CHEO Discipline Panel
Faculty Professional Development Workshop

Building the Dream –
Creating Engaging Allied Health Lab Content

May 15-16, 2014
SHEPC Learning Center
WICHE, 3035 Center Green Drive, Boulder, CO

Provided by the Western Interstate Commission for Higher Education for the Consortium for Healthcare Education Online (CHEO)
Welcome Message

Welcome to Boulder, the home of the Western Interstate Commission for Higher Education (WICHE), dedicated to helping its 16 member states and territories expand educational access and excellence for all citizens of the West.

We are excited to provide this workshop for our CHEO colleagues as an opportunity to share experiences and information about the great work accomplished during the first two years of this TAACCCT grant and to learn from one another. Over the next two days you’ll have the opportunity to collaborate in the design of new NANSLO lab activities for use in your courses and to learn from some of our speakers and other attendees about best practices and openly-licensed resources for use in teaching online science courses and lab activities.

We hope you will leave fulfilled and inspired by the shared understanding that together we are creating new opportunities for rural and place-bound students to participate in high quality laboratory experiments using cutting-edge technologies and gain skills that will prepare them for a future in the increasingly technology-supported healthcare field.

Pat Shea, director
Academic Leadership Initiatives, WICHE

Overview

This engaging professional development workshop is designed for faculty from the eight partner institutions participating in the Consortium for Healthcare Education Online (CHEO) initiative, funded through a U.S. Department of Labor TAACCCT grant. During the two-day event, faculty will have the opportunity to learn about creative approaches in the design of laboratory activities, share with their colleagues some of their successful strategies for engaging students in online and hybrid labs, and work together in developing new remote web-based laboratory activities for their courses. Attendees will also tour the Colorado Node of the North American Network of Science Labs Online (NANSLO), located on the Red Rocks Community College campus, to see this cutting-edge, robotically controlled science equipment at work expanding student access to STEM fields that increasingly incorporate remote technologies. In addition to faculty, CHEO project leaders are also welcome to attend.
Workshop Objectives

By the end of this workshop, you will be able to:

• Explain to your students the value of active inquiry in lab activities and other course curriculum.
• Describe to others how NANSLO labs are delivered remotely.
• Utilize NANSLO lab activities that incorporate your suggestions, recommendations, and additions.
• Use searching techniques to find openly licensed interactive activities for your course.
• Describe how NANSLO lab activities can increase student access.
• Apply ideas used by others to engage students in your course.
• Identify skills used in NANSLO lab activities that translate to skills used in the expanding telemedicine field.

Workshop Coordinators

Sue Schmidt, NANSLO/CHEO project coordinator, WICHE
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Pat Shea, director, Academic Leadership Initiatives, WICHE
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Workshop Agenda

Thursday, May 15
SHEPC Learning Center, Boulder

9:00 – 9:15 am  Welcome, Introductions, and Goals for the Day

Speaker:
Sue Schmidt, NANSLO/CHEO project coordinator, WICHE

9:15 – 10:15 am  What Do Students REALLY Think of Inquiry?
Students can be skeptical or overtly resistant to active inquiry because it may be very different from their past experiences. How do we help them invest and engage in inquiry? Distinguish normal discomfort from legitimate problems that need to be corrected? Prove to students they are learning more? Johnson will share lessons learned from over 10 years of inquiry laboratory evaluations, including practical advice on filtering and prioritizing student feedback, and how to discover what students really think about their experiences.

Speaker:
A. Daniel (Dan) Johnson, core curriculum coordinator for biology, Wake Forest University (NC)

10:15 – 10:30 am  Break

10:30 – 11:30 am  NANSLO Lab Activity Update
The curriculum leads, collaborating with faculty participating on the CHEO/NANSLO Discipline Panels (DP), have been developing a number of NANSLO lab activities that will be available for use by summer 2014. The curriculum leads will provide an update on DP involvement to date and what lab activities the working groups will discuss in the breakout sessions.

Speakers:
Farah Bennani, collegewide chair, online learning, math, science, allied health and psychology, Front Range Community College (CO)
Farnosh Family, adjunct faculty chemistry, Colorado Community College Online (CCCO) Online
Kate Lormand, adjunct faculty biology, CCCOnline

11:30 am – 12:30 pm  Catered Lunch in the SHEPC West Foyer, First Floor
12:30 – 2:30 pm  
**Breakout Sessions – Discussion and Working Groups**  
Each Discipline Panel will meet with its respective curriculum lead to design NANSLO lab activities applicable to their courses.

SHEPC Learning Center  
**NANSLO Discipline Panels: Biology/Allied Health**

*Facilitators:*  
Farah Bennani and Kate Lormand assisted by A. Daniel Johnson

SHEEO Jim Mingle  
Conference Room #103  
**NANSLO Discipline Panel: Chemistry/Allied Health**

*Facilitators:*  
Farnosh Family assisted by A. Daniel Johnson

2:30 – 5:30 pm  
**NANSLO Node Tour**  

2:30 pm  
Board bus at WICHE

2:30 – 3:30 pm  
Travel to RRCC

3:30 – 4:30 pm  
**NANSLO Note Tour**  
Remote web-based science experiments allow students to complete experiments in real time, collect actual data and build experience in controlling equipment remotely. We will visit NANSLO’s Colorado Node located on the Red Rocks Community College campus in Arvada and look behind the scenes to see how students access and use the scientific equipment available at this lab.

*Tour Speakers:*  
Dan Branan, NANSLO lab director, Colorado Community College System  
Albert Balbon, supervisor of distributed learning, North Island College, British Columbia, Canada

4:30 – 5:30 pm  
Travel back to WICHE

*Dinner on your own.*

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**Friday, May 16**  
SHEPC Learning Center, Boulder

9:00 – 9:15 am  
**Goals for the Day and Q&A – Sue Schmidt**

9:15 – 10:00 am  
**Open Source Interactive Activities to Augment Student Learning in Labs**  
In this session find out how one of our colleagues uses virtual and interactive activities to enhance student learning related to course and
laboratory content and how she finds these resources. She will show resources she uses from open-source sites with an emphasis on the health sciences. Please be prepared to share and briefly discuss one or two of your favorite open-source (free) sites with the group. Together, we’ll compile a list of CHEO favorites.

Speaker:
Suzanne Buie, department chair of health sciences, Kodiak College (AK)

10:00 – 10:15 am Using a YouTube Channel to Deliver Videos to Students
Videos can be a powerful tool to use in preparing students for laboratory activities. Learn how to set up your own YouTube channel, upload your videos to it, and embed those videos in a web page, social media and emails. Often your learning management system provides you with the ability to easily upload videos to YouTube. But, if not, or if you want your own channel, we’ll show you how to do it. Come away with a simple cheat sheet to use later.

Speaker:
John Fellers, web design manager, WICHE

10:15 – 10:30 am Break

10:30 – 11:30 am NANSLO – The interface between students and scientific discovery
A NANSLO chemistry lab first experience! Mircovich will be showing you how her General Chemistry II students experienced the NANSLO labs and share her methods for engaging students and preparing them for the lab experience. Her goal was to provide pre-lab experiences that familiarized students with the NANSLO spectroscopy lab interface – getting the interface “out of the way” to allow students to concentrate on learning and engaging in the experimental process in the remote laboratory setting. How did it work? We’ll hear about the pre-lab meeting and quiz, students “in the lab”, the post-lab meeting, post-lab quiz, and student feedback. Mircovich will close with lessons learned and ask participants to share their ideas for maximizing the learning potential of the NANSLO experience.

Speaker:
Susan Mircovich, assistant professor of chemistry, Kenai Peninsula College, University of Alaska Anchorage

11:30 am – Noon  Catered Lunch in the SHEPC Learning Center

Noon – 1:00 pm  Faculty Showcase
CHEO faculty have done amazing work since the beginning of this grant. Several will demonstrate strategies and tools used in their curriculum to engage students and enhance learning.
See detailed timeline in red below.

Noon – 12:15 pm  Simulated Labs
Simulated labs for the Medical Laboratory Technician students have been made possible with the acquisition of new equipment through TAACCCT
grant funding. A MicroScan Walkaway and BacT Alert were purchased for the microbiology area and cell washers and pipettors in the blood banking area. This lab equipment has enhanced the clinical student’s confidence and knowledge base as well as opened up more clinical sites for the program.

Speakers:
Alison Albertson, instructor and director, Medical Laboratory Technician program, Lake Area Technical Institute (SD)
Mona Gleysteen, instructor, Medical Laboratory Technician program, Lake Area Technical Institute (SD)

12:15 – 12:30 pm
Success Strategies for Science Students
Lords will share different strategies she has used successfully and strategies she will use this summer for her new hybrid human biology course.

Speaker:
Quinzie Lords, department chair, biology, Great Falls College Montana State University

12:30 – 12:45 pm
Using a NANSLO Lab Activity in Microbiology
Canine used a NANSLO lab activity in her microbiology class this spring. She will share information on her students’ experiences and challenges and provide insights on incorporating a NANSLO lab activity into a traditionally face-to-face lab.

Speaker:
Brenda Canine, NANSLO lab manager and microbiology and chemistry adjunct faculty, Great Falls College Montana State University

12:45 – 1:00 pm
Overcoming Hurdles to Deliver a Flipped Classroom
In his first attempt to use the “flipped” learning style for an organic chemistry class, Casmier describes the initial hurdles he had to overcome, the use of new technology to encourage “inquiry” based learning, and how his students responded to this style over the course of the semester. Some of the technology discussed will include the following: Camtasia and Livescribe to produce online content, Socrative quizzes for instantaneous feedback on material, and MolPrime as a molecular drawing tool.

Speaker:
Dan Casmier, chemistry faculty and natural sciences department chair, Great Falls College Montana State University

1:00 – 1:45 pm
Breakout Sessions – Discussion and Working Groups

SHEPC Learning Center
NANSLO Discipline Panel: Biology/Allied Health

Facilitators:
Farah Bennani and Kate Lormand
NANSLO Discipline Panel: Chemistry/Allied Health

Facilitator:
Farnosh Family

1:45 – 2:45 pm  The Future of Health Information Technology: Opportunities in Electronic Health Records (EHRs), mHealth and Telehealth

The use of information technologies and telecommunications mediated health services has been literally exploding in the last five years. We see a convergence of technologies with the building of large clinical databases, the movement of applications to mobile platforms, and the remote provisioning of health care services. There are tremendous opportunities awaiting those who have the training to move into these fields. Learn about these developments and opportunities and how the skills used in performing NANSLO remote web-based lab activities complement those needed in this field.

Speaker:
Stuart Speedie, professor of health informatics, University of Minnesota, and executive director, Great Plains Telehealth Resource and Assistance Center

2:45 – 3:00 pm  Workshop Reflections

3:00 pm   Adjourn

Presenters & Moderators

Alison Albertson is an instructor and director of the Medical Laboratory Technician program at Lake Area Technical Institute (LATI) in Watertown, SD. Albertson obtained her M.T. degree from South Dakota State University and her M.S. in clinical lab science from the University of North Dakota. Albertson was employed in the lab at Memorial Medical Center in Watertown prior to teaching at LATI.

Albert Balbon is the supervisor of distributed learning at North Island College in British Columbia, Canada. He is responsible for the planning of resources and the successful implementation and ongoing evaluation of e-learning technologies and also acts as an expert resource on issues involving e-learning technologies for faculty, staff, and administrators. Balbon has been involved with distributed learning at North Island College for over 28 years. He was recognized for his excellence with a British Columbia Innovation Award in Education and Technology in 2006 and a Canadian National Staff Excellence Award from the Association of Canadian Community Colleges in 2010. Balbon’s latest project, the Remote Web-based Science Laboratory, which can be used to deliver university-level lab exercises to students using the Internet, has garnered international attention and led to the establishment of the North American Network of Science Labs Online.
Suzanne Buie is the department chair of health sciences at Kodiak College in Alaska. She has been teaching since 2005 using face-to-face, hybrid, and distance delivery methods. Currently, Buie instructs in a distance delivery format. She has developed and instructed several courses including anatomy and physiology I and II, medical terminology, core concepts in health science, and most recently, human biology, utilizing NANSLO labs. Buie is responsible for supervising the Certified Nursing Certificate program and is the curriculum developer for an occupational endorsement in medical coding, a CHEO program. Buie has been a clinician for the past 15 years with a specialty in sports and orthopedic therapy. She is the owner of Arctic Physical Therapy in Kodiak, Alaska. She has been published in the American Physical Therapy Association’s Journal of Sports Therapy for her work with catastrophically injured high school football players.

Farah Bennani is the collegewide chair, online learning, for math, science, allied health, and psychology at Front Range Community College. Bennani teaches microbiology, anatomy, physiology and general college biology for health sciences students, as well as science of biology for non-biology majors. In addition to her doctorate of science in microbiology, Bennani holds a patent for her research study for her doctorate; an advanced studies certification; a bachelor of science in animal biology and option immunology; and a degree in computer science as an analyst-programmer. She was recognized by Who’s Who Among America’s Best Teachers in 2007 and Marquis Who’s Who and Cambridge Who’s Who for Excellence in Higher Education in 2008. She received the Master Teacher Award in 2009 at Front Range Community College (CO) and the Online Faculty Award of the Year in 2010 at Community College of Denver. She is also an affiliate faculty member at Regis University in Colorado.

Dan Branan is the North American Network of Science Labs Online (NANSLO) lab director at the Colorado Community College System. He provides leadership and coordination for the many subject-area teams working on projects. Previously, he served at the U.S. Air Force Academy as an assistant professor of chemistry, co-director of the Center for Research on Learning and Teaching, and research director for the Institute for Information Technology Applications. Branan received his B.S. in chemistry from the University of South Alabama, his M.S. in inorganic chemistry from Ohio State University, and his Ph.D. in analytical chemistry from the University of Denver.

Brenda Canine is the NANSLO lab manager at Great Falls College Montana State University in Great Falls, Montana. She has also been an adjunct instructor at GFCMSU teaching microbiology and chemistry. Before joining the NANSLO team, she was a research scientist at the McLaughlin Research Institute studying the genetics of neurodegenerative diseases. Canine holds a Ph.D. in pharmaceutical sciences and a B.S in chemical engineering and has experience working in private, government, and industry labs.

Dan Casmier has been full time chemistry faculty and natural sciences department chair at Great Falls College, an extended campus of Montana State University, since Fall 2012. For two years prior to that, he was an adjunct instructor. He teaches face-to-face and hybrid lecture and laboratory classes in organic and general chemistry. In spring 2014, Casmier was awarded a faculty fellowship to teach organic chemistry in a “sandbox” classroom using a “flipped” learning approach. In addition to teaching, Casmier has five-years experience as a senior process engineer in the lithography area for Intel Corporation and was the recipient of several awards for his efforts to improve performance and quality in high-volume manufacturing. He holds a B.S. in chemistry from Pacific Lutheran University in Tacoma, Washington and a Ph.D. in organic chemistry from the University of Washington in Seattle, Washington.
Farnosh Family is an adjunct faculty, chemistry, for CCCOnline. Family studied environmental chemistry at Columbia University as an undergraduate and got a master’s in organic chemistry from University of California, Los Angeles. She then moved to Baltimore where she joined the chemistry faculty at the Community College of Baltimore County. Family is now living in Denver where she teaches part-time for CCCOnline and continues to teach online for the Community College of Baltimore County.

John Fellers is web design manager for Western Interstate Commission for Higher Education (WICHE). Previously, he was a full-time digital imaging instructor at the Art Institute of Colorado and a web development contractor. Fellers has an associate degree in interactive media design from the Art Institute of Colorado, a B.S. in mass communications from the University of Southern Colorado (now Colorado State University-Pueblo), and a masters in computer information systems from the University of Phoenix.

Mona Gleysteen has been an instructor for the Medical Laboratory Technician program at Lake Area Technical Institute (LATI) in South Dakota since 1982. Gleysteen has a B.S. in microbiology from Colorado State University and an M.S. in clinical laboratory science from the University of North Dakota. For the last several years, Gleysteen has also been involved in institutional assessment at LATI.

A. Daniel (Dan) Johnson has been the core curriculum coordinator for biology at Wake Forest University since 1998 where he holds the rank of teaching associate professor. He has been teaching for 25 years. Trained as a cardiovascular cell biologist, Johnson has spent nearly two decades designing, developing, and publishing active-learning instructional materials. In 2008, the National Science Teachers Association published his guide to inquiry instructional development for faculty, 40 Inquiry Exercises For the Biology Laboratory, which has been used by the College Board as a guide for developing the new Advanced Placement biology curriculum. Johnson is a senior editor and a regular contributor for Tested Studies for Laboratory Teaching, an international open-access journal published by the Association for Biology Laboratory Education. In 2011, Johnson founded The Adapa Project, a group of educators, students, developers, and others who create open-access resources.

Quincie Lords is department chair, biology, at Great Falls College Montana State University. She teaches biology and anatomy and physiology. Lords has taught for ten years including time as a high school science instructor.

Kate Lormand is an adjunct faculty, biology, for CCCOnline. She has over 20 years of experience as a biology instructor at the community college level in biology, anatomy and physiology, genetics, and botany for both majors and non-majors. She has worked at community colleges in both California and Colorado as an adjunct faculty, and her experience includes both traditional face-to-face courses and online teaching. Additionally, Lormand worked on the development of an online biology course through the Monterey Institute, writing an online text and creating the activities and learning objectives for these chapters. She has been responsible for the development of new courses, as well as the refinement of existing courses to meet evolving standards.
**Susan Mircovich** is assistant professor of chemistry, Kenai Peninsula College, an extended campus of the University of Alaska Anchorage. She teaches online lecture sections of both allied health and general chemistry. In spring 2012, Mircovich won the Blackboard Exemplary Course Award for her “Survey of Chemistry” course. In addition to teaching, she also works closely with chemistry lab instructors, assisting them with instructional design and development of online and hybrid courses. Previously, she worked as an instructional designer for the UAA nursing program, assisting their faculty in converting classroom courses to distance. Mircovich has 15 years experience as a scientist and trainer in the field of environmental health as well. She has a bachelor of science in chemistry from California Polytechnic State University in San Luis Obispo and a master of arts in learning and technology.

**Sue Schmidt** is the NANSLO/CHEO project coordinator for WICHE. Schmidt provides professional development opportunities for science faculty who are creating remote lab experiences utilizing the NANSLO lab and its resources in CHEO courses, and also for CHEO career coaches. Schmidt facilitates communication between members of discipline panels and career coaches to share best practices and project updates and also serves as the project manager for the development of the new NANSLO scheduling system. Previously, Schmidt worked for Colorado Mountain College, first as its Blackboard administrator/trainer and then as an instructional chair. In the latter role, she programmed classes and worked with faculty in allied health and other discipline areas. Schmidt holds an M.A. Ed. from George Washington University with a focus in educational technology leadership.

**Patricia (Pat) Shea**, the director of academic leadership initiatives at WICHE, oversees the activities of three membership-based organizations: WICHE Internet Course Exchange, Western Academic Leadership Forum; and Western Alliance of Community College Adacemic Leaders. In addition, she directs WICHE’s involvement in three regional collaborative projects: the North American Network of Science Labs Online, the Consortium for Healthcare Education Online, and the Interstate Passport Initiative. Prior to serving in this position, Shea served as the assistant director of WCET, also based at WICHE. She holds an M.A. in educational administration and supervision from George Mason University.

**Stuart Speedie** is a professor of health informatics and a fellow in Minnesota’s Institute for Health Informatics at the University of Minnesota. He holds a B.S. in computer science and a Ph.D in educational research from Purdue University and is a fellow in the American College of Medical Informatics. His research activities focus on taking advantage of existing clinical data in electronic health records to improve the efficiency and effectiveness of clinical research. He is engaged in evaluations of the impact of HIT on patient and provider outcomes both in primary care settings involving e-prescribing and in the emergency department in the inpatient setting. He directed the Fairview-University of Minnesota Telehealth Network for over 10 years. He now is executive director of the Great Plains Telehealth Resource and Assistance Center which provides technical assistance to healthcare providers who are establishing telehealth programs.