

Opportunities to Engage in Research at the Larner College of Medicine

TO: Members of the UVM Larner College of Medicine Class of 2027
FROM: [Renee Stapleton, MD PhD](#)
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DATE: November 10, 2023
RE: Opportunities to Engage in Research at the Larner College of Medicine (LCOM)

- ❖ Information in this document applies to both the UVM LCOM Summer Research Fellowship and the CVRI (Cardiovascular Research Institute) Summer Research Fellowship
- ❖ [A pre-proposal form](#) must be filled out and approved prior to writing a full proposal
- ❖ A mentor is required
- ❖ A Summer Research Award will be awarded for the 3 most meritorious projects (open to all students who submit the final abstract and present their research from their summer research experience at the annual fall poster session). CVRI also bestows one merit award.

Research is an important component of the multiple missions of the Larner College of Medicine (LCOM). We encourage you to participate in the opportunities available during your medical training to engage in **basic, clinical, translational, medical education, health services, and/or health policy-related research** activities that are ongoing in the institution.

How to start?

First, read through this letter carefully. You can also see the LCOM Medical Student Research Website where this letter and additional informational links are posted

Visit the [main LCOM Research Website](#). On the website, you will find departmental research web sites, programmatic web sites, links to the Research Protections Office, and a wide variety of information about the kind of research done in the College and at University of Vermont Medical Center. Based on what you see, you may want to contact one or several faculty members to find out if they would be willing to act as your mentor for a 7-week summer experience.

You can also [find information on the CVRI Summer Research Fellowships](#) online.

Your fellow students (M2s) are also an important resource during an informational meeting on Summer Opportunities, which will occur in November or December, during the lunch hour. Students and program directors will present the possibilities for your summer between your first and second year, including but not limited to the UVM LCOM Summer Research Fellowship. Please [visit the Summer Opportunities section of the Medical Student Services Commons space for resources from this year's and past years' sessions](#). In this location is a link to view [mentors and projects from the past many summers, as well as potential mentors for the coming summer](#).

How is this summer experience supported?

There are several mechanisms available to provide financial support for summer research. Additional information can also be obtained through individual faculty and departments. Here is a listing of the types of support that are available:

1. Both the College of Medicine and the CVRI **Summer Research Fellowships** (described in more detail at the end of this memo). These Fellowships are competitive and support students for a 7-week summer research project with stipends of \$3000.
2. NIH-funded Grants may have support for summer experiences for medical students. The Training Grants at the College are listed on the [UVM LCOM Research website](#). You might also consider contacting the following center to inquire:
 - a. Vermont Lung Center – contact Dr. Anne Dixon, Department of Medicine
 - b. Vermont Center on Behavior & Health – Dr. Stephen Higgins, Department of Psychiatry
 - c. Cardiovascular Research Institute of Vermont – Dr. David Schneider, Department of Medicine
 - d. Vermont Cancer Center – Dr. Randall Holcombe, Division of Hematology/Oncology
 - e. Vermont Center on Cardiovascular and Brain Health – Dr. Mary Cushman, Division of Hematology/Oncology
3. There are opportunities in some **Departments of the College of Medicine** to support students for a summer and all departments/divisions have a ‘research liaison’ faculty member. However, departmental opportunities for support are often limited and on a first come – first served basis.
4. Arrangements with **individual faculty**. Many individual College of Medicine faculty have access to extramural funding or departmental/divisional funds to support summer activities, and as mentioned above, the website is an excellent way to get started in reviewing the faculty’s interests. The Office of Medical Education maintains a [list of individual faculty who have mentored students in the past and/or have expressed interest in students joining their groups for summer research](#), but it is not exhaustive.
5. [Dr. Renee Stapleton](#), Director of Medical Student Research, is an excellent resource for help with navigating the research process and finding a mentor.
6. One frequently asked question regards statistical support for student research projects. You may well have access to statistical assistance through your mentor. However, if you need additional help, please be in touch with Maria Scolnick, a statistical consultant in the UVM libraries. Statistical software support and consulting services are available to students, postdocs, and researchers at UVM. Maria can assist with statistical methodologies, data interpretations and analysis, experimental design, and the use of statistical software. Maria’s webpage is here: https://library.uvm.edu/research/statistical_software_support. The Dana Library walk-in hours are Wednesday 2-4pm, in addition to the other options on the web page.

What are some key issues?

No matter what the source of support or with whom you work, here are some key issues that need to be addressed:

1. **Types of Projects:** Projects are expected to be “research”, defined as either 1) posing a hypothesis and performing a basic science or clinical “experiment” with data collection and analysis to address the hypothesis and provide new insight and knowledge or 2) using appropriate methods for qualitative research (this is not-hypothesis-driven but requires specific methodology). In some cases we may accept more descriptive research such as observing a new area of medicine and/or biological science and carefully documenting features or characteristics, thereby providing important new insight into “what” something is. However, such projects will be given a lower priority and may not receive funding if we have many proposals. Case reports and case series reporting on clinical events, while scholarly, are not considered research and will not be funded. Similarly, literature reviews are also not considered research and will not be funded. Meta-analyses, however, utilized specific statistical methods to aggregate data from multiple studies; these are research and can be funded.
2. **Your role on the project:** Students are expected to have a major role in the project that is distinct from others in the research group who might be working on the same project. In other words, each student should have their own research question that they are working to answer independently. They should not be shadowing other researchers in the group/lab. Additionally, while more than one medical student can be supported by an individual mentor for summer projects, more than one student cannot work on the same research question.
3. **Mentorship:** Having a mentor is a requirement. Having your mentor be an LCOM faculty member is not a requirement BUT we strongly advise you do so; proposals with extramural mentors and performance sites will receive a lower priority and may not be funded if there are more proposals than funds can support.
4. **Funding:** Funds to conduct research are always very tight, and to try to support as many students as possible, we encourage mentors to contribute funds in addition to the OMSE. Student projects where the mentor is committed to sharing the funding will receive priority over those without mentor funding.
5. **Human studies:** If your research involves human subjects, the protocol must be in place and approved by the UVM Institutional Review Board (IRB) in order for you to receive funding for your project. In other words, **if your proposal is accepted for funding, you must show proof of IRB approval to receive your summer stipend.** This means that you need to make sure this IRB approval process starts early. Work with your mentor to make sure this happens.
6. **Animal studies:** If your research involves animals, you will need to submit a protocol to the Institutional Animal Care and Use Committee (IACUC) and have it approved before you can begin your work. This needs to be done in consultation with your mentor. However, often you can be added to an existing protocol based on your mentor’s work. Ms. Aubrie Class is the Director of IACUC and can be a resource for you in this area. A certificate for completion of web-based training for working with animals is also a requirement and can be found on the [Animal Resources Center web site](#).
7. **Training in the conduct of research:** There are 2 trainings that students must complete.
 - a. First, all summer students must complete the ***UVM LCOM Summer Research Fellowship Students Fundamentals in the Conduct of Clinical Research Training Program***. This program was designed in partnership between the LCOM Office of Clinical Trials Research and the LCOM Medical Student Research program, with the goal of providing Summer Research Fellowship recipients a foundation for the conduct of research at UVM and UVMHN. Ms. Kim Luebbers directs the [Office of Clinical Trials Research](#) and the [Clinical](#)

[Research Center](#), and she was instrumental in designing this training. She can be an excellent resource to you for help.

- b. Second, if your research involves human subjects, you must also complete the UVM on-line course concerning human subjects research (CITI Training). This course is available on the [IRB web site](#). The [IRB web site](#) is an excellent source of additional information.
8. **Timing and Work Expectations:** You will only have a maximum of 7 weeks available in the summer, so you and your mentor will need to make careful plans to fit in a productive project. It is important to start early! The expectation is that you will work full time (i.e. 40 hours per week) for the 7-week summer research experience.
9. **Libraries support:** At the time of receiving summer fellowship awards, students will be assigned to one of several librarians in the Dana Health Sciences Library who can assist with finding information, literature searching strategies, and locating relevant sources for your project.
10. **Final Research Presentations/Abstracts:** All recipients of the COM Summer Research Fellowships (LCOM and CVRI) are required to summarize and present their final research work at the annual Poster Session for Summer Medical Student Research. You will be required to submit a 400-word abstract and an electronic copy of your poster in the fall of 2024 about 2 weeks prior to the poster session (date and time TBA). The abstract can also include one reasonably-size table or figure, in addition to the 400 words. Presentation of your work at the poster session is a requirement.

While not required, we strongly encourage students/mentors to formally write up their research and submit a manuscript for publication.

2023-2024 timeline

August – January	Have discussions with faculty, identify a mentor and a potential project
Monday, November 13	Summer 2024 Research Opportunities Information Session
Friday, November 17	M1 Event – Annual Larner Summer Opportunities Panel
Monday, February 12	Submit pre-proposal form electronically to Student Services at StudentCOMServices@med.uvm.edu . *Must be submitted as a single PDF document with the file name "2024_SummeResearch-PreProposal_ <i>studentlastname</i> <i>studentfirstname</i> "
Friday, March 3	Project review outcomes sent via email
Monday, April 15	Final proposals due (submitted electronically to Student Services at StudentCOMServices@med.uvm.edu)* *Must be submitted as a single PDF document with the file name "2024_SummeResearch-FinalProposal_ <i>studentlastname</i> <i>studentfirstname</i> "
Friday, May 10	Award notifications for LCOM fellowships sent via email
June 24 - August 9	7- week Summer Research Fellowships completed under mentor supervision

TBA in September or October	Final research abstracts and an electronic copy of your poster are due (submitted electronically to Student Services at StudentCOMServices@med.uvm.edu)* *Must be submitted as a single PDF document with the file name "2024_SummeResearch-FinalAbstractPoster_ <i>studentlastname</i> <i>studentfirstname</i> ." See detailed instructions below.
TBA in September or October	Poster session attended by students, mentors, Medical Student Research Committee Members, faculty, administration, etc.
January 2025, at end of Foundations Level	Selected Merit Award Recipients presented at the class's End of Foundations Celebration

College of Medicine and CVRI Summer Research Fellowships:

Summer Research Fellowships funded by the College provide **\$3000** and are **7 weeks** in length. Support for these fellowships is awarded based on the relative merit of the proposals submitted. We will try to fund as many as possible. We require each applicant to ask their mentor to help with their support (see more below), and many of the training faculty members contribute their own research funds to these endeavors in order to make more fellowships available.

The CVRI (Cardiovascular Research Institute) also funds three Summer Research Fellowships at **\$3000** each for research related to cardiovascular disease. The application process for these fellowships are the **same as for the LCOM Summer Research Fellowships**.

Students wishing to compete for these funds (either from the College or from the CVRI) must submit a [pre-proposal form](#) that includes student and mentor information as well as a **brief** description of the project and anticipated funding sources. Work with your mentor to ask if they can provide partial financial support for your project.

Following approval of the pre-proposal,

A full proposal will be required describing the project **not to exceed 5 double-spaced, type-written pages (not including references)**. It is understood that the student requesting support will write their pre-proposal and proposal in collaboration with their chosen mentor. The proposal **must** contain:

- a cover page indicating the title of the proposal, and the name of your faculty mentor;
- a statement of Specific Aims including the hypotheses to be tested or objective of project (1 page);
- a brief background and significance section (1-2 pages);
- methods of procedure including the rationale for their choice (1-2 pages);
- future directions in which this project may lead (½ -1 page);
- your specific role in the project (1-2 sentences); and
- a letter from your chosen mentor/sponsor indicating their willingness to mentor you in this endeavor as well as indicating what funds, if any, are available to support the various aspects of the project. They should specifically address whether funds are available to support ½ of the stipend.
- Please note that the 5-page limit does not include the cover page, references, or mentor letter.

Applications will be reviewed, and awards made on a competitive basis. All final proposals must be submitted **by Monday April 15, 2024**, electronically to Student Services at StudentCOMServices@med.uvm.edu

Merit Awards

All recipients of the LCOM and CVRI Summer Research Fellowships are required to present their final work summarizing their research experience in the form of a 400-word abstract and a poster presentation at the annual poster session in the fall. The Larner College of Medicine Medical Student Research Committee will evaluate the abstracts and posters and will select three merit award recipients based on the quality of the project. The three selected students are recognized and receive a \$500 Merit Award at their End of Foundations Celebration, in January. The CVRI also bestows one merit award each year to the most meritorious cardiovascular research-related final report. Students participating in summer research outside of LCOM and CVRI fellowships may also submit abstracts and posters to be considered for a merit award.

Final Abstract and Poster Instructions

The final abstract should have the following characteristics:

1. Should be no more than 400 words to include sections d-g below (excluding cover letter [below], title, authors, and one reasonably-sized table or figure)
2. Should include the following sections:
 - a. Title
 - b. Authors
 - c. Introduction/background/rationale
 - d. Methods
 - e. Results
 - f. Discussion of the importance and impact of the Results
 - g. Conclusions
3. You must also include a cover letter (not more than one page, single-spaced) that introduces the abstract, and contains the following:
 - a. A section on difficulties encountered and how they were addressed
 - b. If appropriate, a comment from your mentor explaining what part of the project was actually done by you
 - c. A section on what you learned and what you “took away from this experience”

Posters should generally be created in PowerPoint. Please format them at 48” wide and 36” high to fit on the poster boards. There is no specific poster template requirement, so please work with your mentor(s) to choose the best format.