

# Medical Laboratory Science Program 2011-2012



Accredited by  
the National  
Accrediting  
Agency for Clinical  
Laboratory Sciences

# Medical Laboratory Science Program at Mercy Medical Center

## Mission

The Mercy Medical Center – Sioux City Medical Laboratory Science Program is committed to providing didactic and practical instruction, which will allow our students to acquire the knowledge, skills and attitudes necessary to attain a high level of competency in the practice of medical laboratory science. This program is accredited by the National Accrediting Agency for Clinical Laboratory Science.

The majority of students enrolled in the program are college seniors from formally affiliated colleges. This program will complete the requirements for the Medical Technology/Clinical Laboratory Science/ Medical Laboratory Science baccalaureate degree. Other students are those who have obtained a baccalaureate degree prior to entry.

Graduates of this program are eligible to take a national certifying examinations given by the American Society of Clinical Pathologists (ASCP) Board of Certification.

## Mercy Medical Center – Sioux City

Living the traditions, visions and values of the Sisters of Mercy, Mercy Medical Center–Sioux City has grown into a 238-bed (staffed) regional center that meets the needs of residents in a 33-county area. Mercy is the only Level-II Trauma Center in western Iowa and is one of only four trauma care facilities in the state of Iowa to receive verification from the American College of Surgeons.

Mercy provides an entire continuum of preventive, primary, acute and tertiary healthcare services and is nationally recognized in several clinical areas. Mercy Medical Services, a partner to the medical center, operates 30 family practice and 9 specialty clinics in Iowa and Nebraska. Additionally, Mercy owns Baum Harmon Mercy Hospital in Primghar, Iowa and Oakland Mercy Hospital in Oakland, Nebraska, and manages Hawarden Community Hospital in Hawarden, Iowa, and Pender Community Hospital in Pender, Nebraska. Mercy Medical Center–Sioux City is a member of Trinity Health of Novi, Michigan, the fourth largest Catholic healthcare system in the nation.

## The Medical Laboratory Science Program

The Medical Laboratory Science Program in the clinical laboratory at Mercy Medical Center was established in 1941 and is accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

The year of professional study begins in August and the average class size is four students. The curriculum consists of didactic classroom lectures, and clinical instruction by certified medical technologists/medical laboratory scientists in all areas of the laboratory. The lecture portion of the program is given in conjunction with the St. Luke's College/St. Luke's Regional Medical Center Medical Laboratory Science Program. The two hospitals are approximately 1.5 miles apart.

Students are assigned to clinical rotations in the Mercy Medical Center hospital laboratory and the Dunes laboratory locations. The hospital laboratory is located on the fifth floor and serves inpatients, as well as surgical, trauma and outpatients. The Dunes laboratory site is located in a medical office park located approximately 6 miles from the hospital on I-29 in Dakota Dunes, SD. Both laboratory sites are equipped with instrumentation that allows laboratory personnel to perform a wide variety of tests accurately and precisely, and on a timely basis. Areas of testing include chemistry, hematology, coagulation, urinalysis, immunology, immunohematology (blood banking), and microbiology.

## Program Goals

- To provide an educational program in accordance with standards established by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).
- To maintain a curriculum and standard of academic education consistent with criteria acceptable for a college program culminating in a baccalaureate degree.
- To provide the community and region with qualified medical laboratory scientists.
- To adequately prepare and encourage those students who want a general medical laboratory science background prior to the pursuit of advanced education in the profession, teaching careers in medical laboratory science, or employment in commercial and other related medical laboratory fields.

## Affiliated Colleges & Universities/Advisors

- Briar Cliff University, Sioux City, IA, *Paul Weber, PhD*
- Dordt College, Sioux Center, IA, *Tony Jelsma, PhD*
- Mount Marty College, Yankton, SD, *Krisma DeWitt, PhD*
- Morningside College, Sioux City, IA, *Larry Martin, PhD*
- North Dakota State University, Fargo, ND, *Polly Olson, MS*
- Northwestern College, Orange City, IA, *Tim Lubben, PhD*
- University of South Dakota, Vermillion, SD, *Kay Rasmussen, MS, MLS(ASCP)*
- Wayne State College, Wayne, NE, *Doug Christensen, PhD*

## Admission Requirements

The applicant must possess a baccalaureate degree or have satisfactorily completed a minimum of 90 semester hours (135 quarter hours) in an affiliated college or university, be eligible for a baccalaureate degree upon successful completion of the professional year of study at the hospital, and possess the required pre-program course work

Minimum pre-clinical and credit requirements are:

- 16 semester hours of chemistry, to include: general chemistry, organic and/or biochemistry
- 16 semester hours of biological sciences, to include anatomy/physiology, genetics/molecular biology, microbiology, immunology. It is strongly recommended that immunology be a separate course.
- One course of mathematics to include statistics.

The content of chemistry and biological science courses must be acceptable toward a major in those fields or in medical technology/clinical laboratory science. Survey courses do not qualify as fulfillment of the prerequisites. Remedial mathematics courses will not satisfy the mathematics requirement.

Applicants must have a minimum cumulative grade point average (GPA) of 2.80 on a 4.0 scale and a minimum science GPA of 2.80. Applicants with GPA's below 2.8 may submit a Committee on Medical Laboratory Education (COMLE) application. However, applications will be evaluated and considered only after candidates with GPA's 2.80 or higher have been processed.

Individuals who met the minimal pre-clinical requirements seven or more years before application should update their academic preparation in a manner acceptable to the program. Individuals who possess a foreign degree and meet the program's requirements must have their transcripts evaluated by a qualified transcript evaluation agency. Contact the Program Director for information.

Students meeting the above criteria and possessing certification in laboratory science (CLA, MLT) may be considered for advance placement in the clinical laboratory rotation portion of the program by demonstrating competency. The didactic portion of the program does not lend itself to advance placement.

Meeting minimum requirements for application does not guarantee admission into the Program.

## Essential Requirements

The Essential Requirements provide criteria so that potential applicants can independently evaluate their own ability to meet, participate in education activities and successfully fulfill the expected competencies required of a medical laboratory scientist. These performance criteria are in compliance with the current regulations of the Rehabilitation Act, the Americans with Disabilities Act, Civil Rights Act and the Standards of NAACLS. The Committee on Medical Laboratory Education requires that all applicants read and sign the form as part of the application process.

## Application Procedure

Application for entrance into the program is made through the Committee on Medical Laboratory Education (COMLE). Application forms may be obtained from the academic affiliate's Advisor on campus, or from the Program Director at Mercy Medical Center – Sioux City Medical Laboratory Science Program, 801 5th St., Sioux City, IA. 51101. Telephone: 712-279-2371. Online: <http://www.mercysiouxcity.com/medical-laboratory-science-program>.

Applications must be postmarked on or before October 1 for the class starting the following August. Interviews are scheduled during October or November. Students are notified of acceptance or alternate status in December/January. Admission is conditional based on successful completion of science courses in progress and planned at time of making application. Late applicants will be considered if openings exist.

An accepted student must satisfactorily pass a criminal background check conducted by Mercy in the 30 days prior to the August starting date.

## Processing Applications

Mercy Medical Center, along with other members of the Committee on Medical Laboratory Education, participates in a matching system for selection of students. Students are ranked numerically according to points generated through evaluation of the college GPA, course progress, references, interview and a statement of the applicant's expectations and goals. The objective is to match qualified students with a program based on available program positions and student program preference. The individual program does not accept more students than it has available clinical positions.

The following grid gives the assigned percent values used for evaluating applicants:

- |  |     |
|--|-----|
| • Applicant; Statement of Career Goals | 5%  |
| • GPA, science courses                 | 30% |
| • GPA, non-science courses             | 10% |
| • Academic progress                    | 10% |
| • References                           | 15% |
| • Interview(s)                         | 30% |

## Progress Requirement

During the clinical year, students must maintain a minimum grade of C (70 %) or better in each subject area. The didactic (lecture) subject area constitutes 50% of the grade while the clinical performance constitutes the other 50%.

Grading in the didactic portion of the program is based upon written examinations. Progress in the clinical portion (bench performance) of the program is evaluated after each rotation through a department. The student is provided with a detailed explanation of the grading system during orientation week.

## Grading System

A	90-100%
B	80-89%
C	70-79%

When the student has satisfactorily completed all requirements of the program, they will be eligible to take a national certification exam for Medical Laboratory Scientists (ASCP). The student will be awarded a certificate and pin from the program and a baccalaureate degree from the college/university. Issuing of the baccalaureate degree or program certificate is not contingent upon students passing external certification or licensure examinations.

## Rules & Regulations

Program Policies are reviewed with students during Orientation. These policies state the criteria regarding academic requirements, academic probation, grievance and appeal procedure and disciplinary action.

### Causes for Probation or Dismissal

**On the Basis of Grades:** Any student failing to achieve an average of C in didactic (lecture) or clinical areas will be counseled and will be informed of academic status including verbal warning, written probation notice, and lastly dismissal from the program. Dismissal for scholastic failure or technical incompetence would be per the decision

of a committee comprised of the Medical Director, Program Director, and Clinical Instructor from the designated area(s). Progress records are maintained throughout the year and are available to the student at any time.

**On the Basis of Conduct:** Students are required to conform to existing medical center and laboratory policies concerning conduct. Reasons for disciplinary actions up to and including dismissal are as follows:

- Theft, immoral conduct, fighting, willful destruction of property on hospital grounds.
- Being under the influence of alcohol, illegal drugs, or chemicals within the institution.
- Inconsiderate treatment of patients or discussion of confidential information with unauthorized persons.
- Cheating on school examinations or dishonesty in the performance or reporting of test procedures.
- Excessive unexcused absenteeism and/or tardiness.
- Any other act classified as criminal.

Students dismissed for reasons of either grades or conduct will not be allowed reentry into the program.

## Appeals Procedure

An appeals procedure is available for use by any student having a grievance based upon seemingly unfair treatment. According to the procedures, a grievance not settled between the parties immediately involved may be appealed to the Program Director of the school, then to the Medical Director and finally to a Committee consisting of the following: Program Director, Medical Director, College Advisor, two other laboratory faculty members of the student's choice and a representative of Human Resources/Education department.

## Expenses

Tuition is \$4500.00 (2011-12 year; subject to change). An enrollment fee of \$300 must accompany the letter of acceptance and is applied toward the tuition. This \$300 fee is **not refundable**. The tuition will be paid in two installments, August and February.

Books: approximately \$700.00

Criminal Background check: approx. \$70 (due with August tuition payment)

Housing/Meals: students are responsible for their own living quarters and meals.

Transportation: students are responsible for providing their own transportation to and from their personal residence, the hospitals, Dunes Laboratory and any enrichment site.

## Withdrawals

If a student chooses to withdraw from the program, he/she must submit a written statement of withdrawal to the Program Director. The Program Director will notify the college/university of the student's withdrawal or dismissal from the program. The college/university will be sent a transcript of any final grades attained. A final grade for a course is earned after satisfactory completion (70% or higher) of all requirements for a course, including both didactic and clinical rotation requirements.

## Refunds

All institutional charges (tuition and fees) will be refunded according to the following schedule. A week is defined as 7:00 a.m. Monday through 3:30 p.m. Friday.

<b>Withdrawal during the Following time period</b>	<b>Percent of charges refunded</b>
The first day of class	100%
Week 1	75%
Week 2	50%
Week 3	25%
Week 4	25%
Week 5 or later	0%

For students who terminate following February 1 when the second payment is made, a similar refund policy will apply.

## Health and Liability Insurance

Each student must be able to show proof of a current physical, including chest X-ray or TB skin testing; Hepatitis B and tetanus vaccinations, age appropriate immunity or immunizations for Measles, Mumps and Rubella and Chickenpox. It is recommended that the hepatitis vaccine series be initiated before the beginning of the clinical year. Students who experience a blood and body fluid exposure during the course of the Hospital laboratory training program will be initially provided post exposure follow up testing through the Hospital Employee Health nurse at no cost to the student. Further medical costs associated with follow up care that is recommended or required due to the exposure will be the responsibility of the student and his/her their personal health insurance. The Hospital will not pay for any costs associated with other injuries or illnesses experienced by the student during the course of the Hospital laboratory training program, however students can seek medical care and treatment through the Hospital Emergency Department. Any costs for medical care and treatment other than for initial blood and body fluid exposure testing, will be the responsibility of the student and/or the student's personal health insurance policy.

Mercy Medical Center maintains a comprehensive liability insurance program, which covers students during the 12-month period in which they are enrolled in the MMC Medical Laboratory Science Program.

## Financial Aid

Students seeking financial assistance are encouraged to contact their college/university financial aid office for information.

Limited scholarships are available through professional organizations. The Program Director can provide this information.

## Program Calendar

The 12 months of professional study begins in August and consists of learning experiences in all phases of medical laboratory science. Mornings are spent attaining practical experience in the clinical laboratory under the supervision of certified medical technologists/medical laboratory scientists. Afternoons are devoted to a formal program of lectures and student laboratory exercises. This portion of the program is given in conjunction with the St. Luke's College Medical Laboratory Science Program.

Hours are from 7:00 am until 3:30 pm Monday through Friday, with some days from 6 am until 2:30 pm when no afternoon class is scheduled. Two days on the afternoon shift (2 pm until 10:30 pm) is included during the year. The following holidays will be observed: Labor Day, Thanksgiving Day and the Friday following, Christmas Day, New Years Day, Good Friday, Easter Monday, Memorial Day, and July 4th. There will be a two-day fall break, approximately two weeks of vacation during the Christmas holiday season, one-week spring break and three personal days.

Students will be allowed three personal days if needed for illness, travel, interviews, etc. Students who are absent beyond three days will make up clinical time missed, by completing clinical time during scheduled academic calendar breaks, at the end of the clinical year or on weekends or evenings when a teaching technologist is available. Makeup hours are subject to approval by the Program Director. Students are responsible for all lecture material missed due to absence.

## COURSE DESCRIPTIONS

### MAJOR SUBJECTS:

### Range of Semester Hour Credits

#### 1. CLINICAL MICROSCOPY/URINALYSIS

2-3 sem. hrs.

Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in body fluids and urine in regard to chemical and cellular composition. Anatomy and physiology, theory of renal function in health and disease.

#### 2. CLINICAL HEMATOLOGY/COAGULATION

5-8 sem. hrs.

Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in the analysis of cellular elements of the blood and bone marrow, both normal and abnormal, and on the hemostatic mechanisms of the blood.

- 3. CLINICAL MICROBIOLOGY** 8-12 sem. hrs.  
Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in the isolation and identification of pathogenic organisms and their susceptibility to anti-microbial agents. Includes Bacteriology, Mycology, Parasitology, and Virology.
- 4. CLINICAL SEROLOGY/IMMUNOLOGY** 2-3 sem. hrs.  
Lecture on antigen/antibody structure-function-interaction, supervised laboratory instruction, quality control, instrumentation, computer applications, and experience in applying the principles of immunology to serologic diagnosis.
- 5. CLINICAL CHEMISTRY** 8-12 sem. hrs.  
Lecture, supervised laboratory instruction, quality control, computer applications, instrumentation, and experience in medically oriented biochemistry as applied to normal and abnormal physiology and analyses of body constituents. Includes analyses of special body fluids such as amniotic, synovial, cerebrospinal, and pleural fluids. Includes special procedures utilized for toxicology, endocrinology, and immunoassay.
- 6. CLINICAL IMMUNOHEMATOLOGY** 4-6 sem. hrs.  
Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in theory and practice of immunohematology as applied to blood transfusion, component therapy, autoimmune diseases, immunologic diagnostic procedures and blood component preparation and administration.

## SPECIALIZED UNITS (SPECIALIZED TOPICS)

- 7. ORIENTATION TO MEDICAL LABORATORY SCIENCE** 0-1 sem. hrs.  
**A. Introduction:** Introduction to basic techniques, principles of safety, infection control, professional ethics, personal and professional responsibilities in the clinical laboratory. Review of program's rules and regulations. Introduction to clinical significance of laboratory procedures in diagnosis and treatment.  
**B. Phlebotomy:** Anatomy and physiology of the arm, blood collection techniques from vein, capillary, artery and difficult draw sites. Specimen variables and handling techniques. Interactive communication skills with patients and para-professionals.  
**C. Computer Applications in the Medical Lab:** An introduction to techniques, principles, and concept common in laboratory data processing systems. Utilization of computers in the laboratory and within instruments.  
**D. Laboratory Mathematics/Quality Assurance:** Laboratory oriented mathematics with emphasis on performing calculations related to units of measure, pH, Beer's law and calibration curves, Henderson-Hasselbach equation, enzyme activity, renal clearance, hematology calculation. Principles and practice of quality assurance. Includes statistical techniques, method evaluation, and pipette calibration.
- 8. MANAGEMENT AND SUPERVISION** 0-4 sem. hrs.  
Lectures and/or seminars on theory and techniques of laboratory oriented management practices utilized in planning, organizing, directing, controlling and supervising a medical laboratory facility.
- 9. EDUCATION METHODOLOGIES** 0-4 sem. hrs.  
Lecture and/or seminars on the principles of education. Includes methods of instruction, writing objectives and evaluation devices for didactic and clinical practice.
- 10. INTRODUCTION TO RESEARCH** 0-1 sem. hrs.  
Faculty guided study, research, scientific writing, case study presentations and/or projects in specialty area(s) of medical laboratory science.

TOTAL SEMESTER HOURS CREDIT = 40

## Laboratory and Program Administration

**Askar A. Qalbani, MD, Medical Director**

**Kris Giese, MHA, MT(ASCP), Director of Laboratory Services**

**Mary K. Smith, MS, MLS(ASCP)<sup>CM</sup>, Program Director**

**Faculty members** include program officials, pathologists, and selected medical technologists /medical laboratory scientists. A current list of program faculty members and college/university advisors is available from the program director.

### **For more information:**

**Contact the program director at 712-279-2371**

Visit our web site at <http://www.mercysiouxcity.com/medical-laboratory-science-program>

## Statement of Policy

Mercy Medical Center's educational program is an equal opportunity program. Any question of discrimination on the basis of age, sex, race, color, creed, disability or national origin shall be directed to:

**Mercy Medical Center-Sioux City**  
**801 5<sup>th</sup> Street**  
**Sioux City, IA 51101**

**National Accrediting Agency for  
Clinical Laboratory Sciences**  
**5600 N. River Rd., Suite 720**  
**Rosemont, IL 60018-5119**  
**847-939-3597**  
**[www.naacls.org](http://www.naacls.org)**