September 16, 2021 Education Working Group Call

Attendees: Alyssa Willson, Jody Peters, Anna Sjodin, Jason McLachlan, Lisa Haber

Agenda/Notes:
1. Document for (guidance counselors/instructors) working with students interested in ecological forecasting
   a. Mary and Tadhg are sharing it with their class. We want to share it with others in EFI to get feedback. Think about strategy for sharing and getting feedback and then think about where to share more broadly, e.g., Ecolog, Career counselors, QUBES (see notes from May/April calls for details about QUBES options)
   b. Put it out there and say we welcome feedback and it is a living document
   c. Interested in hearing from guidance counselors when students are reaching out to them - want to get this resource to those people so they have it when they are working with students at the right time frame - Jody to follow up with Dom Chaloner and ND Career Center and forecasting instructors
   d. Put it on Ecolog and QUBES

2. Update about Olivia's scripts for teaching R infographic for teaching/learning biostatistics with R Updates.
   a. Wait on this until Olivia is available

3. Forecasting, Prediction, Projection Manuscript Update (Anna and Gretchen)
   a. Remaining things to draft: Conceptual figure and discussion. Everything else is drafted
   b. Anna will be starting a new position in the next couple of months with the EPA! She will continue to work on forecasting and will be working with Covid in water sources and bat monitoring.

4. Other tasks to consider prioritizing (and the group can brainstorm other ideas!):
   a. RCN Educational Materials follow ups
   b. Educational module development connected with the Sloan grant
      i. We have Sloan funds for a grad student in the spring. Will be following up with Sloan partners to figure out what topic to pursue, but leaning towards species distribution and how that changes with climate change. Jason will be meeting with Sloan partners to discuss ideas.
   c. Alyssa's paper: 2nd chapter of dissertation focuses on educational resources from EFI and Alyssa's work with the HSU interns and RCN meetings this past summer - communicate about developing curriculum at different levels and how undergrads can develop a forecasting background with the undergrad degree. Would like input from the group when she has pulled together an outline for the paper
   d. What kind of biostats do students need to know to set them up for being able to take a forecasting course?

i. Notes from today:
ii. Could be something emerging from Alyssa's paper that provide concrete steps that Jason can incorporate into the Biostats course he teaches
iii. 2 things students are missing - thinking in terms of distributions and thinking in terms of programmatic coding - is it possible to take the Biostatistics class and incorporate these things.   Would need to redefine the intro content for data science/intro stats class
iv. From Anna's experience - the programmatic codign experience came from repetitiously doing it rather than taking a class. Teaching it is a challenge because it isn't just this is how you do this and there is a right and wrong answer
v. Stanford has challenge online that provides weekly challenges - something like this would be something that gives people the experience
vi. Come up with ways to have group projects where everyone participates and have challenge or project based modules to have consistent practice
vii. Anna's experience with UConn's ecological modeling course - taught by 2 professors, a Bayes and a frequentist so got both perspectives
   ● Morgan Tingley - UCLA and Robi Bagchi - UConn
viii. Previous Notes:
ix. Jason - provide update on ideas from RCN Steering Committee Call
x. From Feb 2021 call: How do we make those materials available? Don't want to create a textbook, but could think about an [AGU Monograph](#) style resources. 10 chapters that build on each other.
xi. Go back to the notes from Feb 2021 call for details about this conversation.
xii. Elva Escobar is interested in participating on this project
xiii. Here are some ideas that came from a separate call with the RCN Steering Committee.
   ● Quinn is trying to think about how to put some of his course materials together. Thinking of perhaps a How To Guide for the forecasting challenge
   ● 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 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.
    - 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
  - xiv. Disciplinary expertise - think we are downplaying the empirical researchers who are providing data/data collection. Don't want to leave those people out
    - Ecological methods course

5. Plans for next call:
    a. Check in with Alyssa about her documents.
    b. Check in with Jason about his discussion with Antoinette, Georgia, and Nievita for Sloan activities