The North American Network of Science Labs Online (NANSLO) represents an international collaborative partnership between postsecondary institutions in the U.S. and Canada working together to develop and deploy high-quality, modular, openly licensed courseware integrating learner-centered and immersive web-based laboratory experiments using software, video and robotics for the study of science courses.

The concept of remote web-based labs is not new. Remote labs have been used to deliver engineering experiments to students located around the world for many years. Through an innovative approach designed for astronomy at North Island College (NIC) in British Columbia, however, the idea of using robotics and software to manipulate equipment in science labs for other subjects took root.

NANSLO formalized the consortium in April 2011 as a result of funding through the Next Generation Learning Challenges (NGLC) grant program. Through the leadership of the Western Interstate Commission for Higher Education (WICHE), the Colorado Community College System (CCCS), and BCcampus, and faculty from six other partner institutions, NANSLO developed immersive experimental opportunities in biology, chemistry and physics. NANSLO’s goal is to expand its initial work by securing additional funding and creating a sustainable model for continued delivery of high quality online laboratory experiences to science students through its network of participating institutions.

NANSLO Began:
As a result of the NGLC initiative that focused on identifying and scaling technology-enabled approaches to dramatically improve college readiness and completion, especially for low-income young adults, NANSLO completed its first project in 2013 that delivered:

- Curriculum for online introductory courses in biology, chemistry and physics.
- World-wide access to its courses via Creative Commons Licensing.
- Six lab experiments using software, robotics, and state-of-the-art science equipment allowing students to manipulate equipment from a distance, gather experimental data and capture high resolution pictures for lab reports. See www.wiche.edu/nanslo/labs to see videos of how they work.
- A development lab at NIC to assist in the design and testing of new experiments.
- A production lab at CCCS that includes robotically operated microscopes, a spectrometer, an air track, and high resolution video cameras.

NANSLO Governing Body:
Representatives of the NANSLO partners serve on the advisory board which provides overall direction for the network’s effort. Faculty from the institutional partners serve on the expert discipline panels. Together, they collaborate in the development of creative approaches for delivering science labs, building open access curriculum, and providing research and insights into meeting the needs of science students.

Western Interstate Commission for Higher Education (WICHE) serves as the coordinating partner and fiscal agent for NANSLO.

Colorado Community College System (CCCS) is comprised of 13 community colleges and is the primary field test site.

North Island College in British Columbia is the development lead for web-based science experiments.

BCcampus, a consortium of 25 post-secondary institutions located in British Columbia (BC), Canada, focuses on research in best practices in teaching science courses online.

Satellite Campuses: Colorado School of Mines, University of Wyoming, Montana State University, Great Falls College Montana State University, and Laramie County Community College (WY) lend their expertise to both the advisory board and discipline panels.

Current NANSLO Project:
As a result of a Trade Adjustment Assistance Community College and Career Employment and Training Administration (TAACCT) grant made by the U.S. Department of Labor in October 2012, NANSLO will be developing 12 new experiments for courses in the Allied Health field. These experiments will add to the collection of remote web-based science lab experiments previously developed with funding from the NGLC grant. Discipline panels composed of faculty members from each of eight colleges participating in the grant will work collaboratively to develop the curriculum and deploy the new lab experiments.

In addition to developing these experiments, NANSLO will increase its existing capacity by expanding its production lab and creating a “faculty sandbox” at its CCCS node, create a production lab at its new node at Great Falls College Montana State University, as well as expand its development lab and add a production lab on its node at North Island College (British Columbia).

The grant not only funds these 12 experiments but also funds the creation or conversion of the curriculum for a number of Allied Health courses as openly licensed content for online and hybrid delivery. The eight participating institutions are:

- Flathead Valley Community College – MT
- Great Falls College Montana State University – MT
- Kodiak College/University of Alaska – AK
- Lake Area Technical Institute – SD
- Laramie County Community College - WY
- Otero Junior College – CO
- Pueblo Community College – CO
- Red Rocks Community College – CO

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