



WELCOME

September 5, 2025
8:30am – 1:30pm

Research...
In Louisiana
By Louisiana
For Louisiana



THANK YOU!

Dr. Dianne Olivier

Interim Provost & Vice President for Academic Affairs
Office of Faculty Affairs
Professor of Educational Leadership

Dr. Ramesh Kolluru

Vice President for Research, Innovation
& Economic Development
...and the Entire OVPRIED Team

Dr. Mary Farmer-Kaiser

Dean of the Graduate School
Professor of History
...and the Entire Grad School Team

Dr. Gretchen Vanicor

Director, Office of Sustainability & Community Engagement
...and the Entire Sustainability & Community Engagement Team

Kiwana McClung

Office of Academic Affairs
Professor of Architecture and Design
SLEMCO/LEQSF Regents Professor in Art & Architecture II

Dwight W. Andrus, Jr.
The Louisiana Board of Regents



WELCOME!

Dr. Jaimie Hebert
Interim President







4 rounds of proposals

385 Submissions

From all 7 academic colleges

From every graduate program

**128 projects awarded
\$250,000+ invested**

**50 faculty, 68 grad students,
12 undergraduates, 10 staff**

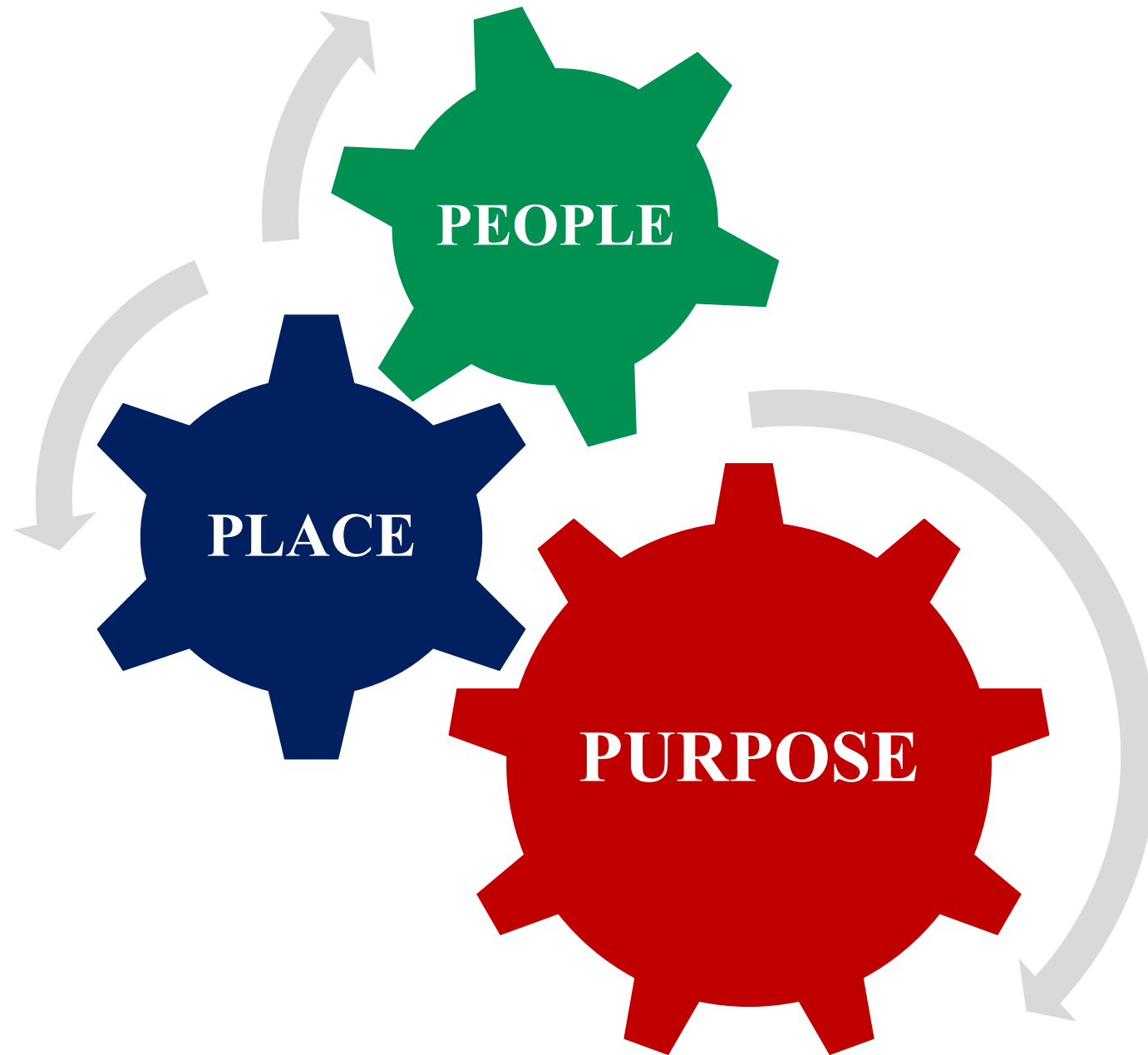
4 research summits



LOUISIANA

IMPACT

LOUISIANA RESEARCH COLLABORATIVE



Our Values

These are the values that drive our research and motivate us to explore, learn, and discover.



Sustainability

Our campus is a living lab for innovative research in watershed management, solar power, energy conservation, and environmental restoration.



Value for All

We recognize the value of all disciplines. Our research aims to improve opportunity, literacy, and design for everyone.



Social & Economic Development

Through our research, we're leaders in shaping policy, advancing educational practices, improving health care, attracting businesses, and preserving our cultural heritage.



You



Research
Output



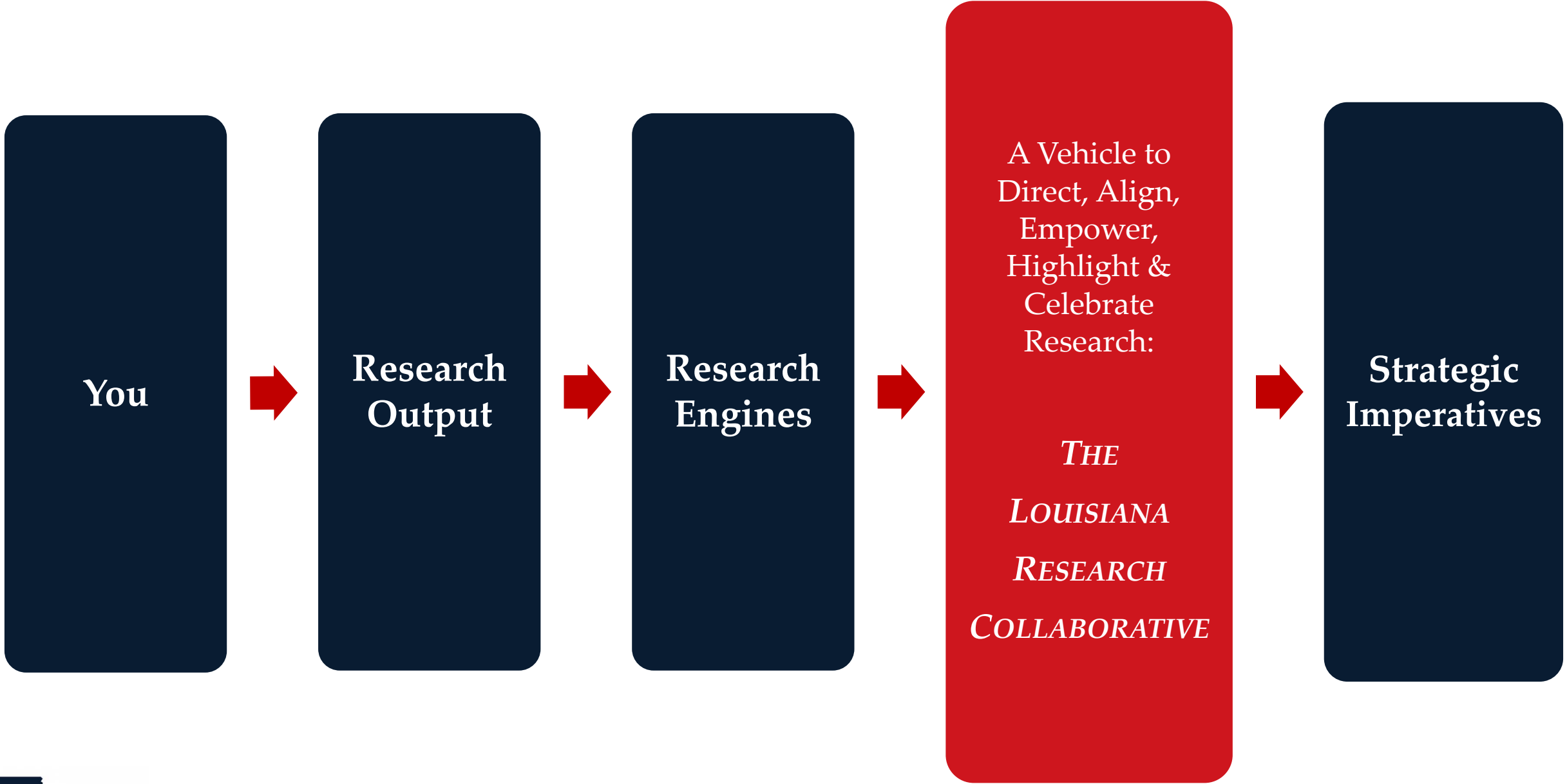
Research
Engines



? ? ?



Strategic
Imperatives





LOUISIANA RESEARCH COLLABORATIVE

Louisiana
Impact
Research
Awards:
People, Place
& Purpose

Creativity,
Innovation &
Entrepreneurship
Research
Awards

Louisiana
Economic
Development
Research
LEED Center

Public Policy
Research
Blanco Center

Louisiana
Culture, Arts
& Expression
Research

Annual
Funded
Research
Showcase &
Awards

OVPRIED

Advance,
Honors
Program,
The Graduate
School

Communities
of Interest
OVPRIED

Building a
Better
Louisiana:
Health,
Wellness &
Education

Bridging the
Gap Between
Academia &
Industry





LOUISIANA RESEARCH COLLABORATIVE

WHAT'S NEXT?

- MORE OF THE SAME...IN TERMS OF RESEARCH
- MORE, NEW INTERDISCIPLINARY RESEARCH
 - NEW RESEARCH PLATFORMS
 - NEW GRANT OPPORTUNITIES
- GREATER IMPACT FROM YOUR WORK

WHAT'S NEXT TODAY?

9:15-10:20	Research Presentations
10:20-10:35	Break
10:35-10:45	Dr. Dianne Olivier
10:45-11:30	Research Presentations
11:30-12:00	Lunch & Snacks
12:00-12:10	Dr. Ramesh Kolluru
12:10-1:20	Research Presentations
1:20-1:30	Dr. Mary Farmer-Kaiser



THANK YOU!

Kevin Guillory

LEED Center Operations & Community Engagement
Coordinator (Louisiana Entrepreneurship & Economic
Development Center)

2024-2025 UL System Management & Leadership Institute

2-time University of Louisiana at Lafayette graduate

KJ's Dad





THE CULTURE OF LOUISIANA

David Squires

Associate Professor of English

Isuru Rathnayake

PhD Student, English

Reading Ernest J. Gaines in the Archives



UNIVERSITY of
LOUISIANA
LAFAYETTE

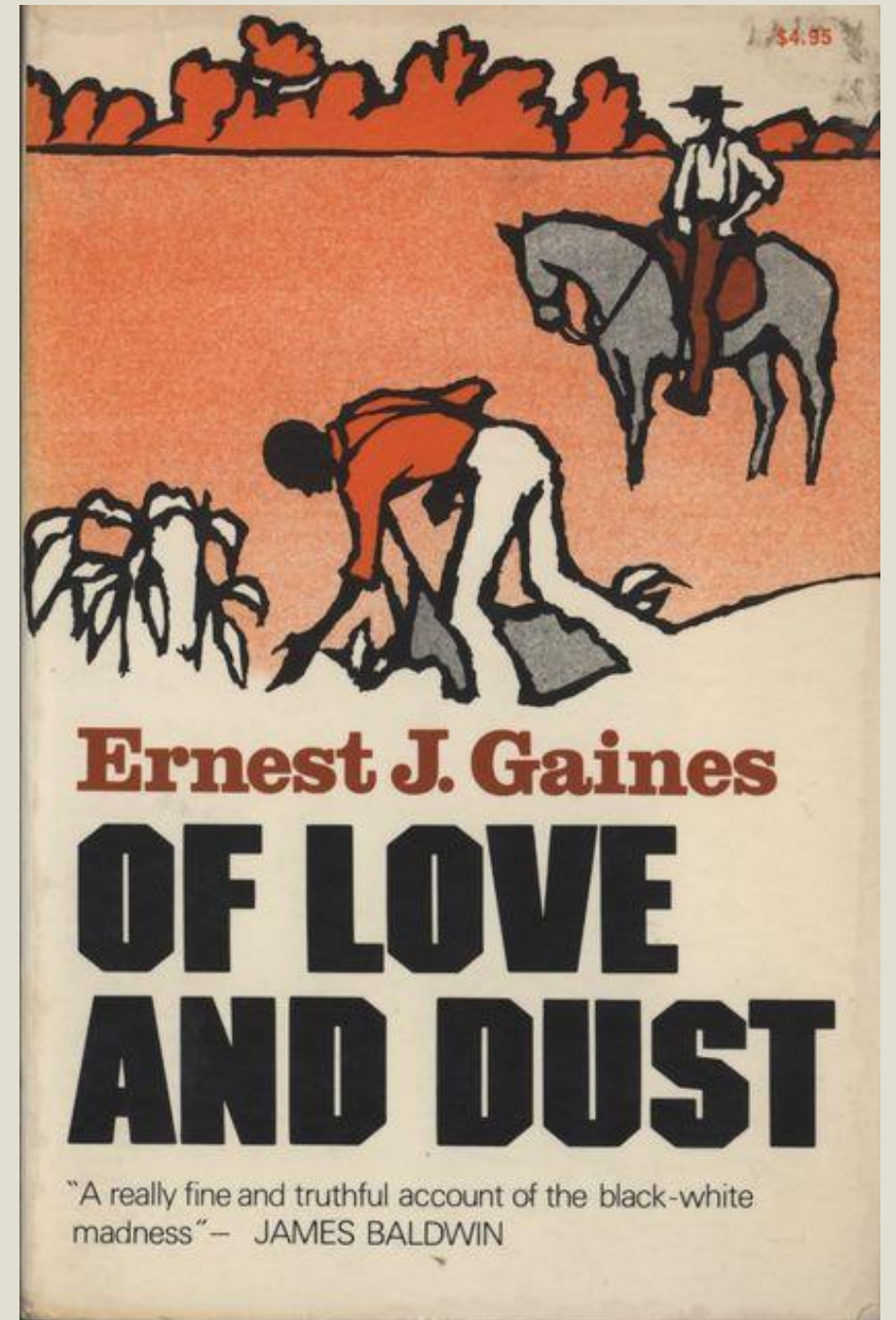
Department
of English

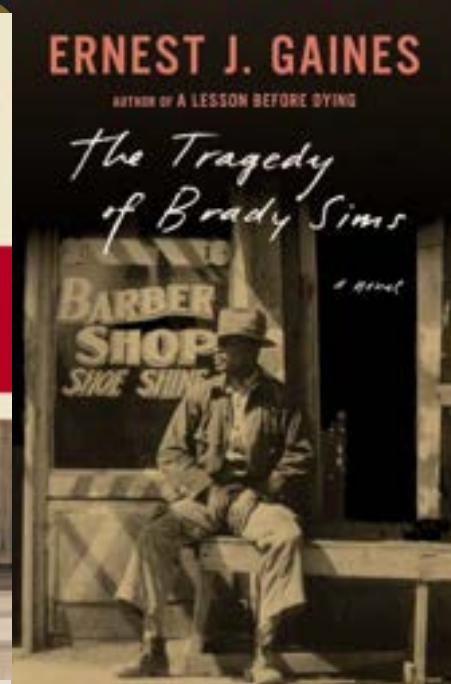
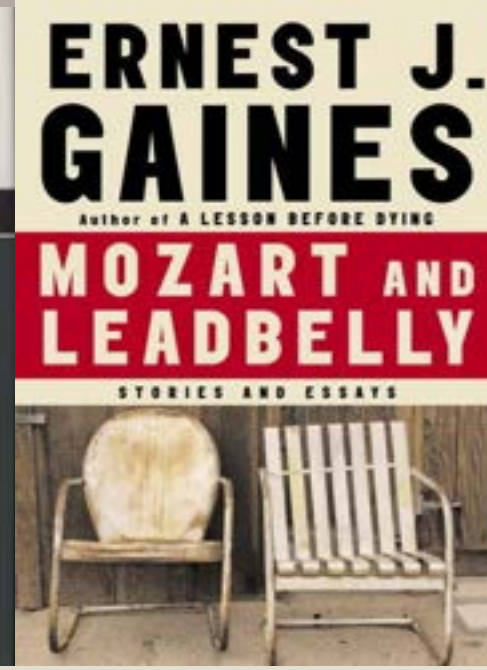
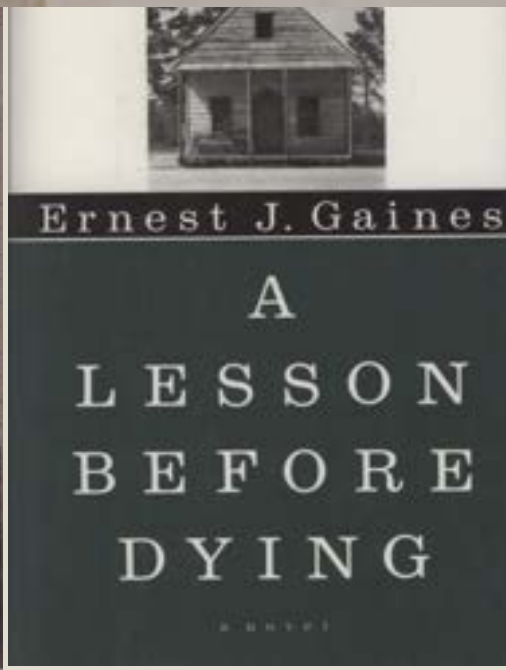
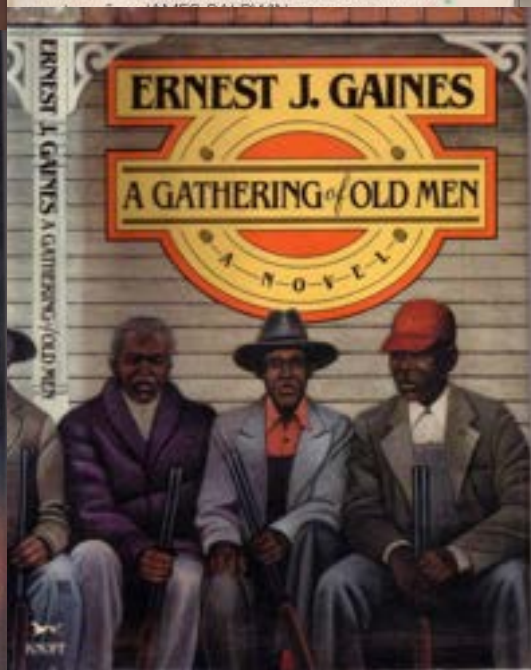
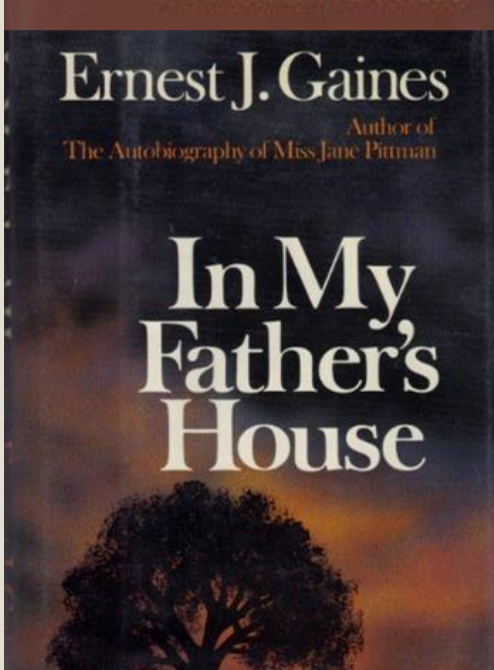
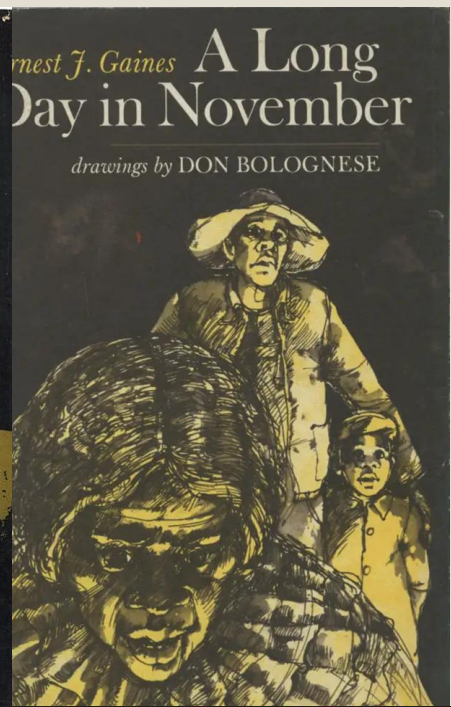
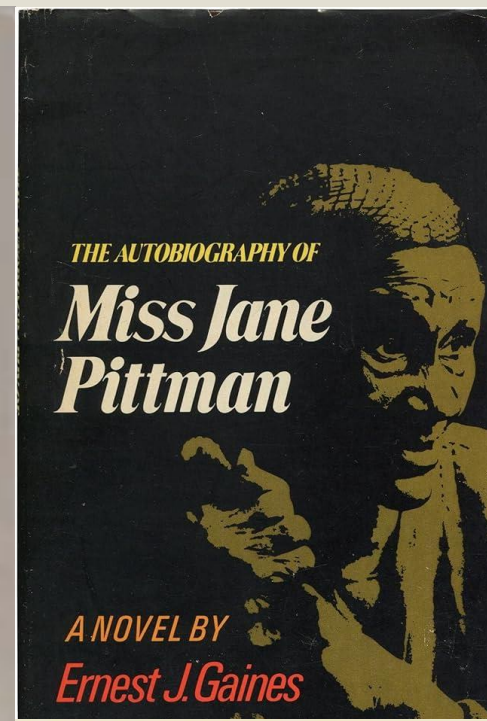
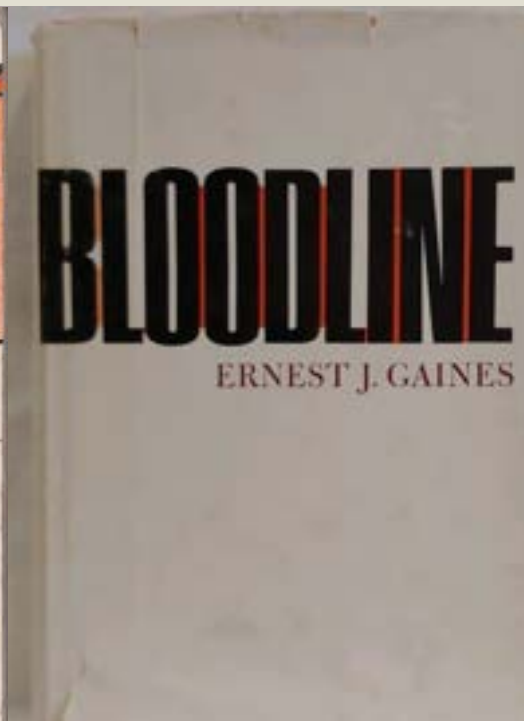
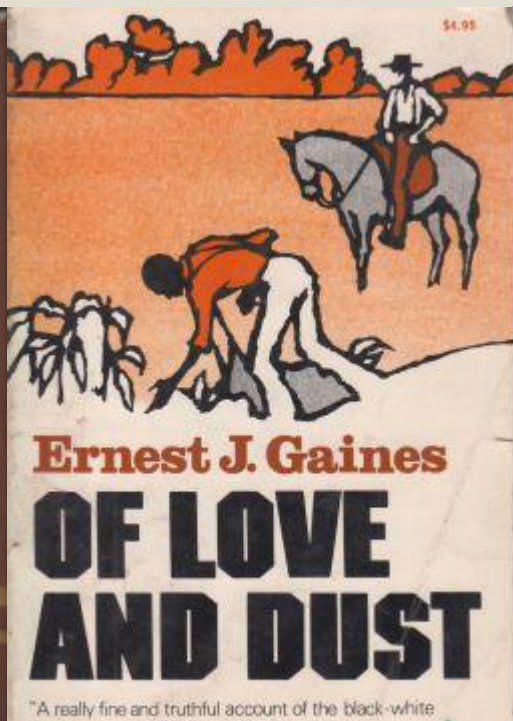
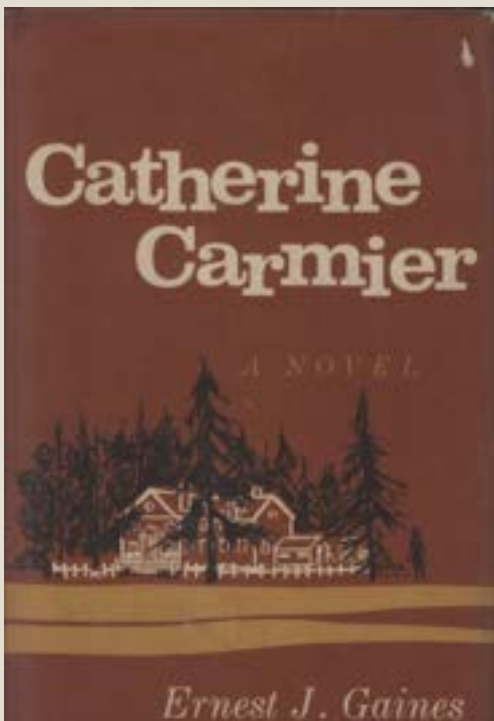
September 5, 2025

Reading

Ernest J. Gaines in the **Archives**

David Squires & Isuru Rathnayake







**“Proof that we
ever was.”**

Reading Ernest J. Gaines in the Archives

Of Love and Dust

Contributor: David Squires

This project is a study guide for Ernest J. Gaines's second novel *Of Love and Dust* (1967). The novel tells a story of love and labor under fraught circumstances. Read transcriptions of Gaines's early drafts to see how he composed the story. Then consult the keyword entries to get a sense of the historical and cultural contexts informing Gaines's fiction.

[GO TO STUDY GUIDE](#)

[SEE RESOURCES](#)

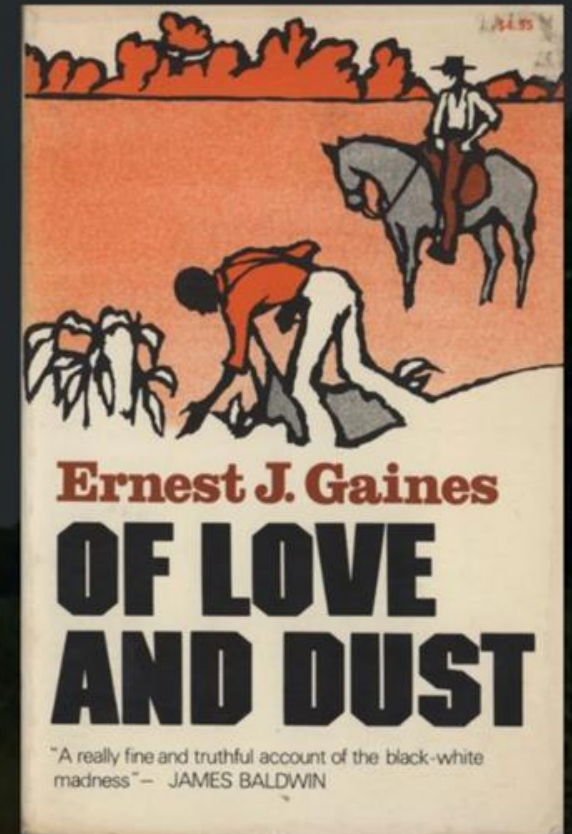


Photo courtesy of Matthew Teutsch, via
African American Intellectual History
Society blog [Black Perspectives](#)

Accessibility



Open Access Resources

The Center

+

The Ernest J. Gaines Center actively works with educators internationally to explore Dr. Gaines's novels and their themes.

The Author

+

With permission from the educators, this site will house projects created by students specifically on the work of Ernest J. Gaines and topics related to his work.

The Collection

—

Blog

Finding Aid

Research Guide 

The Lafayette Parish
Community
Remembrance

These materials are available for **ACADEMIC USE ONLY.**

For assistance with proper citation, contact the Ernest J. Gaines Center at gainescenter@louisiana.edu

Is it available online? Is it open access?

CAJUN VS. CREOLE:

what's the difference?



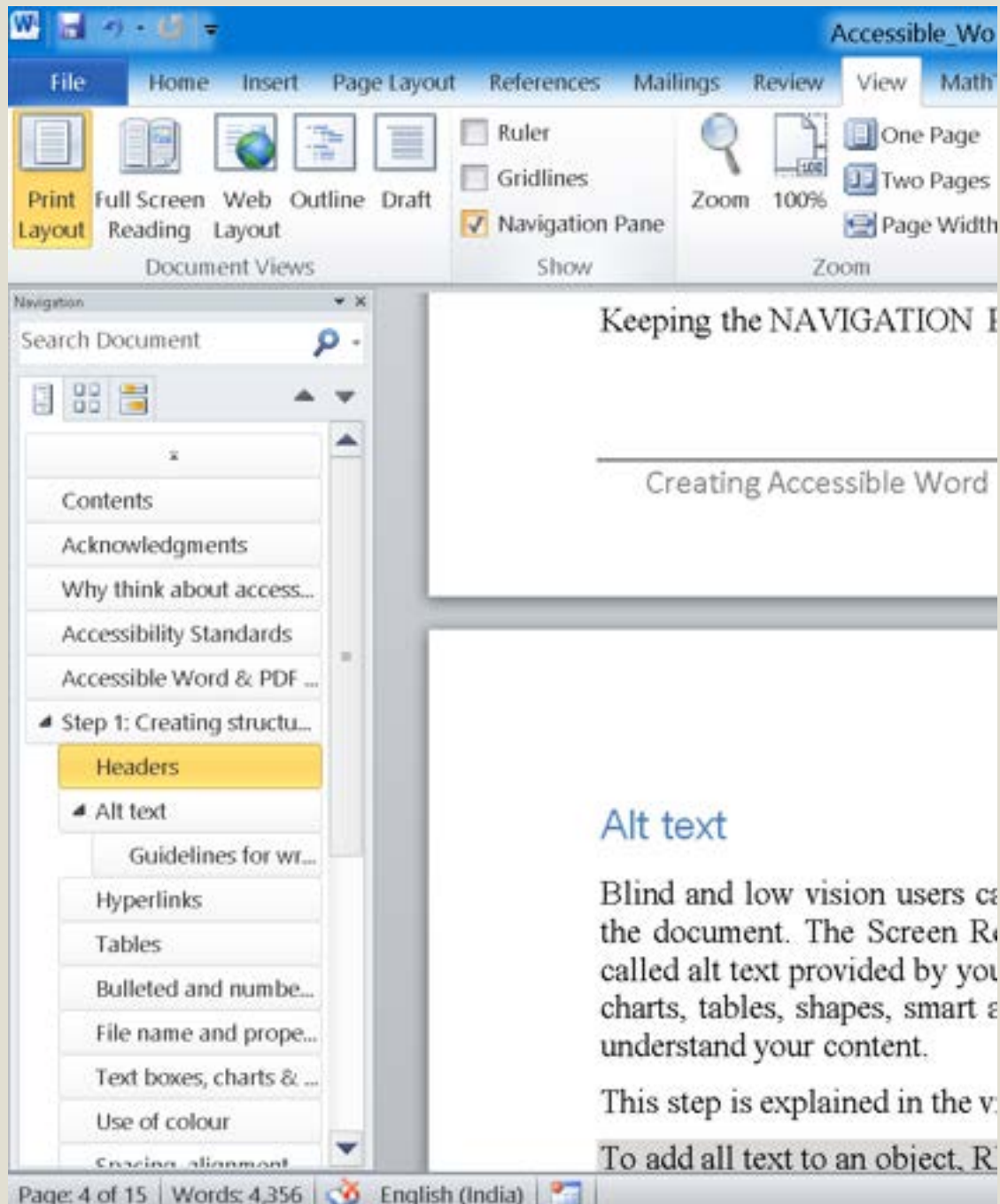
Will readers understand it?

part one
chpts one

From my gully I could see the dust coming
down the quarter, coming fast, and I thought
to myself, "Now who in the world -" and I
got up to go inside until it had all settled
and I had just stepped in the door when I
heard the truck stopping and there in front of the
gate. I didn't turn around right then, because
I knew the dust was still flying all over the
place. But a minute later when I figured I had
all settled, I went back ~~out~~ on the gully.
It was still flying down the yard, but it wasn't
nearly so thick. I looked toward the gate and
I saw somebody coming up the walk. I couldn't
tell if he was white or colored because of the
dust and because he had just started to get
darker good.

"You Kelly?" he said.
He was Caland - a tall, thin, brown skin
boy. He was wearing a dirty white shirt and ~~dark~~
dark ~~trousers~~ ^{pants}. The collar of his shirt was
up and the sleeves were rolled up to his
elbows.
"I'm Kelly," he said. "Jim Kelly."

Is it
legible?



Is it
formatted
for a
screen
reader?



Reading Ernest J. Gaines in the Archives Of Love and Dust

[SHOW TEXT](#) [VIEW](#)[DELETE](#)[Analytics](#)[Properties](#)[Layout](#)[Access](#)[People](#)[Texts](#)[Resources](#)[Resource
Collections](#)[Activity](#)[Metadata](#)[Social
Integrations](#)[Log](#)

PROJECT ENTITLEMENTS

Entitlements give users and/or reading groups access to this project. In Manifold, all projects are open by default. Enable access restrictions below to limit access to your project.

ID for CSV entitlement imports:

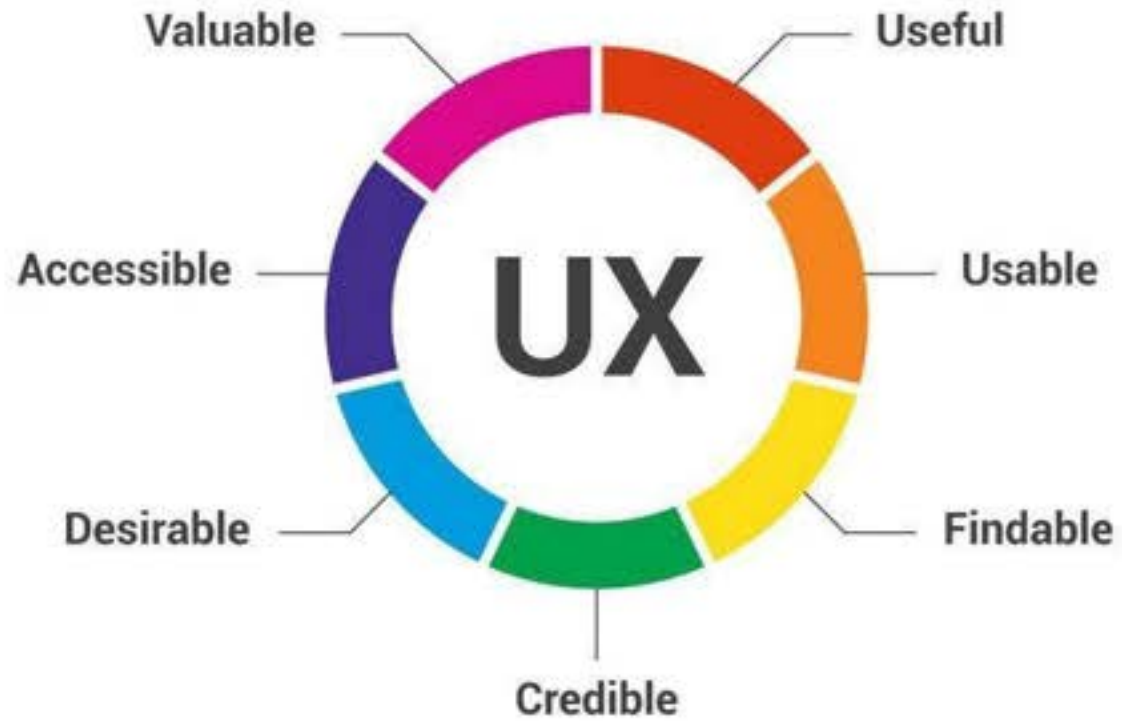
gid://entitlements/Project/21bd8abe-763f-47fb-ae2f-98ea0791af42

Configure Access Restrictions

Enable access restrictions and adjust messaging

[RESET](#)[Grant Entitlement](#)

SHOWING 0-0 OF 0 ENTITLEMENTS:



User experience, so far.



THE CULTURE OF LOUISIANA

David Squires

Associate Professor of English

Isuru Rathnayake

PhD Student, English

Reading Ernest J. Gaines in the Archives



THE CULTURE OF LOUISIANA

Elena Babatsouli

Associate Professor of Communicative Disorders

*Louisiana Family Language Use and Child Speech
Developmental Norms in English*

UL Lullaby

Louisiana Family Language Use & Child Speech Developmental Norms in English

Elena Babatsouli
Department of Communicative Disorders
College of Liberal Arts

Talk Outline

- *What?*

- *Why?*

- *Now!*

- *How?*

- *Next!*

What?

Phonological development

The process by which children learn to organize sounds into words and language and use them in meaningful ways.



LENGTH OF SENTENCES AS A CRITERION OF A
CHILD'S PROGRESS IN SPEECH

Margaret Nice (1883-1974)



CERTAIN LANGUAGE
SKILLS IN CHILDREN

Their Development and Interrelationships

Mildred C. Templin (1913-2008)



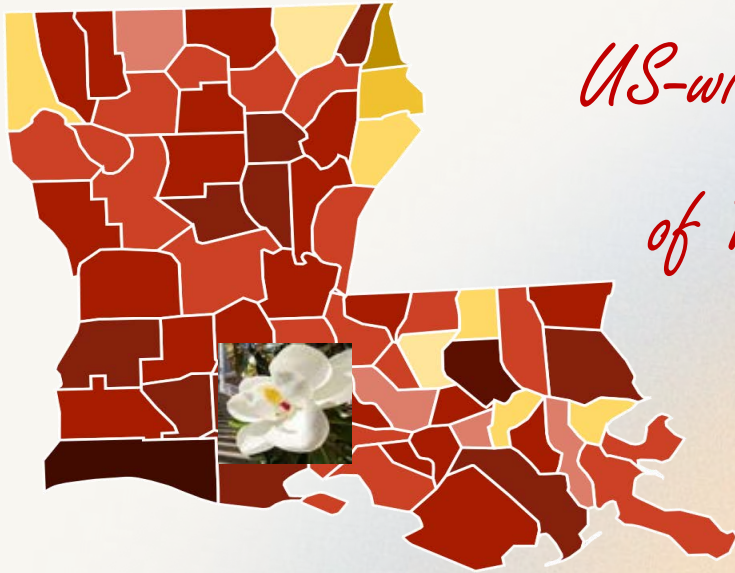
Phonologic Error Distributions in the
Iowa-Nebraska Articulation Norms
Project: Consonant Singletons

Ann Borsma Smit (?-)

*US-wide Norms
of 1993*

*Normative data help identify Child Speech/Phonological Disorder
guiding Clinical Assessment and Intervention*

Why?



*US-wide Norms
of 1993*

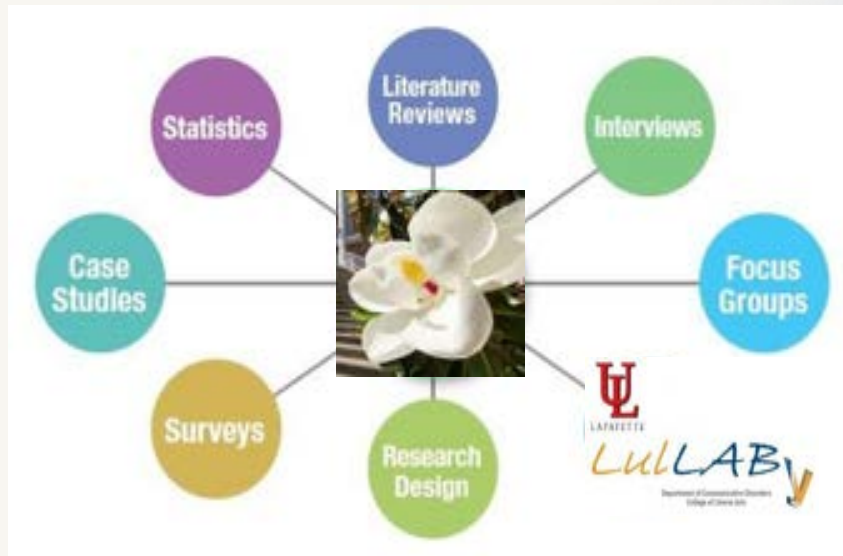
- Outdated
- Never Reflected Louisiana's linguistic terrain
- No Louisiana Norms

Map of parishes in Louisiana by racial plurality, per the 2020 US census Legend Non-Hispanic White 40–50% 50–60% 60–70% 70–80% 80–90% 90%+ Black or African American 40–50% 50–60% 60–70% 70–80%

The UL Lullaby

- provides a Standardized Speech Assessment Test for the LA context
- seeks to account for Language Variation in LA Children's English Input

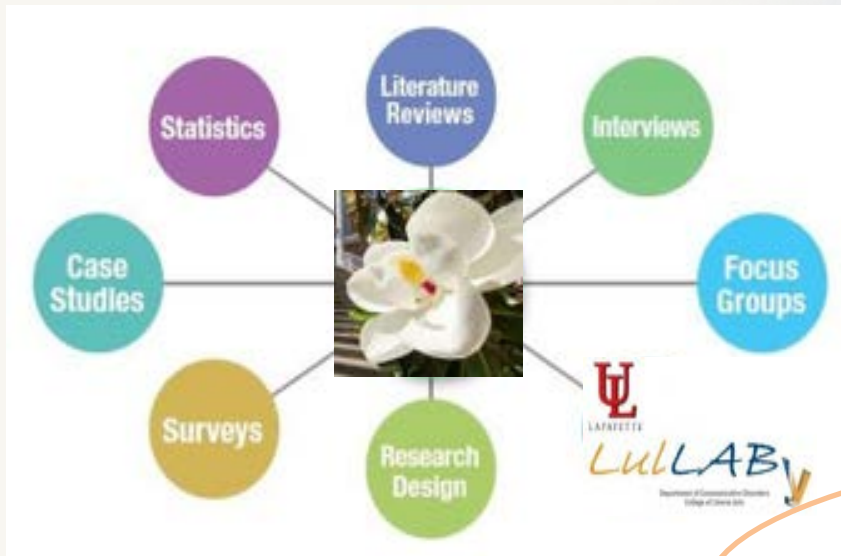
How?



Participants

- 300 Children (ages 2;0-5;0) - Round 1
- Parents/Caregivers

How?



Participants

- 300 Children (ages 2;0-5;0)
- Parents/Caregivers

- Word-list picture elicitation task
- Narrative Repetition task

Children

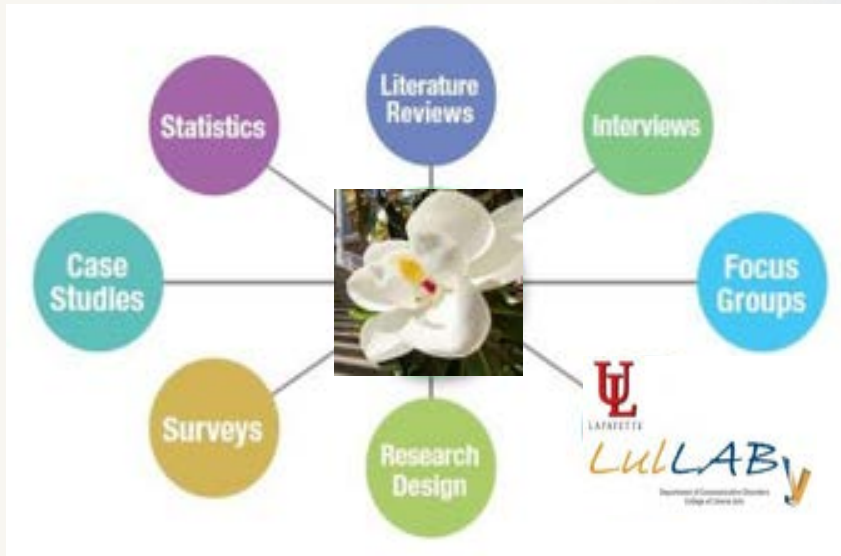
Mixed-methods & Triangulation

- Reading task

- Survey

Parents / Caregivers

How?



Participants

- 300 Children (ages 2;0-5;0)
- Parents/Caregivers

- Word-list picture elicitation task

- Narrative Repetition task

- Reading task *UL Lullaby Text?* (Hush! It's a secret.)

- Survey

*Mixed-methods
& Triangulation*

Now!

Year 1: 2024-25, Year 2: 2025-26



Students Researchers

- FA '24-SP '25: 10
- FA '25: 10

Funding

- ADVANCE
- LA Impact Research Collaborative

Data

- 40 families identified
- Data collected from 10 families
- Transcriptions in PHON (for analysis)

Conference Presentations

- Global Souths Conference
- International Symposium on Monolingual and Bilingual Speech (ISMBS) 2025

IRB Approval

- IRB-24-076-CODI

Next!



Louisiana English speech developmental norms

- More than 300 participants
- Children aged 5;0-8;0 & Parents (Round 2)
- representing all LA parishes

Clinical Application

- UL Lullaby Test freely available
- in "SpeechCatcher" for LA SLP practice

Louisiana Family Language Use

- Demographic data
- English Dialects/Other Languages

Educational Application

- Data may be used to develop Educational & Teaching Resources

Selected References

- Babatsouli, E. (2019). A phonological assessment test for child Greek. *Clinical Linguistics and Phonetics*, 33(7), 601-607. <https://doi:10.1080/02699206>.
- Dodd, B., Holm, A., Crosbie, S., & Bloomfield, J. (2006). English phonology: Acquisition and disorder. In Z. Hua & B. Dodd (Eds.), *Phonological development and disorders: A multilingual perspective* (pp. 25-54). Clevedon, England: Multilingual Matters.
- Dodd, B., Holm, A., Hua, Z., & Crosbie, S. (2003). Phonological development: A normative study of British speaking children. *Clinical Linguistics and Phonetics*, 17 (8), 617-643.
- Ingram, D., & Babatsouli, E. (2024). Cross-linguistic phonological acquisition. In M. J. Ball, N. Müller, & L. Spencer (Eds.), *The handbook of clinical linguistics* (pp. 409-421, 2nd ed.). Wiley-Blackwell.
- Nice, M. (1925). Length of sentence as a criterion of child progress in speech. *Journal of Educational Psychology*, 16, 370-379.
- Smit, A. B. (1993a). Phonologic error distributions in the Iowa-Nebraska articulation norms project: Consonant singletons. *Journal of Speech and Hearing Research*, 36, 533-547.
- Smit, A. B., Hand, L., Freilinger, J. J., Bernthal, J. E., & Bird, A. (1990). The Iowa articulation norms project and its Nebraska replication. *Journal of Speech and Hearing Disorders*, 55, 779-798.
- Templin, M. (1957). *Certain language skills in children: Their development and interrelationships*. Institute of Child Welfare Monograph 26. Minneapolis: The University of Minnesota Press.



*Thank you for your
attention !*





THE CULTURE OF LOUISIANA

Elena Babatsouli

Associate Professor of Communicative Disorders

*Louisiana Family Language Use and Child Speech
Developmental Norms in English*



THE CULTURE OF LOUISIANA

Nathan Rabalais

Associate Professor of Modern Languages

*Cultiver Notre Jardin: Rethinking
'Traditional' Cajun and Creole Foodways*



CULTIVER NOTRE JARDIN: RETHINKING 'TRADITIONAL' CAJUN AND CREOLE FOODWAYS

LOUISIANA IMPACT GRANT RECIPIENT
NATHAN RABALAIS (MODERN LANGUAGES)

HOW HAS COMMERCIALIZATION SHAPED “TRADITIONAL” CAJUN AND CREOLE FOODWAYS?

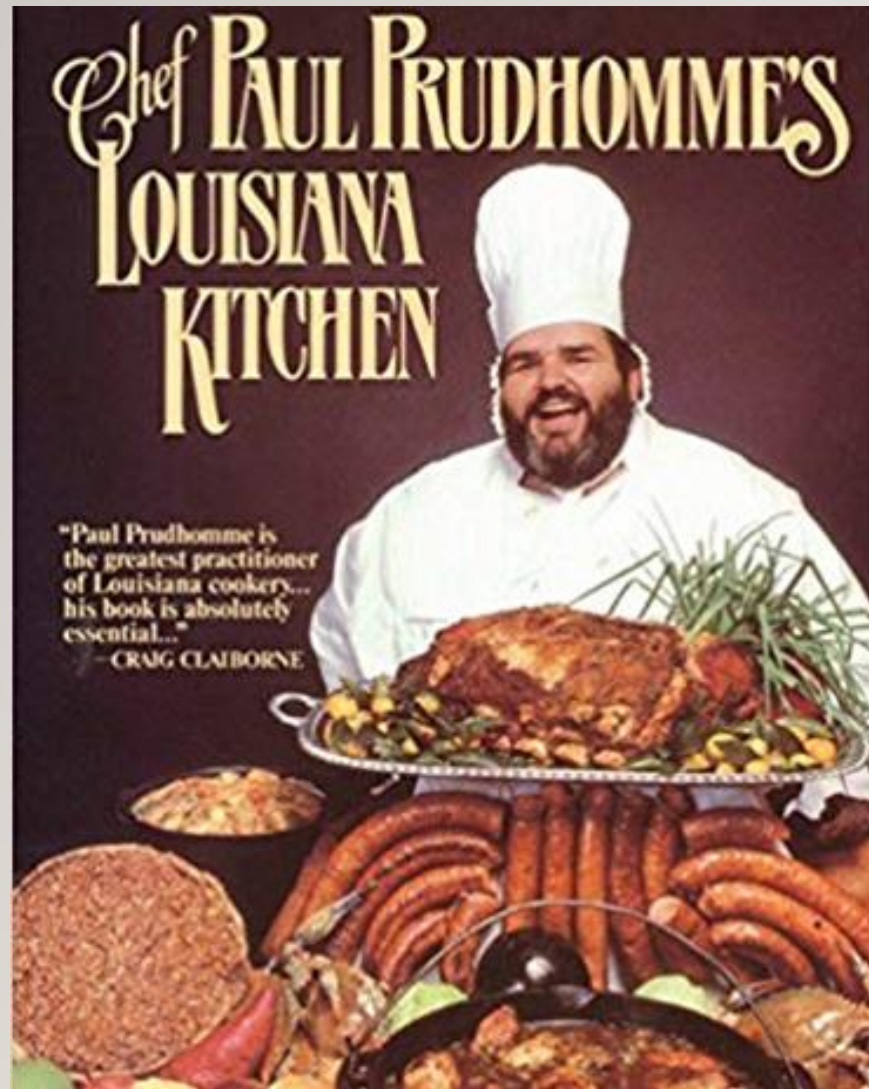
How does Louisiana preserve or adapt its foodways?

What are environmental, economic, and health-related effects of these trends?



GLOCALIZATION

- Derives from the Japanese notion of *dochakuka* :The simultaneous occurrence of both universalizing and particularizing tendencies in contemporary social, political, and economic systems (*Encyclopedia Britannica*)



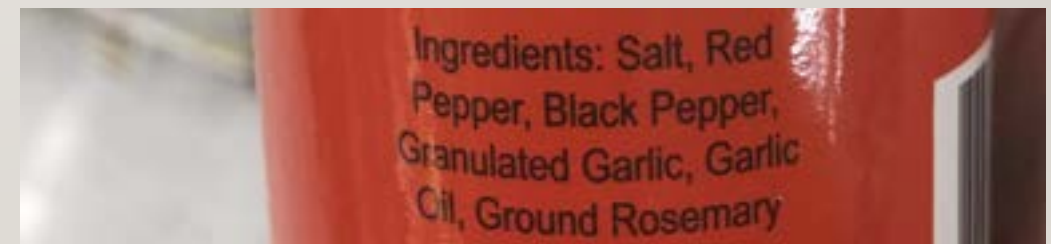
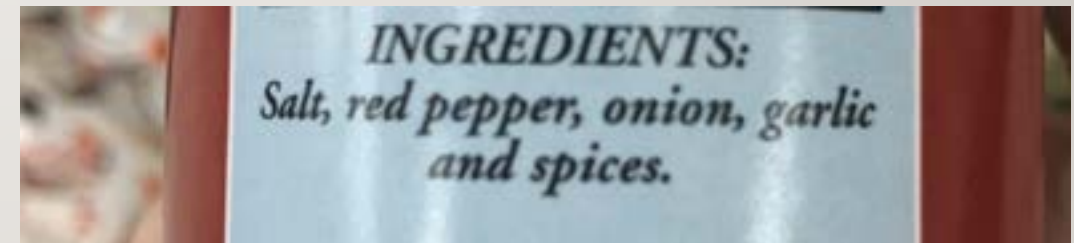
WHAT DOES “CAJUN” MEAN TO THE OUTSIDE WORLD?

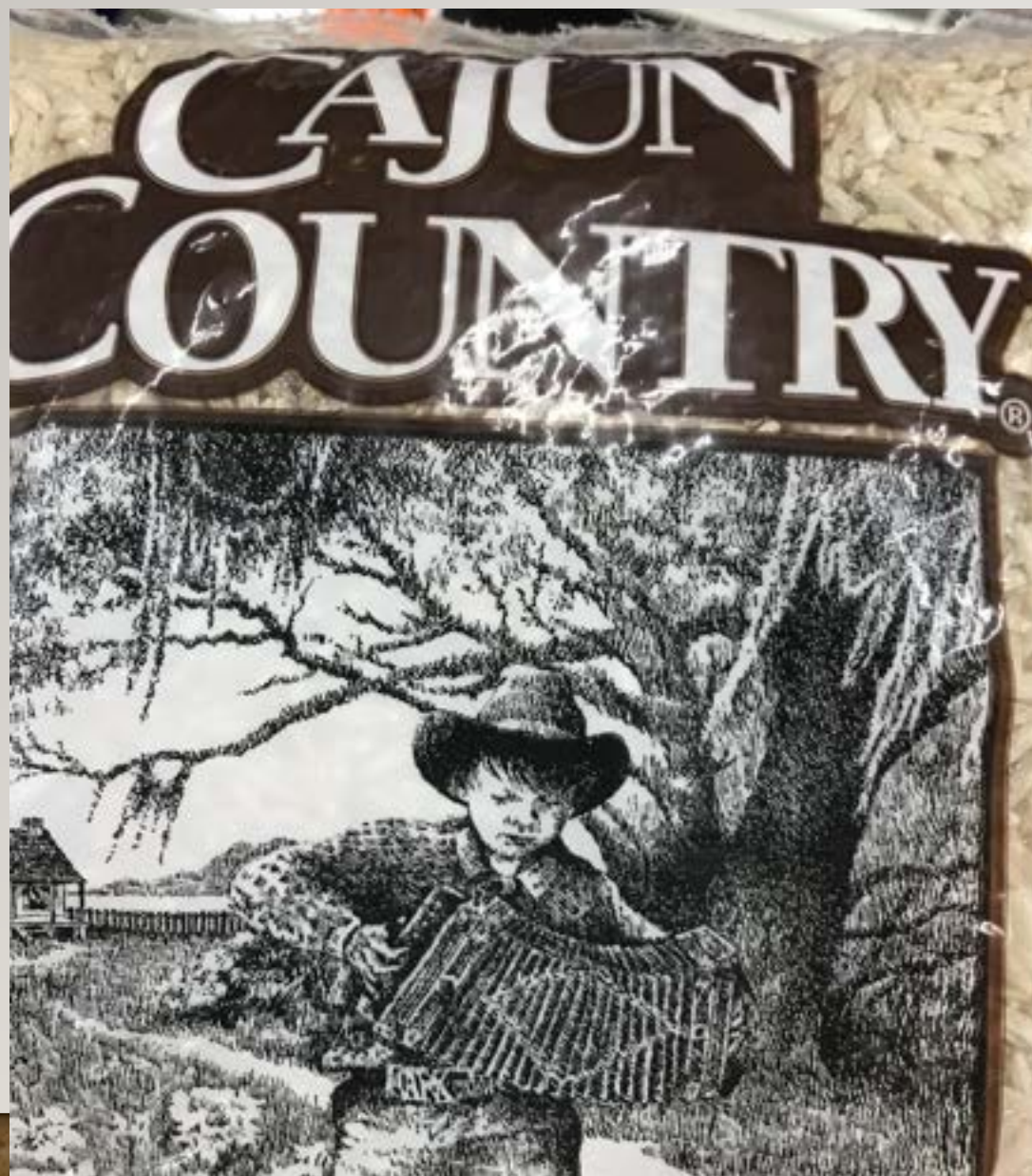
- What is expected of “Cajun and Creole” food?
- How do locals adapt to trends?





The product must be representative of the culture that is generally of Acadian descent and at least fifty percent of the product must be made, grown, produced, manufactured, processed or packed in Louisiana to be eligible to use the **Certified Cajun** logo.







Recherches sociographiques



Un savoir solidaire Nord/Sud : le projet Louisiane et le défi de l'engagement

North-South solidarity knowledge: The Louisiana Project and the stakes of commitment

Clint Bruce

Volume 59, numéro 1-2, janvier-juillet 2018

Les recherches conjointes

URI : <https://id.erudit.org/iderudit/1051433ar>

DOI : <https://doi.org/10.7202/1051433ar>

[Aller au sommaire du numéro](#)

Résumé de l'article

Vers le milieu des années 1970, le Projet Louisiane (PL) a mobilisé une équipe pluridisciplinaire de chercheurs canadiens afin d'étudier la lointaine Louisiane francophone « dans toute sa complexité et toutes ses contradictions ». En examinant cette initiative, nous nous intéressons aux enjeux relatifs à l'esprit solidaire du PL vis-à-vis du renouveau ethnique alors en cours. Étude métascientifique, l'article s'oriente autour d'un double objectif : d'une part, cerner les postures multiples face aux milieux louisianais et, d'autre part, examiner les expériences d'assistants de recherche, québécois et louisianais, en tant que vécu conscientisant susceptible de favoriser un engagement sur le plan ethnolangagier.

BOUCHERIE

- A specific set of products, heavily dependent on timing and cooperation



MODERN DEMAND FOR BOUDIN AND CRACKLINS

- Inversion of production processes and demand for ingredients





THE CULTURE OF LOUISIANA

Nathan Rabalais

Associate Professor of Modern Languages

*Cultiver Notre Jardin: Rethinking
'Traditional' Cajun and Creole Foodways*

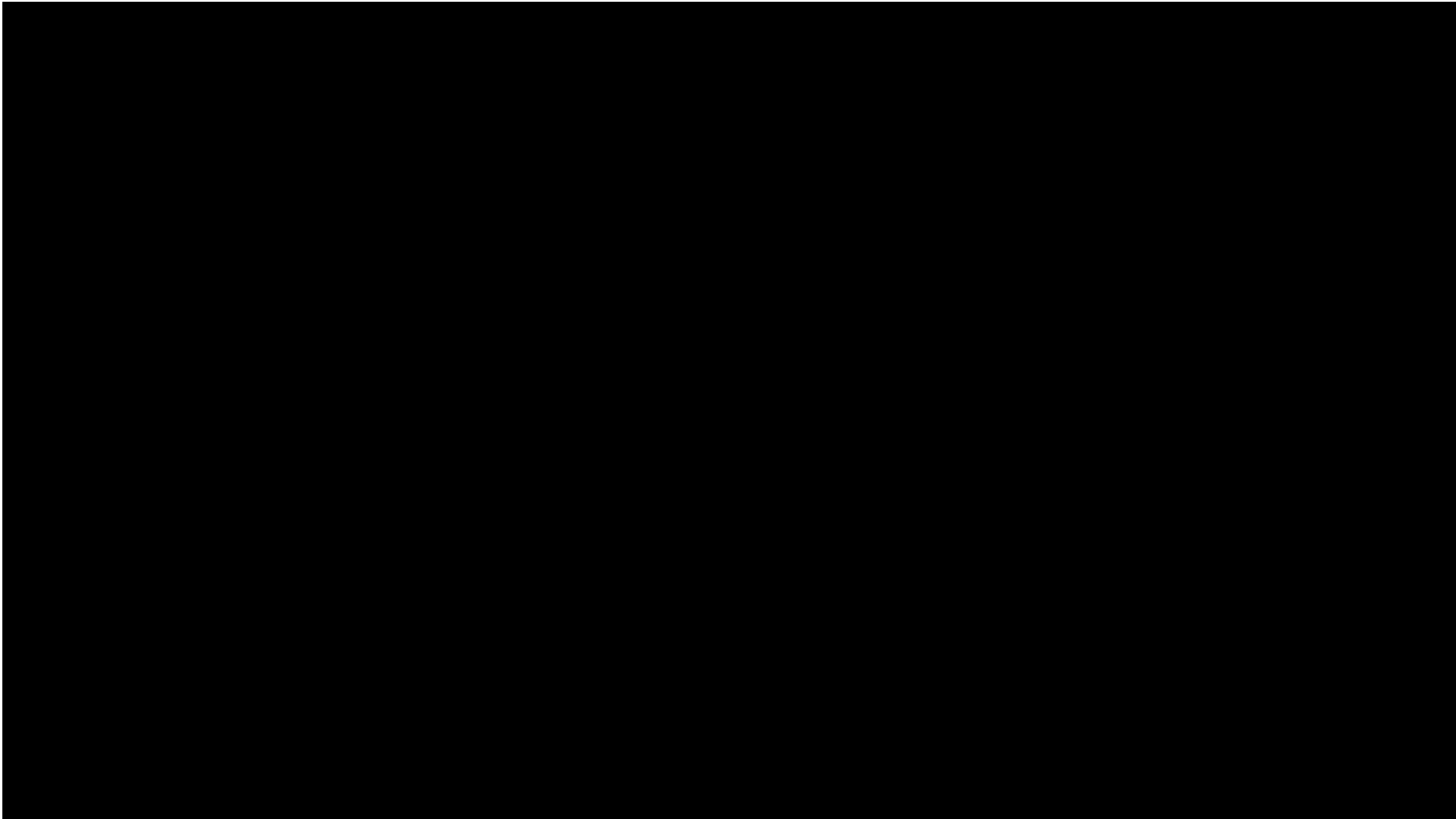


THE CULTURE OF LOUISIANA

Virgile Beddock

Associate Professor of English

Settling St. Malo - The Movie





THE CULTURE OF LOUISIANA

Virgile Beddock

Associate Professor of English

Settling St. Malo - The Movie



INNOVATION, EDUCATION & OUR UNIVERSITY COMMUNITY

Kevin Guillory

Operations & Community Engagement Coordinator

Louisiana Entrepreneurship & Economic Development Center

Jonathan Shirley

Program & Operations Manager

*Educating & Cultivating
the Heart of an Entrepreneur*

Cultivating the Heart of an entrepreneur

KEVIN GUILLORY AND JONATHAN SHIRLEY



Growth of Entrepreneurship

- Entrepreneurial interest grew significantly post pandemic
- U.S. averaged 430,000 new business application per month in 2024
- Diverse entrepreneurship at an all-time high, 43% of self-employed Americans are female

Entrepreneurial research - skills

- Much is done around entrepreneurial skills and some on mindset
- Entrepreneurial Thinking Skills (ET-7)
 - Problem Solving
 - Tolerance for ambiguity
 - Failing forward
 - Empathy
 - Creativity
 - Responding to critical feedback
 - Teamwork

Entrepreneurial Mindset

Attitude

- Can affect change
- There is a better way
- Opportunities are everywhere
- Embrace innovation and change
- Failure is learning
- Optimism
- Passionate

Behavior

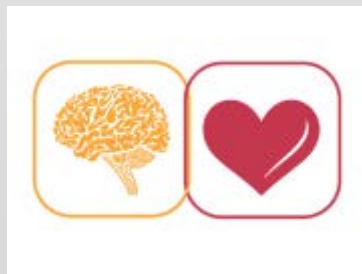
- Pursue opportunities
- Innovating
- Perseverance
- Leveraging resources
- Guerrilla actions
- Risk management
- Adaptation

Heart-centered research

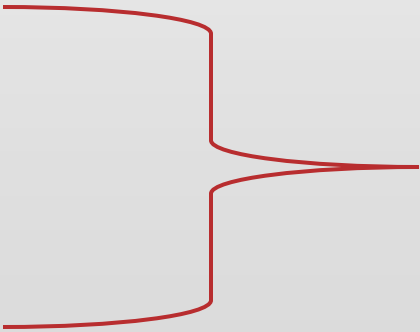
- Resilience and emotional stability – Zettel (2025) tracked 163 entrepreneurs – higher resilience led to fewer emotional fluctuations and a more stable effort toward business growth
- Emotional Intelligence – 2017 study found entrepreneurs with higher EI perceived greater success across employer satisfaction, customer satisfaction, and personal fulfillment
- Education in emotion regulation and socio-emotional skills – 2021 study argued that entrepreneurs should seek to equip themselves with emotional skills like resilience through targeted education

Accelerate Northside

- Accelerate Northside is a small business development program launched in Spring 2021 by the LEED Center.
- Based on a framework created by Dr. Michael Morris and the Urban Poverty & Business Initiative. The framework is built on the belief that entrepreneurship can be a viable pathway out of poverty.
- 9 cohorts completed by 375 individuals since 2021.
- Head & Heart Approach – “The longest journey you will ever take is the 18 inches from your head to your heart.



What did we learn

- Accelerate Northside participants – 5 words to describe the heart of an entrepreneur:
 - Passionate
 - Risk taker
 - Self-motivated
 - Drive
 - Visionary
 - Creativity
 - Resilient
- 
- Separated by 2 votes**

What did we learn

- Accelerate Northside participants – what could fill your entrepreneurial heart
 - Mentorship
 - Networking
 - Community
 - Education

In their own words

- https://www.youtube.com/shorts/3T_gZd687IA



INNOVATION, EDUCATION & OUR UNIVERSITY COMMUNITY

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*Educating & Cultivating
the Heart of an Entrepreneur*



INNOVATION, EDUCATION & OUR UNIVERSITY COMMUNITY

Gretchen Vanicor

Chief Sustainability Officer

Kiwana McClung

Professor of Architecture
& Academic Affairs

*Connecting Students to our Community: How to
Create a Safe and Welcoming Community
Engagement Experience*



Connecting Students to our Community: How to Create a Safe and Welcoming Community Engagement Experience

Kiwana T. McClung

*Executive Director, Student Development and Academic Outreach
Professor of Architecture and Design*

Gretchen LaCombe Vanicor, Ed. D.

Chief Sustainability Officer, Director of Office of Sustainability and Community Engagement

MISSION STATEMENT – WHAT IS OUR PURPOSE?



Exceptional educational and professional experience

driven by

diverse
worldviews

enriched shared
cultural traditions



Develop citizens, leaders and innovators who create solutions to community and regional challenges

through

public impact
research

inspirational
teaching

transformative
service



Improving the world for future generations



WHAT IS COMMUNITY ENGAGEMENT?

Strategic Priority No. 5:

Transformational Community Engagement is our responsibility to foster collaboration and mutually beneficial partnerships locally, regionally, nationally and globally:

- to enrich teaching and learning,
- prepare educated and engaged citizens,
- strengthen our communities and improve the world for future generations.

“Community engagement emphasizes a two-way exchange. The university doesn't just offer its resources to the community, but also learns from and benefits from the community's expertise and experience (Gelmon, pg. 154, 1997).”





The UL Lafayette Community Collaboratory brings together our town and gown partners to strengthen our communities and create a better world for future generations.

The Community Collaboratory fosters collaboration and mutually beneficial partnerships, promotes meaningful dialogue, and co-develops solutions to address community priorities. It enriches teaching and learning while providing professional development and service opportunities to prepare educated and engaged citizens.

WHAT DOES COMMUNITY ENGAGEMENT LOOK LIKE?

Community engagement takes on many forms:

- Direct volunteerism among students and staff
- Project or place-based service-learning
- Participatory research
- Peer-to-peer mentorship
- Curriculum-based internships, such as nursing clinicals and student-teacher residency
- Knowledge exchange, public lectures, and fostering public dialogue
- Cultural and educational events
- Lifelong learning activities
- Civic engagement
- Economic development activities



WHO IS OUR COMMUNITY?

Is it geographical? Is it a group of people? Is it internal? Is it external?yes, and...

- The local community as a place where we share and live together
- The campus community as a place where we learn, work, and perhaps live together
- Communities of interest (or practice) that share common interests, such as academic disciplines, experience, hobbies, and/or career focus areas, such as student affairs
- Broader geographical regions with which we identify and/or share challenges, goals, etc
- Affiliation and identity-based communities that share a common identity, such as cultural, ethnic, race, veteran status, abilities, etc.



“Communities refer to those specific, local, collective interest groups that participate,

WHO ARE OUR PARTNERS?

Community-University partnerships are organic, complex, and interdependent systems (Sigman, 1996).

Partnerships are rarely static and constantly evolve as a result of other changing forces, such as:

- Personnel changes
- Resource availability
- Organizational infrastructure
- Political forces
- Other social, economic, and environmental forces



WHAT ARE THE IMPACTS OF COMMUNITY ENGAGEMENT?

Studies have shown that intentional community-university engagement can achieve both community and university goals and address critical challenges facing higher education institutions and society (Gelmon, 2018).

Effective community engagement can:

- Improve recruitment and retention of students, faculty, and staff
 - Improve student completion rates
 - Provide leadership development and professional growth opportunities for students
 - Increase research activity and support interdisciplinary forms of discovery
 - Renew and strengthen connections with government agencies
 - Form effective partnerships with community non-profit agencies
 - Increase access to new sources of revenue, including connections to donors
 - Improve community and quality of life outcomes
-
- Fulfill societal expectations of universities serving as 'anchors' in their communities



ENSURING A GREAT SERVICE EXPERIENCE

- Review University Guidelines and Standard Operating Procedures
 - Standard Operating Procedures for Field Work
- Complete the appropriate forms and paperwork
 - University, Service Orgs, Municipal
- Notify the appropriate authorities
- Notify landowners, property owners, and those on adjacent or nearby properties
- Reach out to Office of Sustainability and Community Engagement with questions and for additional resources.



THE SERVICE IS SET....NOW WHAT?

Service Partners

- Responsibilities
- Agreements
- Liability Concerns
- Communication
- Safety (Physical and Social)

University and community partnerships are best understood from a systems perspective --- any change affecting any partner is likely to have an impact in multiple aspects of the partnership (Gelmon, 1997).



THE SERVICE IS SET....NOW WHAT?

Students

- Student Voice & Leadership
- Context (Physical and Social)
- Accessibility & Access
- Value, Relevance, & Meaning
- Skill Development
- Reflection & Learning
- Sustainability & Continuity
- Recognition & Motivation



Remember, it's more than just service...

- Studies show that students who have participated in community-based learning (Cress et al., 2023):
 - Have greater learning gains and problem-solving skills than their peers,
 - Possess a higher academic and social self-concept,
 - Show improved tolerance and empathy,
 - Have a deeper understanding of societal challenges and community issues
- Community engagement offers students growth and development opportunities, professional connections, and real-world experience.
- Community-engaged learning creates a bridge between campus and community.





Special thanks to all the Community Collaboratory Fellows

The Community Collaboratory Fellows are made of UL Lafayette's Faculty and Staff who are leaders on campus in how they are engaged with communities on campus and in our community.

Dr. Aimee Barber

Blair Begnaud

Dr. Lisa Broussard

Jonathan Brown

Kevin Guillory

Dr. Emad Habib

Ruben Henderson

Rose Honnegor

Kayleigh Murphy

Professor Kiwana McClung

Professor Tom Sammons

Kyle Sarver

Dr. Liz Skilton

Dr. Lise Anne Slatten

Dr. Geoff Stewart

Dr. Peter Shepard



INNOVATION, EDUCATION & OUR UNIVERSITY COMMUNITY

Gretchen Vanicor

Chief Sustainability Officer

Kiwana McClung

Professor of Architecture
& Academic Affairs

*Connecting Students to our Community: How to
Create a Safe and Welcoming Community
Engagement Experience*



INNOVATION, EDUCATION & OUR UNIVERSITY COMMUNITY

Blair Begnaud

Assistant Director

Jonathan Brown

Sustainability Coordinator

Gretchen Vanicor

Chief Sustainability Officer

Office of Sustainability & Community Engagement

Data Informed Decision Making: Making the Case for Bicycle & Pedestrian Infrastructure Improvements Around the UL Lafayette Campus

Data Informed Decision Making: Making the Case for Bicycle & Pedestrian Infrastructure Improvements Around the UL Lafayette Campus

Blair Begnaud, Jonathan Brown and Dr. Gretchen Vanicor



**Office of Sustainability and
Community Engagement**



Introduction

The Office of Sustainability and Community Engagement conducted **Pedestrian and Bicycle Studies** in the Spring of 2022 and in the Fall of 2024.

The studies focused on measuring pedestrian traffic at Johnston Street and University Avenue intersections to:

- Evaluate current conditions
- Collect quantitative and qualitative data
- Identify potential solutions to improve safety and quality of life for pedestrians, cyclists, and drivers









**UL Lafayette is Silver
Bicycle Friendly University
and this data helped us
achieve a higher ranking!**

Data Collected

2024 Pedestrian and Bicycle Study

2024 Study Area:

-  Johnston + St. Mary
-  Johnston + University
-  Hebrard + University
-  McKinley + University
-  Johnston St. Midblock
-  University Ave. Midblock

Data Studied and Collected in the 2024 Study:

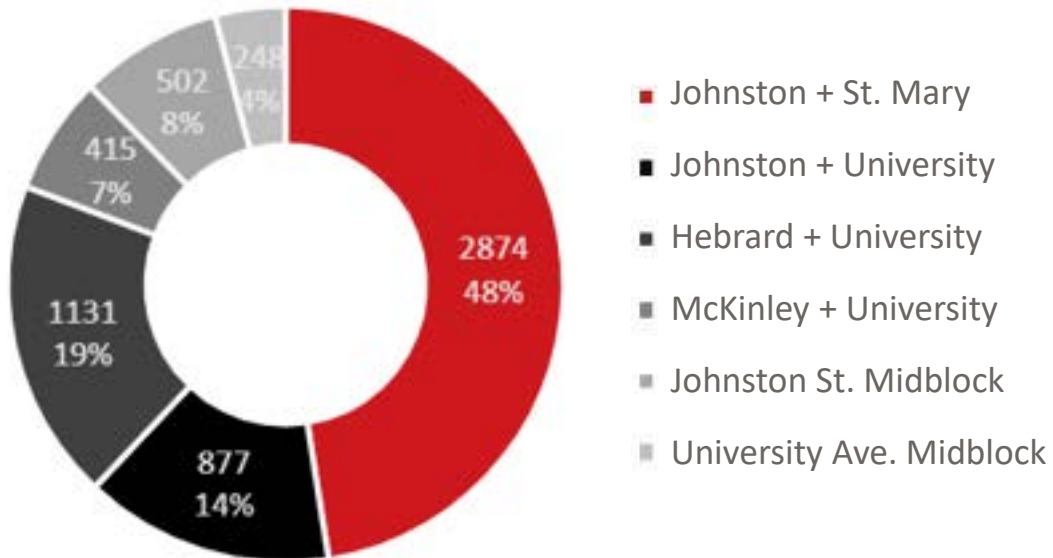
Quantitative and Qualitative Data

- Pedestrian Counts
- Bicycle Counts
- Pedestrian and Bicyclist Behavior Observations
- Motorist Vehicle Behavior Observations
- 2024 Pedestrian and Bicycle Survey
 - Survey Period: Nov 7 - Dec 31

Day 1 : Pedestrian and Bicycle Study

Wednesday, October 30, 2024

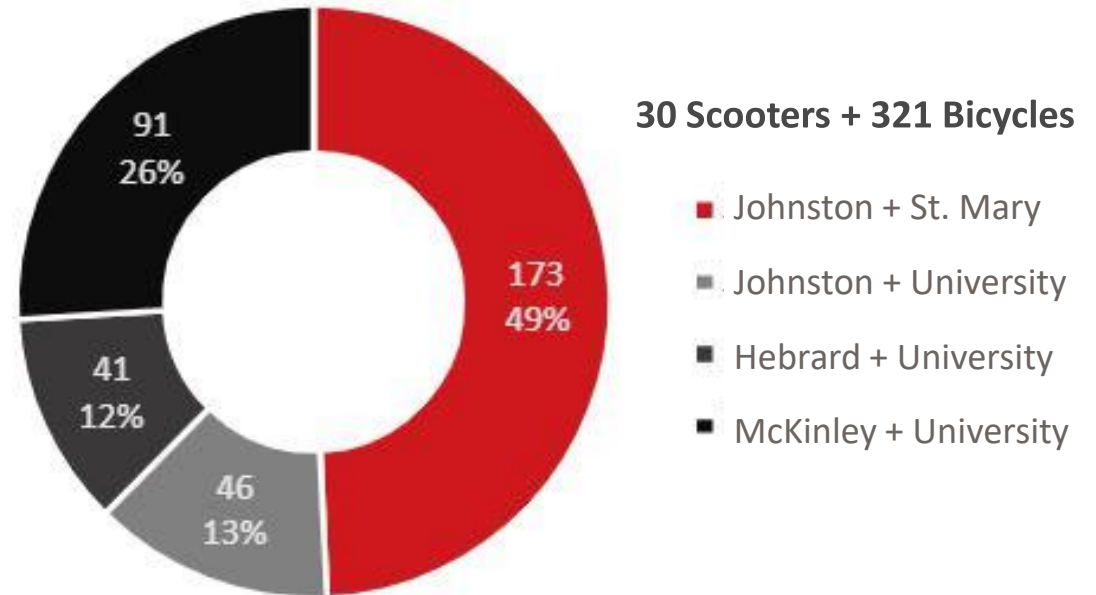
Pedestrian Crossing Count



6,047

Pedestrian Crossings on
Wednesday, October 30,
2024

Bicycle Count



30 Scooters + 321 Bicycles

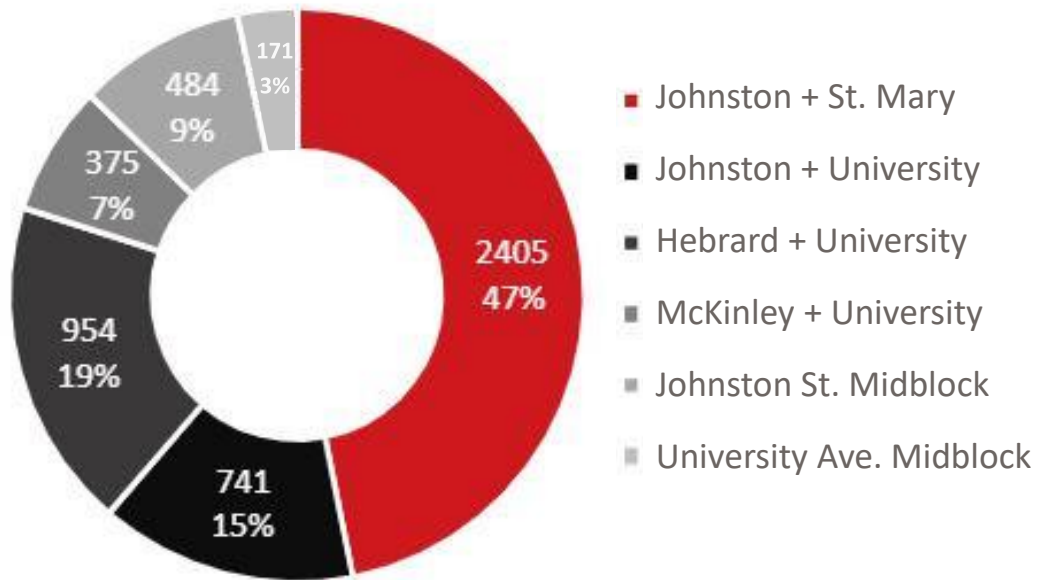
351

Bicycles/ Scooters on
Wednesday,
October 30, 2024

Day 2 : Pedestrian Study

Thursday, November 7, 2024

Pedestrian Crossing Count



5,130

Pedestrian Crossings on
Thursday,
November 7, 2024



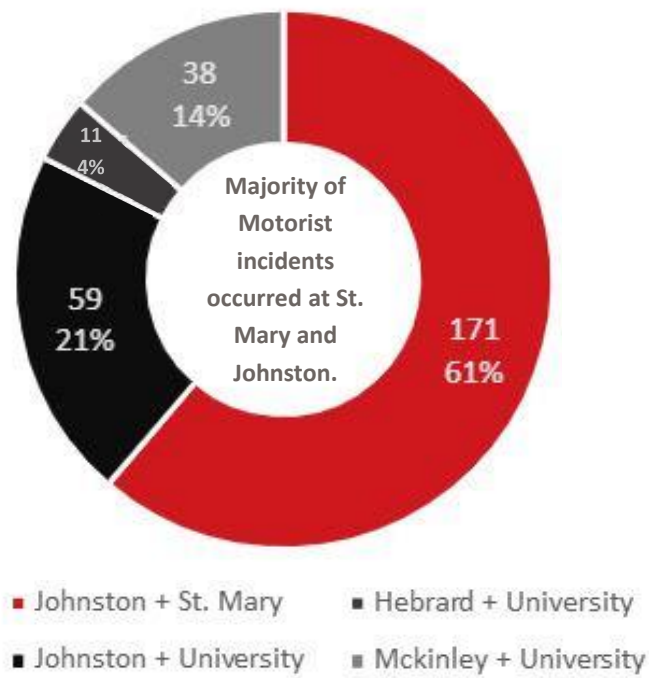
Bike Lafayette Volunteer, Matt Mick, counting pedestrians during the 2024 Pedestrian and Bicycle Study at St. Mary + Johnston.

Day 2 : Motorist Study

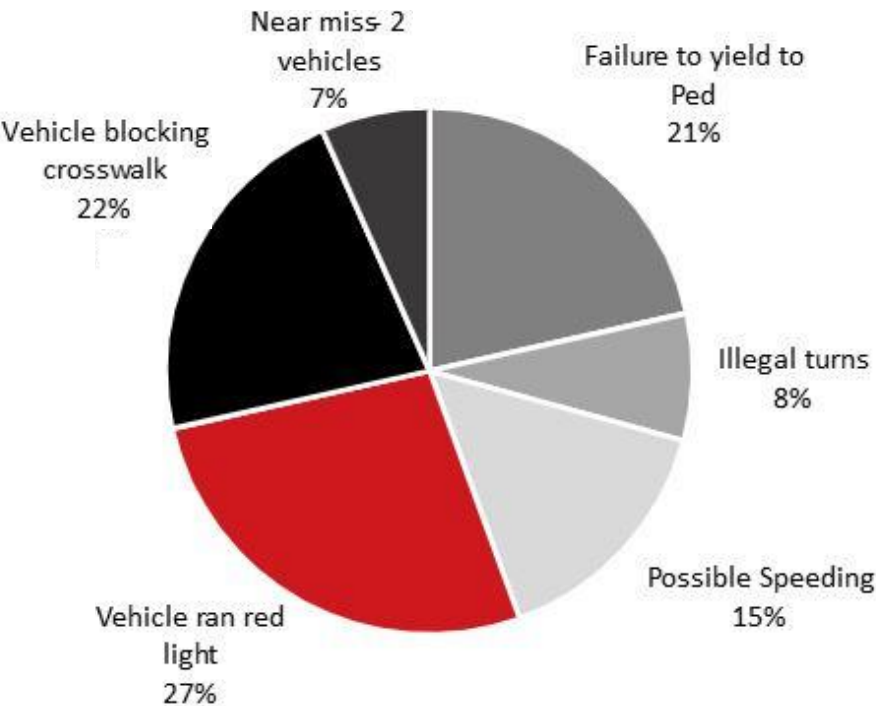
Thursday, November 7, 2024

Motorist Behavior

Quantity of Incidents at Each Intersection



Types of Incidents at all Study Intersections



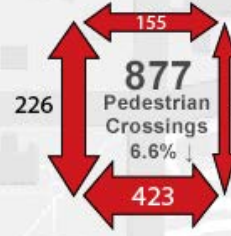
279

Motorist incidents on Thursday, November 7, 2024

Day 1 : Wednesday, Oct 30

Pedestrians Counted at each Intersection

.25 miles between crosswalks



.15 miles between crosswalks



.15 miles between crosswalks

Johnston St.

Florida Ct

Buena Vista Blvd

Rex St.

E. St Mary Blvd

Hebrard Blvd

Boucher Dr.

McKinley St.

Tulane Ave.

Gordon St.

Lamar St.



The distance between signal crossings on Johnston Street is **1,320 feet**—a **quarter-mile!** For comparison, that's even longer than the Empire State Building's height of 1,250 feet!

October 30th, 2024

Wednesday - Pedestrians Counted
Total Count: 6047
Study Time Period: 7AM - 6PM

Johnston + St. Mary: 2874 (12.4%↑)
Johnston + University: 877 (6.6%)
Hebrard + University: 1131
McKinley + University: 415
Johnston St. Midblock: 502 (23.3%↑)
University Midblock: 248

*Percentages are compared to 2022's Study

Data Comparisons Between the 2022 and 2024 Studies

Thursday: 2024 vs 2024

Same scheduled class times

	Thursday 2022	Thursday 2024	Percentage Change	
Johnston + St Mary	2254	2405	+6.7%	↑
Johnston + University	711	741	+4.2%	↑
Johnston Midblock	445	484	+8.8%	↑

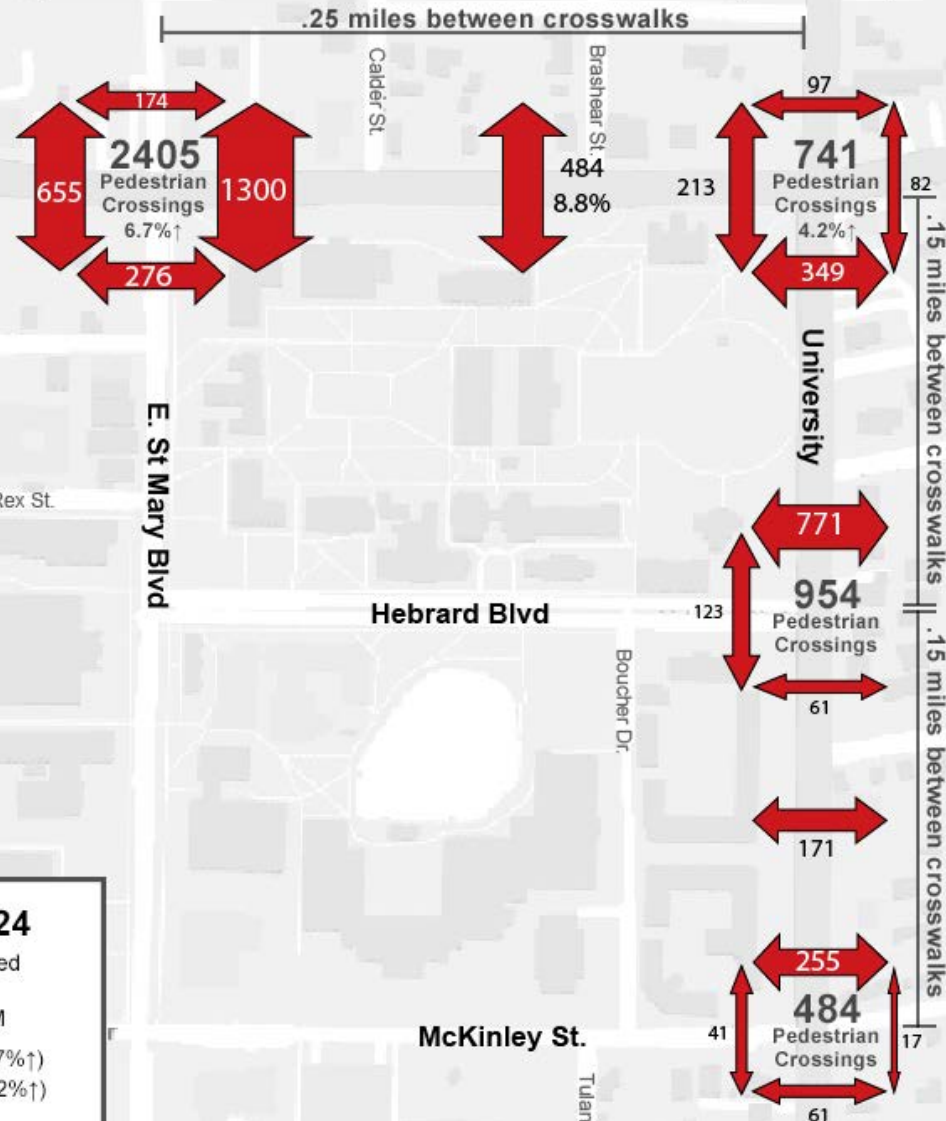
Monday/Wednesday : 2024 vs 2024

Same scheduled class times

	Monday 2022	Wednesday 2024	Percentage Change	
Johnston + St Mary	2557	2874	+12.4%	↑
Johnston + University	939	877	-6.6%	↓
Johnston Midblock	407	502	+23.3%	↑

Day 2 : Thursday, Nov 7

Pedestrians Counted at each Intersection



November 7th, 2024

Thursday - Pedestrians Counted

Total Incidents: 5130

Study Time Period: 7AM - 6PM

Johnston + St. Mary: 2405 (6.7%↑)

Johnston + University: 741 (4.2%↑)

Hebrard + University: 954

McKinley + University: 375

Johnston St. Midblock: 484 (8.8%↑)

University Midblock: 171

*Percentages are compared to 2022's Study

Common Observations noted in the Study:

- Cars turning into pedestrians during the pedestrian signal
- Near misses between pedestrians and vehicles during right and illegal turns
- Illegal left turns from St. Mary to Johnston St both north and south bound
- Pedestrians queuing area full during peak times
- Pedestrian running out of time to cross with current signal timing
- Cars blocking pedestrian crosswalk
- Vehicles running red lights
- Vehicles speeding
- Pedestrians had to step back from buses and vehicles turning on curbs

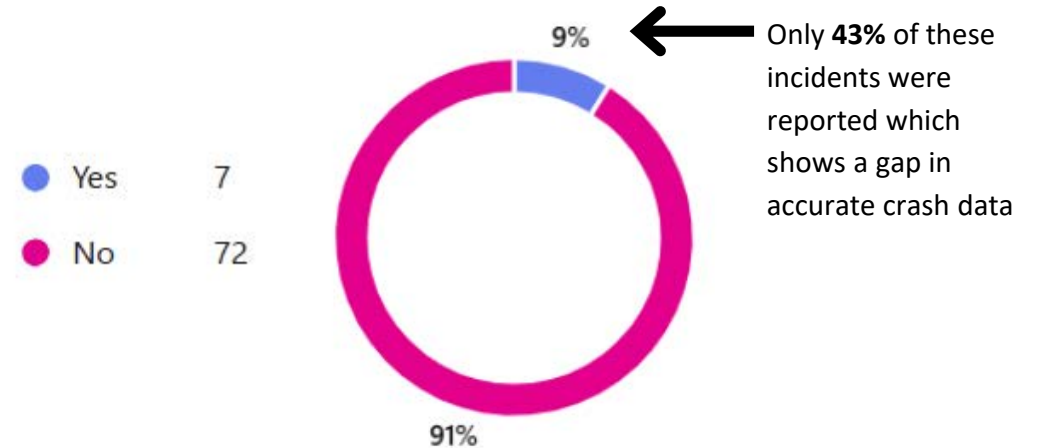
Pedestrian and Bicycle Study

Survey: n = 79

As a pedestrian or cyclist, have you ever been **almost hit** by a vehicle on Johnston St. or University Ave.?



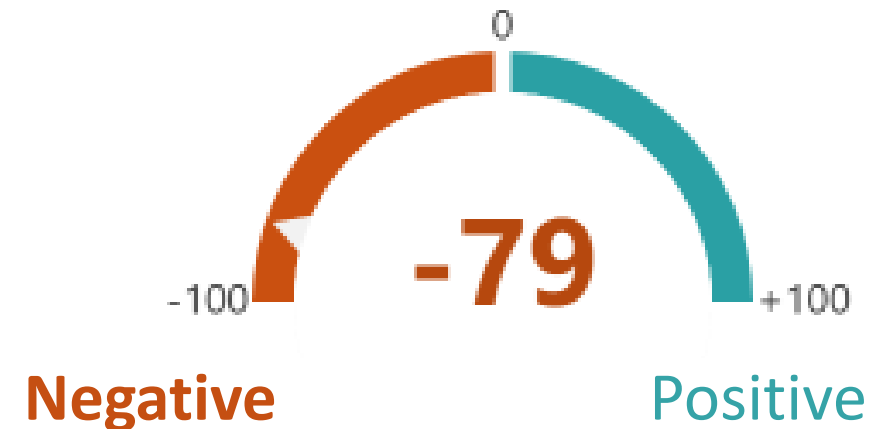
As a pedestrian or cyclist, have you ever been **hit** by a vehicle on Johnston St. or University Ave.?



How would you rank pedestrian and bicycle infrastructure along Johnston St. and University Ave.? (1-10 scale)

Responses :

Positive	4
Neutral	7
Negative	60



Discussions at Local, State, and National Levels

- CiviCon Acadiana
- LCG Bike and Ped Committee
- Acadiana Leadership Panel
- Moncus Park Workshop
- Lee Ave. Workshop
- Mickey's Loop Memorial Bike Ride
- Town & Gown Summit
- Louisiana Sustainability Summit
- Civic Leaders Summit in Pensacola

**The impact of
data is
invaluable and
is a continued
call to action.**

Coverage in Local Media

- UL pedestrian/bike survey finds students feel 'unsafe, scared, uncomfortable' on Johnston Street. *The Current*.
- Getting around Lafayette can be deadly. Better connectivity could help. *The Current*.
- Students say walking, biking along UL campus can be dangerous; 'Something has to happen'. *The Advocate*.
- An ambitious plan to build bike paths in Lafayette has existed for years. Will it actually happen?. *The Advocate*.
- UL, LGC partner for new bike path. *News 15*.
- UL Lafayette's campus once again named 'bicycle friendly'. *KLFY*.
- City Center – Lafayette is at a Crossroads, Reimagining its future and reinvesting in its roots. *LaLouisiane*.

Value of Data: Evidence Over Assumptions

- Decisions are based on **data** (counts, surveys, crash stats) rather than **opinions or guesses**.
- Helps **justify funding and policy changes** with measurable evidence.
- **Pinpoints high-risk areas** for pedestrians and cyclists on campus.
- **Builds community confidence and support** for infrastructure projects.
- Data creates a **baseline for tracking progress** over time.
- Data-backed proposals **stand out** when competing for funding.
- **Sparked conversations** about Johnston St. **safety and connectivity**.

Makes the case to integrate UL Lafayette into the fabric of Lafayette's multimodal network.



INNOVATION, EDUCATION & OUR UNIVERSITY COMMUNITY

Blair Begnaud

Assistant Director

Jonathan Brown

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Chief Sustainability Officer

Office of Sustainability & Community Engagement

Data Informed Decision Making: Making the Case for Bicycle & Pedestrian Infrastructure Improvements Around the UL Lafayette Campus

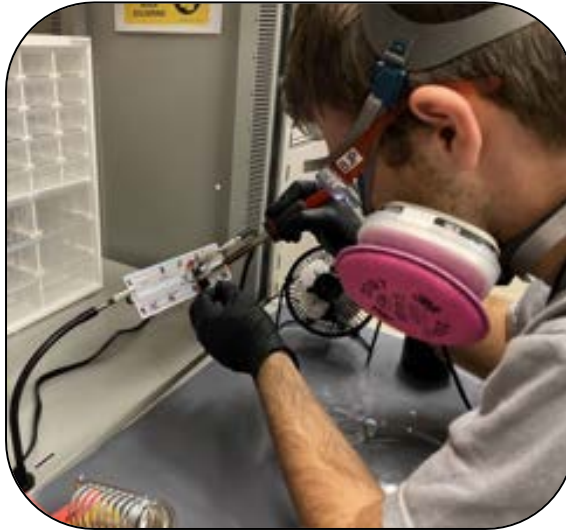


INNOVATION & EXPLORATION

Billy Poirier

Water Resources &
Environmental Engineering
major

Faculty References:
Courtney Chicola &
Rodney Yantis



Bree Landry

Environmental Science, Digital
Geography major

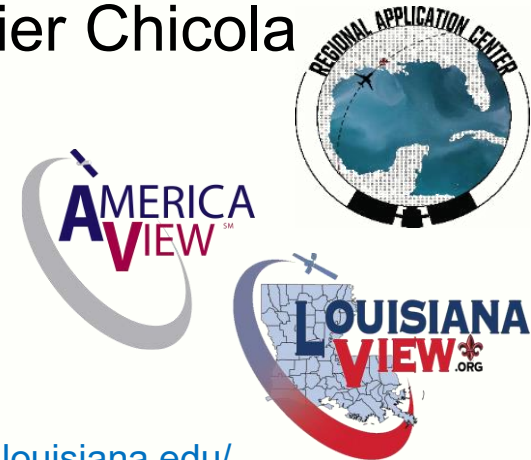
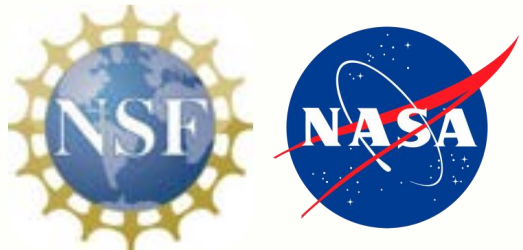
Faculty References:
Courtney Chicola &
Rodney Yantis

September 2025 – Faculty, Staff & Student Louisiana Impact Research Summit

Louisiana Impact: Louisiana Research Collaborative

Sustainable Development Research Award

Faculty Advisors: Rodney B. Yantis, MLA & Dr. Courtney A. Poirier Chicola
Regional Application Center
University of Louisiana at Lafayette



<https://rac.louisiana.edu/>
<https://louisianaview.wordpress.com/>

AmericaView™
www.americaview.org



GEOSERVICE: GEOsciences Students Excelling in Real, Vital Investigations with Community Engagement

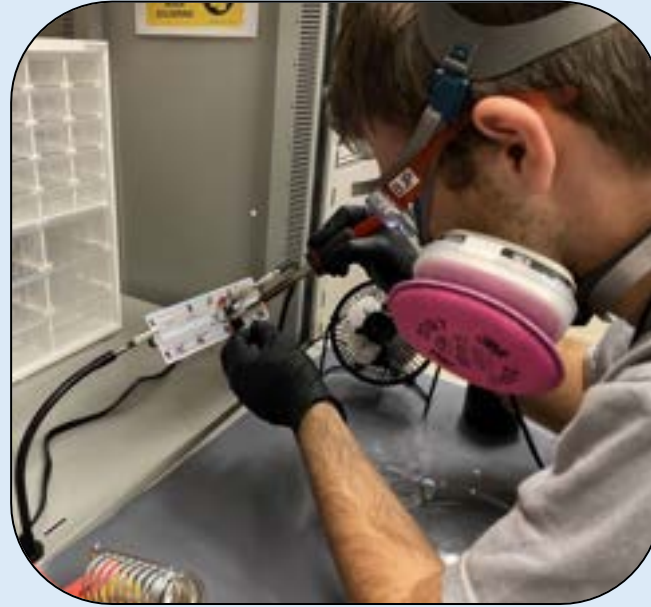
Utilizes geospatial technologies to educate local middle and high school students to increase interests in pursuing a geoscience major.

Bridge program for middle and high school students to participate in project activities that utilize geospatial technologies.

Hands-on, active learning techniques to assess and analyze a wide range of Earth observation datasets to answer research questions associated with environmental challenges.

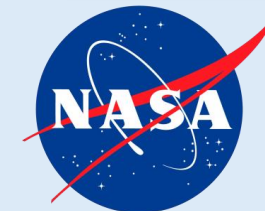
Integrates undergraduate mentors, university faculty, and local community partners to enhance the engagement and sustained student interest in STEM careers among the middle and high school students.

Billy Poirier



Undergraduate Student
Civil Engineering – Water Resources & Environmental
Engineering

Title: STELLA and Beyond: Replicating NASA Satellite & Sensor
Technologies

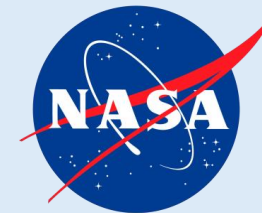
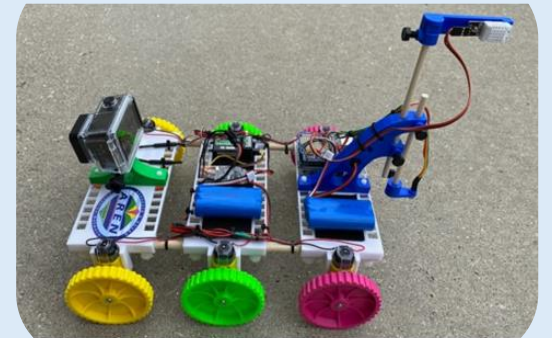


Bree Landry



Undergraduate Student
Environmental Science – Digital Geography

Title: Roaming with the TerraROVER: Exploring Areas that Can Be Difficult to Access



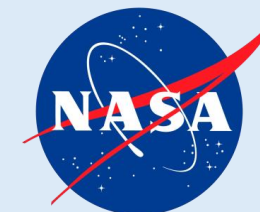
**COMING
SOON**

Bree Landry

Undergraduate Student

Environmental Science – Digital Geography

Title: Tracking Troubled Waters: Community-Based Field Research with the AREN AquaROVER

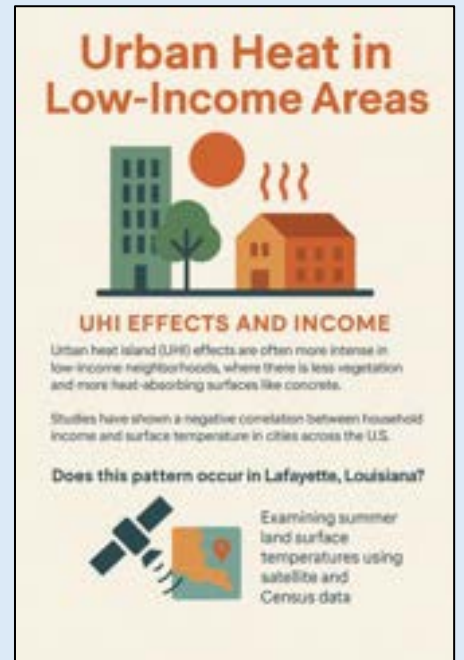
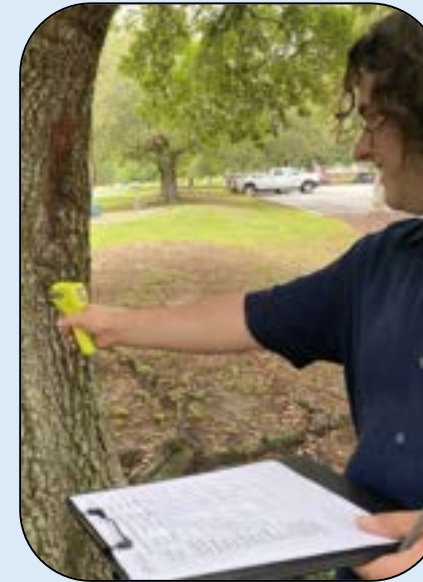


Joseph Kolb

Undergraduate Student (Graduated May 2025)

Environmental Science, School of Geosciences

Title: Urban Heat Island Effect: A Comparative Analysis of Household Income and Land Surface Temperatures

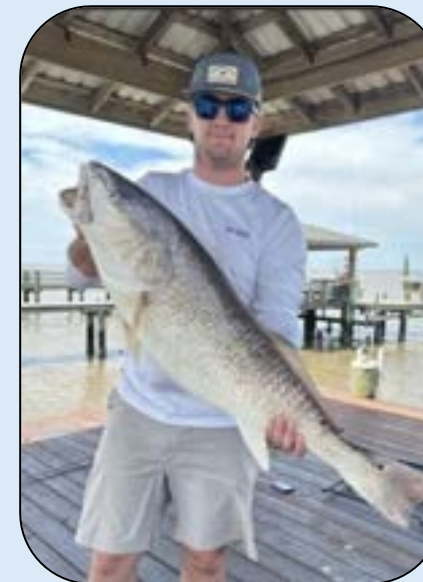


Hayden Smith

Undergraduate Student (Graduated May 2025)

Environmental Science, School of Geosciences

Title: Vanishing Marshes, Fading Redfish: Louisiana's Dual Ecological Crisis

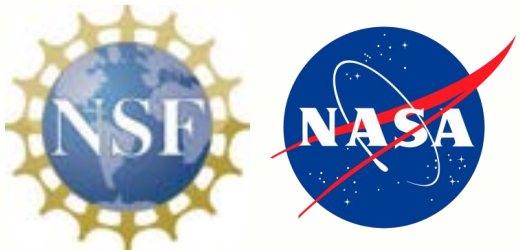


**PAST
WINNERS**

THANK YOU!

Rodney B. Yantis, MLA
yantis@louisiana.edu

Courtney A. Poirier Chicola, PhD
chicola@louisiana.edu



<https://rac.louisiana.edu/>
<https://louisianaview.wordpress.com/>

AmericaView™
www.americaview.org



INNOVATION
& EXPLORATION

Billy Poirier

Water Resources & Environmental Engineering major

***STELLA and Beyond: Replicating
NASA Satellite & Sensor Technologies***

Faculty References: Courtney Chicola & Rodney Yantis

STELLA and Beyond

Replicating NASA Satellite and Sensor Technologies

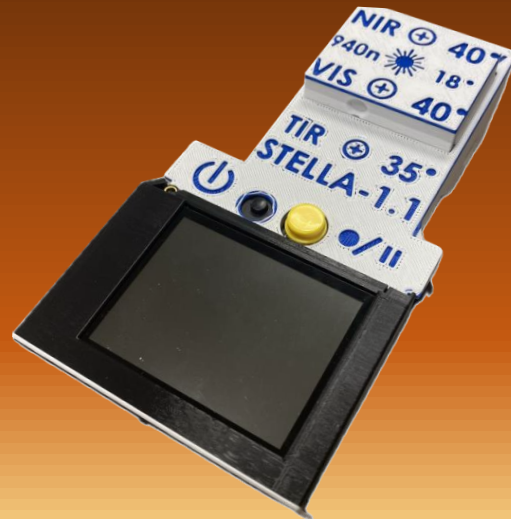
Billy Poirier and RAC Team



RAC Collaboration with NASA STELLA Team

The Regional Application Center (RAC) team at the University of Louisiana at Lafayette will highlight their Earth observation education outreach summer workshop program.

Over the past years, NASA has expanded our understanding of satellite data with STELLA spectrometers.



Landsat Program



Series of Earth-observing satellite missions

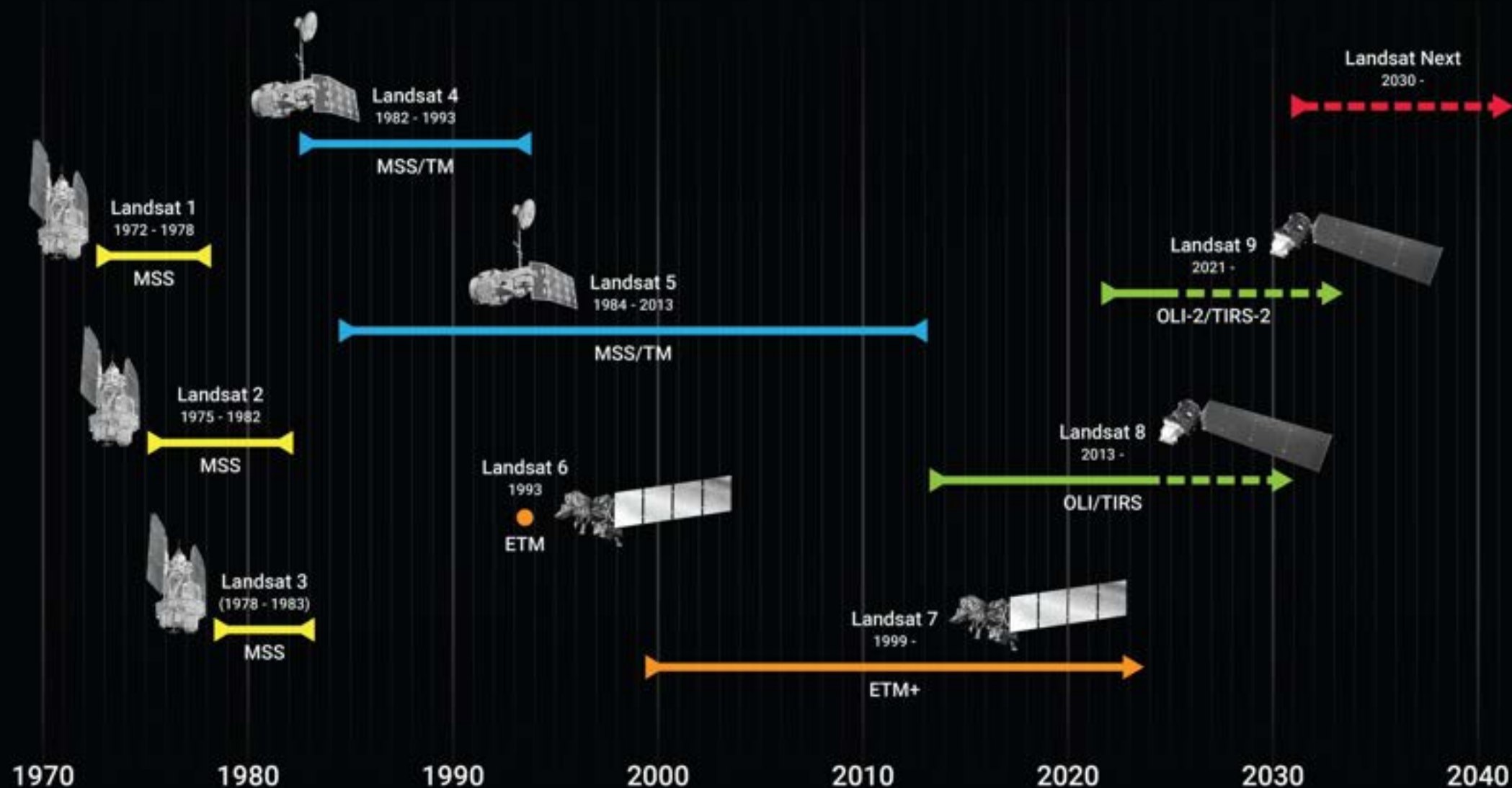
30 M ground resolution and spectral bands

Longest continuous collection of land remote sensing data
acquired from space at a moderate resolution

Applications in research, business, education, and MORE!



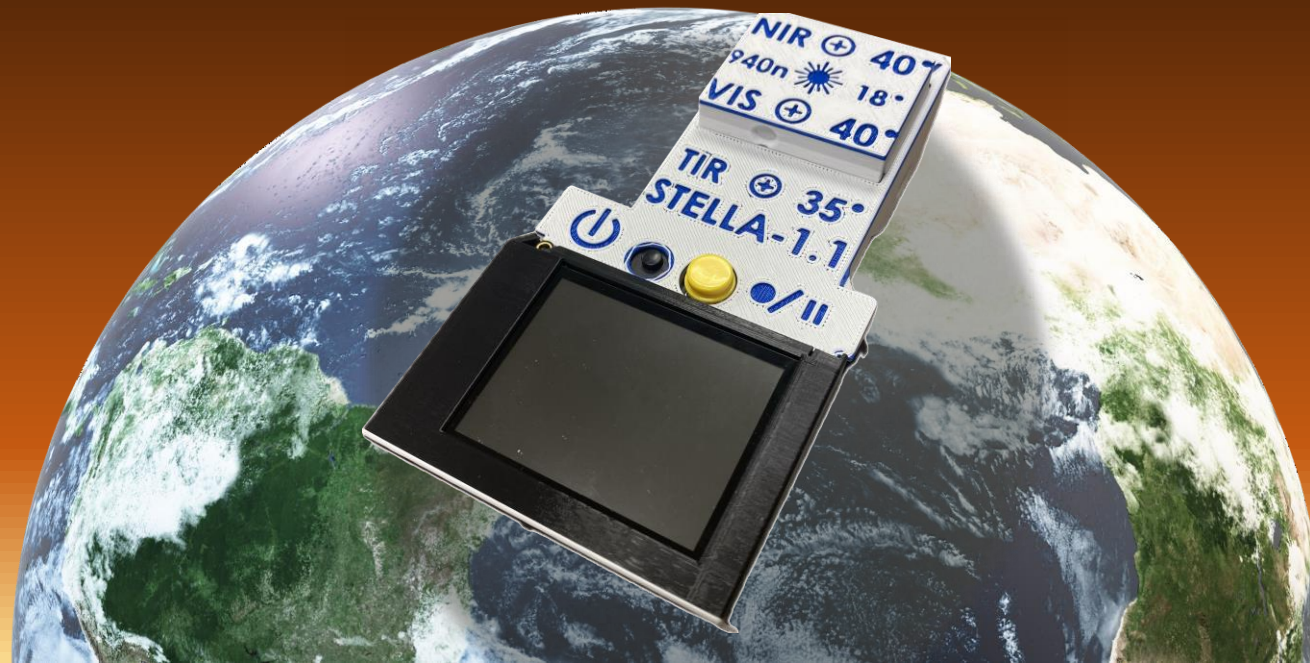
BUILDING ON THE LANDSAT LEGACY





STELLA: Science and Technology Education for Land/Life Assessment

NASA Landsat Science Outreach Program



Introducing STELLA into workshop activities

Measures surface temperature, humidity, altitude, barometric pressure, and reflectance across the **visual** and **near infrared** portions of the spectrum (450nm to 860nm)

Optional height measurement data using LiDAR (Light Detection and Ranging)

Educational and outreach tool to teach about Landsat and remote sensing to students and the community

STELLA






1

RAW

NDVI

REFLECTANCE

1

0

1

time: 11:12:59 AM

air_temp: 22.2°C

surface_temp: 22.8°C

relative_humidity: 62%

battery_voltage: 3.49V





UID: 380

Infrared (filtered)



11

4/6

#batch

0

1

Graphs

RAW

NDVI

REFLECTANCE

distance (cm)

1

calibration #batch

0

1

09/27/2023

time: 11:13:01 AM

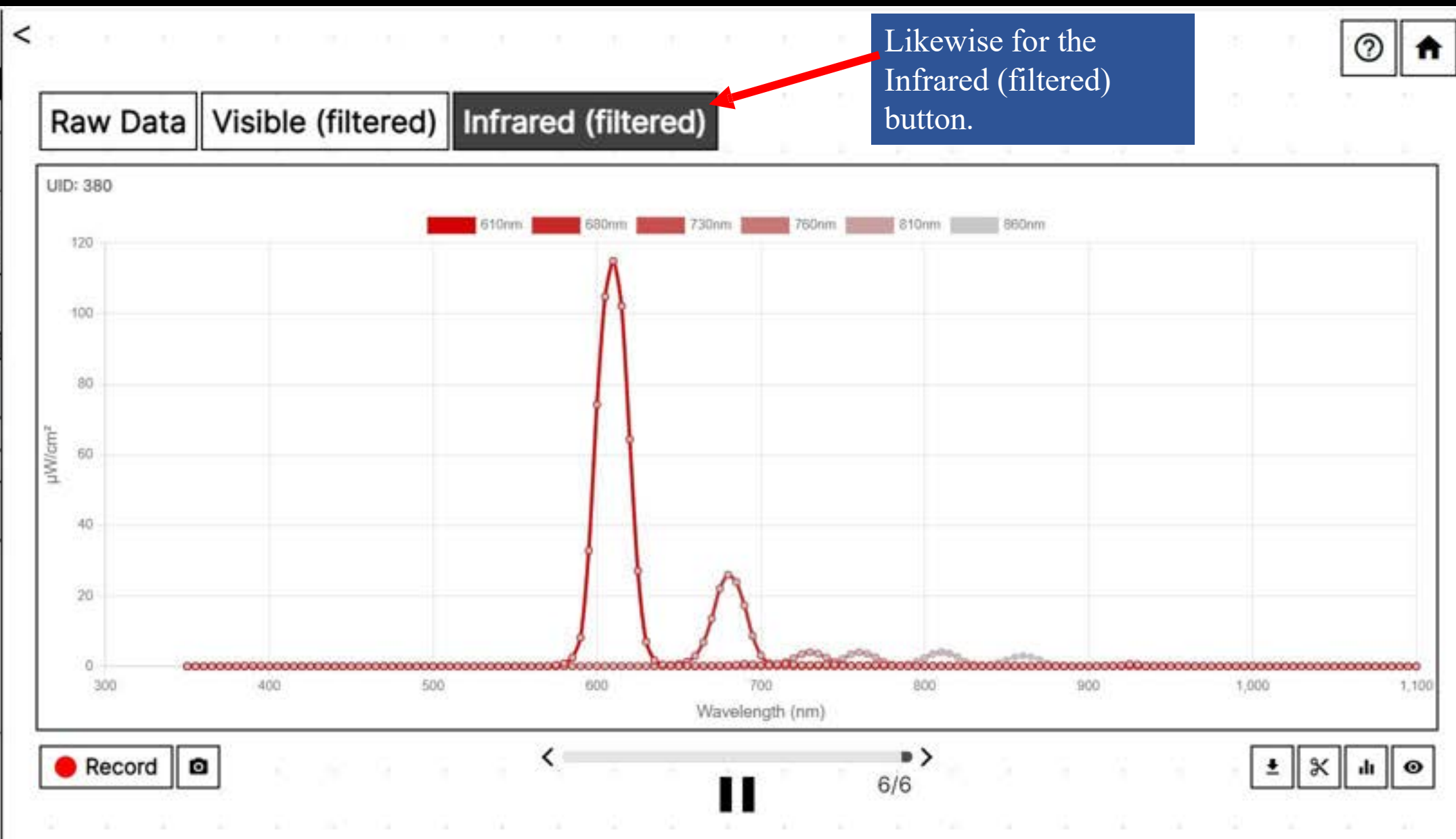
air_temp: 22.2°C

surface_temp: 22.9°C

relative_humidity: 64%

battery_voltage: 3.47V

UID: 380



Wavelength = λ

NIR = Near
Infrared

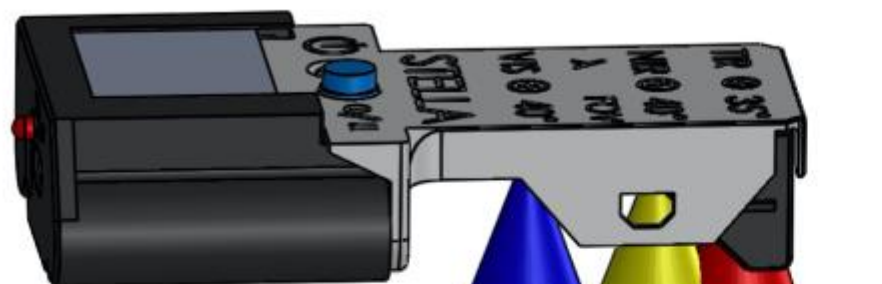
VIS = Visible
Irradiance
Spectrum



FOV = Field of View

940n = 940
nanometers

TIR = Thermal
Infrared



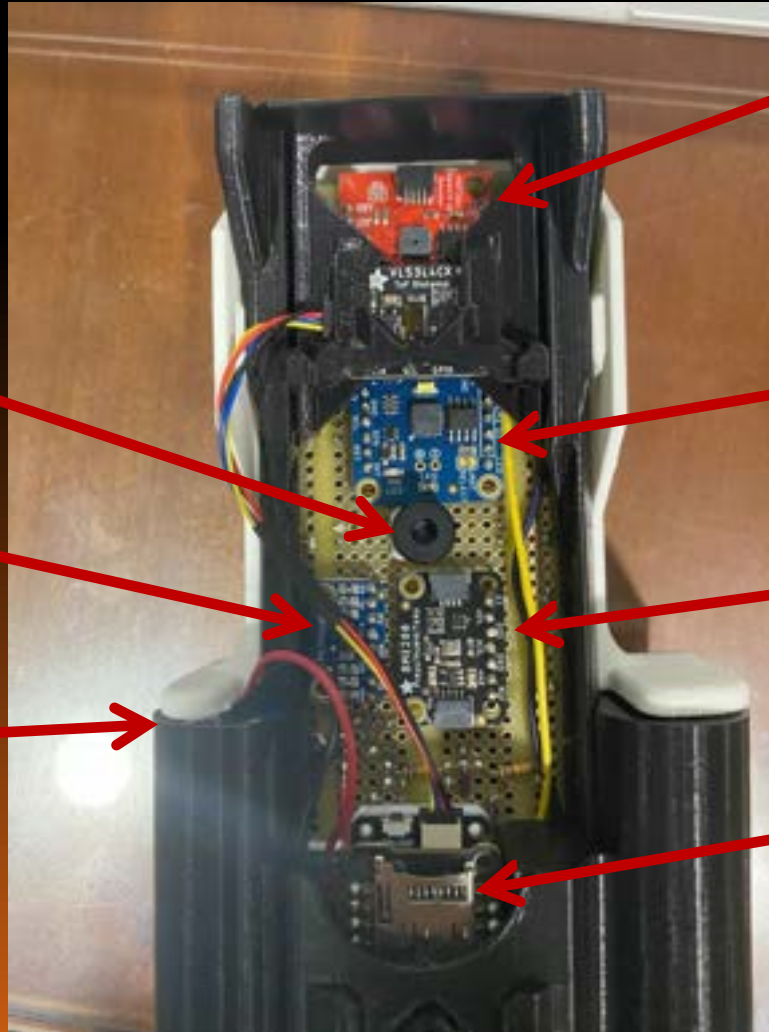
Visible Spectrum
40° FOV

Near Infrared Spectrum
40° FOV

Thermal Infrared Temperature
35° FOV



Snap on Beam Guide
10 cm standoff



Thermal Infrared Surface
Temperature Sensor

Air Temperature Sensor

Rechargeable Battery

Near Infrared
Spectral Sensor

Visible Light
Spectral Sensor

Pressure/Humidity
Sensor

MicroSD Data
Card Slot

Background

These devices provide an entry point to help better understand the sensors on Landsat satellites including the electromagnetic spectrum.

Students can learn about collecting spectral data and create spectral signatures to help interpret the data while highlighting the importance of Landsat satellite imagery.

STELLA is designed as an educational and outreach tool to teach about Landsat and remote sensing to students and the community.

The Landsat satellite program, including the upcoming Landsat Next, which plays a crucial role in these educational initiatives.

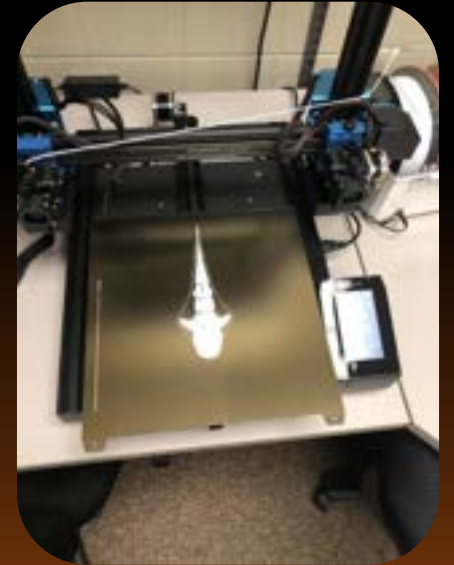


STELLA and engineering: Building the best of both worlds

Developed a RAC 3D printing team to run the newly purchased 3D printers

Bought the printers to be able to print the DIY STELLA units using the files from the STELLA website

Broadening our printing skills to include game pieces and dice towers for interactive board games



STELLA 3D printing takeaways

Understand

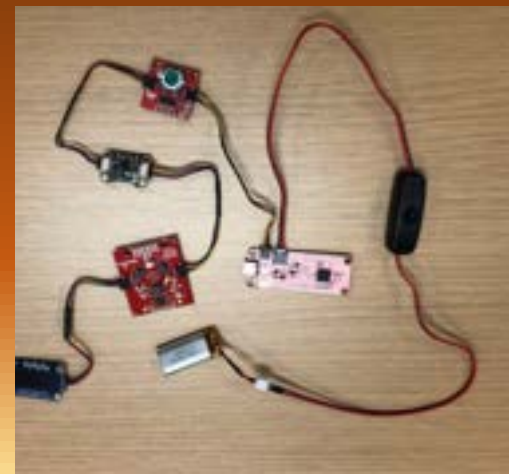
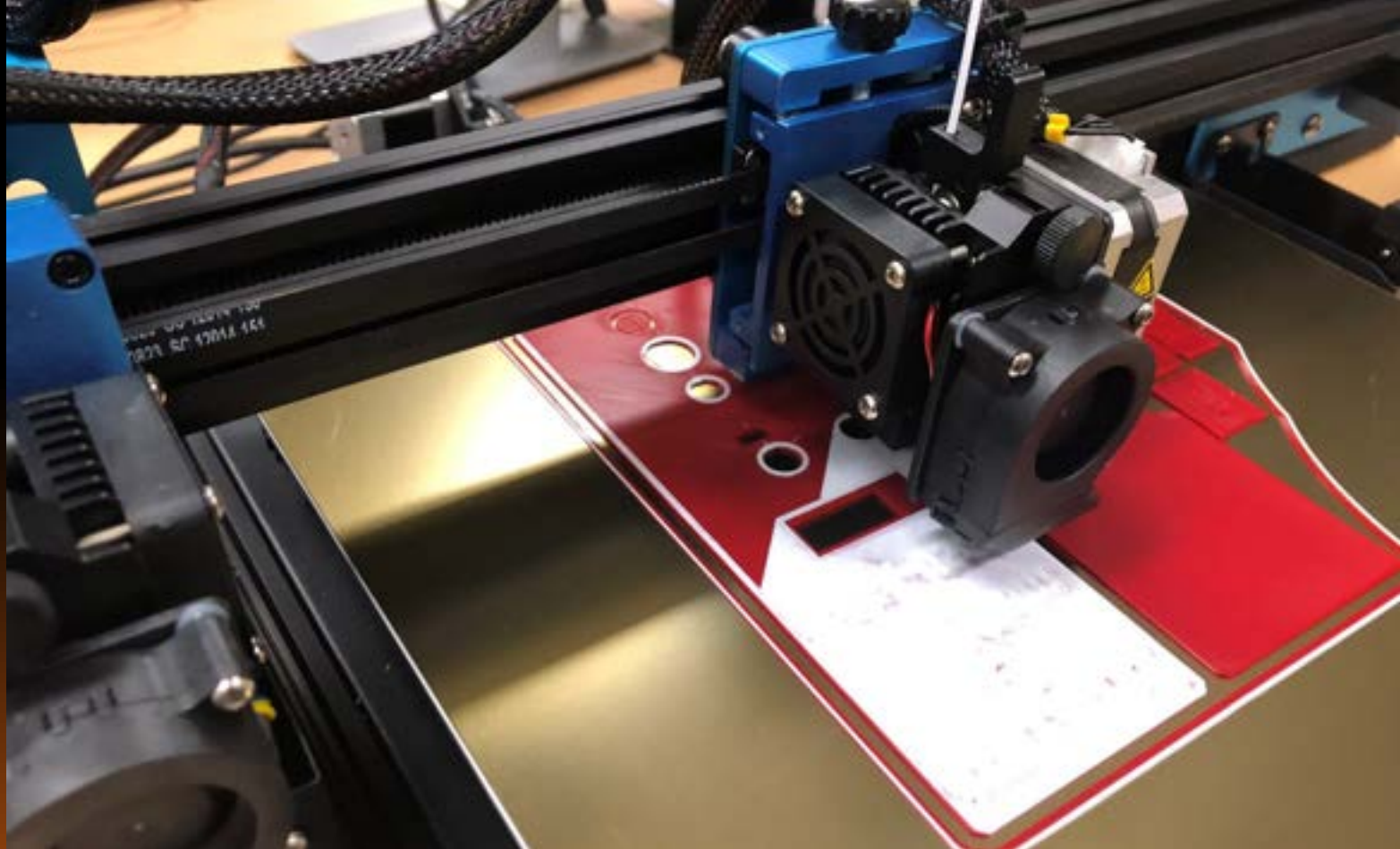
-
-
-
-

Learning

CAD



STELLA Q2







Summary

STELLA brings the foundational, space-based measurements of spectral data down to Earth and in the hands of students.

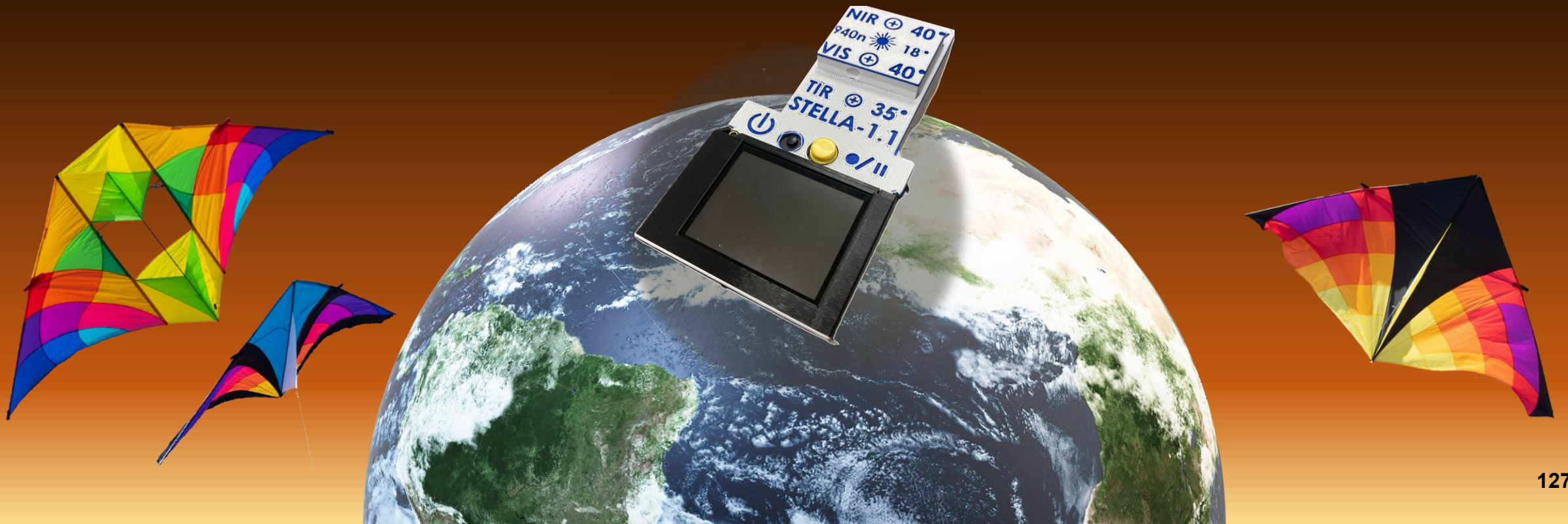
Students become citizen scientists making spectral measurements wherever they are.

STELLA engages students with remote sensing, allowing them to explore key concepts, explain their understanding through practical application, elaborate on their knowledge with real-world data, and evaluate their learning process through hands-on technology.



THANK YOU!

QUESTIONS?





INNOVATION
& EXPLORATION

Billy Poirier

Water Resources & Environmental Engineering major

***STELLA and Beyond: Replicating
NASA Satellite & Sensor Technologies***

Faculty References: Courtney Chicola & Rodney Yantis



INNOVATION
& EXPLORATION

Bree Landry

Environmental Science, Digital Geography major

*Roaming with the
TerraROVER:
Exploring Areas that Can Be
Difficult to Access*

*Tracking Troubled Waters:
Community-Based Field Research
with the AREN AquaROVER*

Faculty References: Courtney Chicola & Rodney Yantis



Roaming with the *TerraROVER*

*Bree Landry, Dr. Courtney A. Poirier Chicola, & Mr. Rodney B. Yantis
NASA/UL Lafayette Regional Application Center, University of Louisiana at Lafayette
Sustainable Development Summit – September 5th, 2025*



Outline

NASA AREN Team:

- Develops and deploys **low-cost, accessible airborne and ground-based technologies** to engage students and educators in authentic **Earth science data collection and research**.

TerraROVER Capabilities:

- Mini Land Rover used to collect surface temperature, air temperature, relative humidity, and light about different surfaces.

Upgrades:

- Future upgrades that can be done to the TerraROVER to **improve mobility** on different surfaces and **increase the diversity of data** that can be collected in one mission.

Workshop Integration:

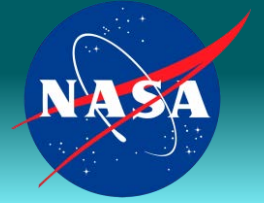
- How the TerraROVER has been used in **outreach events** to boost education in **low-cost science instruments** and the **UHI effect** on surrounding communities.

Educational Component:

- Students learn how to **obtain/read/process/interpret/explain/reflect** on data collected from the device
 - Educational materials can be created to show the importance of having **data logs** for adequate measurements.
-



NASA AREN Team



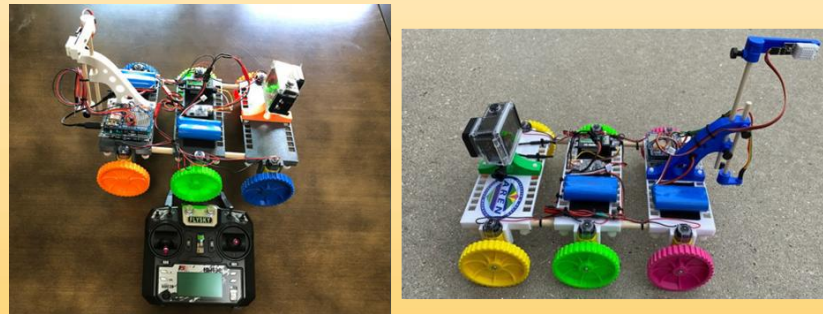
NASA AREN Team Collaboration:

- “The AEROKATS and ROVER Education Network (AREN) introduces **NASA technologies** and practices in authentic, experiential learning environments...”
- “**Low-cost instrumented systems** for in-situ and remotely sensed **Earth observations** include kite-based ‘AEROKATS,’ and remotely controlled aquatic and land-based ‘ROVERS” (“AEROKATS/ROVER Education Network”).
- Various AREN Projects: Aerial and Remote Observations (“AREN Project”):

AREN: Aeropods



AREN: TerraROVERS



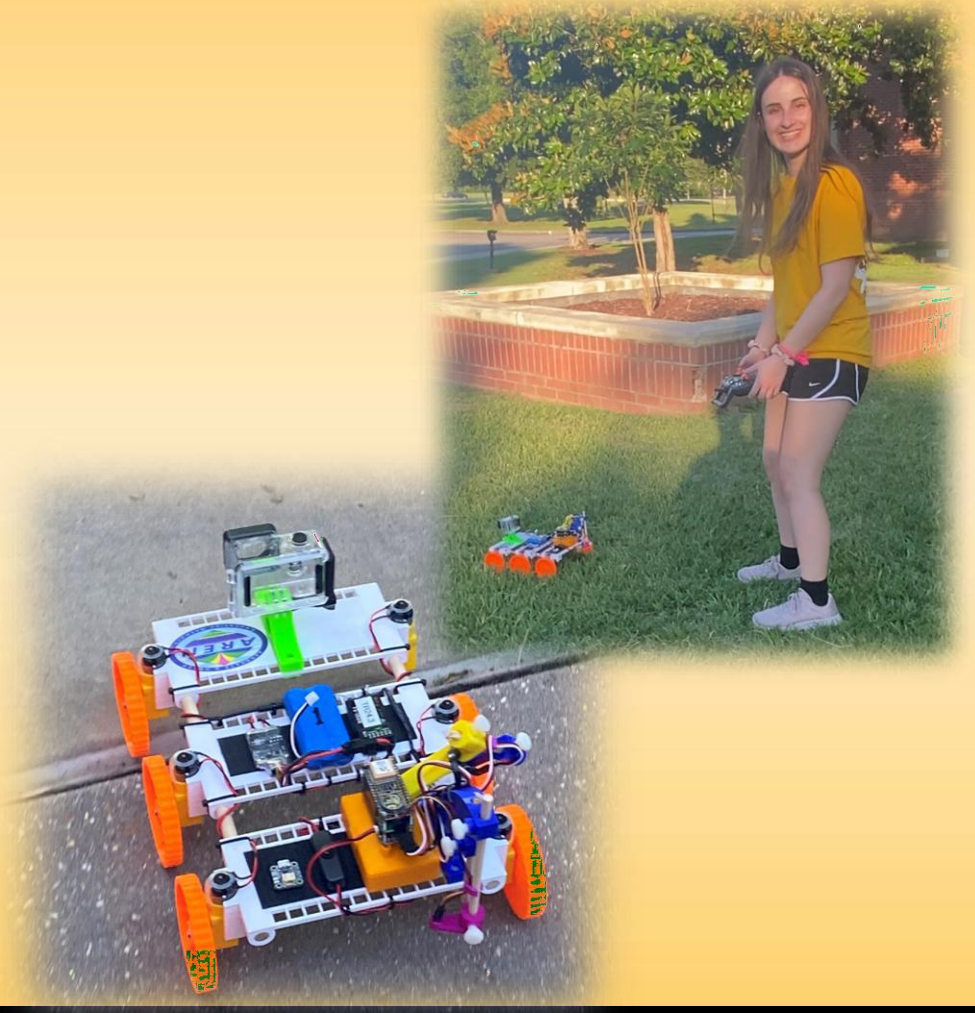
AREN: AquaROVERS



TerraROVER

TerraROVER Capabilities

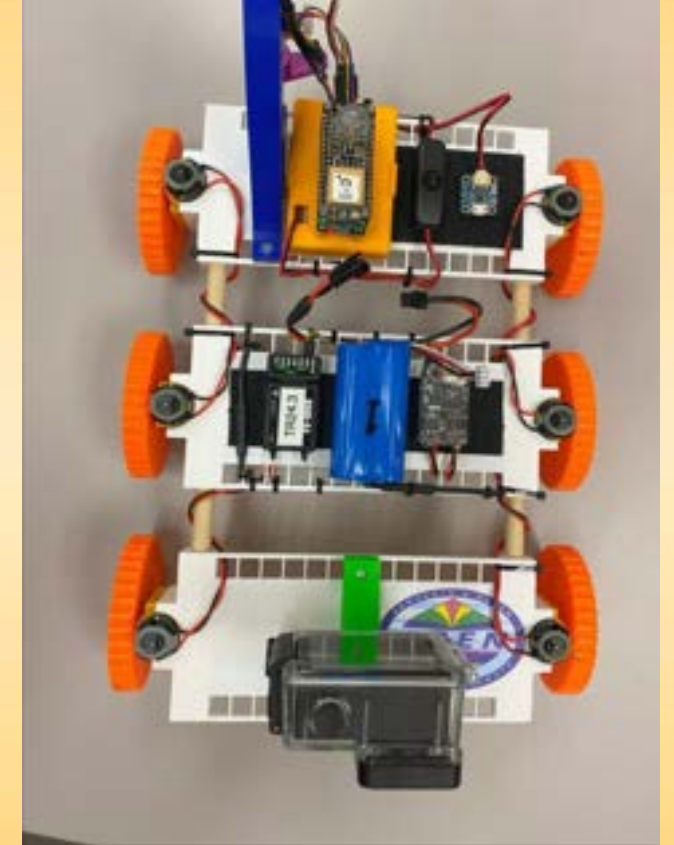
- “TerraROVERS are used to **collect** and **analyze** surface temperature data. They can explore how surface materials impact local temperatures and impact phenomena such as the **Urban Heat Island Effect**.”
- “... **carry instruments** that allow for field missions using NASA-inspired AREN operations and GLOBE protocols” (“TerraROVERS.”).



TerraROVER

What is the TerraROVER?

- Small, **6-wheeled rover** developed by NASA's AREN program
- Equipped with **multiple sensors** that collect data as you drive it around
- Helps students and scientists **study the Earth from the ground**
- It's like a **mini-Mars rover** – but for planet Earth!



TerraROVER

What does the TerraROVER do?

- Self-Sampling Datalogger
- Collects the date/time of data collection, GPS coordinates, surface/air temperature, relative humidity (RH), and amount of light on different surfaces
- Pictures/Videos

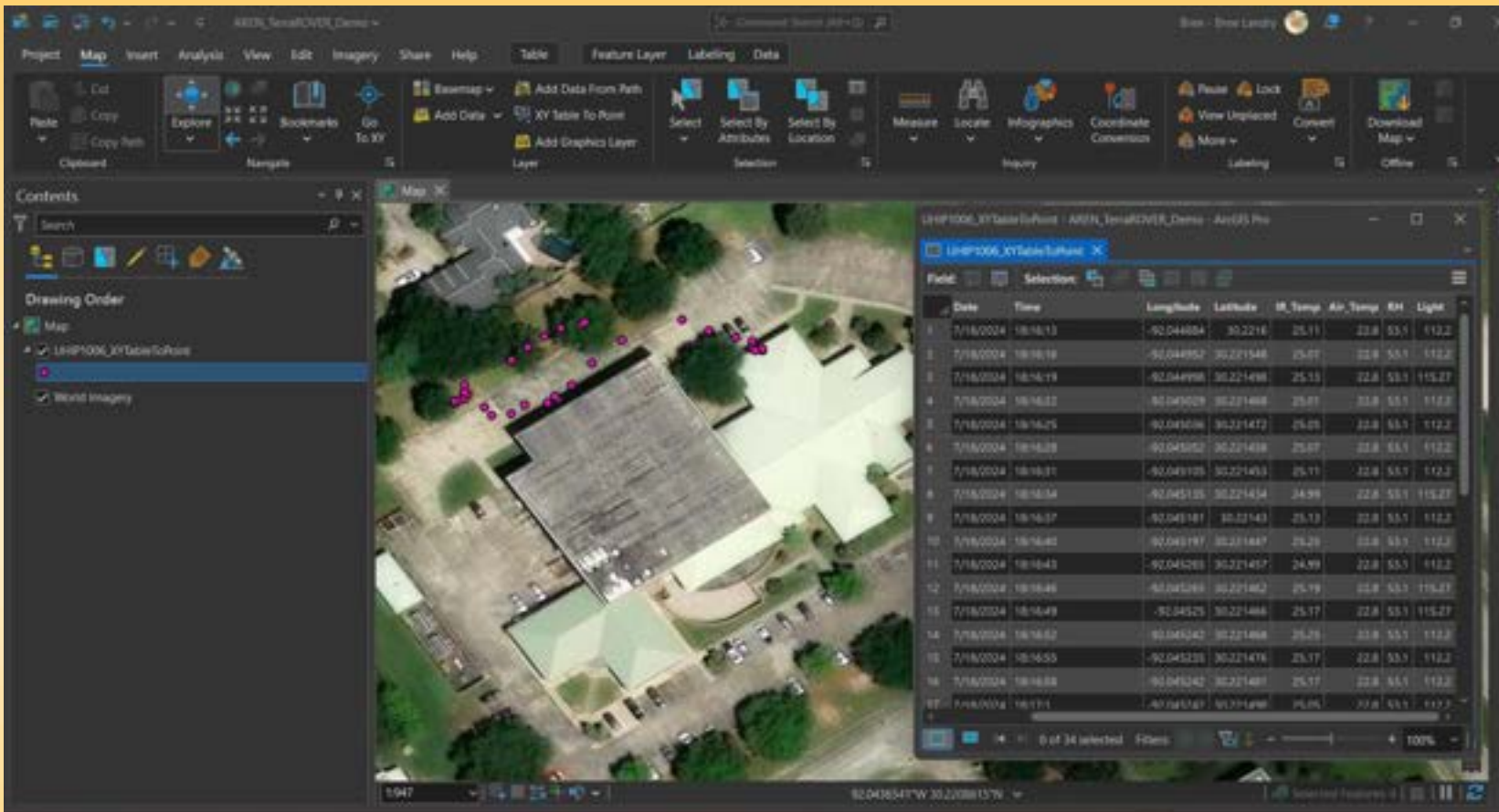


Date	Time	Longitude	Latitude	IR_Temp	Air_Temp	RH	Light
7/18/2024	18:16:13	-92.0449	30.2216	25.11	22.8	53.1	112.2
7/18/2024	18:16:16	-92.045	30.22155	25.07	22.8	53.1	112.2
7/18/2024	18:16:19	-92.045	30.2215	25.13	22.8	53.1	115.27
7/18/2024	18:16:22	-92.045	30.22147	25.01	22.8	53.1	112.2
7/18/2024	18:16:25	-92.045	30.22147	25.05	22.8	53.1	112.2
7/18/2024	18:16:28	-92.0451	30.22146	25.07	22.8	53.1	112.2
7/18/2024	18:16:31	-92.0451	30.22145	25.11	22.8	53.1	112.2
7/18/2024	18:16:34	-92.0451	30.22143	24.99	22.8	53.1	115.27
7/18/2024	18:16:37	-92.0452	30.22143	25.13	22.8	53.1	112.2
7/18/2024	18:16:40	-92.0452	30.22145	25.25	22.8	53.1	112.2
7/18/2024	18:16:43	-92.0453	30.22146	24.99	22.8	53.1	112.2
7/18/2024	18:16:46	-92.0453	30.22146	25.19	22.8	53.1	115.27
7/18/2024	18:16:49	-92.0453	30.22147	25.17	22.8	53.1	115.27
7/18/2024	18:16:52	-92.0452	30.22147	25.25	22.8	53.1	112.2
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7/18/2024	18:16:58	-92.0452	30.22148	25.17	22.8	53.1	112.2
7/18/2024	18:17:01	-92.0452	30.2215	25.05	22.8	53.1	112.2
7/18/2024	18:17:04	-92.0451	30.22156	25.13	22.8	53.1	112.2
7/18/2024	18:17:07	-92.0451	30.22158	25.23	22.8	53.1	112.2
7/18/2024	18:17:10	-92.0451	30.22161	25.11	22.8	53.1	112.2
7/18/2024	18:17:13	-92.045	30.22163	25.01	22.8	53.1	112.2
7/18/2024	18:17:16	-92.045	30.22164	24.99	22.8	53.1	115.27
7/18/2024	18:17:19	-92.045	30.22164	25.07	22.8	53.1	112.2
7/18/2024	18:17:58	-92.0447	30.22165	24.87	22.8	53	112.2
7/18/2024	18:18:01	-92.0447	30.22162	25.05	22.8	53	112.2
7/18/2024	18:18:04	-92.0446	30.22161	24.99	22.8	53	112.2

IR/Air Temp: 25°C = 77°F

RH: 53.1% (percent of water vapor in air)

Light: 0 = pitch black / 800-1000 = sunlight on a clear day

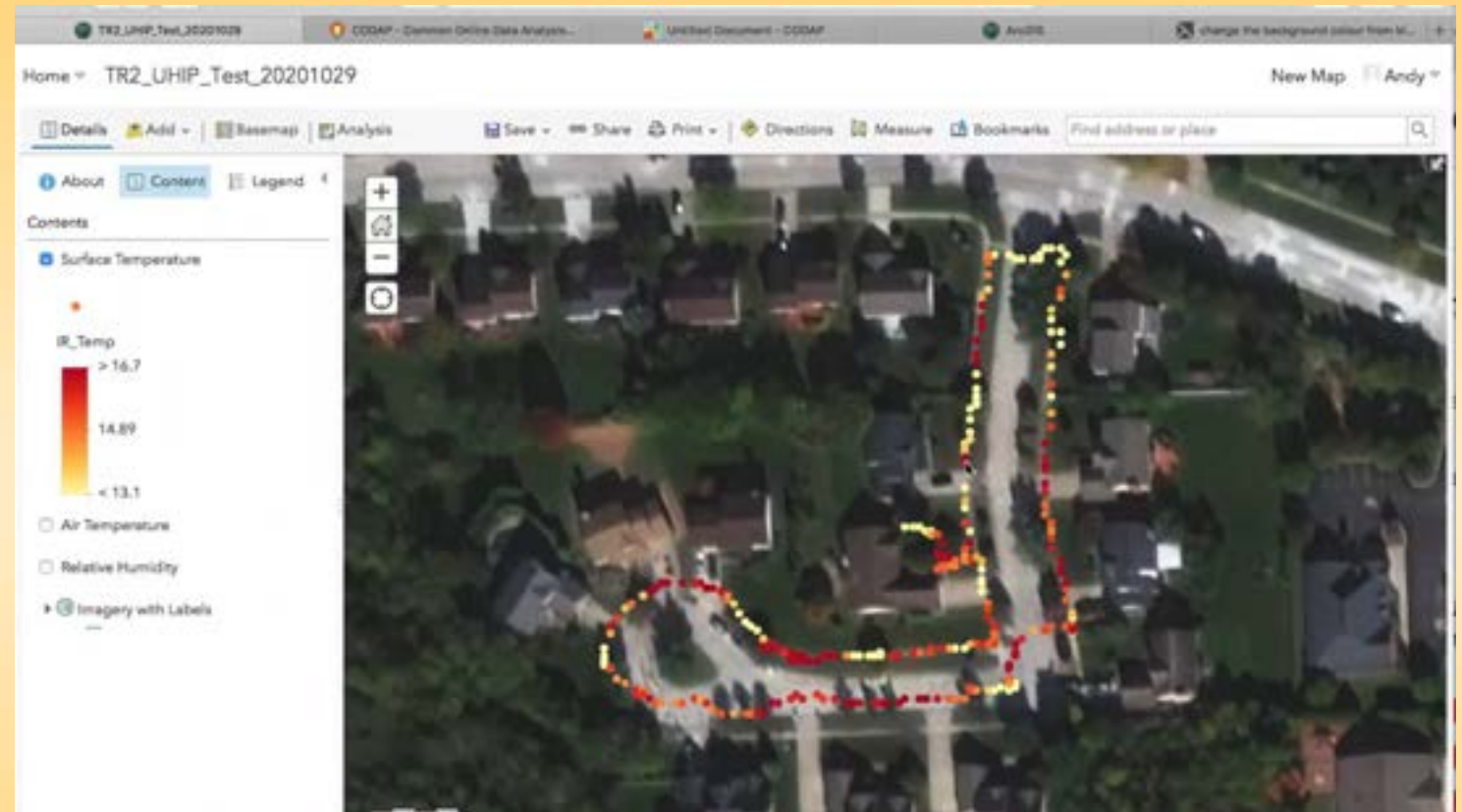


Why GPS coordinates?

- Tells you **exactly where the sample was taken**, rather than manually recording the GPS coordinates in the field.
- Can plot on a map to visually represent where samples were taken

Why is this useful?

- Used to study UHI Effects
- Create ArcGIS Online Maps using data
- Fun way to collect data!



Why a Camera?

- Take pictures/videos of sampling locations
- Use to cross-reference with satellite visuals by viewing sample sites from the ground
- See through the eyes of the TerraROVER!

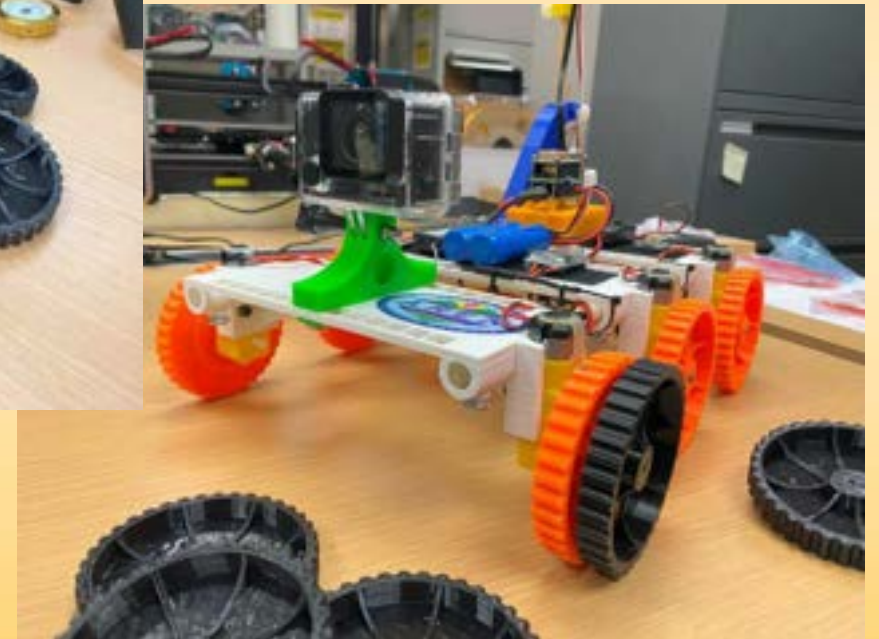


Upgrades

Upgraded **wheels** for better movement

Possibility to **add new sensors** like:

- Air Quality
 - Wind Speed
 - UV sensor
 - Etc.
-





Workshop Integration

How the RAC uses the TerraROVER

- The TerraROVER was previously used as an educational tool in the **2025 Rising Water GeoSERVICE Summer workshop** held at the RAC this past July.
- The rover served as a tool to teach students how **UHI can be studied in their local communities.**



How the RAC educates on the UHI Effect using the TerraROVER

- 


TerraROVER Data Collection Log


Name: _____ Date: _____

Weather conditions (sky cover, wind, etc.): _____

Instructions:

 1. Use the TerraROVER to collect your environmental data at your study site.
 2. Record basic conditions (name, date, weather) on this sheet.
 3. Insert the TerraROVER's microSD card into a computer to access your data.
 4. Open the data file in Excel to view the full dataset of the collection.
 5. Use the table below to copy key values from Excel onto your worksheet.
 6. From the data you collected, what story do you think your data tells about the environment you studied today?

#	Data/Time	GPS (Lat, Long)	Surface Temp (°C)	Air Temp (°C)	Relative Humidity (%)	Light Value	Description of Pictures/Videos
1							
2							
3							
4							
5							
6							
7							
8							



***TerraROVER* → Brings a
whole new way to take
data samples!
(watch your step!)**



Funding

*This research was funded by the **University of Louisiana at Lafayette Sustainable Research Award**, sponsored by the **Office of the Vice President for Research, Innovation, and Economic Development**; and the **Dwight W. Andrus, Jr. / BoRSF Eminent Scholar Endowed Chair for Finance**, the University of Louisiana at Lafayette Regional Application Center applied research program, and the **National Science Foundation (NSF Award No. 2120015)** in support of undergraduate research activities that were used in the summer workshop programs under the direction, mentorship and guidance of the **Regional Application Center**.*

References

“AEROKATS/ROVER Education Network.” NASA Science, Science Mission Directorate, 7 Mar. 2025, science.nasa.gov/sciact-team/resa/. Accessed 5 Aug. 2025.
“AREN Project.” GLOBE.gov, The GLOBE Program, accessed 5 Aug. 2025, globe.gov/web/aren-project.
“TerraROVERS.” GLOBE.gov, The GLOBE Program, accessed 5 Aug. 2025, globe.gov/web/aren-project/overview/terrarothers.

Acknowledgement

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Contact Information

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Dr. Courtney Poirier Chicola

Email: chicola@louisiana.edu



Tracking Troubled Waters: Community-Based Field Research with the AREN AquaROVER

*Bree Landry, Dr. Courtney A. Poirier Chicola, & Mr. Rodney B. Yantis
NASA/UL Lafayette Regional Application Center, University of Louisiana at Lafayette
Sustainable Development Summit – September 5th, 2025*



Outline

NASA AREN Team:

- Develops and deploys **low-cost, accessible airborne and ground-based technologies** to engage students and educators in authentic **Earth science data collection and research**.

AquaROVER Capabilities:

- **Mini RC boat** used to collect water temperature, pH, dissolved oxygen (DO), turbidity, and conductivity of different water bodies.

Proposal/Development:

- Proposal for the **development of an AquaROVER** to further **low-cost student-led research in water quality monitoring/sustainability**, data interpretation, and identifying trends in water quality status over time across sites in Lafayette, Louisiana.
- **Steps** needed to create an AquaROVER from NASA professionals, including materials, supplies, sensors, troubleshooting processes, etc.

Possible Workshop Integration:

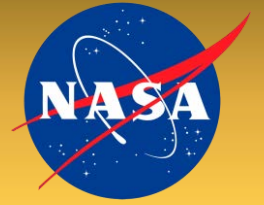
- How the AquaROVER can be **used in outreach events** to boost education in low-cost science instruments, understand the meaning of water quality parameters, and understand how crucial having adequate water bodies is for the health of the environment and society.

Educational Component:

- Students learn how to **obtain/read/process/interpret/explain/reflect on data** collected from the device
- Students learn about the **different sensors** that are used to **measure water quality parameters** as citizen scientists.



NASA AREN Team



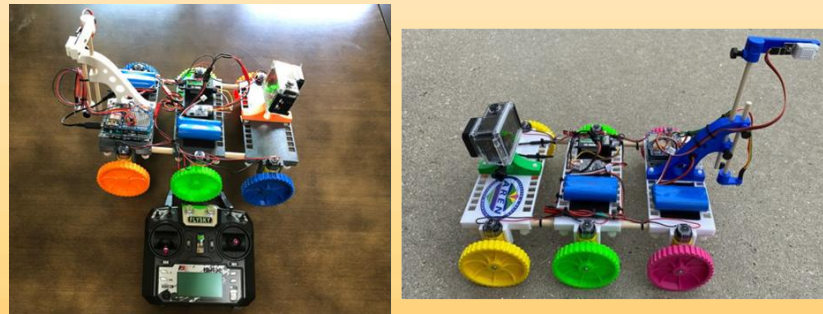
NASA AREN Team Collaboration:

- *"The AEROKATS and ROVER Education Network (AREN) introduces NASA technologies and practices in authentic, experiential learning environments..."*
- *"**Low-cost instrumented systems** for in-situ and remotely sensed Earth observations include kite-based 'AEROKATS,' and remotely controlled aquatic and land-based 'ROVERS'" ("AEROKATS/ROVER Education Network").*
- Various AREN Projects: Aerial and Remote Observations ("AREN Project"):

AREN: Aeropods



AREN: TerraROVERS



AREN: AquaROVERS



AquaROVER

AquaROVER Capabilities

- “AquaROVERs are a tool to **collect and analyze water quality data** beyond the shoreline. They carry instruments that allow for field missions using NASA-inspired AREN operations and data systems.
- “The vehicle hull is based on a commercially available **foam body board** with a toughened bottom for durability....consists of a **data system to collect water quality**” (“AquaROVERs – AREN



AquaROVER

What is the AquaROVER?

- Small, **remotely controlled water-based vehicle** used to collect and analyze water quality data in water bodies.
- Carries instruments on a body board to measure **temperature, pH, dissolved oxygen (DO), turbidity, and conductivity**.
- Equipped with a **camera** to provide visual context for the study's site samples.
- **Highly customizable** → great for choosing specific sensors based on what information is needed about a water body.



AquaROVER



Developmental Proposal for an Improved AquaROVER

- Currently, NASAAREN scientists have created a version of the AquaROVER that has **outdated sensors, data systems, and technology.**

Goal:

- Work with NASAAREN scientists to **create a new and improved model of the AquaROVER**
- **Boost awareness of water quality issues** in the community using the AquaROVER.



AquaROVER Parts

Data System



Bilge Pump



Temp. Sensor



pH Sensor



Conductivity Sensor



DO Sensor



Bodyboard



Turbidity Sensor



Controller/
Camera



Note: Excel spreadsheet contains data collected by the TerraROVER, which would be a similar protocol for storing data collected by the AquaROVER.

What does the AquaROVER do?

- Self-Sampling Datalogger
- Collects the date/time of data collection, GPS coordinates, turbidity, temperature, pH, conductivity, and DO.
- Pictures/Videos



Date	Time	Longitude	Latitude	IR_Temp	Air_Temp	RH	Light
7/18/2024	18:16:13	-92.0449	30.2216	25.11	22.8	53.1	112.2
7/18/2024	18:16:16	-92.045	30.22155	25.07	22.8	53.1	112.2
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7/18/2024	18:17:07	-92.0451	30.22158	25.23	22.8	53.1	112.2
7/18/2024	18:17:10	-92.0451	30.22161	25.11	22.8	53.1	112.2
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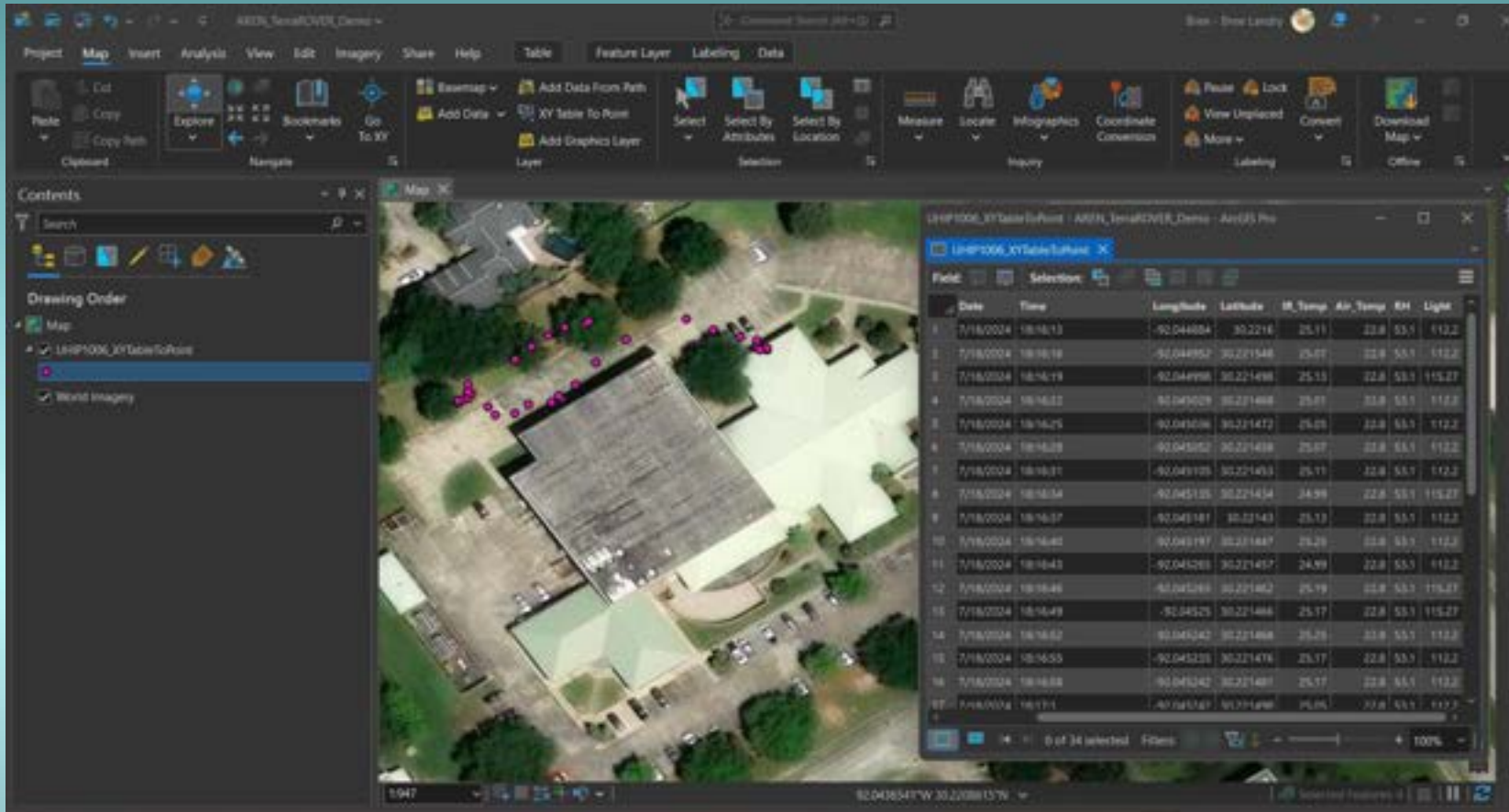


Image: GPS coordinates taken from the TerraROVER to display data in ArcGIS Pro to convey where sample locations were taken.

Why GPS coordinates?

- Tells you **exactly where the sample was taken**, rather than manually recording the GPS coordinates in the field.
- Can plot on a map to visually represent where samples were taken.
- For the AquaROVER: Useful for **tracking certain areas** in water bodies that **have concerning water quality levels**.

Workshop Integration

How the RAC can use the AquaROVER

- The **TerraROVER** was previously used as an educational tool in the 2025 Rising Water GeoSERVICE Summer workshop held at the RAC this past July.
- The rover served as a tool **to teach students how UHI can be studied in their local communities.**
- The AquaROVER can bring a new aspect to studying the environment through our community by **expanding the exploration beyond the shoreline** into the water!



**AquaROVER → Allows for
water quality education
with hands-on experience
(don't fall overboard!)**



Funding

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References

*"AquaROVERS – AREN Project." **GLOBE.gov**, Global Learning and Observations to Benefit the Environment Program, GLOBE Program, **GLOBE.gov**, last updated [not specified], <https://www.globe.gov/web/aren-project/overview/aquarovers>. Accessed 29 Aug. 2025.*

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INNOVATION
& EXPLORATION

Bree Landry

Environmental Science, Digital Geography major

*Roaming with the
TerraROVER:
Exploring Areas that Can Be
Difficult to Access*

*Tracking Troubled Waters:
Community-Based Field Research
with the AREN AquaROVER*

Faculty References: Courtney Chicola & Rodney Yantis

BREAK TIME!

10:35am

Dr. Dianne Olivier





Dianne F. Olivier

**Interim Provost and
Vice President for Academic Affairs**

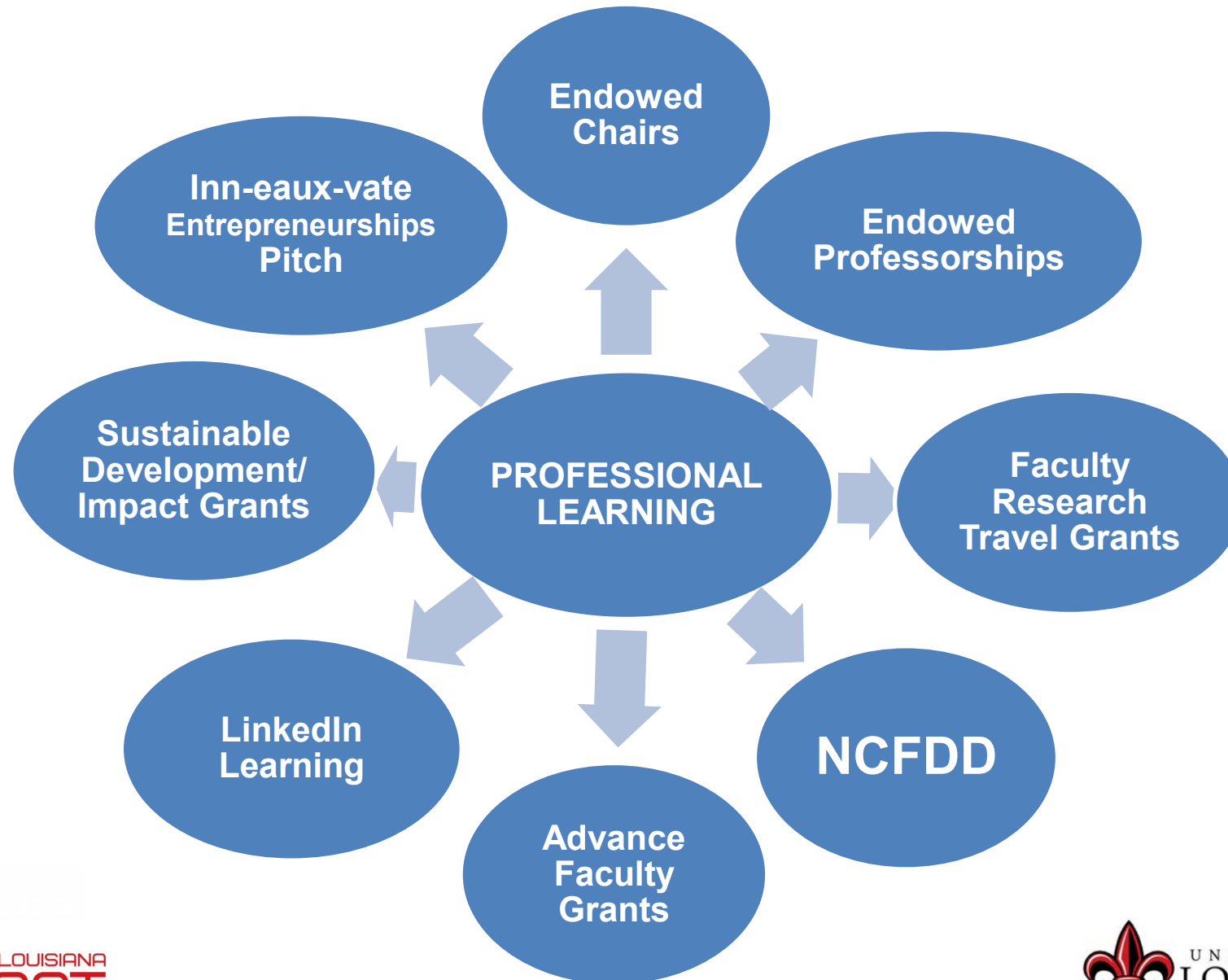


LOUISIANA RESEARCH COLLABORATIVE



Learning as a Community

Faculty Initiatives



Research Learning Community





PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Jeanne Cartier

Professor of Nursing

*Increasing Students' Understanding of the Complexities &
Challenges of Living in Poverty Through an Experiential
Learning Activity: The Community Action Poverty Simulation*



- ▶ Jeanne Cartier, PhD, APRN, PMHNP-BC
- ▶ College of Nursing and Health sciences
- ▶ September 5, 2025

INCREASING STUDENTS' UNDERSTANDING OF THE COMPLEXITIES AND CHALLENGES OF LIVING IN POVERTY THROUGH AN EXPERIENTIAL LEARNING ACTIVITY: THE COMMUNITY ACTION POVERTY SIMULATION

WHY





Xanthos

406 Peacock St.

FAMILY MEMBERS

- **Grandfather:** Xavier, age 52, doesn't have a high school diploma. He immigrated to the United States five years ago and is a legal citizen of the country. Xavier has diabetes and mobility problems. He does not work anymore and receives disability assistance.
- **Grandmother:** Ximena, age 50, has a high school diploma. She immigrated to the United States five years ago with her husband and is a legal citizen of the country. Ximena works full time as a cashier at the General Employer. She speaks limited English.
- **Granddaughter:** Xaria, age 9, attends grade school. She has to help her grandfather get around the community.
- **Grandson:** Xavion, age 7, attends grade school. He is diagnosed with ADHD and is a handful for his family.

ABOUT YOUR FAMILY

You live in a small home, on which you are paying off a first and second mortgage. Ximena is working full-time while Xavier is disabled and stays at home with the Xaria and Xavion. The grandchildren came to live with them 6 months ago when their daughter was taken into custody by U.S. Immigration and Customs Enforcement (ICE). The house needs several repairs and insulation to help reduce your monthly utility bill and make it more comfortable. You have one reliable vehicle on which you are still paying off a loan. Ximena and Xavier have insurance through her work. The children have no health insurance coverage. Due to Xavion's recent diagnosis of ADHD and the associated behaviors, your family expenses have increased. The father has no contact with the children and cannot be located. During the third week of the simulation, the Realville Public School will be closed.

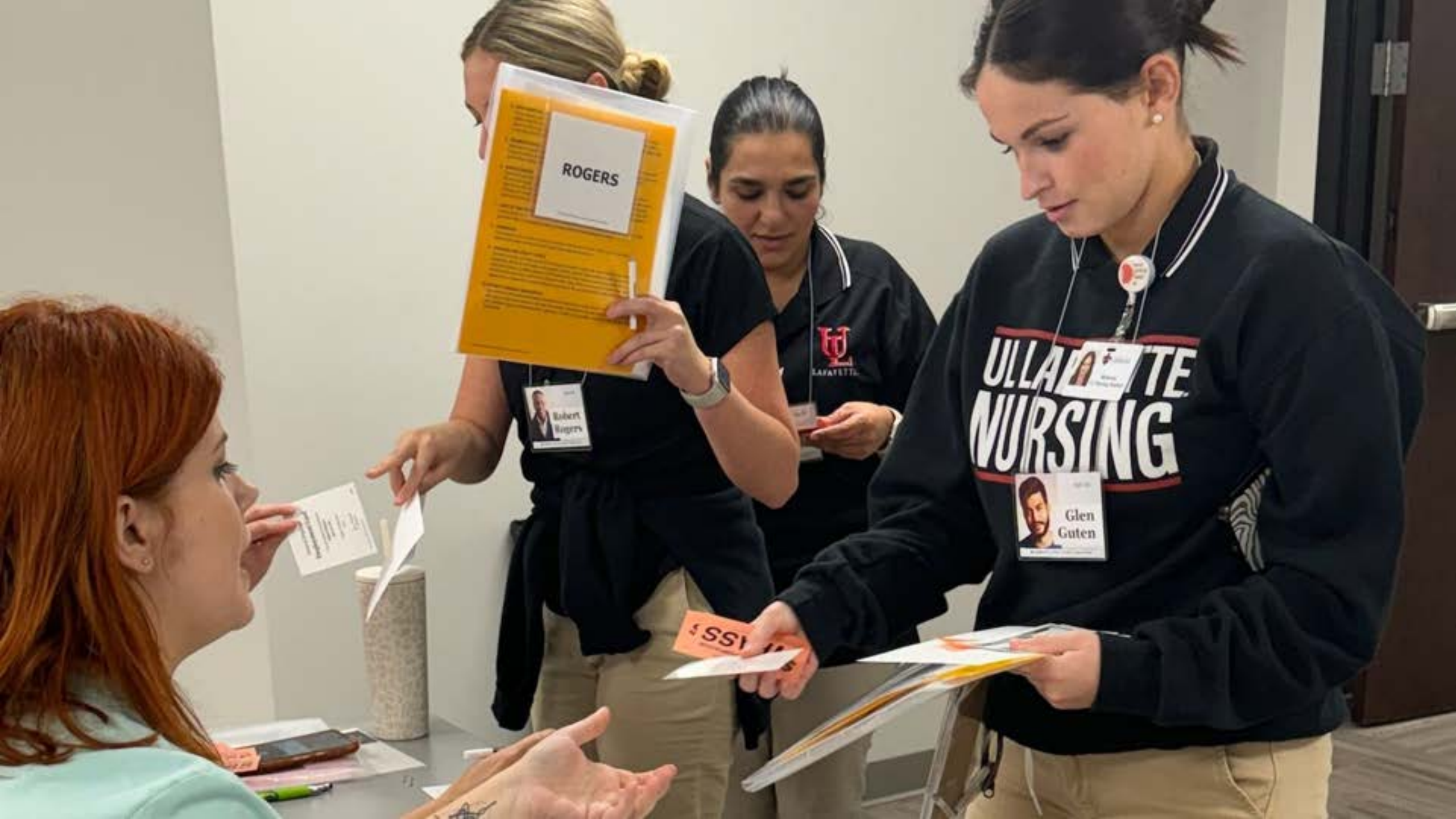
YOUR INCOME

Ximena makes \$9.50/hour and works 40 hours/week, for \$1,520/month (\$1,325 after taxes). Xavier receives \$800.00 a month in disability.

YOUR BUDGET

These are the bills you must pay during each month:

Mortgage.....	\$750.00 per month	Pay to Sweaney Mortgage and Realty
Property Taxes.....	\$60.00 per month.....	Pay to Sweaney Mortgage and Realty
Health Insurance.....	\$15.00 per month.....	Pay to Sweaney Mortgage and Realty







Instructions

Garofalo

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

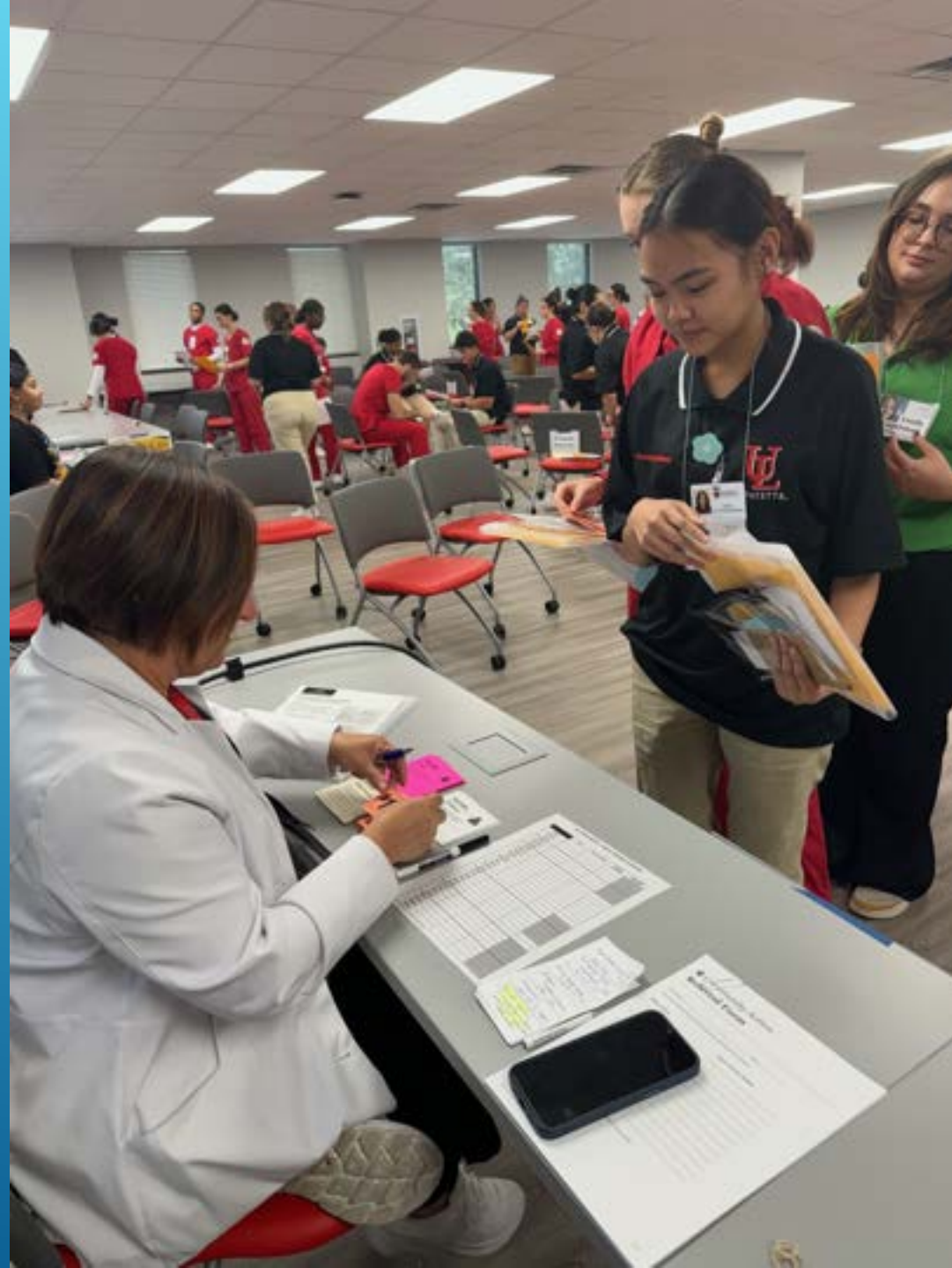
ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

ABOUT YOUR FAMILY

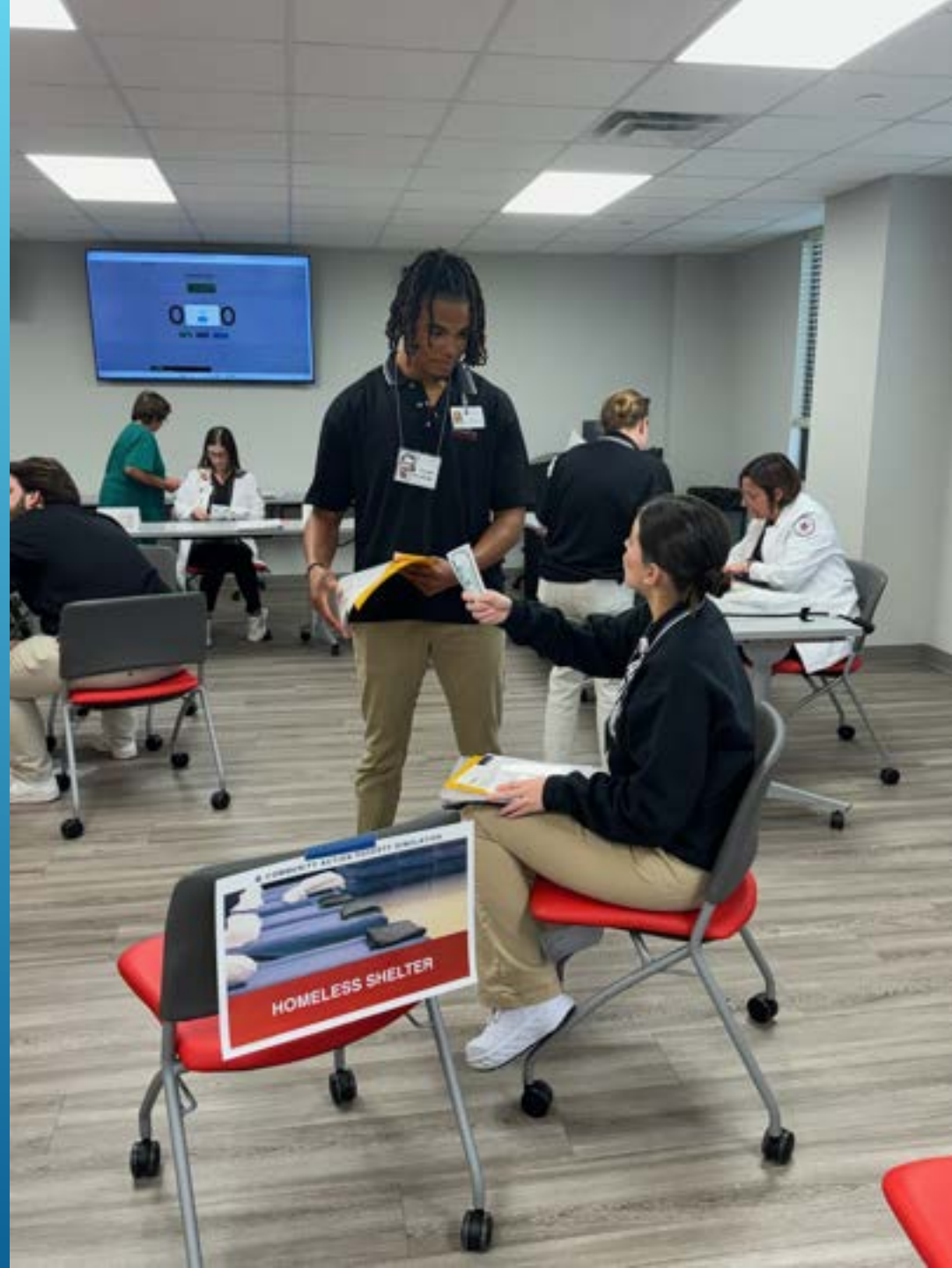
ABOUT YOUR FAMILY

Mortgage/Rent
Collector









RESULTS



OBSERVATIONAL FINDINGS

LIMITATIONS



ACHIEVEMENTS, SUSTAINABILITY, AND FUTURE PLANS



Standard activity in curriculum
Increased faculty scholarship
Interdisciplinary trial
Engaged students in research
Advance program
Tex-Biomed



Increased faculty training
Students as staff for
community resources
Community involvement led
by students
Other potential activities



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Jeanne Cartier

Professor of Nursing

*Increasing Students' Understanding of the Complexities &
Challenges of Living in Poverty Through an Experiential
Learning Activity: The Community Action Poverty Simulation*



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Beenish Chaudry

Assistant Professor of Computing & Informatics

How Well Do Clinical Terminologies Represent Climate-Related Illnesses of Low Socio-Economic Communities: A Gap Analysis

Assessing the Representation of Disaster Hazards in Standardized Clinical Terminologies: A Study of ICD-10, ICD-11, and LOINC

Beenish Moalla Chaudhry, PhD
Md Shafiur Raihan Shafi, MSc
School of Computing and Informatics

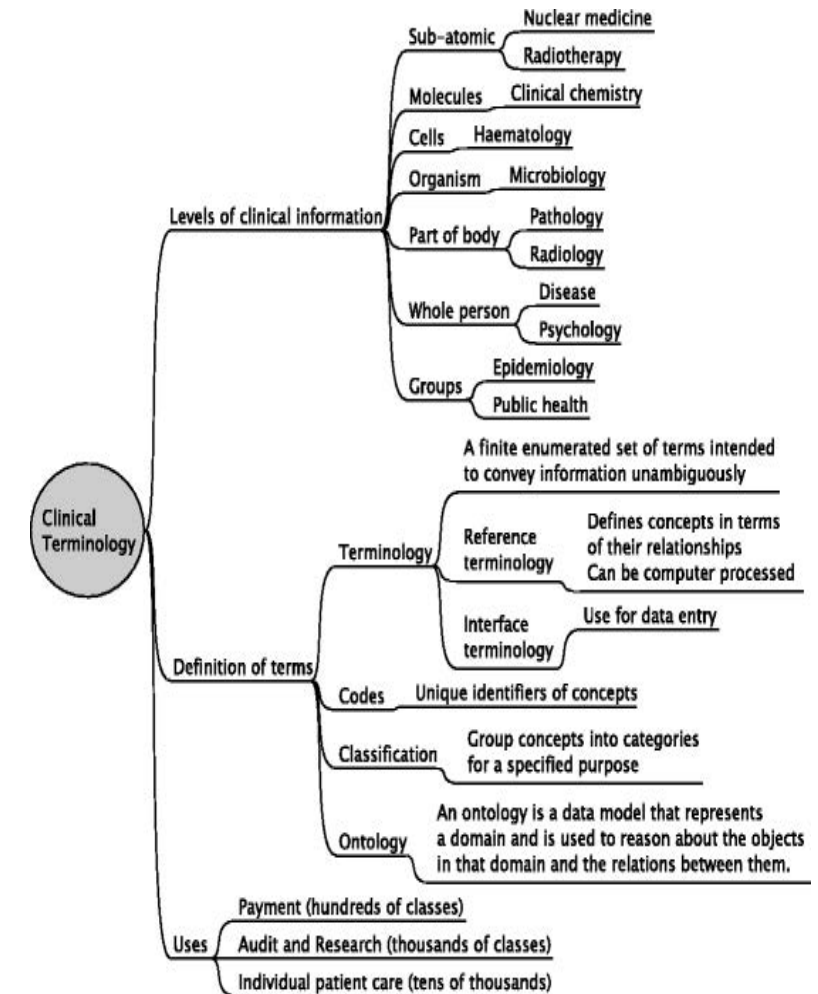
Background

- Climate-driven disasters pose significant risks to health that must be addressed by healthcare systems.
 - For example, respiratory illness (smoke inhalation), heatstroke, dehydration, cardiovascular issues, etc.
- Healthcare systems need accurate documentation and tracking of disaster-related health impacts.
- Standardized clinical terminologies (ICD-10, ICD-11, LOINC) provide a structured way that enables
 - Consistent data encoding
 - Sharing across hospitals, emergency response, public health agencies

Clinical Terminology Databases

- Standardized systems that encode, organize, and retrieve medical concepts.
- Examples, ICD-10, ICD-11, LOINC, SNOMED-CT

Disease	ICD-10 Code	ICD-11 Code
Diabetes mellitus type 2	E11	5A11
Influenza	J10–J11	1E30
COVID-19	U07.1	RA01.0
Asthma	J45	CA23
Myocardial infarction (Heart Attack)	I21	BA41



Problem

- Within clinical terminology databases, disaster hazards may be
 - categorized differently (e.g., “wildfire” under *environmental exposure* vs. *natural disaster*)
 - missing entirely from certain terminologies
- Due to these discrepancies, healthcare systems
 - struggle to provide consistent documentation and proper health impact analysis
 - face challenges in conducting triage, monitoring, and resource allocation
- **This calls for a systematic evaluation of whether and how disaster hazard concepts are encoded within ICD-10, ICD-11, and LOINC.**

UNDRR-ISC HIP Profile

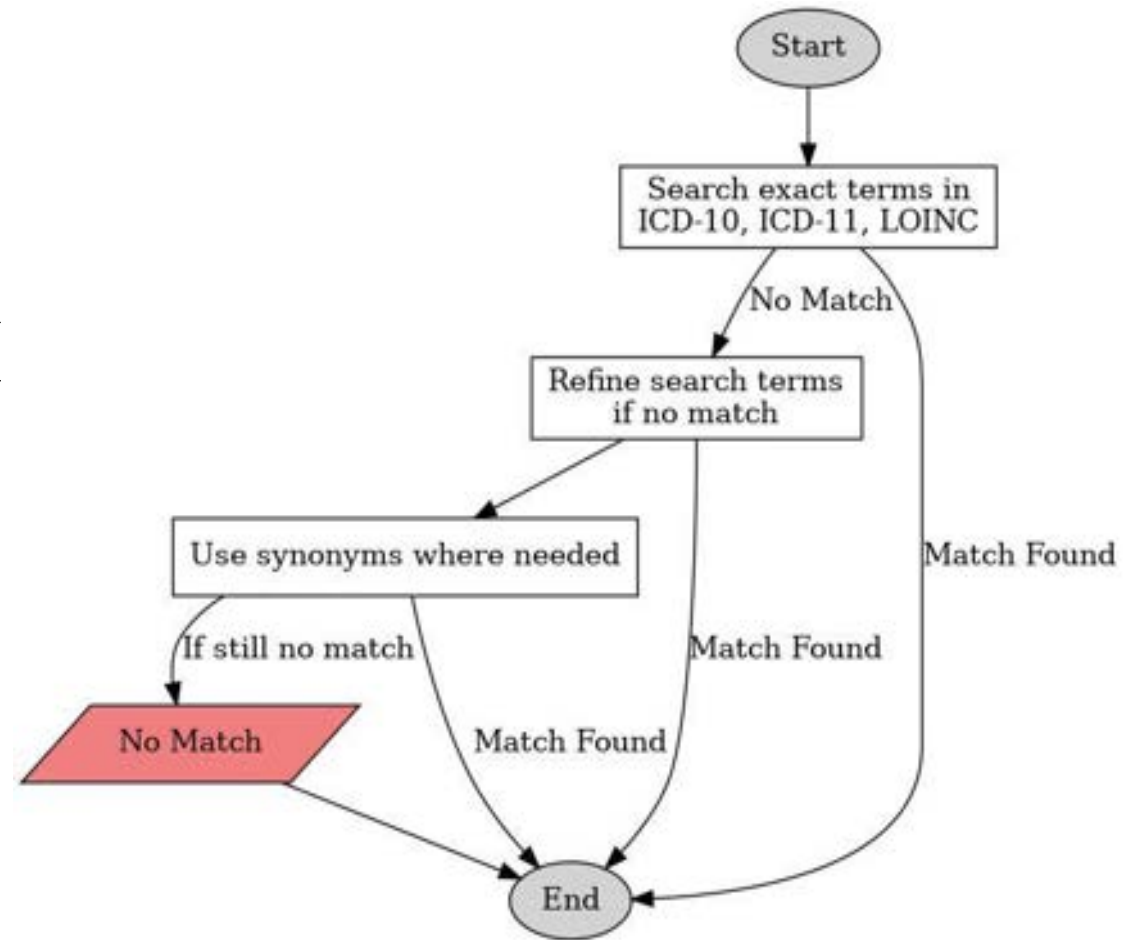
United Nations Office for Disaster Risk Reduction (UNDRR) and the International Science Council (ISC) developed a standard database that classifies and describes disaster-related hazards.

Consists of 8 hazard categories and 302 hazards

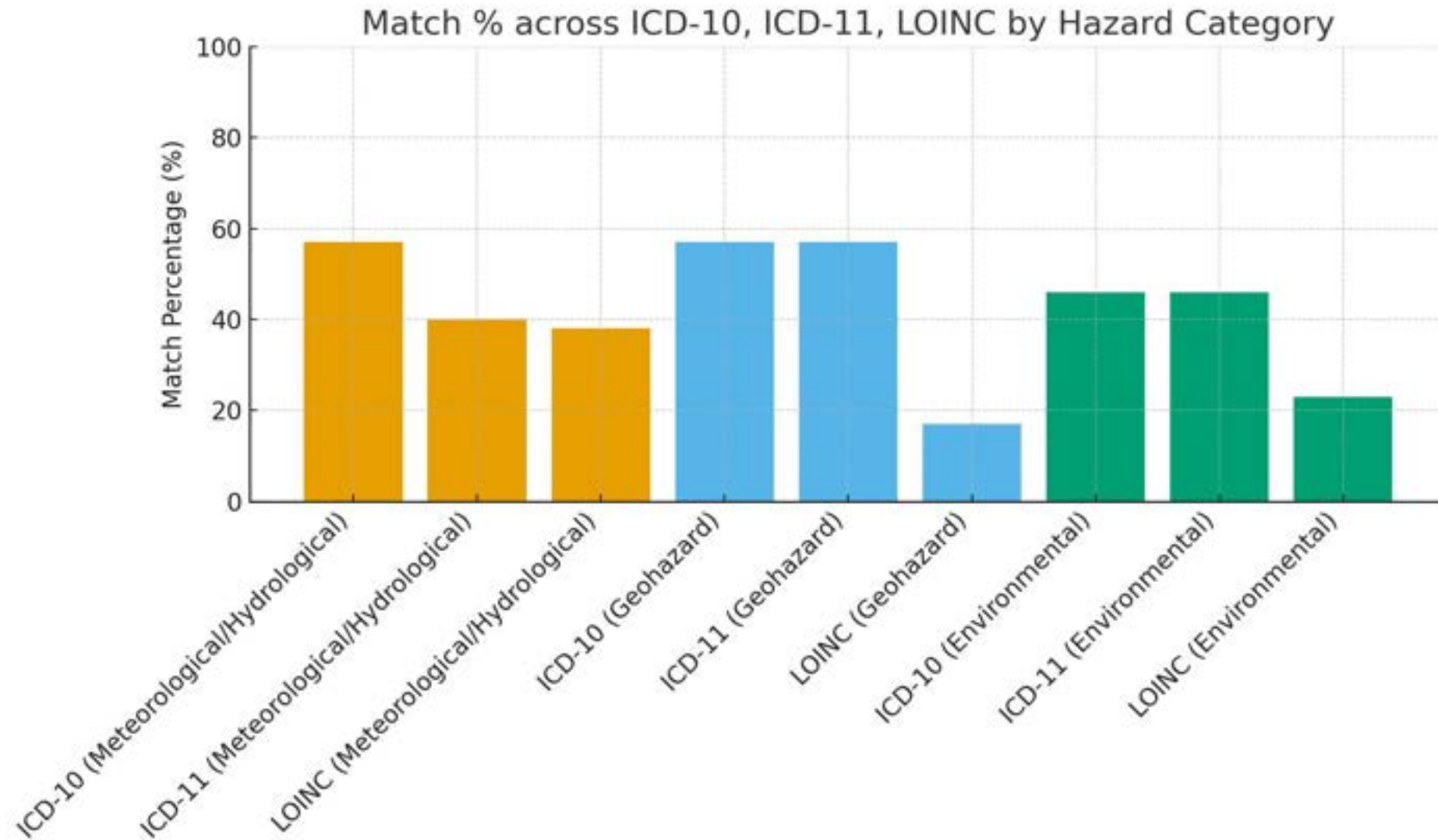


Methods

- **Mapping Approach:** *Lokmic-Tomkins et al.* framework.
- **Hazard Concepts:** 78 disaster hazard concepts from UNDRR-ISC Hazard Information Profiles.
- **Validation:**
 - Two researchers mapped independently
 - Two others verified
 - Discrepancies resolved by consensus



Results



Results

Hazard Type	ICD-10		ICD-11		LOINC	
	Match	No Match	Match	No Match	Match	No Match
Meteorological & Hydrological (n = 42)	24 (57%)	18 (43%)	17 (40%)	25 (60%)	16 (38%)	26 (62%)
Geohazards (n = 23)	13 (57%)	10 (43%)	13 (57%)	10 (43%)	4 (17%)	19 (83%)
Environmental (n = 13)	6 (46%)	7 (54%)	6 (46%)	7 (54%)	3 (23%)	10 (77%)

Discussion

- **Findings:**

- Current clinical terminologies (ICD-10, ICD-11, and LOINC) lack comprehensive and consistent representation of disaster hazard concepts.
- Underrepresentation is particularly pronounced in LOINC and in the environmental hazards category.
- Even in ICD-based terminologies, hazard representations are often generalized or indirect which limits the data analysis capability.

- **Recommendations:**

- Expand ICD-10, ICD-11, and LOINC to include disaster hazard concepts.
- Align with UNDRR-ISC HIP framework.

- **Expected Benefits:**

- Enhanced semantic interoperability across health and disaster response systems.
- Enable more accurate data capture, monitoring, and policy development.

Thank You! ☺

Any Questions??



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Beenish Chaudry

Assistant Professor of Computing & Informatics

How Well Do Clinical Terminologies Represent Climate-Related Illnesses of Low Socio-Economic Communities: A Gap Analysis



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Clancy Ratliff

Professor of English

*Saving Species, Saving the Climate: Poetic Inquiry and
Environmental Advocacy Rhetoric*



Saving Species, Saving the Climate: Poetic Inquiry and Environmental Advocacy Rhetoric

Clancy Ratliff, University of Louisiana at Lafayette



THERE'S ONLY ONE THING WORSE THAN A FOX GUARDING THE HENHOUSE—FIVE FOXES!

Dear [REDACTED]

November 12, 2018

They make up THE most anti-environment administration in the 242-year history of our nation.

President Trump, who called climate change a hoax perpetrated by the Chinese, picked for the most important environmental posts in the federal government individuals whose words and actions are directly opposed to the missions of the very agencies they serve.

As a congressman, Interior Secretary **Ryan Zinke** supported measures that would increase the production of climate-heating fossil fuels and eliminate protections for endangered species.

Andrew Wheeler, who replaced the controversial **Scott Pruitt** as Acting Administrator of the Environmental Protection Agency (EPA), is a former coal lobbyist who not only shares the denominative zeal of his predecessor, but also Pruitt's skeptical outlook on climate science.



From the desk of:
Executive Director Mark Reynolds

November 18, 2019

Dear [REDACTED]

In a country so deeply split between left and right, it's a radical idea to suggest that people can work together to solve big problems like climate change. But that's exactly what Citizens' Climate Education and Citizens' Climate Lobby are doing.

As one of the only grassroots organizations focused on bipartisan climate action, we know that Republicans and Democrats can and will work together to solve climate change.

We believe in the power of a collaborative democracy. We recognize that bipartisanship is the only way to achieve lasting solutions. **And we are leading the way!**

This year we played a critical role in getting the bipartisan Energy Innovation and Carbon Dividend Act introduced in the U.S. House of Representatives. There are already 65 – and counting – congressional cosponsors, and our volunteers have helped secure 1,000+ high-profile local endorsements for the bill. Several other bipartisan bills on climate and the environment have also been introduced in Congress.



Dear Friend of the Environment,

When is an endangered species no longer entitled to Endangered Species Act protections?

When its numbers have rebounded? When it is no longer threatened?

No, according to new changes to the Endangered Species Act (ESA) proposed by the U.S. Fish & Wildlife Service (USFWS), a species will essentially be no longer eligible for ESA protections when the Trump administration wants its habitat for oil and gas drilling, logging, mining, or any other commercial pursuit.

For the past four decades, the Endangered Species Act has been one of our most effective laws. Since first enacted by a bipartisan Congress in 1973, less than one percent of the listed species have gone extinct. And millions of acres of forests, beaches, and wetlands have been



2019 Louisiana Tree Survey



Dear [REDACTED]

You may be wondering why what you think about trees is important.

The answer is that trees are important, and our job at the Arbor Day Foundation is to make sure people in Louisiana — and across the country — know that. But we can't try to change the way people think about trees until we know what they think about them now.

That's where you come in.

America's Long and Rich Heritage

Since 1776, America's ideals have been a beacon to the world.

Poetic Inquiry Distills and Reveals (Environmental) Rhetoric

Using phrases from a corpus of text

Creating data poems

Separating signal from noise to show rhetorical strategy
and audience more clearly

Noticing different approaches to environmental rhetoric

Bird Poem: Letters from The Audubon Society

Brown Pelican, Florida Scrub-Jay, American Oystercatcher,
Cerulean Warbler, Northern Bobwhite, Rose-breasted Grosbeak,
Western Sandpiper, Ruby-Throated Hummingbird

Turn to birds for comfort and inspiration
Spirited songs and resilient nature

The spectacle and joy of birds on the move
Migration season, this delightfully extended affair
A critical indicator of the health of our planet

A planet that's warming faster than they can adapt

Climate change threatens
Two-thirds of North American birds with extinction
Three billion birds have already disappeared
Drought, winter warming, seasonal flooding
Continued reliance on oil is killing birds
and harming the places they need

Restore habitat
Wetlands, beaches, and barrier islands
The sagebrush ecosystem in the West
Safeguard wild spaces
Allow birds to cope and adapt

You are what hope looks like to a bird

National Parks
Poem: Letters from
the National Park
Foundation, National
Parks Conservation
Association, The
Wilderness Society,
The Trust for Public
Land

The parks tell America's history
These magnificent places

We inherited national parks from our forebears
Our nation's natural, cultural, and historic treasures
This priceless legacy
Our cultural heritage
For current and future generations to explore
Outdoor recreation
Beautiful views
Many miles of trails
Personal adventures
Riparian habitat of cottonwoods and mesquite
Bubbling mud pots
Hundred-foot geysers
Hot springs
Beloved and cherished
We leave them to our children

Enjoy them in their natural state
Free from noise
Pollution
And other modern disruptors

The best of America
Experience their majesty firsthand

National Parks Poem: Letters from the National Park Foundation, National Parks Conservation Association, The Wilderness Society, The Trust for Public Land

the Everglades, Bears Ears

Threatened like never before
Motorized misuse
Exploitation for short-term profit

The Great Smoky Mountains, Joshua Tree

Years of underfunding
Staggering backlog of urgent repair needs
Aging trails and roads
Dilapidated structures
Dwindling educational and interpretive programs

Mesa Verde, the Grand Canyon

Dangerous, shortsighted, and profit-driven development
Drilling in this fragile place
Choking air pollution
Vanishing wildlife habitats
The ravages of climate change
Logging, mining, and drilling interests
Communities that have
For too long
Been excluded from decision making about public lands

Yellowstone, Denali

A necessity for our mental, physical, and spiritual health
Our public lands take care of us
Greenways, blueways
Critical wetlands and meadow habitat
Deep generational connections to Indigenous communities
The healing power of nature

Use your powerful voice
Reclaim, repair, and restore

Senator Bill
Cassidy and
Senator Lindsey
Graham's
"Foreign Pollution
Fee Act"

China is by far
The world's worst air and water polluter
Manufacturers in the United States face
Staggering environmental regulatory compliance costs
Producing iron, steel, aluminum, cement,
Glass, fertilizer, hydrogen,
Solar components, and certain battery inputs.

Foreign polluters have a competitive edge
At the expense of American workers
the Chinese Communist Party subsidizes its exports
refusing to enforce basic environmental protections
undercutting responsible manufacturers
in the United States

Level the playing field for American manufacturers and
workers
Hold non-market economies like China accountable
For their unfair trade practices
Strengthen our economic resilience
Reduce supply chain dependence on adversaries
Reward innovation in production
Fulfill President Trump's goal
Of rebuilding the Golden Age



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Clancy Ratliff

Professor of English

*Saving Species, Saving the Climate: Poetic Inquiry and
Environmental Advocacy Rhetoric*



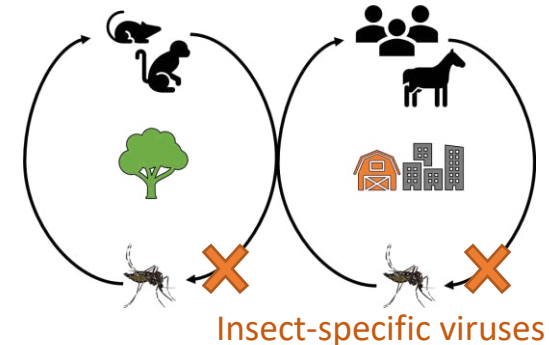
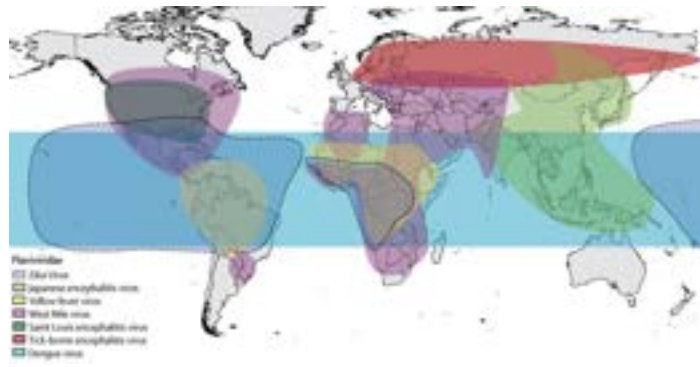
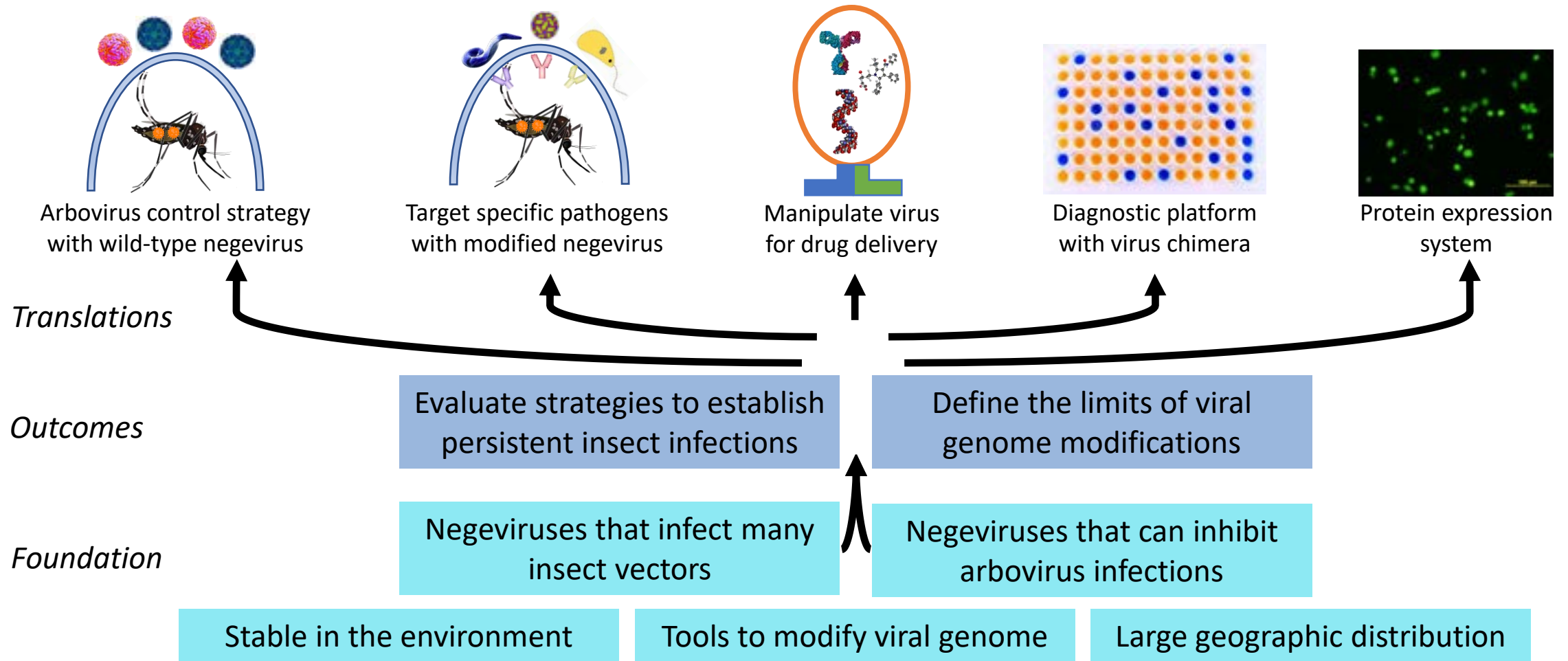
PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Ian Patterson

Assistant Professor of Biology

*Using Insect-Specific Viruses to Prevent Mosquitoes from
Transmitting Arthropod-Borne Viruses*

Using insect-specific viruses to control arbovirus infection and transmission





PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

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Assistant Professor of Biology

*Using Insect-Specific Viruses to Prevent Mosquitoes from
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PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Kevin Torgensen

PhD Student, Environmental & Evolutionary Biology

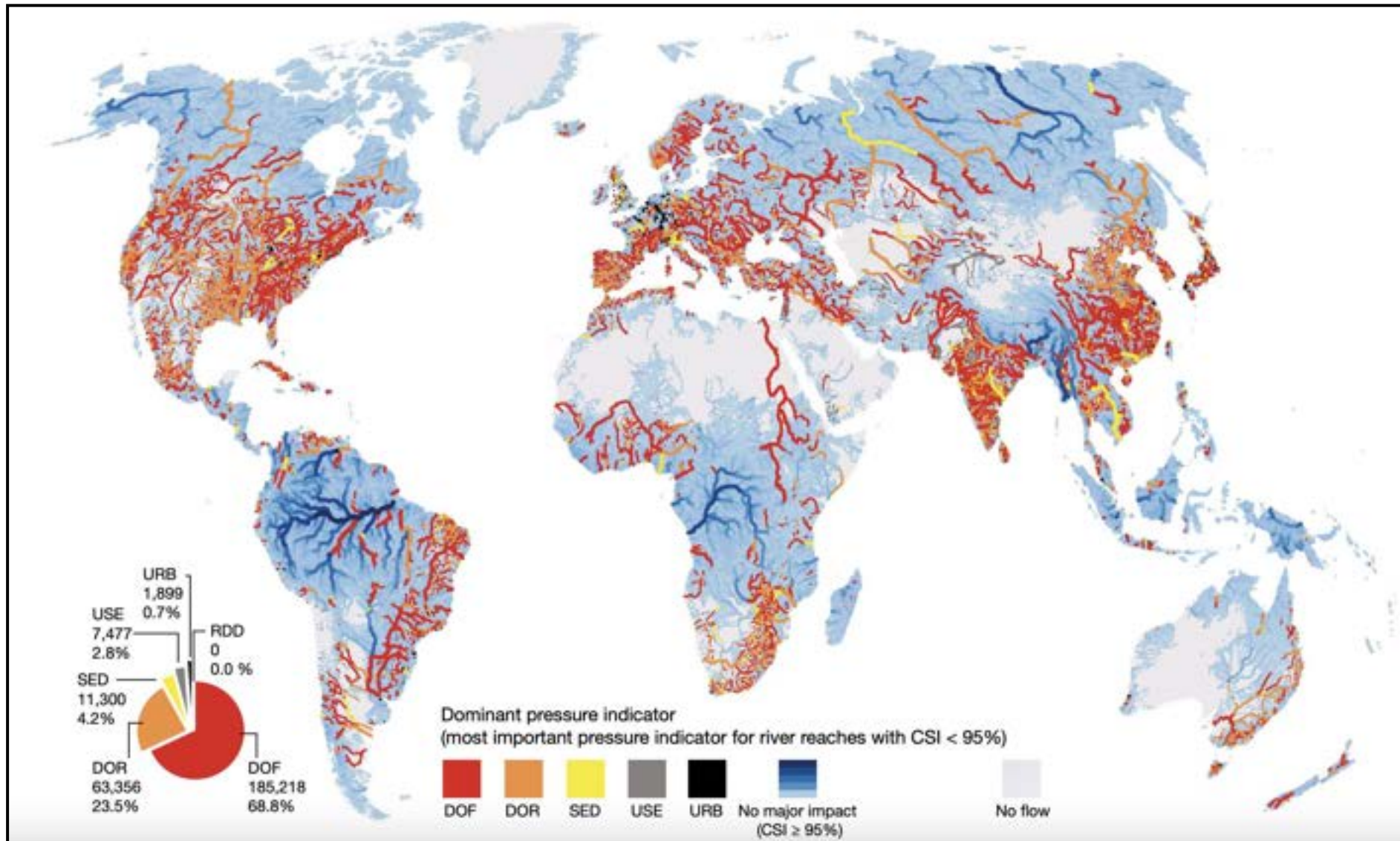
*Highlighting Global Conservation Priorities for Freshwater
Fishes Using New Methods of 3D Photogrammetry*

Faculty Reference: James Albert

Highlighting Global Conservation Priorities for Freshwater Fishes Using New Methods of 3D Photogrammetry

Kevin T. Torgersen & James S. Albert
School of Biological Sciences





An organism's body shape affects how it moves, feeds, and avoids predators



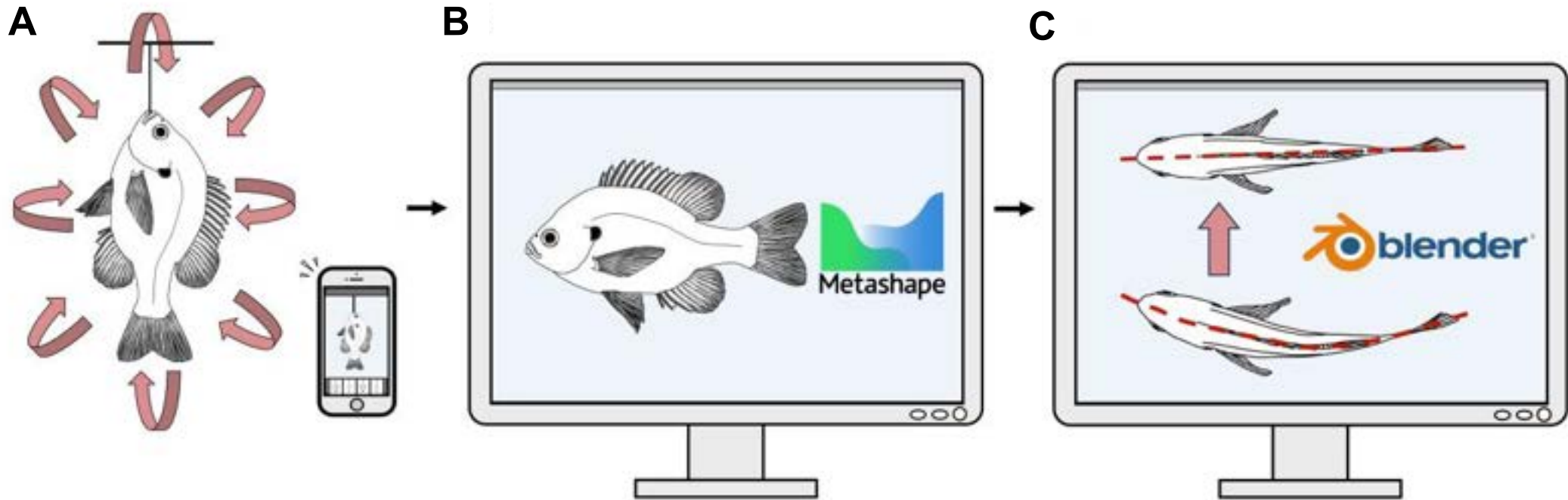
Cottus carolinae
Banded Sculpin



Polyodon spathula
American Paddlefish



3D Photogrammetry Workflow

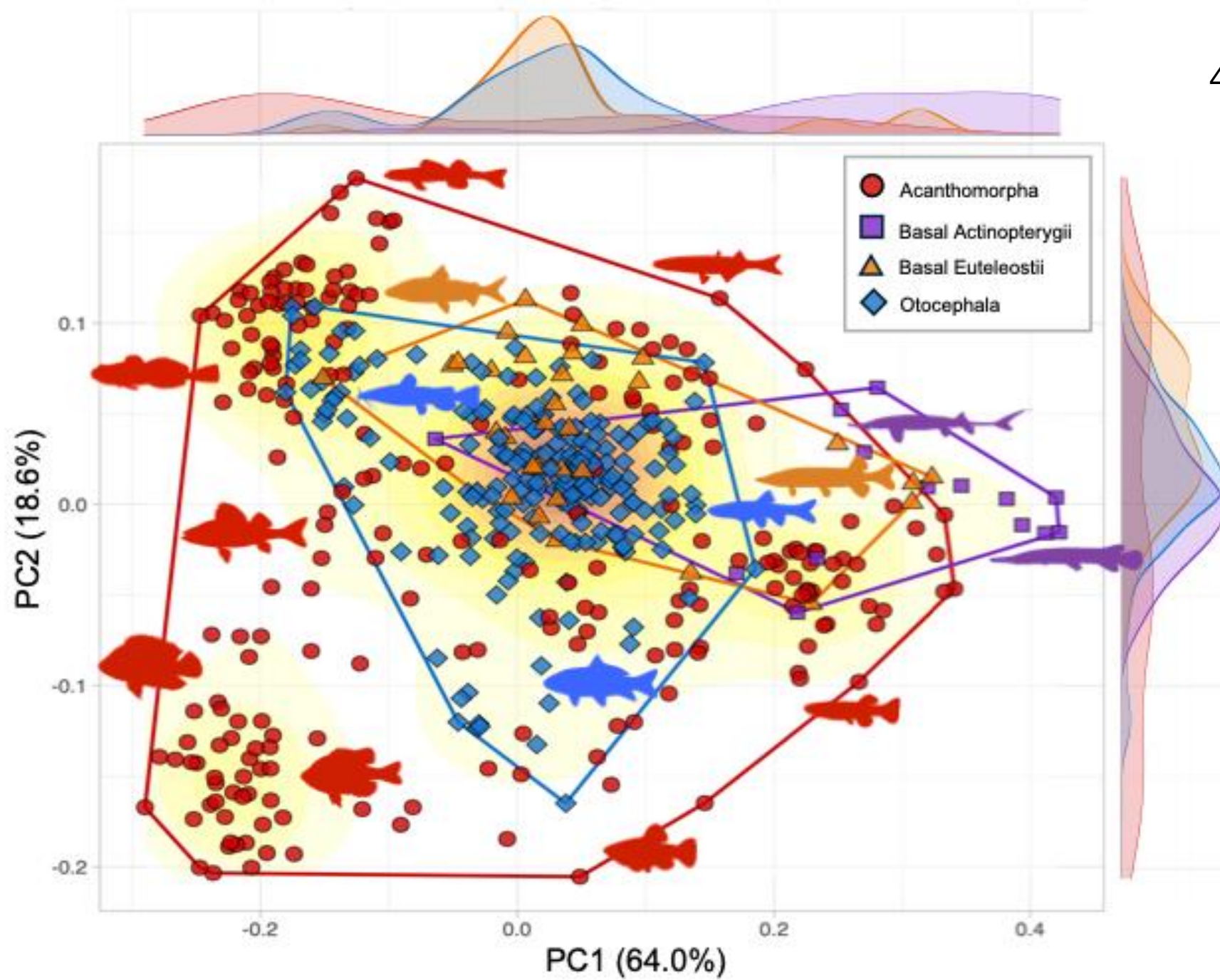




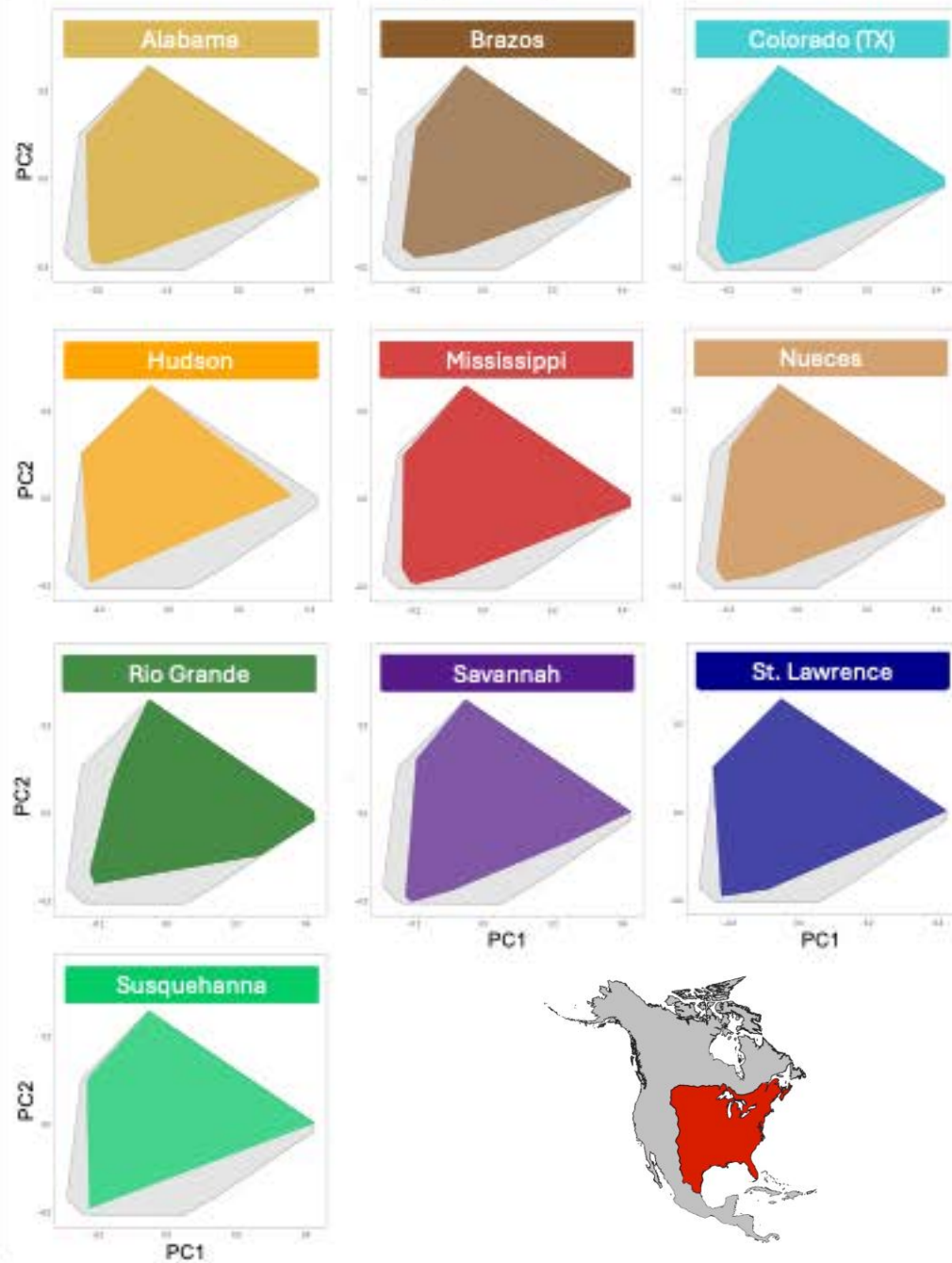
Fins are hard for the photogrammetry programs to reconstruct, but we don't need perfect fins for this analysis.

Catostomus macrocheilus
Largescale sucker
(Cypriniformes: Catostomidae)
TU 121819 (140 mm TL)

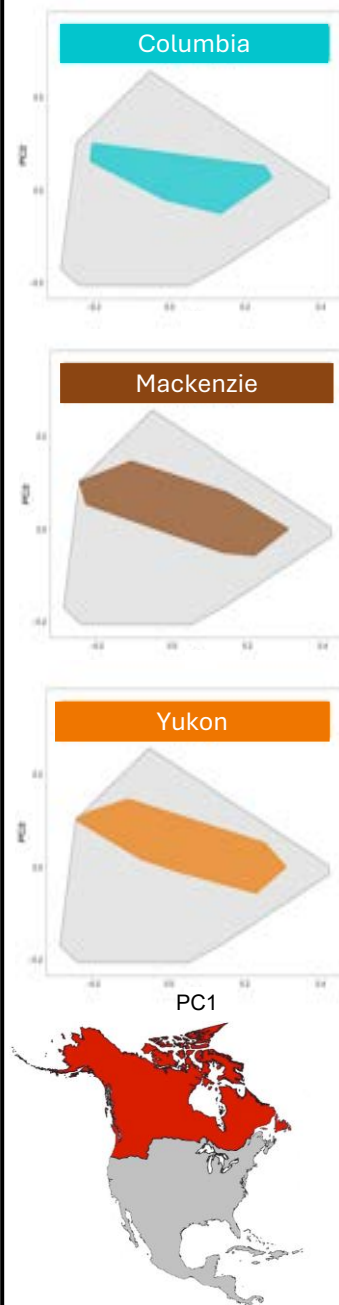
481 species



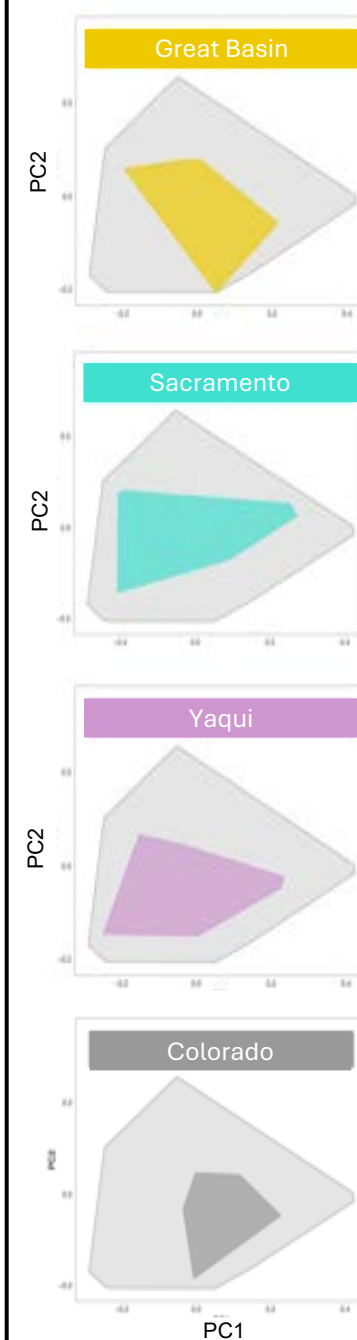
Mississippi Superbasin

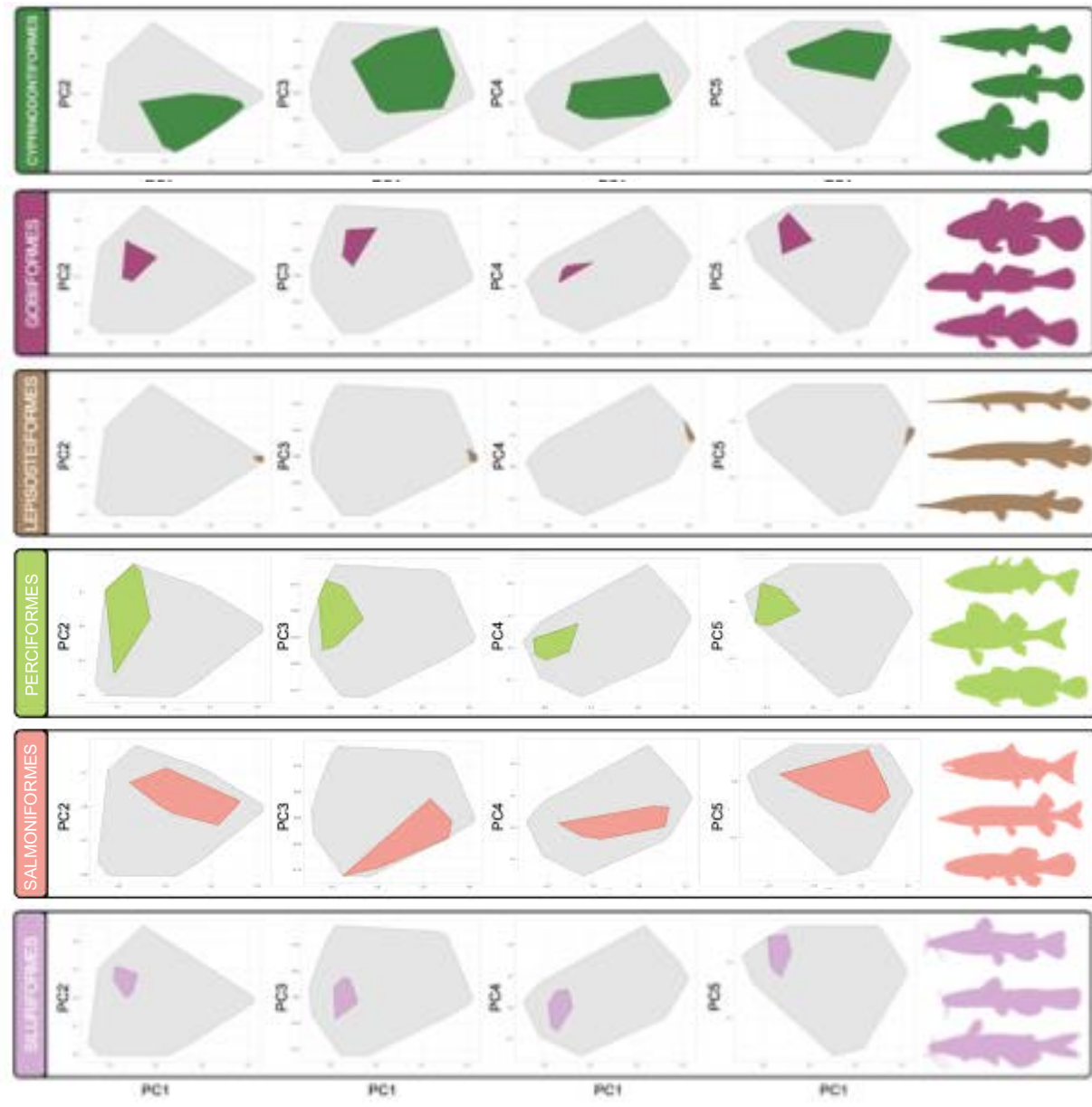
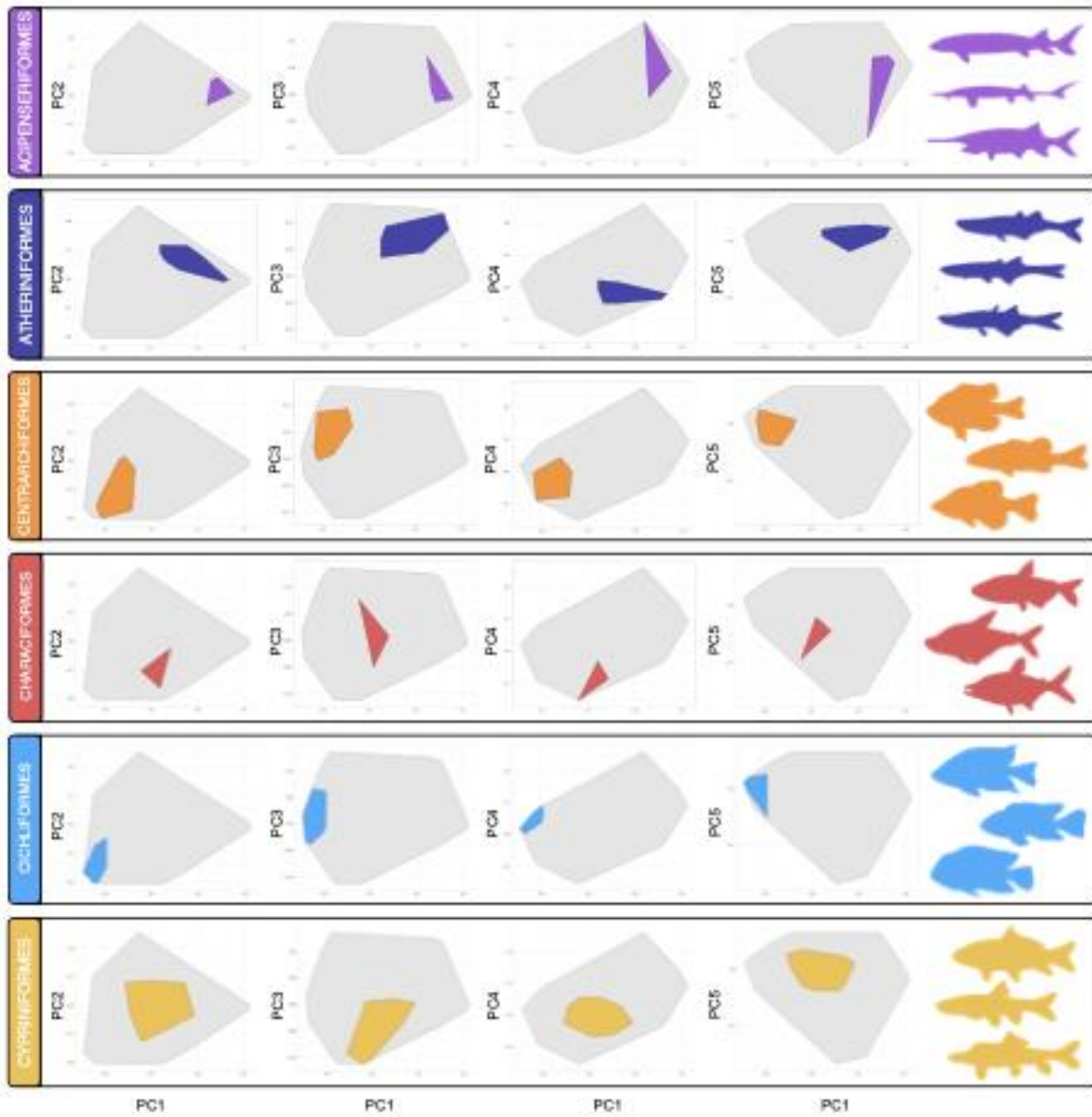


Northern Basins



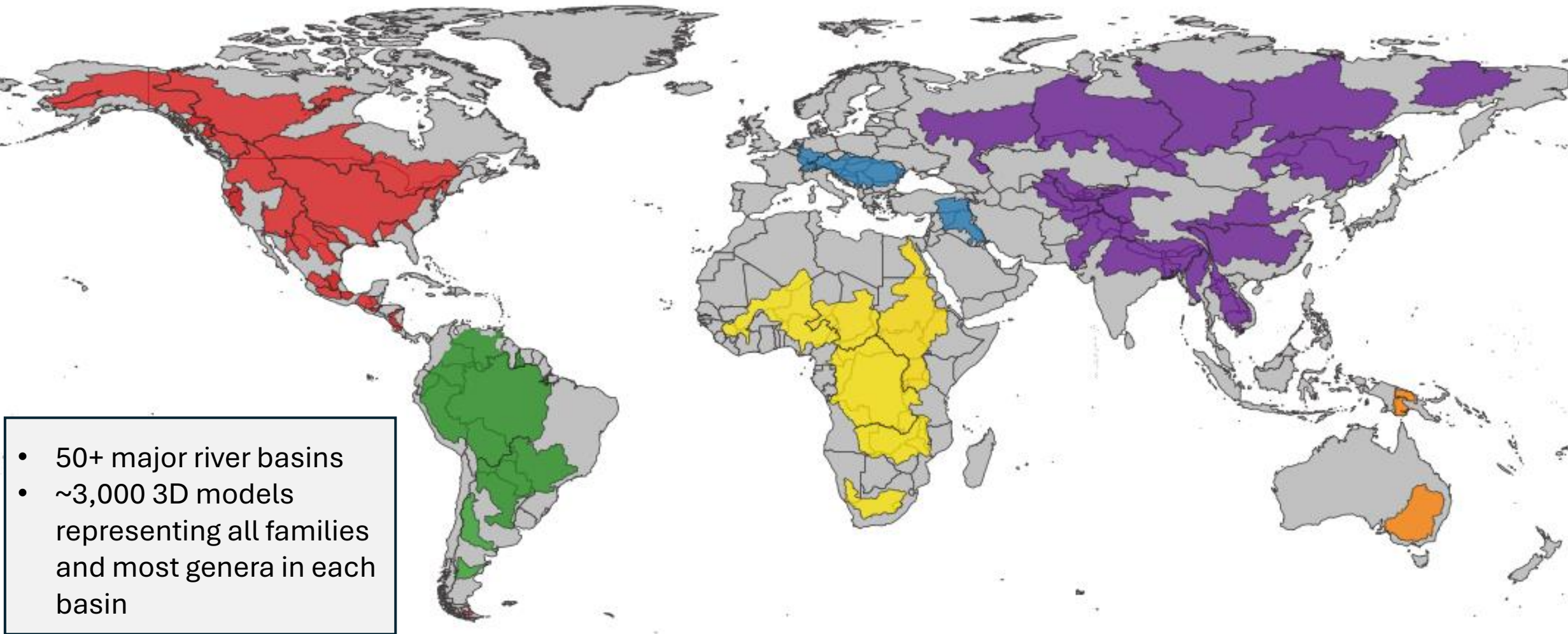
Arid West





Next Steps:

Make comparisons across global faunas and climate zones



Acknowledgements

Natural History Collections staff for loans and collection visits

The following funding:

- Field Museum of Natural History Visiting Scientist Award
- Academy of Natural Sciences-Philadelphia Böhlke Memorial Endowment Fund Award
- American Museum of Natural History Collection Study Grant
- American Society of Ichthyologists and Herpetologists Edward C. Raney Fund Award



The Academy of
Natural Sciences
of DREXEL UNIVERSITY

AMERICAN
MUSEUM OF
NATURAL
HISTORY





PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

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*Highlighting Global Conservation Priorities for Freshwater
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Faculty Reference: James Albert



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Robyn Zerebecki

Assistant Professor of Biology

*Investigating How Tidal Inundation and Plant Composition
Influence Black Mangrove (*Avicennia Germinans*) Growth
and Survival to Inform Coastal Restoration Practices*



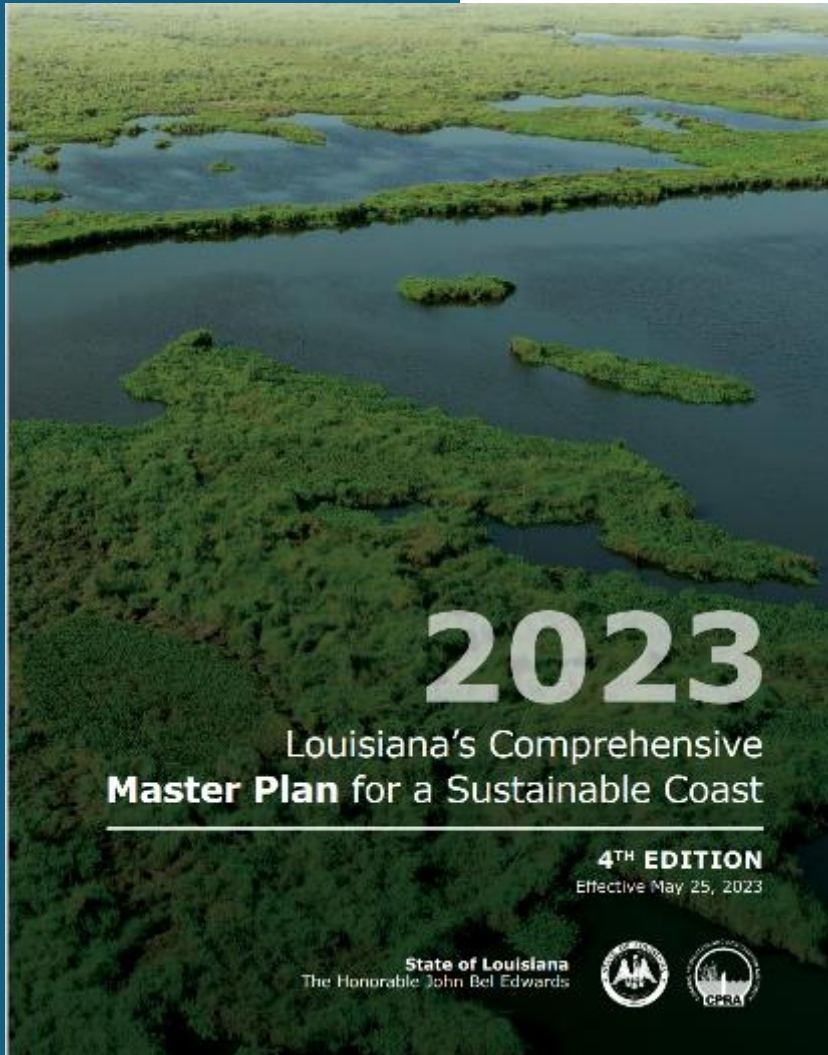
Investigating how tidal
inundation and plant
composition influence Black
mangrove (*Avicennia germinans*)
growth and survival to inform
coastal restoration practices

Robyn Zerebecki

Assistant Professor, Biology

LOUISIANA'S COASTAL MASTER PLAN

- Wetland loss and effective restoration
- Best practices for restoration outcomes and objectives
- Assessing changes in the plant community and cascading impacts on ecosystem function

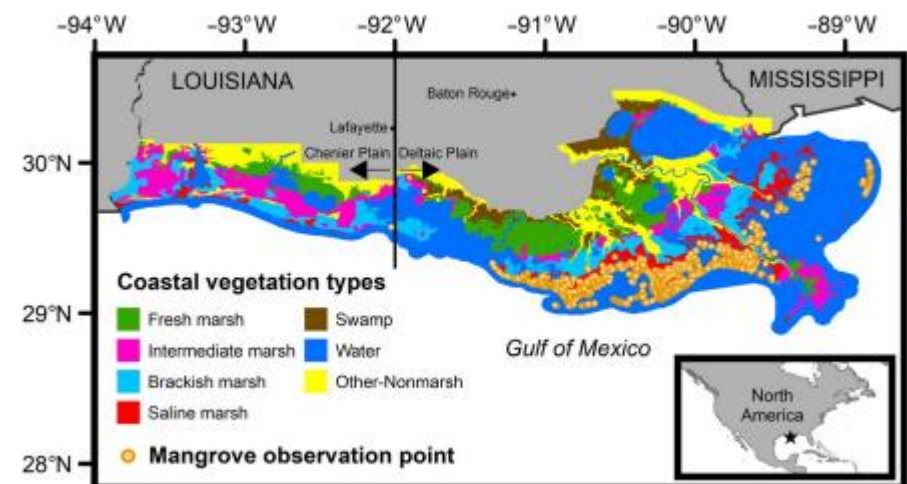


INTRODUCTION

- Mangrove expansion



Bardou et al. 2023



Osland et al. 2020

INTRODUCTION

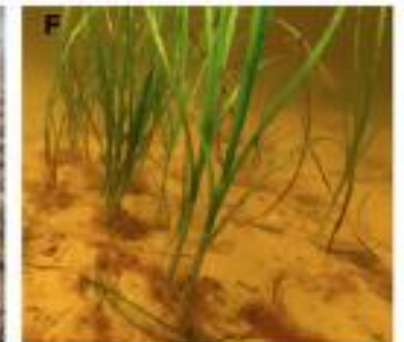
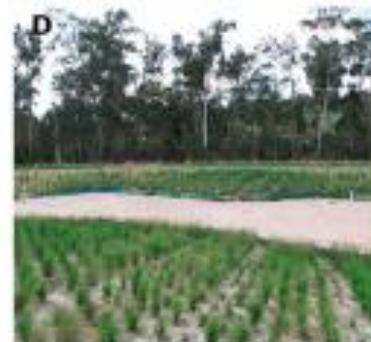
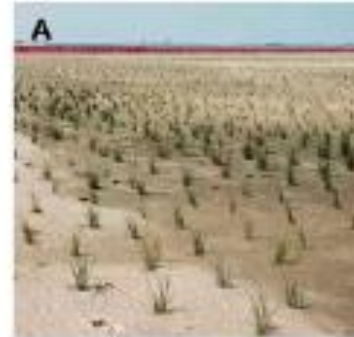
- Facilitation in Restoration



Dispersed



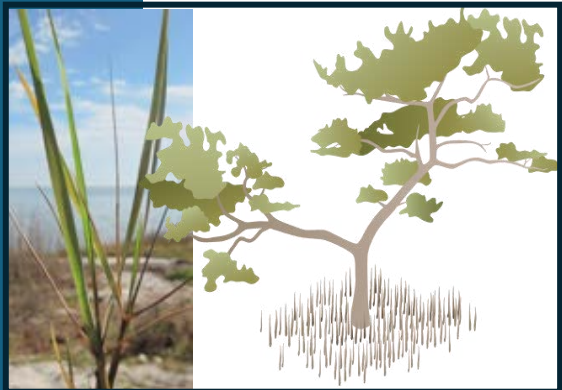
Clumped



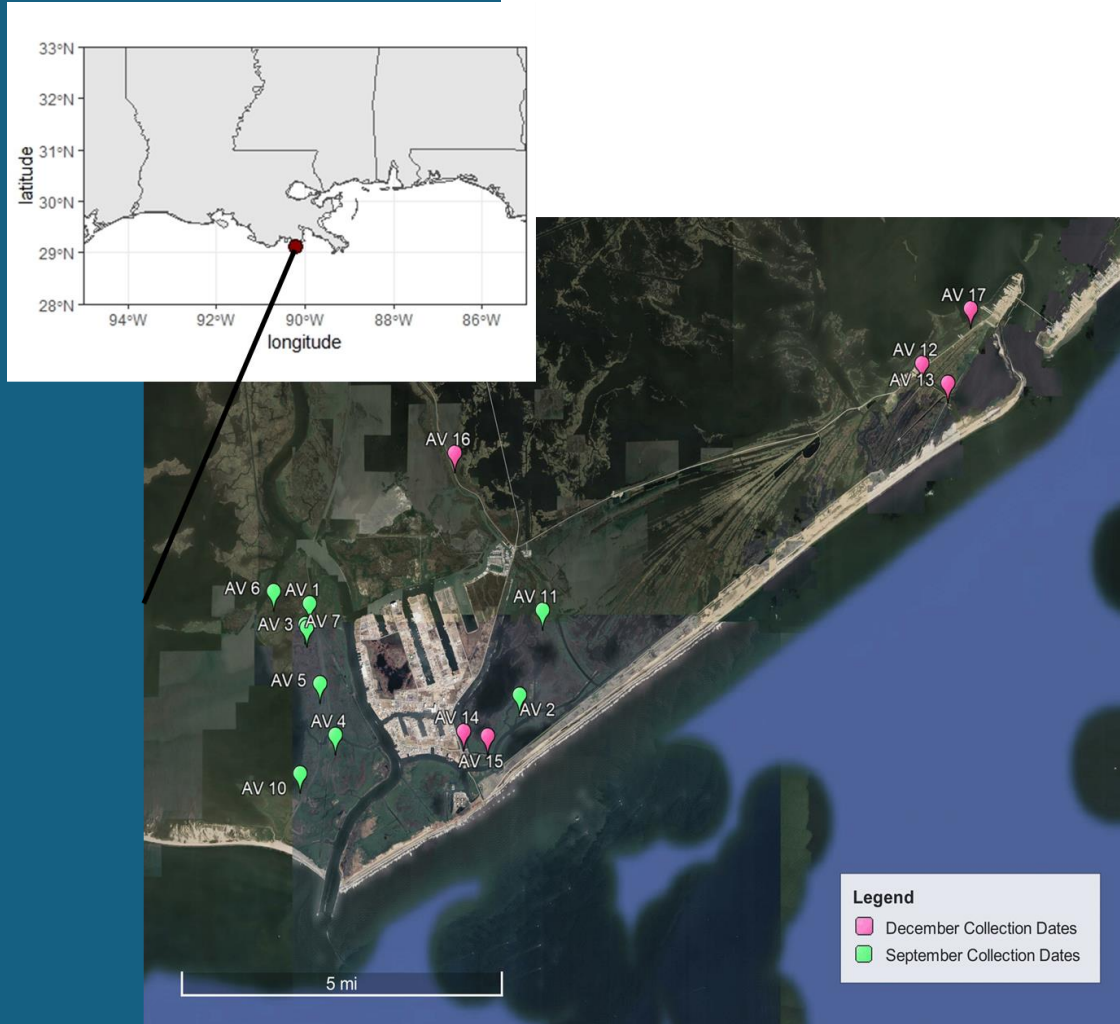
Silliman et al. 2012

RESEARCH OBJECTIVES

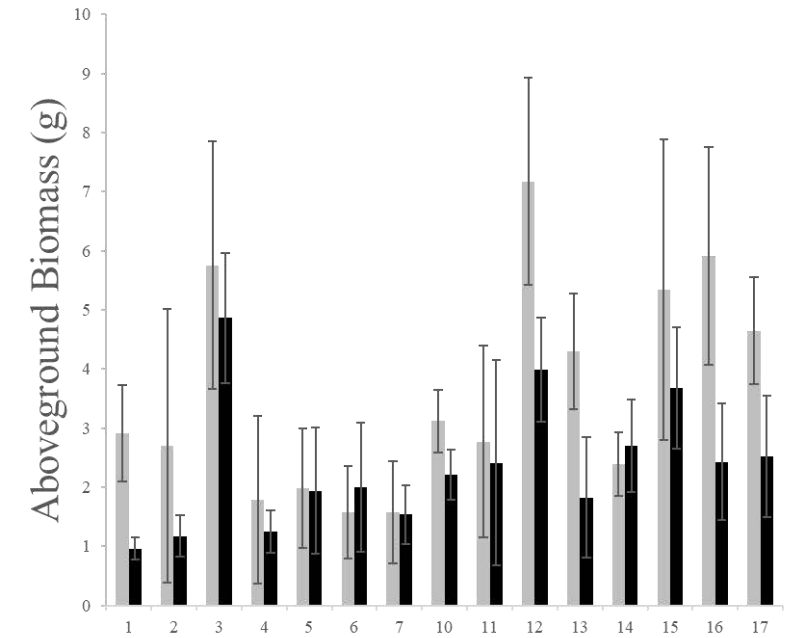
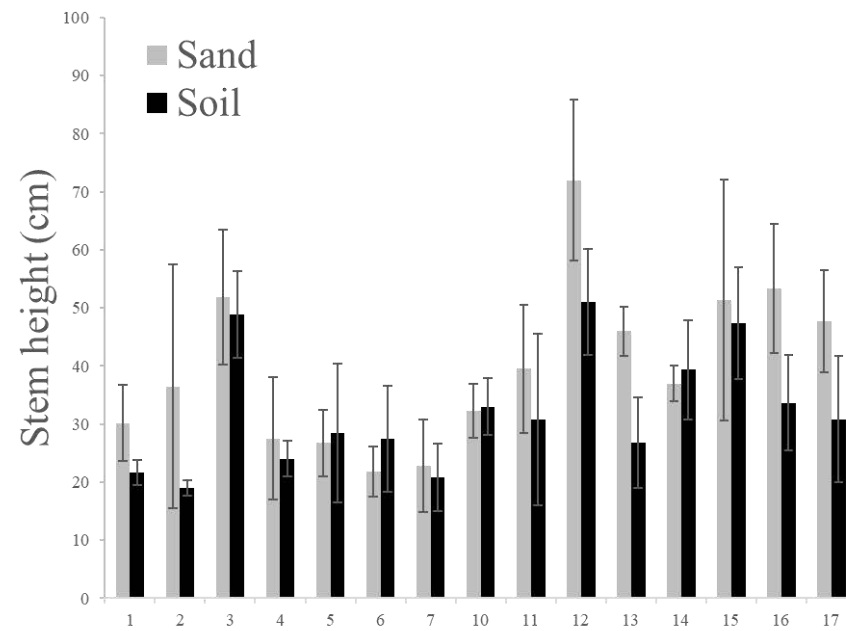
1. Does *Spartina* presence or absence and/or tidal inundation impact *Avicennia* growth and survival?
 - Higher inundation = more stress; increasing importance of facilitation among plants



RESEARCH OBJECTIVES




RESULTS



Zerebecki in review at Estuaries & Coasts

ONGOING GOALS AND OBJECTIVES



CSAP
Coastal • Science • Assistantship • Program

Conduct Impactful Research

On the Job Training

Masters Student Funding

The Coastal Protection and Restoration Authority provides graduate student support for science or engineering research relevant to Louisiana's coast. The program will both expose students to CPRA activities and provide a potential avenue for recruitment of new CPRA personnel. Funding support for up to three years of master's research.

The assistantship is available to all faculty pursuing coastal restoration-related research at Louisiana colleges/universities to recruit outstanding graduate students. Up to four new students will be funded each academic year. The annual award is \$30,000 per student.

Applications are due December 3, 2024.
For more information, contact:
Matt Bethel at mbethe3@lsu.edu or
Summer Langlois at Summer.Langlois@la.gov

www.laseagrant.org/research/student-research/csap

CPRA logo and Louisiana State University logo.





PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Robyn Zerebecki

Assistant Professor of Biology

*Investigating How Tidal Inundation and Plant Composition
Influence Black Mangrove (*Avicennia Germinans*) Growth
and Survival to Inform Coastal Restoration Practices*

LUNCH TIME!

Boxed lunches available in the lobby

12:00pm

Dr. Ramesh Kolluru



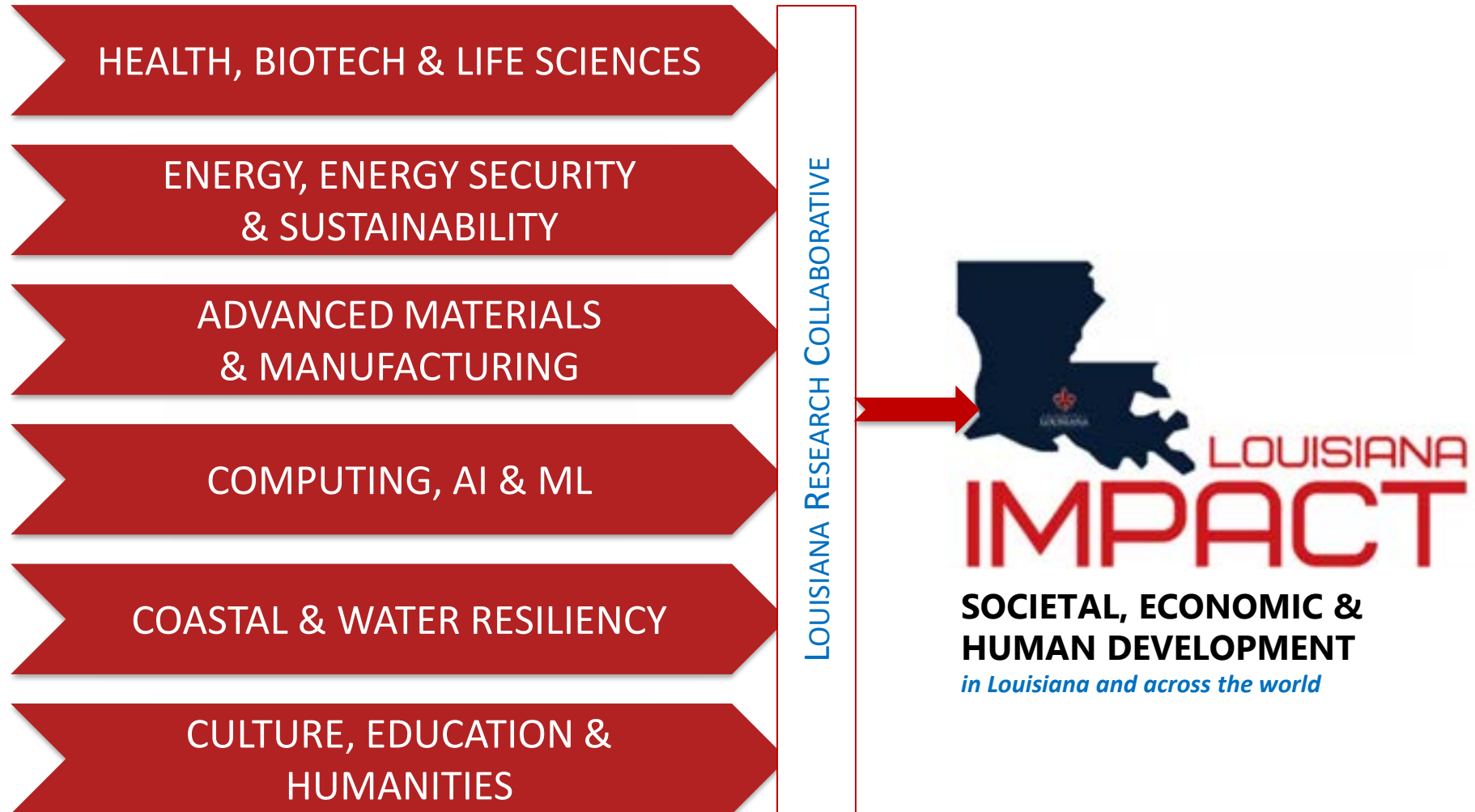


Dr. Ramesh Kolluru

**Vice President for
Research, Innovation &
Economic Development**



RESEARCH ENGINES: VISION 2030





PEOPLE, PLACE &
OUR SHARED ENVIRONMENTS

Mohammad Jamal Khattak

Professor of Civil Engineering

*Development of Green Construction Material Using Locally
Available Rice and Sugarcane Industrial Byproducts*

Development of Green Construction Material Using Locally Available Rice and Sugarcane Industrial Byproducts

Mohammad Jamal Khattak, PhD, PE. (Civil)

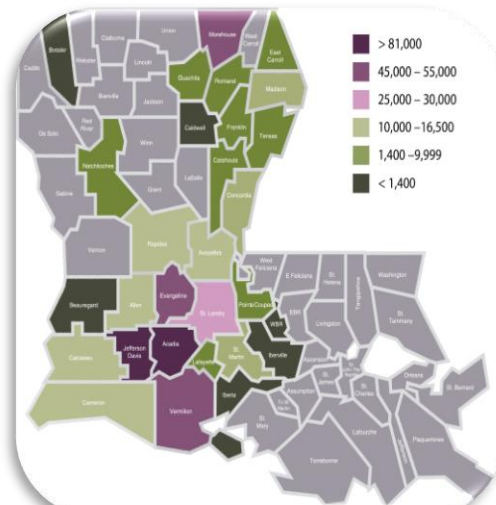
Atif Khan, MS. (Civil)

Thomas Pesacreta, PhD. (Biology)

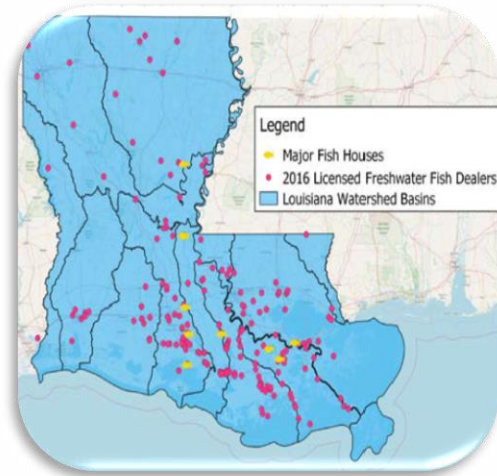
Introduction & Background



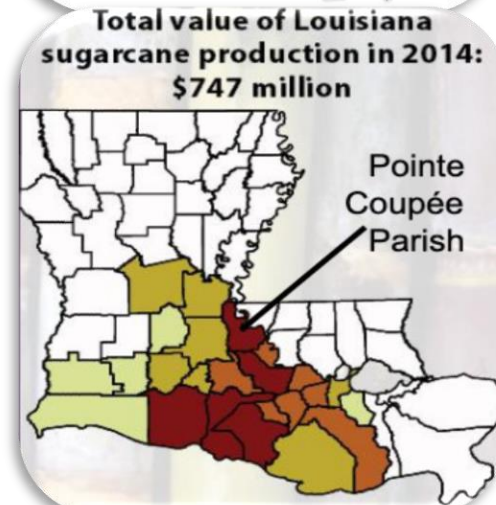
Oil Industry



Rice Industry

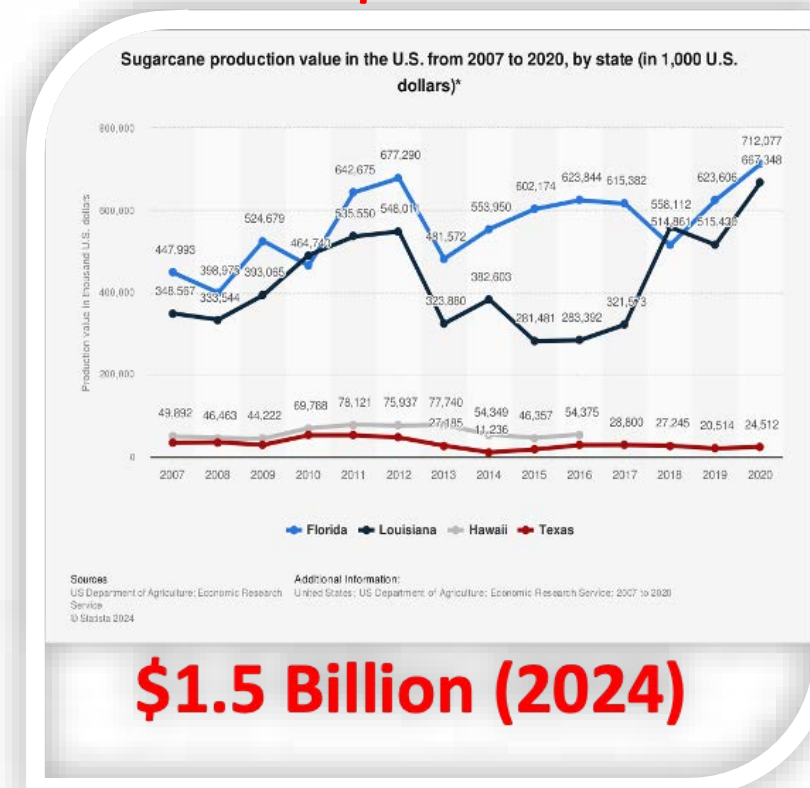


Fish Industry



Sugarcane Industry

Sugarcane Production \$ Value



\$1.5 Billion (2024)

Introduction & Background

Sugarcane Bagasse Ash (SBA)



**Sugarcane
fields**



**Sugarcane
Bagasse
(30%)**



**Sugarcane
Industry
(300-600C)**



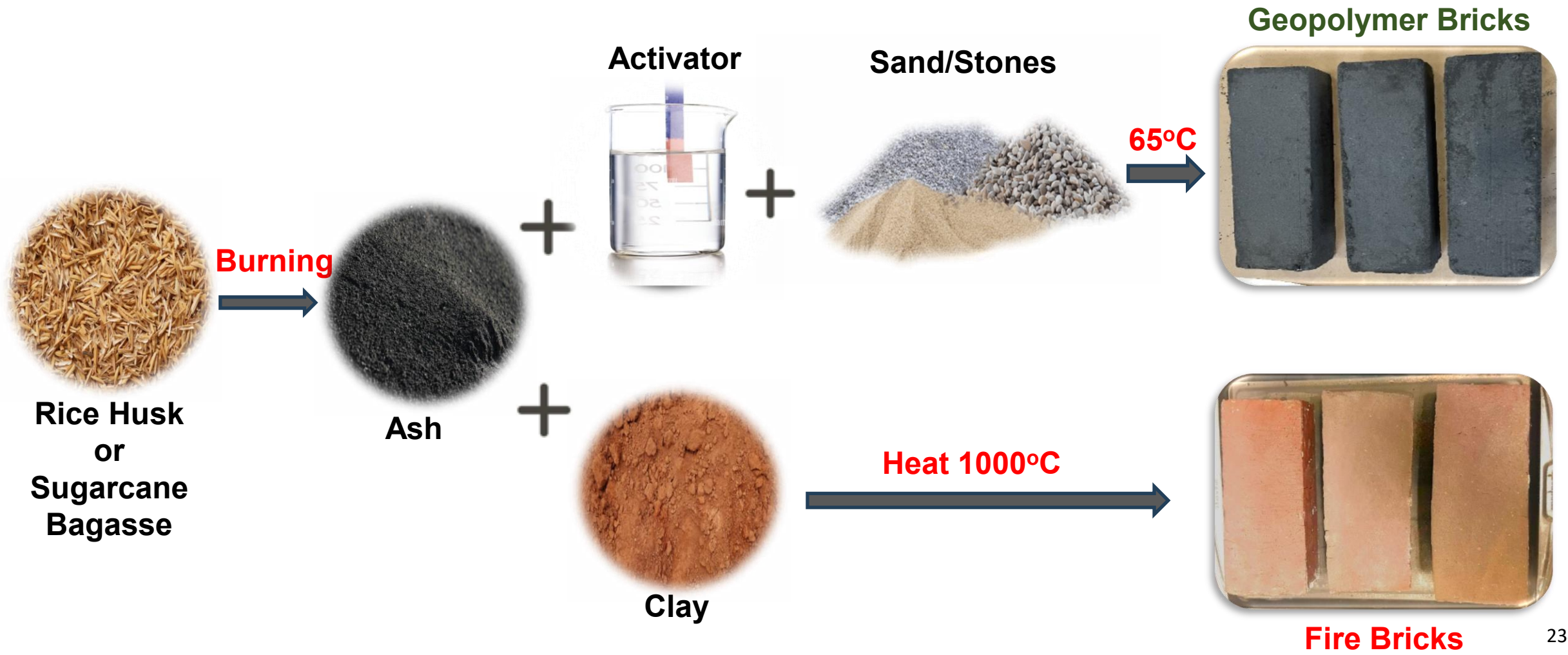
**Sugarcane
Bagasse Ash
(SBA)**

Problem/Issues

- ✓ Landfill limitations
- ✓ Toxic Leaching
- ✓ Air pollution
- ✓ Health issues

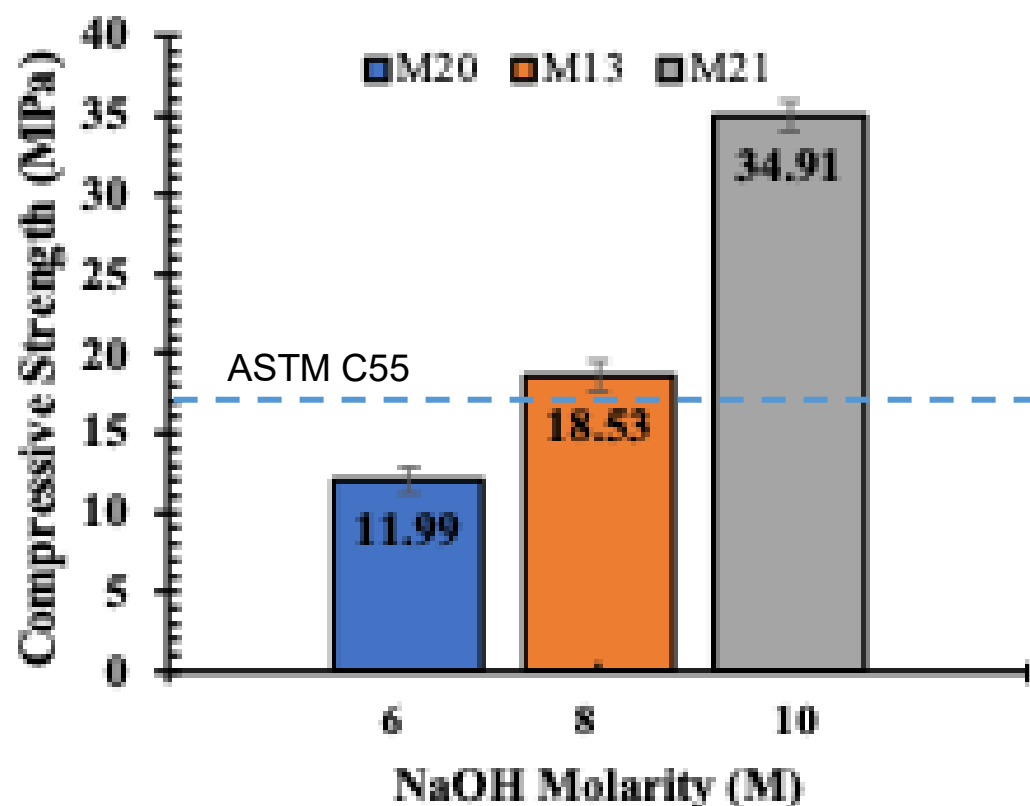


Geopolymer/Fire Bricks

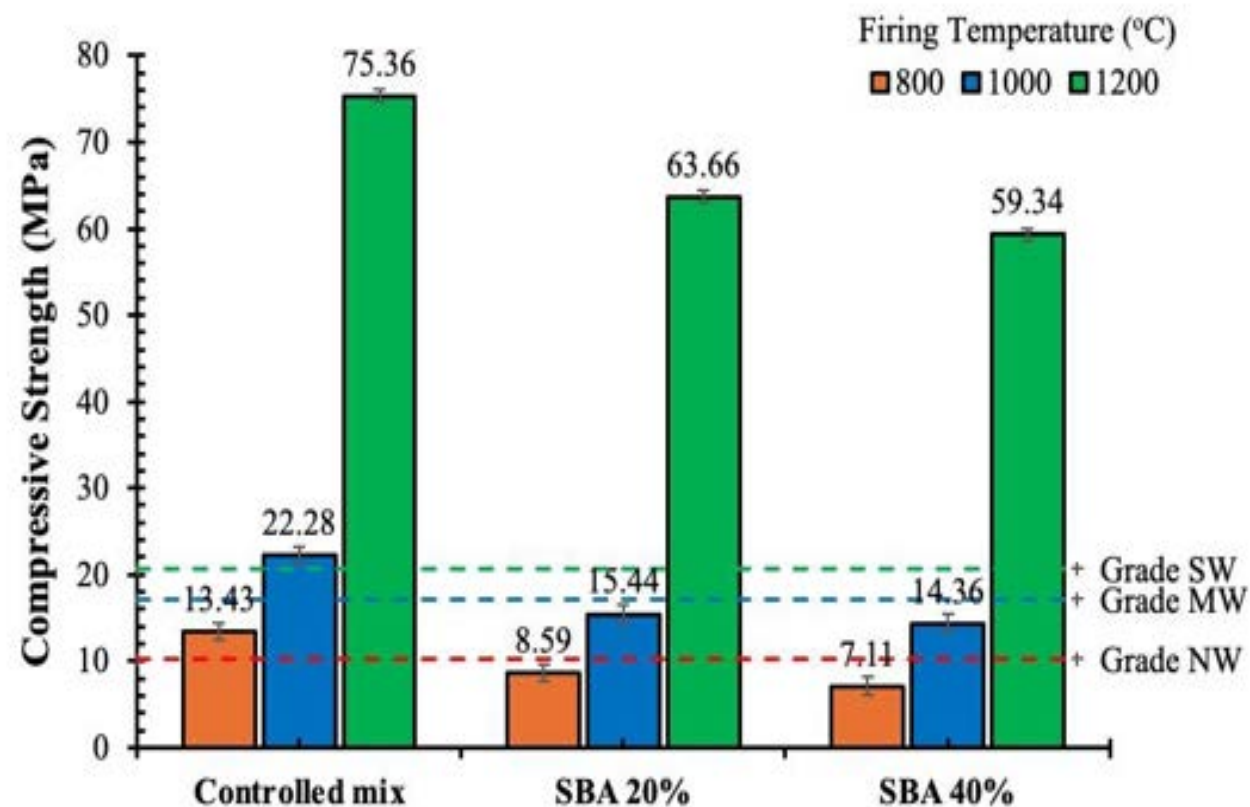


Results

Geopolymer Bricks



Fire Bricks



Acknowledgments

- University of Louisiana at Lafayette
- Board of Regents Support Funds Louisiana
- Infrastructural Materials Design and Testing Lab
- GR/GR students and Lab Technicians



Crawfish on Fire

THANK YOU





PEOPLE, PLACE &
OUR SHARED ENVIRONMENTS

Mohammad Jamal Khattak

Professor of Civil Engineering

*Development of Green Construction Material Using Locally
Available Rice and Sugarcane Industrial Byproducts*



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Caitlin deNux

Visiting Assistant Professor of
Teaching, Geosciences

Terry Chambers

Professor of Mechanical Engineering

*Evaluating Soil Health Improvements Utilizing Cover Crops in
a Pre-Established Broccoli Production AV System in Louisiana*

Evaluating Soil Health Improvements Utilizing Cover Crops in a Pre-Established Broccoli Production AV System in Louisiana

Dr. Caitlin deNux, Visiting Assistant Professor
Dr. Terrance Chambers, Professor of Mechanical Engineering

What is Agrivoltaics

- Dual-use of land for energy and agricultural activities
 - Specialty crops, livestock, ecosystem services
- Benefits
 - Increased land productivity
 - Economic development
 - Climate resilience
- Gap in the literature
 - AV systems in Louisiana
 - Developed framework transitioning PV systems to AV systems



UGA VIPR

Project: 1st Phase

- Location: Louisiana Solar Energy Lab (LaSEL)
- Cover crop study
 - Trt: Buckwheat, Iron Clay Cowpeas, Cereal Rye, Oats
 - Soil health indicators
 - Soil pH, organic matter, soil microbial activity (FAMES), XRF
 - Agronomic data
 - Leaf temperatures, plant height, above-ground biomass
 - Energy production



Iron Clay Cowpeas
Nitrogen fixation
legume



Buckwheat
Phosphorus
scavenger



Cereal Rye
Add OM



Oats
Quick weed
suppression

Preliminary Results



Control Cowpeas



Rep 1 Cowpeas

Iron clay cowpeas most promising

- Above-ground biomass
- Plant height
- Relative chlorophyll content
- Nitrogen content

Energy production was not impacted by plant growth

Soil health analysis ongoing

What's Next: 2nd Phase

- Broccoli production under these same conditions
- New Trt/data:
 - Agronomic data to include
 - Fruit development (size and color)
 - Tissue samples
 - Ambient temperature fluctuations (microclimate under panels)
- Data will utilized in public workshops to address local concerns
 - Solar panel toxicity
 - Land use



Thankyou!

Dr. Caitlin deNux

caitlin.denux@louisiana.edu

Dr. Terrence Chambers

terrence.chambers@louisiana.edu





PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Caitlin deNux

Visiting Assistant Professor of
Teaching, Geosciences

Terry Chambers

Professor of Mechanical Engineering

*Evaluating Soil Health Improvements Utilizing Cover Crops in
a Pre-Established Broccoli Production AV System in Louisiana*



PEOPLE, PLACE &
OUR SHARED ENVIRONMENTS

Afeez Jimoh

PhD Student, Earth & Energy Sciences

*Computational Modeling of Ion Transport Dynamics in Ion
Exchange Membranes for Sustainable Energy Systems*

Faculty Reference: Erez Aghion

Computational Modeling of Ion Transport Dynamics in Ion Exchange Membranes for Sustainable Energy Systems

By

Afeez Jimoh

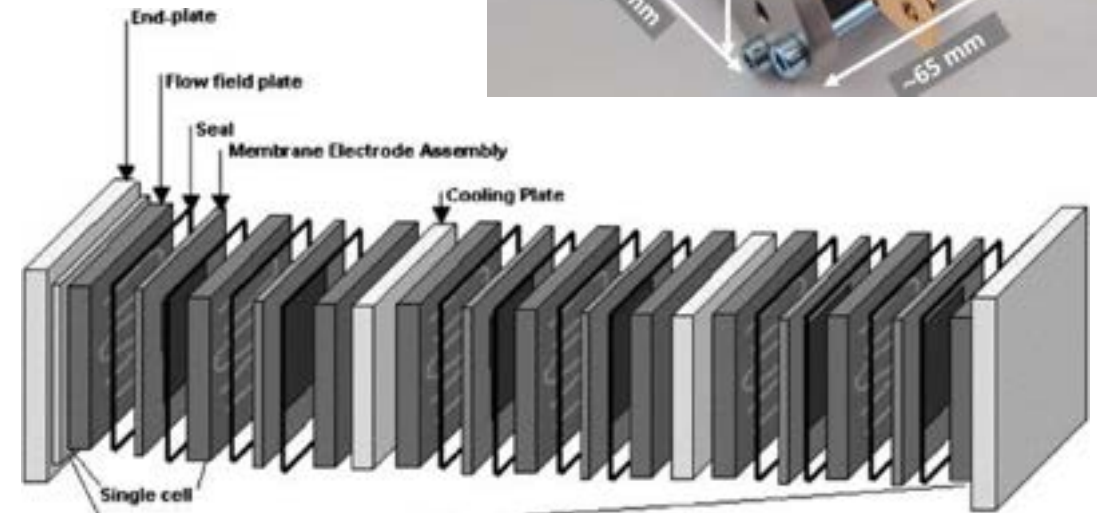
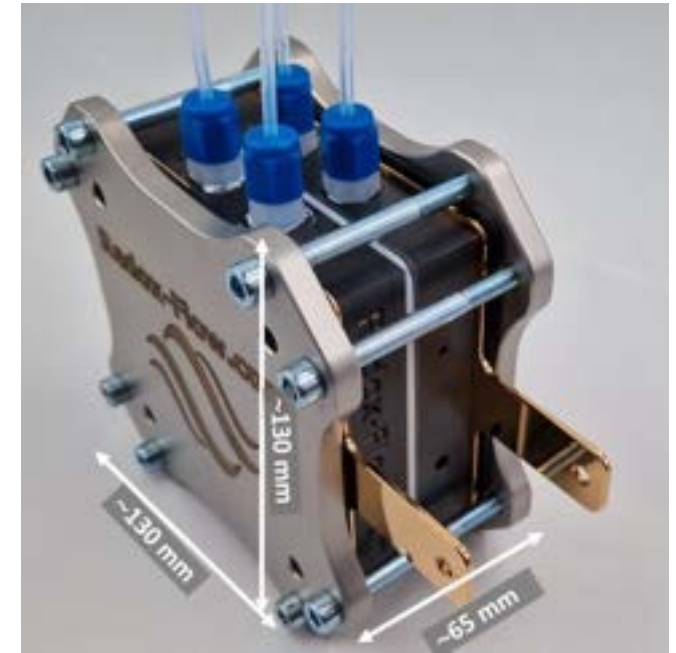
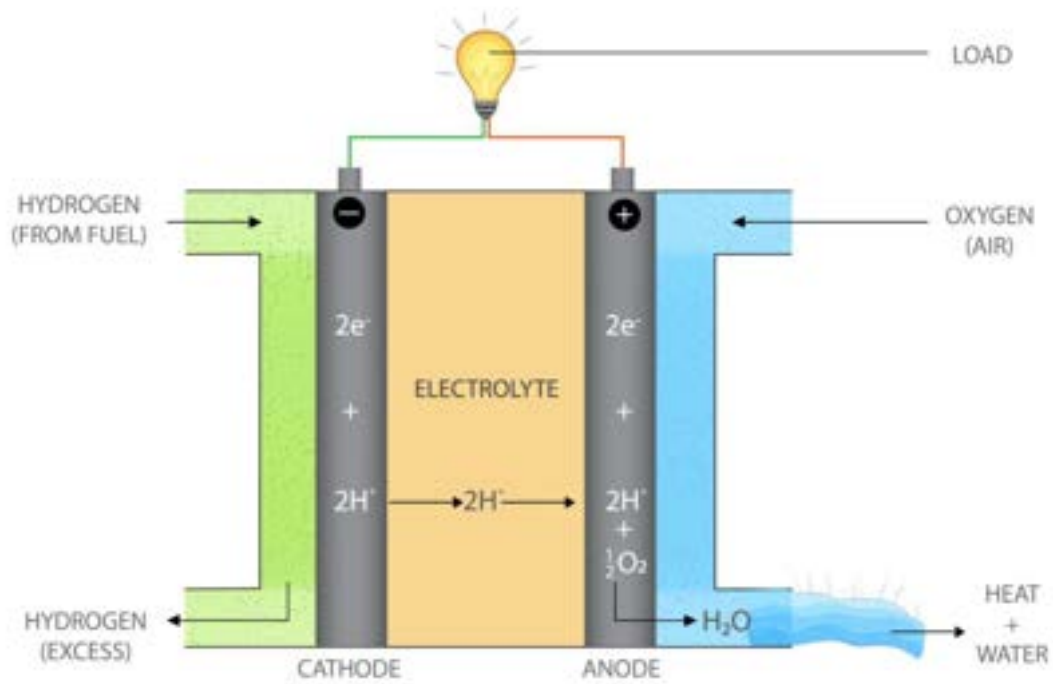
PhD Student in Earth & Energy Sciences

Faculty Reference: Dr. E Aghion



Background

- Ion exchange membranes are important components in the operation and efficiency of sustainable energy systems, such as fuel cells and redox flow batteries.
- Proton Exchange Membrane (PEM) - Nafion. sulfonic group, significant research in Per and Poly Fluoro Alkyl Substances (PFAS), but uncertainties about the fate of this contaminant.
- This study models ion transport in PEM using Langevin dynamics simulations to optimize efficiency, longevity, and sustainability.



Working Principle of Fuel Cell

<https://www.biolinscientific.com/blog/what-are-proton-exchange-membrane-fuel-cells-and-how-do-they-work>

Accessed August, 2025

PEM fuel cell stack.

<https://knowledge.electrochem.org/encycl/art-f04-fuel-cells-pem.htm>

Accessed August, 2025



Structure of the RFB stack.

Pan et al., The Innovation Energy. **2024**, 1(3): 100040

Research Objectives

- This research aims to investigate ion diffusivity, charge separation behaviour, and distribution dynamics in proton exchange membranes used in fuel cells and redox flow batteries.

Our objectives are:

- To quantify ion mobility within membranes.
- To determine the distribution of ions along the direction of the external field, and to quantify charge mixing and separation within the membrane.
- To investigate the role of membrane binding sites on the drift and retention behaviour of ions.

Simulation Description

- Modeling a Proton Exchange Membrane (PEM) with charged ions and acidic binding sites.
- The membrane is selectively permeable to influence the retention of positively charged particles.
- Langevin equation to capture both deterministic and random forces. It is expressed as:

- $m\ddot{x}_i(t) = -\gamma\dot{x}_i(t) + F_i(\vec{x}) + \sqrt{2D}\gamma\Gamma_i(t)$

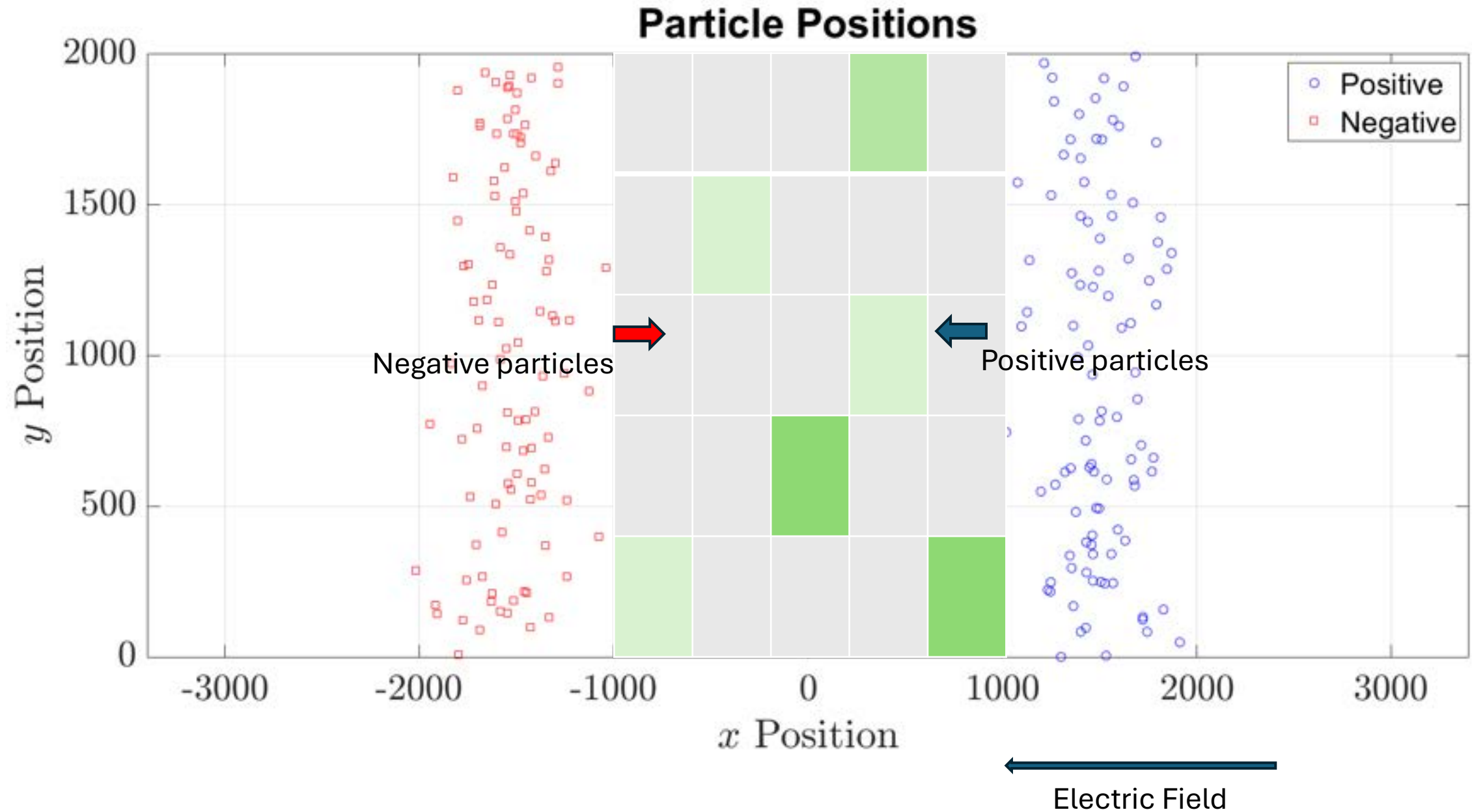
- $D = \frac{k_B T}{\gamma}$

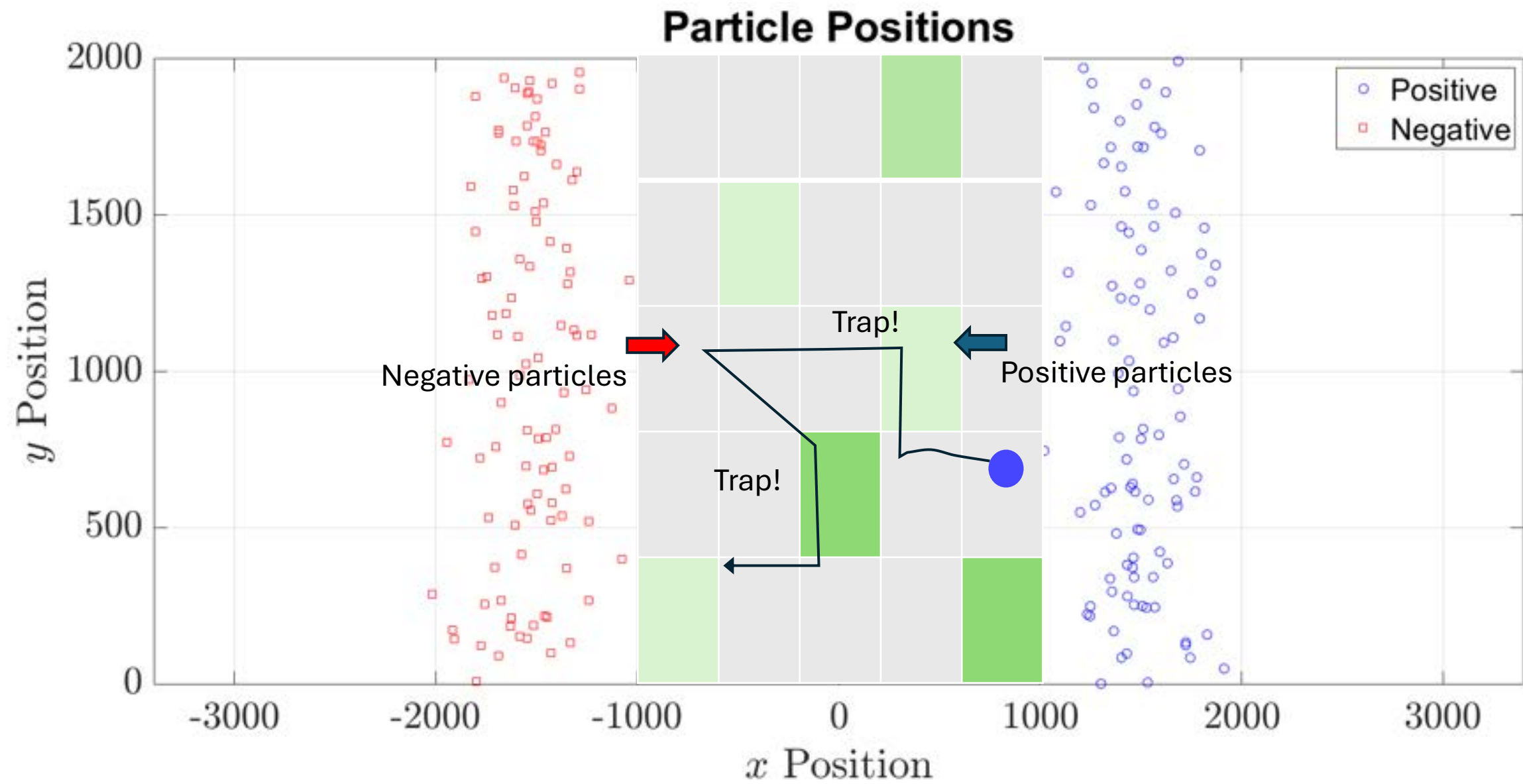
- $m\ddot{x}_i(t) \ll \gamma\dot{x}_i(t)$, so:

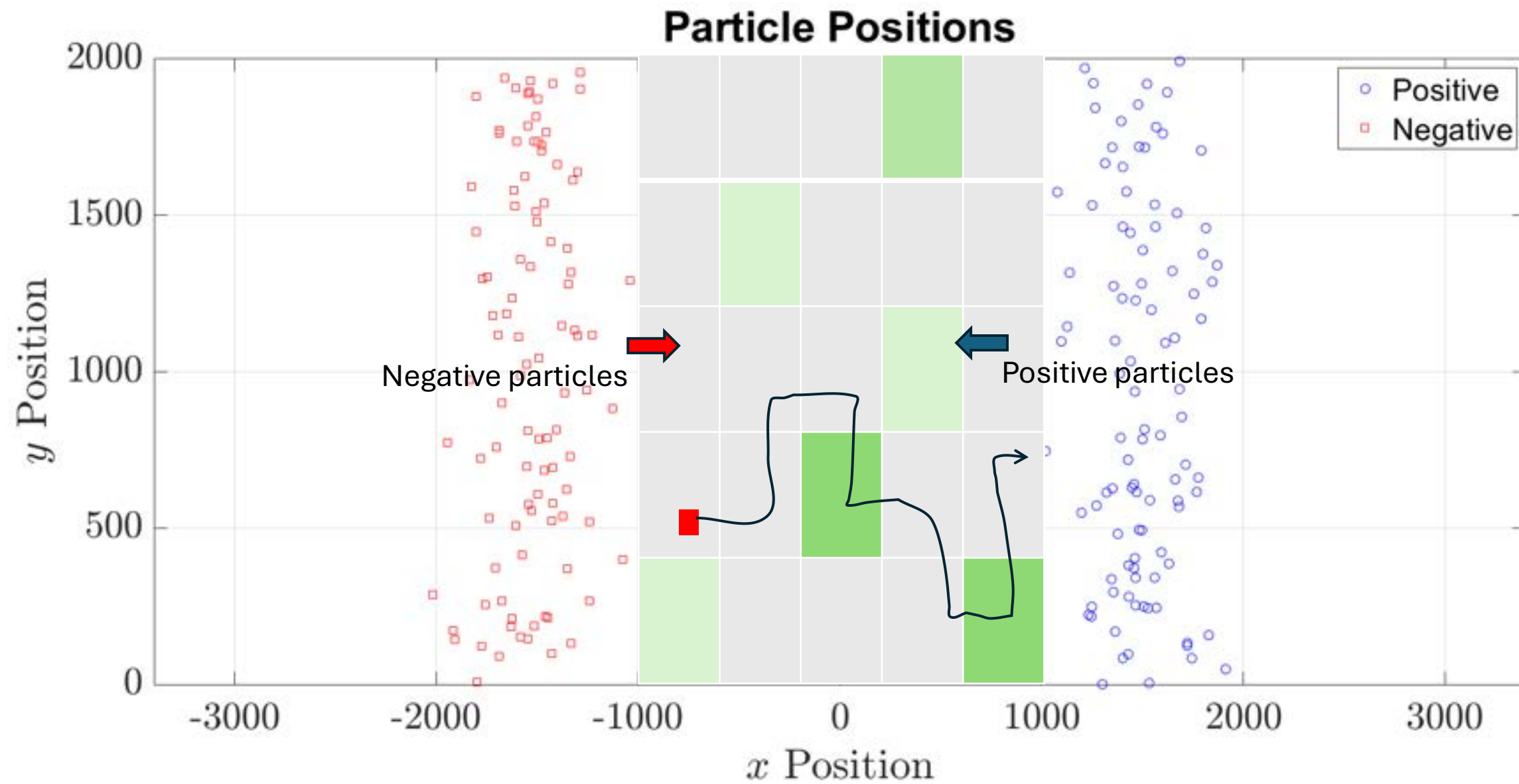
$$\gamma\dot{x}_i(t) \approx F_i(\vec{x}) + \sqrt{2D}\gamma\Gamma_i(t)$$

- $-\gamma\dot{x}_i(t)$ = Stokes' friction
- $F_i(\vec{x})$ = deterministic forces (electric field drift + binding site attraction + Coulomb forces)
- $\sqrt{2D}\gamma\Gamma_i(t)$ = stochastic force due to thermal noise

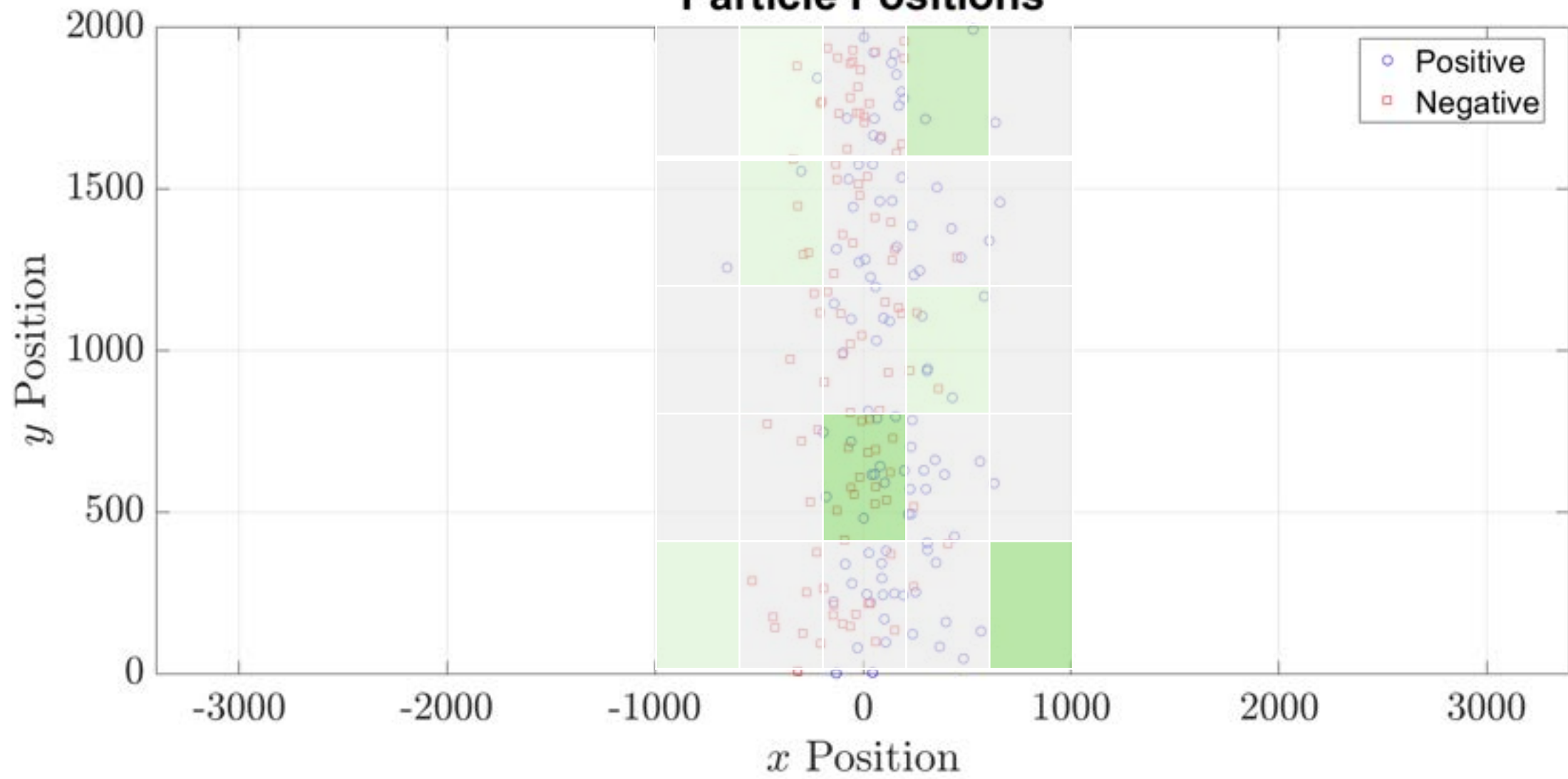
Simulation Description







Particle Positions



Take Home Messages

- Due to the combined effect of thermal diffusion and barriers in the Proton Exchange Membrane (PEM), ions undergo random walk (anomalous diffusion).
- Diffusion, drift due to external electric field, binding site interactions, and Coulomb forces collectively govern the trajectories of ions.
- Tuning membrane properties such as adjusting acidic binding sites density and hydration effects controls ion retention and transport efficiency.
- Insights support the design of better membranes for fuel cells and redox flow batteries.



PEOPLE, PLACE &
OUR SHARED ENVIRONMENTS

Afeez Jimoh

PhD Student, Earth & Energy Sciences

*Computational Modeling of Ion Transport Dynamics in Ion
Exchange Membranes for Sustainable Energy Systems*

Faculty Reference: Erez Aghion



PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Sydney McDermott

PhD Student, Environmental & Evolutionary Biology

*Observations of the Condition
of Deep-Sea Benthic
Communities in the Immediate
Vicinity of the Deepwater
Horizon Wreckage*

*Comparisons of Three Deep-Sea
Wreck Communities
in the Gulf of Mexico*

Faculty Reference: Craig McClain

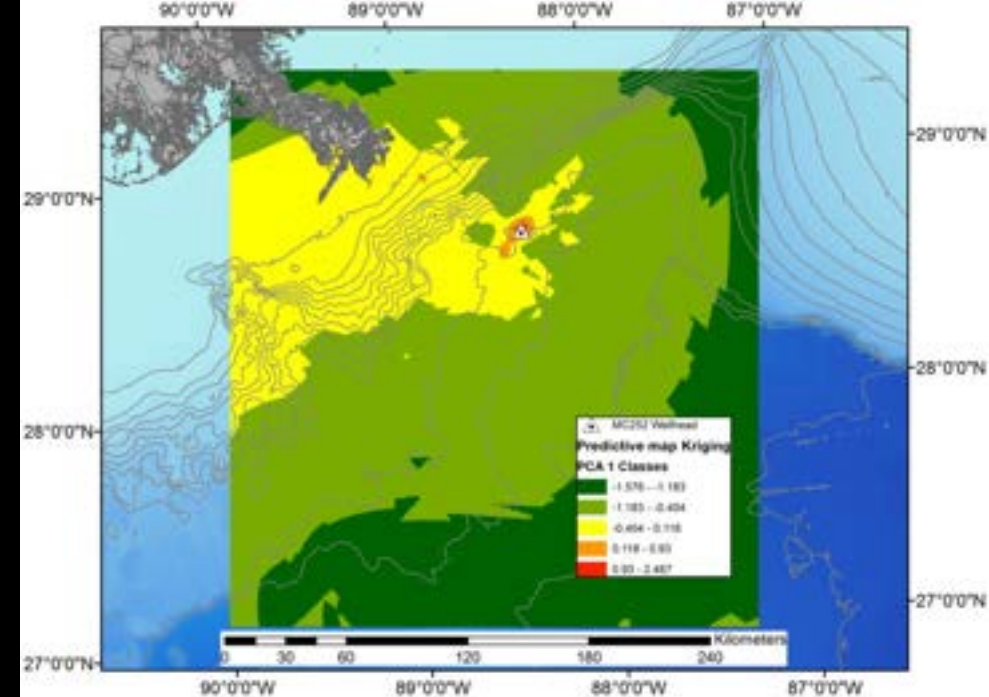
Current Observations of the Condition of Deep-Sea Benthic Communities in the Immediate Vicinity of the *Deepwater Horizon* Wreckage

Sydney McDermott, Mark Benfield, Craig McClain



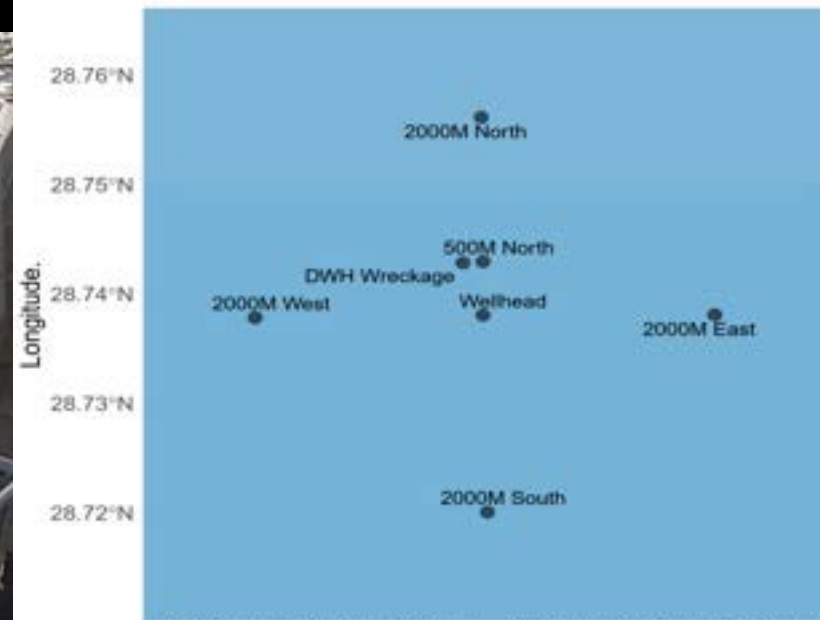
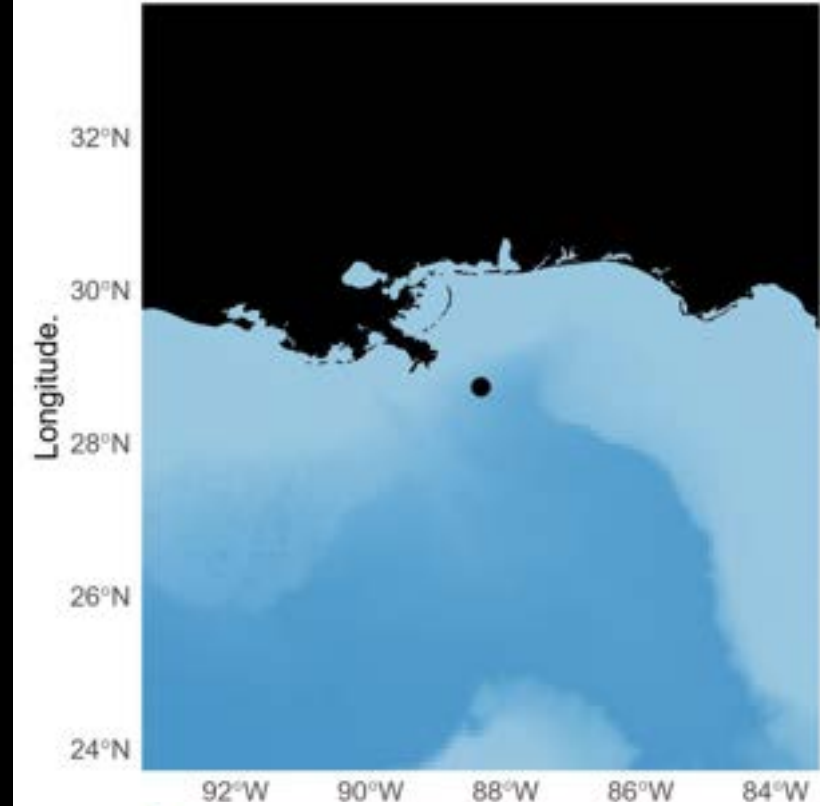
Introduction

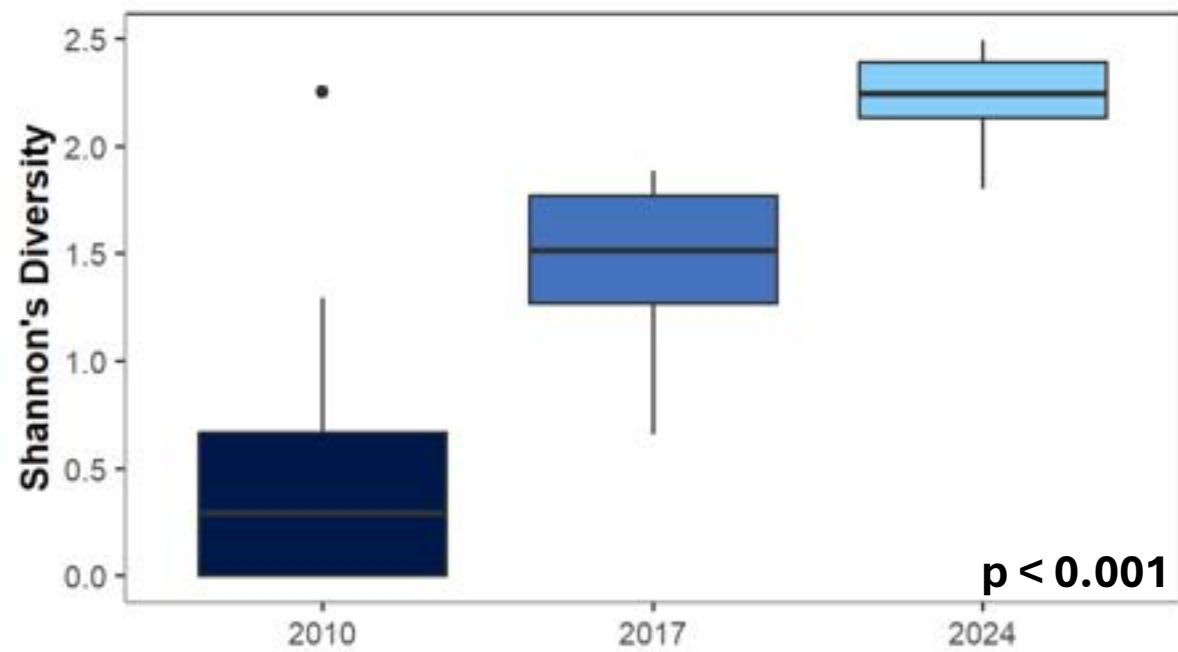
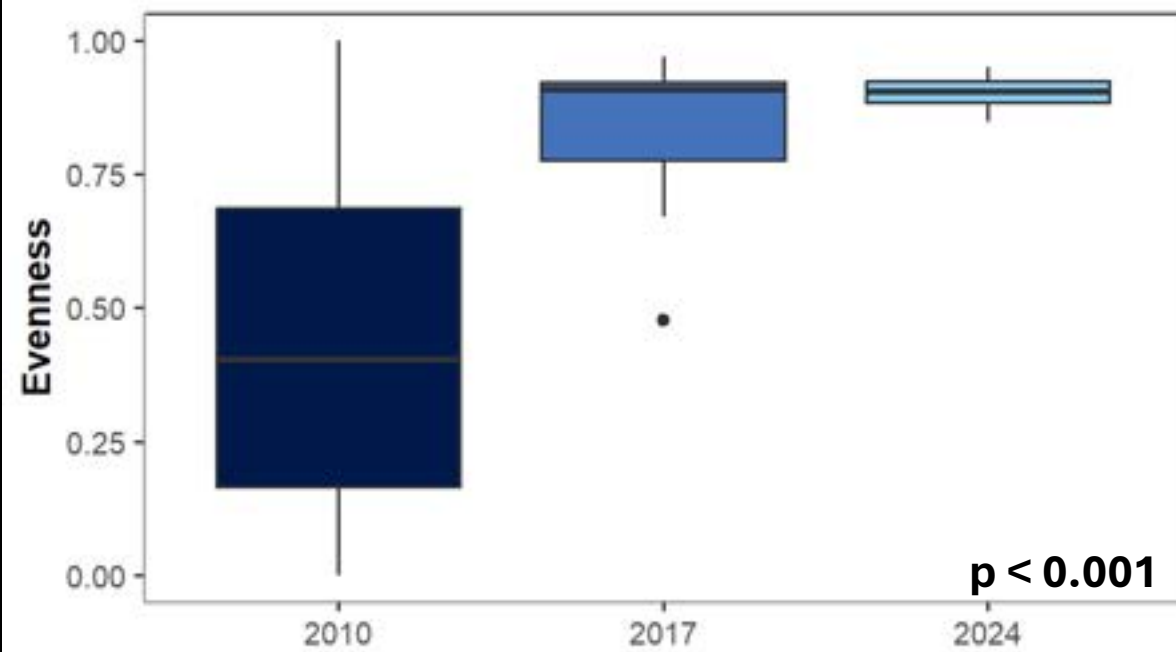
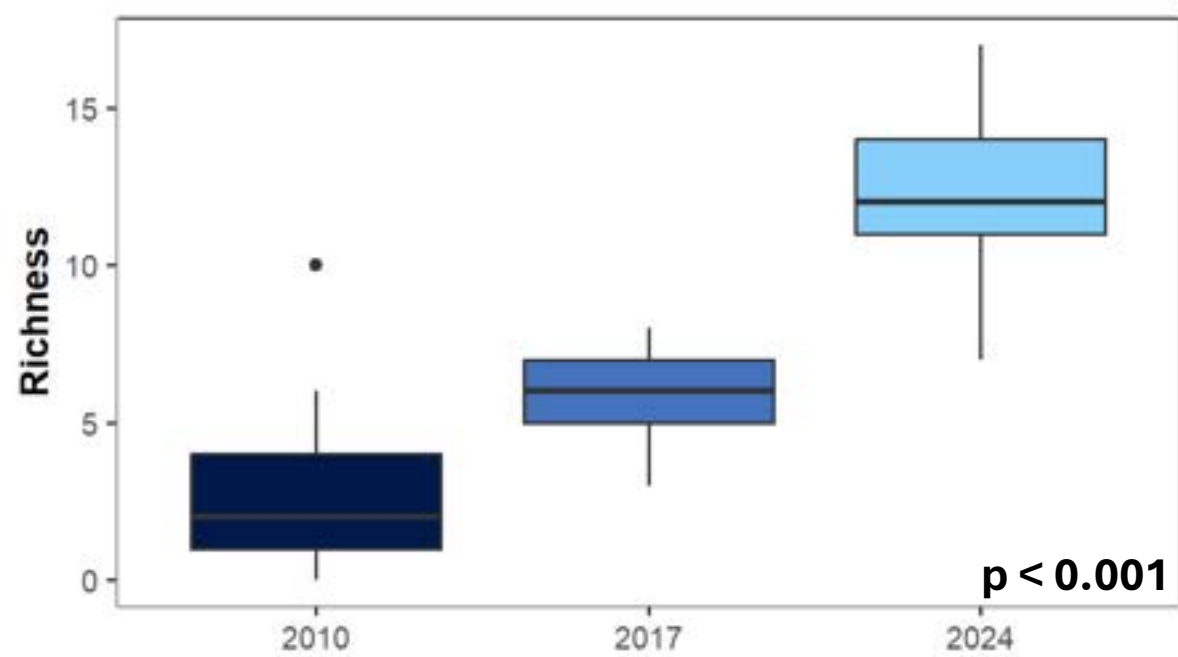
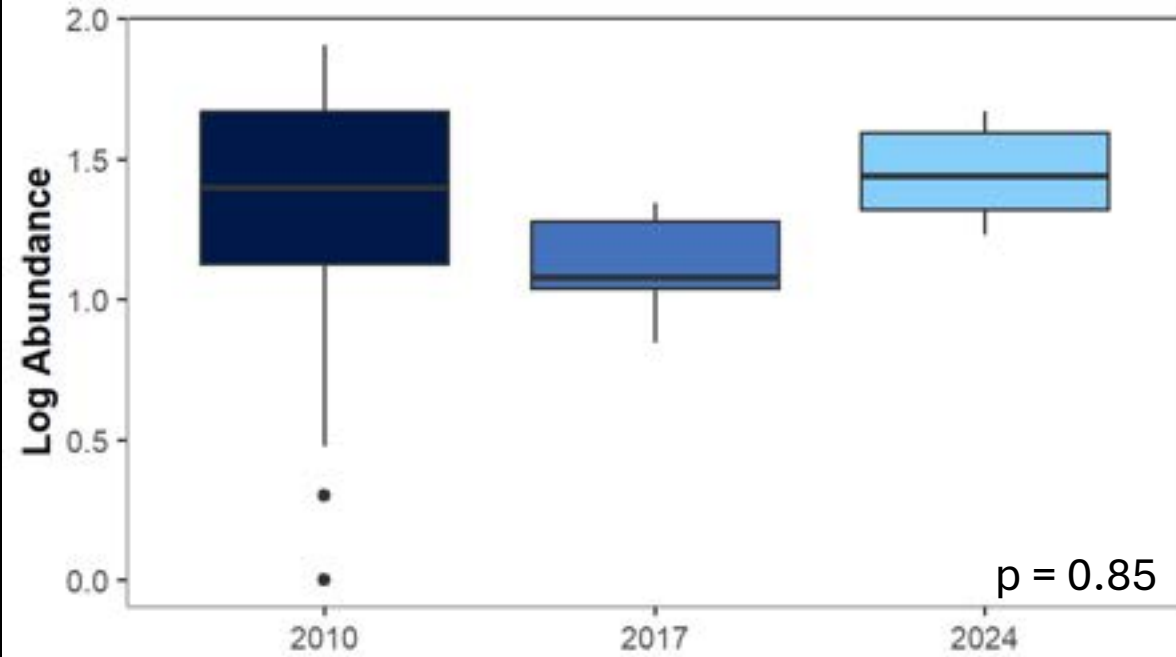
- April 20, 2010
- Approximately 3.19 million barrels of oil spilled
- Other studies focused on nearshore communities or specific organisms, but there is a lack of long-term monitoring
- How has the community in the vicinity of the *DWH* changed over time?

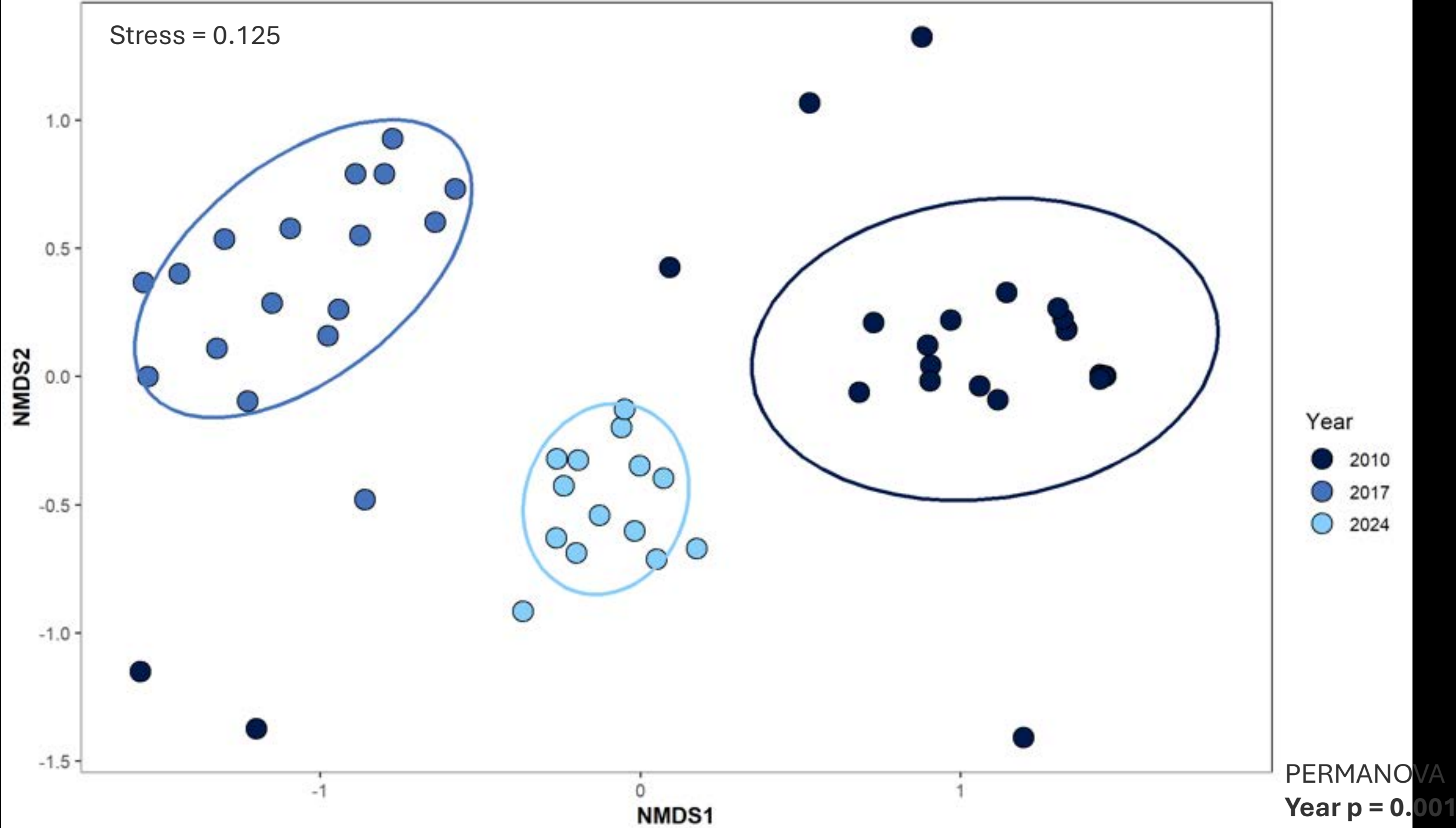


Methods

- 250-meter transects were performed by remotely operated vehicles in 2010, 2017, and 2024





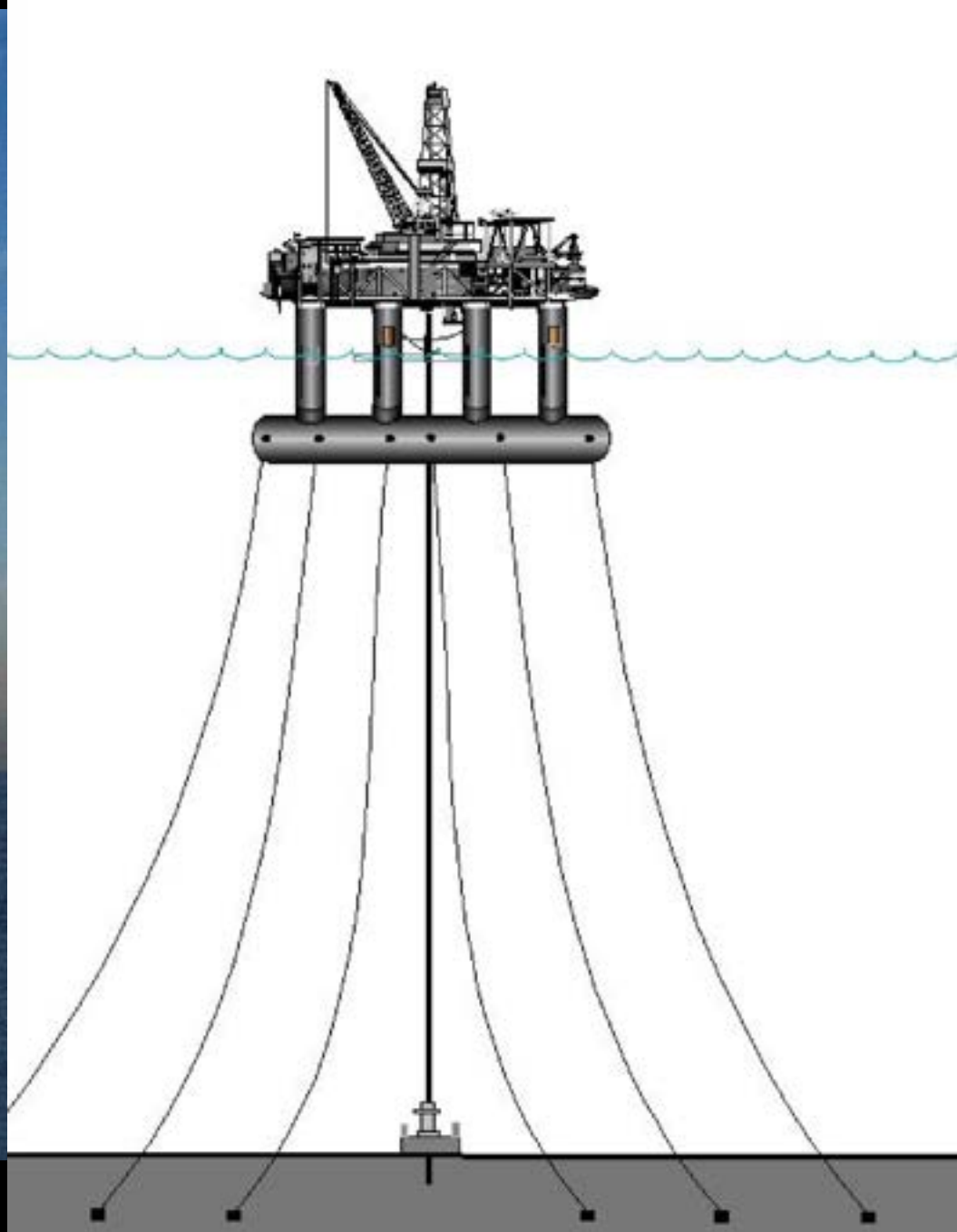




Conclusions

- The communities in the vicinity of the *DWH* oil spill are still changing, but further study is required to determine whether the sites are recovering (reference sites, continued observation)
- However, the oil itself was not the only thing left behind





Comparisons of Three Deep-Sea Wreck Communities in the Gulf of Mexico

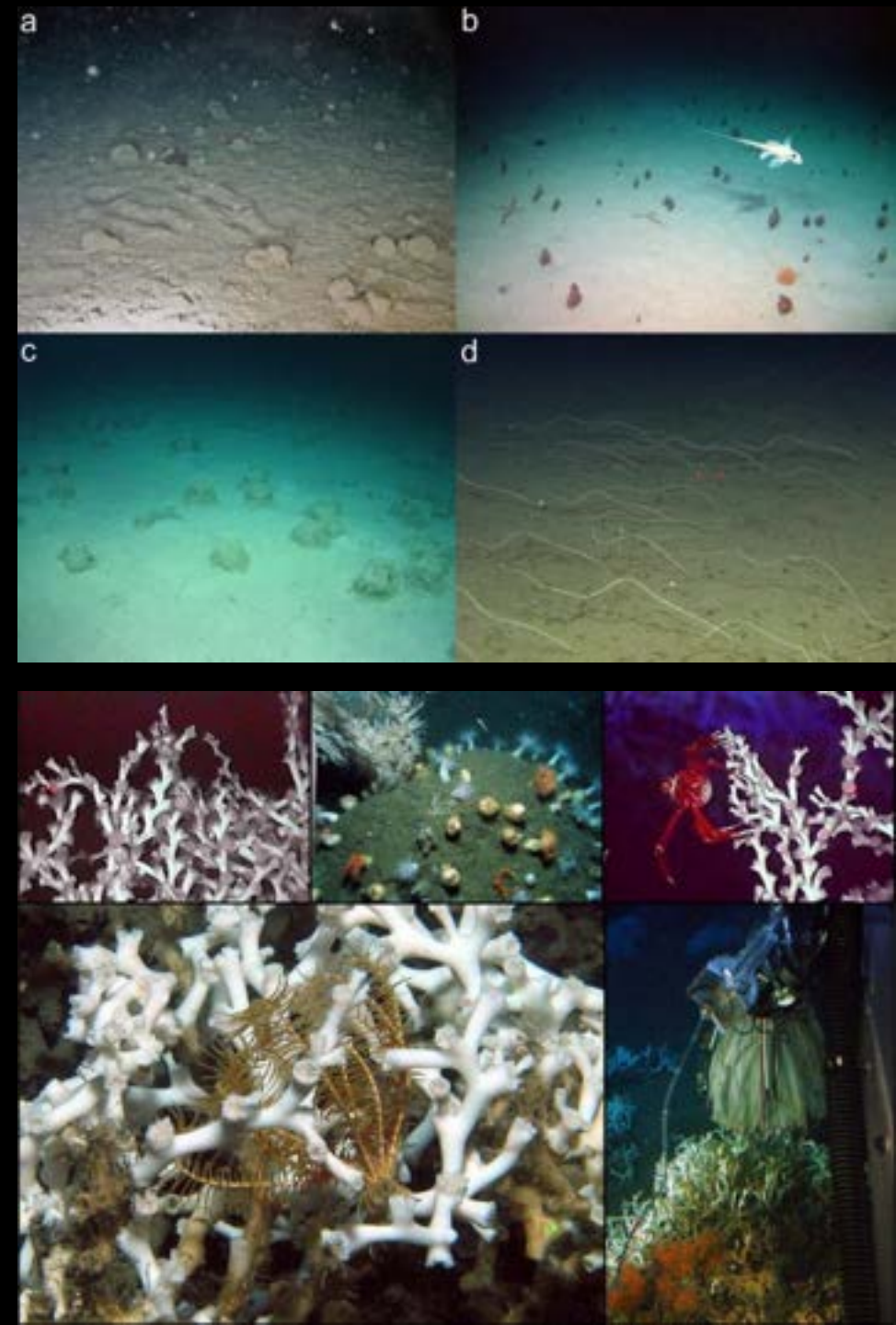
S. McDermott¹, M. Benfield², G. Hanks¹,
C. McClain¹

1: University of Louisiana at Lafayette, 2: Louisiana
State University



Introduction

- The deep sea is mostly soft sediment, >90% by surface area. Rare hard substrates host unique communities
- Man-made hard substrates may have properties that endanger deep-sea life
- How does community on the *DWH* compare to other shipwreck communities?



- *Deepwater Horizon*

- Depth: 1505 m
- Survey year: 2023, ROV Global Explorer
- Time on seafloor: 13 years
- Within oil impact area



- *SS Robert E Lee*

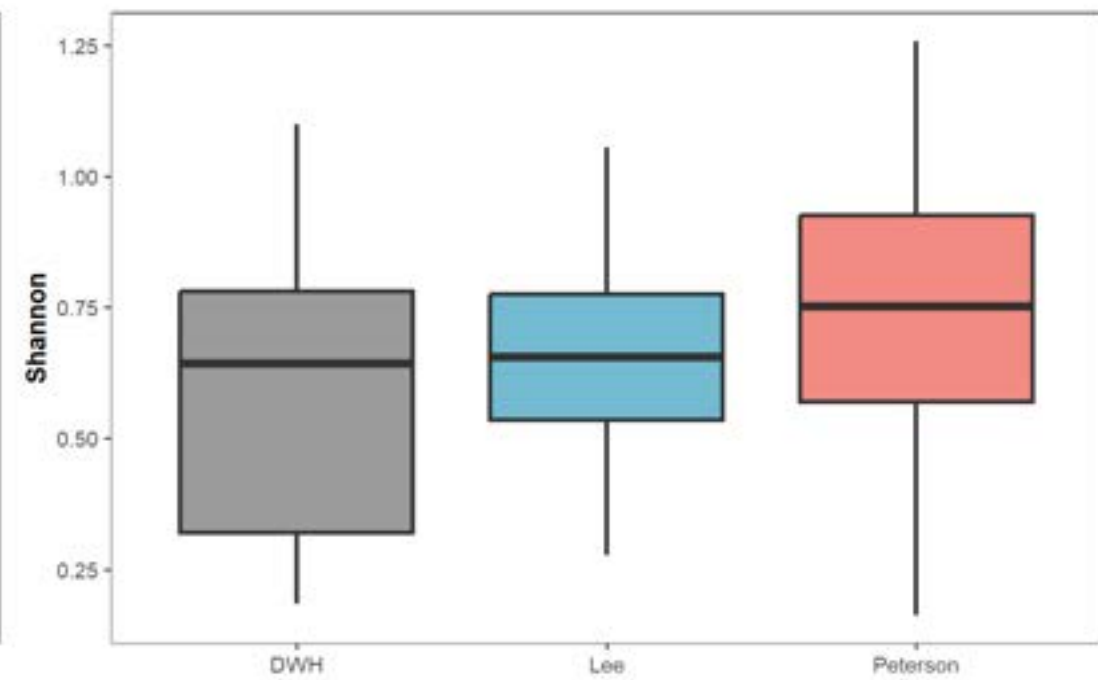
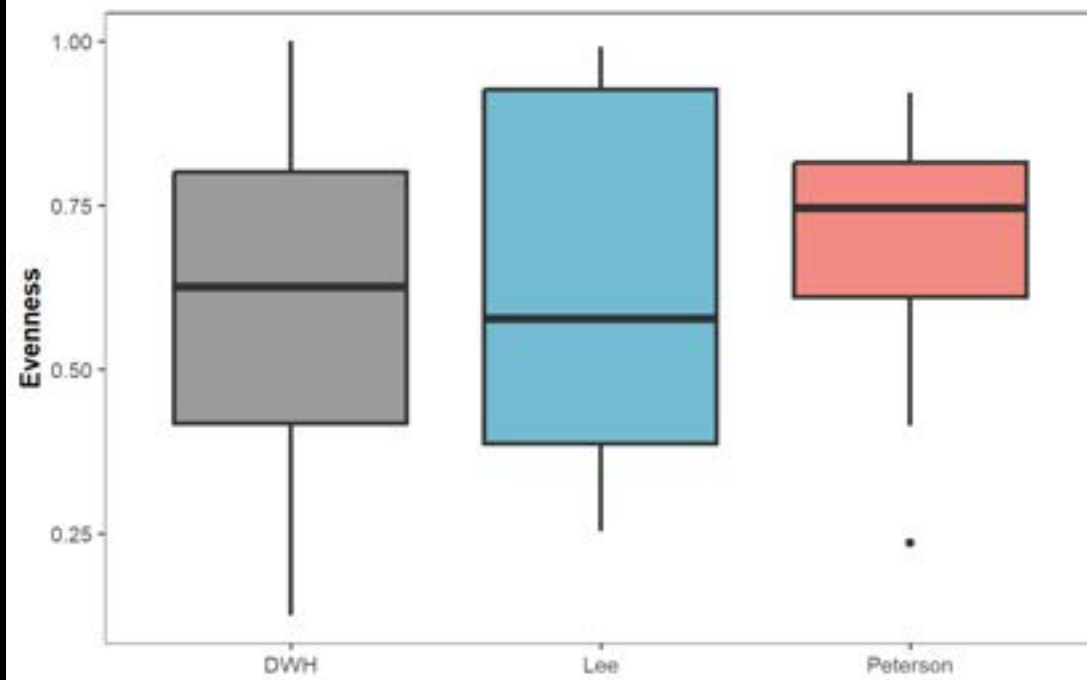
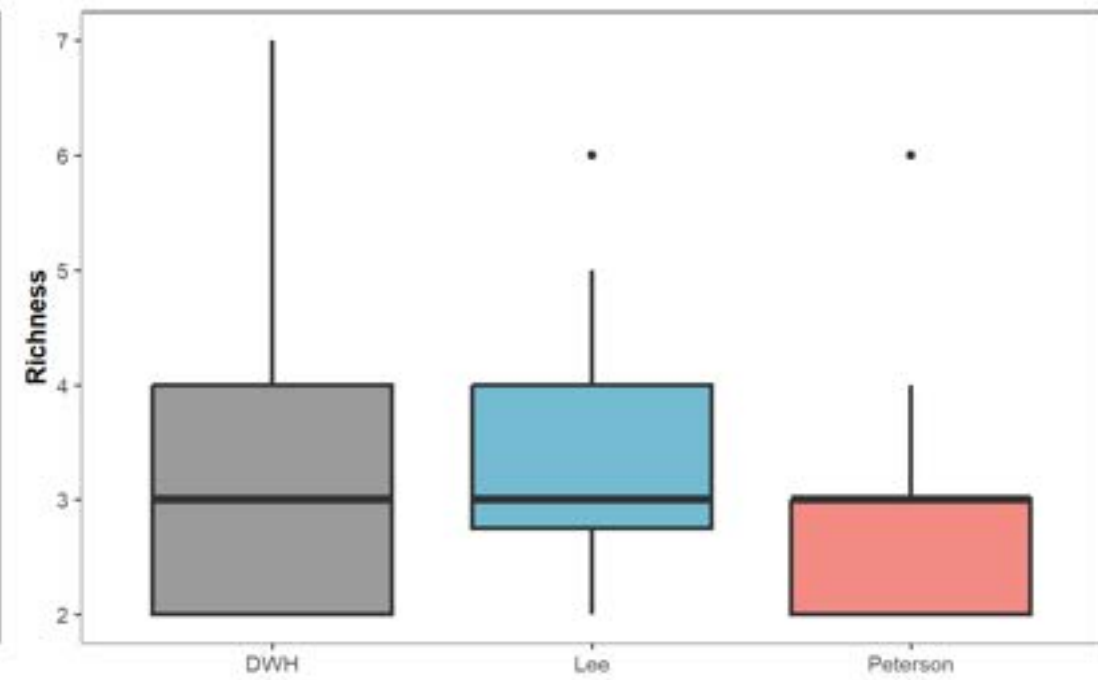
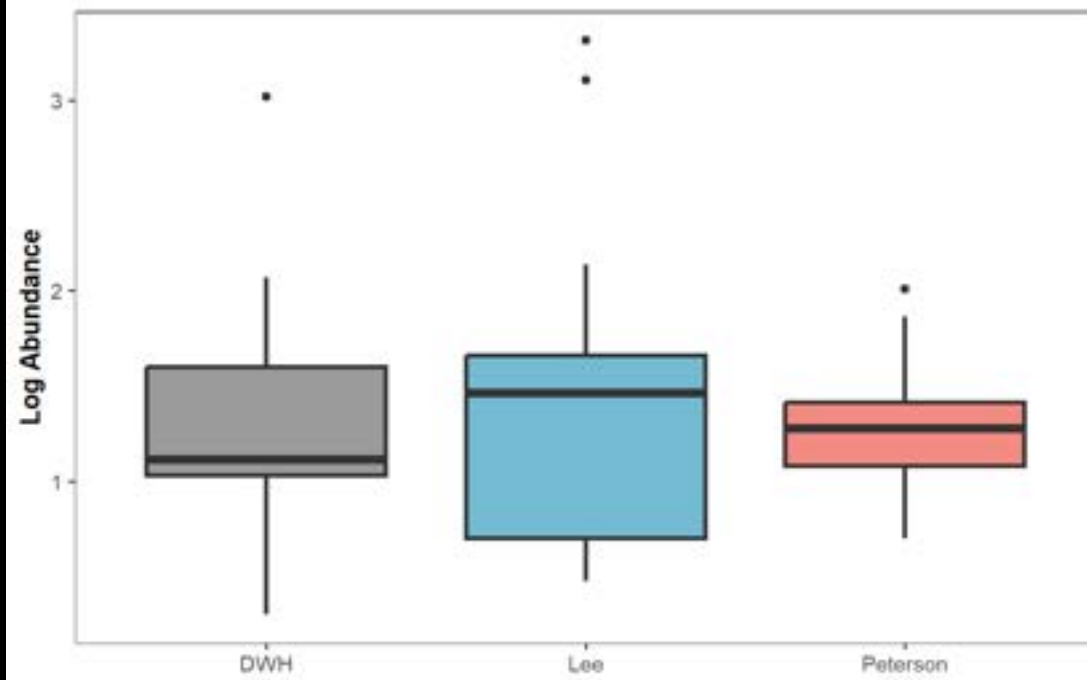
- Depth: 1500 m
- Survey year: 2014, ROVs Hercules and Argo
- Time on seafloor: 72 years
- Within oil impact area

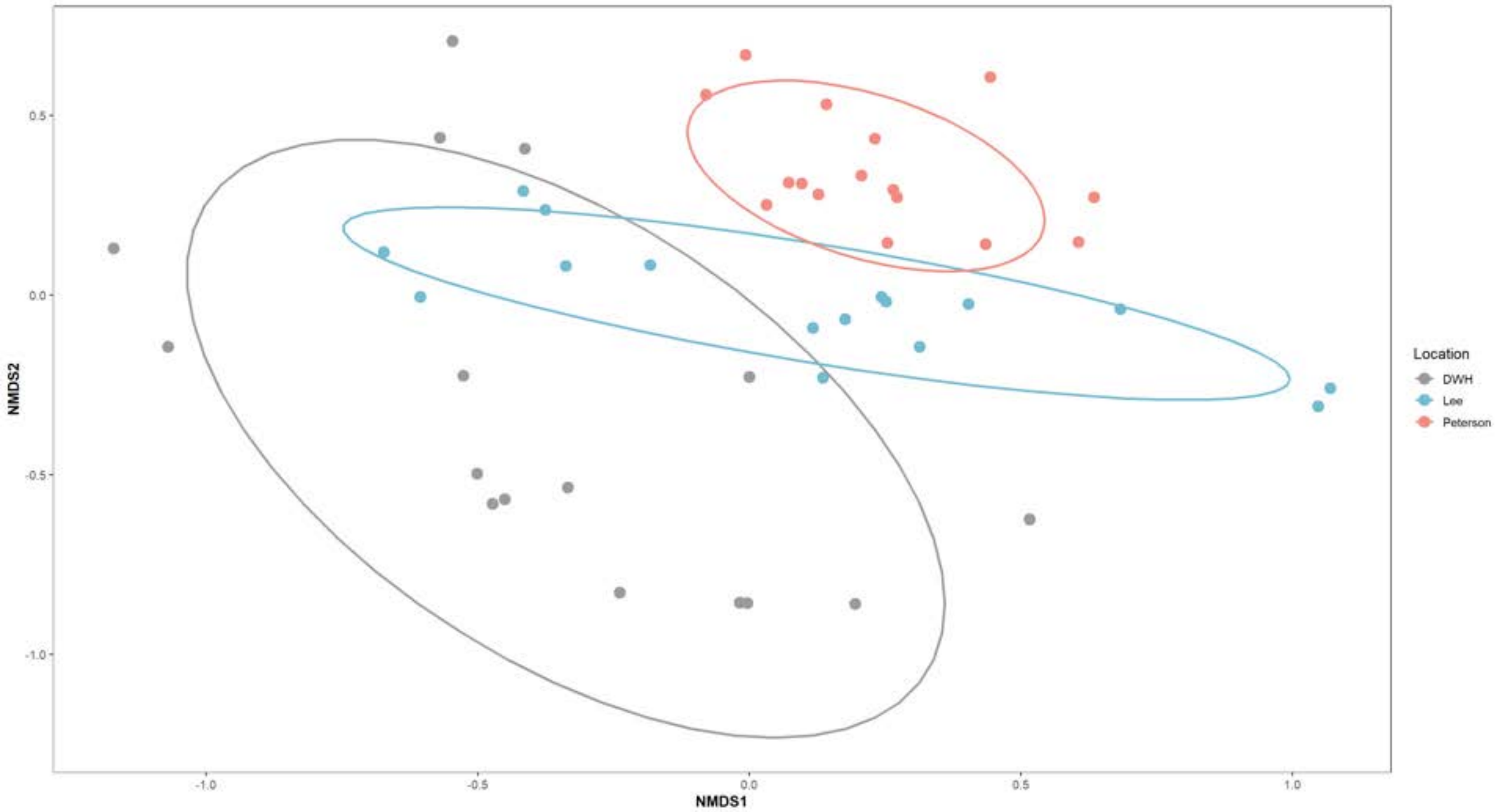


- *USS Peterson*

- Depth: 2400 m
- Survey year: 2014, ROVs Hercules and Argo
- Time on seafloor: 10 years
- Outside of oil impact area









Conclusion

- The *Deepwater Horizon* wreckage hosts a unique community compared to the shipwrecks of the *SS Robert E Lee* and *USS Peterson*
 - Potential factors: depth, oil, and time



Acknowledgements

- Craig McClain
- Mark Benfield
- Stephanie Farrington
- USGS
- Jacob Badcock
- Samuel Copley
- Kelly Sonnier

- Captains and crews of the *R/V Point Sur*, *R/V Nautilus* and NOAA ship *Nancy Foster*
- Pilots of *ROV Global Explorer*, *Odysseus*, *Hercules*, and *Argo*
- Funding for this work was provided by:
- The MDBC Habitat Assessment and Evaluation project, which was selected by the Open Ocean Trustee Implementation Group to restore natural resources injured by the 2010 *Deepwater Horizon* oil spill
- NSF Grant No. 1744048
- Louisiana Impact Research Awards Rounds 3 and 4





PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

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PhD Student, Environmental & Evolutionary Biology

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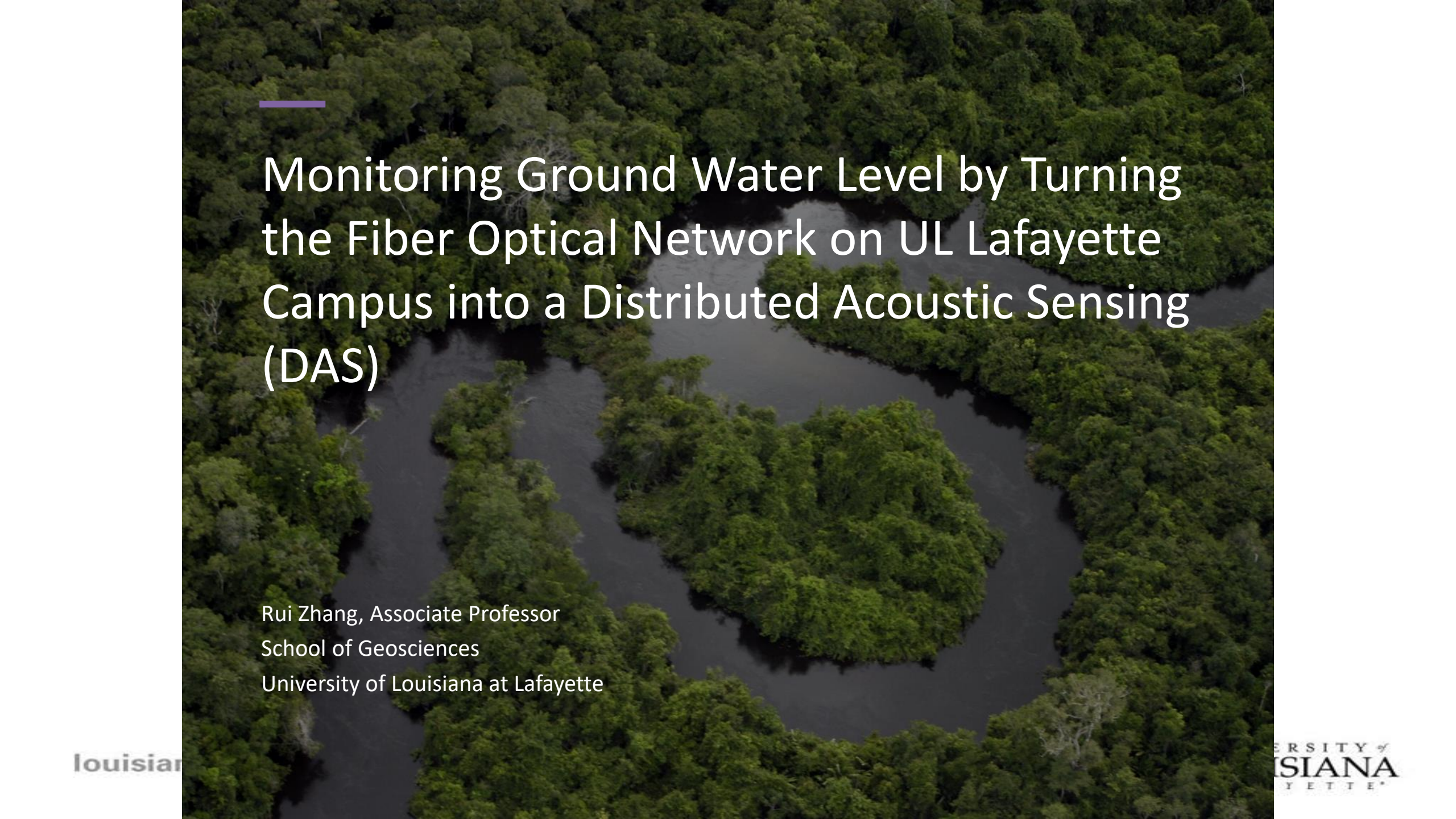


PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Rui Zhang

Associate Professor of Geosciences

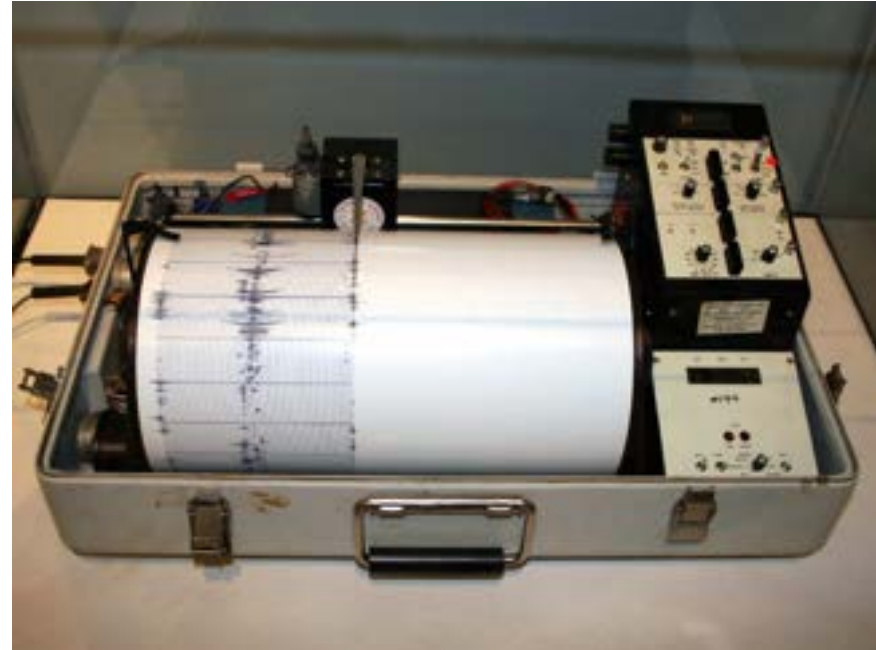
*Monitoring Ground Water Level by Turning the Fiber Optical Network
on UL Lafayette Campus into a Distributed Acoustic Sensor (DAS)*



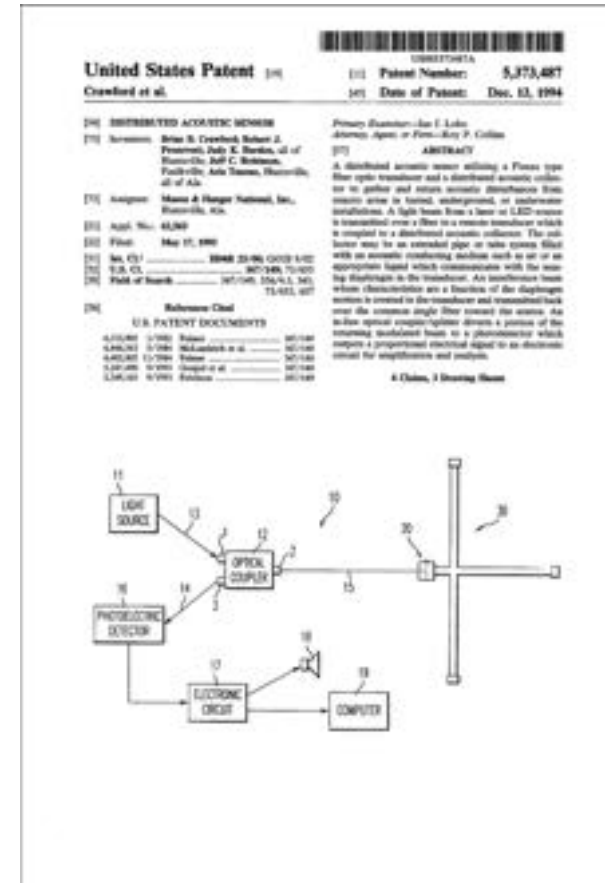
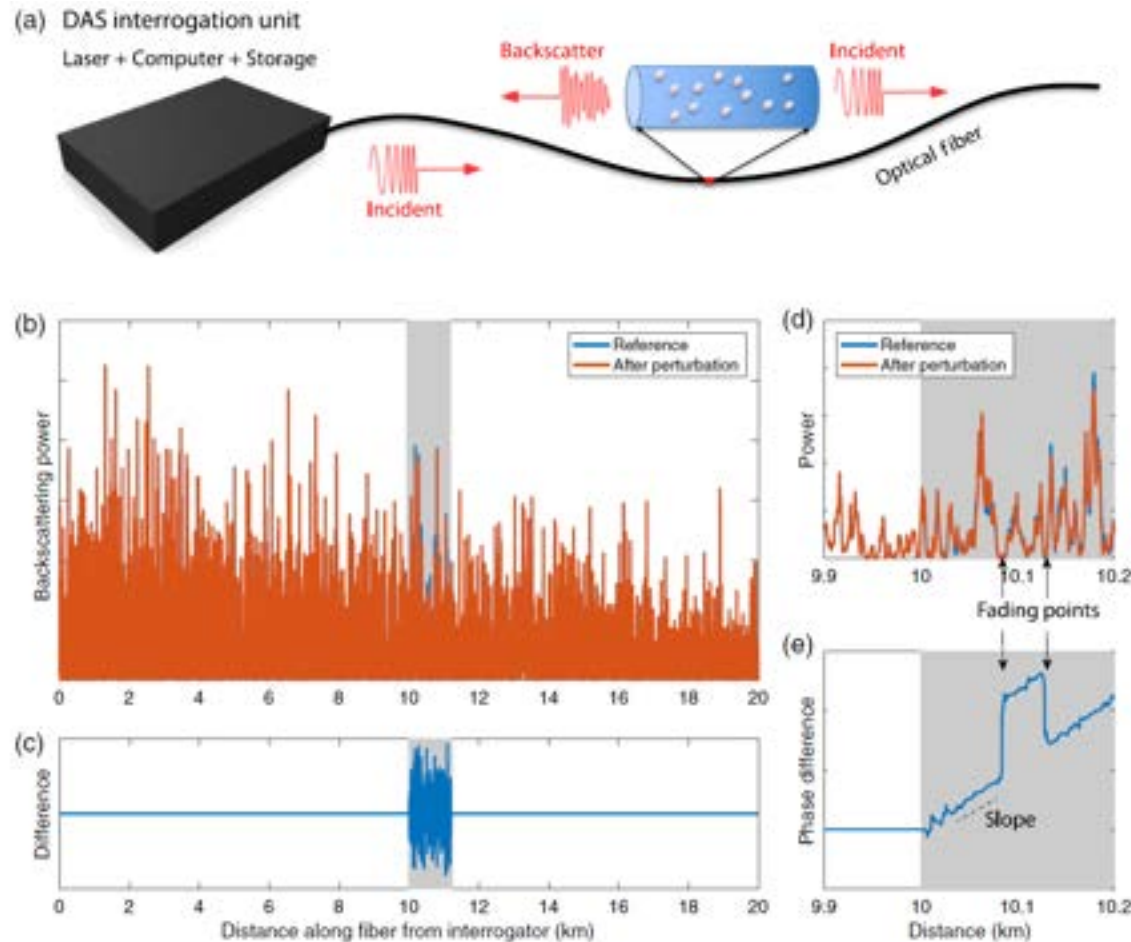
Monitoring Ground Water Level by Turning the Fiber Optical Network on UL Lafayette Campus into a Distributed Acoustic Sensing (DAS)

Rui Zhang, Associate Professor
School of Geosciences
University of Louisiana at Lafayette

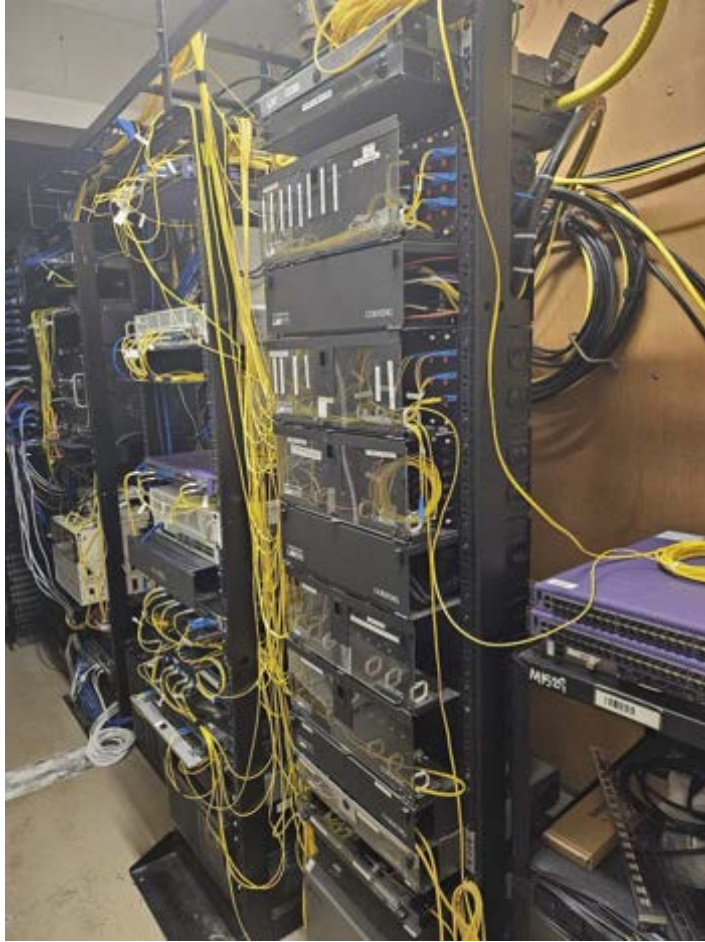
Distributed Acoustic Sensing (DAS)



Distributed Acoustic Sensing (DAS)



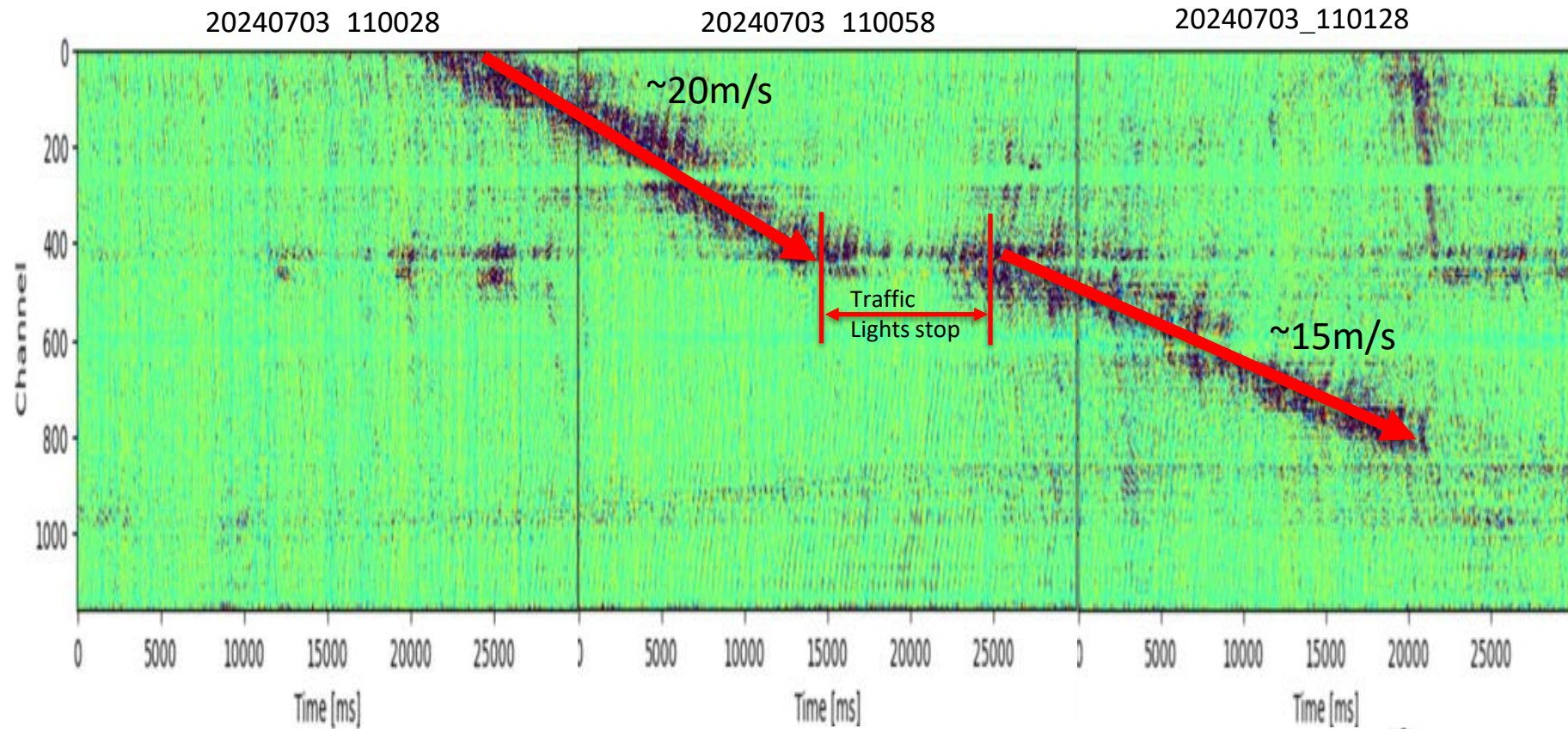
Fiber cable @ Abdalla Hall



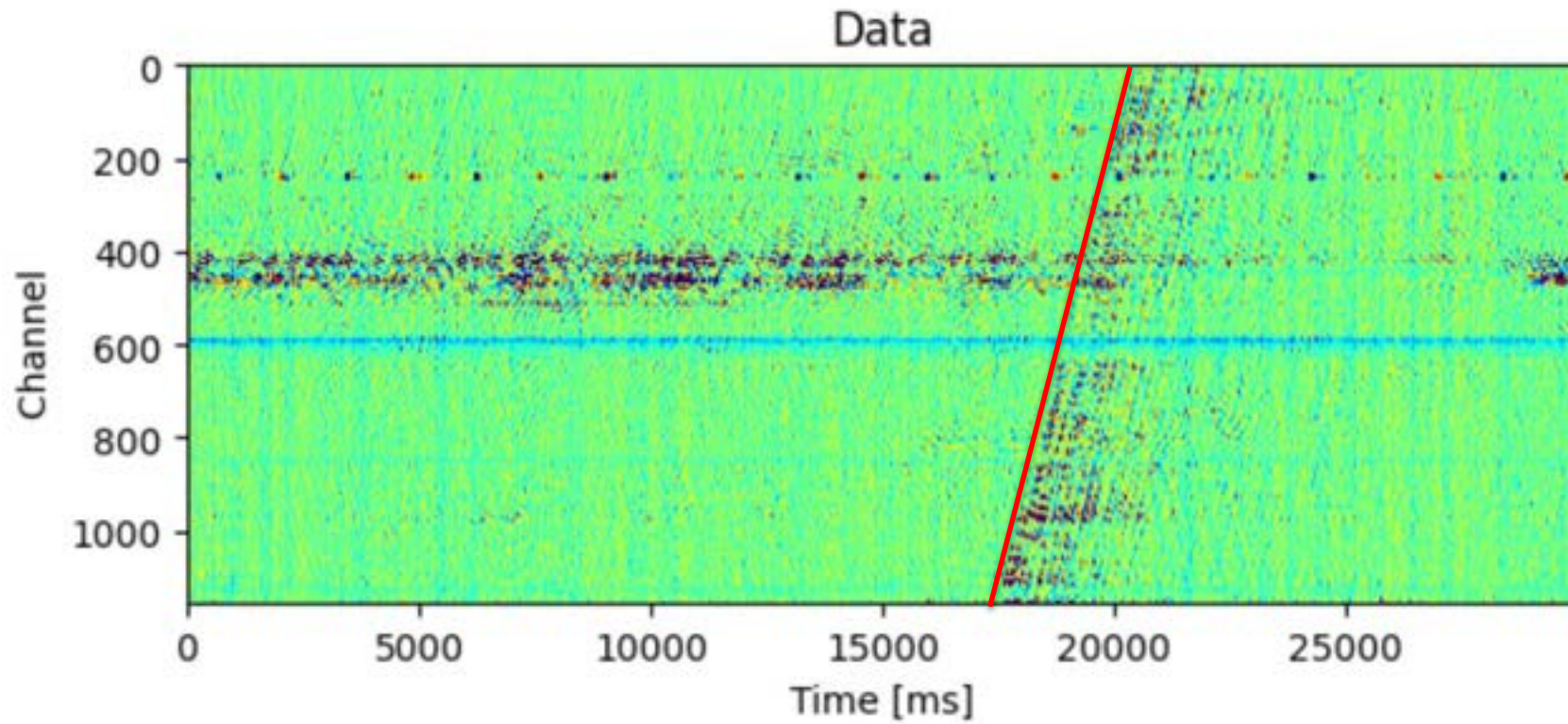
Installation of iDAS from Silixa LLC



Vehicle

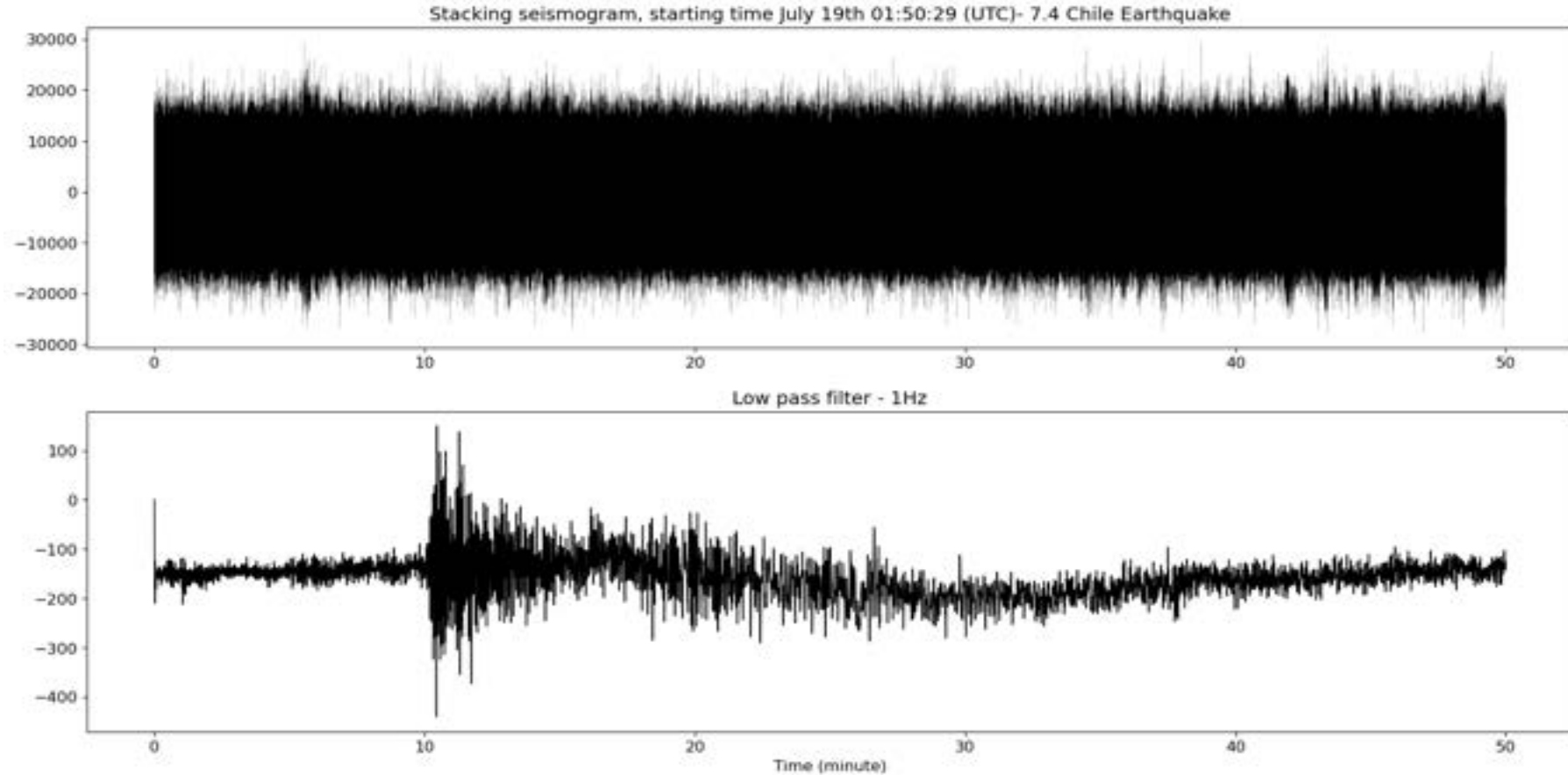


Thunderquake

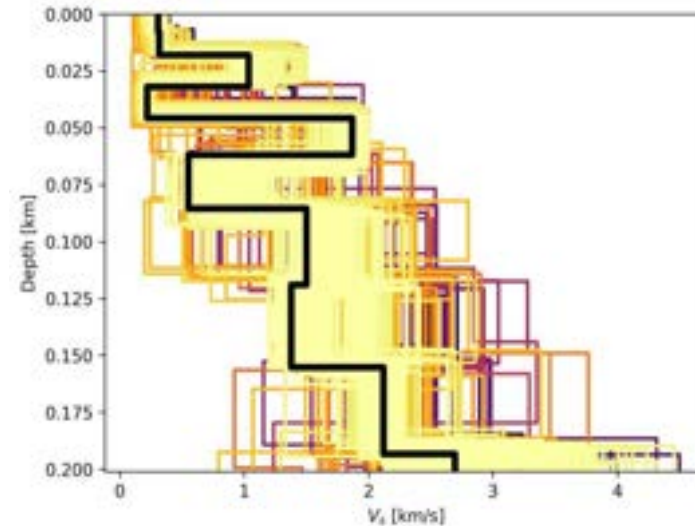
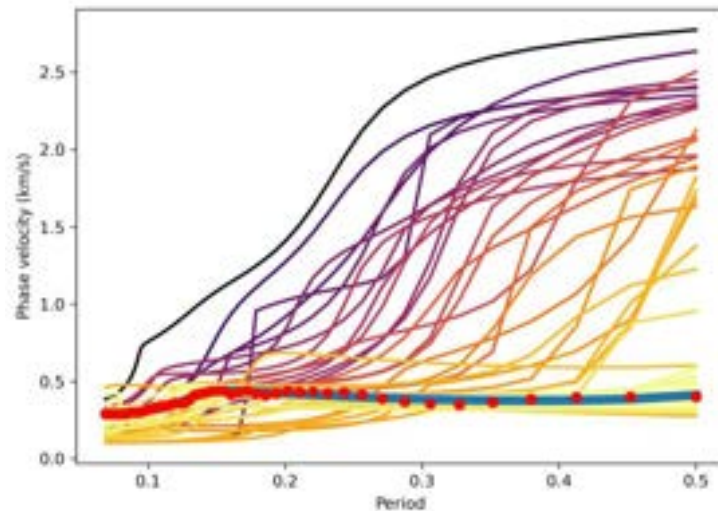
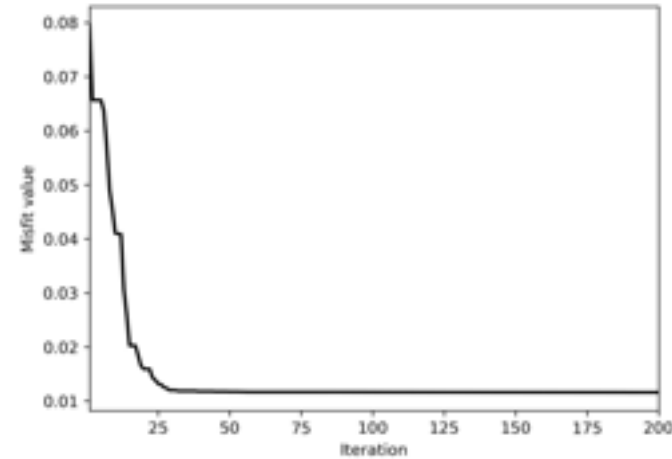
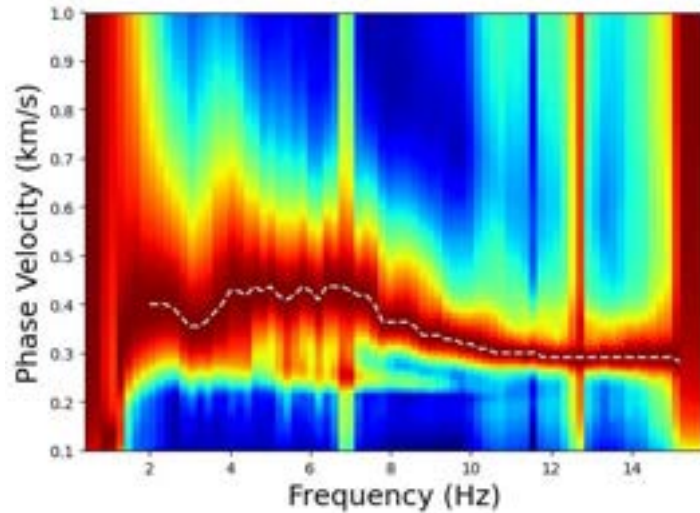


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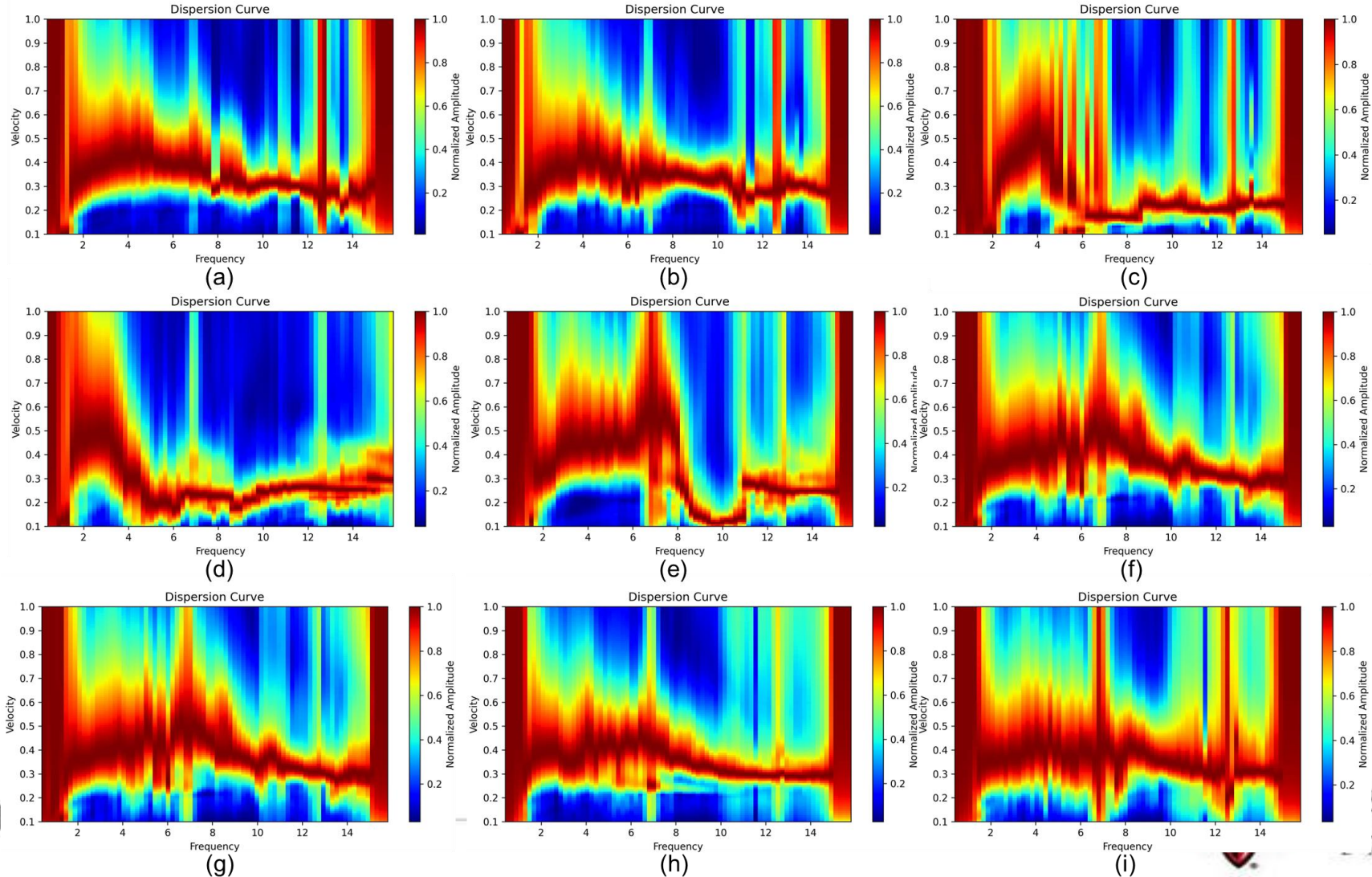
Earthquake



Surface wave dispersion to shear wave velocity

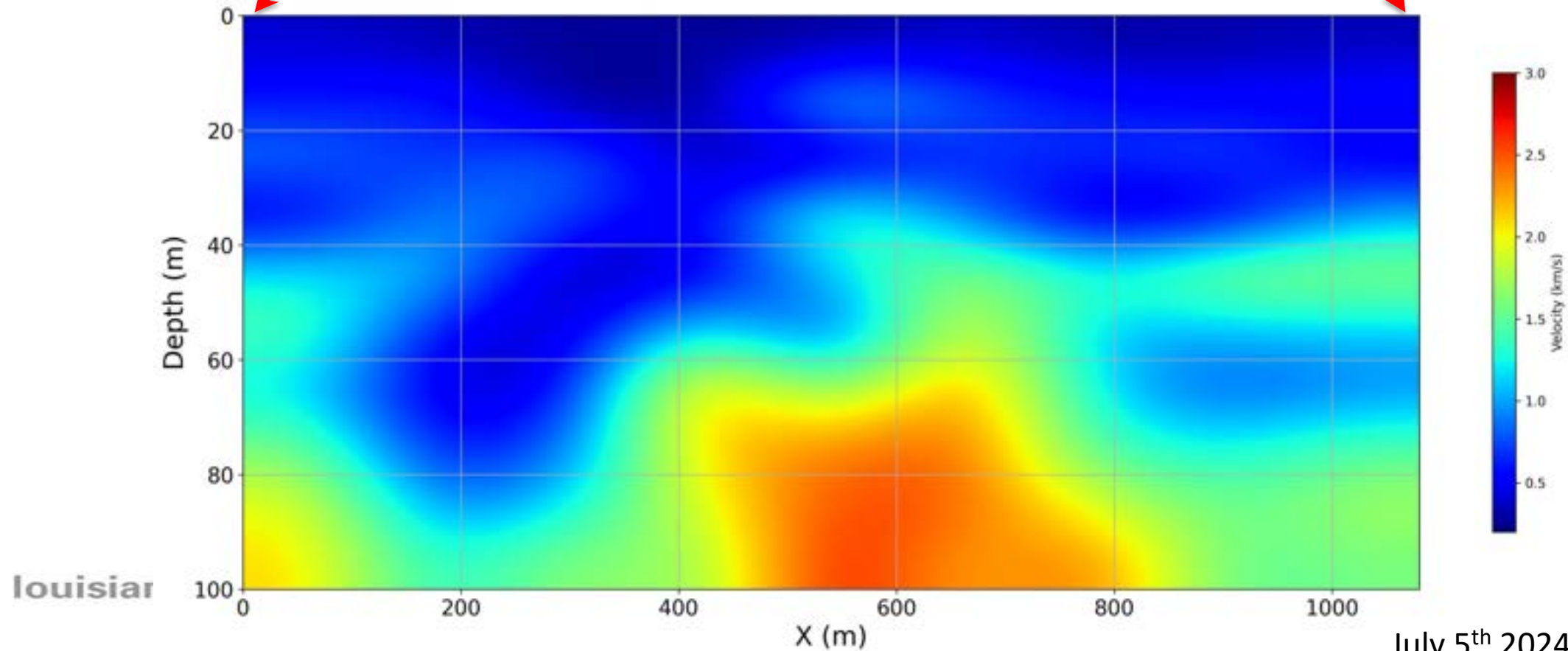


Surface wave dispersion curves





Velocity Model across DAS Profile



July 5th 2024

LONI



Collaboration needed

- Subsurface infrastructure information along Cajundome blvd needed



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PEOPLE, PLACE & OUR SHARED ENVIRONMENTS

Rui Zhang

Associate Professor of Geosciences

*Monitoring Ground Water Level by Turning the Fiber Optical Network
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HEALTH, WELLNESS & OUR SHARED EXPERIENCES

Bailey Singleton

Psychology major

*Consent in Media Consumption: Exploring Content Warnings
as Accessibility through Sexual Assault Survivor's Perspectives*

Faculty Reference: Amy Brown

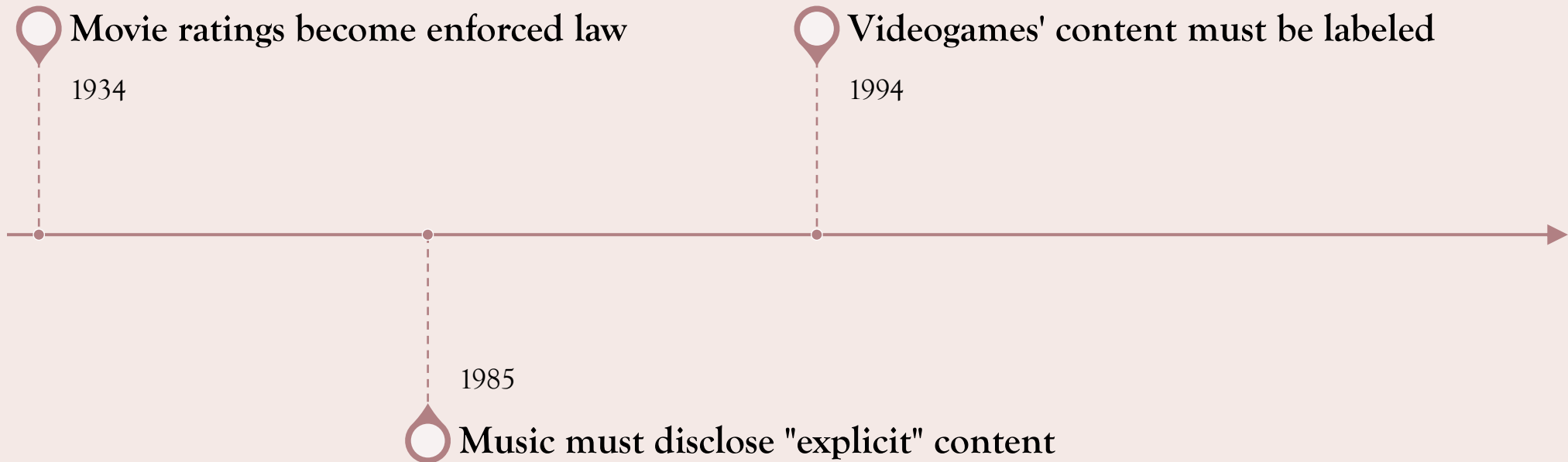
CONTENT WARNINGS AND ACCESSIBILITY

Research by UL's Sexual Violence Lab

(lead researcher: Bailey Singleton)



CONTENT WARNINGS: NOTHING NEW



So, what do these content warnings have in common?

- Established
- Exact Metrics
- Ratified under U.S. Law (very big deal)

CONTENT WARNINGS FOR TRAUMA

- Content warnings for discussions/depictions of sexual violence began in feminist spaces in the early 90s to support survivors (Cornell University, 2024)
- Today, these warnings are widely accepted and utilized
 - o Today's biggest social media sites (e.g. Instagram, Tik Tok, Youtube) use visual and written content warnings
 - o In a study of 829 U.S. professors, over half had utilized content warnings (Kamenetz, 2016)
 - Most professors did so on their own accord

UTILIZED, BUT NOT ESTABLISHED

What our research wants to discover about content warnings for sexual violence:

- What:

- What creates an effective content warning? (e.g. how much detail is preferred? What terminology is best for survivors? Are visual or written warnings most effective?)

- Where:

- Where should content warnings be utilized? (e.g., how should content warnings be handled in the news vs fictional media? Should warnings be utilized if it may be a "spoiler?" Should there be standardized CW requirements across some/all media?)

- How:

- How do content warnings affect the populations they were created to support? (e.g., do survivors utilize CWs? Do their friends and families use these warnings? Do participants perceive more animosity or support for CWs?)

WHO WOULD KNOW THESE ANSWERS?

- The populations that content warnings were created for!
- Current research focuses on:
 - General population
 - Students
 - Overall: little to no specific focus on those affected by sensitivity to trauma

OUR RESEARCH'S FUTURE

- We will be:
 - conducting focus groups of self-identified sexual violence survivors
 - asking 13 questions about survivors' perceptions on content warnings and their effectiveness
 - Collecting our findings to hopefully help both survivors and content creators to create a more accessible world!

REFERENCES

- For info on trigger warnings' beginnings in feminist circles:

Cornell University. “Do Trigger Warnings Work?” Cornell.edu, 2024,

<https://evidencebasedliving.human.cornell.edu/blog/do-trigger-warnings-work/>.

Accessed 21 July 2025.

- For info on NPR's study about professor usage of content warnings:

Kamenetz, A. (2016, September 7). *Half Of Professors In NPR Ed Survey Have Used “Trigger*

Warnings.”NPR.org. <https://www.npr.org/sections/ed/2016/09/07/492979242/half-of-professors-in-npr-ed-survey-have-used-trigger-warnings>



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HEALTH, WELLNESS & OUR SHARED EXPERIENCES

Elizabeth Drell

Psychology major

*Alcohol Intoxication as a Moderator of Bias
Against Transgender Victims of Sexual Assault*

Faculty Reference: Amy Brown

Alcohol Intoxication as a Moderator of Bias Against Transgender Sexual Assault Victims

A DEEP DIVE INTO COVERT BIASES

Elizabeth Drell and Dr. Amy Brown

As anti-transgender legislation is becoming more prevalent, it is more important than ever to keep researching about the transgender community and how biases effect them.

PRIOR RESEARCH...

Violence

Compared to cisgendered persons, transgender people are 4 times more likely to experience violence, including rape, sexual assault, and simple assault (Flores et al., 2021).

Sexual Assault

In a study conducted by Abern et al. (2023), in a sample of 96,000 transgender/gender diverse persons, 47% had experienced sexual assault. Over 34% of those assaulted were transfeminine and 46% were transmaculine.

Victim Blame

Transgender men and transgender women victims of sexual assault received greater levels of victim blaming compared to cisgender men and women (Davies & Hudson, 2011).

COVERT VS OVERT BIASES



Covert Bias


Hidden or Disguised

Can be subconscious or unintentional, causing it to be more difficult to analyze, as participants are often unaware of its presence

Overt Bias

Obvious or deliberate

Often times, the participant is aware of their bias and actively promote ideologies that align with it



**COVERT BIASES ARE OFTEN AMPLIFIED WHEN A
SITUATION'S CIRCUMSTANCES MAY BE AMBIGUOUS
AND CAN BE USED TO REINFORCE HIDDEN
PREJUDICE.**

STUDY'S FOCUS:

*HOW COVERT BIASES AGAINST
TRANSGENDER VICTIMS MAY BE
AMPLIFIED IN PARTICIPANTS WHEN
COMBINED WITH VICTIM ALCOHOL
CONSUMPTION PRIOR TO THE SEXUAL
ASSAULT*

METHOD:

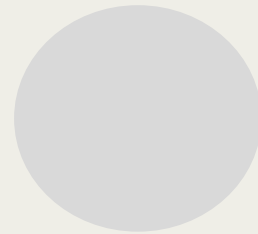
- 1 OF 4 POSSIBLE VIGNETTES
 1. CISGENDER WOMAN, INTOXICATED
 2. CISGENDER WOMAN, SOBER
 3. TRANSGENDER WOMAN, INTOXICATED
 4. TRANSGENDER WOMAN, SOBER
- QUESTIONS ACCOMPANYING VIGNETTES
- GENDERISM AND TRANSPHOBIA SCALE

WHAT WE PREDICT

Considering prior research, we expect that alcohol consumption will act as a moderator in the perception of transgender sexual assault victims and justify bias.

Data is currently being collected and we expect to start analysis by the end of the fall semester.

Thank you!



REFERENCES

- Abern, L., Diego, D., Krempasky, C. et al.(2023) Prevalence of Sexual Assault in a Cohort of Transgender and Gender Diverse Individuals. J GEN INTERN MED 38, 1331-1333. <https://doi.org/10.1007/s11606-022-07900-y>
- Davies, M., & Hudson, J. (2011). Judgments toward male and transgendered victims in a depicted stranger rape. Journal of homosexuality, 58(2), 237–247. <https://doi.org/10.1080/00918369.2011.540179>.
- Flores, A. R., Meyer, I. H., Langton, L., & Herman, J. L. (2021). Gender Identity Disparities in Criminal Victimization: National Crime Victimization Survey, 2017-2018. American journal of public health, 111(4), 726–729. <https://doi.org/10.2105/AJPH.2020.306099>
- Tebbe, E. A., Moradi, B., & Ege, E. (2014, January 1). Revised and Abbreviated Forms of the Genderism and Transphobia Scale: Tools for Assessing Anti-Trans* Prejudice. JOURNAL OF COUNSELING PSYCHOLOGY, 61(4), 581–592.



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HEALTH, WELLNESS & OUR SHARED EXPERIENCES

Jacob Norris

Master in Psychology student

*The Relationships Between Ego Depletion and Social Behaviors
Across Different Degrees of Psychological Flexibility*

Faculty Reference: Emily Sandoz

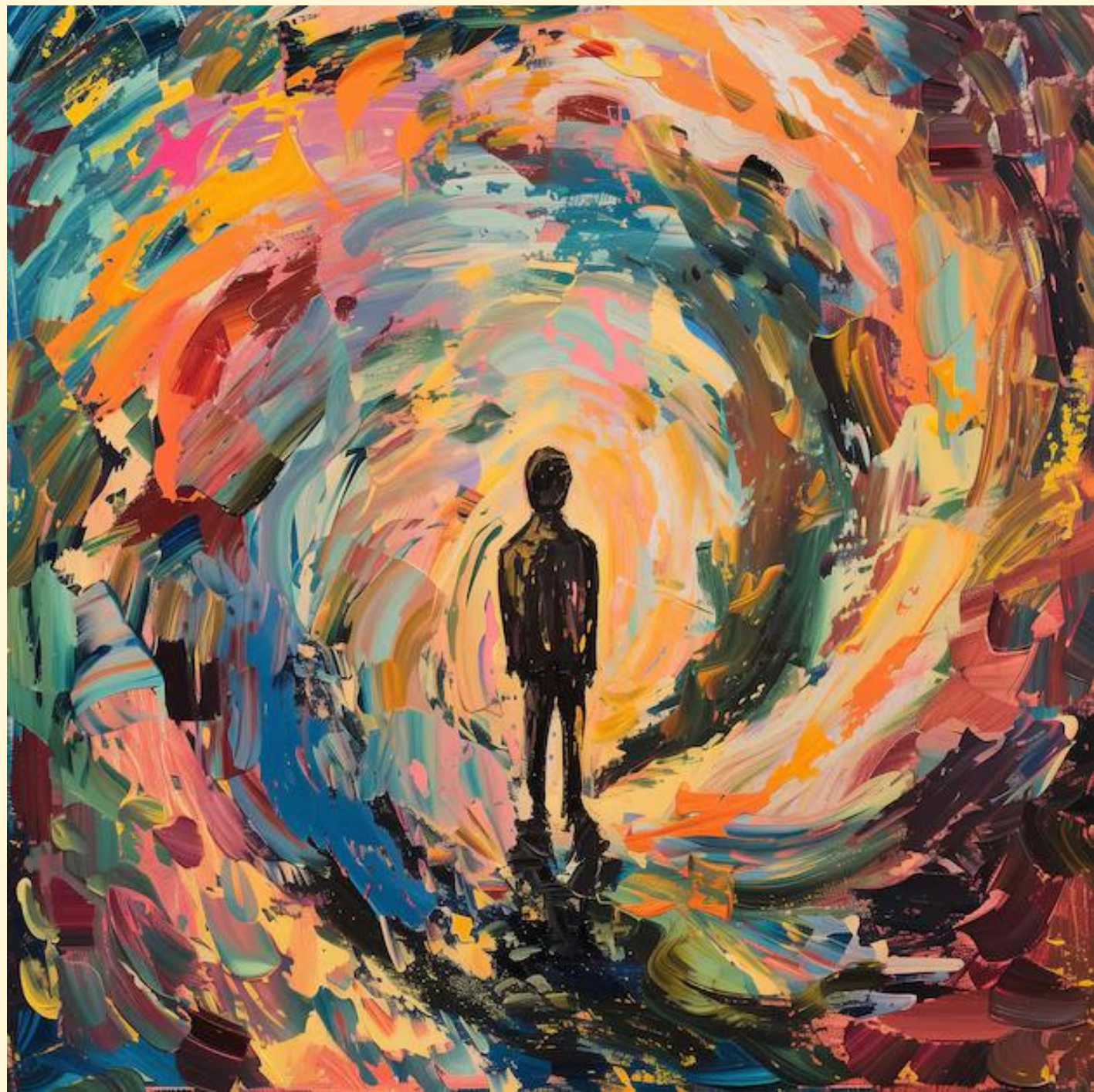
The Relationships between Ego Depletion and Social Behaviors Across Different Degrees of Psychological Flexibility

- Jacob Norris, B.S.
- Emily Sandoz, PhD BCBA
- Thesis Committee
 - David R. Perkins, PhD
 - Mark S. Lacour, PhD









Current Study

- Examination of the effects ego depletion has on social behaviors
 - Altruism & Aggression
- Furthermore, examination of whether psychological (in)flexibility may have a moderation effect on this relationship.
- Sample
 - N = 457
 - Age (M = 19)
- EDG
 - n = 229
- NED
 - n = 228

Future Directions

- Examination of other variables
 - Socioeconomic Status
 - Stress
 - Psych (In)Flex subscales
- Exploration of another Stroop Task
 - Paragraph Stroop Task
 - Video Stroop Task
 - Variations regarding numbers, shapes, directions.
- Research regarding best practice of how to effectively induce ego depletion utilizing an online participant platform.

THANK YOU.



HEALTH, WELLNESS & OUR SHARED EXPERIENCES

Jacob Norris

Master in Psychology student

*The Relationships Between Ego Depletion and Social Behaviors
Across Different Degrees of Psychological Flexibility*

Faculty Reference: Emily Sandoz



HEALTH, WELLNESS & OUR SHARED EXPERIENCES

Sebnem Cilesiz

Professor of Education
& Human Development

Emily Sandoz

Professor of Psychology
Director, University Honors Program

*When the Going Gets Tough:
Examining Perspectives on Resilience Across University Stakeholders*

When the Going Gets Tough: Examining Perspectives on Resilience Across University Stakeholders

Sebnem Cilesiz, PhD

Professor, Educational Foundations and Leadership

&

Emily Sandoz, PhD

Professor, Psychology

Director, University Honors Program



Problem Statement & Purpose



- Successful degree completion may be hindered by personal setbacks and institutional or societal barriers
- Resilience buffers effects of adversity but is sometimes misunderstood/misused (Clay, 2019; Zembylas, 2021; Mu, 2020)
- Misconceptions may misdirect institutional efforts to support student success
- Need to explore how higher education stakeholders define and view resilience
- Study objectives:
 - Gather diverse understandings of resilience from students, faculty, and staff
 - Examine links between these resilience views & adversity experiences

Methods and Data Sources

- Mixed Methods Research Design
- Phenomenographic analysis → quantitative investigation of associations
- Data Collection: Online survey including:
 - Demographics
 - Adverse Childhood Experiences Questionnaire (ACEs) (Felitti et al., 1998)
 - Life Events Checklist (LEC-5) (Weathers et al., 2013)
 - Nine open-ended short answer questions
- Participants: 319 total (274 students, 23 faculty, 22 staff)

Data Analyses



- Qualitative Analysis: Followed Marton (1986) & Sin (2010) guidelines
 - Iterative coding → 5 hierarchically ordered categories
- Quantitative Analysis (ongoing):
 - ANOVA: Compare resilience across roles, demographics, social positions
 - Regression: Link resilience views with adversity history (childhood & recent)

Resilience as inherent & fixed (simplistic)

- Resilience viewed as an innate trait that some people possess
 - *Some people are born inclined to resilience (this might be mistaken as stubbornness or “not knowing when to quit”)*
 - *I think there are some genes people are born with, providing them with more resilience*
 - *Some people are really wired differently... Those willing to do whatever it takes will never fail, but not all people are like that*

Resilience as learned

- Resilience is understood as a skill developed through effort and overcoming challenges
 - *I think resilience can be learned simply by going through hard times*
 - *Resilience is not a characteristic someone can just have... The only defining factor is just how much work they put into becoming a resilient person*

Resilience as acquired through experience and environment

- Resilience is seen as shaped by life experiences, environment, and intentional practices
 - *A degree of adversity is good for people. I feel like everyone has a story and either try to grow from it or did grow from it to become resilient*
 - *Resilience is not a fixed, stable characteristic; it is something that can be learned and developed over time... resilience is primarily shaped by experiences, mindset, and intentional practices. It involves developing the ability to cope with challenges...*

Romanticized or idealized conceptualization of resilience

- Adversity is perceived as essential for growth, strength, and identity formation
 - *I wouldn't wish adversity on anyone, but sometimes painful experiences are the best (sometimes only) way to realize your true strength*
 - *Students succeed because of their resilience, because their want for an education surpasses their fear and struggle in adversity*
 - *Going through or coming from hardship does not define you or where you belong... adversity helps shape you into the healthiest and best version of yourself*

Complex understanding of resilience

- Recognizes both the value and the limits of resilience, emphasizing balance and context
 - *It can be learned, but I don't think an extremely high level of resilience is key to living a good life*
 - *It's important to have resilience; however, I think there is such a thing as being too resilient, which can cause you to be indifferent to your experiences*
 - *A degree of adversity is good for people. It builds character, confidence, trust, and humility. However, there are some marginalized groups that face adversity because of economic status*

Significance of the Study

- This study identifies areas for intervention by examining how students, faculty, and staff with different adversity histories conceptualize resilience
- Guides student “resilience training” by integrating their perspectives (Ang et al., 2022)
- Encourages faculty/staff professional development for a deeper understanding
- Reminds institutions to acknowledge systemic limits on student responsibility
- Methodologically, it extends phenomenography’s applicability through methodological innovation.
- It introduces a novel mixed-methods approach by combining phenomenography with quantitative research, suitable for studying links between conceptualizations and lived experiences.



Thank you





HEALTH, WELLNESS & OUR SHARED EXPERIENCES

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*When the Going Gets Tough:
Examining Perspectives on Resilience Across University Stakeholders*



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THANK YOU!

To all of today's presenters

To all of our faculty for supporting student research

To all of our students for being the future of research



THANK YOU!

Jennifer Ercoli

Director of Graduate School
Communications





Dr. Mary Farmer-Kaiser

**Dean of the Graduate
School**

Professor of History





LOUISIANA RESEARCH COLLABORATIVE

OUR NEXT RESEARCH AWARDS:

MAYBE MORE PEOPLE, PLACE, PURPOSE IN SPRING 2026

**MAYBE MORE CREATIVITY, INNOVATION
& ENTREPRENEURSHIP IN SPRING 2026**

MAYBE SOME NEW THEMES...





LOUISIANA RESEARCH COLLABORATIVE

OUR NEXT RESEARCH SUMMIT:

**PROBABLY IN APRIL DURING
GRAD STUDENT APPRECIATION WEEK**



Kathleen Babineaux Blanco
Public Policy Center

Upcoming Katrina Forward Events

LOUISIANA RESEARCH COLLABORATIVE



Katrina Forward Webinar

**Tracking Change:
Economic Opportunity Since Hurricane Katrina**

with **Dr. Dek Terrell & Dr. Gary Wagner**

Tuesday, September 9 | 12 to 1 p.m. via Zoom

Register here: <https://bit.ly/KatrinaForwardWebinars>



LOUISIANA RESEARCH COLLABORATIVE

OUR NEXT RESEARCH AWARDS:

MAYBE MORE PEOPLE, PLACE, PURPOSE IN SPRING 2026

**MAYBE MORE CREATIVITY, INNOVATION
& ENTREPRENEURSHIP IN SPRING 2026**

MAYBE SOME NEW THEMES...





Congratulations

ROUND #4

**PEOPLE,
PLACE &
PURPOSE
RESEARCH
AWARD
WINNERS**

Sercan Aygun – Assistant Professor, Computing & Informatics, Ray P. Authement College of Sciences
ULL-HT: Unified, Low-Resource, and Language-Assisted Health Tool

Elena Babatsouli – Associate Professor, Communicative Disorders, College of Liberal Arts
Louisiana Family Language Use and Child Speech Developmental Norms in English

Ignatius Cahyanto – Associate Professor, Management, B.I. Moody III College of Business Administration
Visualizing Empowerment? Tourism and the Experiences of Ethnic Minority Women in Northern Vietnam

Caitlin deNux – Visiting Assistant Professor, Geosciences, Ray P. Authement College of Sciences
Terry Chambers – Professor, Mechanical Engineering, College of Engineering
Evaluating Soil Health Improvements Utilizing Cover Crops in a Pre-Established Broccoli Production AV System in Louisiana

Natalie Keefer – Associate Professor, Education Curriculum & Instruction, College of Education & Human Development
Sustainable Economic and Cultural Development of Louisiana Business Practices in French and Creole

Mo Li – Assistant Professor, Mathematics, Ray P. Authement College of Sciences
Multiple Changepoints Detection and Estimation in Cross-Sectional Time Series for Improving Livestock Production

Edward Patterson – Assistant Professor, Biology, Ray P. Authement College of Sciences
Using Insect-Specific Viruses to Prevent Mosquitoes from Transmitting Arthropod-Borne Viruses

David Squires – Associate Professor, English, College of Liberal Arts
Isuru Rathnayake – PhD Student in English
Reading Ernest J. Gaines in the Archives

Yu Wang – Associate Professor, Chemistry, Ray P. Authement College of Sciences
Advanced Smart Hydrogels for Selective and Regenerable PFAS Remediation in Water

Christine Weill – Assistant Professor, Communicative Disorders, College of Liberal Arts
Louisiana's View of Speech-Language Pathology Assistants

Andrea Westerband – Assistant Professor, Biology, Ray P. Authement College of Sciences
Mitigating Environmental Stress Impacts on Louisiana's Native Prairie Species

Tamjeed Ahmed, PhD Student in Systems Engineering: Mechanical Engineering
Faculty reference: Solomon Yin, College of Engineering
Integrated Economic-Health Valuation of Backup Power Portfolios for Gulf-Coast Hurricane Shelters

Kunle Akinkuade – MSE Student in Chemical Engineering
Faculty reference: Mark Zappi, College of Engineering
Thermochemical Conversion of Plastic Wastes into Sustainable Bio-Oil

Nelly Ankrah – PhD Student in Systems Engineering: Civil Engineering
Faculty reference: Julius Codjoe, College of Engineering

N I Md Ashafuddula – PhD Student in Computer Science

Faculty reference: Li Chen, Ray P. Authement College of Sciences

KI-M3T: Knee Injury-Adapted Medical Multi-Plane Multi-Slice Transformer Model for Advancing Healthcare Accessibility Through Accurate MRI Diagnosis

Jacob Badcock – PhD Student in Environmental & Evolutionary Biology

Faculty reference: Craig McClain, Ray P. Authement College of Sciences

Using Machine Learning to Detect Macrobenthic Regime Shifts in a Louisiana Estuarine Bay

Sajan Bhandari – PhD Student in Mathematics

Faculty reference: Azmy Ackleh, Ray P. Authement College of Sciences

Discrete-Time Refuge-Mediated Selection Model

Xueao Cao, PhD Student in Applied Language and Speech Sciences

Faculty reference: Judith Oxley, College of Liberal Arts

More Than Words: Supporting the Development of a Child with Communication Disabilities Through Engineering the Communicative Environment

Lisa Dizon – PhD Student in Systems Engineering: Chemical Engineering

Faculty reference: Emmanuel Revellame, College of Engineering

Bioreactor Scale-Up and Testing of Optimum Conditions to Enhance Methanotrophs' Growth and Activity for Lipid Production

Muhammad Towhidul Islam – PhD Student in Systems Engineering: Petroleum Engineering

Faculty reference: Boyun Guo, College of Engineering

Visualization of Hydrate Formation of Flowing CO₂ in Low-Temperature Water for CO₂ Disposal onto Seafloor

Asif Istiak – PhD Student in Systems Engineering: Mechanical Engineering

Faculty reference: Tanvir Faisal, College of Engineering

A Novel Nanocarrier-Driven Therapeutic Strategy for Inhibiting Tissue Damage in Degenerated Joint Disease

Chimezie Izuazu – PhD Student in Mathematics

Faculty reference: Cameron Browne, Ray P. Authement College of Sciences

Stochastic Analysis of Interplay Among Drug Mode of Action, Nutrient Availability, and Antibiotic Resistance

Jenita Jahangir – PhD Student in Mathematics

Faculty reference: Amy Veprauskas, Ray P. Authement College of Sciences

Invading Populations by Infections in a Discrete-Time Compartmental Epidemic Models

Afeez Jimoh – PhD Student in Earth & Energy Sciences

Faculty reference: Erez Aghion, Ray P. Authement College of Sciences

Computational Modeling of Ion Transport Dynamics in Ion Exchange Membranes for Sustainable Energy Systems

Maria Lindquist – MS Student in Psychology

Faculty reference: Manyu Li, College of Liberal Arts

Shaping Attitudes Toward GLP-1 Drugs: The Impact of Realistic Advertisements on Disordered Eating Behaviors

Lovelyn Madu – PhD Student in Mathematics

Faculty reference: Bruce Wade, Ray P. Authement College of Sciences

Optimization and AI-Driven Advances in Detection Tools for Heart Disease and Cancers

Sydney McDermott – PhD Student in Environmental & Evolutionary Biology

Faculty reference: Craig McClain, Ray P. Authement College of Sciences

Observations of the Condition of Deep-Sea Benthic Communities in the Immediate Vicinity of the Deepwater Horizon Wreckage

Emily Mulcahy – MS Student in Biology

Faculty reference: Beth Stauffer, Ray P. Authement College of Sciences

Growth of and Microzooplankton Grazing on Pico- and Nanoplankton Communities Along Environmental Gradients

Sohail Nawab – PhD Student in Systems Engineering: Petroleum Engineering

Faculty reference: Ning Liu, College of Engineering

Microbial Hydrogen Production in Depleted Oil Reservoirs in Louisiana

Jacob Norris – MS Student in Psychology

Faculty reference: Emily Sandoz, College of Liberal Arts

The Relationships Between Ego Depletion and Social Behaviors Across Different Degrees of Psychological Flexibility

Prince Obeng – PhD Student in Systems Engineering: Petroleum Engineering

Faculty reference: Nelson Chavez, College of Engineering

Experimental Investigation of the Performance of Clay Inhibitor ZCHN71, ZCHN72, ZCHN73 on High and Low Reactive Clays

Khairum Orthi – PhD Student in Earth & Energy Sciences

Faculty reference: Wu Xu, Ray P. Authement College of Sciences

Understanding the Electron Transport Chain in Photosystem I During Photosynthesis

Tasnim Tabassum – PhD Student in Computer Science
Faculty reference: Sonya Hsu, Ray P. Authement College of Sciences
Prevent Hospital Finance Failure: An AI-Powered System for Identifying Financial Risk

Mohammad Nezam Uddin – PhD Student in Systems Engineering: Petroleum Engineering
Faculty reference: Boyun Guo, College of Engineering
A Feasibility Study of Converting End-of-lifetime Oil and Gas Wells into Geothermal Wells

Gregory Williams – PhD Student in Systems Engineering: Civil Engineering
Faculty reference: Emad Habib, College of Engineering
A Collaboratively Designed and Managed Flood Resilience Framework for Affected Communities in the Caribbean Region

Courtney Poirier Chicola – Postdoctoral Researcher, NASA Regional Application Center and Department of Chemistry
Discovering the Early-Time Photodegradation Mechanisms of Emerging Contaminants in Marine Ecosystems

Xiaobo Lei – Postdoctoral Researcher, Energy Institute of Louisiana
Converting Invasive Giant Salvinia in Louisiana into Renewable Biomethane

Yihe Zhang – Research Scientist, Informatics Research Institute
Accelerating Universal Mental Health Access through AI-Powered Suicide Prevention

Elizabeth Drell – Undergraduate Student in Psychology

Faculty reference: Amy Brown, College of Liberal Arts

Alcohol Intoxication as a Moderator of Bias Against Transgender Victims of Sexual Assault

**Bree Landry – Undergraduate Student in Environmental Science, Digital Geography
and Researcher with the NASA Regional Application Center**

Faculty reference: Courtney Poirier Chicola, Ray P. Authement College of Sciences

***Tracking Troubled Waters: Community-Based Field Research with the AREN
AquaROVER***

Bailey Singleton – Undergraduate Student in Psychology

Faculty reference: Amy Brown, College of Liberal Arts

***Consent in Media Consumption: Exploring Content Warnings as Accessibility through
Sexual Assault Survivor's Perspectives***



Congratulations

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