

OHIO NORTHERN UNIVERSITY
2006 ANNUAL REPORT ON THE ASSESSMENT OF STUDENT LEARNING

Academic Program: Clinical Laboratory Science

Department: Biological and Allied Health Sciences

College: Arts and Sciences

Submitted by/Date: Department of Biological and Allied Health Sciences – 12/1/2006

The Annual Report on the Assessment of Student Learning consists of three parts.

Part I provides the mission, learning objectives, and measures as previously identified.
Part II requests information about assessment activities for the previous academic year.
Part III requests information about programmatic or operational changes occurring or being proposed as a result of assessment activities.

Reports must be submitted by department chairs to the Office of Institutional Research by **December 31, 2005**. Each annual report will be evaluated by the University Assessment Committee and returned to the department chair and the respective Dean.

I. ASSESSMENT PROGRAM COMPONENTS

Instructions: Please review the following and make changes as needed.

A. Statement of Purpose/Mission

The mission of the West Central Ohio Clinical Laboratory Science Program is to educate students in the clinical laboratory sciences, preparing them to practice as ethical and competent professionals, and enabling them to meet whatever job-related challenges arise now and in the future.

B. Program Description

The West Central Ohio Clinical Laboratory Science (WCOCLS) program is an admissions-restricted one comprising the four quarters, end-year experience for those pursuing the BSCLS degree or the Post Baccalaureate certificate. During the first two quarters, students complete didactic coursework in seven discipline areas of the clinical laboratory sciences: hematology and hemostasis, clinical chemistry, clinical microbiology, clinical immunology, blood banking and transfusion science, and biological fluids, and professional practice and development. The second two quarters represent the clinical phase. Students are assigned to an affiliate laboratory (Lima Memorial Hospital) to complete rotations. Each rotation is between two (i.e., immunology and infectious diseases) and four weeks (i.e., hematology, chemistry, blood banking, and microbiology) in length. Each student is under daily supervision of a clinical instructor and course supervision by the program director. During this clinical phase of the program, students learn to apply the theory and principles of clinical laboratory science to real world practice in an accredited clinical laboratory.

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C. Learning Objectives

Graduates of the West Central Ohio Clinical Laboratory Science Program will be able to:

1. Competently perform a full range of testing in the clinical laboratory encompassing the areas of but not limited to blood banking, clinical chemistry, hematology and coagulation, clinical microbiology including virology, mycology, and parasitology, clinical immunology, and molecular diagnostics.
2. Actively participate in the development, implementation and evaluation of test methods.
3. Assume responsibility for analysis and clinical decision-making, compliance with and promotion of applicable regulations, professional development and quality improvement wherever lab testing is researched, developed or performed.
4. Demonstrate basic knowledge, skills and possession of relevant experiences in:
 - a. Communications to enable consultative interactions with members of healthcare teams, external relations, customer service and patient education;
 - b. Clinical Laboratory finance, operations, marketing and human resource management to enable cost-effective, high-quality, value-added laboratory services;
 - c. Information technology to enable effective, timely, accurate and cost-effective reporting of laboratory-generated information, and;
 - d. Research design and practice sufficient to evaluate published studies as an informed consumer.

D. Measurements

Direct Measures

1. Course Grades
2. National Certification Examination

Indirect Measures

3. Graduating Student Surveys
4. Alumni Surveys
5. Employer Surveys

II. ASSESSMENT ACTIVITIES FOR 2004-05 (ACADEMIC YEAR)

Instructions: Please complete the following sections.

A. Identify which *learning objectives* were measured during the previous academic year.

Objectives 1 - 4

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B. Describe the *measures* used to collect the data on the program's learning objectives?

(Which measures did you use during the past year? How and when did you administer the measures? Which learning objectives does each measure address?)

The NATIONAL CERTIFICATION EXAMINATION is administered by the American Society for Clinical Pathology (ASCP) Board of Registry (BOR). Students are encouraged to apply for and take the exam as soon after completion of the program as possible. Students in the class of 2006 took the exam between September and December 2006. The goal is that $\geq 80\%$ of the students will pass the exam on their first attempt. LEARNING OBJECTIVES ADDRESSED – 1 through 4.

SURVEYS (Graduate, Alumni, and Employer) are made available on-line via the National Institute for Science Education's (NISE) Student Assessment of Learning Program. Graduating students complete the exit interview survey within the two weeks prior to completing the program. Alumni are surveyed one year ± 2 weeks after finishing the program. Employers are also surveyed one year ± 2 weeks from the time a graduate begins employment. The goal is to graduate knowledgeable, skillful and ethically demonstrative clinical laboratory scientists employed in the underserved areas of Ohio and regions of need. LEARNING OBJECTIVES ADDRESSED – 1 through 4.

C. Present the *results* of the data collection and analysis for each measure listed above.

(How and when was the data analyzed? Were the objectives for student learning met? If so, provide the data that demonstrates the objectives were met. If not, what gaps were found between the objectives and the actual outcomes? Provide the data that illustrates the gaps.)

CERTIFICATION EXAM – The American Society for Clinical Pathology (ASCP) Board of Registry (BOR) exam provided a program performance report (December 15, 2006) on students taking the exam between September and December 2006. The report was reviewed by the program director and forwarded to the program advisory committee. A complete analysis of the data will be undertaken by the program director and the advisory board upon receipt of a summary report from the BOR (January 2007).

All three students (100 %) of the graduated class of 2006 passed the ASCP exam on their first attempt. *Learning objectives been met!* Report data is shown in table 1.

ASCP BOR Exam Scores for the CLS Program Class of 2006

Performance of First Time Examinees									
Attempt	BBNK	CHEM	HEMA	IMMU	LO	MICR	UA	TOTAL	STATUS
1	623	552	388	506	716	708	599	570	PASS
1	518	300	494	748	383	286	438	423	PASS
1	631	578	630	569	491	528	617	585	PASS

BBNK = Blood Banking; CHEM = Clinical Chemistry; HEMA = Hematology and Hemostasis; IMMU = Immunology; LO = Laboratory Operations; MICR = Clinical Microbiology (Bacteriology, Parasitology, Mycology and Virology); UA = Urinalysis and Body Fluids

C. Results - continued

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SURVEYS – Data was examined during the annual program review in May 2006. Results of surveys are shown in tables 2 - 4. *Learning Objectives have been met!*

Table 2 – Exit Survey of Graduated Class of 2006 (N = 3)

QUESTION	RESULT
Employment status at graduation	Full-time CLS = 100 %
Employer location	Ohio, Local = 67 % Ohio, Regional = 33%

Table 3 – Alumni Survey: Graduated Class of 2005 (N = 3)

QUESTION	RESULT
Employment status	Full-time CLS (3 of 3 = 100 %)
Employer location	United States – FL, HI = 67 % International – Mongolia = 33%
<i>To what extent did your CLS education:</i>	
1. Provide the knowledge and skill necessary for you to succeed at your job?	Great deal = 67% A fair amount = 33%
2. Prepare you to perform a full range of testing in the clinical lab?	Great deal = 67% A fair amount = 33%
3. Prepare you to actively participate in the development, implementation & evaluation of test methods?	Great deal = 67% A fair amount = 33%
4. Prepare you to assume responsibility for analysis & decision-making?	Great deal = 33% A fair amount = 67%

Table 4 – Employer* Survey: Classes of 2004 and 2005 (N = 3)

QUESTION	RESPONSE
1. Employee’s academic preparation compared to all other employees from other institutions providing same/equivalent education	100 % responded “Better prepared than all others”
2. To what extent has the employee fulfilled your expectations for a knowledgeable, skilled, and ethical CLS professional?	67 % responded “Exceeds Expectations”
3. How well prepared was the employee to take on the responsibilities of the position?	100 % responded “Excellent to exceptionally”
4. Would you recommend that your organization hire ONU CLS program graduates in the future?	100 % responded “Yes”

* 1 Hospital, 1 Commerical/For-profit Medical Lab, 1 Specialty Medical Lab

C. Results - continued

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A key question that appears on all surveys is: “Program mission: to educate students in the clinical laboratory sciences, preparing them to practice as ethical and competent professionals, and enabling them to meet whatever job-related challenges arise now and in the future. Mission accomplished?” This question was answered ‘yes’ by 100% of the respondents (graduates, alumni, and employers).

III. PROGRAMMATIC /OPERATIONAL ADJUSTMENTS

Instructions: Please complete the following sections.

A. Describe the *adjustments*, if any, to the program or the program’s operations (including budgetary) which are either being proposed or have already been made in order to narrow the gaps identified between learning objectives and actual outcomes. (What changes in curriculum, instructional strategies, course content, personnel, facilities, equipment, resource allocation, etc. are recommended to address each identified gap?)

Assessment tools in place for the 2005 - 2006 academic year indicate sufficient progress is being made by program students to allow all first-time examinees to pass the ASCP BOR certification exam and enter the job market. Enrollment in the CLS major remains steady. Employer surveys indicate that the critical shortage of qualified CLS professionals remains an advantage for our graduates. Recruitment by local, regional and national employers occurs, with increasing frequency, earlier each year.

Nevertheless, based on input from employers, alumni, graduating students, and program adjunct faculty, a few changes to instructional strategies, but no changes to the curriculum, have been initiated, effective Summer 2006. (The program director and adjunct faculty are of the opinion that the curricular adjustments made last year are validated, and at least partly responsible for the improved student performance on the ASCP BOR for this year.) These adjustments were made to sustain grade continuity between didactic and clinical courses, and enhance student clinical experiences. It is expected that these changes will help ensure continued quality learning experiences for program students as reflected by improved scores and pass rates on board certification exams.

Changes Made

1. The final letter grade for each practicum course reflects the score a student receives on the final exam – no more weighted value distribution for competencies and professional performance evaluations. However, to successfully complete a rotation, each student must:
 - Take the final exam and receive a score of 75% or better, and
 - Receive a final rating of average or better on the competency evaluation, and
 - Receive a final rating of average or better on professional performance evaluation.
2. Use additional clinical affiliates: Place no more than 2 students at Lima Memorial.

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B. Describe the *changes* that need to be made to the assessment plan and practices for the future? (Have questions been raised about the effectiveness of the assessment plan? If so, what changes are needed? Are different objectives, measures, analysis, etc. needed?)

No questions regarding the effectiveness of the assessment plan have been raised at this time by the university, the program's advisory committee, or the program adjunct faculty. In accordance with mandates of its national accreditation, the WCOCLS program submitted, on October 13, 2006, to the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) a progress report documenting compliance with the following NAACLS standards:

18. Systematic Review

There must be a mechanism for continually and systematically reviewing the effectiveness of the program to include survey and evaluation instruments that incorporate feedback from a combination of students, employers, faculty, graduates, exit or final examinations, and accreditation review.

19. Outcome Measures

A review of outcomes measures (e.g. external certifying examination results, results from capstone projects) from the three preceding years must be documented, analyzed and used in the program evaluation.

20. Graduation and Placement Rates

A review of graduation rates and placement rates must be documented, analyzed and used in the program evaluation.

21. Program Evaluation and Modification

The results of program evaluations must be documented and reflected in ongoing curriculum development and program modification, followed by an analysis of the effectiveness of any changes implemented.

It is anticipated that concerns, if any, about the effectiveness of the program's assessment plan will be forthcoming from the NAACLS Programs Review Committee at its meeting in February, 2007.