

## June 15, 2023 Education Working Group Call

Attendees: Abby Lewis, Antoinette Abeyta, Olivia Tabares, Gerbrand Koren, Cazimir Kowalski, Jody Peters, Alyssa Willson, Jason McLachlan, Mary Lofton

Agenda/Notes:

1. Ethics in Forecasting Project Manuscript Updates
  - a. Authorship guidelines
    - i. And order. Abby as lead author and then alphabetized afterwards. If anyone has reservations feel free to follow up with Abby directly
  - b. Journal wants us to provide a Cover image
    - i. Do 4 photos - flying foxes, fish, satellite image of watershed, one of the image from Fig 4.1
  - c. Student active approaches and cognitive skills - need
    - i. Think-pair-share is used across all of the figure sets
    - ii. Is anyone familiar with this terminology?
      - Things that have to do with the classroom. Study cases. You are the facilitator of knowledge rather than a presenter of materials
      - Olivia knows the lingo and can help with this
      - See table at the bottom of pg 6, top of pg 7
      - Olivia offered to share a glossary of these types of terms (has one in Spanish, but will look for one in English)
  - d. Timeline
  - e. From last call, waiting for responses from editors about
    - i. Is this a good fit - yes! :)
    - ii. Advice about handling copyright for figures/tables - sorted
    - iii. Providing Student handouts - okay
  - f. Abby will pull it offline and get it cleaned up and ready to go and then send it around for a final look
    - i. Olivia will check to see if she has added the references for her section
2. Macrosystems EDDIE data assimilation figure update (and any other updates)
  - a. For the modules - always want people to use/test the modules, but are wrapping up the grant so aren't necessarily planning to do the pre and post-assessments anymore
  - b. Jody to work with Mary to tweak the language in the newsletter and the EFI Education webpage
3. Olivia's ESA presentation that will highlight EFI projects. Provide materials/figures to help Olivia with the presentation.
  - a. Here's the Abstract (Final version)
  - b. Here are the Slides (work in progress) - Olivia already has some slides!

- i. Something to think about adding: EFI Education group hosted 2 Conferences in 2021. Alyssa and Jody can share materials for this
  - ii. Jody to send Sloan report which has summary material about many of these activities
  - iii. Are there any slides we can help prepare
  - iv. Great to have Alyssa to work on a slide about on the education assessment paper
  - v. Slide from Caz about the the education modules
  - vi. Slide about barriers from Antoinette
  - vii. Slide from Abby about ethics
  - viii. Jody provide overview of EFI materials
4. Olivia is starting a new job and will be teaching high schoolers at [The American School Foundation](#). If anyone wants to do outreach with high schoolers, reach out to Olivia about this.
  - a. Mary - just heard they received funding to develop materials around water quality for high schoolers
  - b. Have argued in EFI that it is good to get the perspective of ecology and forecasting early starting before college. Ecoforecasting is a way for people to frame things
  - c. As Olivia is getting up and running would love to make connections with EFI. Perhaps people in the group can help develop materials
  - d. NSF has a ton of interest in getting curricula and interest in high school
  - e. And it would be great to create bilingual education modules too, most forecasting/data science training is primarily in English.
5. [QUBES repository](#) of EFI resources update - see the 4 resources that have been deposited. The link provides summaries of the materials we have posted. There have been lots of views and downloads!
  - a. Ecoforecasting Student handout: 3289 views, 220 downloads
  - b. Ecoforecasting repository of online resources: 610 views, 191 downloads
  - c. Teaching biostatistics with R infographic: 497 views, 162 downloads
  - d. Learnign R infographic: 397 views, 76 downloads
6. Forecasting Ethics material (Jody is leaving this in the notes for reference)
  - a. Here is an overview of what was developed: start with a think-pair-share to discuss the [Ecological Forecasting Ethics: Lessons from Covid-19](#) post in Dynamic Ecology. This would then be followed by 3 topics presented in the post, 1) uncertainty, 2) unintended consequences and conflict of interest, and 3) sins of omission vs commission. The material provides a hypothetical ecological example with questions and real-world examples/news stories. There are also a couple of examples of further readings and suggestions for the next steps forward.

- b. Idea from Mike on Slack: One other thing we always talk about in my class when we cover forecast ethics (and which might build well off the "sins" example in the slide deck) is the question of which forecasts should be public goods and which are appropriate for private investment. If all forecasts have to be public goods, there will be a lot less forecasting and possibly less innovation than if the private sector invests, but on the flip side there may be forecasts where there's a moral obligation to disclose the prediction to everyone.
  - c. The core group that worked on this project (Abby, Sydne, Ryan, Quinn) were potentially interested in trying to publish it at Teaching Issues in Ecology and Evolution. Sydne had suggested this journal, but Abby is open to others. Think about putting it up on QUBES to get DOI, but make sure that uploading to QUBES won't affect submission to a journal.
    - i. Sydne is happy to provide some rubrics for assessment of student learning to this document once the examples are nailed down
7. 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