March 29, 2021 Education Working Group Call

Attendees: Tadhg Moore, Alyssa Willson, Jody Peters, Shannon LaDeau, Olivia Taberes
Regrets: Jason McLachlan, Anna Sjodin

Agenda/Notes:
1. EFI-NEON video assessment by HSU students (Alyssa)
    a. Humboldt State undergrads are reviewing the overview of forecasting videos from EFI. All the students have some stats backgrounds. Alyssa is helping to hold hands where needed for stats.
    b. Turning in 4th reflections in the next day or so.
    c. Big patterns so far.
        i. Expected that stats would hang up students but that hasn't really been an issue so far, but also haven't got to Kalman Filtering yet. Currently working on uncertainty partitioning and have been able to think about each of the types of uncertainty.
        ii. One thing that has come up with nearly every video is that the students wished they had more examples. Alyssa was surprised because when she went through the resources, she thought there were a number of resources, but she came to the resources starting grad school as compared to these students who are undergrads. Alyssa has been able to share additional examples with the students.
        iii. One thing that has come up with all the students is why do we care about propagating uncertainty or the info gained from understanding the uncertainty. They understood what the uncertainties were doing but not why we care about those uncertainties.
        iv. The students participating come from different STEM majors, ranging from freshman in botany to a senior in environmental engineering.
        v. The reflections Alyssa has asked the students to complete are pretty open-ended. Asked them to reflect on what they understood and what made it useful to understand it or what previous information/experience had they brought to the video to help understand it. Identify areas where they had to look up additional information. And ask a question about something in the video. Alyssa has provided additional resources for students that were interested in going through those additional resources. E.g., numerical weather forecast is a resource that Alyssa has shared with a number of the students.
        vi. Students having a hard time finding a concrete example of applying theoretical/statistical knowledge to the problem.

2. Forecasting, Prediction, Projection Manuscript Update (Anna and Gretchen)
    a. We'll get an update next month

3. Olivia's R infographic for teaching biostatistics with R Updates
    a. Figuring out how to share with the group before tweeting it.
    b. Olivia will share it on twitter and then EFI can share it as well.
    c. Also thinking about translating it into Spanish and is thinking about developing an infographic that targets students.

4. RCN Education Workshop Update (Jason, Alyssa)
    a. 2 applicants for the June 7 Pedagogy Workshop, 6 applicants for the June 28-29 Education Workshop.
    b. It would be great to have everyone in this working group apply and feel free to share the workshop information with your colleagues. Deadline to apply is May 1
        i. [Inclusive Pedagogy Workshop details](#)
        ii. [Education Meeting details](#)

5. Document for Guidance Counselors and Instructors working with students interested in ecological forecasting
    a. Work on this starting at 1:30 when Lisa joins after her lab meeting
    b. Who do we want to target with this document?
        i. Aim broadly: Instructors - could share this on Ecolog for instructors who have students that may be interested in ecological forecasting. Help instructors to know what students need in terms of stats and ecological backgrounds
            ● Put it in the hands of the instructors in biology, ecology departments
        ii. Guidance counselors
        iii. Career counselors - Jody will check with ND Career Counselors
        iv. Would there be a way to leverage the QUBES community?
            ● They have a monthly newsletter. Jody can reach out to Caitlin about getting this in.
    c. 2 pages would be okay. Summarize ecological forecasting (1 page), Suggested course (1 page)
    d. Add text letting
    e. Intro to calculus
    f. Group by category - data science, ecology, social sciences
    g. Do we want this to be a print out or make it html? We could put it on the EFI website and then have a pdf version that people can print out.
    h. Share with people from the Social, CI/Methods, Theory working groups to get feedback.

6. Task for the future. Jody is leaving this on as a reminder.
    a. What kind of biostats do students need to know to set them up for being able to take a forecasting course?

i. Jason - provide update on ideas from RCN Steering Committee Call
ii. 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.
iii. Go back to the notes from Feb 2021 call for details about this conversation.
iv. Elva Escobar is interested in participating on this project
v. 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