



NEW YORK MEDICAL COLLEGE

A M E M B E R O F T O U R O U N I V E R S I T Y

Graduate School of Biomedical Sciences

MASTER OF SCIENCE in CLINICAL LABORATORY SCIENCES

STUDENT HANDBOOK

CLINICAL LABORATORY SCIENTIST PROGRAM
GRADUATE SCHOOL OF BIOMEDICAL SCIENCES
NEW YORK MEDICAL COLLEGE
VALHALLA, NEW YORK 10595

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1. About the Program

Clinical Laboratory Sciences Program

Program Director:

Carol A. Carbonaro, Ph.D., SM, MLS^{CM} (ASCP)

Basic Sciences Building - Room 430

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(914) 594-4778

Application Deadline Date - May 1st

Clinical laboratory scientists (CLS) are trained and qualified to work in medical or industrial/pharmaceutical laboratories. A clinical laboratory scientist is at the heart of clinical care, performing diagnostic tests which monitor treatments and uncover new disease states. They continuously communicate with physicians to provide improved patient care and treatment outcomes. Training for CLS encompasses all areas of clinical laboratory testing: chemistry, toxicology, hematology, urinalysis, immunohematology, hemostasis, diagnostic immunology, clinical microbiology, histocompatibility, and molecular diagnostics. Students are instructed on state-of-the-art instrumentation and digital technology.

Program Mission Statement:

The mission of the Clinical Laboratory Sciences (CLS) program at New York Medical College is to impart knowledge and technical skills in an atmosphere of excellence, scholarship, and professionalism necessary to become a proficient clinical laboratory scientist. The CLS program offers a learning environment in which the student acquires practical laboratory knowledge and critical thinking skills while having access to theoretical training by highly qualified instructors. New York Medical College believes that the rich diversity of its student body and faculty are important to its mission of educating outstanding healthcare professionals for the multicultural world of today.

Program Mission Statement: <https://www.nymc.edu/gsbms/gsbms-academics/degrees--programs/clinical-laboratory-sciences-program/>

The New York State Education Department mandates that all Clinical Laboratory Scientists be licensed by the State to work in a hospital laboratory. Ours is a **Master of Science program in clinical laboratory sciences**. The knowledge obtained by the successful completion of the Clinical Laboratory Sciences Program will qualify the student to take the New York State Exam for Clinical Laboratory Science licensure. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

National Accrediting Agency for Clinical Laboratory Sciences
5600 North River Road, Suite 720
Rosemont, IL 60018-5119
773-314-8880 www.naacls.org

Program Goals:

The goal of the program is to prepare each student to qualify for the National CLS Generalist exam (NAACLS) and/or individual state CLS licensure exam and successfully secure an entry-level position in a Medical Institution. Upon completion of the program, the student will have completed graduate credits toward the Master of Clinical Laboratory Sciences degree at NYMC.

The goals of the CLS program at NYMC is to provide the students with:

- the necessary training and education in the theories and practices of laboratory medicine;
- instruction in the clinical significance of laboratory procedures in the diagnosis and treatment of patients;
- the skills necessary for problem solving, maintenance and troubleshooting while performing manual testing as well as using state of the art instrumentation;
- the exposure to journals, staff conferences, meetings, and seminars to instill in the student the realization that the continual acquisition of knowledge is essential for professional development;
- the understanding of the principles and practices of quality assurance, research, and educational methods, as well as personnel and business management in a clinical laboratory setting;
- a curriculum and clinical experience in which the students can develop and mature in their professional judgments and communications with the health care team and others;
- examples of professionalism, leadership and integrity while instructing the students on issues regarding patient rights, patient privacy and compliance with all regulatory agencies;
- the preparation required to graduate, qualify, and pass the examination for certification and licensure, along with developing the characteristics necessary to produce certified and licensed healthcare professionals who possesses an understanding and respect for all individuals in society;
- continuous systematic evaluation and necessary modifications, of all program processes, to ensure the effectiveness of the program.

Program Graduate Competencies:

The Graduate Clinical Laboratory Scientist, at entry-level, will have basic knowledge and skills for:

- adherence to standard operating procedures, preparation of instruments for testing and accurate performance of quality control;
- performing diverse and multilevel functions in the principles, methodologies and performance of laboratory assays exercising skills in problem solving, troubleshooting and evaluation of clinical procedures and laboratory results;
- development and evaluation of procedures and implementation of new test systems, correlation of test results and ensuring accuracy and validity of laboratory information;
- statistical application for data evaluation as well as the principles and practices of quality assurance and continuous quality improvement;
- directing and supervising of clinical laboratory operations along with managing budgets and personnel in the clinical laboratory;
- demonstrating ethical and moral principles and practices of professional conduct and the communication skills necessary to educate and serve the needs of the patients, the public and the healthcare team;
- adherence to all safety, government and regulatory agency regulations and standards for clinical laboratories;
- understanding that continuous acquisition of clinical knowledge is essential for professional development and competence.

2. Program Admission

In the Master of Science in Clinical Laboratory Sciences program, students will receive their didactic study at New York Medical College and clinical laboratory training at area hospitals. **Federal financial aid is available to U.S. students during the first year when they are taking 41.5 academic credits. Federal financial aid is not available during the second year, when the student is writing their literature review (0 credits).**

Admission Criteria

Applicants must have obtained a baccalaureate or higher degree in the sciences, prior to the start of the program, from an accredited U.S. college or university or from a recognized foreign institution. Critical courses which the applicant should have taken, and done well, include:

- two semesters of General Biology with laboratory component
- two semesters of General Chemistry with laboratory component
- one semester of Anatomy and Physiology with laboratory component
- one semester of General Microbiology with laboratory component
- one semester of Organic Chemistry with laboratory component
- one semester of Biochemistry with laboratory component
- one semester of Statistics or Calculus

The entire application, including two letters of recommendation as well as a CV/resume, will be considered to identify the strongest applicants. An interview is a required part of the admission process.

The position requires considerable walking, standing, and sitting. Good visual acuity and manual dexterity are essential to performing and interpreting laboratory tests; good listening and communication skills are necessary in the clinical setting to interact with various hospital staff. In the classroom setting, students will participate in classroom discussions and presentations.

Program Acceptance

Following an interview with the Program Director and Program Coordinator applicants satisfying admission requirements and anticipated to progress successfully through the program will be admitted.

- The Applicant receives a letter from the Admission Office with required action from the student
 - i. Enroll to get a school email address
 - ii. Physical health assessment - Health forms/immunizations needed
 - iii. Urine Drug screen testing information for testing
 - iv. Information for student to get a background check
 - v. Required Health insurance coverage
- Student will receive Schedule for School Orientation - ATTACHMENT 1

3. Graduate School Policies

<https://www.nymc.edu/gsbms/policies/>

GSBMS Academic Regulations

More academic regulations specific to the NYMC Graduate School of Basic Medical Sciences not found below can be found on the [Academic Regulations](#) page.

GSBMS Policies Related to Student Conduct

- [Graduate School Student Rights and Responsibilities](#)
- [Student Code of Academic Integrity and Professionalism](#)
- [Standards of Conduct](#)
- [Graduate School Social Media Policy](#)
- [Graduate School Academic Integrity Violations Procedures](#)
- [Graduate School Appeals Board](#)
- [Professional Conduct](#)

GSBMS Policies and Procedures Related to Courses, Plan of Study, and Grading

- [Satisfactory Academic Progress Policy \(SAP\)](#)
- [Graduate School Policy on Credit Hours](#)

GSBMS Policies and Procedures Regarding Enrollment Status

- [Policy on Full-Time Status](#)

4. CLS Program Policies

- [Limited Space at Clinical Sites](#)
- [Progression in the Program](#)
- [Teach out Plan](#)

5. Program Schedule

The [CLS Academic Calendar](#) can be found on our website.

Students are scheduled in a Clinical Laboratory Internship Monday to Friday 8am to 3:30pm. Lectures are scheduled from 4:30pm to 6:30pm at least 3 days a week.

Most exams are scheduled on Mondays when there are no lectures.

All lectures are scheduled live in the NYMC / GSBMS Pathology conference room 414. For students unable to arrive on campus to participate in person, the lecture is available on Zoom for online participation.

6. Canvas

Canvas is a web-based learning management system (LMS). All courses are on Canvas for the students to see all assignments, lectures, exam, and grades. Each student is given an email address and access to the enrolled courses. Exams are taken online through Canvas.

7. Clinical Practicum

- Clinical Practicum Internship is a two-semester course.
- Clinical Practicum 1 is a 22-week internship training in Clinical Chemistry, Clinical Hematology, Clinical Urinalysis.
- Clinical Practicum 2 is a 22-week internship training in Clinical Microbiology, Clinical Immunohematology, Molecular Diagnostics and Clinical Management.
- Students attend each clinical laboratory from 8 to 3:30pm Monday to Thursday and Friday is a lab self-study or makeup day.
- Student shadows and is trained by a Senior Medical Technologist or Supervisor in each available lab area. Students are not considered employees of the hospital and are not required to perform actual reportable laboratory results. They can only shadow and repeat testing for competency training.
- Students report to the assigned laboratory at assigned times with 30 minutes for lunch.
- Students are expected to communicate with the Clinical Liaison or Lab supervisor when calling in sick or in anticipation of late arrival.

Students are evaluated on technical performance (45%) and affective performance (20%) and lab quiz (35%).

ATTACHMENT 2: List of Clinical Laboratory Locations and Liaisons contains contact information for sites of clinical training.

8. Syllabi and Student Learning Outcomes

Syllabi and Student Learning Outcomes are available within each course on the NYMC Canvas webpage.

<https://touro.instructure.com/>

9. Evaluation Forms and Worksheets

- a. Student evaluation of Clinical Laboratory – ATTACHMENT 3a
- b. Student evaluation of Lecturer – ATTACHMENT 3b
- c. Evaluations and Worksheets can also be found within each course on Canvas

10. Second Year - Master's Degree Requirements

To complete the requirement for the graduation with a master's degree in Clinical Laboratory Sciences (MCLS); the student must complete a Literature Review or a Capstone Project. During the completion of the Thesis the student registers for Maintenance of Matriculation (MOM) course 16529. MOM keeps the student in active student status. Student continues to have access to all student facilities and liability coverage if on campus or still in clinical internship.

Requirements for the Thesis can be found in the NYMC TouroOne Portal.

All degrees awarded by the Graduate School require submission and approval of a dissertation, thesis, or literature review. Guidelines for the preparation and formatting of these documents are available from the Graduate School Office and on the GSBMS website. The requirement requires an accepted proposal and a Faculty Mentor with a list of readers. Forms are submitted and accepted before starting the thesis. The schedule of deadline dates for receipt of the approved final version of a student's master's Thesis or master's Literature Review thesis for May, August or December graduation is documented on the school academic calendar.

Students who complete thesis degree requirements too late to graduate in May must reapply for graduation in the following term by the designated deadline date. The graduation fee does not have to be paid a second time. Upon request, the dean will write a letter on a student's behalf explaining that the student has met degree requirements and will receive a diploma at the next Commencement of the college.

11. NYS Licensure

Upon graduation you qualify to sit for the New York State Clinical Laboratory Technologist exam. The information and application for the exam is on the NYS webpage. When applying for the exam also apply for the ASCP certification. It is the same exam. <http://www.op.nysed.gov/prof/ct/>

Before graduation, and while completing the master's requirements in the second year, the student may for a **NYS Provisional Permit**. This provides an opportunity to begin working while completing the master's requirements.

- a. Application form 5N is completed by the student, signed, and mailed to the state by the Director of Laboratory at the Laboratory from which a job offer has been received.
- b. Application form 2PP is completed at the undergraduate school where the student received their bachelor's degree and all prerequisite courses needed for admission to the CLS program.
- c. Application form 4PP is a documentation of each lab hour completed during clinical practicum. It is completed at each laboratory attended during Clinical Practicum I and II. The form is signed and mailed to NYS by the Laboratory Directory. (A chart showing number of hours of training hours is provided by the Program Coordinator)

12. ASCP Certification Exam

The ASCP CLS exam provides certification of your training and education. In many states this is the certification that is required for employment. There are some states, including New York that require separate licensure.

- a. Currently, in the state of NY, the ASCP exam acts as the licensure exam. When completing the application there is an option for choosing both certifications.
- b. The requirement for the exam includes the courses which were prerequisite courses needed for admission to the Masters in CLS program and graduation from the program.
- c. Graduates of our program qualify for the ASCP MLS exam via

ROUTE 1 • Baccalaureate degree from a regionally accredited college/university, • AND successful completion of a NAACLS accredited Medical Laboratory Scientist program within the last five years. The education received from a NAACLS accredited MLS program is acceptable for a period of five years from the date of completion of that program. After five years, the applicant's eligibility will be based on clinical laboratory experience as stated in the current examination eligibility requirements.*

- d. <https://www.ascp.org/content/docs/default-source/boc-pdfs/exam-content-outlines/ascp-boc-us-procedures-book-web.pdf>
- e. Apply for exam on the web page.

<https://www.ascp.org/content/board-of-certification/apply-now-check-status-update-info/boc-how-to-apply-for-examination>

ATTACHMENT 1: Orientation Schedule



MASTER OF SCIENCE
PROGRAMS

CLINICAL LABORATORY SCIENCES PROGRAM ORIENTATION

Introductions	Valerie Romeo-Messana , Director of Admissions
IT	John DeAgustini , Manager of IT Services
Public Safety	Robert Lancia, M.A. , Director of Public Safety
Mental Health & Wellness	Robin Hershkowitz, LCSW-R , Director
Introduction to Program	Carol Carbonaro, Ph.D., SM, MLS^{CM} (ASCP) Debbie Isabella, MT CS (ASCP)
Health Services	Marisa Montecalvo, M.D. , Director
Academic Support	Erica M. Levy, M.S.Ed., Ed.M. , Assistant Director Megan Siemers-Livingston, M.S. Ed. , Director of Accommodations and Accessibility Amy Stermer, M.A. , Writing Program Director
Environmental Health & Safety Training	Rawlston D. Crowther, M.A. , Senior EHS Coordinator
Student Services	Christopher Lu GSA President
Campus Tour	Graduate Student Association

CANVAS ORIENTATION VIDEOS & POWERPOINTS

Bursar	Karin Ahyoung , Bursar
eLearning	Donna Berger , Assistant Director William Gibbons , LMS Administrator
Health Sciences Library	Caroline McKinley, MLS , Education & Outreach Librarian
Registrar	Eileen Romero, M.B.A. , Registrar
Student Financial Planning	Anthony Sozzo, M.A., M.S.Ed. , Associate Dean for Student Affairs
Student Residential Life	Katherine Dillon Smith, M.S.W. , Director
Unlawful Harassment	Matthew Lieberman, Esq. , Title IX Coordinator

ATTACHMENT 2: List of Clinical Laboratory Locations/Liaisons

Laboratory Location	Liaison Name	Position	Phone	Email
Bioreference Laboratories 481 Edward H. Ross Drive, Elmwood Park, NJ	Nick Cetani	Sr Director of Lab/Liaison	973-207-5743	ncetani@bioreference.com
Caremount Medical 2 International Blvd Brewster, NY 10509	Debra Cifelli	Administrative Director of Labs	845-230-4057	
Danbury Hospital - Nuvance 24 Hospital Avenue Danbury, CT 06810	Ana Vicente Laura Ovittore	Clinical Liaison/ Chem Supervisor Lab manager	203-739-7686 203-739-7669	Ana.Vicente@wchn.org Laura.ovittore@nuvancehealth.org
Good Samaritan Hospital 255 Lafayette Ave. (Route 59) Suffern, NY 10901	Leyda Duran Alexandra Zubok	Clinical Liaison/ Blood Bank Supr Lab Director	845-368-5177 x5174	Leyda_Duran@bshsi.org alexandra_zubok@bshsi.org
Garnet Health Medical Center 707 E. Main Street Middletown, NY 10940	Beth Post Terri Bostock Melanie Jones	Clinical Liaison Adm Dir Lab Lab manager	845-333-0097 845-901-0737	bpost@garnethealth.org Tbostock @ garnethealth .org
Lawrence Hospital - NY Presbyterian 55 Palmer Ave Bronxville, NY 10708	Jacqui Reiner	Clinical Liaison/ Lab Director	914-787-32387	jar9161@nyp.org
Mt Sinai Medical Center 1468 Madison Ave New York, NY 10029	Bill Dunn	Administration contact		Bill.dunn@mountsinai.org
Mt. Sinai Queens 25-10 30 th Avenue Long Island City, NY 11102	Nelson Barayuga	Clinical Liaison/ Asst. Admin. Director of Labs.	718 - 267-4221	
Mt. Sinai Morningside Hospital 111 Amsterdam Ave. Clark Buiding, 4 th Floor New York, NY 10025	Helene Engel	Clinical Liaison/ Lab Operations Manager	212-523 4455/6	
Putnam Hospital - Nuvance Health 670 Stoneleigh Avenue Carmel, NY 10512	Melody Kanninen	Clinical Liaison/ Lab Manager	845-279-5711 X6627	melody.kanninen@nuvancehealth.org
Westchester Medical Center 100 Woods Road Valhalla, New York 10595	Laura Degenhardt Sharay Glatz	Clinical Liaison/ Director Lab Manager	914-493-5287	laura.degenhardt@wmchealth.org sharay.glatz@wmchealth.org
White Plains Hospital 41 East Post Road White Plains, NY 10601	Louisa Pricoli Christina Hampto	Clinical Liaison/ Hematology Lab Administrator	914-681-2570 914-681-1215	lpricoli@wphospital.org CHampton@wphospital.org

ATTACHMENT 3a: Student Evaluation of Clinical Laboratory

LABORATORY SECTION ROTATION:

DATE:

Please rate clinical laboratory in the following areas on a scale of 1 to 5.

Laboratory Name:	5 EXCELLENT	4 VERY GOOD	3 GOOD	2 FAIR	1 POOR	COMMENTS
Do you feel the number of weeks allotted to this rotation was adequate?						
Do you think the curriculum of this lab was well planned? Please comment						
Were you given sufficient opportunity to observe the tests performed?						
Did you have sufficient opportunity to practice the tests? Please specify test.						
Was the procedure of the tests clearly explained?						
Did the lectures help you in your performance in this laboratory?						
Do you feel confident to work in this area?						
Do you feel you were performing actual routine work for any great length of time instead of learning new tests in this lab? Please Specify.						
Do you feel the learning objectives for this section were achieved?						
Did the exams in this section reflect the stated objectives?						
Do you feel the lab's attitude was to improve patient care?						
Were the instructors interested in student achievement?						
Did You find Lab Resource material useful/ readily available?						

Comments:

ATTACHMENT 3b: Student Evaluation of Lectures/Lecturers

LECTURER:

DATE:

LECTURE SERIES:

Please rate each lecturer/subject according to the following criteria on a scale of 1 to 5.

	5 EXCELLENT	4 VERY GOOD	3 GOOD	2 FAIR	1 POOR	NO RESPONSE
Instructor's preparation of lecture material						
Instructor's method of presentation (3scores) a. Clear, concise, interesting b. Use of handouts, visual aids etc. c. Covered all material in a timely fashion.						
Coverage of material by exams, quizzes, and homework assignments (2 scores) a. Fair number to of exams/quizzes/homework. b. Reflected covered material.						
Exams and quizzes are an adequate reflection of your knowledge of the subject.						
Time allotted for the lecture adequate						
Instructor's use of material, which is current, pertinent, and helpful						
Achievement of stated objective by instructor						
Instructor's availability for consultation/assistance						
Instructor's ability to answer questions regarding the covered material						
Instructor's ability to encourage student participation						

SUGGESTIONS/COMMENTS:
