

# WCCTA Conference October 18<sup>th</sup> – 20<sup>th</sup>, 2007



Washington  
College  
Chemistry  
Teachers'  
Association

Sleeping Lady  
Leavenworth, WA

## *A Journey into the Past*

*Empedocles, a Greek philosopher (ca. 492 – ca. 432 BC) postulated that all matter was composed of 4 “roots” or elements; earth, wind, air, and fire.<sup>1</sup> In his Tetrasomia, or Doctrine of the Four Elements, Empedocles envisioned that these elements not only represented material substances, but comprised spiritual elements as well. He associated these elements with four Greek gods and goddesses - air with Zeus, earth with Hera, fire with Hades, and water with Persephone.<sup>2</sup>*

*While Empedocles’ philosophies were influenced by the teachings of Pythagoras, his theories on the 4 elements influenced Carl Jung and even Hippocrates.<sup>2</sup> Perhaps more importantly, Empedocles believed that his elements were particular and indestructible. Many believe that his “elements” led to later developments in atomic theory by philosophers such as Leucippus and Democritus.<sup>3</sup>*

*Gone are the ideas that the elements are as “simple” as earth, wind, air, and fire. But we must never forget where we came from – lest we get lost on our journey in the future.*

1 <http://scienceworld.wolfram.com/biography/Empedocles.html> (accessed October 13th, 2007)

2 <http://www.webwinds.com/myth/elemental.htm> (accessed October 13th, 2007)

3 <http://www.perseus.tufts.edu/GreekScience/Students/Jesse/Jesse.html> (accessed October 13th, 2007)

Cover picture:

[http://www.istockphoto.com/file\\_closeup/?id=700000&refnum=400212](http://www.istockphoto.com/file_closeup/?id=700000&refnum=400212) (accessed, October 13th, 2007)

2007

15<sup>th</sup> Annual  
WCCTA Conference  
October, 18<sup>th</sup> – 20<sup>th</sup>

Sleeping Lady

Leavenworth, WA

Hosting Institution

Clark College – Vancouver, WA

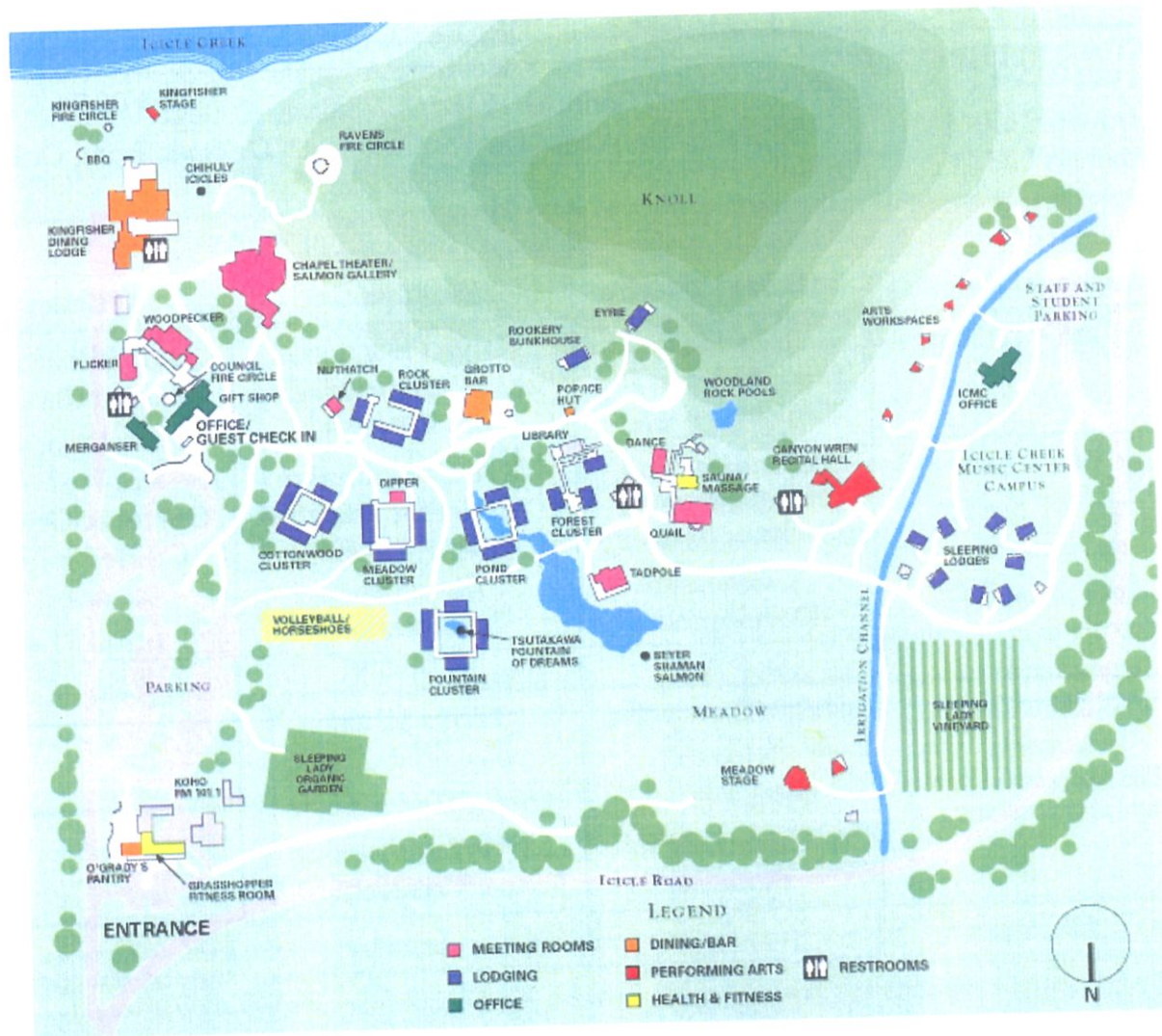
*Karl Bailey, Susan Brookhart, Nadine Fattaleh, April Mixon*

Registration

*Carole Berg (WCCTA Treasurer), Bellevue Community College*

# 2007 WCCTA Fall Conference Conference Program

## Sleeping Lady Conference Center Map



Thursday, October 18<sup>th</sup>

|                 |  |
|-----------------|--|
| 3:00 – 10:00 pm | <b>Check in</b><br><i>Sleeping Lady Main Office</i>  |
| 4:30 – 10:00 pm | <b>Registration</b><br><i>Woodpecker</i>   |
| 6:00 – 7:30 pm  | <b>Dinner</b><br><i>Kingfisher Dining Lounge</i>   |
| 7:30 – 9:30 pm  | <b>Evening Event: Bonfire, S'mores and Bar</b><br><i>Fire circle behind Kingfisher</i><br><i>Drinks sponsored by Pearson Education</i><br><i>Foul-weather alternate location: Salmon Gallery: Chapel</i> |

## Friday, October 19<sup>th</sup> Schedule of Events

| Friday Morning, October 19, 2007 |  |  |   |
|----------------------------------|--|--|---|
| 7:30 – 8:30 am                   | Breakfast  |  |   |
| 8:45 – 9 am                      | Welcome – Chapel Theatre   |  |   |
| 9 – 10:15 am                     | <b>Keynote Address</b><br>Jennifer Freed, Rio Salado College<br>“How in the World Do You Do That? De-mystifying Online Science Labs” |  |   |
| 10:15 – 11 am                    | Vendor Break, Salmon Gallery   |  |   |
|                                  | <b>Chapel Theatre</b>  | <b>Woodpecker</b>  | <b>Flicker</b>  |
| 11 am – 11:30 pm                 | Julie Haack,<br>U of O<br>“The GEMs Database and Collaborative Models for Curriculum Development”                                    | Kalyn Owens <i>et al</i> ,<br>North Seattle CC & CWU<br>“A Collaborative Model for Bringing Undergraduate Research to Community College” | David Reichgott,<br>Cascadia CC<br>“How Disordered Are We? An Outcome-Oriented Guided Inquiry Session”<br>(until 11:40) |
| 11:30 – 12 pm                    | John Thompson,<br>Lane CC<br>“From Green Chemistry to Biodiesel”   | Robyn Johnson,<br>Vernier Software and Technology<br>“What’s new at Vernier?”  |   |
| 12 – 1 pm                        | Lunch  |  |   |

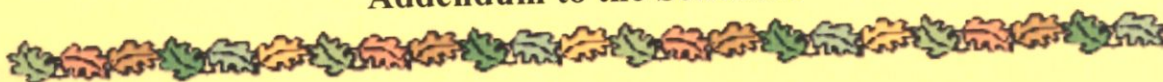
Friday Afternoon, October 19, 2007

|                |   |  |   |
|----------------|---|--|---|
| 1:15 – 1:35 pm | <p align="center"><b>Afternoon Plenary</b><br/>                 Dharshi Bopegedera, The Evergreen State University<br/>                 "Recruiting the 'Many Faces of Chemistry'"<br/>                 Chapel Theatre</p>  |  |   |
| 1:35 – 2 pm    | <p align="center">Vendor Break, Salmon Gallery</p>  |  |   |
|                | <b>Chapel Theatre</b>   | <b>Woodpecker</b>  | <b>Flicker</b>  |
| 2 – 2:30 pm    | Drew Budner,<br>Whitworth<br>University<br>"Inquiry-based<br>Analytical Lab<br>Involving Role-<br>Playing"  | Nadine Fattaleh,<br>Clark College<br>"Accommodating<br>Blind Students in<br>Majors'-level<br>Undergraduate<br>Chemistry Classes" | 2 – 2:40 pm<br>Mike Howard,<br>W.H. Freeman<br>"ChemPortal:<br>Course<br>Management<br>Software"  |
| 2:35 – 3 pm    | Susan Brookhart &<br>Stacey Fiddler,<br>Clark College &<br>PCC<br>"Guided Inquiry in<br>the GOB<br>Classroom"   | Tracy Furutani,<br>North Seattle CC<br>"A Software<br>Alternative to the<br>Qualitative Analysis<br>Lab"                         | 2:45 – 3:45 pm<br>Fred Tabbutt,<br>Evergreen<br>"Water & Fire: A<br>systems approach to<br>teaching<br>introductory<br>chemistry"<br><i>More demos from the new<br/>                 text during the break!</i> |
| 3 – 3:45pm     | Caitlyn Cornell &<br>Martha Kurtz,<br>CWU<br>"Critical Thinking<br>in Introductory<br>Chemistry"  | Jeff Bush,<br>Rancho Bernardo<br>HS/PASCO<br>"Benchtop<br>Technology for the<br>College Chemistry<br>Lab"                        |   |
| 3:45 – 6:30 pm | <p align="center">Break: Free Time!</p>   |  |   |
| 6:30 – 7:30 pm | <p align="center">Dinner</p>  |  |   |
| 8 – 10 pm      | <p align="center">"The Case of Daisy Pushinup, A Murder Mystery 2"<br/>                 Nancy Harding, Ralph Morasch, and the WCCTA Players<br/>                 Pierce College<br/>                 (Drink vouchers sponsored by Cengage Learning and Varian)<br/>                 8 – 10 pm</p> |  |   |

## Saturday, October 20<sup>th</sup> Schedule of Events

| Saturday, October 20, 2007 |   |   |
|----------------------------|---|---|
| 8 – 9 am                   | Breakfast   |   |
|                            | <b>Woodpecker</b>   | <b>Flicker</b>  |
| 9 – 9:40 am                | Jennifer Freed,<br>Rio Salado College<br>"Build, Buy or Borrow?<br>Decision-Making in Designing<br>Science Courses" | Kerry Breno,<br>Whitworth University<br>"Rethinking the Organization<br>of the Organic Chemistry<br>Sequence" |
| 9:45 – 10:30 am            | Discussion<br>Kathy Carrigan, PCC<br>Online/GOB Offerings and<br>Labs   | Discussion<br>Gen Chem/Organic  |
| 10:30 – 11 am              | Break and Check-out by 11 am  |   |
| 11:10 – 11:50 am           | Business Meeting – Woodpecker   |   |
| 12 – 1 pm                  | Lunch   |   |
| 1 pm                       | Have a safe drive home!   |   |

15<sup>th</sup> WCCTA Conference  
October 18<sup>th</sup> – 20<sup>th</sup>, 2007  
Addendum to the Schedule



Keynote Address

**Why is Active Learning Important?**

Mark S. Cracolice, Department of Chemistry, The University of Montana, Missoula, MT 59812

Our goal is to make permanent improvements in students' intelligence while also providing a classroom environment that gives students the opportunity to develop a rich networked understanding of the key concepts of chemistry. This presentation therefore will explore research on the feedback loop that links neurological models of brain functioning, psychological models of human learning, and instructional models for teaching science. Advances in neuroimaging over the past decade have shed new light on the myriad of psychological models that seek to explain human learning. The evidence supporting Piaget's Constructivism makes this a sound theory of learning upon which an instructional theory can be based. An understanding of the difference between development of declarative knowledge (knowing that) and procedural knowledge (knowing how) is an essential tool for science instructors. We will explain the critical need for developing students' procedural knowledge as well as present practical methods for doing so.

**About the Presenter**

Mark S. Cracolice is Professor and Chair of the Department of Chemistry at The University of Montana, where he teaches general chemistry and graduate courses in chemical education. He directs a graduate program in chemical education that includes preparation in traditional chemistry as well as coursework and research in cognitive science and chemical education research. His current central research interest is the acceleration and promotion of the development of higher-order thinking skills. Cracolice has conducted numerous workshops designed to enhance the professional development of science instructors across the elementary, high school, and college spectrum. His professional publications include textbooks and papers in research and practitioner journals.

*The organizers would like to thank Dr. Cracolice and Lisa Lockwood and Brittney Bent of Cengage Learning for their assistance and quick cooperation!*

**Changes to the Schedule:**

- The Friday afternoon talk, "Guided Inquiry in the GOB Classroom," **has been moved to Saturday morning, 9 – 9:40 am, in Woodpecker.** Only Stacey Fiddler will be presenting.
  - The remaining Friday afternoon talks in the Chapel can shift to the earlier time, or take a break!

**Notes:**

- Friday morning, both Kalyn Owens and Anne Johansen will be presenting "A Collaborative Model for Bringing Undergraduate Research to Community College".
- Whitworth College is now Whitworth **University!**



# Abstracts

## Friday Morning Keynote Address

**Jennifer Freed, Rio Salado College**

“How in the world do you do that?” De-mystifying Online Science Labs”

When online college courses were first developed, many of the “hands on” courses such as science labs were forced to adopt a hybrid model of delivery. Students could work through content online but would have to travel to an in-person site to complete the laboratory requirement of their courses. As technology has advanced and become widely available to students, this in-person requirement is no longer necessary. Rio Salado College has successfully placed 100% of their Biology labs completely online, and will have 100% of their Chemistry and Physics labs completely online in the near future. When potential students or faculty hear that they will not need to come on-site to complete their labs, the most common reaction is “how in the world do you do that?” This presentation will discuss how we made the move to online labs, how we are planning for future labs, and will provide examples of these labs in Chemistry and the Health Care fields.

## Friday Afternoon Plenary Lecture

**Dharshi Bopegedera, The Evergreen State College**

“Recruiting the ‘Many Faces of Chemistry’”

As college chemistry professors, our deepest desire for our students is that they share our excitement of doing chemistry, and we hope that it will lead them to become the next generation of chemists. We all know however, that hoping is not enough, we need to actively advise our students about their career options and guide them in their efforts to find suitable employment. Many students need direction and advice in furthering their education in graduate schools.

The Puget Sound Section of the ACS is helping you in this effort by conducting an annual “ACS Focusing on Careers in Chemistry” event where all undergraduates (freshman through seniors) are invited to learn about career options for chemistry graduates. This event informs students about the graduate school application process, how to be successful in graduate school, and how to find successful employment with B. S., M. S. and Ph. D. degrees in chemistry. Since what we present is relevant for all science areas, we encourage all science students to attend. The Career Event is conducted during the winter quarter at a local laboratory (state or federal) where chemists (and scientists from other disciplines) with various educational and training backgrounds are employed.

In my presentation I will share information about past Career Events, their success, and how you can make the 2008 “ACS Focusing on Careers in Chemistry” event an integral part of your teaching plan for your students. An article published in the October 2007 issue of the Journal of Chemical Education on this topic will also be shared.

### Friday Evening "Edutainment"

**Nancy Harding and Ralph Morasch, Pierce College**

"The Case of Daisy Pushinup, A Murder Mystery #2"

We Would like to invite you to an evening of Murder, Mystery, and a little Science. Miss Pushinup has been murdered right before an after-dinner party. It is up to you to solve the Mystery of her death. You will get a chance to put your powers of reasoning, science and sleuthing to work. This will include meeting all the suspects and investigating the crime scene.

Prizes will be awarded for the best costume and the persons or teams who find the correct solution to the Crime.

This murder mystery has been newly written by the Pierce College Team. The initial concepts for this mystery were developed by **Karen Harding** and Pierce College Chemistry to teach and excite students in a liberal arts chemistry class

**Kerry Breno, Whitworth University**

"Rethinking the Organization of the Organic Chemistry Sequence"

Over the last forty years, most Organic Chemistry textbooks and pedagogy has been organized by functional group. However, practicing organic chemists have acknowledged that functional group is not the method they use to organize information. Organic chemists are far more likely to engage material by considering fundamental concepts and reaction mechanisms. Why is it then that we have decided that functional group organization is the one way to teach organic chemistry? Many good organic instructors and textbooks encourage our students to understand mechanisms but maybe we should reconsider the entire structure of teaching organic chemistry. In the last two years, I have restructured the Whitworth organic chemistry curriculum into a spiral model. Students are exposed to structures and a brief overview of *all* functional groups and reactivity. This not only allows an overview of all of organic chemistry but better serves biology students who will only take one semester of organic. The second semester is organized by reaction mechanism after a short section on spectroscopy. This allows the chemistry and pre-health students in the course to revisit topics from the first semester while adding depth and stronger problem solving skills. This model seems to be supported by the ACS committee on professional development in the new 2008 CPT guidelines. The details of the structure, teaching methods, and course materials used in the spiral model for teaching organic chemistry sequence will be presented.

**Susan Brookhart and Stacey Fiddler, Clark College and Portland Community College**  
"Guided Inquiry in the GOB classroom"

When considering adopting an inquiry-based learning model, the GOB classroom presents special challenges. In such a content-heavy curriculum, dedicating valuable class time to group learning requires great confidence in the value of such activities. In addition to potential content-coverage issues, instructors worry about the level of preparation of their students. Many GOB students possess poor study skills and weak science backgrounds, both of which can undermine their confidence in their ability to develop concepts within the collaborative paradigm. Our presentation will consist of two parts. During the first twenty minutes, we will work through a sample exercise and address the question, "What does POGIL (Process-Oriented Guided Inquiry Learning) look like in the GOB classroom?" During the second twenty minutes, we will present a discussion of how we work to overcome the barriers to using guided inquiry in the classroom, offer some preliminary results of our work, and solicit ideas and questions from the participants. Please feel free to attend only the second half if you are familiar with the way a POGIL activity is conducted.

**Dr. Drew Budner, Whitworth University**

"Inquiry - Based Analytical Laboratory Curriculum involving Role - Playing Strategies"

The ongoing development of an analytical laboratory curriculum combining inquiry based learning with role-playing team strategies will be discussed. The laboratory curriculum is designed to provide the students with experience through the entire analytical process including problem formulation, sampling, analysis, data interpretation and presentation. A set of three lab projects have been developed to provide this experience. The first project, the analysis of a commercially available juice provides students an introduction to data analysis and the team environment. The next project is designed to give the students confidence in their ability to implement a procedure from development to implementation. The final project is an inquiry based experience where each student, working with their team chooses and manages the analysis of a chemical species of interest in a natural water sample. The students work together in teams with each team member having a defined role and set of responsibilities. These teams then work collectively to achieve a common result.

**Jeff Bush, Rancho Bernardo High School (San Diego, CA) and PASCO Scientific**  
"Benchtop Tech for the College Chem Lab"

Enjoy a workshop learning how to use the latest in lab instrumentation without the use of desktop computers. This teacher-led session includes melting/freezing points, gas laws, reaction rates, atomic structure, nuclear chemistry, conductivity, pH, and more. Bring your flash drives! An equipment giveaway will be held during the session.

**Caitlyn Cornell and Martha Kurtz, Central Washington University**  
"Critical Thinking in Introductory Chemistry"

Higher education faculty, business employers, and government agencies have become increasingly concerned over the inability of college graduates to think critically using analysis, inference, and evaluation skills. Prior research shows that these students are entering the workforce at a comparative disadvantage in our globalized society. Recent trends in science education at all levels emphasize a shift from traditional, teacher-centered lecture instruction to student-centered and inquiry-based learning. The basis of this change lies in developing students' critical thinking skills while maintaining the focus on course content. A search through the literature reveals little empirical evidence to support specific pedagogies that result in measurable improvements in critical thinking skills. Current investigations at Central Washington University involve determining the effect of modifying the Chemistry 101 Laboratory from traditional, "cookbook" laboratory lessons to a community-based inquiry laboratory. We will discuss this and other critical thinking studies done at Central Washington University.

**Nadine Fattaleh, Clark College**

"Accommodating Blind Students in Majors'-level Undergraduate Chemistry Classes"

Vancouver, WA is home to both the State School for the Blind and for the Deaf, and many of these students come to Clark College to begin their college careers. Although we have accommodated many of these students in the GOB and non-majors' sequences, we did not have experience with accommodating a blind student in the majors' level sequence until this past year. A search through the literature provides many general strategies, but little specific information. Through working with our office of Disability Support Services, the state office of Disability Services for the Blind, and within our own faculty, we have successfully accommodated a student through the general chemistry sequence, and have now transitioned to the organic chemistry sequence, which has been a challenge due to the very visual nature of organic chemistry. I will share our experiences and strategies with a blind student in the majors' level general chemistry sequence last year, along with some strategies for organic chemistry. I will also be seeking suggestions for this endeavor.

**Jennifer Freed, Rio Salado College**

"Build, Buy, or Borrow? Decision-making in designing science courses"

With so many tools and technologies available to online colleges today, how do designers decide what to use? Should they build their own online lab using software such as Flash? Should they "borrow" freeware available on the Internet? Or do they pay a third-party vendor to create labs for them? Rio Salado College has created a nine-block decision tool that assists designers in determining the best route to take for a given lab. Examples of labs created in-house, bought through third-party vendors, and "borrowed" from the Internet will be included.

**Tracy Furutani, North Seattle Community College**  
"A software alternative to the qualitative analysis lab"

Though recent microscale techniques have reduced the volume of hazardous waste generated by the traditional qualitative analysis laboratory exercise found in many organic chemistry lab textbooks, an organic chemistry lab program of seventy students using microscale methods still generates 4 L of waste from that lab (roughly 5 to 10 percent of the annual hazardous waste shipment). I present a prototype of a locally-developed software version of the qualitative analysis lab, which uses video clips of reactions and a timer to simulate the lab. In addition to reducing waste, the advantages of the software version include the ability perform the lab on-line and the ability to add spectra for further refinement of the unknown identification.

**Julie A. Haack, University of Oregon**  
"The GEMs Database and Collaborative Models for Curriculum Development"

Over the past decade considerable progress has been made toward developing a foundation for green chemistry education. Collaborative efforts by the by the Green Chemistry Institute (GCI), the Environmental Protection Agency and the National Science Foundation in partnership with national leaders in green chemistry education have facilitated the incorporation of green chemistry principles into the curriculum by removing two significant barriers to adoption; (1) educating faculty and students about green chemistry principles (via summer workshops and symposia at national meetings) and (2) increasing the availability of educational materials that can be incorporated into the curriculum. As a result, we see a growing number of community college and university faculty who have adopted the curriculum and are now interested in contributing to the development of new educational materials. Members of this community are working together to facilitate the development of new educational materials in the area of green chemistry by influencing textbook content and creating regional networks of ambassador sites focused on collaborative curriculum development. Ambassador sites function as peer-led team efforts to design, evaluate and prepare new materials for dissemination. In summer 2004, the program began with five faculty supporting ambassador sites in Oregon, Arkansas and Massachusetts. During the summer of 2006, this network of educators formed the Green Chemistry Education Network (GCEdNet) in collaboration with the American Chemical Society's Green Chemistry Institute. Today the network includes twenty faculty members from six states. The goal of the GCEdNet is to coordinate curriculum development efforts at the high school, community college and university level via regional ambassador sites in New England, the Pacific Northwest, Arkansas, and Minnesota. This presentation will describe some of the innovative tools (<http://greenchem.uoregon.edu/gems.html>) and strategies that are supporting the development and success of this community-based effort.

**Mike Howard, W. H. Freeman Publishing**  
"ChemPortal: Course Management Software"

This session will feature W.H. Freeman's ChemPortal, the next generation in course materials. ChemPortal is a **complete online course management system** for General and Organic Chemistry. The main features of ChemPortal are a **multimedia enhanced and interactive eBook** which contains living graphs and animated mechanisms, interactive conceptual study resources and a home work system with interactive tutorials. A keynote feature of ChemPortal is the **personalized study plan** which facilitates the learning process for each individual student. Designed with ease of use in mind for both the instructor and student, ChemPortal can help improve learning outcomes in a **robust and affordable** online environment.

ChemPortal can be purchased without a text, because the eBook is contained within, at about half the price of the text, or it can be combined with the text for a very minimal price. Students can download and print from the eBook any pertinent materials they may want to portfolio for future study.

Chemportal is a system then that helps student learn chemistry in a traditional, yet interactive AND visual format, while cutting the cost of a text in half. Please come see the new generation of learning materials here TODAY.

**Robyn Johnson, Vernier Software and Technology**  
"What's new at Vernier?"

What's new at Vernier? A lot! We've been working on many new projects to help you as you teach and to help your students learn.

The most exciting project for us has been the new LabQuest interface. Use LabQuest as a stand-alone device with its vivid color touch screen, or as a computer interface using Logger *Pro*. This durable, splash-proof, and easy-to-use interface is the perfect device for chemistry lab data acquisition and analysis. It has a built-in periodic table and a stopwatch. As an added bonus, you can use your existing Vernier sensors!

An improved CO<sub>2</sub> Gas Sensor allows for measurements of up to 100,000 ppm, making it useful for more chemistry experiments than ever before.

We continue to add new features to our award-winning Logger *Pro* software. An interpolation calculator, double y-axis feature, and full-color spectrum for our line of Ocean Optics and Vernier spectrometers are just a few of the recently added features.

Our new book, *Environmental Science through Inquiry*, will be of interest to many of you. It is our first lab manual written in a true inquiry style. Students are prepared, then challenged to design and investigate their own questions.

The list goes on. Hope to see you there!

**Kalyn Shea Owens, Anne Johansen and Ann Murkowski, North Seattle Community College and Central Washington University**  
"A Collaborative Model for Bringing Undergraduate Research to Community College"

Mounting evidence suggests that traditional focus on content acquisition in isolated discipline specific classrooms may not be optimal for preparing students to be "flexible" thinkers in the increasingly integrated and global marketplace. Along these lines, we have begun to re-conceptualize the two year community college science program by creating a student-faculty design team that spans multiple institutions and is committed to a new vision for lower division science curriculum. Engaging two-year science students in undergraduate research activities is a major component of this new program, and has shown to be an extremely effective pedagogy that emphasizes participation, responsibility, and community. In this session, a model for building collaborations between 2-year and 4-year institutions to bring undergraduate research to the community college will be presented. More specifically, Central Washington University and North Seattle Community College have developed a partnership that involves community college students and faculty in a multidisciplinary, NIH funded research project involving potential impact of ultrafine airborne particles on mitochondrial function.

**Dave Reichgott, Cascadia Community College**  
"How Disordered Are We? An Outcome-Oriented Guided Inquiry Session"

Entropy and disorder are usually introduced starting with the dreaded (yet elegant) concepts of reversible and irreversible heat, or possibly from a presentation of configuration states. A different, outcome-oriented approach is to start with a qualitative assessment of disorder in substances and reactions, matching and contrasting experience with spontaneity, while emphasizing the skills and concepts that we want General Chemistry students to be able to know and do the next time they encounter the topic. Come and participate in a sample Guided Inquiry (aka POGIL) session that teaches this approach, for which no prior training is required.

**Frederick D. Tabbutt, (retired) The Evergreen State College**

**"Water and Fire: a systems approach to teaching introductory chemistry"**

The purpose of this talk is to obtain the response of other college chemistry teachers to a nearly completed textbook, entitled *Water and Fire*, which will be described. The text uses two systems: the flow of the Nisqually River from Mt. Rainier to Puget Sound and the flow of energy from the sun to the earth's surface and, in so doing, covers all of the topics normally found in an introductory chemistry course for majors. Both systems begin with very little chemistry, but as one follows the flow, the chemistry becomes progressively more complex. This provides a vehicle for the gradual development of important topics in chemistry. For example topics in chemical equilibrium, acid/base and redox chemistry of complex systems, chemical kinetics, molecular structure, quantum mechanics and some statistical mechanics are covered. In contrast to the traditional topical approach, topics are only developed to the extent necessary to understand the particular aspect of the system being examined but by the end of the system, the development is complete. Preliminary results from its use in a 2007 summer school class will be described. Publishers' reactions will be presented as well as exploring a new way for development and circulation of science textbooks. Directly following the talk, interested attendees can view the text both as hard copy and computer versions as well as sample the computer-based workshops and experiments that accompany it.

**John Thompson, Lane Community College**

**"From Green Chemistry to Biodiesel: How LCC students applied green chemistry to develop a campus waste oil biodiesel plant"**

Green chemistry has been an important part of the organic chemistry curriculum at Lane Community College (LCC) since the fall of 2000. Many students find the green chemistry perspective interesting and have co-developed several educational opportunities outside of the traditional classroom setting. Over the last couple of years, LCC students have developed a small-scale biodiesel plant to convert campus kitchen waste oil to biodiesel. This talk will tell the story of how we developed our biodiesel plant and the value it has added to the classroom education. It will also include a discussion of the challenges we faced along the way, lessons learned, and future plans.



# 2007 WCCTA Exhibits and Vendors

**Addison Wesley & Benjamin  
Cummings**  
Brenna Bray  
[Brenna.Bray@aw.com](mailto:Brenna.Bray@aw.com)

**Bedford, Freeman, & Worth Publishing  
Group**  
Bill Davis  
[wdavis@bfwpub.com](mailto:wdavis@bfwpub.com)  
206-409-2091

**Buck Scientific**  
Dr. Jerry DeMenna  
[DeMenna@MeasureNet-Tech.com](mailto:DeMenna@MeasureNet-Tech.com)  
203.853.9444  
Gordon Fromm  
[gfromm@teleport.com](mailto:gfromm@teleport.com)

**Houghton Mifflin Publishing**  
Karen Lipyanik-Geagan  
[Karen\\_Lipyanik-Geagan@hmco.com](mailto:Karen_Lipyanik-Geagan@hmco.com)  
360.707.0599  
Eric Ziegler  
[Eric\\_Ziegler@hmco.com](mailto:Eric_Ziegler@hmco.com)  
425.702.9647

**Microlab, Inc.**  
John R. Amend  
[jamend@microlabinfo.com](mailto:jamend@microlabinfo.com)  
406.586.3274  
Todd Rogers  
[todd.rogers@columbiabasin.edu](mailto:todd.rogers@columbiabasin.edu)  
Tim Sorey  
[soreyt@cwu.edu](mailto:soreyt@cwu.edu)

**Pasco Scientific**  
Lance Mayhofer  
[mayhofer@pasco.com](mailto:mayhofer@pasco.com)  
Renee Most  
[most@pasco.com](mailto:most@pasco.com)  
800.772.8700

**Pearson Education**  
Kendra Gallegos  
Teri Orr  
[teri.orr@aw.com](mailto:teri.orr@aw.com)  
509-998-2327

**Varian, Inc.**  
Tom Swift  
[tom.swift@varianinc.com](mailto:tom.swift@varianinc.com)  
206.550.0570

**Vernier Software and  
Technology**  
Robyn Johnson  
[rjohnson@vernier.com](mailto:rjohnson@vernier.com)  
503.277.2299

**John Wiley and Sons, Inc.**  
Bill May  
[bmay@wiley.com](mailto:bmay@wiley.com)  
425.828.8820

**Puget Sound ACS**  
Dharshi Bopegedera  
[bopegedd@evergreen.edu](mailto:bopegedd@evergreen.edu)  
Carole Berg  
[cberg@bcc.ctc.edu](mailto:cberg@bcc.ctc.edu)

**Extech, Ltd**  
Gordon Fromm  
Portland, OR  
503-682-7278  
[gfromm@teleport.com](mailto:gfromm@teleport.com)

**Cengage Learning**  
Brittney Bent  
[brittney.bent@cengage.com](mailto:brittney.bent@cengage.com)  
503.957.3958  
Eric Englund  
[eric.englund@cengage.com](mailto:eric.englund@cengage.com)  
Josh Fletcher  
[josh.fletcher@cengage.com](mailto:josh.fletcher@cengage.com)

# Attendees

| First      | Last       | Institution                                   | e-mail                           |
|------------|------------|---|----------------------------------|
| Kathy      | Ashworth   | Yakima Valley Community College               | kashworth@yvcc.edu               |
| Karl       | Bailey     | Clark College                                 | kbailey@clark.edu                |
| Marci      | Bailey     | Linn-Benton Community College<br>(Albany, OR) | baileym@linnbenton.edu           |
| Ted        | Baldwin    | Olympic College                               | tbaldwin@olympic.edu             |
| Nancy      | Barker     | Pierce College                                | Nbarker@pierce.ctc.edu           |
| Carole     | Berg       | Bellevue Community College                    | cberg@bcc.ctc.edu                |
| Dharshi    | Bopegedera | The Evergreen State College                   | bopegedd@evergreen.edu           |
| Kerry      | Breno      | Whitworth College                             | kbreno@whitworth.edu             |
| Susan      | Brookhart  | Clark College                                 | sbrookhart@clark.edu             |
| Drew       | Budner     | Whitworth College                             | dbudner@whitworth.edu            |
| Jeff       | Bush       | Rancho Bernardo HS<br>(San Diego, CA)         |                                  |
| Kathy      | Carrigan   | Portland Community College                    | kcarriga@pcc.edu                 |
| Sue        | Critchlow  | Green River Community College                 | scritchlow@greenriver.edu        |
| Khushroo   | Daruwala   | University of Washington                      | daruwala@u.washington.edu        |
| John       | DiBari     | Yakima Valley Community College               | jdibari@yvcc.edu                 |
| Jacqueline | Drak       | Bellevue Community College                    | edrak@bcc.ctc.edu                |
| Randy      | Engel      | North Seattle Community College               | tawnydog@earthlink.net           |
| Brandy     | Eastman    | Tacoma Community College                      | brandyeastman@randals.uidaho.edu |
| Nadine     | Fattaleh   | Clark College                                 | Nfattaleh@clark.edu              |
| Stacy      | Fiddler    | Portland Community College                    | stacey.fiddler@pcc.edu           |
| Billy      | Flowers    | Olympic College                               | bflowers@oc.ctc.edu              |
| Jennifer   | Freed      | Rio Salado College                            | jennifer.freed@riosalado.edu     |
| Craig      | Fryhle     | Pacific Lutheran University                   | fryhle@chem.plu.edu              |
| Tracy      | Furutani   | Seattle Central Community College             | tfurutani@sccd.ctc.edu           |
| Cami       | Geyer      | Olympic College                               | cgeyer@olympic.edu               |
| Shelley    | Gaudia     | Lane Community College<br>(Eugene, OR)        | gaudias@lanecc.edu               |
| Melodye    | Gold       | Bellevue Community College                    | mgold@bcc.ctc.edu                |
| Karen      | Grant      | Columbia Basin College                        | kgrant@columbiabasin.edu         |
| Katie      | Gulliford  | Tacoma Community College                      | kgulliford@gmail.com             |
| Julie      | Haack      | University of Oregon                          | jhaack@uoregon.edu               |
| Karen      | Harding    | Pierce College                                | kharding@pierce.ctc.edu          |

| First       | Last        | Institution                            | e-mail                        |
|-------------|-------------|--|-------------------------------|
| Shane       | Hendrickson | Pierce College                         | shendrickson@pierce.ctc.edu   |
| Jackie      | Hong        | North Seattle Community College        | jhong@sccd.ctc.edu            |
| Philip      | Hunter      | Tacoma Community College               | phunter@tacomacc.edu          |
| Anne        | Johansen    | Central Washington University          | johansea@cwu.edu              |
| Robyn       | Johnson     | Vernier Software and Technology        | rjohnson@vernier.com          |
| Angie       | Kantola     | Seattle University                     | kantolaa@seattleu.edu         |
| Guzel       | Khakimova   | Bellevue Community College             | gkhakimo@bcc.ctc.edu          |
| Bob         | Kiebertz    | Olympic College                        | rkiebertz@olympic.edu         |
| Roger       | Knutsen     | Green River Community College          | rknutsen@greenriver.edu       |
| George      | Kriz        | Western Washington University          | George.Kriz@wwu.edu           |
| Linda       | Kuehnert    | Shoreline Community College            | lkuehner@shoreline.edu        |
| Martha      | Kurtz       | Central Washington University          | kurtzm@cwu.edu                |
| Richard     | Logan       | Wenatchee Valley College               | rlogan@wvc.edu                |
| Cathy       | Lyle        | Bellevue Community College             | clyle@bcc.ctc.edu             |
| Jennie      | Mayer       | Bellevue Community College             | jmayer@bcc.ctc.edu            |
| April       | Mixon       | Clark College                          | amixon@clark.edu              |
| Karyn       | Mlodnosky   | Cascadia Community College             | kmlodnosky@sccd.ctc.edu       |
| Ralph       | Morasch     | Pierce College                         | rmorasch@pierce.ctc.edu       |
| Gary        | Mort        | Lane Community College<br>(Eugene, OR) | mortg@lanecc.edu              |
| Mary        | O'Brien     | Edmonds Community College              | mobrien@edcc.edu              |
| Katy        | Olsen       | Pierce College Puyallup                | Kolsen@pierce.ctc.edu         |
| Jeff        | Owens       | Highline Community College             | jowens@highline.edu           |
| Kalyn       | Owens       | North Seattle Community College        | KOwens@sccd.ctc.edu           |
| John (J.D.) | Pellock     | Olympic College                        | jpellock@oc.ctc.edu           |
| John        | Peterson    | Big Bend Community College             | johnp@bigbend.edu             |
| John        | Pfeffer     | Highline Community College             | jpfeffer@highline.edu         |
| Steven      | Powell      | Everett Community College              | spowell@everettcc.edu         |
| Karen       | Radakovich  | Portland Community College             | kradakov@pcc.edu              |
| David       | Reichgott   | Cascadia Community College             | dreichgott@cascadia.edu       |
| Todd        | Rogers      | Columbia Basin College                 | todd.rogers@columbiabasin.edu |
| Perminder   | Sandhu      | Bellevue Community College             | psandhu@bcc.ctc.edu           |
| Bob         | Schmitt     | Tacoma Community College               | rschmitt@tacoma.edu           |
| Sara        | Selfe       | Edmonds Community College              | sara.selfe@edcc.edu           |
| Sumita      | Singh       | Everett Community College              | ssingh@everettcc.edu          |
| Tim         | Sorey       | Central Washington University          | soreyt@cwu.edu                |

| First | Last      | Institution                            | e-mail                  |
|-------|-----------|--|-------------------------|
| Lynne | Spencer   | Edmonds Community College              | lynne.spencer@edcc.edu  |
| Asya  | Starosta  | Edmonds Community College              | astarost@edcc.edu       |
| Fred  | Tabbutt   | The Evergreen State College            | tabbuttf@evergreen.edu  |
| Brook | Taylor    | Lane Community College<br>(Eugene, OR) | taylorb@lanecc.edu      |
| Robin | Terjeson  | Clark College                          | rterjeson@clark.edu     |
| John  | Thompson  | Lane Community College<br>(Eugene, OR) | thompsonj@lanecc.edu    |
| David | Thorsell  | Seattle University                     | dlt@seattleu.edu        |
| Marie | Villarba  | Seattle Central Community College      | mvillarba@sccd.ctc.edu  |
| Dean  | Waldow    | Pacific Lutheran University            | waldow@chem.plu.edu     |
| Mary  | Whitfield | Edmonds Community College              | mary.whitfield@edcc.edu |
| Doug  | Wick      | Seattle Central Community College      | dwick@sccd.ctc.edu      |
| Adam  | Wolfer    | Lower Columbia Community<br>College    | awolfer@lcc.ctc.edu     |
| Ted   | Wood      | Pierce College                         | twood@pierce.ctc.edu    |
| Amar  | Yahiaoui  | Shoreline Community College            | ayahiaou@shoreline.edu  |

**WCCTA**

Washington College Chemistry Teachers Association

October 15 2007 15:23

Home · Web Links

**Navigation**

- ▶ Home
- ▶ WCCTA Email List
- ▶ About WCCTA
- 2006 Conference Info**
- ▶ General Information
- ▶ Location
- ▶ Program
- ▶ Abstracts
- ▶ Vendor List
- Services**
- ▶ FAQ
- ▶ Web Links

**Welcome**

Welcome to the web site of the Washington College Chemistry Teachers Association. The WCCTA works to support college chemistry teachers primarily by organizing an annual conference held in the fall. See the links in the menu to the left. We encourage current and emeritus Washington chemistry teachers (and those nearby) to register on the web site using the register link to the right.

**2007 WCCTA Conference Information****WCCTA 15th Annual Conference**

October 18-20, 2007  
Sleeping Lady Mountain  
Retreat, Leavenworth, WA

This year the organizers of the fall conference have not put information on the web as of this time. For more information about this year's conference, please contact Nadine Fattaleh (NFattaleh at clark.edu) or others of the Clark Chemistry Faculty.

▶ waldow\_admin on September 22 2007 ·

**WCCTA Web Site**

The WCCTA (Washington College Chemistry Teachers Association) web site includes a large array of services including forums, a shout box, user registration, articles, FAQs, News, and much more. In you are interested in the WCCTA, register as of user of this web site and contribute to the online WCCTA community!

NOTE: All new users need to be approved by the administrator. I will try to get all new registrants approved in a timely manner. If you feel your subscription is taking a long time, email waldow - at - chem - dot - plu edu

It is good to note that we now have two communication methods. Messages sent to one are not forwarded to the other.

- Traditional email list
- Specific Topic Forums

To make announcements to the general WCCTA email list, please continue to use the email list. You can find more information about the email list from the link in the left menu. To contribute

**Login**

Username

Password

 Login

Not registered yet?  
Click here to register.

Forgotten your password?  
Request a new one here.

**Shoutbox**

You must login to post a message.

No messages have been posted.

## wccta -- Washington College Chemistry Teachers Association Email List

**About  
wccta** English (USA)

Welcome to the information page for the Washington College Chemistry Teachers Association (WCCTA) Email List. This list is for members and friends of the WCCTA. It is intended for communications relevant to WCCTA business, conferences, and professional discussions about the art of teaching chemistry. It is not for postings of a commercial nature.

Subscriptions to this list will be permitted for individuals who already hold a position in chemistry higher education in Washington (or nearby in bordering states), or who are seeking employment as a Washington college chemistry teacher. Please use an email address with a suffix that indicates your affiliation with an institution of higher education, if you have such an address. Or, please explain your affiliation to higher education through an email to [fryhle@chem.plu.edu](mailto:fryhle@chem.plu.edu), the list moderator.

We hope that you find the messages posted to this list stimulating and informative.

Information about UNSUBSCRIBING from this list is given at the bottom of this page.

When you reply to a message from the list it will be automatically addressed only to the author of the original message and not to the list as a whole. If you wish for your reply to be shared with all of the list subscribers then you must include the list's email address in your reply.

Note that attachments are allowed on this list, but that for the sake of security and economy of bandwidth they are limited to 40 Kb. Please be judicious about decisions to send attachments. If you need to send a larger attachment, please contact one of the list administrators (see below).

To see the collection of prior postings to the list, visit the [wccta Archives](#).

### Using wccta

To post a message to all the list members, send email to [wccta@chem.plu.edu](mailto:wccta@chem.plu.edu).

You can subscribe to the list, or change your existing subscription, in the sections below.

### Subscribing to wccta

Subscribe to wccta by filling out the following form. You will be sent email requesting confirmation, to prevent others from gratuitously subscribing you. Once confirmation is received, your request will be held for approval by the list moderator. You will be notified of the moderator's decision by email. This is also a private list, which means that the list of members is not available to non-members.

Your email address:

Your name (optional):

You may enter a privacy password below. This provides only mild security, but should prevent others from messing with your subscription. **Do not use a valuable password** as it will occasionally be emailed back to you in cleartext.

If you choose not to enter a password, one will be automatically generated for you, and it will be sent to you once you've confirmed your subscription. You can always request a mail-back of your password when you edit your personal options. Once a month, your password will be emailed to you as a reminder.

Pick a password:

Reenter password to confirm:

Which language do you prefer to display your messages?

English (USA)

Would you like to receive list mail batched in a daily digest?

No  Yes

Subscribe

### wccta Subscribers

*(The subscribers list is only available to the list members.)*

Enter your address and password to visit the subscribers list:

Address:

Password:

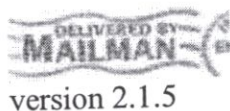
Visit Subscriber List

To unsubscribe from wccta, get a password reminder, or change your subscription options enter your subscription email address:

Unsubscribe or edit options

If you leave the field blank, you will be prompted for your email address

*wccta list run by [fryhle at chem.plu.edu](mailto:fryhle@chem.plu.edu), [waldow at chem.plu.edu](mailto:waldow@chem.plu.edu)  
 wccta administrative interface (requires authorization)  
 Overview of all chem.plu.edu mailing lists*



# Information from Sleeping Lady

We look forward to welcoming you as our guest. To ensure you feel at home during our stay with us, we've provided the following information about our site. Please do not hesitate to contact us at 800-574-2123 if you have any questions.

- **Check-in** time is 3:00 p.m.; **Checkout** is 11:00 a.m.
  - Our **Registration Desk** and **Gift Shop** are staffed 24 hours a day and look forward to serving you.
  - We have a **non-smoking policy** indoors and out. Guests not adhering to the policy will be charged a minimum of \$150. Please help us keep Sleeping Lady smoke-free.
  - Due to the four seasons we experience and our natural environment we recommend **business casual attire** and **non-slip footwear**. High heels are strongly discouraged.
  - Sleeping Lady is a walking site. Please park your **vehicles** in the guest parking lot. No motor vehicles may be driven on site. A wheelchair is available upon request.
  - **Luggage carts** are available directly outside the main office for the convenience of our guests.
  - The **Woodland Rock Pool** is open 24 hours a day seasonally (mid April-September) and the adjoining **hot pool** is open year round. Both are accessible via your room key. Swimsuits are required.
  - The **Sauna** and cold plunge is open 24 hours a day.
  - If you would like to schedule a **massage**, please call us at the number above. 24-hour advance reservation is recommended.
  - **Grasshopper Fitness Center** adjacent to the Sauna building is open 24 hours a day and is accessible via your room key.
  - Roki, our resident Icelandic Sheep Dog will likely welcome you upon your arrival or make your acquaintance some time during your stay. Those with pet allergies should note that Sleeping Lady also hosts a resident cat, Kiska. Dog lovers - Ask about our Canine Companion Program.
  - There are **no televisions** in our guest rooms. We invite you to take our self guided art walk, a leisurely stroll down by the river or through our organic garden. We offer **seasonal equipment rental** including snowshoes, cross-country skis, bicycles and trail passes and information on the seemingly endless recreational opportunities surrounding our site.
  - There are **telephones, wireless and dial up Internet access** in all the guest rooms and meeting spaces.
  - Our friendly barkeep at **The Grotto Bar** keeps the music and beverages flowing, with wine, beer, spirits and soft drinks to choose from. Open daily at 4:30 - 10:00 p.m., or later at the barkeep's discretion.
  - **Dining Hours:** Dinner is served from 6-7 p.m. Breakfast, 7:30-8:30 a.m. weekdays, 8-9 a.m. weekends. Lunch is served from noon-1 p.m. All meals are served in the Kingfisher Dining Lodge.
  - **O'Grady's Pantry**, offers in between meal snacks, espresso, a wide selection of teas and juices, as well as a fine collection of Northwest wines, beers and spirits.
-



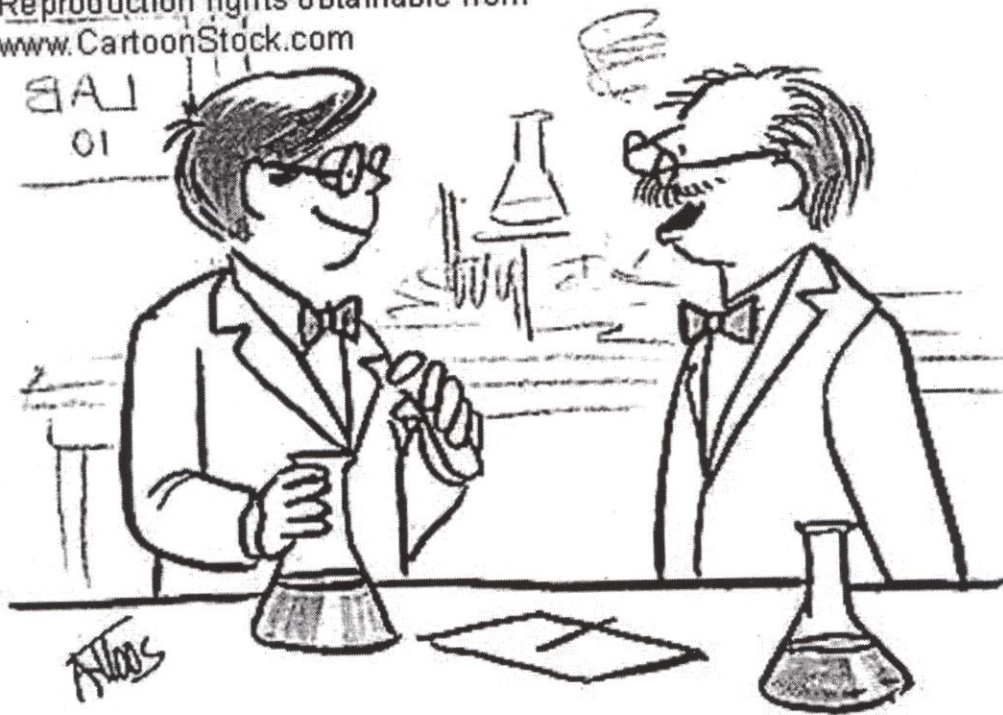
## 2007 WCCTA Annual Conference Evaluation Form

The organizers of this year's conference would appreciate your comments and suggestions regarding the 2007 WCCTA conference. Your comments will be valuable to future institutions hosting the conference!

Please tear out this form and leave it in the box in Woodpecker after the business meeting

|  |               |   |   |                       |
|--|---------------|---|---|-----------------------|
| Registration Materials/Procedure<br>Comments:          | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| Abstract Submission Procedure<br>Comments:             | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| Program Schedule<br>Comments:                          | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| Program Content<br>Comments:                           | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| Program Booklet<br>Comments:                           | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| WCCTA website<br>Comments:                             | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| Thursday Morning Plenary<br>Comments:                  | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| After Dinner Murder Mystery<br>Comments:               | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| Location/Cost<br>Comments:                             | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| Meeting Room Venues<br>Comments:                       | 4 (excellent) | 3 | 2 | 1 (needs improvement) |
| General Comments:<br>Please use the back if necessary: | 4 (excellent) | 3 | 2 | 1 (needs improvement) |

© Original Artist  
Reproduction rights obtainable from  
www.CartoonStock.com



"Wait, wait, before you mix them,  
you have to say, 'Pow!'."

[http://www.cartoonstock.com/directory/o/occupational\\_safety.asp](http://www.cartoonstock.com/directory/o/occupational_safety.asp) (accessed October 12<sup>th</sup>, 2007)