

Program Review Report

for

Clinical Laboratory Science

[CIP code 51.1005]

at

Florida Gulf Coast University

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Introduction

The Department of Environmental Health, Molecular and Clinical Laboratory Sciences (EHMCS) presents this program evaluation to the Board of Regents Office of Academic and Student Affairs. This report, mainly through its related documents (the NAACLS self-study, and the CLS Integrative Program Matrix IPM)¹, provides information and data for the 'Elements of Program Review' as specified by the Board of Regents.

The Department of EHMCS offers upper division program leading to a Bachelor of Science degree in Clinical Laboratory Science for first time in college students as well as articulated students who are practicing medical laboratory technicians or associate degree holders. The department also offers a post baccalaureate certificate program in clinical laboratory science and molecular biology.

In October 31, 2000 the program received her accreditation from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The program was awarded initial accreditation for five years. During the period since then, there have not been any major changes in the program, apart from a change in program directorship.

There are 5 full-time faculty members, and a faculty assistant. Four of these hold doctoral degrees. The total number of students enrolled in the program is 58.

In general, assessment indicators show student satisfaction with the program, and it is our hope that the number of students enrolled in the program will continue to grow. There is a continual effort to aggressively pursue student recruitment into the program.

¹ Attached as appendices and 'pdf' files

Elements of the Program Review

I. Overview, Mission, and Program Description

Program Overview

The Department of Environmental Health, Molecular and Clinical Sciences offers three undergraduate program concentrations in Clinical Laboratory Technology, Articulated Clinical Laboratory Technology, and Biotechnology/Pre-professional leading to Bachelor of Science degrees in Clinical Laboratory Science. In addition, a Laboratory Specialist in Molecular Biology certificate program is available for post-baccalaureate students. The Department strives to provide outstanding educational experiences for entry level or advanced positions in the clinical laboratory, research or biotechnology environments. Academic programs combine a foundation in basic sciences with hands-on clinical and research experiences at the university and partnered regional laboratories. Graduates of the program will be joining a dynamic and expanding health profession or embarking on additional education in graduate school or professional schools for medicine, veterinary medicine, or dentistry.

Mission

The mission, goals, objectives and description of the Department of EHMCS are in line with those of the College of Health Professions and the University. The mission statement is reproduced below. Following that is a list of the responsibilities of the Department of EHMCS to the CLS program, within the framework of the mission statement.

The Florida Gulf Coast University College of Health Professions
Department of Environmental Health, Molecular, and Clinical Sciences
embraces the mission of providing an exemplary education for students to

enter or advance existing careers as professionals in the clinical laboratory, research or biotechnology environments. Central to the department mission is the commitment to student-centered teaching and learning, advancement of community-partnered curriculum, service and scholarship in an atmosphere of diversity and respect. The academic programs are technologically advanced in delivery and practice to address the needs of the student population. This mission is accomplished by providing curricula that are interdisciplinary based and professionally centered, balanced in the basic sciences and enhanced with progressive clinical practice applications. The department is committed to provide continued learning opportunities to the professional laboratory community. The Department of Environmental Health, Molecular, and Clinical Sciences is dedicated to educating competent, qualified and ethical professional practitioners for the regional, state, and national laboratory communities of today and tomorrow.

Within this mission the Department of Environmental Health, Molecular, and Clinical Sciences has the responsibility to:

- Demonstrate exemplary qualities of professionalism, leadership, integrity and compassion through which the student can understand the service, dedication, and continual learning in his/her chosen field.
- Provide a curriculum with clinical experience by professional and qualified educators under which the abilities of critical thinking can develop and mature.
- Involve students in community-partnered laboratory affiliates for professional and progressive laboratory experience.
- Ensure that all students are selected and educated in an atmosphere of fairness and equality.
- Encourage student and faculty involvement in professional organizations that enhance and promote the field of clinical laboratory science.

- Foster continuing education as a source of lifelong learning.
- Promote active participation of faculty and students in community-based service.
- Foster active participation of faculty and students in collaborative and interdisciplinary, scholarly and research activities.
- Provide an educational experience for the clinical laboratory science student that upon graduation will enable him/her to display entry level competencies of the profession, successfully compete for licensing and certification examinations, and be competitive for career opportunities.

Program Description

The Clinical Laboratory Science profession offers a diversity of challenging and rewarding career opportunities in science and medicine. Clinical Laboratory Scientists develop, perform, and evaluate biological and chemical analyses which lead to the assessment of health, diagnosis of disease, and the monitoring of therapeutic treatments. Educational experiences in Clinical Laboratory Science blend a basic science curriculum with clinical instruction in community laboratories to build a strong foundation for the clinical laboratory scientist. Graduates of the Clinical Laboratory Science program are prepared to enter or advance existing careers as professionals in the clinical laboratory, research or biotechnology environments. With the completion of the clinical practica, the graduates are eligible for various national professional certification examinations such as the American Society of Clinical Pathology [MT (ASCP)] or the National Certifying Agency [CLS (NCA)] and the Florida licensure examination for the Clinical Laboratory Technologist. The Clinical Laboratory Science program at Florida Gulf Coast University was established for student admission in Fall 1998. This program is under proposal for approval for accreditation by the National Accrediting Agency for Clinical Laboratory Science and approval by the State of Florida Agency for Health Care Administration.

Areas of Concentration

The Clinical Laboratory Science program at Florida Gulf Coast University is a university-integrated 2+2 program. During the first 60 credit hours of coursework, students complete lower division courses including general education requirements and common course prerequisites for Clinical Laboratory Science distributed across the State University System (SUS). Students continue their upper division coursework in the Department of Clinical Laboratory Science. Education in clinical laboratory science encompasses the following concentrations:

- **Clinical Laboratory Technology**
Prepares students for national certification as clinical laboratorians and Florida licensure as Clinical Laboratory Technologist.
- **Articulated Clinical Laboratory Technology**
Prepares practicing clinical laboratory technicians or associate degree students for completion of the baccalaureate degree, national certification as clinical laboratorians and Florida licensure as Clinical Laboratory Technologist or Supervisor.
- **Biotechnology/Preprofessional**
Prepares students for careers in diagnostic molecular biology, medicine, dentistry, veterinary science, or graduate school. Students completing practicum requirements may qualify for the national certification examination in Molecular Diagnostics.
- **Certified Laboratory Specialist in Molecular Biology**
Designed to provide a certificate in biotechnology/molecular diagnostics to clinical laboratorians, microbiologists, molecular biologists, and others seeking training or certification in molecular biology. Upon completion of the

concentration, students are eligible to take the NCA examination as a Certified Laboratory Specialist in Molecular Biology.

Further detailed descriptions of curriculum, courses, student requirements, etc. begin on page 31 of the enclosed NAACLS 'Self-study' document.

II. Goals, Outcomes, Data Collection and Analysis

Goals and Outcomes

The department's student learning goals and outcomes are set out below.

As a reflection of the Department of Environmental Health, Molecular and Clinical Sciences faculty leadership and exemplary curriculum, program graduates will be able to:

1. Demonstrate the integration of art and science in professional practice.
2. Integrate individual, social, cultural, and intellectual diversity with openness in which multiplicity and difference are viewed with tolerance and equity in the local and global communities.
3. Promote and practice safety procedures including universal precautions in the environment; ensure safe working environment for personal safety and the safety of coworkers, other health care professionals, the patient, and the public; and practice ecologically sound disposition of chemical and biohazard waste.
4. Engage in effective communication as individuals and as members of the team by listening, speaking, and writing in the transfer of ideas and knowledge.
5. Practice high standards of ethical behavior in daily interactions with other personnel, patients, and the public; maintain confidentiality of reports and records at work and in the community; exercise honesty and integrity in the performance of all tasks.
6. Maintain a scholarly environment through formal and informal discussions, presentations, and attendance at workshops and meetings; recognize multiple

resources for investigation in the evaluation of new procedures and information; and embrace the need for continued learning to maintain competency in the rapidly expanding professions.

7. Apply critical thinking skills to integrate knowledge in problem solving to outcomes through deductive, inductive, and inferential reasoning.
8. Incorporate technological advances in the practice of science testing and embrace information system technology for the dissemination of information; utilize technology as a resource for information gathering.
9. Demonstrate understanding of the role of teamwork; utilize knowledge to facilitate and enhance community awareness of health issues and promote healthy lifestyles by example, dissemination of information, and active community participation.

(for Clinical Laboratory Technologists only)

10. Demonstrate competency as set forth in the *Essentials of Accredited Educational Programs for the Clinical Laboratory Scientist*©, 1995, by the National Accrediting Agency for Clinical Laboratory Sciences®. Clinical Laboratory Scientists/Medical Technologists are competent in:
 - a. developing and establishing procedures for collecting, processing, and analyzing biological specimens and other substances;
 - b. performing analytical tests of body fluids, cells, and other substances;
 - c. integrating and relating data generated by the various clinical laboratory departments while making decisions regarding possible discrepancies;
 - d. confirming abnormal results, verifying quality control procedures, executing quality control procedures, and developing solutions to problems concerning the generation of laboratory data;
 - e. making decisions concerning the results of quality control and quality assurance measures, and instituting proper procedures to maintain accuracy and precision;
 - f. establishing and performing preventive and corrective maintenance of equipment and instruments as well as identifying appropriate sources for repairs;

- g. developing, evaluating, and selecting new techniques, instruments and methods in terms of their usefulness and practicality within the context of a given laboratory's personnel, equipment, space and budgetary resources;
- h. demonstrating professional conduct and interpersonal skills with patients, laboratory personnel, other health care professionals, and the public;
- i. establishing and maintaining continuing education as a function of growth and maintenance of professional competence;
- j. providing leadership in educating other health personnel and the community;
- k. exercising principles of management, safety, and supervision;
- l. applying principles of educational methodology, and
- m. applying principles of current information systems.

Data Collection and Analysis

The above listing of goals will provide the basis of the system of assessment to determine program effectiveness that is now being set up. The Integrative Program Matrix (IPM) attached to this document, shows how program content facilitates student achievement of the goals set.

Results of student performance on external certification examinations will also be used in these assessments, and we have begun to receive information on this for our first groups of students. The pass rate of our graduates in the National Certification Agency examination for Clinical Laboratory Science has been 100%.

Resources

A full description and enumeration of resources may be found on pages 16 - 30 of the self-study document. It covers program leadership, faculty, and instructional and physical resources.

Other details - on program functioning and assessment - are found in the following sections of the self-study:

Operational Policies	59 – 63
Program Evaluation	64 – 67

III. Strengths, Opportunities and Barriers

At this point in our growth process, we see more strengths and opportunities and few barriers. The strength of the program may be recognized through the collaborations we have forged with our affiliates in ensuring that our students receive the best education.

We have a team of very dedicated clinical instructors who have fully complemented the efforts of our department faculty members. We have the resources we need and the university and College of Health Professions have been very supportive. We are confident that the university and the College of Health Professions will continue to offer the necessary support.

The program is fully accredited for the full five years by NAACLS, and we have a highly qualified very motivated faculty who are very devoted to providing quality training for our students. All of these factors combine to produce a very effective program of study.

Barriers to achieving these goals include possible budget cuts, which may impact on our ability to obtain needed resources for laboratory exercises.

IV. Recommendations

Additional faculty may be needed as we develop new programs and courses as the department grows, and this potential for growth should be recognized.

- There should be support for faculty research opportunities and grant writing.
- We also recommend that money be set aside for obtaining reagent and laboratory materials and servicing lab equipment.

V. Continuous Improvement

Program evaluation is ongoing. The program evaluation activities being phased in are listed on page 64 – 67. The first survey of graduates from the program will be conducted in summer 2001. This will give the faculty and the administration a feel for how well we are preparing our students for entry into their new profession.

A set of steps has been established to ensure quality, and maintain the process of continuous improvement. These steps are listed at the end of the self-study document (Essential #23, pp. 67).