



UNIVERSITY OF CALIFORNIA, DAVIS HEALTH

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

Revised 2020

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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 scientist which is achieved through our teaching but also by our example as practicing professionals.

B. GOALS AND GRADUATE COMPETENCIES

The **GOALS** of the UCDH 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.
- Graduates 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.

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 the required attestation of training completion, meeting the California Code of Regulations- 1035, chapter 3 division 2. The UCDH CLS training program is accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS).

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Laboratory Field Services
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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
naaccls.org/about.aspx

D. PROGRAM OUTCOMES

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

The UCDH 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	100%	100%	100%
2021			

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) UCDH CLS Program 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 NAACLS.
- Minimum requirements are:
 - Science degree with
 - **Chemistry:** 16 semester hours or equivalent quarter hours including biochemistry and analytical chemistry (quantitative analysis) or clinical chemistry
 - **Biological Sciences:** 18 semester hours or equivalent quarter hours including medical microbiology, immunology, and hematology.
 - **Physics:** Three semester hours or equivalent quarter hours must include light and electricity.
 - **Mathematics:** College algebra or higher.
- Cumulative, science and most recent GPA must all meet the UCDH program requirement of 3.0 or greater.
- Course work in biochemistry, hematology and medical microbiology must be completed within five years of first-time application.
- Required Coursework in Physics (with light and electricity), Immunology and Analytical or Clinical Chemistry must be completed within seven 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. <https://www.cdph.ca.gov/Programs/OSPHLD/LFS/Pages/CLS.aspx>
- 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 UCDH 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. Please refer to CDPH Licensing website.
- The UCDH CLS Training Program is approved by the state of California as a 1-year training program. As this is an inclusive program, there is no advance placement, no ability to train at an accelerated rate, nor are any credits available for transfer. The credits earned are to be utilized for the UCDH CLS training program only and no other previous training credits may be used to shorten the year of state approved training nor are UCDH program credits transferrable.

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

CLS Training Courses and Credit Hours

Unit 1

<u>Course Number</u>	<u>Course Title</u>	<u>Credit Hours</u>
CLS 300	Immunohematology	3.0
CLS 310.A	Clinical Chemistry I	3.0
CLS 320.A	Clinical Hematology I	3.0
CLS 330.A	Laboratory Operations I	0.5
CLS 340	Toxicology	1.0
CLS 350.A	Microbiology I	3.0

Total Semester Hours for Unit 1 13.5

Unit 2

CLS 310.B	Clinical Chemistry II	3.0
CLS 320.B	Clinical Hematology II	2.5
CLS 330.B	Laboratory Operations II	0.5
CLS 350.B	Microbiology II	3.0
CLS 360	Immunology	2.0
CLS 370	Special Chemistry	1.5
CLS 380	Molecular Pathology	1.0

Total Semester Hours for Unit 2 13.5

Unit 3

CLS 310.C	Clinical Chemistry III	2.5
CLS 320.C	Clinical Hematology III	2.5
CLS 350.C	Microbiology III	2.5
CLS 400	Student Collaborative Project	1.5

Total Semester Hours for Unit 3 9.0

Total for 12- month training CLS curriculum 36.0

H. NAME AND ACADEMIC RANK OF PROGRAM DIRECTOR AND CORE TEACHING COORDINATORS

Program Director: Sharon K. McGoldrick, M.Ed, CLS (all program, application and training questions are directed to the program director
skwahl@ucdavis.edu)

Core Teaching Coordinators: Each clinical lab section has a didactic instructor assigned to instruction. These instructors are the clinical specialist in this content area and provide didactic lectures to all accepted trainees.

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, 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. UCDH and clinical affiliate sites recognize and respect training hours to be utilized for CLS training purposes only. At no time are any students utilized as staff.

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 UCDH 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

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

One of the greatest benefits offered to a UCDH 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, the sponsoring institution will embrace the students to train or alternate approved training locations will be secured to allow the selected student to 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 task force will consist 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 program evaluations.

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 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 meets 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 health and safety policies
- Failure to meet the time deadlines to correct deficiencies
- Dishonesty in carrying out assignments or examinations, or falsification of official documents
- Serious compromise of the standards of patient care or jeopardize patient welfare
- Unethical conduct or breach of medical or academic ethics
- Failure to comply with HIPAA (Health Insurance Portability and Accountability Act)
- 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	Mid-August or Mid-February
Last day of training	52 weeks after Training start
Graduation Date	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
Fourth of July	July

CLINICAL TRAINING HOURS:

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

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 during 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 UCDH, 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 UCDH. 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.

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 WEBSITES:

1. Blood Bank Guy (<http://www.bbquy.org/>)
2. Patrick Tracy, Lab training videos
<https://www.youtube.com/channel/UCCOYTqbZUWMGbcY8G1P4-lq>
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/>)

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.