



John Matta and students from Southern Illinois University Edwardsville's CODES program are conducting a research study titled the Importance of Conservation Survey. This study has been approved by the SIUE IRB on 03/13/2024 Protocol #2488. You can contact Dr. Matta at 618-650-3344 or Jmatta@siue.edu.

CODES Undergraduate Scholars Showcase 2024

NGRREC COHORT



Community Oriented Digital Engagement
Scholars

NGRREC Team

Kaz Isibue, Makhia Logan, Sean Brown, Danahe Villasenor, Derrick Newsome,
Nick Fowler, Adam Gardner



**The National Great Rivers
Research & Education Center**



01

Meet Us and Our Partner





Dr. John Matta

Associate Professor at SIUE
School of Engineering



Sean-Jeremie Brown

BS Psychology and Sociology

Kaz Isibue

BS Geography
Minors In Art and Sociology



Danahe Villaseñor

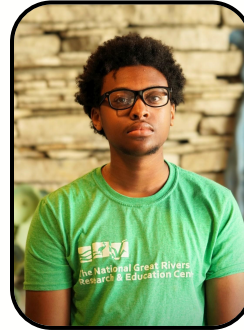
BS Early Childhood Education





Adam Gardner

BA Computer Science
Minor Business Administration



Derrick Newsome

BS Business Administration

Makhia Logan

BA International studies focus in
foreign policies
Minor: History



Nicholas Muppidi-Fowler

B.S. History and B.A. International
Studies



Meet our Partner

The National Great Rivers Research & Education
Center (NGRREC)
Located in Alton, Illinois



**The National Great Rivers
Research & Education Center**

02

Internship With
NGRREC



Active Community and Youth Engagement



- Youth Camp Assistance
 - Assisted in educational and recreational activities at a youth environmental camp.
 - Engaged with children ages 14-17
- Volunteering in Various Capacities
 - Contributed to aspects of community programs
 - Enhanced the effectiveness of local environmental initiatives through dedicated volunteer work.
- Outdoor and Cultural Activities
 - Participated in canoeing trips to educate on water ecosystems.
 - Learned and performed a river dance





Engaging in Environmental Education

- Creating a Video Tour
 - Creating storyboards
 - Developed an video tour showcasing NGRREC
- Educational Materials Development
 - Collaborated on the creation of comprehensive educational materials.
 - Focused on topics such as wildlife preservation.
- Renaming the Wetland
 - Led a community initiative to create a new, meaningful name for the local wetland.
 - The rebranding aimed to revitalize interest and promote active conservation efforts.




03

Semester
Overview





Main Goals For The Semester

- Interviews
 - NGRREC Staff Members
 - Educators
 - Computer Science Students Working With NGRREC
 - Surveys
 - Collecting data about individual experiences in environmental education
 - Stream Discovery
 - Helping design online training modules
 - Making River Watch accessible to a wider audience
- 

04

Interviews





AI Bug Identification Interview

Purpose:

- Create AI driven program to count & identify bug species within vials.

Goal:

- Create a program that can count amount of bugs within a image.
- Make the program able to identify the different species of bugs while counting.
- Make the program display the results or exportable into desired file type.



[Export Selection](#)[Export All](#)Show 5

<input type="checkbox"/> Select All	Image Name ↑ ↓	Model ↑ ↓	Number Detected ↑ ↓	Confidence ↑ ↓	Date Inferred	Label
		<input type="text" value="Any"/>	<input type="text" value="Min ≤ N ≤ Max"/>	<input type="text" value="Min ≤ N ≤ Max"/>		<input type="text" value="All"/>
<input type="checkbox"/>	20231020_130101.jpg	Scud	29	29.00%	04/19/2024, 15:28	Scud-1
<input type="checkbox"/>	IMG_2449.JPG	Scud	73	29.00%	04/19/2024, 15:28	Scud-1
<input type="checkbox"/>	IMG_2364.JPG	Scud	12	29.00%	04/19/2024, 15:28	Scud-1
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<input type="checkbox"/>	IMG_1268.jpeg	Mayfly	7	27.00%	04/19/2024, 15:29	Mayfly-1



Dr.
Danelle
Haake



Hannah
Griffis

NGRREC Interviews

- Would like for science to be seen more as fun to younger audiences rather than something for a grade
- Hands on experience
- Mentioned how our cohort has helped sample how students would react to the current riverwatch experience
- Wants a good way to make this accessible to less science minded people





Interview With Local Educators

Purpose:

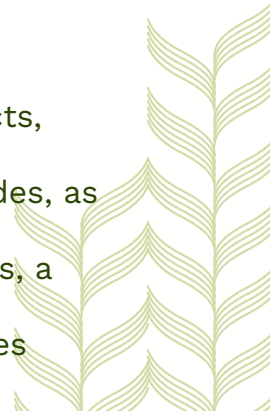
- Get a sense of how educators feel about River Watch and Stream Discovery

Goal:

- Develop a clear outline for NGRREC Educators to integrate Stream Discovery program into local curriculum

Some takeaways:

- Since 2015, Science Ed. Has followed a Storyline based teaching pedagogy
- If NGRREC wants to integrate within local districts, administration is the key factor
- The program should be aimed between 7-12 grades, as that is when science is taught the most
- The program should be inclusive to ESL students, a Spanish version should be provided
- Program could also be marketed towards libraries



05

Surveys



The Surveys

- Hope to gain understanding regarding community members experience with environmental science in the classroom
- Plan on interviewing both former students and teachers

Former Student Survey

Survey Release Date: March 18, 2024

Survey Close Date: August 1, 2024

Survey Participation Goal: 100+ People

Survey Demographics: Adults 18+ who attended high school in the US (public or private)

Survey Goals

Understanding how many participants had experience with:

- Environmental science in high school
- NGRREC
- Community Science

Teacher Survey

Survey Release Date: Fall 2024

Semester

Survey Close Date: Not Decided

Survey Participation Goal: 100+ People

Survey Demographics: Educators 18+ who teach at or who have taught Science at a High School in the US (public or private)

Survey Goals

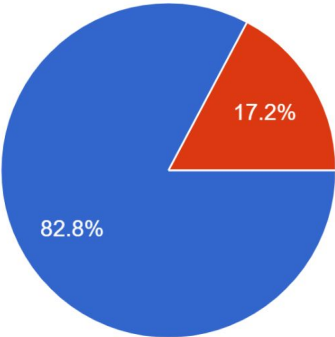
Understanding how many participants would be willing to supplement their environmental education section with NGRREC's Stream Discovery Program.

Former Student Survey Results So Far

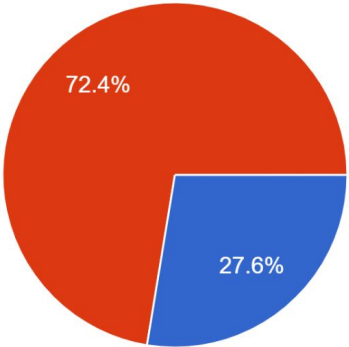
- Out of 29 responses
- Majority of participants were from Illinois (19/29)
- 48.3% of participants do not know where their main water source is



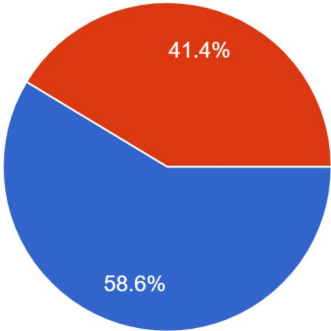
Do you know what community science is?



Are you familiar with community science?



Did they have an environmental science class at your high school?



06

River Watch
Module
Storyboarding





What is River Watch and Stream Discovery?

River Watch is...

- A way to utilize trained volunteers to collect quality assured data on wadeable streams and fosters coordination among groups involved in similar monitoring efforts.
- A way to expand community science

Our goal is to...

- Make River Watch more accessible
- Design Edpuzzle modules for at home learning
- Bridge the gap between Educators and NGRREC

Why is learning needed?

- Allows for a wider range of participants in community science.
- Data collection has a strict set of processes participants need training on.
- Training can reduce the risk of error in data collection.

Stream Discovery is...

- An online learning focused version of Riverwatch
- Able to reach a wider audience
- More engaging than River Watch



Stream Discovery Modules

- **Community Science & NGRREC**
- **Watersheds & Streams**
- **Biomonitoring & Bugs**
- Site Selection & Paperwork
- Site Setup & Sketches
- Flow Measurement
- Habitat Survey
- Bug Collecting & Sorting
- Bug Identification & Calculations
- Entering Your Data
- What To Do With Your Findings





Example Questions

Why are watersheds important?

- A. They supply drinking water
- B. They support agriculture and manufacturing
- C. They serve as habitats for various plant and animal species
- D. All of the above

Which body part are streams compared to?

- A. Fingers
- B. Respiratory system
- C. Arteries
- D. Nerves

Why is community science important?

- A. It allows researchers to expand the scope of their researchers
- B. It gives the local communities an opportunity to learn more about the world around them
- C. It gives community members a voice
- D. all of the above

Which of the following BEST explain how bugs are used in biomonitoring?

- A. They are used to indicate how healthy the environment level is by monitoring them in their natural habitat
- B. They are used to find the different types of bugs and their health
- C. Their reaction to environmental changes is used due to their sensitivity to the slightest environmental change.

Question Answers

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Conclusion





Thanks

Does anyone have any questions?

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Any Questions? Take Our Survey!

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