

## July 19, 2024 Education Working Group Call

Attendees: Mary Lofton, Jason McLachlan, Antoinette Abeyta, Jody Peters, Rachel Torres, Alyssa Willson

Agenda/Notes:

1. Next steps for Macrosystems EDDIE - Update from Mary
  - a. Partnering with community college to do modules targeted to students who will be drinking water managers. Codeveloping with the instructor based on what her needs are. It is an RShiny module in Canvas that people can access who use Canvas
  - b. Beta version of module that Mary just handed off to undergrads to test
  - c. This is for an audience they haven't worked with before. It is not for 4 year undergrads
  - d. Working with Mountain Empire Community College in VA near KY border. Head of department is Rosa. Very rural. An underepresented and underserved community. Working with Environmental Science Water/ Wastewater Specialation program - training program for people who want to work for wastewater or water treatment managers. For people who want extra boost for training for the certification plans.
  - e. The program is completely online and get participants from all over the US
  - f. Considerations for this module compared to previous modules
    - i. 1 hour in length (which is shorter)
    - ii. Need to do without instructor interaction at night after kids are in bed. It is a completely asynchronous course.
    - iii. Want learning objectives to mesh with needs of students to be water managers
    - iv. Student work through RShiny module, but answer questions in Canvas
    - v. Had used short answer questions in previous modules, but that is going to be too much for Rosa who is administering 13 trainings.
  - g. The trainings do not fit specifically with the certification the students will be taking
  - h. The grant the module comes from is a forecasting grant and want to co-develop the module with the instructor based on what they want. A lot of the module is focused on how to use high frequency data to make water treatment decisions. We use data to make a decision, then by the end how do you use forecast to make decisions
  - i. Do they have issues with internet connections or computer access?
    - i. Enrollment in the program presupposes that students have access to Canvas
  - j. To find the program were searching for a water treatment program. Asked Western Virginia Water Authority where they hired their operators and this program came up. Then it was a cold call to Rosa.

- k. It is not competitive to get the water treatment job and it is a job that is under filled across the US. Many times people are hired for a water treatment job and then take the certification while they are working.
  - l. Mary shared the module and then we had time for feedback
    - i. Mary shared a presentation that will be recorded and accessed by the students that sets the stage
    - ii. There is a lot of unit conversion because it is something students struggle with on the certification test so that was something Rosa wanted to be sure was included
    - iii. Question to add: Why do you want to pick the best water quality
    - iv. Could frame the unit conversion as: "If you know the units you have and the units you want - what conversion do you need to make?"
      - This helps students know what equations to start with
    - v. This module falls in the curriculum where students learn about physical, chemical, and biological aspects of water quality. It isn't the first class students take but it is in the second round of courses after the intro round.
    - vi. Expect students will have seen the thermal stratification before and dissolved oxygen and components (biological, physical) so that won't be coming out of the blue
    - vii. This module will be a different format - it will have students apply their knowledge, but that might make it hard for students to feel comfortable with that.
    - viii. Toying with converting questions to multiple choice from open ended short answer. The multiple choice question will make it easier for grading. But
    - ix. On canvas do students have to answer the question before opening the next image?
    - x. Build in for Activity C so people can't get to the answer before going.
    - xi. Mary will share update af
2. Follow up note about MSIs. After discussing the history of TCUs and HBCUs, the question about how MSIs are defined also came up. This is a summary from a recent Alfred P. Sloan Proposal LOI
- a. The nation's more than 700 MSIs are designated by the U.S. Department of Education. There are seven types of MSIs: historically defined MSIs were established through Acts of Congress with the stated purpose of providing access to higher education for a specific racial minority group and include Historically Black Colleges and Universities (HBCUs) and Tribal Colleges and Universities (TCUs). Enrollment-designated MSIs are federally recognized based on student enrollment percentages and other criteria, and include Hispanic-Serving Institutions (HSIs), Alaska Native-Serving and Native Hawaiian-Serving Institutions (ANNHIs), Asian American and Native American Pacific Islander-Serving Institutions (AANAPISIs), Predominantly Black Institutions (PBIs), and Native American-Serving Nontribal Institutions (NASNTIs). In addition to these

seven types there are other designations for American Indian and Alaska Native-Serving Institutions (AIANIS) and Institutions with High Hispanic Enrollment (IHHEs) as defined by the U.S. Department of Education. For more information, see: <https://www2.ed.gov/about/offices/list/ocr/edlite-minorityinst.html>

- b. Note from Mary about an experience with a recent manuscript review
  - i. Reviewers wanted information about the demographics of the students who have used the Macrosystems EDDIE modules. But this wasn't included in the IRB for the project, so they couldn't assess that directly. However, they were able to get a general idea of students backgrounds by looking at the school classification where the modules have been used.
  - ii. Even though it makes things more complicated, for future work, the group is considering how to update their IRB to ask demographic question of students who uses the modules.
  
3. Jody is keeping this note in as a reminder - Is there a code free, GitHub free forecast challenge that could be developed?
  - a. Could invite Dan Keefe to give presentation - has lots of thoughts about technologies that don't include coding
    - i. Dan is not available for the August call, but is willing to share in September. Jody will check schedules once we get the results from the poll for the Sept-Dec Education calls
  - b. <https://processing.org/>
  - c. Nick Record does some of this with his forecasting challenges and courses
  - d. Freya's work that could be transformed into a Shiny format - using CI with code under the hood, but where the user is not using code
  
4. For August call: look at the list of activities and priorities developed during Sept-Dec 2023. Does anything stand out? Should other things be added for priorities for Sept-Dec 2024?
  - a. Google sheet with activities that were mentioned by the EFI Education group in Sept-Dec 2023