

2024 VRI Summer Internship Program:

Vitalant Research Institute (VRI) in San Francisco, an affiliate of the University of California, San Francisco, has openings for **full-time 8-week paid summer internship positions beginning June 17 through August 09, 2024**. Selected students are eligible for a \$4,000 stipend for the successful completion of the 8-week program. Students will participate in seminars, presentations, and institutional events.

Requirements:

Candidates are required to be enrolled in an educational institution (must be matriculated in semester before or after summer 2024, work in a team environment, set priorities, and devote full time to this training experience. Candidates must also have effective oral and written communication skills and be self-motivated with good organizational skills.

2024 Application Deadline: Due April 12, 2024

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- [CLICK HERE](#) to fill out the 2024 Summer Internship Application.
 - [CLICK HERE](#) to email your application **with a letter of interest** and copy of your college transcript (optional*): **Attention: F. Assenzio**, Human Resources.
 - **If you choose to send your transcripts, unofficial copies of transcripts are acceptable.**
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The Summer Internship Program at VRI provides undergraduate and master's students the opportunity to participate in research in the areas of transfusion medicine and cellular therapy through pairing with an investigator/mentor in one of the following research areas:

1. **A summer internship is available in the Dr. Norris Immunology Laboratory.** Ongoing research projects focus on the molecular mechanisms of HIV and COVID-19 pathogenesis, with special emphasis on novel mechanisms of immune signaling mediated by extracellular vesicles in disease states. The summer project will focus on optimizing methods to determine the effect of extracellular vesicles derived from COVID-19 individuals in mediating immune responses leading to inflammatory cell death in endothelial cells an *in vitro model*. [Vitalant Research Institute - Philip J. Norris, MD.](#)
2. **A summer internship is available in the laboratory of Dr. Satish Pillai, PhD, to investigate the molecular biology and pathogenesis of HIV/AIDS from an evolutionary perspective.** Ongoing projects in our lab include studies of host and viral factors involved in the maintenance of HIV latency, which is the principal obstacle to a cure for HIV infection. Projects will involve learning cell culture, flow cytometry, next-generation sequencing, and gene editing techniques to study the virus-host interface. [Vitalant Research Institute - Satish K. Pillai, Ph.D.](#)

3. **A summer internship is available in the cell biology laboratory of Dr. Marcus Muench.** Will use cells and progenitors isolated from human tissues. The project will involve testing the differentiation of these cells in various in vitro and in vivo systems. The internship will offer the opportunity to gain experience in basic laboratory skills in cell culture, flow cytometry, and work with xenogeneic transplant models. Basic concepts in stem cell biology, hematology, and developmental biology will be taught. Applicants must be willing to work with human pathology specimens, transplant models and be willing to handle potentially infectious agents. [Vitalant Research Institute - Cell Therapy.](#)

4. **4 - A summer internship is available assisting Dr. Shana Hughes, PhD, MPH. Project: Understanding Motivations for Blood Donation.** The intern will assist Shana D. Hughes, PhD, MPH with several projects focused on understanding motivations among blood donors. Shana is an applied medical anthropologist, currently engaged in formative qualitative and “mixed methods” research on this topic. Responsibilities will vary depending on intern’s interests and background (ideally pursuing master’s degree in a social science discipline but advanced undergraduate and other disciplines also considered) but may include assisting with qualitative data collection, management, and analysis for studies at multiple locations across the US. [Vitalant Research Institute - Dr. Shana Hughes, PhD, MPH.](#)

5. **A summer internship is available in the laboratory of Dr. Kimberly Thomas, PhD.** Dr. Thomas is seeking a summer intern interested in studying platelet:endothelial cell interactions. Platelets play an important role in maintaining vascular homeostasis and endothelial barrier function. In certain diseases, patients can become thrombocytopenic – have a very low number of circulating platelets – which causes endothelial barrier breakdown and results in mucocutaneous bleeding. To stop this bleeding, patients are given platelet transfusions to increase the number of platelets and restore the endothelial cell barrier. Traditionally, the platelet products used for transfusion can be stored in the blood bank for up to 5 days at room temperature before they can no longer be used for transfusion. However, there is a critical shortage of platelet products due to this short shelf life and decreased numbers of platelet donors. As such, methods to extend the shelf life of platelets, such as refrigeration, are an active area of transfusion medicine research. Currently, it is unknown how refrigeration of platelets will affect their ability to maintain vascular hemostasis and endothelial barrier function. This is the basis for the Thomas Lab 2024 Summer Internship project. During this internship, you will become well-versed in conceptualizing, designing, and executing experiments to assess how platelets alter endothelial cell function. This involves laboratory techniques set in bio-safety level II (BSL-2) conditions including, but not limited to, use of biosafety cabinet, cell culture, flow cytometry, cellular assays, RNA extraction and qPCR, and fluorescent microscopy. Your training will also include data analysis, visualization, documentation using an electronic notebook, and weekly participation in lab meetings. You will also gain experience presenting your research in both small and large group settings. Please contact Dr. Thomas with questions - KThomas@vitalant.org. [Vitalant Research Institute – Kimberly A. Thomas, PhD.](#)

6. **A summer internship is available in the laboratory of Dr. Rachael Jackman.** Our lab studies the immunology of blood transfusion and uses animal models to evaluate immune responses to transfusion such as alloimmunization and rejection. Interns will have the opportunity to gain experience in mouse handling, flow cytometry, and other lab skills along with basic concepts in immunology. [Vitalant Research Institute - Rachael P. Jackman, Ph.D.](#)

7. **A summer internship is available in the laboratory of Dr. Graham Simmons, PhD.** The project will involve screening of compounds to identify novel protease inhibitors of Ebola virus entry. Panels of wild-type and mutant Ebola glycoproteins will be pseudotyped onto lentiviral vectors and used to screen libraries of compounds. Hits will be used to identify unknown proteases required to Ebola virus entry, which will be confirmed via gene knockout. The internship will offer the opportunity to gain experience in basic laboratory skills in molecular biology, cell culture, viral vectors, and gene editing. [Vitalant Research Institute – Graham Simmons, PhD.](#)

8. **A summer internship is available in the laboratory of Dr. Tamir Kaniias, PhD.** Effects of testosterone replacement therapy and variation in blood donor plasma testosterone levels on red blood cell (RBC) storage and transfusion outcomes. This project is part of Dr. Kaniias' studies of gender differences in RBC biology and hemolysis in transfusion medicine. The intern will learn current approaches in 'Omics research' including genome wide association studies and linking blood donor-derived products with patient transfusion outcomes. Part of the study may include RBC hemolysis and immunoblot assays to test genes/proteins identified in Omics analysis. [Vitalant Research Institute – Tamir Kaniias, PhD.](#)

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