

August 17, 2023 Education Working Group Call

Attendees: Abby Lewis, Alyssa Willson, Jason McLachlan, Jody Peters

Agenda/Notes:

1. Poll for calls in September to December:
 - a. Ignore the dates and select your general availability for monthly calls. Make sure your time zone is selected in the upper left
2. Ethics in Forecasting Project Manuscript - submitted to Teaching Issues and Experiments in Ecology!!
3. New semester/new opportunities - what do we want to do?
 - a. Opportunity to develop a forecasting challenge group that thinks about challenges outside NEON
 - i. Could grow from the RCN to other contexts and those could have an education component
 - ii. Jason has discussed with his Tribal College partners is working on a forecast with a Tribal community would be exciting, but would be a lot of work and not in the same context as the RCN
 - iii. Translation working group tutorials on co-production (short 5-10 minute YouTube videos)
 - iv. Theory working group - Mike was talking about the uncertainty work from the Unconference and there could be educational opportunities
 - v. Beetles tutorial from the Unconference
 - vi. Would be good to talk to Freya and Mary about the workshop presentations from an education perspective. Are there things they wished could be updated or what people are looking for?
 - Do we do more 1-day workshops or do we incorporate it into curriculum?
 - Jody to reach out to see if we can check in about this on the next call
4. Recap from ESA
 - a. Alyssa went. Lots of EFI people were there.
 - b. Social had good attendance with good student turn out with new people. There were a few that attended the social because they attended the Monday workshop
 - c. Renewed interest in the ticks and beetles forecasts from people who are computationally inclined but haven't done forecasting before
 - d. Sessions were cool. Full EFI day - Back to Forecasting session in the morning and then EFI session in the afternoon.
 - e. Lynda's talk was really cool and got people interested. Talk was about her dissertation research on schistosomiasis and predicting a schistosomiasis vector

5. Updates

- a. Abby - designing a class this semester in advanced R programming for grad students. Not forecasting specific. But could be useful to think about in the education group
 - i. Abby has a syllabus she can share with Jason
 - ii. Jason is thinking about what grad students need and how people present it
 - iii. VT doesn't have classes that introduces R. Has a fundamentals of data science course. Then the class Abby is working on. Most people use R to accomplish a task. The class is to understand underlying parts of data storage, best practices for reproducibility, tools to address more complicated problems. Based on the Advanced R book
 - iv. 1 credit grad seminar, so students aren't required to read the book, but Abby is creating Rmarkdown material for the class that addresses the topics in the book
 - v. What are the structural and cultural and financial obstacles to teaching? Why are we in this place where a grad student is discouraged by TAing?
 - vi. Abby is working on theory working group projects
 - vii. Applying to some postdoc fellowships
 - b. Jason - teaching environmental justice and data science this semester
 - i. Start with environmental justice and think about how data science contributes to inequities and how to overcome it
 - ii. Then students will work with Sloan partners Georgia at Salish Kootenai College and Sean Dorr at U of Minnesota on projects
 - iii. Abby had intro statistics class in undergrad where you learn statistics, but then have a partner outside academia to work on class projects that provide real world examples and opportunities
 - iv. Students learn to code, but learn to code in the context of people who use the code and the results
 - v. Want students to leave class so all their future work makes them think about whose land they are working on and the impact it has for their work
 - vi. Will build content for Georgia's class that is focused on the cultural setting
 - vii. Sean is leading the project to use Design Justice Principles to evaluate the Forecasting Challenge and eventually will develop the framework where the principles can be applied to other activities.
 - c. Alyssa - interested in supporting educational efforts for the group. Doesn't have anything specific planned for her own work
6. Next steps - not totally clear what the next steps for the group are. Have the list of ideas above. Could try to follow up on those or see if there are others in the bigger EFI community who are interested in working on those projects.
- a. Could collectively read papers this helps people who are worried about jumping in

- b. Small Teaching book - new book suggested to Jason recently
- c. Could also invite people to the calls
 - i. 1-day challenge workshop - what does it need
 - ii. Invite people who have all taught a class - where are we on that and what do we need
 - Code has developed a lot and class has worked well for different people
 - Mike feels that part of his textbook need to be updated since the field is developing so quickly
 - Come up with a list of priorities
- d.

7. Macrosystems EDDIE

8. Any other updates or input people want to share or get feedback on?

9. Brainstorm projects the group wants to work on collectively

10. Notes from a long time ago, that may be good as a reference. But doesn't need to be discussed on this call. Open Book Project to keep in mind and mash up of notes from previous calls

- a. There is potential to use the educational materials developed for the Sloan grant or with Olivia's class to start providing content for this that other EFI members could contribute to.
 - i. This is a book you would read before you read Mike's Forecasting book
 - ii. If we start to develop modular materials they could be included in such a book
 - iii. Can start to develop a list of the components that would be useful to include in a book and think about how to make it applicable to a wide range of students from many different backgrounds
 - iv. Think about developing slides/materials that provide context
 - v. Running list of who has expressed interest at one time or another
 - Jason McLachlan, Shannon LaDeau, Elva Escobar
 - vi. Has anyone seen the [Open Forecasting Textbook](#) (does exist as a [paperback](#) as well)
 - In the Preface this is for a 3rd year undergrad intro master's course
 - Interesting template. Success in part due to free online and R packages are nicely user friendly
 - This is a bookdown format where R code is integrated and is a living document

- Wouldn't get the credit of something like an AGU Monograph, but would be more broadly available.
 - Could do something that are RMarkdowns that could be combined as a book
 - Loop John Zobitz into this. He is also writing a book for his courses. Mike has used some of his chapters in his 300 level course.
 - Do this in the context of NEON data and walking through all the steps of forecasting. Could get long, but would be a nice resource.
 - A self-contained book to walk through. Could reference other books.
- vii. This sounds like a strong potential for a proposal for NSF Education Directorates, especially if we could bring in an education evaluator who evaluates the open source, collaborative textbook.
- If we structured it well it could have a strong educational research component