make the Institute an exciting option for students in southwest Washington. Some of the ideas behind the project and plans for the future will be presented.

2:00 pm -2:45 pm, Flicker

Teaching Accuracy, Precision and Graphing using Rubber Bands

Ralph Morasch & Nancy Barker, Pierce College, Fort Steilacoom, WA

Abstract: Using an inexpensive rubber band shooter, we have developed a fun and interesting project for the teaching accuracy, precision and graphing. The project makes the topics more meaningful to introductory chemistry students, in particular non-lab classes. During the session we will provide handouts and allow attendees to participate in this activity, as well as talking about its benefits.

2:00 pm -2:45 pm, Woodpecker

Solving Problems in Freshman General Chemistry Labs: A Model for Interdisciplinary Collaboration

Timothy Sorey, Central Washington University, Ellensburg, WA

Abstract: A model for interdisciplinary collaboration that supports both national science education goals and Accreditation Board for Engineering and Technology (ABET) accreditation objectives will be presented. Curriculum that is based upon these goals and objectives, a newly devised learning model called The Scientist's Research Cycle, and unique microcomputer-based laboratories (MBLs) using MicroLAB technology will also be presented that foster engineering track students' creativity and problem solving abilities that are important within the scientific process.

2:00 pm -2:45 pm, Chapel/Theater

Web-Based Homework and Assessment

John Holdcroft, BrooksCole/Thomson Learning

Abstract: OWL – Online Web-Based Learning. The only system designed by chemists to teach freshman chemistry. OWL incorporates a home work system, tutorial, and course management functions. It incorporates a Mastery learning approach and is the only system available that generates problems and also generates specific feedback to those problems.

3:30 pm -4:10 pm, Flicker

Undergraduate Research Experiences for Community College Students

Hilary Loeb, Program Assistant, Educational Partnership Program, University of Washington
Mary Whitfield, Edmonds Community College, Lynnwood, WA

Abstract: This past summer, several local community college students completed paid research internships at the University of Washington as part of a major NSF-funded research center in photonics. Though community college students are always welcome to apply for summer research internships, their inclusion in this program was part of a targeted effort to create a gateway experience for transfer students. We will share the successes and challenges of the program, discuss the importance of these opportunities for transfer students, and share plans for similar opportunities in summer 2005.

3:30 pm -4:10 pm, Woodpecker

New Instrumentation for Undergraduate Teaching & Basic Research in Spectroscopy & Chromatography: Real-World Hands-on Experiments with the BUCK/ FUN-SCI Academics Program

Jerry DeMenna, BUCK Scientific

Abstract: In addition to the instruments noted below, example of the unique academic program, called the "FUN-SCI" experiments developed by Chem-Chek will be demonstrated. These "turnkey" projects can be modified & altered to meet the specific needs of your class curriculum & expanded to encompass a dedicated discipline such as biology / biochemistry, physics, environmental science, geology, forensics, food technology, marine science, material engineering, etc.

As an established company & a manufacturer of quality, low-cost, small-sized, yet high-performance analytical instrumentation that has seen productive use in simple QC & sophisticated research applications; BUCK has all the primary support services of the "name brands" manufacturers for approximately half the price! Toll-free access to the sales office in CT, the applications lab in NJ & a North American pager network provide round-the-clock help for ANY questions you have.

Here is just a brief overview few of the "fun" & "interesting" (aka: non-boring!) experiments that you will be involved with in this session for undergraduate teaching of analytical instrumentation and entry-level research. They focus on topics that the students deal with or are concerned with everyday, & thus inspire a real & continuing interest to remember what they did during the experiment. We will have copies of our condensed lecture (depending on background of attendees) on the FUNdamentals of analytical chemistry, spectroscopy & chromatography; to hand out to any teacher & student.

3:30 pm - 4:10 pm, Chapel/Theater

Poster Presentations

Karen Kreutzer and Linda Kuehnert, Shoreline Community College, Shoreline, WA

Abstract: Student presentations are powerful teaching mechanisms that encourage deeper understanding of scientific topics while developing oral communication and group work skills. This workshop will focus on the significance of incorporating poster projects into the third quarter of both General Chemistry and Organic Chemistry courses. Simple strategies for increasing students' effectiveness and confidence in sharing chemistry topics in larger group settings will be included. Three years of data and analysis will be examined and collaborative communication skills essential to the process will be discussed. Evaluation methods include student self-assessment, peer and faculty evaluation, contracts, and journals.

4:15 pm -5:30 pm, Flicker

The Write-Chem Learning Community vs. Stand-alone Chem 100: Gains, Losses and Extras

Rachel Wang, Spokane Falls Community College, Spokane, WA

Since 2002, I have been teaching the "Write Chem" learning community (LC) with an English instructor at SFCC every fall quarter. In this LC, we integrate traditional course contents in Chemistry 100 and English Composition 101/201 with an added emphasis on personal and civil responsibilities to the environment. I will report a comparative study of the chemistry portion of this combined course versus other stand-alone Chem 100 courses offered in fall quarters. Areas compared include student retention and learning outcomes assessment, curriculum, cost-effectiveness, instructor issues, and some unexpected extras.

4:15 pm -5:30 pm, Woodpecker

New Instrumentation for Undergraduate Teaching & Basic Research in Spectroscopy & Chromatography: Real-World Hands-on Experiments with the BUCK/ FUN-SCI Academics Program

Jerry DeMenna, BUCK Scientific

Continuation of program from 3:30 pm

4:15 pm -5:30 pm, Chapel/Theater

Using Vernier Probeware in College Chemistry

Robyn Johnson, Vernier Software and Technology

Abstract: This presentation will demonstrate the use of the Vernier probeware, LabPro interface, and Logger Pro software in college chemistry courses. See how this versatile system can be used to conveniently collect data using computers, TI graphing calculators, and Palm OS handhelds. Data will be collected using sensors such as our new ORP sensor, Vernier drop counter, temperature, pressure, pH, conductivity, colorimeters, and radiation monitors. All

experiments are excerpts from our popular series of chemistry lab books or from our newest book, *Advanced Chemistry with Vernier*.

FRIDAY, OCTOBER 15, EVENING PROGRAM

8:00 pm, Woodpecker

Chemistry Collaboration with a Developing Country: Field Study of Coffee Fermentation on Farms in Matagalpa, Nicaragua

Susan Jackels, Seattle University

SATURDAY, OCTOBER 16, MORNING SESSIONS

9:00 am-9:40 am, Flicker

Birds of a Feather

Abstract: If you have a topic that does not appear in this program, but is worthy of discussion, contact Mary O'Brien, Sara Selfe, or Mary Whitfield by breakfast on Friday morning so that we can announce it to the group.

9:00 am -9:40 am, Woodpecker

WCCTA Advocacy

Abstract: The Washington College Chemistry Teachers Association is the only organization in the state that represents chemistry teachers and, therefore, should act as a voice in issues related to chemistry and chemistry teaching in this state. This session will discuss how we can become a more influential force in the state and will consider some specific issues that need to be addressed. We will also consider a logo and official stationery.

9:00 am – 5 pm, Tadpole

POGIL Workshop (pre-registration was required)

9:45 am -10:30 am, Flicker

Journal Paper Discussion

Mary Whitfield, Edmonds Community College, Lynnwood, WA
Martha Kurtz, Central Washington University, Ellensburg, WA

Abstract: We will gather to discuss some recent articles from the literature. This year's articles are by Eric Scerri on topics related to philosophy and chemistry. The first article was controversial enough to generate two printed responses and an author's reply to each, which should make it an engaging topic for discussion. It always helps if participants have read the articles ahead of time (they're short!). If you forgot your copies, check for extras at registration or at dinner on Friday.

9:45 am -10:30 am, Woodpecker

Issues Related to Requirements for Washington State Nursing Programs

Kathy Ashworth, Yakima Valley Community College, Yakima, WA

Sara Selfe, Edmonds Community College, Lynnwood, WA

Abstract: Two issues regarding requirements for state nursing programs will be discussed.

1. A state-wide committee of 4 yr public and private 4 yr nursing schools plus several community colleges is developing a state-wide direct transfer agreement for pre-nursing for students going directly to BSN programs.
2. The UW nursing program has changed the chemistry requirement for admission to their program. This change and how it will impact community college transfer students will be discussed.

We will have late breaking news on both of these topics!

11:00 am -11:45 am, Flicker

Undergraduate Research Discussion

Karen Grant, Columbia Basin College, Pasco, WA

Tim Hubler, Pacific Northwest Labs

This session will be devoted to issues related to undergraduate research, including ways in which community college students can get involved in research before transferring to a four-year institution.

11:00 am – 11:45 am, Woodpecker

Birds of a Feather

Abstract: If you have a topic that does not appear in this program, but is worthy of discussion, contact Mary O'Brien, Sara Selfe, or Mary Whitfield by breakfast on Friday morning so that we can announce it to the group.

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WCCTA Fall Conference - Vendor List

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