



SETx-UIFL: Southeast Texas

*Urban Integrated
Field Laboratory*

What is SETx- UIFL?



SETx-UIFL is a collaborative project among four Texas institutions (University of Texas–Austin, Lamar University, Texas A&M University, Prairie View A&M University), Oak Ridge National Laboratory, and a network of technical stakeholders and residents. SETx-UIFL focuses on the compounding impacts of flooding and air pollution on Southeast Texas communities and the development of adaptation strategies under future climate scenarios.

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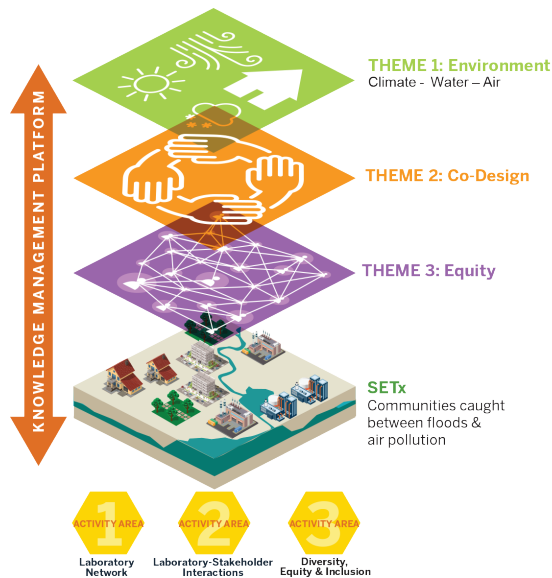
Lead Institution University of Texas–Austin

Partner Institutions

- Lamar University
- Oak Ridge National Laboratory
- Prairie View A&M University
- Texas A&M University

What Are Urban Integrated Field Laboratories?

The U.S. Department of Energy Biological and Environmental Research program supports four urban integrated field laboratories (UIFLs) that aim to inform equitable climate and energy solutions to strengthen community-scale resilience across urban landscapes. UIFLs represent diverse demographic characteristics, differing climate-induced pressures on people and infrastructures, and unique settings.



Research Approach

SETx-UIFL fosters the development of equitable adaptation strategies through the integration of modeling, data collection and analysis, and community experience under three interacting themes (Environment, Co-Design, and Equity), supported by a Knowledge Management Platform and three Activity Areas.

Vision

SETx-UIFL's mission is to better understand current and future impacts from flooding and air pollution in Southeast Texas and the Gulf Coast region using measurements, modeling, and community experiences and to co-develop applicable and equitable adaptation strategies with local partners.



U.S. DEPARTMENT OF
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Science

Biological and Environmental Research Program





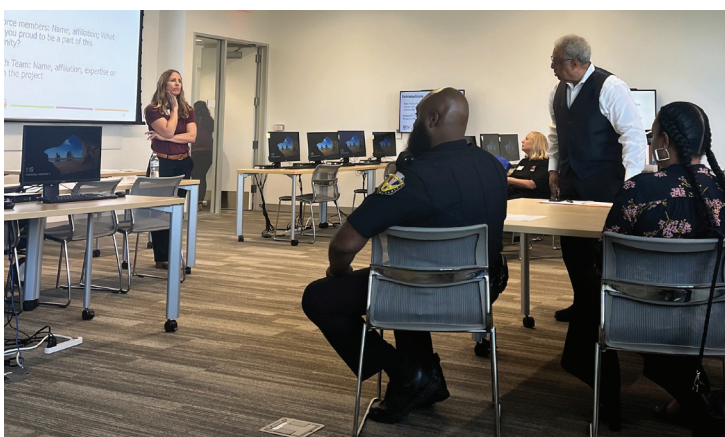
RESEARCH QUESTIONS



Participants gather at the 2023 SETx-UIFL Annual Meeting.

Developing the SETx-UIFL provides an underutilized opportunity for convergent science efforts to ask and answer two research questions::

- Which processes and variables need to be captured in regional-scale hydrological and atmospheric models so they help inform adaptation strategies and are representative of the conditions experienced by local communities?
- How can SETx-UIFL understand the linkages between and within natural, built, and social systems in urbanized regions to better support natural and human resilience?



Community members and professionals from Southeast Texas came together for a SETx-UIFL task force meeting in September 2023.

SETx-UIFL BY THE NUMBERS

280
WATER
SENSOR
SITES

15
TASK FORCE
MEMBERS



40
REALIZATIONS
OF FUTURE
CLIMATE CHANGE
AT 1-KM RESOLUTION

2
CONTINUOUS
AIR-
MONITORING
SITES

36 UNIVERSITY STUDENTS OR
POSTDOCTORAL RESEARCHERS



RESEARCH SPOTLIGHT

Following approval of interview questions and protocol in August 2023, SETx-UIFL successfully conducted two joint task force meetings with community members (Community Organization Task Force) and professionals (Technical Task Force) from Southeast Texas. During the meetings, task force members discussed what makes them proud to be part of their community, identified community and technical issues related to the SETx-UIFL project, suggested potential solutions to these issues, and identified possible sites for adaptation strategy development.

Front image credit: Beaumont, Texas, skyline. [Getty Images]

SETx-UIFL NEWS

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