



Partnering with Local Experts to Engage Faculty and Students to Address Watershed Issues in the North Bay

April 19, 2024

Dr. Chris Halle, Program Developer
Ms. Kerry Winger, Outreach Lead
Dr. Claudia Luke, Director

Dr. Chris Halle

**Program Developer
Center for Environmental Inquiry**

- **Engineer, Programmer, Scientist**
- **Arctic Oceanography**
- **35+ Years Analyzing Large Data Sets**
- **Developing Academic-Regional Partnerships**

halle@sonoma.edu



Transformational Goal

An Environmentally Ready Society

...one where everyone has the skills to find solutions to challenges facing the North Bay.



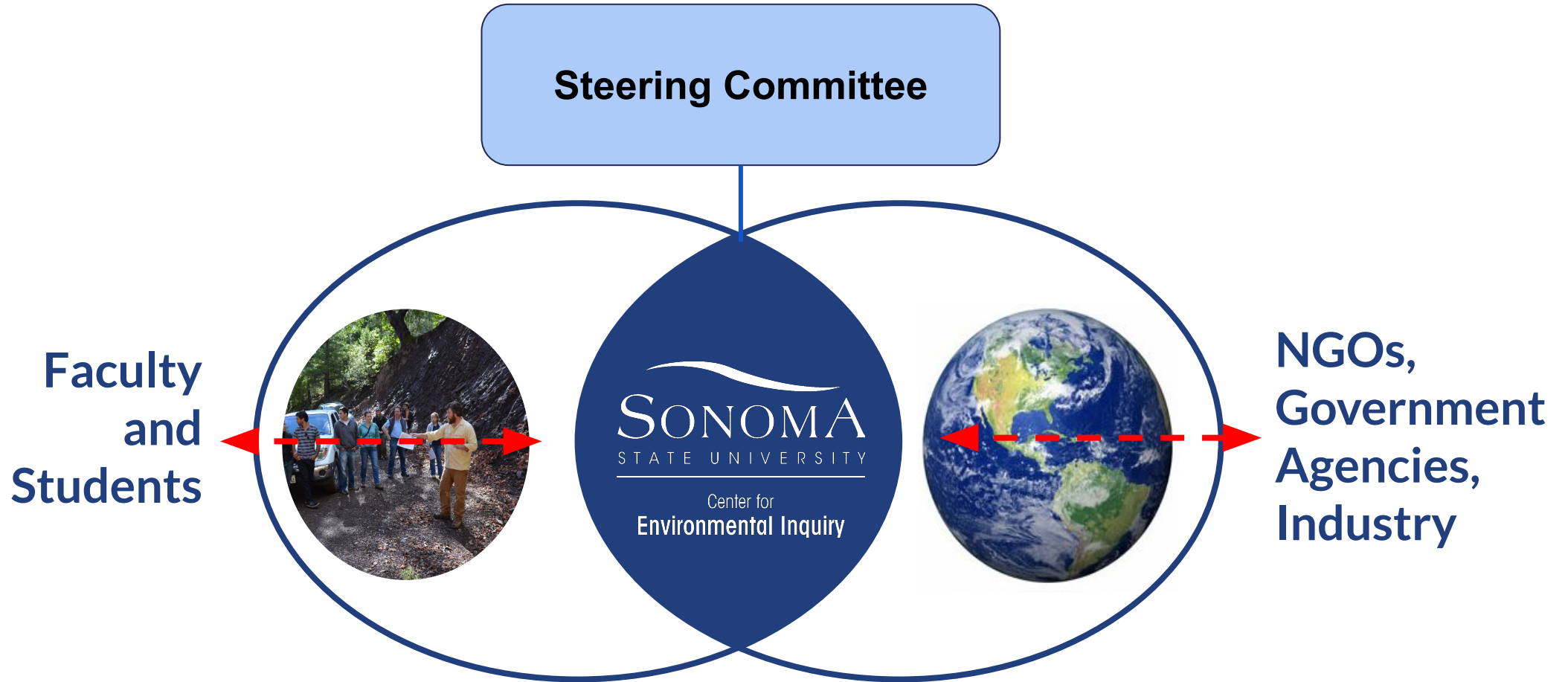
Center for Environmental Inquiry

Education for a changing planet:

- First-hand understanding of our connection with the environment
- Skill-building experiences
- Innovative solutions



Education Into Action



Marrying Two Cultures to Help Find Solutions

Rising Waters Initiative

- Complex high-priority issues surrounding water
- Neutral meeting ground for diverse partners
- Cross-disciplinary engagement to address cultural, economic and environmental issues
- Facilitated process targeting innovative and practical solutions



Rising Waters Process

- Rising Waters Working Group identifies issue(s)
- Multi-disciplinary faculty-student teams collect and summarize data
- Collaborative brainstorm for solutions and cost-benefit analysis by teams
- Presentations and reports



Rising Waters supported by:



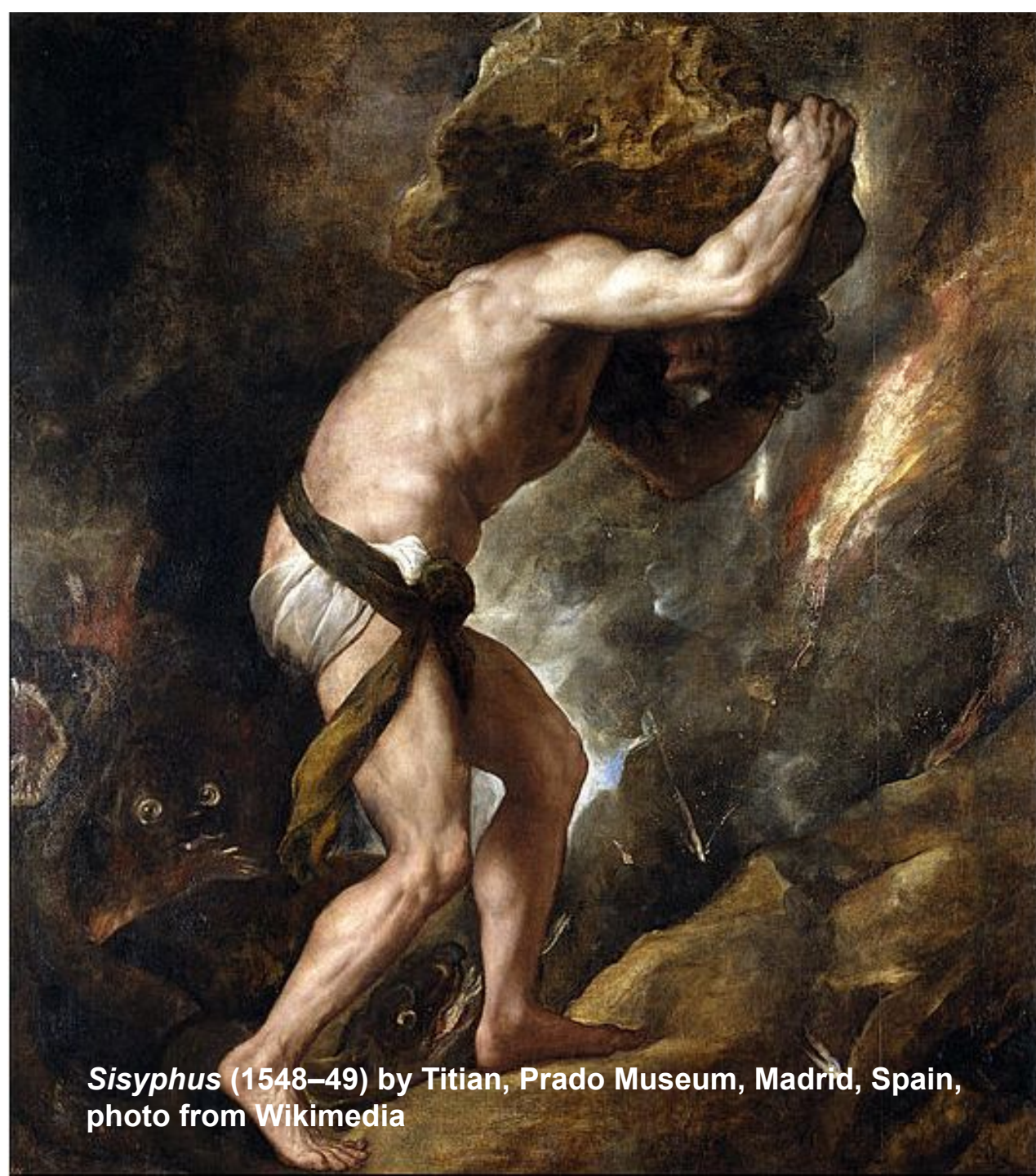
Alexander Leff

Year 3 Steering Committee:

- Ryan Pedrotti, Assistant General Manager, Sonoma Water
- Andy Rogers, Executive Director, Russian River Watershed Association
- Emily Quig, Homeless Services Coordinator, City of Rohnert Park
- Lynea Seiberlich-Wheeler, Associate Director of Behavioral Health, West County Health Centers
- Sean McNeil, Deputy Director of Environmental Services, City of Santa Rosa
- Matt St. John, Executive Officer, North Coast Regional Water Quality Control Board
- Don McEnhill, Executive Director, Russian Riverkeeper
- Ludmilla Bade, Statewide Advocate for Homeless Individuals

Rising Waters Timeline

- Fall 2018, Spring 2019 - Discussions Begin
- Fall / Spring 2020 - Funding Allocated
- Spring / Summer 2020 - Public Workshops To Hone Questions
- Fall 2020 - Identification of Steering Committee, Further Meetings to Hone Questions
- Fall 2020, - Faculty / Student Research Grants Awarded (including help with “bite sized pieces”)
- May 2021 - Initial Public Workshop Led by Students
- Sept 2021 - Formal Public Workshop (Year 1 Results)



Sisyphus (1548–49) by Titian, Prado Museum, Madrid, Spain,
photo from Wikimedia

Homelessness and Watersheds

- flood protection
- water quality
- sanitation/health
- habitat conservation



**SONOMA
STATE**
UNIVERSITY

CENTER FOR
ENVIRONMENTAL
INQUIRY



Rising Waters: Where are We Now ?

Current Research Topics

1. Mapping Study
2. Case Studies (Sanitation)
3. Agency Alignment
4. Water Quality Sampling
5. Social Media Campaign

(Topics in red added after first year)



Task 1: Resource Mapping Update

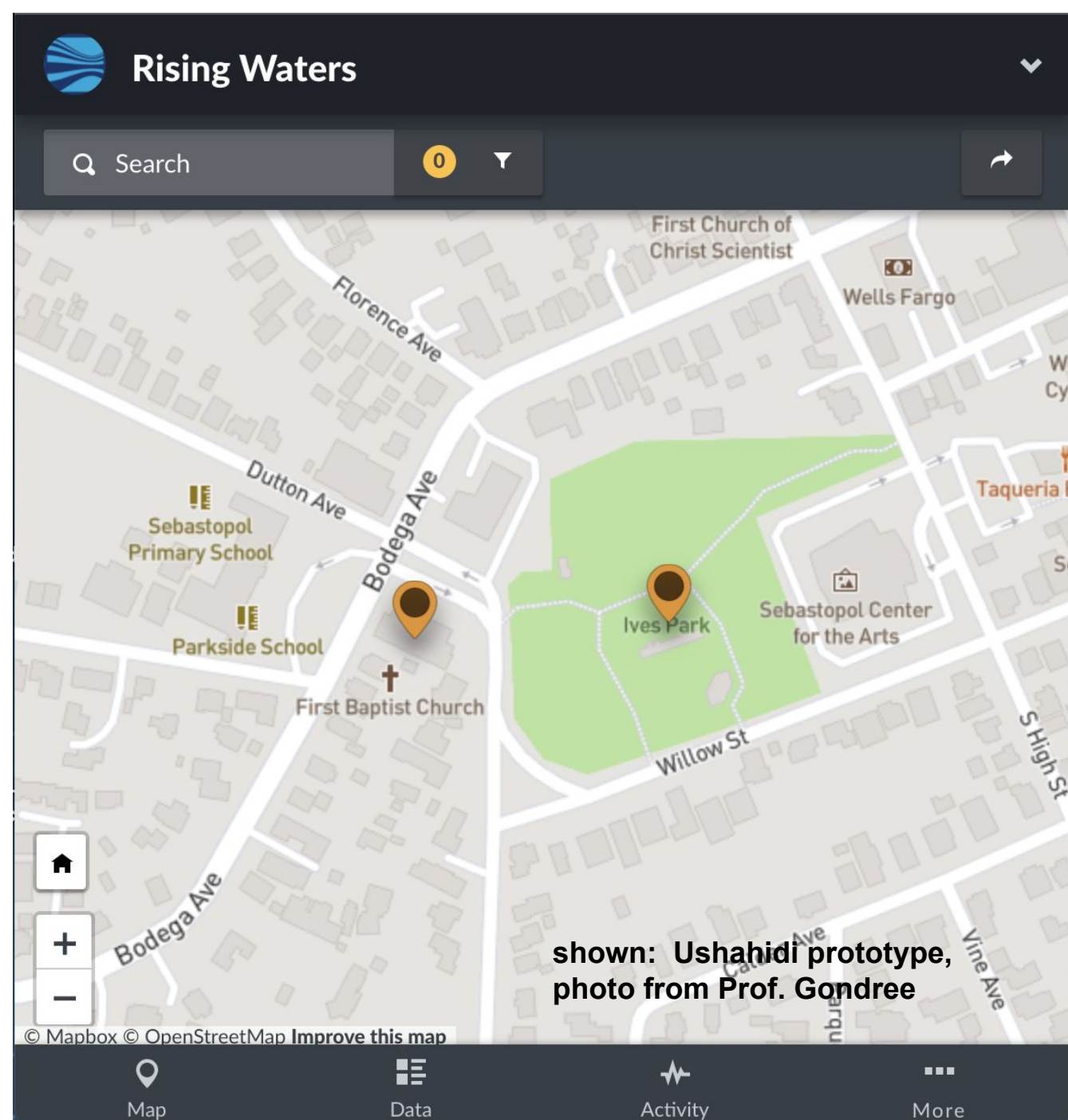
We stood up an instance of Ushahidi (virtual machine).

The Ushahidi Platform helps communities turn information into action with an intuitive and accessible crowdsourcing and mapping tool. By enabling the rapid collection, management and analysis of crowdsourced information, Ushahidi empowers everyone—individuals, community groups, governments, activists, organizations—to create meaningful change.

Examples:

- Hurricane Relief
- Covid Response
- Documenting Community Violence

<https://www.ushahidi.com/features/>



Task 1: “Hosted” Ushahidi *

- Ushahidi helps communities solve complex problems by engaging multiple stakeholders and organizations, without worrying about technology changes, displays across platforms, etc.
- No ongoing staffing requirements, maintenance requirements, update requirements.
- Ease of collaboration & community engagement.
- Collaborative real-time response to emergencies.
- Engagement of outside organizations (DEMS, Tourism, etc.)
- Engagement of citizens.
- Supports Open-Source tool development.

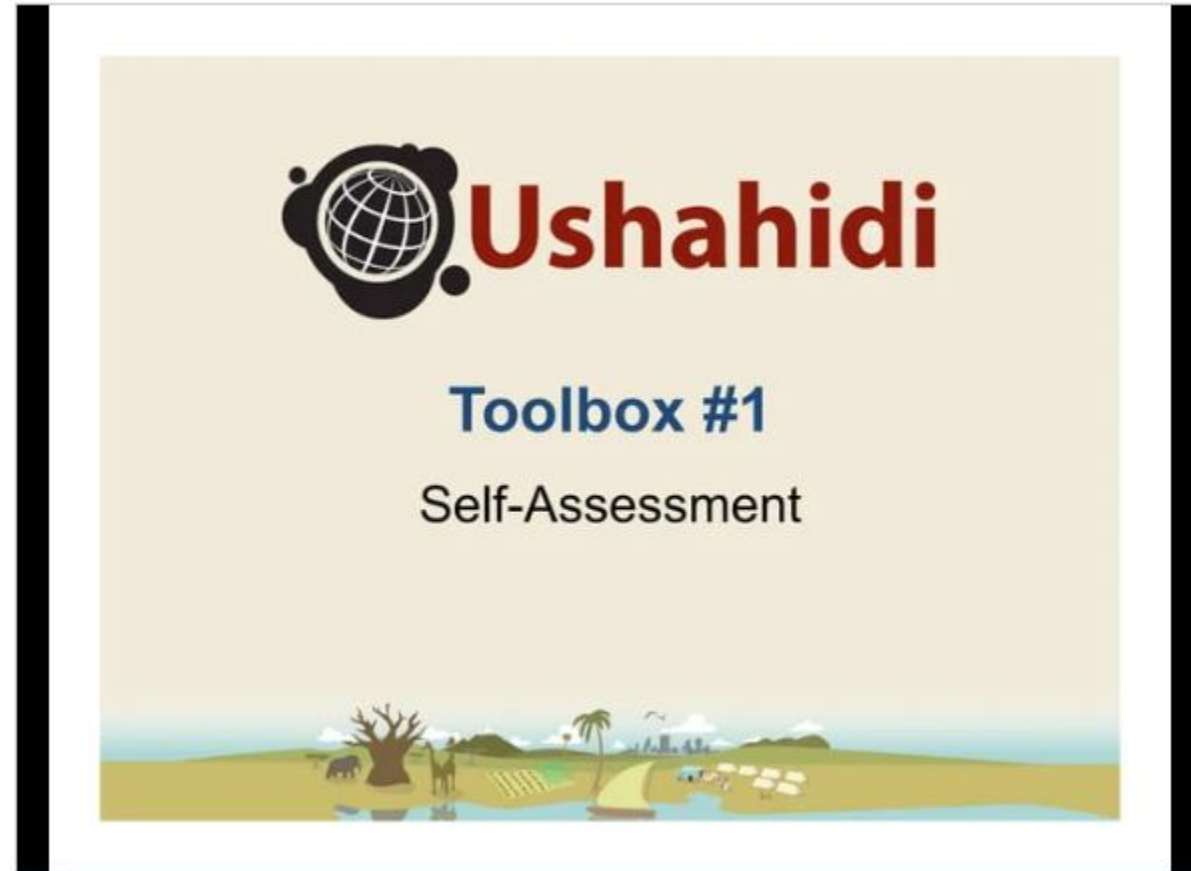
- aka “Reasons to Avoid Standard GIS”



<https://www.ushahidi.com/support/examples-of-deployments/>

Task 1: Stakeholder Strategy Meeting

- Proposed for Spring / Early Summer 2024.
- Which organization should hold the license?
- How should the “approval” system be set up?
- How to set up and measure impact?
- How to engage other interests in the County?



Task 4: Water Quality Sampling

- Measure “water quality” upstream and downstream of homeless encampments
- Collect water samples
 - pH
 - Temperature
 - Dissolved oxygen
 - Conductivity
 - Filter water for HF183 gene testing
- Project began in earnest after Covid



Environmental Studies Students



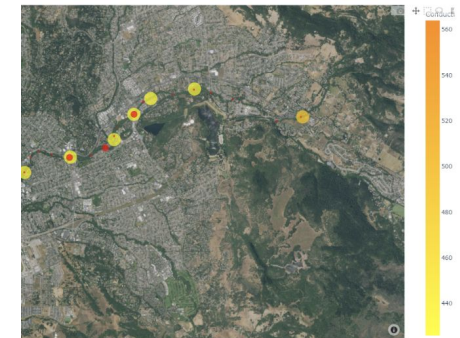
Laguna Treatment Plant Environmental Lab



SSU Biology Dept



City of Santa Rosa Creek Team

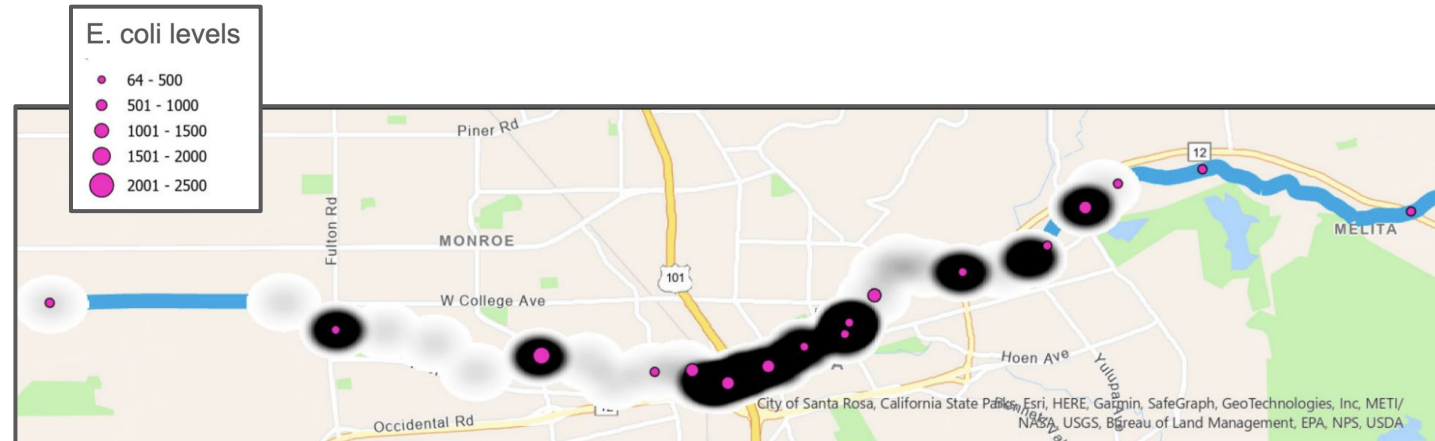


SSU Computer Science Dept

Task 4: Water Quality Sampling Observations (2023-24)

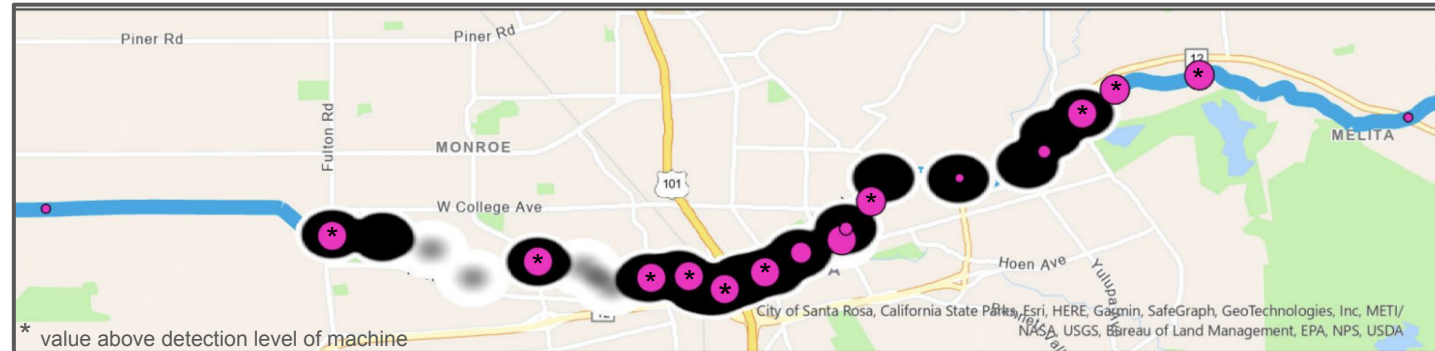
October

Homeless data: Oct 24
E coli: Oct 27

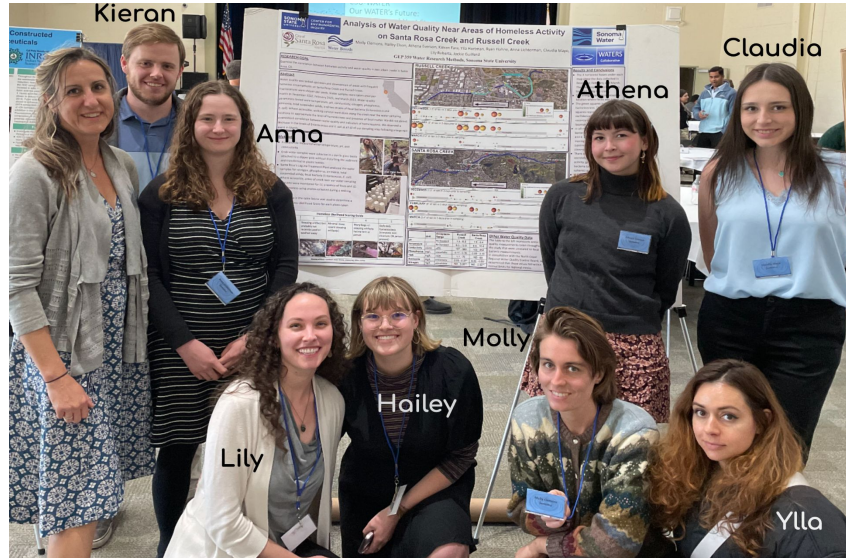


November

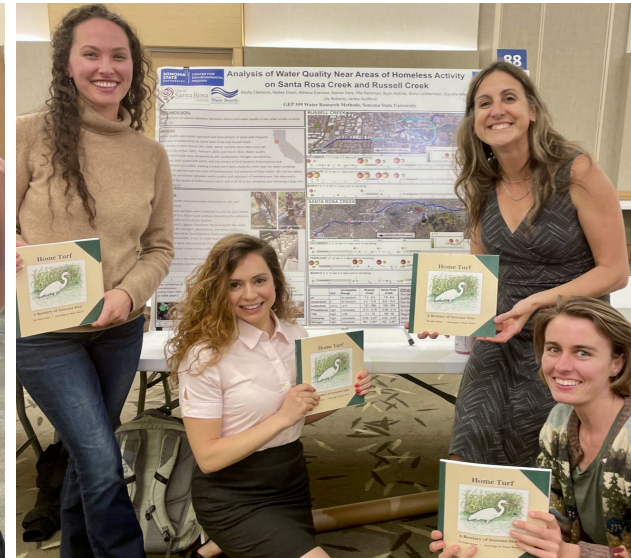
Homeless data: Nov 17
E coli: Nov 14



Task 4: Engagement and Awards



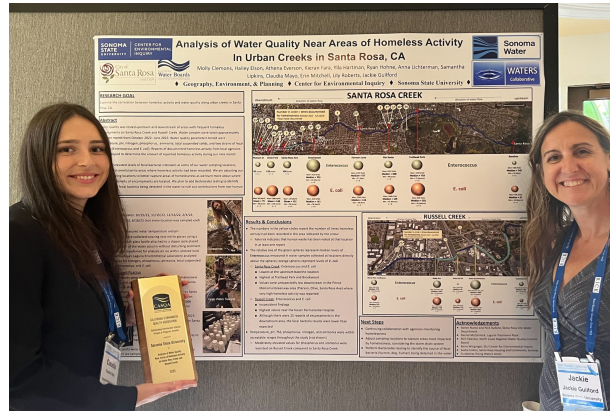
CSU Water Conference in Monterey



Best Water Poster: SSU Student Symposium



SSURI (Sam & Erin)



Outstanding Stormwater Student Science Project: CASQA Annual Conference 2023 *

San Diego



Santa Rosa Board of Public Utilities Meeting



Task 5: Social Media Campaign

- **Misconceptions and frustration were encountered by all student teams.**
- **Misconceptions encountered among public and homeless advocates.**
- **Education / public media / story campaign advocated by students.**

RISING WATERS

Welcome to the Rising Waters Communications content site.

Here, you will find information about Rising Waters, as well as fact sheets, posters, videos, and social media graphics you can use.

[FIND RESOURCES](#)

SHARE CONTENT

Here are some resources you can use to help counter misconceptions on water & homelessness.

Social Media
Post Graphics



Info Pamphlets
& Fact Sheets



Videos

Task 5: Social Media Library

- Social media posts or other information can be downloaded, shared, or displayed at meetings.
- Single and multiple page posts available.
- Feedback from partners and community encouraged.

RISING WATERS

Ending the Stigma

Did you know:

While most individuals believe that giving homeless people access to clean water and sanitation will bring about more homelessness in our community, the reality is that a vast majority of homeless people are Sonoma County residents of 10+ years!

Task 5: Interviews and Subject Videos (Rough Cut)



Lessons Learned

- Solving “wicked problems” takes time.
- Local experts (Steering Committee members) will often get to participate in conversations that would not otherwise happen.
- You may get results you don’t want to hear.
- Roadblocks to “actionable research” can arise from either the academic side or the partners. What is considered success?
- Supporting the relationship between academia and industry is more important than supporting one-off projects. The research arises from the relationship.
- Faculty as well as students need to be trained or supported.
- Every roadblock encountered during implementation is another potential project opportunity.
- All disciplines need to be engaged.

Expanding the Model

- **CEI has been asked to partner with CSU-WATER to advise the California Sustainable Growth Council on effective ways of engaging academia**
 - **How can academics, NGOs, and agencies work together to effectively move research results into practice?**
 - **In particular, how can granting agencies ensure that research funding will result in meaningful community outcomes?**
- **We are happy to explore ways to engage additional agencies in the Bay Area, or to help bring the model to your favorite local academic institution.**
- **Please visit the table to meet the students and faculty doing the research to learn more about their experiences.**

Transformative Impact



“I am walking away with valuable skills: teamwork, leadership, communication, and creativity. “

Nicole Manzares

More Information

bit.ly/NBWA_EdIntoAction

The logo for Sonoma State University, featuring a stylized white wave above the word "SONOMA" in a serif font, with "STATE UNIVERSITY" in a smaller sans-serif font below it.

SONOMA
STATE UNIVERSITY

Center for
Environmental Inquiry

An Environmentally Ready Society

More Waters Information:

<http://cei.sonoma.edu/waters/about>

Chris Halle: halle@sonoma.edu

Kerry Winger: wingek@sonoma.edu

Claudia Luke: lukec@sonoma.edu