

UNDERGRADUATE CERTIFICATE

CLINICAL & TRANSLATIONAL SCIENCE

STUDENT HANDBOOK

Updated August 4, 2025



Undergraduate Certificate in Clinical and Translational Science Student Handbook

The Undergraduate Certificate in Clinical and Translational Science (UC-CTS) program is a training program offered through the UC College of Medicine, Department of Family and Community Medicine. It is supported by the Center for Clinical and Translational Science and Training (CCTST).

The CTS training offered through this program is designed to prepare undergraduates pursuing clinical research careers at academic health centers, biotechnology or pharmaceutical companies, hospitals, and more. Graduates from the program will obtain the practical skills and knowledge needed to work as a clinical research professional (CRP) and choose from a variety of career paths. The topics include clinical trials, research quality standards, research ethics, clinical trial management, data collection and management, grant proposals and IRB submission, project management, and working in teams.

This handbook is intended to provide an overview of the program requirements and resources available to students. Students are expected to comply with all policies and procedures outlined in the <u>UC COM handbook</u> and in each class syllabus.

For a list of program requirements and to apply, visit our website: <u>Undergrad CTS Certificate | CCTST</u>. For questions, contact:

Jackie Knapke, PhD

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(Course structure questions)

Michelle Marcum, MS, CCRP

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(Admissions, all general certificate questions, class permissions)

Deanna Markus

UC Health HCE Program Manager HealthcareExploration@UCHealth.com

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(UC Health Healthcare Exploration Internship/MEDS-

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baccalaureate program advising questions)

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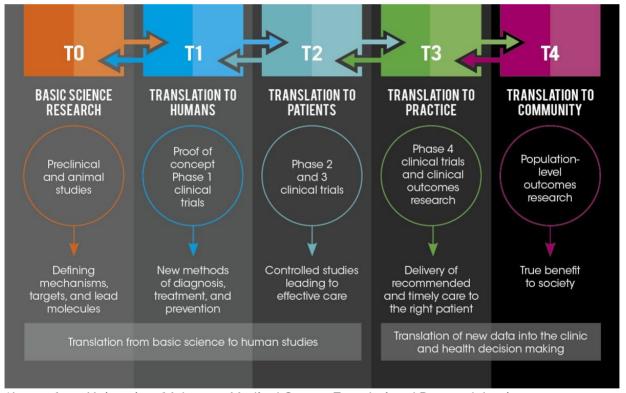
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Introduction to the Field of CTS

What is clinical and translational science? According to the National Center for Advancing Translational Sciences, translation is the process of turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and the public — from diagnostics and therapeutics to medical procedures and behavioral changes. Translational science is the field that generates scientific and operational innovations that overcome longstanding challenges along the translational research pipeline. These include scientific, operational, financial and administrative innovations that transform the way that research is done, making it faster, more efficient, and more impactful.

Clinical and translational science is the science that supports and facilitates clinical and translational research. The below figure provides a visual of the spectrum of clinical and translational research, from "T0" (pre-human/animal studies) to "T5" (population health).



*Image from University of Arkansas Medical Center, Translational Research Institute

Curriculum Overview

The Certificate program consists of 12 credit hours. Students can enroll in Fall or Spring and complete the program at their own pace.

Required courses

Course #	Course Title	Credit hours	Prerequisites	Offered	Mode
MEDS-3099	Healthcare Exploration through Patient Care*	3	None, but must apply to HCE program	Fall/Spring	In-Person
MEDS-3110	Introduction to Clinical & Translational Science	3	None	Fall/Spring	In-Person
MEDS-3111	Fundamentals of Clinical Trials	3	MEDS-3110	Fall	Online
MEDS-3112	Team-Based Clinical & Translational Science*	3	MEDS-3099 and MEDS-3110	Spring	Hybrid

^{*}These courses include a 12-hour/week in-person paid internship.

Sample Certificate Timelines

	Fall start	Credits
Fall	Introduction to Clinical & Translational Science	3
Spring	Healthcare Exploration through Patient Care	3
Fall	Fundamentals of Clinical Trials	3
Spring	Team-Based Clinical & Translational Science	3

	Spring start	Credits
Chring	Healthcare Exploration through Patient Care	3
Spring	Introduction to Clinical & Translational Science	3
Fall	Fundamentals of Clinical Trials	3
Spring	Team-Based Clinical & Translational Science	3

Undergraduate Certificate in CTS Graduation Checklist

Courses		
	Healthcare Exploration through Patient Care	
	Introduction to Clinical & Translational Science	
	Fundamentals of Clinical Trials	
	Team-Based Clinical & Translational Science	

Course Policies

The following policies and resources apply to all courses in the UC-CTS program:

Academic Code of Conduct

Academic misconduct or dishonesty is defined in the University of Cincinnati Student Code of Conduct. Academic misconduct includes, but is not limited to: acts of cheating, plagiarism, falsification, and misappropriation of credit. The Student Code of Conduct defines behavior expected of all University of Cincinnati students. It is each student's responsibility to know and comply with the University's Student Code of Conduct. Disciplinary procedures are explained in a step-by-step manner, and the procedures for appeal of decisions are stated. (see: UC's Student Code of Conduct)

- Plagiarism is defined as:
 - Submitting another's published or unpublished work in whole, in part, or in paraphrase, as one's own without fully and properly crediting the author with footnotes, quotation marks, citations, or bibliographic reference.
 - Submitting as one's own original work, material obtained from an individual, agency, or the internet without reference to the person, agency or webpage as the course of the material.
 - Submitting as one's own original work material that has been produced through unacknowledged collaboration with others without release in writing from collaborators.
 - Submitting one's own previously written or oral work without modification and instructor permission.
- Plagiarism will not be tolerated and according to the Student Code of Conduct (https://www.uc.edu/conduct/Code_of_Conduct.html), may result in the following consequences:
 - Formal report of academic misconduct.
 - Reduced or failing grade on the exercise.
 - Reduced or failing grade for the course.
 - Recommendation to the College Hearing Panel/Dean/Provost for probation, suspension, or dismissal.

Use of Artificial Intelligence (AI)

Please ask your instructor about the use of AI in individual courses. Program policy states that you are generally allowed to use AI, but only as a tool to improve written assignments that were originally created and developed by you. This means you are allowed to provide your original work to an AI tool and receive feedback or revisions for improvement. You should review AI suggestions carefully. You should not use generative AI to actually write an assignment because AI tools may include incorrect information or plagiarized text from someone else's work or fabricated citations. If we identify plagiarized, falsified, or fabricated information in an assignment submission, we will take appropriate actions to address the issue following the UC Student Code of Conduct.

Accessibility

Students with disabilities have the right to full and equal access at the University of Cincinnati. The Accessibility Resources office will work with you and identify reasonable accommodations to ensure an equitable opportunity to meet all requirements for this course. AR is also a resource for

coordinating access and accommodation to all non-academic programs and opportunities available to UC students and potential students.

Contact Information:

• Accessibility Resources Blue Ash: <u>UCBAAR@uc.edu</u>

• Accessibility Resources Clermont: <u>ClermontAR@uc.edu</u>

Accessibility Resources Clifton: <u>AccessResources@uc.edu</u>

Counseling Services, Clifton Campus

Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, Counseling and Psychological Services (CAPS) can provide professional counseling upon request; students may receive five free counseling sessions through CAPS without insurance. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concerns. After hours, students may call UHS at 513-556-2564 or CAPS Cares at 513-556-0648. For urgent physician consultation after-hours students may call 513-584-7777.

Title IX

Title IX is a federal civil rights law that prohibits discrimination on the basis of your actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also covers sexual violence, dating or domestic violence, and stalking. If you disclose a Title IX issue to course facilitators, we are required to forward that information to the Title IX Office. They will follow up with you about how the University can take steps to address the impact on you and the community and make you aware of your rights and resources. Their priority is to make sure you are safe and successful here. You are not required to talk with the Title IX Office. If you would like to make a report of sex or gender-based discrimination, harassment or violence, or if you would like to know more about your rights and resources on campus, you can consult UC's webpage for Title IX or contact the office at 556-3349.

Religious Accommodations Policy

Ohio law and the University's Student Religious Accommodations for Courses Policy 1.3.7 permits a student, upon request, to be absent for reasons of faith or religious or spiritual belief system or participate in organized activities conducted under the auspices of a religious denomination, church, or other religious or spiritual organization and/or to receive alternative accommodations with regard to examinations and other course requirements due to an absence permitted for the above-described reasons. Not later than fourteen days after the first day of instruction in the course, a student should provide the instructor with written notice of the specific dates for which the student requests alternative accommodations. For additional information about this policy, please contact the Executive Director of the Office of Equal Opportunity and Access at (513) 556-5503 or openhelp@UCMAIL.UC.EDU.

Healthcare Exploration through Patient Care (MEDS-3099)

This is a unique and innovative course that focuses on experiential learning through hands-on patient care at the University of Cincinnati Medical Center, coupled with a weekly seminar that introduces various healthcare career pathways and character development through reflection and cultivating habits that will help future health professionals.

Instructor Information

Name: Jackie Knapke, PhD

Title: Assistant Professor, Dept of Family & Community Medicine, Research Division

Office: Medical Sciences Building 4453-B or 5461

Office Phone: (513) 558-3237
Email: jackie.knapke@uc.edu
Office Hours: By appointment

HCE Program Manager Information

Name: Deana Markus

Title: HCE Program Manager, UC Health

Office Phone: 513-585-9461

Email: HealthcareExploration@UCHealth.com

Course Requirements

This course includes in-person requirements in two primary forms: a weekly seminar that incorporates guest speakers sharing their healthcare career journeys, as well as a work requirement as a Patient Care Assistant at the University of Cincinnati Medical Center (UCMC). Additionally, students are required to complete several course assignments as detailed below.

<u>In-person seminar</u>: Students will be introduced to a variety of topics, including development of a high-impact personal statement, creation of an effective resume, and introduction to different career pathways within healthcare. Attendance is recorded each week, and students must attend 10 of the 14 seminars in order to receive full participation credit.

Weekly Writing Assignments: Students will be required to submit brief, weekly written assignments throughout the semester, as posted in Canvas. These include but may not be limited to: a professional resume, a personal statement, and reflection papers in response to prompts. Many of these reflections will ask students to reflect on their recent PCA experiences and connect those experiences to assigned readings in the course's required book. Each reflection paper should be 99 words or less and should address the prompt for that week in a meaningful and relevant way. Assignments submitted more than two weeks after the deadline posted in Canvas will not be counted. Students must submit the resume, personal statement, and at least 10 of the 12 assigned reflection papers in order to receive all written assignment credit.

<u>Required Course Text</u>: Students should obtain a copy of the following book, which will be used in conjunction with many of the semester's assigned reflection papers.

 Covey S, Covey SR. The 7 habits of highly effective people: guided journal. Fievre MJ, editor. Coral Gables, Utah: Mango; 2020. ISBN 978-1642503173.

HCE Internship Requirements

To enroll in MEDS-3099, students must first apply to and be accepted into the Healthcare Exploration (HCE) Program at UC Health. Through this program, students are part-time employees of UC Health and subject to UC Health policies, including vaccination requirements (listed below). Students will receive \$17/hour for training, orientation, and hands-on patient experience as a Patient Care Assistant (PCA).

Application: Students are required to apply for the Healthcare Exploration Internship on UC Health's career portal by visiting careers.uchealth.com and searching keyword Healthcare Explorer to find the listing. Application deadlines will be communicated with UC-CTS students each semester. Qualified applicants are current UC undergraduates who have completed at least one year of school with a minimum of 2.5 GPA. Pre-Pharmacy students do not need to complete one year of school to be considered.

<u>Orientation:</u> Orientation start dates begin in mid-to-late Summer or over winter break; exact dates vary. Orientation runs full-time for two weeks. Attendance in-person is mandatory to begin PCA work.

In-person PCA Work: Students will also be required to work an average of 12 hours per week, totaling 168 hours for the semester; 80 of which will need to be after 3pm or on the weekend. Work hours are recorded over the semester, and students must complete 168 hours total with 80 of those 168 off-shift to receive all work credit.

Contact Anna Johns for a recent syllabus.

Introduction to Clinical and Translational Science (MEDS-3110)

This course will introduce students to established and fundamental concepts of clinical trials and translational science where scientific discoveries are translated into methods for preventing, diagnosing, and treating disease. Course topics include: an overview of clinical and translational science, clinical research history and resulting ethics considerations, an introduction to the clinical trial process, Good Clinical Practice (GCP), and the key and various roles and functions of clinical research study team members.

The goal of this course is to prepare students to conduct clinical and translational research studies in the academic and industry setting, with established key concepts and base knowledge of Clinical Research Professionals (CRPs) including: Human Research Participants Protections and Ethics, Participant Safety, Regulatory Requirements, Investigational Product Development, Good Clinical Practice (GCP), Study Coordination and Management, Study Start up, and Site Level Study logistics of conducting a study.

Readings, projects, discussion boards, lectures, and tests will be used to help students' understanding of the key concepts of clinical and translational science and conducting clinical research studies.

Instructor Information

Name: Nathaniel L. Harris, BS

Title: Clinical Research Administrator, Compliance and Education, Instructor

Office Phone: (513) 558-9068
Email: harrisnl@ucmail.uc.edu
Office Hours: By appointment

Course Requirements

<u>In-person lectures</u>: Class will meet twice a week. Assignments, including readings, discussion board topics, and any guidance on the final project will be given during each lecture. Attendance will be recorded at each class session, and students must attend 26 of 30 class sessions to receive full participation credit. Additionally, students are required to complete several course assignments and participate in small group discussions and discussion boards.

Required Course Materials: Students should obtain a copy of the following books, which will be used in conjunction with many of the semester's lectures and assignments:

- A Concise Guide to Clinical Trials. J. Rick Turner, PhD (ISBN 978-0615507675)
- The Comprehensive Guide to Clinical Research. Dan Sfera and Chris Sauber (ISBN 978-1090349521)

Both are available from Amazon and the UC Bookstore in paperback form. Excerpts from either of the preceding books pertaining to specific lectures and assignments will be provided **upon request** for anyone unable to obtain physical copies of either book.

Contact Anna Johns for a recent syllabus.

Fundamentals of Clinical Trials (MEDS-3111)

This course will introduce students to the fundamental concepts of how to conduct a clinical research trial for medical product development in an academic and industry setting. Clinical Research Professionals perform a large variety of tasks related to the clinical research enterprise.

This course aims to give students the skills to conduct clinical research trials in an ethical, safe, vigilant, and collaborative manner. Key concepts include human research subject ethics, regulatory approvals, participant safety, investigational product development and regulation, study management, site management, and Good Clinical Practice (GCP).

Class readings, lectures, discussion board posts, assignments, and tests will be used to help the student understand the key concepts of this class and the overall fundamentals of clinical research studies.

Instructor Information

Name: Sarah Buccigross, MHA

Title: Clinical Research Manager, UC Cancer Center Clinical Trials Office, Instructor

Office: Stetson Building Room #3262

Office Phone: (513) 584-5294 Email: wilso4sh@ucmail.uc.edu Office Hours: By appointment

Course Requirements

<u>Synchronous online lectures:</u> Live classes will be held three times per week via Teams and will be accompanied by assigned readings. Students will be assessed on their knowledge and understanding of course objects via discussion board posts, class assignments, tests, and a final project.

Required Course Materials: Students are required to obtain a copy of the following:

• "A Clinical Trials Manual From The Duke Clinical Research Institute: Lessons From a Horse Named Jim" (2nd edition) by Margaret Liu and Kate Davis (ISBN 978-1405195157)

This text is available from Amazon and the UC Bookstore.

Contact Anna Johns for a recent syllabus.

Team-Based Clinical and Translational Science (MEDS-3112)

The course description will become available soon.

Instructor Information

Name: Angela Mendell, MS

Title: Program Manager, CCTST, Instructor

Email: angela.mendell@uc.edu
Office Hours: By appointment

Course Requirements

Online lecture:

Required course materials:

Internship Requirements

Matching process:

In-person research:

Frequently Asked Questions

Q. How do I declare the certificate?

A. Once you receive an email that you are accepted into the program, follow this link to officially declare the certificate: https://www.uc.edu/about/registrar/record-updates/cpp-workflow/declare-ugrd-cert.html. Completing this form to add the UC-CTS certificate will not alter your existing programs. Once your request has been accepted, you will be notified via email that you need to return to the site to confirm. Please be sure to confirm your acceptance in a timely manner; otherwise, your request will be cancelled.

Q. I cannot complete all the certificate requirements. Can I still take certain classes?

A. Yes, students may complete MEDS-3099, MEDS-3110, or MEDS-3112 without enrolling in the certificate program (provided they have met any prerequisites listed on page 2.) MEDS-3112 is only available to students in the UC-CTS program.

Q. I missed the application deadline. Can I still apply?

A. We review applications on a rolling basis throughout the year, so you can apply at any time following the next semester's deadline.

Q. How do I get permission to enroll in MEDS-3099, MEDS-3111, and MEDS-3112?

A. In order to get permission to enroll in MEDS-3099, you must first be accepted into the HCE internship program. For MEDS-3111 and MEDS-3112, email anna.johns@uc.edu if you have completed the prerequisites and are eligible to enroll.

Center for Clinical and Translational Science and Training (CCTST)

The Center for Clinical and Translational Science and Training (CCTST) was established in 2005 as the UC academic home for clinical and translational research, providing "one-stop shopping" for investigators across the AHC and beyond in need of guidance, information, support, resources and training.

The CCTST spearheaded the AHC's submission of an NIH Clinical and Translational Science Award (CTSA) application. In 2009, UC and its partner institutions CCHMC, UCMC, and Cincinnati VAMC comprised the 39th member of the CTSA Consortium, which now includes over 60 institutions. Its offices are centrally located in the CCHMC "Location S" research building, directly across the street from UC's Medical Sciences Building.

Investigators request services through the CCTST's online "Research Central" portal at http://cctst.uc.edu. The CCTST website also features service descriptions, videos, a searchable database of intramural funding opportunities, news, and a comprehensive calendar of oncampus workshops, conferences and lectures of interest to clinical/translational researchers. Faculty, trainees and community/industry partners can establish free CCTST membership online, required to obtain access to consultation services through Research Central as well as special funding, training and networking opportunities. In return, members help promote CCTST goals and services, collaborate and share expertise with fellow researchers, cite CCTST assistance in publications as appropriate, and provide information for surveys and reports. To date, approximately 4,200 members have joined the CCTST, including over 400 community representatives. Students are welcome to become members in order to learn more about training and community events and gain access to research resources – membership is free: https://chi.uc.edu/cctst/login.

Academic Resources

How to Register for Classes

Catalyst www.catalyst.uc.edu is the UC Web site where you can register for classes, accept your aid award, pay your bill, check your grades, request a transcript, and more. The One Stop Student Service Center is located on the second floor of the University Pavilion. Contact Anna Johns if you need help registering for UC-CTS courses.

Phone: 513-556-1000

Office hours: Monday - Thursday, 8-5 and Friday 9-5

Libraries

University of Cincinnati Libraries offer access to an outstanding research library collection of 2.8 million volumes and a wide range of services to help students with their research needs. Students have access to the University of Cincinnati Libraries' online library catalog and information about resources and services through these main web portals: University Libraries (www.libraries.uc.edu) or the Health Sciences Library (http://libraries.uc.edu/hsl/). The libraries' web sites serve as local gateways to OhioLINK, which includes a statewide library catalog of over 38 million items from 83 other academic libraries across Ohio as well as over 4700 electronic journals.

Each University of Cincinnati library is home to a knowledgeable staff eager to assist students, faculty, and staff with their research and service needs. Among the most important services provided by our staff are instruction in library research, assistance with the appropriate use of electronic resources, and help creating electronic Dissertations and Theses. For more information about these instruction sessions visit:

http://www.libraries.uc.edu/help/th/thand.html and http://www.libraries.uc.edu/hsl/reference/edutrain.cfm. Hours of libraries vary. For information and the current semester's library hours, consult the University Libraries' web site at http://www.libraries.uc.edu/information/hours_maps/index.html

The Health Sciences Library is located on the E level of the Medical Sciences Building/CARE building. Visit the Health Sciences Library website at: http://libraries.uc.edu/hsl/. Contact information and directions follow:

Circulation Desk: 558-0127 Reference: 558-5628

Technology Support: 558-4173

The entrance to the library is in the Medical Sciences Building on the E level across from MSB E351 and between Kresge Auditorium and the bank of passenger elevators.

If you drive:

Enter the Medical Center Campus by traveling north on Eden Avenue. Just past Goodman Avenue, turn left into the Eden Avenue Garage. Park and go to the 5th floor of the garage. An elevator is located on the east side of the parking garage. The pedestrian bridge is on the 5th floor beside the elevator. Walk across the pedestrian bridge into the Academic Health Center complex.

Continue along the hall until you reach the end. Turn left and enter the Medical Sciences Building through the double doors. You are on G level. Continue on G until you reach the bank of passenger elevators on the left. Take the elevator down one floor to the E level.

The entrance to the Health Sciences Library will be just beyond the bank of elevators. Walk toward the seating area and the entrance will be on the right.

If you take the campus shuttle:

Exit the shuttle in front of the Eden Garage on Eden Avenue. Cross the street and climb the stairs to the entrance of the Center for Academic Research Excellence (CARE) building. Go through the double doors into the atrium that is between the CARE building and the Medical Sciences Building (MSB). On the left you see the HSL computer lab through the glass wall and on the right you'll see seating plus a glass "hut". Walk between the two and the entrance to the library will be on the left before you reach the bank of red brick passenger elevators on the right.

If you get dropped off in the circular drive on Albert Sabin Way:

Enter the Medical Sciences Building (MSB) and continue along the hall until you see the MSB E351 on the left and the red brick passenger elevator bank on the right. Just before the elevators, turn right and the entrance to the Health Sciences Library will be on the right just beyond the elevator bank.

Shuttle Bus

The University of Cincinnati offers a shuttle bus service that transports students, staff, and faculty across campus. Buses run every 7-10 minutes Monday through Friday year round (except holidays). The nearest stop to the Medical Sciences Building is in front of Eden Garage. For information on shuttle routes and bus stops, visit their website at http://www.uc.edu/af/facilities/services/shuttle.html or call 556-4424.

Medical Campus (West Campus) Map

A map of the UC Medical Campus can be found here: 2024 FALL COLOR UC EAST-MED CAMPUS