



Clinical Laboratory Science

College of Science & Health

The **Clinical Laboratory Scientist (Medical Technologist)** is a vital member of the health care team. The Clinical Laboratory Scientist designs and performs testing on patient samples to determine the presence or absence of disease and its severity. Their work provides valuable data needed to evaluate the effectiveness of treatment. They work closely with pathologists and other health care providers.

The Clinical Laboratory Scientist examines and analyzes body fluids, tissues, and cells. They detect and identify bacteria, parasites, or other microorganisms, analyze the chemical content of fluids, select blood for transfusion, and test for drug levels in the blood to show how a patient is responding to treatment. They perform complex chemical, biological, hematological, immunologic, microscopic, and bacteriologic tests. They use, maintain, and troubleshoot sophisticated laboratory equipment which is used to perform diagnostic tests. They possess the scientific and diagnostic skills required for DNA technology and genetic engineering applications. In addition to these responsibilities, the clinical laboratory scientist analyzes these results and discusses them with the medical staff.

The Clinical Laboratory Science/Medical Technology program at UW-L offers students a unique experience including a broad liberal arts curriculum combined with the prerequisite course work in the biological sciences and chemistry. The professional curriculum is offered both on campus and at the clinical education programs at St. Joseph Hospital/Marshfield Laboratories, Sacred Heart Hospital Laboratories (Eau Claire), Aspirus Wausau Hospital Laboratories, Affinity Healthcare in Appleton, Mayo Clinic Laboratories (Rochester, MN), Fairview Health Services or Hennepin County Medical Center Laboratories (Minneapolis). Because the education is so broad and the prerequisites are essentially the same as medical, dental, and veterinary schools, graduates can make an easy transition to careers requiring additional education.

Undergraduate Program

Major:

- Clinical Laboratory Science

Program Features

Prior to admission to the Clinical Laboratory Science program, students must satisfactorily complete prerequisite course work in general and organic chemistry, biochemistry, statistics, anatomy and physiology, genetics, microbiology, and immunology. The professional curriculum on campus includes Introduction to Clinical Laboratory Science, Hematology, Urinalysis and Body Fluids, Immunohematology, Pathogenic Bacteriology, and Capstone in Clinical Laboratory Science.

Admission to the Clinical Laboratory Science major is on a competitive basis. Students apply for admission to the CLS major

early in the spring semester of the academic year just prior to the beginning of their professional studies (junior year). The selection process includes the submission of a formal application for admission, personal recommendations, review of academic performance, and an interview with the program admission committee. A GPA of at least 2.75 is recommended. Students formally admitted to the major then apply to one of the affiliated hospital programs in the fall of the junior year. Through a matching process, students select the hospital program(s) of their choice. Selection is made by the end of the fall semester. The senior year is spent in the hospital program.

Technology

Student laboratories for the professional curriculum provide excellent opportunities for students to learn methods and procedures on equipment and instruments similar to what is found in the clinical setting. Once in the clinical setting, students will apply the theoretical knowledge gained on campus and advance to competencies required for entry into the profession. The Clinical Laboratory Science program has laboratories and state-

of-the-art equipment available in the Health Science Center.

Faculty

Clinical Laboratory Science majors receive instruction from outstanding professors during both the pre-professional and professional phases of their education. The faculty has current clinical, research, and publication experience that is shared with students.

Clinicals

Students spend their senior year at one of the accredited hospital-sponsored programs affiliated with UW-L. UW-L grants college credit for the courses offered at the hospitals. During the fall semester of the junior year, students apply to one or more of the hospital programs. A student must visit all of the programs in which application will be made. A matching process determines which program the student will attend during this final phase of the curriculum. Once the degree is obtained, the graduate is eligible to sit for the national certification examination through ASCP. UW-L is an academic affiliate for St. Joseph's Hospital/Marshfield Laboratories; Sacred Heart Hospital Laboratories (Eau Claire, WI); Aspirus Wausau

Hospital Laboratories; Affinity Healthcare Laboratories (Appleton, WI); Fairview Health Services (Minneapolis, MN); Hennepin County Medical Center Laboratories (Minneapolis, MN); and Mayo Clinic Laboratories (Rochester, MN).

Sample Courses

- Biology and Chemistry
- Urinalysis and Body Fluids
- Clinical Hematology
- Clinical Parasitology
- Clinical Immunology
- Immunohematology
- CLS Capstone

Career Opportunities

Entry Level

- Clinical Laboratory Scientist/ Medical Technologist
- Biomedical Industry Technologist
- Fertility/Transplant /Bone Marrow/Virology Scientist
- Forensic Laboratory Technologist
- Industry Quality Control Technologist
- Laboratory Equipment/ Pharmaceutical Sales and Development
- Laboratory Information Systems Specialist Tech (computer)*
- Research Technologist
- Laboratory Supervisor*

*Employment in a clinical lab requires certification by a national certification agency. Graduates of the CLS program are eligible to take the certification exam(s).

Further Education

- Graduate study in clinical laboratory science, microbiology, biochemistry, hematology, immunology, business, management, and education.
- Dental School
- Law School
- Medical School
- Veterinary School

Long Term Career Development

- College or University Faculty
- Dentist
- Director of Marketing
- Health Care Administrator
- Physician/Pathologist
- Program Director for Hospital/University-sponsored CLS Program
- Research and Development Director
- Veterinarian

Occupational Outlook

The demand for clinical laboratory scientists/medical technologists continues to increase. As molecular diagnostics expand in the clinical setting, there is a greater demand for highly educated and skilled individuals in this field. Nationwide the vacancy rate is 12 percent. At the present time there are sign-on bonuses and tuition reimbursement offers in areas of the United States where shortages are acute.

According to the Bureau of Labor Statistics, employment of clinical laboratory workers is expected to grow by 14 percent between 2008

and 2018, reflecting a continued need for these health professionals.

Job Titles of Graduates

- Clinical Laboratory Scientist/ Medical Technologist
- Clinical Chemist
- Clinical Hematologist
- Clinical Immunologist
- Clinical Microbiologist
- Computer Specialist
- Consulting Service Specialist
- Crime Lab Specialist
- Health Educator
- Infection Control Practitioner
- Laboratory Manager
- Quality Assurance Coordinator
- Research Scientist

Professional Associations

Students are eligible to join the Student Forum of the American Society of Clinical Laboratory Science. The Wisconsin State Society also has an active Student Forum. In addition, students can become student members of the American Society of Clinical Pathologists.

ASCLS Web Page: www.ascls.org/
ASCP Web Page: www.ascp.org/

Clinical Laboratory Science Program

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www.uwlax.edu/clinlabsci