Virtua Health College of Medicine & Life Sciences of Rowan University

Research Opportunities
2025 SMRF Program

College of Science and Math

Below is a listing of research opportunities that are available for Rowan-Virtua SOM Medical Students who have an interest in submitting applications for approval to participate in the 2025 Summer Medical Research Fellowship Program.

Contact Name/Department	Contact Information	Project Title/Information
Dr. Mary Alpaugh Biological & Biomedical Sciences & Research Joint Health Science Center	Email: alpaugh@rowan.edu	**Project 1:** Students will assist in developing microfluidic biomimetics of metastasis, perform time lapse analysis of ex vivo IBC metastatic process, ultrastructural analysis of lymph vascular embolus. **Project 2:** Students will isolate and analyze exosome profile as it relates to progression of IBC. **Project 3:** Students will perform small molecule drug screens on preclinical model of IBC.
Dr. Danielle Arigo Psychology Robinson Hall 116G	Email: arigo@rowan.edu	This is a line of research that uses intensive ambulatory assessment in people's natural environments to determine (1) within-person associations between predictors and behaviors of interest, and (2) identify novel targets of intervention, and (3) evaluate new interventions for promoting physical activity, healthy eating, and good sleep quality. Specific projects include investigation of menstrual cycle symptoms/physical activity, social experiences/physical activity, and social experiences/weight control. Populations of interest are those with elevated risk for cardiovascular disease.
Dr. Gregory Caputo Chemistry and Biochemistry Science Hall, Room 154A	Email: caputo@rowan.edu	The student will be screening novel antimicrobial compounds. There are several ongoing antimicrobial projects including structure-activity relationships in antimicrobial peptides, evaluating metal-based thin-film coatings as antimicrobial agents for biomedical devices, and combinatorial application of FDA approved drugs with ionic liquids.
Dr. James Grinias Chemistry and Biochemistry Science Hall. Room 301	Email: grinias@rowan.edu	**Project 1:** Students will help develop a miniaturized liquid chromatography-mass spectrometry assay to detect biomarkers in blood that indicate PTSD susceptibility. **Project 2:** Students will help develop a miniaturized liquid chromatography-mass spectrometry assay to measure potential use of illicit substances in urine. This is being developed for a tool to be implemented in drug treatment and rehabilitation facilities.
Dr. Jim Haugh Clinical Psychology Robinson Hall, Room 116N	Email: haugh@rowan.edu	I am broadly interested in the use of mobile applications to help people with depression, anxiety and other mood disorders. Potential projects can include application studies, feasibility, opinions of providers and/or patients.

Dr. Ping Lu Chemistry and Biochemistry Science Hall 301I	Email: lup@rowan.edu	This research centers on the development of advanced smart drug delivery platforms aimed at optimizing therapeutic efficacy and improving patient compliance. Specifically, my group has pioneered the creation of multi-stimuli-responsive delivery systems, leveraging cutting-edge nanomaterials to achieve precision-targeted and controlled drug release. These innovative systems address significant limitations of conventional drug delivery approaches by responding dynamically to environmental triggers, thereby offering enhanced therapeutic outcomes with minimized side effects.
Dr. Gustavo Moura-Letts Chemistry and Biochemistry Science Hall 301F	Email: moura-letts@rowan.edu	**Project 1:** This projects aims at developing novel synthetic strategies for the production of pharmacologically relevant benzodiapines and benzodiazepine-like molecules. **Project 2:** This project aims at developing systematic strategies for the synthesis of Taxanes and Morphinans molecular architectures as means to access unexplored regions of chemical space.
Dr. Maggie Panning Pearce Biological & Biomedical Sciences & Research Science Hall 256E	Email: pearcem@rowan.edu	**Project 1:** Forward genetic screen to identify modifiers of spread of protein aggregate pathology in Drosophila and mammalian cell models of neurodegenerative diseases (e.g., Alzheimer's disease, Huntington's disease.) **Project 2:** Single-cell RNAseq analysis of Drosophila brains containing neurodegenerative disease pathologies. **Project 3:** Proximity labeling coupled with proteomics to identify new protein-protein interactions underlying neurodegenerative disease.
Dr. Nicolas Whiting P&A and BBS Science Hall 101I	Email: whitingn@rowan.edu	**Project 1:** Develop carbon quantum dots as optical and magnetic resonance reporters for targeted molecular imaging. **Project 2:** Generate parahydrogen gas and use to enhance magnetic resonance signals for biologically-relevant small molecules.
Dr. Chun Wu Chemistry & Biochemistry Molecular & Molecular & Cellular Biosciences, and Research Science Hall 340B	Email: wuc@rowan.edu	**Project 1:** Students will run in-house bioinformatics programs to analyze the public sequence dataset to probe the evolution dynamics of these deadly viruses. **Project 2:** Students will carry out virtual screening to identify lead compounds and design experiments to test the compounds. **Project 3:** Students will carry out virtual screening to identify potential epitopes from the viruses' genome, and design experiments to test the epitopes.

If you have an interest in any of the above projects, please reach out right away to the contact person for that department.

NOTE: The **deadline for application submissions** is **(Wednesday) February 12, 2025.**
The **2025 SMRF Program Instructions/Guidelines and the Application Cover Page are available at** http://som.rowan.edu/oursom/pipeline/research/smrf.html

If you have any questions, or difficulty accessing the hyperlink above, please contact the Rowan-Virtua SOM Research Office at somresearch@rowan.edu.