

RESURG

Research Experience in Surgery

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MISSION STATEMENT

Our vision is to promote, develop, and train students to become competent research professionals, while mentoring them in their professional and educational goals.

HIGHLIGHTED CURRENT PROJECTS

Referrals to Bariatric Surgery

Research Classification: Retrospective

Co-PI: Leah Timbang, M.D.

Medical Students: Diego Sevilla-Marquez, Navneet Singh, Anusha Gogulapati

Research Assistants: Ariel Pham

Principal Investigator: Shushmita Ahmed, M.D.

Other Investigators: William Smith

Anticipated Enrollment #: 15,000 charts

Study description: This study investigates the barriers to bariatric surgical treatment for patients with obesity. My role as a research assistant is to compare how many patients eligible for bariatric surgery are referred to a bariatric center. This data is utilized to investigate the socioeconomic factors and weight stigma associated with limited bariatric surgery referrals. Less than 1% of eligible patients receive bariatric surgery, and this statistic is significantly due to disparities within healthcare. A future goal that our research team plans to work on this year is creating an EMR EPIC alert that notifies physicians if patients are eligible for bariatric surgery. This research and alert can improve access to bariatric surgery for eligible patients and promote equity within healthcare.

"Cellular Therapy for In Utero Management of Myelomeningocele" (CuRe)

Research Classification: Clinical Trial, Phase I/II

Co-PI: Shinjiro Hirose, M.D., Aijun Wang, Ph.D.

Research Assistants: Matthew Jue, Charuthi Arul, Veena Arunkumar

Principal Investigator: Diana L. Farmer, M.D.

Other Investigators: Maria Hernandez

Anticipated Enrollment #: 35

Study description: The overall aim of this clinical trial is to test the efficacy of a new treatment for Myelomeningocele, or Spina Bifida. The treatment is the first of its kind and was created by UC Davis Chief of Surgery and Fetal Surgeon Diana Farmer in conjunction with UC Davis Biomedical Engineering Researcher and Chancellor's Fellow Professor Aijun Wang. This treatment consists of a mesenchymal stem cell seeded patch that is placed on the defect in the spinal canal of a fetus. The goal is to promote the regeneration and fusion of the spinal canal while the fetus grows, so that the baby is born healthy and avoids the effects that untreated Spina Bifida may cause. Spina Bifida is birth defect that affects around 1,500 - 2,000 children born in the US every year. It occurs early in pregnancy, when the tissue and bones in the spinal canal do not fuse, leaving a space for the spinal cord to bulge through and become injured. Babies born with Spina Bifida may have a range of lifelong issues such as cognitive issues, mobility problems/paralysis in lower limbs, urinary system, and bowels. The hope for this research is that with the combined effect of the stem cells and fetal surgery, these babies can be born perfectly healthy and without the complications that often come with Spina Bifida, and that this treatment can be proved effective enough to become common in other hospitals.

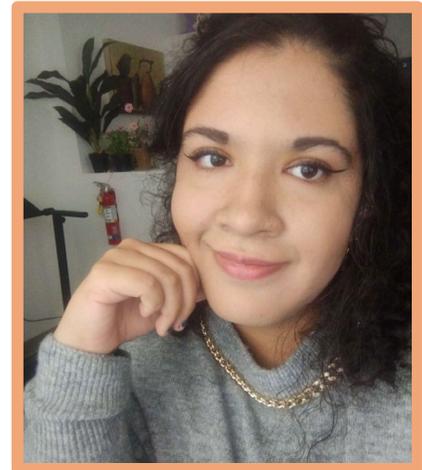
HAVE A STUDY YOU NEED HELP WITH?

Request Assistance [HERE](#). To learn more about our program visit our website [HERE](#).

WELCOME RESURG'S SPRING 2024 CLASS

"I had no idea RESURG existed until I saw a flyer about it in a newsletter through email. I was excited to learn about the opportunity for undergrads to gain experience in clinical research! I'm an Aerospace Engineering major, so I felt a bit nervous about applying but I knew it would benefit me in my career interest of space medicine. I'm looking forward to the immense experience I'll gain as a data specialist in RESURG and how it'll assist me in my future goals for space medicine. I realized that a lot of clinical research occurs in this field and I deeply feel that RESURG will help me achieve those professional goals for graduate school and beyond. I felt so welcomed by the community and the program; and enjoyed those "at least it's not rocket science" jokes! I learned so much already and it's only been the beginning; I've been super excited to start on my first project with a wonderful team. I'm looking forward to learning about how data analysis plays a role in our research/project(s) and having the opportunity to shadow the OR (operating room)!"

- **Liliana Figueroa, Data Specialist**



My name is Jacob Youtsey, a third year Systems and Synthetic Biology undergraduate, and I aspire to become a pediatrician. I was born and raised here in Davis, and I've been a part of the Davis community my entire life. I'm excited about exploring the workings of clinical research as part of the RESURG program. I believe the hands-on experience conducting clinical research responsibly will help me become a data-driven and well-informed physician in the future.

- **Jacob Youtsey, Pediatric Research Assistant**

"In my previous clinical experiences, I frequently heard the term "evidence-based medicine" to describe how research improves and advances healthcare. It wasn't until I applied to RESURG that I learned about clinical research and more specifically, the idea that by studying how we treat patients today, we can shape how we practice medicine tomorrow. As an aspiring physician, RESURG has helped me to develop my scientific and critical thinking skills through responsible clinical research. The program has also given me much exposure to the surgical specialties, including opportunities to shadow in the operating room. In the coming quarters, I look forward to learning more about the variety of active studies in the Department of Surgery and to contribute a larger role in the studies that I'm a part of."

- **Lawrence Cheung, Research Assistant**



“As an aspiring dentist hoping to perform surgical research with a focus on oral trauma in the future, RESURG offered the ideal opportunity for me to prepare for my future endeavors. I knew that working as a research assistant under the mentorship of RESURG faculty would provide a solid starting point for me to conduct my own research in surgery in the future. In addition, RESURG allowed me to expand my health-related experiences outside of the clinic and support patients in ways not limited to direct assistance. Currently, I am working on a study called "Assessing Referral Patterns for Bariatric Surgery," and I am excited to expand upon this research in the upcoming quarters.”

- **Ariel Pham, Research Assistant**

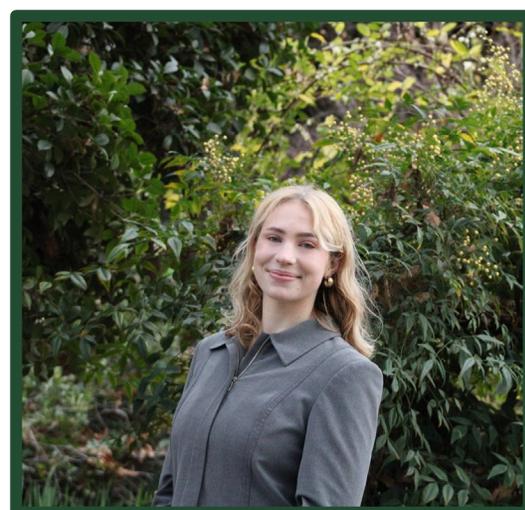


“As a student in the College of Biological Sciences at UC Davis, I knew I wanted to explore more about different professional opportunities in the field of biology. I know as a baseline that I'd really enjoy a collaborative, innovative environment centered around research, biology, and medicine -- naturally, when I found out about RESURG's work in clinical trials, I was intrigued. Throughout this past year, RESURG has allowed me to not only explore Clinical Research as a collaborative, science-based profession that I had previously not been exposed to before but also has connected me to passionate, like-minded students. As a new member of RESURG, I am excited to learn more about the specifics of how clinical trials are organized, managed, and overseen as I work with a Clinical Research Coordinator in the Department of Pediatrics. And, as someone passionate about the applications of molecular mechanisms of biology to human health, I've enjoyed learning about the different studies that are testing how drugs can target and potentially treat specific illnesses and diseases.”

- **Esin Demiray, Pediatric Research Assistant**

The dynamic collaboration between the Department of Surgery and undergraduate students motivated me to apply to RESURG. Additionally, this program offers the opportunity to learn more about the intricacies of clinical research, explore potential career paths, and develop professional relationships with peers and mentors. RESURG is integrated with valuable mentorship, as well as the opportunity to learn applications that are fundamental to the scope of research, which will supplement my goals as an aspiring physician. Having recently joined the early phases of a clinical research study, I am excited to understand the transition from developing technical analytical applications to the actual steps of enrolling patients and extracting data. I am immensely thankful for the experiences I've gained in the program to date, and I look forward to how my role as a Research Assistant will contribute to my growth and development during my undergraduate journey.

- **Jocelyn Livezey, Research Assistant**



HOW IS RESURG CURRENTLY DOING?

Physicians RESURG is Currently Assisting: 20
RESURG RAs Assisting on Research Studies: 20
Research Studies RESURG is Assisting on: 34
Divisions RESURG Currently Supports: 6

RESURG WORKSHOPS



The UC Davis Fire Department conducting a class with RESURG members to help them learn how to become more proactive at learning to be proactive in their communities.

"The Stop the Bleed class is a course designed by the American College of Surgeons to train our communities on how to stop life-threatening bleeding in a severely injured person. RESURG recently hosted the Student Emergency Medical Technicians from the UC Davis Fire Department to educate RESURGers on identifying and controlling various bleeds in patients. RESURGers gained hands-on practice with simulated wound packing, pressure dressings, tourniquets, and chest seal application. This training is important more than ever, as uncontrollable bleeding is the #1 cause of preventable death from trauma. Our RAs are now equipped with the skills needed to help save a life in their communities. I plan to continue working with the Fire Department and other entities to provide more skills training for our students, recognizing that many in our program are interested in careers related to health or just would like to know first-aid and emergency management skills."

- **Neha Gondra, Vascular Research Assistant and RESURG Education Officer**



Members practicing how to administer a blood glucose finger prick test.



Members practicing how to tie a tourniquet to hold pressure.



UCD Fire demonstrating how to feel for a pulse with a tourniquet.

FOSTERING THE FUTURE



Photo from last year's Fostering the Future

Fostering the Future (FTF) is a 2-day educational event aimed at providing leadership development, personal growth, and career exploration opportunities in healthcare, medicine, and research to underserved high school students in Sacramento County. It is run by the RESURG program at the UC Davis Department of Surgery and exemplifies our efforts to support our community through outreach and mentorship to help develop future healthcare leaders. We have opened applications for this year's Fostering the Future 2024 to any current high school students interested in this program! FTF will take place at the UC Davis Medical Center.

At FTF, students will get the chance to participate in a variety of academic workshops, professional panels, and hands-on activities to support their learning, and will be provided with the information and mentorship resources to help them pursue their educational and career goals in healthcare and beyond.



Charuthi Arul, Matthew Jue, Veena Arunkumar, Elisa Gonzalez, Julia Lee (as seen in order from left to right) and a highlight of one of the many workshops offered for students at FTF.

FAREWELL, ELISA!

“I was a Pediatric Research Assistant in RESURG for 2 years. After I graduate with my B.S in Biomedical Engineering, I plan on attending graduate school in California to earn a M.S. or M.E. in Bioengineering.

RESURG has help me learn how to navigate important software commonly used in clinical research such as EMR and REDCap as well as taught me more about medicine, children's health, and specific diseases. It has also helped me manage my organization and time management skills. My biggest takeaway is what I learned from my shadowing experience in the OR and observing what medical devices and tools the surgeons used and how they operated them. RESURG has allowed me to gain more confidence in my professional self and become a leader in research projects that involves supervising multiple research assistants.

Because of RESURG, I have become a more skilled, confident, and academically accomplished individual. I will apply everything I learned in my time at this program to my future at graduate school.”

- **Elisa Gonzalez**



RESURG thanks Elisa for her contributions to the program and her hard work!

FAREWELL, HARSHITHA!



“I have been a pediatric research assistant since 2021 and Onboarding Officer for RESURG since 2022. I am currently a Clinical Research Coordinator for UC Davis Health in the department of Pediatrics. I am applying to medical school and hope to become a physician-scientist. Through my role as Onboarding Officer, I feel that I have been able to further develop my leadership skills.

My biggest takeaway has been to always keep an open mind and experience as many things as possible! I did not know that my experiences in RESURG would lead me to a career as a Clinical Research Coordinator and lead to my current aspirations to become a physician-scientist. I think that learning as much as possible from my experiences and exploring different fields have affirmed what I want in a career and helped me in my journey to become a physician.

RESURG has helped me become a more confident professional. I have learned a lot about clinical research during my time in this program and I am excited to see how the work our members are doing will go on to push the boundaries of what medicine can do for current and future patients.”

- **Harshitha Naidu**

RESURG thanks Harshitha for her contributions to the program and her hard work!

FAREWELL, DENA!

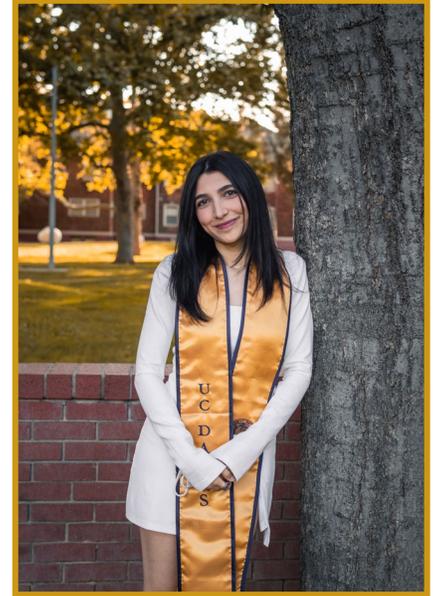
“I served as a Research Assistant for RESURG for over a year. Currently, I hold the position of Junior Specialist within the Department of Pathology and Laboratory Medicine at UC Davis Health.

My experience with RESURG has profoundly influenced my professional trajectory and research aspirations. As an engineer, this program has equipped me with invaluable clinical research skills, ranging from crafting IRBs to navigating Electronic Medical Records, managing databases, and learning how to effectively consent patients. These skills have been particularly instrumental in refining my approach as a researcher and have greatly contributed to my current position.

Looking ahead, as I aspire to continue my higher education and collaborate closely with healthcare professionals in developing innovative solutions for clinical challenges, the foundation laid by RESURG is indispensable. It has not only provided me with essential knowledge but also instilled in me a robust framework to thrive in my future endeavors.

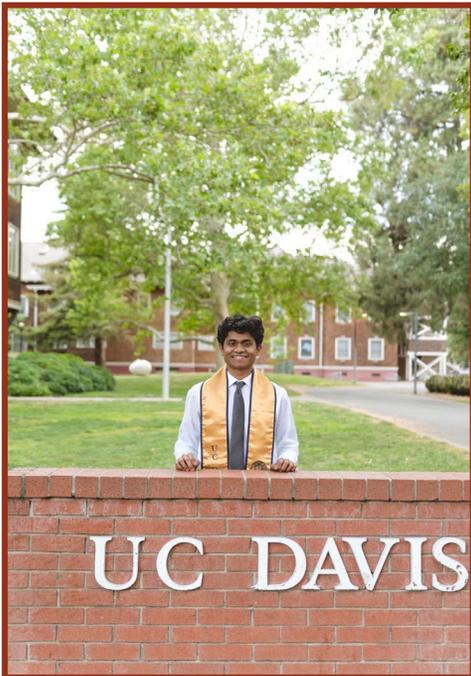
I wholeheartedly recommend RESURG to fellow researchers aiming to integrate seamlessly into healthcare collaborations. To prospective participants, I assure you that while the program may seem daunting initially, but the blend of technical and interpersonal skills coupled with unparalleled mentorship and support makes it an unmatched learning experience.”

- **Dena Sayrafi**



RESURG thanks Dena for her contributions to the program and her hard work!

FAREWELL, KAR!



“I was a trauma research assistant for 2 and a half years with the RESURG program. This program exposed me to clinical research and has immensely helped develop my professional and academic career. With the great mentorship program and ability to work on a diverse range of studies, RESURG has given me the opportunity to make life-long connections with peers and physicians. Now as I move on to medical school, I am a more prepared and experienced individual thanks to RESURG and the wonderful group of students and physicians that help orchestrate it.”

- **Kar Shrikantham**

RESURG thanks Kar for his contributions to the program and his hard work!