

Gulf Scholars Program

Summer Research Project Description

Faculty Advisor: Farès El-Dahdah, Professor of Art History, Rice University

Community Partner: Bayou City Waterkeeper, Ayanna Jolivet Mccloud, Executive Director, and Mashal Awais, Community Science Manager

This project will support work by Bayou City Waterkeeper (BCWK) to protect and restore the integrity of the lower Galveston Bay watershed through advocacy, education, and action. BCWK is a non-profit organization using science and law to work with communities affected by water pollution and flooding across greater Houston to restore our natural systems, achieve equitable policy solutions, and advance systematic change to benefit all who live within the Lower Galveston Bay watershed. Through the Clean Water Act, BCWK holds polluters accountable and protects the water that flows through our bayous, creeks, wetlands, and neighborhoods into our coastal bays.

The 2022 Gulf Scholars summer project with BCWK will focus on open drainage ditches—a common feature in many of Houston’s older neighborhoods and communities of color. Drainage ditches run alongside local streets and were designed to channel stormwater runoff. However, Houston’s open drainage ditches are unable to handle waterflow from the city’s frequent storms, and are the cause of many other neighborhood problems, including standing water that breeds mosquitoes and disease, mobility and safety hazards, trash and debris deposits, and neighborhood de-beautification.



Photo from Texas Housers, 2017

The project will build off the Uneven Runoff story map that was created in 2021 through Rice University's Diluvial Houston Initiative in the School of Humanities. Uneven Runoff combines layers of data including flood risks, drainage types, industrial chemical releases and Superfund environmental cleanup sites to call attention to problems throughout the community—as well as their relationship with urban disparity at large. This project will also expand on BCWK's work on sewage justice at the intersections of risks including public health, stormwater pollution, and climate change. Utilizing mapping and visualization tools, this project aims to work alongside community members, to identify and communicate the real time risks of living with urban inequities and develop resources to illustrate and inform decision makers about communitycentered solutions.

Between June 1 and July 29, 2022, a team of four Gulf Scholars students will:

- Review the Uneven Runoff story map to identify existing resources and opportunities to develop and identify solutions for communities living with open drainage ditches in Houston.
- Use existing data, maps and other resources available through Uneven Runoff, BCWK's sewage justice research, and other existing public data to expand and deepen its coverage of the impact of drainage ditches on community life in several underserved Houston neighborhoods.
- Meet with community activists to learn about neighborhood-specific problems and goals

associated with open drainage ditches.

- Create an advocacy toolkit for community activists and other stakeholders to raise awareness and call for action on the problems associated with open drainage ditches. The toolkit may take the form of an interactive and publicly available map and will be created with input from community advocates. Gulf Scholars will be able to rely on the expertise of a GIS Specialist from the Center for Research Computing's Spatial Studies Lab and/or Fondren's GIS/Data Center who will assist with the visualization needs that the toolkit might require as well as provide tutorials in GIS applications.
- In dialogue with community groups, identify key stakeholder groups to present findings and toolkit to larger audiences with the goal to further community advocacy around climate mitigation and adaptation, drainage and sewage justice.
- Complete a written report for BCWK that documents the project's background, work, findings, and outcomes.

Relevant student skills and experiences: environmental justice, community engagement, GIS, data analysis, data visualization, storytelling, professional writing, public presentations