OREGON TECH - OHSU CLINICAL LABORATORY SCIENCE PROGRAM

2015-2016

Annual Assessment Report

Prepared by
Cara Calvo, MS, MT(ASCP)SH
CLS Program Assessment Coordinator

On behalf of
Dawn Taylor, M.Ed., MT(ASCP)
Department Chair and CLS Program Director

And
The Faculty of the Department of Clinical Laboratory Science

ABSTRACT: An illustrated report of the assessment activities carried out by the faculty of Department of Clinical Laboratory Science, Wilsonville, Oregon during the 2015-2016 academic year. Every attempt has been made to report objective, accurate information. Any errors in reporting are not intentional, and the author welcomes correction when merited.

Clinical Laboratory Science (CLS) Program Assessment Report
2015-2016

I. Introduction

a. HISTORY & LOCATION: Established in 1933 by the Oregon Health and Science University (OHSU) in Portland, Oregon, the nationally accredited* Clinical Laboratory Science program is a university-based, 3+1 program of study culminating in a BS in Clinical Laboratory Science. In 2001, administrative responsibilities for the program transferred to Oregon Tech through a master collaboration agreement between the two universities. Student diplomas identify both Oregon Tech and OHSU as the degree-granting institutions. In brief, Oregon's only baccalaureate CLS program retains the brand identity of OHSU with the administrative support of Oregon Tech.

Today, the program is administered through the Department of CLS which resides on the Oregon Tech Wilsonville, Oregon campus. Here, students admitted to the last year of the degree program (professional year) take coursework that combines a rigorous competency-based science curriculum with community-sponsored clinical training. During the first four terms of the professional year, students complete course work in state-of-the-art-classrooms that include two well-equipped laboratory classrooms and an instrumentation room.

Upon successful completion of the on-campus coursework, students are assigned to one or more program-affiliated laboratories to complete clinical training. During the 16-week clinical training period, students spend 40 hours per week applying knowledge and skills to perform a wide variety of testing in an accredited medical laboratory and to further develop discipline-specific competency under supervision of clinical instructors. Currently, the Department of CLS maintains affiliations with accredited laboratories in Oregon, Washington, Nevada, Idaho, and Arizona. Program graduates are eligible to take the *American Society for Clinical Pathology (ASCP*) *Medical Laboratory Scientist (MLS)* national board certification examination* and to pursue career opportunities in various laboratory settings including but not limited to medical, research, and public health. The Clinical Laboratory Science professional program is accredited by the *National Accrediting Agency for Clinical Laboratory Science (NAACLS)*, 5600 North River Road, Suite 720, Rosemont, Illinois 60018-5119.

b. ENROLLMENT TRENDS: Applications to the program have decreased over the last three years, from a high of 125 in 2013 to 93 received by January of 2016. The number of admitted students remains steady at no more than 50.
c. RECENT NUMBER OF GRADUATES: **35** graduated 12/14/2013; **49** graduated 12/13/2014; **45** graduated 12/11/2015.
d. EMPLOYMENT RATES & SALARIES: 37 of 45 or 82.2% of the class of 2015 self-reported employment as MLS within the six months of graduation. Of the 37 reporting employment, 29 are employed in Oregon, 5 in Washington State, 2 in Nevada, and 1 in Arkansas. Graduate exit survey data indicates the average starting annual salary for a 2015 CLS program graduate to be $57,301. In a minority of instances, graduates were paid a sign-on bonus of $3000.
e. PASS RATES ON NATIONAL BOARD EXAM: The three year (2013 – 2015) average pass rate for program first time examinees is 93.3**%.** The pass rate for the class of 2015 first time-examinees is 91.1% while the pass rate for all attempts is 96%. The exam includes the following seven subtest areas: 1) Transfusion Medicine and Blood Banking (BBNK); 2) Chemistry (CHEM); 3) Hematology and Hemostasis (HEMA); 4) Immunology (IMMU); 5) Laboratory Operations (LO); 6) Microbiology (MICR); and, 7) Urinalysis (UA).

II. Program Purpose, Objectives, and Student Learning Outcomes

A. *The CLS program faculty* met October 19, 2015 and discussed assessment activities for the 2015-2016 year. The program purpose, objectives, and student learning outcomes were reviewed and affirmed as the following:

Faculty & Staff Commitment

We, the faculty and staff of the Oregon Tech • OHSU CLS program, as professionals and educators, are committed to providing our students with experiences that prepare them to practice as scholastically accomplished and competent Medical Laboratory Scientists. To that end, we acknowledge our responsibility and pledge our commitment to:

Program purpose, objectives, and student learning outcomes - continued

- Demonstrate professionalism through our words and actions
- Provide knowledge-building, skill-developing experiences for all our students
- Create equal opportunity learning environments within which all our students are educated in an atmosphere of fairness and impartiality
- Foster students' commitment to lifelong learning
- Endorse student participation in professional organizations
- Promote student scholarship and professional achievement
- Contribute to the ongoing development and growth of medical laboratory science pedagogy through faculty participation in scholarship, service, and outreach

Program purpose, mission, objectives, and student learning outcomes (SLOs)

Program Vision

Our vision is that the Oregon Tech • OHSU CLS program continue as a center of excellence in medical laboratory science education, graduating a Medical Laboratory Science workforce in demand.

Program Mission

The mission of the Oregon Tech • OHSU Clinical Laboratory Science Program is to educate, train, and graduate professionally competent and ethical individuals, committed to life-long learning, and who are prepared to meet current and future workplace challenges in medical laboratory science.

Program Goals

The goals of the Oregon Tech • OHSU CLS program are to:

1. Advance an innovative curriculum that meets current and emergent pedagogical and professional development needs of students
2. Identify, establish, and maintain partnerships with community medical laboratories that provide exceptional educational experiences
3. Provide learning experiences rich in opportunities that maximize every student's potential to achieve MLS career entry-level competencies
4. Graduate competent MLS that meet the workforce needs of Oregon and underserved regions of the nation
5. Contribute to the advancement of MLS pedagogy and growth of the profession

Student Learning Outcomes

Upon completion of the Oregon Tech • OHSU CLS a student will have had opportunity to acquire knowledge and skills, and develop professional attributes of a Medical Laboratory Scientist. Consequently, at the time of graduation, students will be able to demonstrate:

1) Competency to perform a full range of testing in the contemporary medical laboratory encompassing pre-analytical, analytical, and post-analytical components of laboratory services, including hematology, chemistry, microbiology, urinalysis, body fluids, molecular diagnostics, phlebotomy, and immunohematology;
2) Proficiency to problem-solve, troubleshoot, and interpret results, and to use statistical approaches when evaluating data;
3) Professional conduct, respecting the feelings and needs of others, protecting the confidence of patient information, and not allowing personal concerns and biases to interfere with the welfare of patients.
4) Administrative skills consistent with philosophies of quality assurance, continuous quality improvement, laboratory education, fiscal resource management, and appropriate composure under stressful conditions.
5) Application of safety and governmental regulations and standards as applied to medical laboratory practice.
6) Effective communication skill to ensure accurate and appropriate information transfer.

Program purpose, objectives, and student learning outcomes - continued

B. The *CLS Program Advisory Committee* met May 17, 2016. Discussion focused on 3 impactful topics:

1) The disappearance of clinical microbiology externship training sites; 2) Online program offerings, including but not limited to degree completion for MLT to MLS; and 3) Laboratory information systems: incorporation of subject matter into current professional program and creating a specialization or certificate program.

c. ***Noted assessment changes 2015 - 2016:***
In June of 2015, two of the five fulltime CLS faculty left Oregon Tech. Additionally, in July 2016 the Department experienced a change the Department Chair and in December, a change in the Program Director. As a consequence of these impactful changes, faculty decided not to participate in assessment of diversity perspectives (ISLO 2015-2016).

III. Three-Year Cycle for Assessment of Student Learning Outcomes (SLO)

The CLS faculty/staff affirmed the assessment plan listed in Table 1. Until the program advisory board and the program faculty have a chance to review the NAACLS accreditation standards and fully integrate them into the program assessment plan, a final decision on a definitive 3-year assessment SLO cycle is pending further discussion.

Table 1 Assessment of Clinical Laboratory Science Program SLO by Year

Student Learning Outcomes	**Assessment of SLO by Year**		
	2013-2014	2014-2015	2015-2016
1. Competency to perform a full range of testing in the contemporary medical laboratory encompassing pre-analytical, analytical, and post-analytical components of laboratory services	**Direct**	• **Direct** 1. ASCP Board Examination Scores • **Indirect** 2. NAACLS Accreditation Summary Report NAACLS Outcome Measures: 3. Graduation Rates 4. Graduate Placement Rates a. Attrition	• **Direct** 1. ASCP Board Examination Scores • **Indirect** NAACLS Outcome Measures: 2. Graduation Rates 3. Graduate Placement Rates 4. Attrition
2. Proficiency to problem-solve, troubleshoot, and interpret results, and to use statistical approaches when evaluating data	**Direct**		
3. Professional conduct and ethical behavior, respecting the feelings and needs of others, protecting the confidence of patient information, never allowing personal concerns and biases to interfere with the welfare of patients	**Not Assessed**		
4. Administrative skills consistent with philosophies of quality assurance, continuous quality improvement, laboratory education, fiscal resource management, and appropriate composure under stressful conditions	**Direct & Indirect**		
5. Application of safety and governmental regulations and standards as applied to medical laboratory practice	**Not Assessed**		
6. Effective communication skill to ensure accurate and appropriate information transfer	**Direct**		

IV. Summary of 2015-2016 Assessment Activities

1. DIRECT MEASURE: National Board Exam - *NAACLS Standard IIB1: A review of the results of the external certification or licensure results from at least the last three active years must be documented, analyzed and used in program assessment*
   - ***NAACLS Benchmark*** for accredited programs: three years consecutive results of graduate certification rates demonstrate an average at least 75% pass rate on the ASCP-BOC examinations, for those who take the exam within the first year of graduation as calculated by the most recent three year period. Three year averages should be calculated using raw student numbers.
   - ***Program action:*** At the end of spring term 2016, program faculty assessed professional program graduates using results from the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) Medical Laboratory Scientist (MLS) exam.
   - ***Strengths and Weakness in Student Learning***: Results of graduate certification rates for the most recent three years demonstrate an average pass rate on the ASCP BOC MLS exam well above the NAACLS benchmark of at least 75% (program average pass rate for the last 3 years is 93.3% for first-examinees) for those who take the exam within the first year of graduation. Program student pass rates was also well above those for all University MLS first –time examinees (91.1% versus 79.19%, respectively) and for National MLS first-time examinees (91% versus 78.85%, respectively). *Weakness*: a drop in the average mean score: in 2013 the score was 553 but in 2015 the score was 538.
     NOTE: ASCP calculates and reports data for first-time examinees while NAACLS's benchmark includes all examinee attempts.
   - ***Recommendations for Improvements:*** Faculty made no recommendations for improvements to the program curriculum at this time. Records on assessment activities are kept in the Office of the CLS Department Chair and may be found in individual student records maintained in the CLS program office.

Oregon Tech • OHSU CLS Program 1st Time Examinees ASCP Board Examination Outcomes (MLS) 2013- 2016			
CYCLE: Class 2013	**Program**	**Universities**	**National**
Number of Examinees	34	2760	3892
Mean Scaled Score	553	502.5	503.5
Number Passing (Percent)	33 (97.1%)	2352 (85.2%)	3301 (84.8%)
Number Failing (Percent)	1 (2.9%)	408 (14.8%)	591 (15.2%)
CYCLE: Class 2014	**Program**	**Universities**	**National**
Number of Examinees	48	2871	3994
Mean Scaled Score	530.5	496	495
Number Passing (Percent)	44 (91.7%)	2336 (81.4%)	3249 (81.3%)
Number Failing (Percent)	4 (8.3%)	535 (18.6%)	745 (18.7%)
CYCLE Class2015	**Program***	**Universities ****	**National****
Number of Examinees	45	2903	4056
Mean Scaled Score	538	489	488
Number Passing (Percent)	91.1%	79.19%	78.85%
Number Failing (Percent)	8.9%	20.81%	21.15%

*Data for those taking the exam between December 2015 and June 2016; **Data for those taking the exam between January and December of 2015

Summary of Assessment activities – continued

2. *INDIRECT MEASURES:*

A. *Graduation rates, placement rates, and attrition rates from the last three active years*

- ***NAACLS Benchmark for graduation rates:*** three years consecutive results of graduation rates demonstrating an average at least 70% of students who have begun the final half of the program go on to successfully graduate from the program as calculated by the most recent three year period.
    - ***NOTE:*** Our program consists of 5 consecutive quarter-terms. Students start in the fall and complete the program at the end of the following fall term. Accordingly, the program determine the final half of the program to be when students begin the spring or third term of the five terms of the program.

	Class of 2013	**Class of 2014**	**Class of 2015**
No. starting third term of program	35	49	45
No. graduates	35	49	45
Graduation Rate (%)	100	100	100

- ***NAACLS Benchmark for placement rates***: three years consecutive results of graduate placement rates demonstrating that an average of at least 70% of respondent graduates either find employment in the field or a closely related field, or continue their education within one year of graduation.

	Class of 2013	**Class of 2014**	**Class of 2015**
No. Graduates	35	49	45
Graduates self-reporting employment in the field	34	44	40
Placement Rate (%)	97.1	89.7	88.9%
3-year average: ≥ 91.9%			

- **Attrition** (last three consecutive years)

	Class of 2013	**Class of 2014**	**Class of 2015**
No. of students admitted	36	50	46
No. of students who did not graduate	1	1	1
Attrition (%)	2.8	2.0	2.2

Recommendations for Improvements: Faculty made no recommendations to make changes to the program at this time. Records on assessment activities are kept in the CLS Program Office and the Office of the CLS Program Director.

Table 2 – Clinical Laboratory Science Curriculum Map

Term	Course Number	Course Title	Credits
FALL	*CLS 420*	*Clinical Immunology*	4
	CLS 432	*Foundations of CLS I*	4
	CLS 424	*Hemostasis*	3
	CLS 444	*Microbiology I*	6
Term	**Course Number**	**Course Title**	**Credits**
WINTER	CLS 415	Clinical Chemistry I	6
	CLS 447	*Clinical Chemistry Lab*	6
	CLS 445	*Microbiology II*	4
	CLS 449	*Principles of Urinalysis*	3
Term	***Course Number***	***Course Title***	**Credits**
SPRING	CLS 416	*Clinical Chemistry II*	2
	CLS 442	*Hematology I*	6
	CLS 443	*Immunohematology I*	4
	CLS 446	*Microbiology III*	4
Term	**Course Number**	**Course Title**	**Credits**
SUMMER	*CLS 422*	*Molecular Diagnostic Methods*	3
	CLS 448	*Infectious Serology*	1
	CLS 452	*Hematology II*	5
	CLS 453	*Immunohematology II*	2
	CLS 457	*Adv. Chemistry/Immunology Concepts*	2
	CLS 462	*Foundations of CLS II*	2
Term	***Course Number***	***Course Title***	**Credits**
FALL (2^{nd} year)	*CLS 470*	*Chemistry and Immunology Externship*	4
	CLS 471	*Hematology Externship*	4
	CLS 472	*Microbiology Externship*	4
	CLS 473	*Immunohematology Externship*	3
	CLS 463	*Foundations of CLS III*	1
		Total Credits	83