Bridging Data, Resilience, and Public Health

Lessons from the Roots for Resilience Program

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University of Arizona – Fall 2025

About Me

Master of Public Health (MPH) student at the University of Arizona

Interested in the intersection of public health, science, and business

Focused on data and research to address complex health and societal challenges

Expanding skills in data science and computational tools through R4R

Roots for Resilience (R4R) Program

University initiative bridging data science, resilience and action

Focus on open science, data equity, and resilience across systems

Exposure to computational tools, coding, and cross-sector collaboration

Developed skills to analyze, visualize, and share data responsibly

R4R Cohort Fellowship Overview

Attend weekly **Tuesday & Thursday** sessions (11:00 AM - 1:00 PM)

Participate in **Foundational Open Science Skills** (FOSS) online workshops led by CyVerse educators

Engage in **U of A cohort activities** to foster community & research collaboration

Complete **FOSS capstone & departmental presentations** on time

Submit department presentation material for online posting

Ambassador Role

Serve as a liaison to **university dep**artments to enhance resilience research engagement

Stipend Details

Total stipend: $7,000

Disbursed in two installments: start of program & end of semester upon successful completion

Graduate Research & Evaluation Intern

- Supported Health & Wellness Survey: data cleaning and variable creation
- Organizational Quality Improvement (QI) projects
- Developed data visualization templates and fact sheets
- Assisted in creating reports for CAPS and HPPS programs

Using Data Science and AI in Public Health

Integrating Data Science in Health Evaluation

Enhancing Data Accuracy & Insights Through Compuational Methods

Using AI to Strengthen Quality Improvement (QI) Efforts

Transforming Evaluation into Predictive Health Insights

Visualizing Public Health Impact with Computational Tools

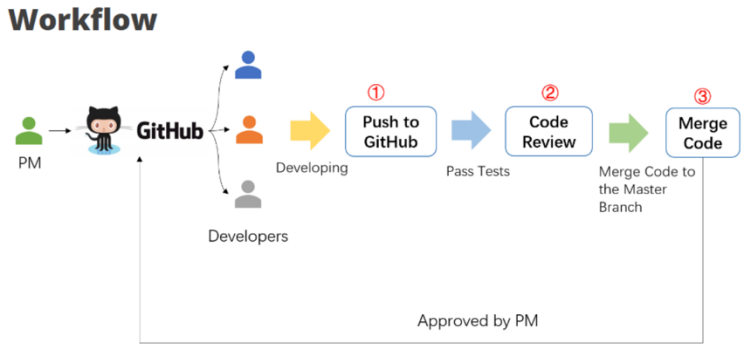
From Data to Action; Communicating Findings Effectively

Leveraging GitHub and OpenAI for Public Health Innovation

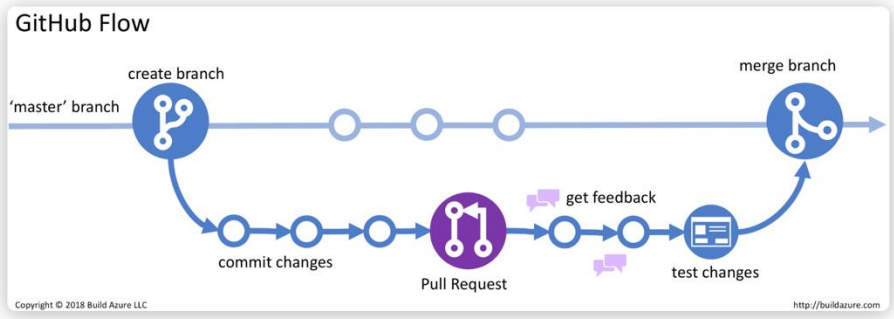
Enhancing Collaboration and Communication Through Modern Tools

Applying CARE and FAIR Data Principles in Public Health

Ethical and Responsible Use of Health Data



GitHub is a collaborative platform that helps teams manage, review, and merge code efficiently—ensuring transparency, accuracy, and high-quality development for public health tools and data projects.



GitHub

OpenAI

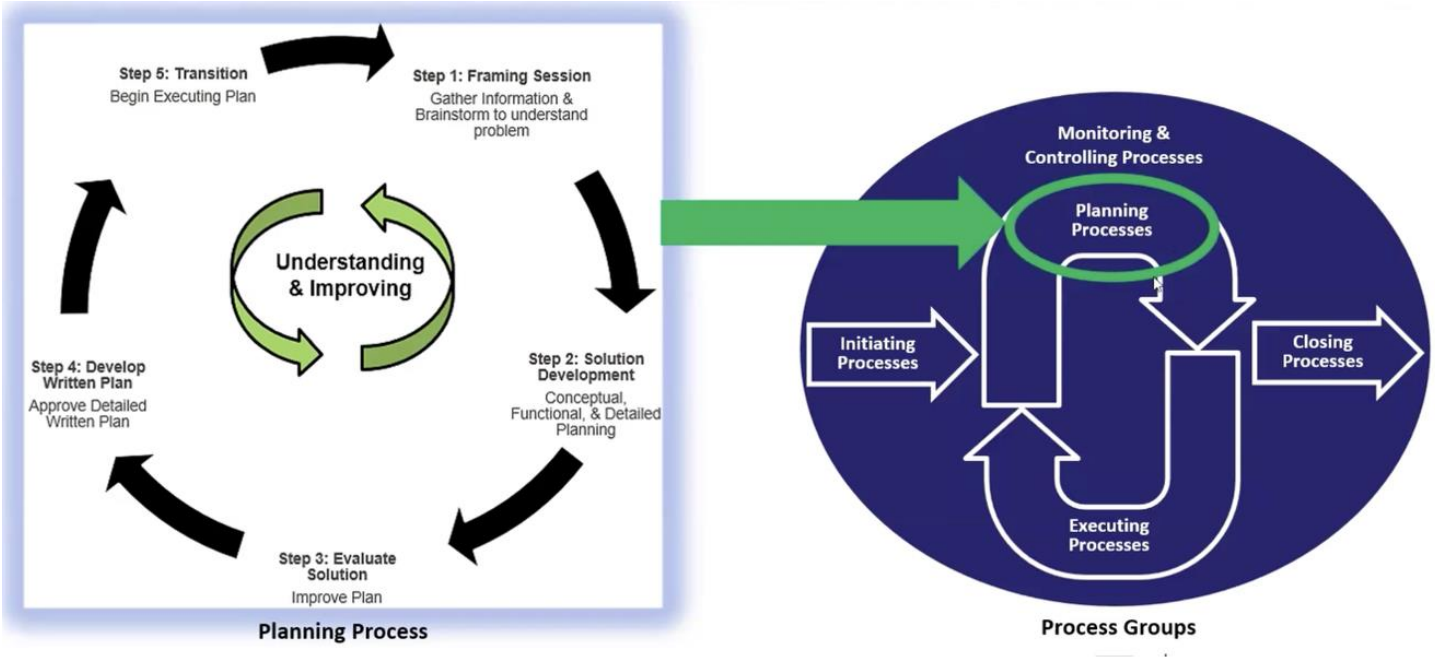
deepseek

Open AI

Simplify complex medical or evaluation text for clearer communication.

Generate summaries or visual explanations of health data for stakeholders.

Automate repetitive writing tasks like report sections or quick summaries.

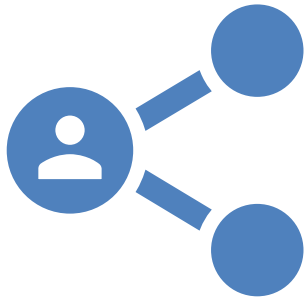


Project management can be applied to public health by organizing resources, timelines, and goals to effectively plan, implement, and evaluate health initiatives.

Project Management

Explore CyVerse: Open-Science Platform

- Open-science platform for data storage, sharing, and computation (cyverse.org)
- Supports collaboration across researchers, and communities
- Open Science Workshops
- Built for collaboration with security, privacy, sovereignty, & federation at its core



Applying R4R Concepts to My Internship

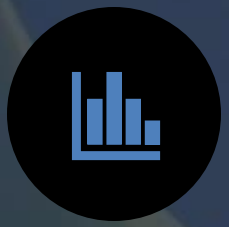
Worked on data collection, cleaning, and reporting for campus health initiatives

Recognized potential for R4R tools (open data, AI, visualization) in evaluation work

Understood how data transparency and reproducibility can strengthen health insights

Plan to integrate computational and collaborative tools in future evaluations

How R4R Could Enhance My Internship Work



Open data practices → improve survey reproducibility

AI tools → streamline pattern recognition and insights

Collaborative data platforms → enhance cross-department sharing

FAIR data principles → strengthen transparency and data integrity

What I learned

OPEN SCIENCE AND FAIR DATA PRINCIPLES

DATA MANAGEMENT AND REPRODUCIBILITY

AI AND COMPUTATIONAL TOOLS

INTERDISCIPLINARY COLLABORATION

Mel & Enid Zuckerman College of Public Health

Connecting R4R to Public Health

Data resilience supports stronger, more adaptive health systems

Open science encourages equity and shared problem-solving

Computational tools enhance evidence-based decision-making

R4R builds capacity for innovation in public health research and practice

Key Takeaways

- R4R expanded my understanding of data's role in public health resilience
- Learned how open and collaborative data practices drive impact
- Plan to apply R4R insights to future evaluation and research projects
- Excited to continue bridging data science and health systems innovation

Thank You!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