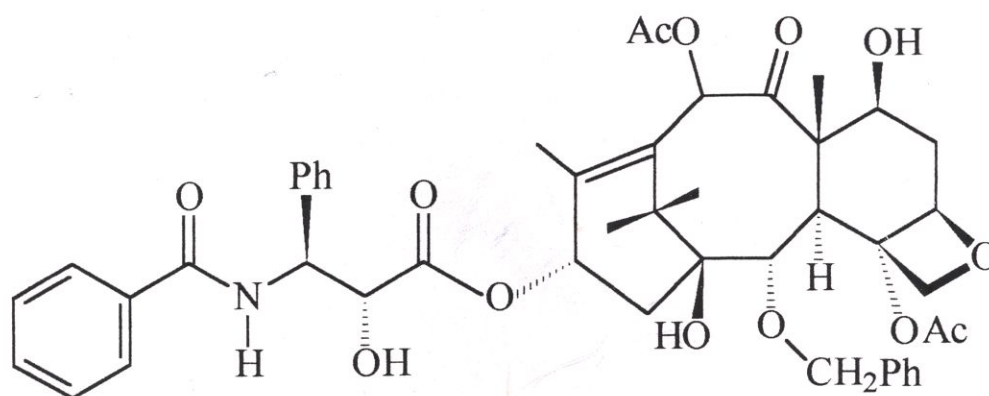


WCCTA Sixth Annual Conference



April 16-18, 1998

Sleeping Lady Conference Center
Leavenworth, WA

Time	Program Events for Friday, April 17th	
7:30-9:00	Breakfast	
9:00-10:30	<p>Chapel: Welcome and Opening Presentation By George Kriz <i>What Do We Want Students to Learn From the Organic Laboratory</i> Panel Discussion: <i>The Role of the Chemistry Lab in the Chemistry Curriculum</i> Participants: Mary O'Brien (moderator), JoAnn Deluca, George Kriz, Dick Logan, David Reichgott, Walt Voland, Jack Weyh, and Mary Whitfield</p>	
10:30-11:15	Break Vendors: Salmon Gallery	
	Presentation Location: Flicker	Presentation Location: Woodpecker
11:15-Noon	<i>The ChemCore Program: Real World Chemistry for Focused Outcomes</i> Mary O'Brien	<i>Learning Activity Packets for the One-Year Health Science Chemistry</i> Rachel Wang
12:00-1:00	Lunch	
1:00-1:40	<i>Real World General Chemistry Projects</i> Mary O'Brien and David Reichgott	<i>Using the Learning Cycle in the College Chemistry Laboratory</i> Martha Kurtz
1:45-2:30	<i>Improving Student Thinking Skills in the Organic Chemistry Laboratory</i> Randy Engel, George Kriz, & Don Pavia	<i>Getting Students to think Critically about Science and Public Policy Issues</i> Carol Burton, Melodye Gold, Cathy Lyle, Donna Sharp, and Francine Wells
2:30-3:15	Break Vendors: Salmon Gallery	
3:15-3:55	<i>Chemical Instrumentation in a Combined Transfer/Technician Program</i> David Reichgott	<i>A Concept Based Chemistry on "Exploring the Gas Laws"</i> Dharshi Bopegedra
4:00-4:30	<i>Computer and Laboratories for General Chemistry</i> Ralph Morasch	<i>What is an Associate of Science Degree</i> Kathy Ashworth
4:30-5:00	<i>McGraw-Hill Learning Architecture</i> Marilyn Jacoby	<i>Assessment In and Out of the Classroom</i> Vicky Minderhout, Mara Rempe, and Jeff Stephens
5:00-6:30	Social Hour <i>Grotto</i>	
6:30-8:00	Dinner	
8:00-9:00	<i>An Evening with Madame Curie</i> <i>Chapel</i> A Presentation by Carol Berg	

	Program Events for Saturday, April 18th		
8:00-9:00	Breakfast		
	Presentation Location: Flicker	Presentation Location: Woodpecker	Presentation Location: Dipper
9:00-9:45	<i>Four Year College Issues: An Open Discussion</i> Facilitator: Dharshi Bopegedera	<i>Two Year College Issues: An Open Discussion</i> Facilitator: Mary Whitfield	Open
9:45-10:30	<i>Show and Tell Organic Chemistry</i> Facilitator: Jay Mueller	<i>Show and Tell General Chemistry</i> Facilitator: Ted Baldwin	Open
10:30-11:00	Break: Check out from Rooms		
11:00-12:00	<i>Open Discussion Group: Organic Chemistry</i> Facilitator: Jeff Dial	<i>Open Discussion Group: General Chemistry</i> Facilitator: Bob Kieburtz	<i>Open Discussion Group: Introductory & Allied Health Chemistry</i> Facilitator: Jo Kohn
12:00-1:30	Lunch and Business Meeting		

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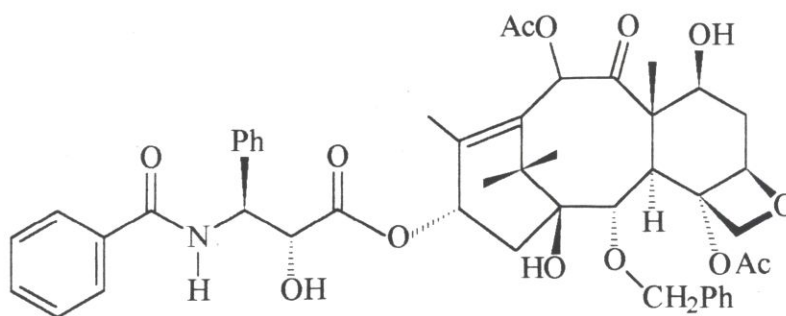
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WCCTA Sixth Annual Conference Abstracts



The ChemCore Program: Real-World Chemistry for Focused Outcomes

11:15-12:00, Flicker

Mary O'Brien

Edmonds Community College

Edmonds Community College's new two-year chemical technician program, ChemCore, will be described. This new program emphasizes a concerted educational process toward the goals of fundamental chemical knowledge, skill acquisition in modern chemical laboratory practice, and group interaction experiences typical of current team-oriented industrial laboratories. Several non-traditional components are: a single curriculum that enables either transfer to four-year institutions with an Associate of Arts and Sciences degree, or the completion of an Associate of Technical Arts degree; integration of management, technical writing, and computer classes with the chemistry curriculum; an introductory chemical instrumentation course at the freshman/sophomore level; a required internship experience in a commercial laboratory; and assessment of student work by industry professionals. The curriculum places an emphasis on acquiring and practicing the skills expected by employers, demonstrating these skills as part of the assessment process, and participating in team-oriented problem-solving projects beginning in the second quarter. (NSF's Advanced Technological Education (ATE) program is funding this curriculum and program development project)

Learning Activity Packets for the One-Year Health Science Chemistry Series

11:15-12:00, Woodpecker

M. Rachel Wang, Ph.D.

Spokane Community College

A series of student learning activity packets (LAPS) introducing chemistry and its applications in nutrition and food has been developed. The LAPs incorporate text and interactive laboratory exercises to present chemistry concepts. They are suitable for use in the one-year health science chemistry series as laboratory or supplementary lecture materials. Peer review and class testing have been on-going for the past three years. I will discuss LAP content, class testing results and issues related to implementing new curriculum with non-traditional teaching styles. Free desk copies of the LAP manual will be distributed. Up to ten \$250 mini-grants are also available for interested instructors to class test this curriculum. This project is supported by National Science Foundation grant DUE-9452258.

Real-World General Chemistry Projects

1:00-1:40 Flicker

Mary O'Brien and David Reichgott

Edmonds Community College

The laboratory curricula in both the general chemistry and organic chemistry laboratories at Edmonds Community College are undergoing significant revisions to enhance student understanding, to improve student's thinking skills, and to include skills needed in the workplace. Isolated experiments have been replaced with open-ended, multi-week projects that require students to apply their theoretical knowledge to the solution of real problems and to work collaboratively in the solution of these problems. Examples of some projects are: the analysis and treatment of hexavalent chromium; the analysis of commercial products for calcium using two different analytical methods; the analysis and assessment of campus photo lab waste as a hazardous material; and the on-going monitoring of several area streams for water quality. Several of these projects will be highlighted and new methods of assessment of student work will be described.

Using the Learning Cycle in the College Chemistry Laboratory

1:00-1:40 Woodpecker

Martha J. Kurtz

Central Washington University

I will discuss the learning cycle and give several examples of labs that use this method. This should fit in well with the "theme" of new methods and philosophies in lab courses.

Improving Student Thinking Skills in the Organic Lab

1:45-2:30 Flicker

Randy Engel

Don Pavia, Gary Lampman, George Kriz

Edmonds Community College

Western Washington University

We have developed an organic laboratory curriculum that places greater emphasis on improving student thinking skills than the traditional "cookbook" approach. This curriculum encourages students to think more during all parts of an experiment, but particularly while lab work is being performed. The basic technique experiments developed for this approach place a strong emphasis on both understanding and proficiency. Included in most of these experiments are "Critical Thinking Applications", which are short exercises in which students must provide experimentally determined solutions to problems related to the techniques. Students then perform increasingly more sophisticated separation and synthesis experiments in which they must solve a problem or generate part of all of a procedure. Students must think critically to write and evaluate their own procedures. Finally, students perform mini-research projects where they develop and test procedures to accomplish a given goal. Not only do students enjoy this approach more, but it is also our observation that they learn more of the skills possessed by experienced organic chemists. Many of the experiments developed for this curriculum will be included in the 3rd edition of *Introduction to Organic Laboratory Techniques: A Microscale Approach* by Pavia et al.

Getting Students to Think Critically about Science and Public Policy Issues
Critical Thinking and Information Literacy Project

1:45-2:30 Woodpecker

Carol Burton, Melodye Gold, Glenna Kelso, Cathy Lyle, Donna Sharpe, Francine Walls
Bellevue Community College

The "Of Mice and Matter" team together with the Biology Department and the Library Media Center will discuss their critical thinking and information literacy project. We will discuss our approach to student-developed and student-led seminars that focused on issues such as medical ethics, population control, and biodiversity.

Chemical Instrumentation in a Combined Transfer/Technician Program

3:15-3:55 Flicker

David Reichgott

Edmonds Community College

One of the most important skill sets our students need to take into the workforce or into upper division chemistry, biochemistry, or engineering laboratories is competence in chemical instrumentation. A course in chemical instrumentation is rarely elected or even available to students who take one or two years of chemistry for engineering or life sciences. Students who enter the workforce after two years have experience with instrumental methods that is likely to be below the expectations of employers. A unique chemical instrumentation sequence has been developed at Edmonds Community College within a new combined transfer/chemical technician curriculum. Two courses (2.5 credits each) are offered, one concurrent with the third quarter of general chemistry, and one concurrent with the second quarter of organic chemistry, that cover the concepts and skills of instrument design, operation, and methods. Our presentation emphasizes what instruments we've selected, how they are used to teach transferable skills and problem-solving, and how the courses are integrated with the standard chemistry curriculum.

A Concept Based Chemistry Laboratory on "Exploring Gas Laws"

3:15-3:55 Woodpecker

Dr. Dharshi Bopegedera

The Evergreen State College

I am in the process of developing several "concept based chemistry labs" for introductory and senior level classes. The goal of these labs is to let students **discover** chemical concepts by doing hands-on laboratory experiments. In this presentation, I wish to discuss one of these chemistry labs on "Exploring Gas Laws".

It is important to note that students need no prior knowledge of the gas laws when they begin this lab. Students carry out a series of experiments that enable them to discover the relationships between pressure, volume, temperature, and the number of moles of gases. The laboratory equipment required is relatively inexpensive. Vernier multi-purpose laboratory instructional software is used for data acquisition. By graphical analysis of their data (using a spread sheet software package such as Microsoft Excel), students "discover" the gas laws. They also use their data to calculate the value of the universal gas constant (R).

I will discuss each experiment in detail, present a sample of typical students' data and show how data analysis led to the discovery of gas laws. I will provide information on the equipment and software used and briefly discuss other "concept based chemistry labs" to teach different chemical concepts.

Computers and Laboratories for General Chemistry

4:00-4:30 Flicker

Ralph Morasch

Pierce College

Pierce College has initiated the use of computer technology by incorporating computer laboratory techniques in the general chemistry series using Lab Works. Some of the topics covered are temperature changes in evaporation of a liquid, freezing point depression, concentrations of solutions, turbidity in water samples and acid/base relationships. Using this program also entails using spreadsheets and graphing procedures. The equipment consists of twelve 386 CPU's and twelve Lab Works interfaces. The department is also interested in assessing the value of discovery type labs versus traditional which could include the use of computers.

What is an Associate of Science Degree?

4:00-4:30 Woodpecker

Kathy Ashworth

Yakima Valley Community College

The Associate of Science Degree at Yakima Valley Community College has helped science students transfer more easily than our previous Associate of Arts and Science Degree. Are there further modifications that should be made? Should it require calculus? Should the humanities and social sciences requirements be reduced?

McGraw-Hill Learning Architecture

4:30-5:00 Flicker

Marilyn Jacoby

McGraw-Hill

On-line and Web-based Learning Centers from McGraw-Hill.

Assessment in and out of the Classroom

4:30-5:00 Woodpecker

Vicky Minderhout, Mara Rempe, and Jeff Stephens

Seattle University

As a result of a workshop on Process Education TM* which we attended, we have incorporated a variety of assessment tools (assessment of group activity, of assignments, of exams, and individual self assessment) into our courses. (The courses include general chemistry, fundamentals of organic, and biochemistry.) The goals of these assessment tools were to gather data generated by students that could be used to improve classroom activities, to help students improve their learning skills, and to shift more ownership of learning to the students. We will discuss assessment and the tools we used and report the results of a common survey on assessment administered at the end of these courses.

*Dan Apple, Ph.D. and Pacific Crest Educational Consultants

Living at Sleeping Lady
Services, Routines and House Rules



CHECK-IN TIME IS 3:00 PM

CHECK-OUT TIME IS 11:00 AM

In deference to incoming guests, we appreciate your cooperation in observing this time. If a late check-out is needed, please get approval in advance of your conference.

REGISTRATION

The registration desk in Sleeping Lady Lodge is staffed from 8 am - 10:00 pm daily. Gift shop purchases may be made during these times. Please notify us of arrivals expected later than 10:00 pm

PHONES

Telephone information is provided in guest rooms next to the telephone. Pay phones are located in Sleeping Lady Lodge, in the Salmon Gallery, and at the dining hall entrance.

PETS

Sorry, no pets.

WALKWAYS

Decking planks are spaced to drain water for more secure footing and will trap high-heeled shoes. Non-slip footwear is essential.

VEHICLES

Please park your car in the parking lot. Bikes are welcome, but no motor vehicles may be driven site.

SAUNA

The Sauna House is open 24 hrs a day and is located at the west end of the site.

MASSAGE

If you'd like to schedule a massage, please phone our front desk for the name and phone number of our massage therapist.

DINING

Meals are served buffet style. The fare is nutritious and delicious with seasonal home-grown garden produce, homemade breads and pastries, and a choice of entree.

Meal times are:	Breakfast	7:30 am M-F
		8:00 am Weekends
	Lunch	12:00 pm
	Dinner	6:30 pm

Trays are located at the beginning of the buffet table as you enter the dining hall. Help yourself to fresh selections of international salads. An attendant will assist you with hot food items. Beverages are available at the small buffet.

When you are finished, please place your dishes back on the tray and slide the tray on to the carts located at each exit.

Sleeping Lady is a no smoking facility, indoors and out. Our staff priority is to keep rooms fresh for all guests and grounds fire safe and litter free. Guests who smoke in cabins will be charged an extra \$50 cleaning fee on their bill or through their group leader.

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SLEEPING LADY

SELF-GUIDED TOUR

