

UNIVERSITY OF CALIFORNIA DAVIS MEDICAL CENTER

CLS Training Guide
For Prospective Students
Department of Pathology and Laboratory Medicine
3740 Business Drive
Sacramento, CA 95820

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UC DAVIS HEALTH CLINICAL LABORATORY SCIENTIST TRAINING PROGRAM NAACLS Standard IV.A Publications and Disclosures

A. MISSION STATEMENT

The Clinical Laboratory Science Training Program is dedicated to providing trainees with the knowledge, skills and abilities needed to excel as competent clinical laboratory scientists not only through our teaching but also by our own example as practicing professionals.

B. GOALS AND GRADUATE COMPETENCIES

The GOALS of the UC Davis CLS Training Program are to:

- Provide trainees with the best quality education in all aspects of clinical laboratory science
- Promote patient safety and quality standards
- Promote expanded roles and contributions of clinical laboratory professionals to the healthcare team
- Provide leadership in educating other health personnel and community populations
- Promote professionalism, honesty, integrity, and compassion
- Provide an educational experience which will enable all trainees to pass the national licensing exam and be prepared for the duties and responsibilities of an entry level CLS

GRADUATE COMPETENCIES

- > Graduates will demonstrate entry level knowledge necessary to perform the full range of clinical laboratory testing.
- Graduates will apply principles and practices of professionalism.
- Graduated will follow established laboratory policies and procedures.
- Graduates will apply safety regulations and standards as appropriate in the laboratory.
- > Graduates will communicate appropriately with members of the healthcare team.
- Graduates will apply principles and practices of management and supervision as appropriate.
- > Graduates will utilize educational methodologies and terminology sufficient to train and educate users and providers of laboratory services.
- Graduates will apply principles and practices of clinical study design, implementation, and dissemination of results to improve workflow and patient care.

ROLE OF CLS PROFESSIONAL

A CLS is a professional who is responsible for performing a wide range of laboratory tests and procedures to diagnose and treat various medical conditions. These tests and procedures include analyzing bodily fluids, blood, and cells, as well as interpreting test results and communicating them to physicians and other

healthcare providers. The role of a CLS is vital to the healthcare system. Accurate and timely test results are essential for effective patient care. CLSs must have a thorough understanding of the scientific principles and techniques used in their field with the ability to use and maintain specialized equipment. They must also be able to work independently and make quick and accurate decisions based on the results of laboratory tests. In addition to performing laboratory tests, CLSs are also responsible for maintaining accurate records of test results and ensuring that the laboratory is in compliance with all relevant regulations. The role of a CLS is challenging and demanding, but also highly rewarding for those who are dedicated to improving the health and well-being of patients

C. PROGRAM APPROVAL AND ACCREDITATION

After completing the 12-month training program, graduates are awarded a certificate of completion, and are eligible to take the American Society of Clinical Pathology (ASCP) national certifying examination.

This certificate of CLS Training completion is not contingent upon the passing of any certifying exam. The Program is approved by the State of California Department of Public Health which allows trainees to secure California licensing post program completion and successful passing of the ASCP certifying examination.

Upon program completion each trainee will receive supporting documentation of program completion from the program director. This packet of information will be uploaded to the CDPH-LFS for the California state MTA license application as required attestation of training completion meeting the California Code of Regulations- 1035, chapter 3 division 2. This packet will include copies of the signed program completion certificate, program transcript, program completion attestation letter and a copy of the previously issued CLS Training License.

The UCDMC CLS training program is accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS).

State of California Department of Health Services Laboratory Field Services 850 Marina Bay Parkway Building P, 1st Floor Richmond, CA. 94804-6403

Phone: (510)-620-3828

NAACLS

5600 N. River Rd., Suite 720 Rosemont, IL 60018-5119 Phone: (773) 714-8880

Phone: (847)-939-3597 naacls.org/about.aspx

D. PROGRAM OUTCOMES

The UCDMC Department of Pathology and Laboratory Medicine, in compliance with NAACLS standards, clearly demonstrate student core competencies and training expectations through the attainment of established goals & objectives.

The UCDMC Department of Pathology and Laboratory Medicine is proud of its 100% student ASCP first time examination pass rate over the past twenty years and exam scores which has consistently placed the UCDH CLS Program within the top 10% nationally.

The UCDMC CLS Training Program also has a 100% graduation and job placement rate for over fifteen years.

Training Year	Graduation Rate	Board of Certification First-time Pass Rate	Job Placement
2009-2019	100%	100%	100%
2020-2025	100%	100%	100%

E. LIST OF CLINICAL TRAINING FACILITIES

UCD Health (Sponsoring Institution)
Marshall Medical Center, Placerville
Memorial Medical Center (MMC), Modesto – Sutter Affiliate
Sutter Medical Center Sacramento (SMCS)

F. ADMISSION REQUIREMENTS

The applicant must meet all of the requirements set forth by (1) State of California Department of Public Health (2) the National Accrediting Agency for Clinical Laboratory Scientists (NAACLS) (3) UCDMC and (4) College of American Pathologists (CAP)

- BS/BA Science degree (CAP preference) from an accredited university or college.
- Course work must include requirements of the California Department of Public Health-Laboratory Field Services and the NAACLS.
- Minimum requirements are:
 - Science degree with
 - Chemistry: 16 semester hours or equivalent quarter hours including biochemistry and analytical chemistry (quantitative analysis)
 - **Biological Sciences:** 16 semester hours or equivalent quarter hours including medical microbiology, immunology, and hematology.
 - Three semester hours or equivalent quarter hours in math, statistics, or physics.
- Courses must be completed with a GPA of 3.0 or above. Cumulative, science and most recent GPA must all meet the UCDMC program requirement of 3.0 or greater.
- Course work in biochemistry and medical microbiology must be completed within five years of first-time application.
- All required biology courses (medical microbiology, immunology and hematology) are preferred to have a B grade or higher.
- A valid State of California Clinical Laboratory Science Trainee License must be issued prior to training start.
- Completed Standardized Application Form with a personal statement of interest
- > Three letters of recommendation from science instructors and/or employers
- Official transcripts sent into the program office directly from registrar
- Interviews are required of selected candidates
- Accepted CLS trainees are cleared by UCDMC Volunteer Services which requires
 - Immunization review
 - Two step TB or a single QuantiFERON or chest x-ray
 - Safety training
 - Background check

- Signed waivers
- > Additional Information for foreign applicants
 - Applicants with foreign baccalaureate degrees must have an acceptable foreign transcript evaluation to determine if the completed course work meets stated requirements. Foreign transcripts must be evaluated by the National Association of Credential Evaluation Services (NACES) or the Association of International Credential Evaluators, Inc. (AICE).
- ➤ The UCDMC CLS Training Program is a small hospital based, certificate issuing program that is approved by the state of California as a 1-year consecutive training program. As this is an inclusive standardize program there is no advance placement, no ability to training at an accelerated rate, nor are any credits available for transfer. The credits earned are to be utilized for the UCDMC CLS training program only and no other previous training credits may be used to shorten the year of training.

G. LIST OF COURSE DESCRIPTIONS (CREDIT HOURS/COURSE)

Unit 1

Course Number CLS 300 CLS 310.A CLS 320.A CLS 330.A CLS 340 CLS 350.A	Course Title Immunohematology Clinical Chemistry I Clinical Hematology I Laboratory Operations I Toxicology Microbiology I	Credit Hours 3.0 3.0 3.0 0.5 1.0 3.0
	otal Semester riours for Office	13.3
Unit 2		
CLS 310.B CLS 320.B CLS 330.B CLS 350.B CLS 360 CLS 370 CLS 380	Clinical Chemistry II Clinical Hematology II Laboratory Operations II Microbiology II Immunology Special Chemistry Molecular Pathology	3.0 2.5 0.5 3.0 2.0 1.5 1.0
Unit 3		
CLS 310.C CLS 320.C CLS 350.C CLS 400	Clinical Chemistry III Clinical Hematology III Microbiology III Student Collaborative Project	2.5 2.5 2.5 1.5
T	otal Semester Hours for Unit 3	9.0
T	otal for 12- month training CLS curriculum	36.0

H. NAME AND ACADEMIC RANK OF PD AND CORE INSTRUCTORS

Program Director: Sharon K. McGoldrick, MS Ed, CLS

Core Teaching Coordinators: The four major CLS Training content areas (Transfusion Medicine, Hematology/Coagulation, Clinical Chemistry/Urinalysis and Microbiology) have CLS specialists who are responsible for CLS training in their specific content area.

I. TUITION/FEES

The UCDH CLS Training Program is supported by the sponsoring hospital and the clinical training affiliate sites. Currently there is no tuition charged. Accepted CLS trainees are responsible for all required vaccines/Tb screening, parking, LABCe subscription and certification and licensing fees.

WITHDRAW POLICY

A student may withdraw from the program due to medical, academic or hardship reasons. Since the student never pays tuition, he/she will not receive any refunds or have any financial obligations to the training program.

J. SERVICE WORK

Students are not required to participate in service work for the laboratory at any time. Throughout training, students will never be utilized as staff nor will any trainee be substituted to perform service work for any regularly scheduled staff member. UCDMC and clinical affiliate sites recognize and respect training hours to be utilized for CLS training purposes only. CLS students may be provided an option to participate in weekend training while in certain rotations. Training offered in weekend hours may expose the trainee to weekend workflow and provide an enriched training experience for the CLS student. In this case, students will be working with the assigned teaching specialists, the same objectives and evaluation instruments will apply for any weekend training opportunities.

As the UCDMC CLS training program is rigorous, students are discouraged to take on any part-time employment outside of the required 40 training hours per week of required CLS training. Any CLS student choosing to work outside training hours will be required to perform academically within 20% of their cohort group, to ensure appropriate time is available to CLS training.

K. Training Policies & Procedures

Advising and Guiding Students through the program while maintaining confidentiality and impartiality

One of the greatest benefits offered to a UCDMC CLS Trainee is the dedication and training support offered by the clinical staff, faculty, teaching staff, teaching coordinators and the program director. As a small hospital based program all clinical staff are dedicated to student training success, most trainees are retained as a career employee with their training site upon program completion. The program director meets frequently with CLS trainees and has an open door policy for students to come and seek support or training assistance. All student meetings, complaints, any concerns or training issues which may arise, and all student survey feedback, are held in strict confidentiality. Students are treated with respect and impartiality as they are our laboratory future and a valuable laboratory resource.

CLS students are encouraged to bring forth any training concerns so immediate corrections may be

made to ensure student training success.

2. Clinical Assignment if training placement cannot be immediately guaranteed

Students are accepted based upon training applied education availability. If training placement is not immediately available or if training is not able to be maintained throughout the year, alternate approved training locations will be secured whenever possible to allow student to r complete training.

3. Student Grievance & Appeals

STUDENT GRIEVANCE

The program provides an informal complaint procedure for academic and non-academic student complaints. Student complaints of misconduct of staff and/or working conditions are to be brought to the attention of the program director as soon as possible. When complaints about academic and non-academic matters cannot be resolved by the persons directly involved, the appeal procedures outlined in this document will be implemented.

APPEALS PROCEDURES

The due process procedure provides a mechanism to reexamine the program's decision made on academic and non-academic matters ensuring a fair disposition. Faculty, staff, or students may initiate complaints.

- A written or oral report shall be submitted to the program director explaining the complaint and the individual(s) involved within 30 days from the receipt of the program's decision on academic and/or non-academic matters.
- The program director establishes an ad hoc task force of at least three individuals to review the appeal. The program director appoints a task force that consists of a CLS section teaching coordinator, a bench CLS staff, and a CLS supervisor who played no role in the decision which is under appeal. If the concern is brought forth by an affiliate placed trainee, the affiliate teaching coordinator will be part of the task force as well.
- Upon receipt of the report, the program director will arrange a meeting between the task force and the individuals directly involved to discuss the complaint.
- The involved parties will be given an opportunity to present their views orally and/or in writing to the task force committee. Additional information such as documentary evidence and statements from third parties may also be submitted to the committee for review.
- Following the committee's review, it shall formulate its decisions and recommendations.
- The Program Director shall deliver the committee recommendations and decisions to the individuals directly involved. The decision shall be in writing and shall state the complaint, actions to be taken, and the reasons therefore. The decision and the recommendations of the committee are final.

4. Criteria for Program Completion (including probation, suspension, and dismissal)

PROGRAM COMPLETION REQUIREMENTS

In order to receive a graduation certificate, a student must successfully:

- 1. Receive a minimum rotation grade of "C" or >70% in each of the clinical rotations:
- 2. Complete all didactic lecture examinations with a 70% minimum competency level.
- 3. Complete a year-end comprehensive final examination with a 70% minimum competency level.

- 4. Complete all required evaluations.
- 5. Complete the community Service requirement which is 10 hours of community service while in the program. These community service hours must be related to the CLS program or health care and may include a collaborative project, case study presentation and/or participating in a community event such as the CAMLT symposia, Heart Walk etc.

Misconduct Warning

A misconduct warning may be given at the sole discretion of the instructor and is not a prerequisite to filing a formal charge. A misconduct warning may remain in the student's file indefinitely, or it may be removed at the discretion of the instructor and program director. Any improper conduct may result in dismissal.

Academic Probation

When it appears a student is not meeting the academic requirements necessary to satisfy the program's standards, the student may be placed on probation.

- If a student corrects the problem and the student's grades continue to meet program standards, there will be no cause for academic dismissal.
- If a student is unable to take corrective actions to meet the academic requirements, the student will be dismissed from the program.

CAUSES FOR DISMISSAL

The trainee may be dismissed from the program because of misconduct or academic failure including, but not limited to the following:

- A student receives a final rotation grade of D.
- A student is required to retake more than 3 examinations during the 12-month training period.
- Failure to consistently follow established guidelines for protection of self and others in matters regarding health and safety
- Failure to meet the time deadlines to correct deficiencies
- Dishonesty in carrying out assignments or examinations, or falsification or alteration of official documents
- Serious compromise of the standards of patient care or jeopardize of patient welfare
- Unethical conduct or breach of medical or academic ethics
- Failure to comply HIPAA (Health Insurance Portability and Accountability Act) to protect patient health information
- Plagiarism.

DISMISSAL POLICY

Necessary and appropriate corrective action may be applied for student misconduct or failure to maintain established standards of academic performance. The basis for dismissal will be determined by the student's behavior that interferes with the educational process or jeopardizes the welfare of the patient, fellow trainees, and faculty or staff.

L. ACADEMIC CALENDAR- UCDH AND AFFILIATE TRAINING SITES

Fall/Spring Training Class

Orientation Week Prior to Training Start
First day of training late July or early February
Last day of training 52 weeks after Training start
Graduation Ceremony Monday after program completion

HOLIDAYS

Labor Day September Veterans Day November 11

Thanksgiving Last Thursday/Friday of November

Winter Holiday December 24- January 1 (approximately)

Martin Luther King Jr. January
Presidents Day February
Cesar Chavez Day March
Memorial Day May
Juneteenth June
Fourth of July July

CLINICAL TRAINING HOURS:

Monday through Friday: 8:00 a.m. to 4:30 p.m. (may vary due to site/rotation)

Lunch: 30 minutes (Lunch and rest breaks are to be coordinated with the

instructor assigned to trainee)

Rest Breaks: Two 15-minute breaks per eight-hour rotation

M. RULES AND REGULATIONS GOVERNING ACCEPTABLE CONDUCT

PRINCIPLES OF COMMUNITY

The **Principles of Community** affirm the inherent dignity in all of us, the right of freedom of expression, the responsibility to reject discrimination and the need to build a community of mutual respect and caring. The **Principles of Community** are stated below:

"The University of California, Davis, is first and foremost an institution of learning and teaching, committed to serving the needs of society. Our campus community reflects and is a part of a society comprising all races, creeds and social circumstances. The successful conduct of the university's affairs requires that every member of the university community acknowledge and practice the following basic principles: We affirm the inherent dignity in all of us, and we strive to maintain a climate of justice marked by respect for each other. We acknowledge that our society carries within it historical and deep-rooted misunderstandings and biases, and therefore we will endeavor to foster mutual understanding among the many parts of our whole. We affirm the right of freedom of expression within our community and affirm our commitment to the highest standards of civility and decency towards all. We recognize the right of every individual to think and speak as dictated by personal belief, to express any idea, and to disagree with or counter another's point of view, limited only by university regulations governing time, place and manner. We promote open expression of our individuality and our diversity within the bounds of courtesy, sensitivity and respect. We confront and reject all manifestations of

discrimination, including those based on race, ethnicity, gender, age, disability, sexual orientation, religious or political beliefs, status within or outside the university, or any of the other differences among people which have been excuses for misunderstanding, dissension or hatred. We recognize and cherish the richness contributed to our lives by our diversity. We take pride in our various achievements, and we celebrate our differences. We recognize that each of us has an obligation to the community of which we have chosen to be a part. We will strive to build a true community of spirit and purpose based on mutual respect and caring."

CODE OF ETHICS OF CLS TRAINEES

Being fully cognizant of my responsibilities in the practice of Clinical Laboratory Science, I affirm my willingness to discharge my duties with accuracy, thoughtfulness and care.

Realizing that the knowledge obtained concerning patients in the course of my work must be treated as confidential, I hold inviolate the confidence (trust) placed in me by the patient and physician. Recognizing that my integrity and that of my profession must be pledged to the absolute reliability of my work, I will conduct myself at all times in a manner appropriate to the dignity of my profession.

STANDARDS OF CONDUCT

The UCDMC, Department of Pathology, Clinical Laboratory Scientist Training Program is committed to the practice of ethical standards in education and health care. The policies, procedures, and regulations of this Program reflect this commitment and are in compliance with those of the UCDMC. This Program expects an acceptable quality of work and mature behavior by trainees and requires all trainees to conduct themselves in a manner which meets the accepted standards of health care professionals, and of the Clinical Laboratory Scientist Training Program.

Medical Laboratory Professionals exercise sound judgment in all aspects of laboratory services they provide. Furthermore, Medical Laboratory Professionals safeguard patients from others' incompetent or illegal practice through identification and appropriate reporting of instances where the integrity and high quality of laboratory services have been breached.

Medical Laboratory Professionals maintain strict confidentiality of patient information and test results. They safeguard the dignity and privacy of patients and provide accurate information to patients and other health care professionals. Medical Laboratory Professionals respect patients' rights to make decisions regarding their own medical care.

Medical Laboratory Professionals comply with relevant laws and regulations pertaining to the practice of Clinical Laboratory Science and actively seek to change those laws and regulations that do not meet the high standards of care and practice.

REQUIRED REVIEW BOOKS- All required books are loaned to each trainee by the UCDMC CLS Training Program and are returned upon training completion.

- 1. Board of Registry Study Guide: Clinical Laboratory Certification Examinations. 6th Edition, 2019. (*Provided by Program*)
- 2. Jarreau, P. et. al. Clinical Laboratory Science Review: A Bottom-Line Approach. Fourth Edition. LSU Medical Center Foundation, New Orleans, Louisiana. 5th Edition 2015. (*Provided by Program*)**
- 3. Lehman, L. Success in Clinical Laboratory Science. 5th Edition, Pearson. 2019. (*Provided by Program*)
- 4. Harr, R. Medical Laboratory Science Review. 5th Edition, Davis.2019. (*Provided by Program*)

RECOMMENDED JOURNALS AND WESITES

- 1. Blood Bank Guy (http://www.bbguy.org/)
- 2. Patrick Tracy, Lab training videos https://www.youtube.com/channel/UCCOYTqbZUWMGbcY8G1P4-lg
- 3. American Society of Hematology (http://www.hematology.org/)
- 4. Clinical and Applied Thrombosis/Hemostasis (http://cat.sagepub.com/)
- 5. Blood Journal (http://www.bloodjournal.org/)
- 6. Journal of Clinical Microbiology (http://jcm.asm.org/)
- 7. Journal of Virology (http://jvi.asm.org/)
- 8. Journal of Immunology (http://www.jimmunol.org/)
- 9. The Journal of Molecular Diagnostics (http://jmd.amjpathol.org/)
- 10. Clinical Chemistry (http://www.aacc.org/publications/clin_chem/)
- 11. Immuocor Education Center (http://bloodbankknowledge.com/)
- 12. Transfusion Journal of the American Association of Blood Bank (http://www.aabb.org/programs/publications/Pages/transfusion.aspx)

SUPPLEMENTAL REFERENCES AND RESOURCES

- 1. http://www.ucdmc.ucdavis.edu/cme/distance_education/webevents/ Continuing Medical Education Self-Study Modules
- 2. UCDHS Clinical Resources Center: http://ecrc.ucdmc.ucdavis.edu
- 3. MTS Lab Training Library: www.medtraining.org:
- 4. www.ascp.org
- 5. www.andersonce.com
- 6. www.camlt.org
- 7. www.4CEUINC.com
- 8. www.phlebotomyweb.org
- 9. http://Diagnostica.Digiscript.com
- 10. www.ascls.org
- 11. www.cap.org
- 12. www.cacmle.org
- 13. www.bttrain.org
- 14. www.nltn.org
- 15. www.advanceweb.com
- 16. For molecular diagnostics, use:
 - Roche's Molecular Diagnostic CD-tutorials, Howard Hughes Virtual Lab Series: Bacterial ID Lab (http://www.hhmi.org/biointeractive/disease/vlab.html)
 - NIH's Lecture series (http://videocast.nih.gov/)

ORIENTATION CHECKLIST

Tasks	Date Completed
Essential Functions signature form	-
2. Pass Volunteer Services Health Clearance	
3. Volunteer Injury/Incident Medical Treatment	
4. Clinical Rotation Schedule	
5. Phlebotomy Schedule	
6. Telecommunications Badge and Cardkey	
7. UCD computing account	
8. Canvas Overview	
9. Timecard Procedure	
10. Lab coats–sizes	
11. Locker assignment	
12. Laboratory tour	
13. Lecture Schedule	
14. Lecturer Evaluation BY student	
15. Clinical Rotation Evaluation BY student	
16. Affective Objective Checklist OF student	
17. Clinical Rotation Evaluation OF student	
18. Reviewed P&P's	
19. Completed MTS Safety Modules outlined in the Safety Syllabus	

ESSENTIAL FUNCTIONS

(Functional Expectation Itemized by NAACLS)*

The CLS student must be able to:

- Observe visual laboratory presentations of any biologicals being tested for their biochemical, immunological, hematological, and microbiological components.
- Identify the color, odor, clarity, and viscosity of biologicals, reagents, or chemical reaction products. Use a clinical grade binocular microscope to recognize the difference between the structure and color (hue, shading, and intensity) of microscopic specimens.
- Read and understand the meaning of text, numbers, and graphs in print and on visual monitors.
- Possess intellectual skills of comprehension, measurement, and mathematical calculation, reasoning, integration, analysis, comparison, self-expression, and criticism.
- Exercise sufficient judgment to recognize and correct performance.
- Read and understand technical and professional materials.
- Follow verbal and written instructions in order to independently perform laboratory test procedures.
- Provide clear instructions to patients before specimen collection.
- Effectively communicate laboratory results in a sensitive and confidential manner to patients.
- Communicate and interact with faculty, fellow trainees, staff, and other health care members in a verbal and written manner.
- Independently prepare papers, laboratory reports, and take paper and laboratory practical examinations.
- Move freely and safely in the laboratory to reach bench tops, shelves, patients lying in hospital beds or seated in specimen collection chairs.
- Maneuver common laboratory equipment (micro-pipets, analytical instruments) with mobility necessary to utilize instrumentation and/or perform laboratory procedures.
- Perform moderately taxing continuous physical work, sometimes requiring sitting or standing for periods of several hours.
- Recognize potentially hazardous materials, equipment, and situations and proceed safely to minimize risk or injury to patients, self and others close by.
- Manage the use of time and organize actions to complete all tasks with realistic restraints.
- Possess the emotional health to effectively employ intellect and exercise appropriate judgment.
- Perform technical and professional services while experiencing the stress of task-related uncertainty and a distracting environment.
- Ability to be flexible, creative and adaptive to professional and technical change.
- Ability to support the activities of fellow trainees and health care professionals to promote a team
 approach to learning, task completion, and problem solving.
- Be honest, compassionate, ethical, responsible and outspoken about errors, and any
 uncertainties. The student must critically evaluate her or his performance, accept constructive
 criticism, and seek improvement.