

Lake Area Technical Institute

Case Study Report

Consortium for Healthcare Education Online

Education and Employment Research Center

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RUTGERS
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ABOUT RUTGERS SCHOOL OF MANAGEMENT AND LABOR RELATIONS

Rutgers' School of Management and Labor Relations (SMLR) is the leading source of expertise on the world of work, building effective and sustainable organizations, and the changing employment relationship. The school is comprised of two departments—one focused on all aspects of strategic human resource management and the other dedicated to the social science specialties related to labor studies and employment relations. In addition, SMLR provides many continuing education and certificate programs taught by world-class researchers and expert practitioners.

SMLR was originally established by an act of the New Jersey legislature in 1947 as the Institute of Management and Labor Relations (IMLR). Like its counterparts that were created in the other large industrial states at the same time, the Institute was chartered to promote new forms of labor-management cooperation following the industrial unrest at the end of World War II. It officially became a school at the flagship campus of the State University of New Jersey in New Brunswick/Piscataway in 1994. For more information, visit smlr.rutgers.edu.

ABOUT THE EDUCATION AND EMPLOYMENT RESEARCH CENTER

Rutgers' Education and Employment Research Center (EERC) is housed within the School of Management and Labor Relations. EERC conducts research and evaluations on education and workforce development programs and policies. EERC research expertise includes community colleges, state and federal workforce developmental systems, skills development, college completion, and innovative and technology-based programs.

INTRODUCTION

The Consortium for Healthcare Education Online (CHEO) is a United States Department of Labor (USDOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT) funded grant project intended to develop new or redesigned online and hybrid courses leading to credentials in health care fields in high demand across the West and Midwest. CHEO is an interstate consortium consisting of eight colleges across Colorado, Wyoming, South Dakota, Montana, and Alaska. The consortium includes Pueblo Community College (PCC), Otero Junior College (OJC), Red Rocks Community College (RRCC), Laramie County Community College (LCCC), Lake Area Technical College (LATI), Great Falls College Montana State University (GFC MSU), Flathead Valley Community College (FVCC), and Kodiak College (KoC).

Each of the eight colleges is required to integrate the following components into its program/course design/redesign: 1) open education resources (OER), 2) use of the North American Network of Science Labs Online (NANSLO), 3) a CHEO-funded career coach, and 4) use of the CHEO Health Career Hub.

Open education resources (OER) are teaching tools and resources that are licensed for free, public use. They include teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

Under the CHEO grant, consortium colleges are encouraged to use OER resources in the creation/redesign of their online or hybrid courses. Consortium colleges are also required to create or redesign their courses/programs so that they can be packaged and licensed OER for use by other educators and institutions. The CHEO colleges will package, license, and post their course material during the course of the grant. OER materials will be uploaded to a skills commons repository under MERLOT. The MERLOT skills commons repository consists of discipline-specific learning materials, learning exercises, and web pages, designed to enhance the teaching experience.

The North American Network of Science Labs Online (NANSLO) is a remotely operated robotic lab designed to innovate the distance lab experience for students through a web-based portal. CHEO partners will collaborate to develop lab exercises to be used in health- and science-related courses. Faculty in the designed/redesigned CHEO programs will incorporate the developed labs into courses, using one of the three NANSLO nodes. Nodes are equipped laboratories that remotely run the specified labs for consortium colleges. Three total nodes exist, one newly created under the CHEO grant at GFC MSU. The other two nodes are located at North Island College in Vancouver, British Columbia, and RRCC in Denver, Colorado.

The NANSLO science lab network is managed by the Colorado Community College System (CCCS). For the purposes of the CHEO grant, the Western Interstate Commission on Higher Education (WICHE) in Boulder, Colorado serves as the public's primary resource for information about NANSLO. WICHE coordinates communication among the network's lab partners and coordinates the faculty discipline panels that plan and develop individual science experiments for the nodes.

WICHE additionally serves as CHEO's professional development coordinator, scheduling webinars and workshops for instructional designers, faculty and career coaches through three years of the grant. Specifically, in the first year of the grant, WICHE was responsible for one face-to-face workshop that included instructional designers and faculty members, a separate face-to-face workshop for career coaches, and four webinars (two for faculty and two for coaches). In the second year of the grant, WICHE was responsible for a face-to-face workshop for faculty and one for coaches, as well as six webinars (three for faculty and three for coaches). In the third year of the grant, WICHE is responsible for one face-to-face workshop for faculty and one for coaches, in addition to six webinars (three for faculty and three for coaches). If subsequent support during any grant-funded year is deemed necessary, the PCC CHEO administration team is responsible. For example, based upon project needs relative to employer engagement and job placement, a second face-to-face workshop was provided for coaches in year three. The PCC CHEO team also provides organization and facilitation of annual face-to-face meetings for project leads. Additionally, 10 trainings for the CHEO Health Career Hub are the responsibility of College in Colorado. Hub trainings began in year two and extend into year three.

Each college in the consortium is required to employ a career coach to collaborate with employer partners, local workforce centers, community and nonprofit organizations, and students to ensure student access to CHEO resources. Within each of these areas of collaboration, coaches work according to their institution's needs to build CHEO programs, recruit and retain students for CHEO programs, and assist students in multiple ways as each institution designates. Coaches also track their interactions with students to report outcomes based on a model of "intensive advising," assisting students throughout their education with multiple interactions and points of intervention to ensure student success and, ultimately, employment.

The CHEO Health Career Hub is a sophisticated regional and web-based portal that promotes and supports those pursuing a career in health care fields with a wide variety of high-impact interactive tools and services. PCC, the lead applicant and fiscal agent for the CHEO grant, has worked with College in Colorado hub development and Kuder, a company that designs online career planning systems, to create the CHEO hub. The hub is to be used as a case management tool by coaches and as an interactive career management tool for students in CHEO programs across all eight consortium colleges.

This report is one of eight created to highlight each individual college's contributions to the CHEO project to date. The purpose of this case study is to provide a summary of LATI's activities, successes, and challenges to date and to identify the best practices, innovative strategies, and unique contributions of the college to the CHEO project to date. This case study begins with an overview of its methodology and data sources and then moves on to the contextual frame—demographic and socioeconomic background information about LATI, its student population, and its service region. These sections are followed by a) a summary of the goals of LATI's CHEO program, b) a discussion of the baseline targets and subsequent changes relative to the CHEO project, c) the identification of LATI's emerging best practices, innovative strategies and unique contributions to CHEO, and d) a summary of successes and challenges to date along with next steps.

METHODOLOGY/DATA SOURCES

This report examines the development and implementation of the first two years of the CHEO grant at LATI, including experiences of the project team members and participating staff, faculty, and students. As such, this report uses qualitative data and analysis. Subsequent EERC evaluation reports will include outcome measures and report on quantitative data collection and analysis.

The qualitative methodology for this report includes content analysis of consortium goals and activities to date, relevant proposals, and project- and college-specific statements of work, quarterly reports, career coach tracking spreadsheets (also called "stitched-in reports"), strategic plan information and materials, and websites developed by individual colleges. EERC team members have also conducted phone and in-person interviews with the CHEO coordinator, grant administrators, senior WICHE administrators, college project leads, NANSLO Discipline Panel participants, and faculty and career coaches. EERC team members have also been participant-observers at many project workshops including those for faculty, project leads, instructional designers, and career coaches. Finally, members of the EERC team have "observed" conference calls with project leads and career coaches and joined in webinars.

Most interviews were taped and transcribed; non-taped interviews involved extensive note taking. These transcriptions and notes as well as the documents cited above have been coded through the use of NVivo qualitative data management software and analyzed by EERC team members to represent each college's individual story relative to the CHEO project.

As noted above, while quantitative analysis will be presented in subsequent reports, this summary is meant for contextual purposes only and will only utilize data from qualitative analysis. For this reason, grant targets relative to each college, student counts, course counts, NANSLO lab counts, industry- and workforce-related targets, and other quantitative objectives will not be discussed as part of this report.

COLLEGE DESCRIPTION AND OVERVIEW OF THE STUDENT POPULATION

Founded in 1965, LATI is a nonresidential technical college located in Watertown, a small community in South Dakota. LATI offers 29 programs granting certificates and associate of applied science degrees.¹ The school prides itself on offering the only hybrid medical laboratory technician (MLT) program in South Dakota and the only nationally accredited practical nursing (LPN) program in the state.² In 2011, the Aspen Institute named LATI one of the top five two-year colleges in the nation for achievements in areas such as student learning outcomes, degree completion, labor market success, and facilitating minority and low-income student success.³ Since then, the college has been named a top-ten college by Aspen in 2013 and 2014 as well.

The geographic location of LATI near the northeast border of the state and the hybrid character of the programs allow for expansion of the recruitment territory to residents in western Minnesota, southern North Dakota, and northwest Iowa.⁴ As the school's president noted, LATI covers a distance of over 18,000 square miles as their "primary area of responsibility."

During the 2013-2014 academic year, LATI served 1,537 full-time and 357 part-time students,⁵ offering 21 associate degree and 17 certificate programs.⁶ The student population has a roughly even gender division, comprised of about 49 percent (N=933) women, and approximately three percent (N=64) of students identified themselves as ethnic minorities. About 46 percent of LATI's students are in the age range of 20-29 years (N= 872).⁷

LATI's CHEO GOALS

LATI's region has a high labor market need for health care employees. The CHEO grant provided an opportunity for the college to expand and enhance their existing LPN and MLT programs.

LPNs provide basic care for patients under the direction of registered nurses and doctors. Nationally, LPNs made about \$43,000 in 2013 and about \$35,000 in South Dakota. The wages in

¹ *About Us*. Retrieved August 26, 2014, from the Lake Area Technical Institute:

<http://www.lakeareatech.edu/about.html>

² Retrieved August 26, 2014, from the Lake Area Technical Institute:

<http://www.lakeareatech.edu/academics/programs/distinct/nursing.html>

<http://www.lakeareatech.edu/academics/programs/nursingonline/index.html>

³ *National Awards*. Retrieved August 27, 2014, from the Lake Area Technical Institute:

<http://www.lakeareatech.edu/NationalAwards/index.html>

⁴ *Catalog 2014-2015 Revised*. (2014, Summer). Retrieved August 26, 2014, from the Lake Area Technical Institute:

<http://www.lakeareatech.edu/academics/Downloads/LATICatalog2014-15Revised.pdf>, p. 24

⁵ *Catalog 2014-2015 Revised*. (2014, Summer). Retrieved August 26, 2014, from the Lake Area Technical Institute:

<http://www.lakeareatech.edu/academics/Downloads/LATICatalog2014-15Revised.pdf>, p. 24

⁶ *Community Colleges: Lake Area Technical Institute*. (n.d.). Retrieved August 27, 2014, from *U.S. News & World Report*:

<http://www.usnews.com/education/community-colleges/lake-area-technical-institute-CC04387>

⁷ *Catalog 2014-2015 Revised*. (2014, Summer). Retrieved August 26, 2014, from the Lake Area Technical Institute:

<http://www.lakeareatech.edu/academics/Downloads/LATICatalog2014-15Revised.pdf>, p. 24

South Dakota's neighboring states were higher, ranging from about \$41,000 (Minnesota) to \$38,000 (Iowa).⁸ Students can complete the LPN program in 11 months (full-time) or 22 months (part-time) earning a diploma. The E-Degree is restricted to residents of South Dakota, North Dakota, Minnesota, Iowa, and Nebraska.⁹ Upon completion of the program, students may continue their education by pursuing a registered nurse (RN) associate's degree at LATI through the University of South Dakota distance-degree program or by transferring to a bachelor of science degree in nursing at neighboring Mount Marty College.¹⁰

MLTs perform analysis tests of body fluids, tissue, and other substances and work in conjunction with other health professionals. About half of all MLTs are employed in hospitals; the rest work in clinics and laboratories.¹¹ Nationally, the projected employment growth for medical and clinical laboratory technicians is 30 percent by 2020, much higher than the average job growth of 11 percent for all occupations. The demand for MLTs is explained by the greater need for diagnosis because of the aging population and the increasing number of patients who have access to health insurance.¹² South Dakota's job growth is the lowest of the neighboring LATI states, but even with that, the employment growth for MLTs is expected to be 18 percent.¹³ North Dakota is projected to have the highest change (29 percent), followed by Minnesota (23 percent), Iowa (25 percent), and Nebraska (18 percent).¹⁴ Nationally, MLTs earned about \$40,000 in 2013. In Minnesota, MLTs earned \$44,000; they earned about \$40,000 in North Dakota and Iowa and about \$35,000 in Nebraska and South Dakota.¹⁵

LATI's redesign of their MLT program has included 1) accelerating the program so that students can complete it in two years instead of three, 2) improving the hybrid version of the program, 3) integrating NANSLO labs to decrease the number of hours students need to travel to campus for lab time, as well as adding additional lab experiences to the program by

⁸ *Occupational Employment Statistics*. (2014, April 1). Retrieved August 30, 2014, from the Bureau of Labor Statistics: <http://www.bls.gov/oes/current/oesrcst.htm>

⁹ *Practical Nursing E-Degree*. Retrieved August 28, 2014, from the Lake Area Technical Institute: <http://www.lakeareatech.edu/academics/programs/nursingonline/index.html>

¹⁰ *Catalog 2014-2015 Revised*. (2014, Summer). Retrieved August 26, 2014, from the Lake Area Technical Institute: <http://www.lakeareatech.edu/academics/Downloads/LATICatalog2014-15Revised.pdf>, p. 67

¹¹ *Medical and Clinical Laboratory Technologists and Technicians: Job Outlook*. (2014, January 8). Retrieved October 16, 2014, from Bureau of Labor Statistics: <http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm>

¹² *Occupation Information: Employment Trends by Occupation across States*. Retrieved August 30, 2014, from <http://www.careerinfonet.org/carout3.asp?optstatus=001000000&id=1&nodeid=2&soccode=292012&stfips=46&jobfam=29&menuMode=&order=Percent>

¹³ *Occupation Information: Employment Trends by Occupation across States*. Retrieved August 30, 2014, from <http://www.careerinfonet.org/carout3.asp?optstatus=001000000&id=1&nodeid=2&soccode=292012&stfips=46&jobfam=29&menuMode=&order=Percent>

¹⁴ *Occupation Information: Employment Trends by Occupation Across States*. Retrieved August 30, 2014, from <http://www.careerinfonet.org/carout3.asp?optstatus=001000000&id=1&nodeid=2&soccode=292012&stfips=46&jobfam=29&menuMode=&order=Percent>

¹⁵ *Occupational Employment Statistics*. (2014, April 1). Retrieved August 30, 2014, from the Bureau of Labor Statistics: <http://www.bls.gov/oes/current/oesrcst.htm>

including supplemental labs, and 4) creating two simulation labs that will reduce the strain on clinical sites.

LATI has participated in all three rounds of the TAACCCT grants to date, and all rounds have overlapped to some extent. With a focus on healthcare in two of the three rounds, the college has been able to innovate in and expand its healthcare programs. CHEO was an excellent opportunity for LATI to expand and improve its MLT program, an area that was not touched by the other grants and one of great need to the college. Overall, all three rounds of the grants have been focused on moving programs online and increasing the availability of programs to students across a vast geographic area.

As has been mentioned, there is a demand for MLTs in the Wyoming/Minnesota/ North Dakota/South Dakota region. In preparation to serve this obligation, LATI has recognized the limits of existing clinical sites and created an alternative solution. In the region as a whole, multiple colleges are competing for a limited number of clinical sites for their students. Without the ability to place students into clinical sites, they are unable to graduate students, which in turn leads to a shortage of employees for the industry sector and labor market. The creation of LATI's simulation labs has been a solution to this problem. LATI's simulation labs consist of microbiology and blood banking equipment identical to that used in hospitals. Students are able to re-create tests and simulate protocols used in day-to-day practice for MLTs. The simulation lab equipment was purchased and staffed with CHEO grant dollars; LATI's focus at this time is on the sustainability of these labs after the grant period is complete.

CHEO PROGRAMS AND PROCESSES

Development and Implementation

To better meet the needs of its students, LATI chose to focus their CHEO efforts on redesigning the MLT program to accelerate the time to completion by adding a full-time option to the pre-existing part-time option and by creating simulation labs to decrease the amount of time that students need to spend at clinical sites, as well as to allow for the addition of new clinical sites. A redesign of LATI's LPN program was also part of the original proposal for the CHEO grant. However, LATI's focus to date has been primarily on the MLT program; the LPN program has only been redesigned to the extent that new equipment has been added and an extensive overhaul of the program's testing banks—questions designed to prepare students to pass their certification test—was completed.

The MLT program has both a "traditional" (face-to-face) cohort and a hybrid (primarily remote) cohort that occur simultaneously. The instructor performs the lecture in class for the face-to-face students while recording it with specialized technology and cameras. The recorded lecture with all PowerPoint slides, video, and voice recording is posted online immediately after the traditional class has ended. Online students are able to see exactly what the traditional students see, as well as hear any questions asked by traditional students and the instructor responses.

Traditional students are also able to access the recordings to review at any time, which students report is very helpful for test reviews or if they think that they missed something during a lecture. Lab instructors post the PowerPoint slides online and include blanks that students can fill in during lectures. This practice was described as promoting critical thinking. The slides are used by both face-to-face and hybrid students. Students described this activity as very useful. Face-to-face students mentioned to the Rutgers team that this provides a good review of the material for them at home, as they can listen to the lecture again and fill in the blanks.

The MLT program already existed in hybrid form prior to the grant and will continue to be hybrid; however, with the CHEO redesign, the college was able to increase the amount of online material, decreasing the amount of time that hybrid students must spend on campus. For hybrid students, all coursework can be completed online, and time on campus is dedicated to lab work. Hybrid students come to campus about twice per month (around eight hours per credit). Through CHEO, this in-person lab time has also been decreased; under the redesigned program, the addition of new equipment and technology has meant that demonstrations and “pre-lab” preparation can be completed online. This has significantly shortened the on-campus lab time for hybrid students.

Both the face-to-face and hybrid MLT programs are offered as both a three-year program (considered part-time) and a two-year program (considered full-time). Most students choose the two-year option, which gets them on the job market faster. Prior to CHEO, the program was offered only in the three-year format. LATI had to redesign six of their MLT courses to accommodate the accelerated versions of the programs. Faculty were extremely involved in the redesign process, and several industry representatives worked with faculty to ensure that content was accurate. Additionally, LATI has an instructional designer and an education technology specialist, both new positions to the college, who have assisted faculty with technological integration and turning their creative ideas for the MLT program into reality. Both staff members work with rounds two and three of the TAACCCT grants and are very involved with the CHEO programs. One of their key contributions to the program was to install the Panopto equipment, which allows the instructor to record lectures instantly and post them easily without having a technology person involved. Before this change, online students were up to a week behind the in-class students, making the cohorts asynchronous. Now, however, the cohorts are nearly synchronous, and online students can view lectures the same day as in-class students; the exception to this is late Friday lectures, which are generally posted online the following Monday.

The biggest change for LATI’s MLT program has been the integration of the blood banking and microbiology simulation labs. The two simulation labs were added fully under the CHEO grant and have allowed two major improvements to the program: 1) students are able to complete more of their clinical experience on campus, shortening the time that students must spend at clinical sites, and 2) medical clinics, not just hospitals, are now able to offer clinical sites to students, allowing for an increase in the number of sites available, which in turn allows more

students to enter the program at once while also eliminating the possibility of wait lists for students who need clinical placement.

Recruitment and Enrollment

The region has a clear need for healthcare workers, especially MLTs. Industry representatives are actively looking for new hires, which creates a need for MLT programs and students to fill them. Educators, including LATI, have struggled to find quality candidates for the MLT program and retaining them to program completion. Schools feel that prospective students are unaware of what MLTs do and how the program can benefit them. Marketing and outreach by local schools often focuses on the oil and gas industry; students can make more money in these fields, and as a result, these programs are easier to fill. LATI's CHEO staff is encouraging the marketing department to market MLT and increase the outreach to prospective students. Some ways in which LATI has done this have been to offer tours of its expanded facilities and simulation labs to prospective students and to target advertisement of the program to non-traditional remote students through advertising, including social media.

NANSLO

As mentioned previously, the North American Network of Science Labs Online (NANSLO) is a network of three science labs that serve the CHEO consortium and CCCS. LATI utilizes the Denver, Colorado node housed at Red Rocks Community College (RRCC).

Reception

Faculty and staff at LATI are excited about NANSLO and its ability to expand lab learning to online students. LATI's integration of NANSLO is another way that the college is increasing the online capacity of its MLT program. Additionally, NANSLO has allowed on-campus students to have access to equipment that the college is unable to provide. Prior to NANSLO, the school was unable to afford the equipment used in particular types of laboratory experiments. Access to NANSLO has allowed LATI to connect its students to laboratory experiments that the college would ordinarily not be able to offer, such as the Osmosis lab recently used in the MLT program.

Use to Date

Currently, LATI is offering two NANSLO labs in its inorganic chemistry course, Chemistry 106. The course is fully online, and the instructor for the course lives outside South Dakota. The course was redesigned from face-to-face to a completely online class. An additional chemistry course, Chemistry 108, will be redesigned as well and is planned to include NANSLO labs. In addition to chemistry, four NANSLO labs are being used in MLT courses this semester (fall 2014), for a total of six NANSLO labs currently being offered.

Future Plans

The college is also planning to incorporate NANSLO into other courses/programs that cannot currently afford the type of equipment needed to do labs effectively. LATI faculty and staff are enthusiastic about NANSLO and its ability to transform online learning; the integration of NANSLO opens the possibilities for the CHEO programs and beyond.

OPEN EDUCATION RESOURCES

As discussed above, open education resources are teaching tools, lessons, interactive activities, recorded lectures, or any other teaching element that can be shared openly without copyright or licensing. As part of the requirements for the CHEO grant, the colleges are to integrate as many open educational resources as possible into their courses, as well as to design/redesign their courses in such a way that the pieces can be shared as open education resources. LATI's educational technology specialist has worked with instructors to find and integrate OER into their MLT courses and labs. She listens to what the instructors are trying to accomplish and the learning objectives of the course or lesson at hand and finds interactive online materials to incorporate in the course. For example, the MLT instructor found interactive online "slides" that teach students how to stain and assess bacterial slides. The technology specialist worked with her to integrate the slides into her course. Integrating OER is one way that instructors have been able to decrease the time that remote students need to spend on campus by letting them perform steps of procedures that normally take days—such as setting up slides and incubating them—virtually online and then coming to campus just for the steps that they actually need to learn hands-on. Lab instructors at the college set up the slides and incubate them to have them ready for students when they arrive, but students still are able to walk through the steps virtually and learn the procedure—eliminating the need to come to campus for extra days.

LATI is in the process of figuring out how best to meet the OER requirements of the grant; discussions are taking place regarding what elements they can pull from their courses to post as OER. This is challenging in some respects because the courses for both MLT and LPN programs are directly derived from the testing that students must sit for after completion of the programs, and all of that material is copyrighted. Much of the LPN program updates have centered on re-vamping the test banks that prepare students for their certification test; none of these materials can be OER.

Some materials will be fairly easy to license as OER. For instance, the college has recently purchased a slide-scanning digital camera with 3-D focusing software with CHEO funds that will allow them to take pictures in 3-D of one slide and share it with all students at the same time. These photos can be uploaded and licensed as OER and could be a great resource for other

MLT educators. Instructors and staff are currently in the process of setting up the camera for use and are excited about its potential.

The instructional designer and education technology specialist are also putting thought into how best to create OER and weighing various options, such as full units, modules, and syllabi. They are trying to consider “what might be beneficial to another school attempting to replicate the success that LATI has had with the MLT program.” LATI’s instructional designer is fairly new to the college and at the time of the site visit had not yet attended any of the CHEO instructional designer workshops or professional development sessions. In the short time since the site visit and the release of this report, the instructional designer has been able to attend professional development relative to OER and the MERLOT repository. LATI is currently solidifying plans for uploading their course resources.

CAREER COACH

LATI’s career coach serves a data input function for required grant data (filling in the “Stitched-In Report”) but is not actively meeting with or “coaching” students. LATI is focused solely on technical programs with defined programs of study. Entering students choose a career path prior to the first day of school. LATI maintains consistently high student retention, graduation, and placement rates, as indicated by historical data and confirmed by the Aspen Institute’s numerous awards to the school. Because of this, current staffing and counseling services are adequate, and no further student coaching is necessary. For this reason, their CHEO career coach does not work directly with students. She was hired as a grant program officer and has been involved in all rounds of the TAA grants, focusing on articulation agreements with four-year universities.

Once Round 3 was underway, LATI hired an additional project officer to focus on the stacking/latticing elements of programs and credit for prior learning. This allowed Rounds 2 and 3 to mutually leverage each other, as both are focused on health care programs (Round 3 focuses on the LPN, EMT, Dental Assisting and Medical Assisting, programs). The college plans to incorporate credit for prior learning changes at the institution level. As a result, LATI has publically documented their credit for prior learning process.¹⁶ This includes an initial publicizing of possible prior learning situations for programs affected by Rounds 2 and 3.¹⁷ LATI continues to refine this policy and look for ways to expand from this initial list of prior learning situations. Finally, LATI has published career pathways (showing stacking and latticing) for both the MLT and LPN programs, along with pathways for Round 3 programs.¹⁸ These pathways contain numerous hyperlinks that help students and potential students explore career possibilities.

¹⁶<http://www.lakeareatech.edu/future/admissions/transfer.html#cpl>

¹⁷<http://www.lakeareatech.edu/future/admissions/downloads/LATI-AHC-PriorLearningCreditGrantingPolicyinitial.pdf>

¹⁸<http://www.lakeareatech.edu/academics/programs/mlt/downloads/CareerLadderMLT.pdf> and
<http://www.lakeareatech.edu/academics/programs/nursing/downloads/CareerLadderNursing.pdf>

LATI chose not to create a new position because they already offer this role at the college in multiple ways, including student cohorts, instructor advising, and a retention specialist position. The retention specialist position at LATI fills multiple “coaching” roles at the college, including helping students with personal issues, keeping them “on track” in their courses and programs, and responding to “early alerts” from faculty if students are slipping in their grades or not attending classes. For example, one student recently experienced an automobile accident that caused damage to his vehicle. He needed a place to store the vehicle for needed repairs. The stress of the accident and subsequent vehicle storage and repair issues were causing the student distress, and he was unable to keep up with his courses. The retention specialist stepped in, solving the storage issue and helping the student re-focus his energy on classes.

Because LATI is a technical institute and not a traditional community college, when students apply to LATI, they apply to a specific program; therefore, if accepted, they start in a program with a planned career path. Programs contain the necessary pre-requisite courses, so students never start at the college as “undecided” or “general education” attendees, who may need more support or counseling in making decisions. Students also start the program with a cohort that they then continue with throughout the course of the program. Students indicate that this is quite helpful; they develop friendships with students and become a sort of “family” to each other. They also help each other with homework, study for exams together, and help each other with personal issues. The only reasons that students would not graduate with their cohort is that they begin the full-time program and later decide to switch to part-time or that they fail a course and need to re-take it during a later semester.

The students in the MLT program have very few instructors, and the instructors serve a dual role as student advisors. The instructor is the first to know if students are slipping in class, not attending, or seem to be experiencing issues that are interfering with their studies—LATI refers to the students’ instructors as the “gatekeepers.” As one administrator stated, “We expect the faculty to know all the students, not just their names but their stories, where they’re from, whether they have child issues, all that kind of stuff, because, if a student’s not here, we expect the faculty to know why.” As such, faculty play a strong role in advising. In fact, when students were asked whom they go to for help with problems, including personal issues, they all reported “to [their instructor].” When asked whether they could imagine a reason that they would need to go to anyone else at the school, they all replied, “No.”

Faculty members are also very involved when students need academic support. For example, if students need a remedial course or fail a course, they can sometimes choose to take/re-take the course one on one with the instructor during lunch or after school so it does not interfere with their time to completion or remove them from their cohort. LATI pays the instructor to do so.

If the students’ needs are outside the realm that the instructors feel comfortable assisting with, they will refer the student to LATI’s retention specialist, a guidance counselor, advisor, or other student services staff member. If a student decides that he or she wants to switch to a different

program, the retention specialist helps with this decision, mapping out the choices and helping the student weigh options. The retention specialist noted to EERC staff that this is one of his most common functions relative to MLT students since the program is extremely difficult and students are sometimes unprepared.

INDUSTRY/EMPLOYER/WFC INVOLVEMENT

LATI includes industry in nearly every element of its CHEO process, from input on equipment purchases to teaching the simulation labs, placing students in clinical sites, and employment of graduates. Internally, LATI employs instructors who are well connected with industry, and many of them are currently working in industry. For example, in the LPN program, all of the instructors are still working in the field to maintain their licensure.

The college is also engaging industry in discussions regarding the sustainability of their simulation labs and the future of the HIT program. They are planning ongoing meetings and emails with industry representatives involved in a recent symposium hosted by LATI involving regional employers and educators, and they are also entertaining the possibility of using the simulation labs for incumbent worker training. Further, they are considering articulation agreements with other colleges and universities to offer the simulation labs for a fee to other education institutions. These options will be explored in more detail as the grant period nears its end.

Every program at LATI has an Advisory Committee, which includes industry representatives. Across all programs, Advisory Committees include over 400 industry representatives and 275 companies. The MLT Advisory Committee was actively involved in the development of the blood banking and microbiology simulation labs. It was actually the committee that made the decision that these two elements were the key areas that needed improvement in the MLT program. Industry representatives on the committee were also very involved in helping the school choose the equipment necessary to develop the simulation labs. Additionally, the instructors of the simulation labs are currently employed in industry.

LATI has a marketing and outreach coordinator who is actively engaged in building industry relationships relative to the MLT and LPN programs. Currently, she is traveling throughout the northeastern portion of the state meeting with industry representatives and educating them about the two CHEO programs. She is finding that employers are very receptive and especially interested in the online portions of the programs. It is much easier for incumbent workers to attend online programs while working than to attend campus-based programs. Employers are interested in offering tuition assistance for some employees, and LATI is seeing an increase in employer interest from the visits. The marketing coordinator is also currently working with the regional Head Start office, in what at first appeared to be an unlikely partnership. A representative for Head Start asked about programs that LATI offered and, when informed of the CHEO programs, stated that the programs could be a perfect match for parents of Head Start attendees. Given recent grant opportunities to help some low-income parents receive

training to increase their skills and thus increase wages, LATI was asked to present program information at monthly Head Start parent meetings across the region.

There have also been three recent industry closures in the Lake Area region, and LATI has been working with industry representatives to help re-employ affected workers. These workers would qualify for TAA re-training, so LATI has been working closely with the verification staff, holding one-on-one meetings, giving tours, and discussing targeted outreach for workers affected by the closures. LATI has also been present at the career fairs offered to the affected employees.

LATI has a workforce-centered mission at its core. As one staff member stated, "It's all about working together to obtain institutional goals and improve the workforce in South Dakota and the Midwest. That's what we're here to do." LATI sits on the state-level Workforce Development Council board and maintains an active role with state workforce planning. There are also plans in the works to invite the SD Department of Labor Relations to their regularly scheduled CHEO meetings. The college has not worked extensively with its local workforce center; however, at the symposium, attendees discussed future plans for working closer with the workforce development system. Attendees agreed that a major component to educating the unemployed and underemployed about the MLT career and labor market need is the involvement of the workforce center, which in the past has been under-utilized. During the symposium, it was agreed that, by using the local workforce center as well as multiple ways of marketing, including using YouTube, television, and radio advertising, and offering career days, this void can be filled.

LATI has a symbiotic relationship with workforce development in the state. If LATI were not creating a skilled workforce, enrollment would decrease:

That would be a very quick way to empty all the programs because, if they're [the students are] going out there and we're getting bad press and they're not prepared or they don't have any exposure to the new technologies that are out there and they're not getting the right training because you don't have the right equipment, it doesn't take very long, and your seats will be empty.

PROFESSIONAL DEVELOPMENT

LATI attends all CHEO professional development activities, including the WICHE webinars, workshops, and monthly coffee talks. Since LATI's career coach does not participate in usual coach duties, these development activities are attended by various LATI staff.

LATI's new instructional designer and its technology integrationist attended a special professional development session facilitated by RRCC's and LCCC's instructional designers in Denver in October 2014. They, along with PCC's new career coach, spent time together defining course redesign protocol and OER expectations and receiving an introduction to the OER

repository. The meeting was held to help orient the new CHEO staff to establish CHEO redesign practices, and the response was positive from all involved.

LATI also hosts its own professional development sessions, which CHEO staff attend. One example of this is the “Tech Bytes” meetings, which occur twice per month and are geared toward integrating technology in everyday teaching and addressing how best to use technology to expand online and in-class learning. LATI is focusing on innovation and creativity across all its programs, and all three rounds of the TAACCCT grants have allowed them to expand and increase their ability to do so.

In addition, LATI offers “mini professional development” sessions to its instructors that are held during in-service days throughout the academic year. Topics include technology, scheduling, instructor support, and assessment.

LATI'S INNOVATIVE STRATEGIES

Microbiology and Blood Banking Simulation Labs

LATI's primary focus through CHEO has been on innovation: how to use it to expand online and in-class learning, how to integrate new technology and new tools, and how to use all three rounds of TAA grants to build on each other. Most importantly for its MLT program, the college has focused on the development of blood banking and microbiology simulation labs. The labs were established and equipped through the CHEO project, and the college would have been unable to develop the labs without CHEO. The first simulation labs were run in September 2013 and have been a regular part of the MLT program ever since. The simulation labs do not replace clinicals, but they have shortened the training that students need once they reach their clinical site, and they have also allowed for the addition of clinical sites that the college could not previously use. Blood banking and microbiology were always the most difficult areas of study for the college to find clinical sites for because few healthcare facilities in the area have the equipment. Because students can get a larger portion of their blood banking and microbiology clinical time in at the college now through the simulation labs, clinical sites that do not offer blood banking or microbiology (such as medical clinics and small hospitals) can now be utilized for students. Students still need to spend time in blood banking and microbiology during their clinicals, but this clinical time is shortened because of the simulation labs.

Since the addition of the simulation labs, LATI has been able to add four new clinical sites for students. This has had a far-reaching effect on the ability of the program to accommodate students. Previously, there was a wait list for students to take their clinicals, and clinical sites were overloaded. Prior to the addition of the simulation labs, it took about two weeks for students to “get up to speed” at their clinical sites. This time is no longer needed. The additional sites have also allowed LATI to enroll more students than previously. Since the simulation labs have opened up additional clinical sites, students no longer have to wait to take their clinicals,

and the time that students must spend in clinicals has been shortened, which allows students to enter the job market sooner.

Employers that offer clinical sites in many cases end up hiring the students during or after their clinicals. According to one CHEO staff member, employers do not want to decrease the clinical time that students spend there because students are now so much more useful—like unpaid employees. Moreover, employers are happy to hire: “In the last three years, students have had jobs by the time they’re done or before they’re done.” The college currently has employers calling them asking to be considered as a clinical site; this is a vast change from the situation that existed before the establishment of the simulation labs.

The equipment for the simulation labs that LATI has developed were carefully selected with input from employers and industry representatives who regularly use such equipment in their hospitals. Not only did industry inform the selection of the equipment but two medical laboratory scientists actively employed in the industry actually teach the simulations. Students enjoy this because the instructors bring with them actual real-world scenarios and stories from their jobs. They can also offer alternate methods of performing procedures based on real-life experiences. Students state that their instructor will sometimes teach one method, and the lab technician will teach them another method, so they learn multiple ways of doing the same thing, which they find helpful when they get to their clinical sites. This purposeful integration of industry with education is part of LATI’s commitment to creating a true learning experience for students that will help them transition effectively to work in the field.

Students find that the blood banking and microbiology simulations prepare them so well for the procedures that they need very little training once they arrive at the facility. One student commented that she and other students felt that they already knew the procedures well enough that they could just jump right in: “We knew before we went into the actual hospital. We weren’t digging out procedures book and figuring out what we had to do. We could just know from the sim lab.”

Because the LATI simulation equipment is exactly the same as that at many of the clinical sites, they arrive already knowing how to operate it and the proper procedures for using it. They have confidence in using the equipment and knowing the procedures, which translates into confidence in their training as a whole. When one student was asked what the simulation lab helped her with the most, she commented,

I think confidence. I was a lot more confident after doing it over and over. And I felt like it was really low-key, like if I did something really dumb that didn’t make sense and I didn’t know what it was, I felt like comfortable to ask, and so it was really good.

Another student said,

I was kind of worried about going into the hospital because there's just so much going on. And now it's like, okay, well... they showed me how to do it in the sim lab first, so it built the confidence a little bit.

Employers have echoed this, stating that students completing the simulations are more confident in their training and abilities and have required less training and oversight than students who took the program prior to the establishment of the labs. In fact, employers see the benefit to the degree that they want more students than in previous years because they are a helpful addition to the hospital staff instead of individuals they need to train. They feel that they can integrate the students without needing to dedicate a staff member to train them; the students are instantly useful. One LATI administrator commented, "Industry has seen the improvement in the students when they come out in the field, enough that they've asked [whether they] can ... get some of their people into them [the simulation labs], and those types of things."

Simulation labs are becoming more common nationally, especially as more students are seeking to take online courses. Simulations have "become a vital tool in substituting the physical lab."¹⁹ The critics of the use of simulation labs in education stress that simulations cannot replace real-world learning or the variety of scenarios that occur in real life. They also state that students in simulation scenarios can ignore safety protocol and lab ethics because the classroom setting allows for a "safety net."²⁰ However, LATI's simulation labs are not just software-based computer programs, such as those that are most common in educational settings. The labs are actually a series of high-tech medical equipment used in blood banking and microbiology procedures in hospitals, the exact same equipment used by area hospitals. Therefore, students are able to learn on the equipment that they will use in the field. Safety protocols are followed in the exact same manner as they are at hospitals; in fact, clinical site representatives state that LATI students do not require the same amount of safety training as other students because they already know the protocol. Moreover, since the equipment is owned by LATI, students are able to use it in different ways; the students can turn off the automatic functions of the equipment and use it manually. This is also important to employers since learning the manual method is imperative in understanding the process that the machine uses, and it also can be handy in case of malfunction or when a procedure requires only one portion of the process.

Student Success Courses

Another important element to employers regarding the employability of students is the development of soft skills. LATI has developed a series of courses that combine soft skills that employers find useful, such as time management and diversity, and those that are helpful to

¹⁹ Balamuralithara and Woods, "Virtual Laboratories in Engineering Education: The Simulation Lab and Remote Lab," (2007) pg. 110.

²⁰ Ibid, pg. 111.

students trying to balance their studies with other responsibilities, such as study skills, financial responsibility, and substance use. While the courses are not taught by CHEO-funded staff (they are taught by staff employed for the first and third rounds of the TAA grants), they are required for the CHEO MLT students. MLT is one of the six programs at LATI that signed on for the pilot program.

The program is intended to be offered for credit in the future; the current plan is to offer it as a half-credit program. The program is meant to increase student retention as well as to help students develop soft skills that will help them complete their studies successfully and increase their employability. LATI plans to continue the program after the grant periods have ended; offering it as a credit-bearing course will help in funding the program in the future.

Industry Symposium

LATI has also considered sustainability relative to their simulation labs and MLT program as a whole. To prepare and properly plan for sustainability issues, LATI hosted and participated in a symposium of 25 regional industry representatives and educational institutions with MLT programs to discuss labor market shortages, solutions, and sustainability possibilities for the simulation lab. Representatives also toured the lab facilities. Rutgers was present at the symposium via teleconference.

Industry representatives present at the symposium stated that over 50 MLTs are needed in the region per year to replace retirees, add new staff, and replace turnovers. Regional education institutions with MLT programs are unable to meet this labor market need because of low retention of students, low recruitment of students, and the primary reason: lack of clinical sites. The consensus at the symposium was that increasing the number of students using the LATI simulation labs as a replacement for clinical sites would increase the number of graduates entering the job market, thereby filling the labor market need. Other educational institutions could use the simulation labs by partnering with LATI to create sustainability for the lab.

The symposium was a critical first step in moving toward an action plan for industry involvement and a sustainability model for LATI's programs and simulation labs. The symposium resulted in ongoing dialogue, brainstorming, plans for workgroups, and plans for future meetings. LATI is hoping to circumvent sustainability issues by involving industry and educational partners early and opening dialogue, collaboration, and problem solving around labor market needs and sustainability solutions as a preemptive measure.

SUMMARY OF CHALLENGES

Jobs are available in the region, but employees are not. As such, increasing the number of students in the MLT pipeline is a major focus of LATI and industry partners. Because of the addition of the simulation labs, which has in turn opened up new clinical sites, LATI has been able to increase the number of students in the program. However, this is still an issue, and employers in the area would like to see even more students. By increasing the use of the

simulation labs, either through enrolling more students at LATI or training other educators' students, LATI feels that it can increase the number of graduates to fill some of this need. They are working with industry partners and other education institutions to do this. Increasing marketing and student outreach (recruitment) as well as education about the MLT program and employment will help in this as well.

Student retention is a big issue for MLT programs in this region. LATI feels that students often do not realize what an MLT is or does prior to joining the program, so students switching to different programs are common. Students interviewed at LATI echo this, saying that some students who start the program do not finish it, and instead transfer into other programs at the school. The biggest reason for this is that these students do not know what is involved in the program when they start it. One student felt that misinformation was likely to blame: "Most people are like, oh well, I'm going to learn how to poke people and run a machine, and that's it." In part, this could be a reflection of what students are told when they first apply for the program: "I think if more people knew exactly what the job was, more than what they kind of say when people first apply to it, maybe more would stick around or not start it to begin with." LATI also feels that there is such a focus on the oil and gas industry in the region and that students can make so much more money in these industries that it is difficult to compete with them.

Establishing the simulation labs was a huge logistical challenge for LATI. Choosing the equipment, setting it up, getting all the needed supplies in time, and finding space to put everything took time and intense consideration.

Communication at the consortium level has been somewhat challenging for LATI. Several staff members indicated that they wish there were more discussion and sharing among consortium members and more articulation between colleges. While several communication methods are available to the consortium, such as annual face-to-face meetings for project leads, coaches, and instructional designers, "coffee talk" teleconference meetings for coaches, an online Basecamp site for project leads to discuss topics, and other communication methods, some staff members feel that not enough people use them to share ideas. LATI has been working with OJC because it has a similar MLT program, but there could be more collaboration at the consortium level: "With communication, we could facilitate resource sharing." One staff member felt that working as a team could foster ideas and promising practices:

I really believe in collaborating and working online being the best way to solve our problems and find really great things. That's how you get to amazing goals is by working together because just my narrow view is not going to be what's best for MLT. We need to be working together as a team.

Expanding the program to include two separate cohorts (a full-time and a part-time cohort) meant hiring two adjunct faculty members to teach the newly designed courses. The expansion also meant finding additional lab space for students. In addition, instructors were hired to teach

the simulation labs. The logistical issues were challenging, but the expansion has added immense value to the MLT program and students.

SUMMARY OF ACHIEVEMENTS

The development of the simulation labs has been a major achievement for LATI. The labs have allowed students more options for clinical sites, cut wait times, and allowed the college to expand its program and accept more students than previously. These simulations have given students more confidence, exposed them to high-tech hospital equipment before their clinical experience, and given them real-world experience.

LATI has been able to redesign its MLT program, offering a two-year option for students. This is allowing students to complete the program faster and enter the job market sooner.

The college has also greatly increased innovation in its MLT program, decreasing the amount of time that online students must spend on campus. This has increased the ability of in-class students to review material and re-watch lectures online at home.

The symposium held at LATI has opened dialogue with industry and higher education representatives to discuss options for sustainability of the simulation labs and ways to increase the number of students exiting the MLT program.

All three rounds of the TAA grants have benefitted the healthcare programs at LATI, the students they serve, and the college as a whole. LATI has been particularly successful in integrating rounds one and three and building on the achievements of each for the long-term success of the programs.

The addition of new equipment and overall innovations has raised the bar for the MLT and LPN programs. This has led to an increase in student interest in the programs and active engagement by industry and the community as a whole. CHEO staff at the college see the improvements of the programs as necessary to stay competitive: "Prospective students expect to see a certain level of technology and innovation. [We] need it to remain competitive." The college "received some neat equipment and offers some things that are a little bit unique, so it does make [the programs] stand out."

NEXT STEPS

As LATI moves into the third year of the CHEO grant, the college is transitioning from redesign and innovation to expansion and sustainability. NANSLO labs will be incorporated into more courses in the near future, and the college plans to expand its use into other programs beyond the MLT and LPN programs. Final equipment purchases are being made that will make course material easier to distribute electronically and in accordance with OER protocol. As the consortium makes decisions regarding how OER will be shared, LATI is ready to make the transition and share the success of its MLT program.

Sustainability plans for LATI's MLT program include open communication and partnerships with industry and education representatives. The symposium held at LATI was the first step in this process. Creating plans for the simulation labs to be used by employers for incumbent worker training and educational partners for student use will increase the sustainability of the labs. As the grant period nears an end, these plans will be solidified, and the college will consider the associated costs of the labs and plans for other institutions to pay for the use of the labs.

Continuing to build strong industry relations is a primary goal for the college. The marketing and outreach coordinator will continue engaging in outreach activities, going back to industry representatives to market the programs. Her plan is to continue to foster these relationships by meeting face to face and sharing program materials. Likewise, workforce relationships are important to sustainability. By working closely with workforce development to help train employees displaced by recent industry closures, the college is fostering a partnership that will continue to be built in the future. The college knows that building strong relationships with industry and the workforce are the key to the success of the programs.