**May 11, 2023 Education Working Group Call**

Attendees: Abby Lewis, Jody Peters, Cazimir Kowalski, Jason McLachlan, Dexter Howard, Mary Lofton, Oliva Tabares, Alyssa Willson

Agenda/Notes:

1. Scheduling new calls - can we keep this time/day combination and meet on Thursdays at 2pm US ET on June 15, July 13, Aug 17? Or should we poll to find a new time for calls for June to August?
a. If needed here is a poll to schedule calls in May to August.

2. Announcements
    a. Congratulations to Alyssa Willson for leading the paper "Assessing opportunity and inequities in undergraduate ecological forecasting education." published in Ecology and Evolution https://doi.org/10.1002/ece3.10001
    b. The DEI working group is hosting a book club this summer to discuss the book "97 Things About Ethics Everyone in Data Science Should Know". Let Jody know if you are interested in being added to the email list to get more details.
        i. The group meets

3. Macrosystems EDDIE Updates
    a. Feedback on a figure Mary is hoping to use in Version 2 of Module 7: Using Data to Improve Ecological Forecasts
    b. Module is targeted for undergrads. This is a figure that they would get to at the end, they would be working towards this sequentially.
    c. Series of 1-day-ahead chlorophyll a forecasts
    d. What do you think as you look at the figure?
        i. Intuitive for someone with training.
        ii. For students, there is a lot going on. Mike's figure of the distribution of the forecast, data, and posterior. Could you put that in the same type of format (same axes) and then move to this with the real data.
        iii. Why are the dashed lines there? Students were confused when the forecasts they were being generated. Student could think a forecast is generated every 4 days when the data is available. So the dashed lines were to help make it clear that the forecasts were created each day. Perhaps add the dashed line into the legend.
        iv. Dates are ugly on the bottom - maybe try Sept 30, Oct 1. But do like the dates on the bottom to show that this is a real example.
        v. Students will be upper level undergrads. This module is not for introductory students. Assume the students using this module will have self-identified as being more quantitatively oriented, but don't expect them to have seen data assimilation before.

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vi. Could try a more simple version that only has 3 days (which also goes along with Alyssa's suggestion of using Mike's diagram)

vii. Could walk through it day by day. Start with day 1 and then show ensemble and then next show day 2 forecast.

viii. Mary will share the updated figure with the day by day walk through

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1-day-ahead forecasts generated every day
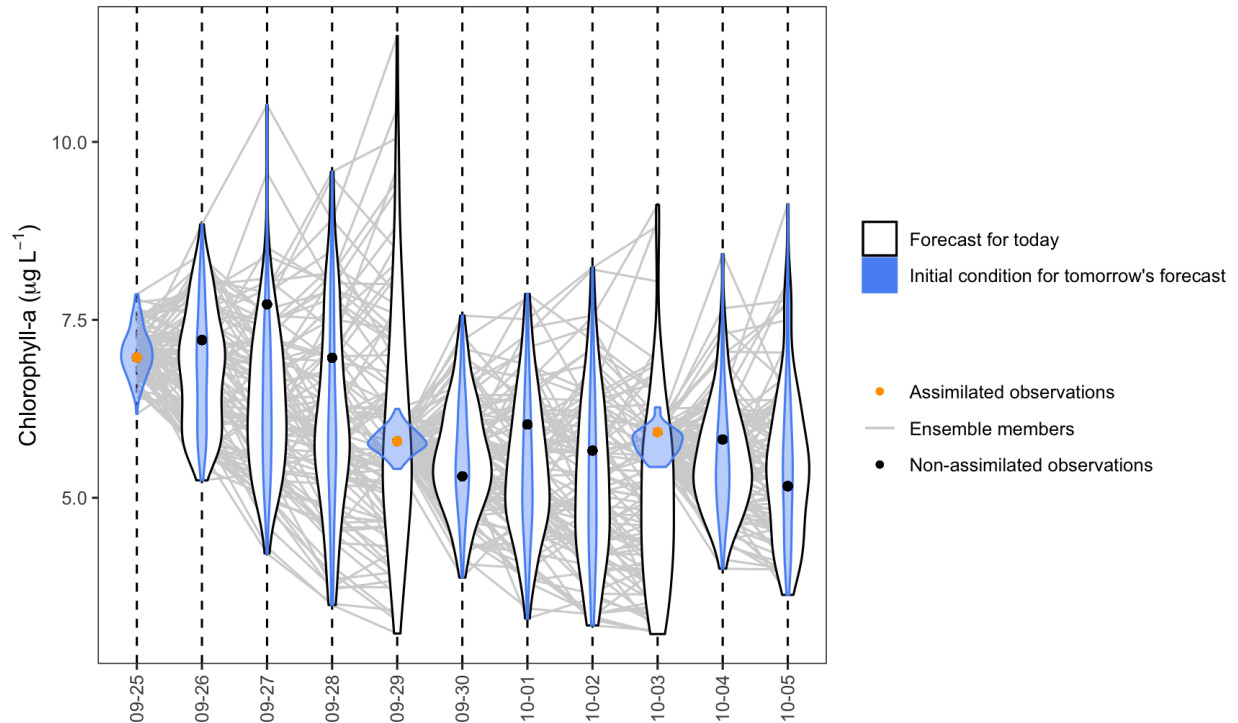
4. Ethics in Forecasting Project Manuscript Updates
   a. Authorship guidelines
   b. From last call, waiting for responses from editors about
      i. Is this a good fit
      ii. Advice about handling copyright for figures/tables
      iii. Providing Student handouts
   c. Abby looked at all the journals for the tables/figures that we use. Many are open access or say it is fine to use it as long we cite it appropriately. For 2 figures requested through Wiley to reuse the content for free. Just needed the table from Figures set 2 that needs to be paid for and we'll get this paid for from the RCN funds.
   d. Journal requirements - there are a few formatting things we need to
      i. Define the issue
      ii. Pick the Core Ecological Concepts that are related to ESA's 4DEE framework (as compared to 5E which - need to pick the concepts from each of the 4 areas that align with what is in the manuscript.
         ● Fisheries module ties with population growth - not explicitly but you would use population growth with fisheries analyses

- ● Would be a guide for classes on what is relevant
- ● Maybe have in the Notes to Instructor section - if you are teaching an ecology class, here are some specific ecology-relevant topics
- ● Do we need to list the different concepts for the different modules? Or just list the concepts as being general across all
- ● Perhaps have a table for ecological concepts that lists the concepts by each figure set
   iii. Course Context - give detail about what kind of course to use these case studies.
- ● Have the leads of each figure take a start on adding the course context
   iv. Check with the editor about the option to put the figure sets on QUBES as a way to allow for modifications. Abby will do this.
   v. Side thing for the group to think about: Interesting to think about ways of taking resources and modules/exercises/code - is there a way to provide a way to broaden them out to different disciplines. Is there a standard for that? Is there a way to say for a math class you can use it this way, for a

e. Update from Figure Set 2
   i. Have continued to clean and update
   ii. Olivia will finish the rubric and let Abby/group know. Plan to have it done by the end of next week

f. Update from Figure 3 and review of other modules by students at Cal Poly Humboldt
   i. Caz tried out the modules with the students they are mentoring. Students enjoyed the marine module. Felt the Figure set 4 was the
   ii. Difficulties for students was figure interpretation. Some of the figures could be challenging on their own. But as long as someone walked through the figures then they were able to
   iii. Flying foxes - students didn't understand contingency tables, so providing more details about that in the caption would be useful.
   iv. Think Figure set 3 is ready except making an explicit connection between Figure set 3 and 4.
   v. There is a rubric - but Caz would like comments from the group about that
   vi. Have Discussion 1, then all the content, then have Discussion 2 - should the first 2 questions be reflected on individually and then move to discussion in a small group on the following 2 questions.

g. Updates from Figure Set 4
   i. Still need to write notes for Instructors and needs to work on the Rubric
   ii. 2 questions - how it is written now has background, student instructions, notes to instructors. Right now it is intended for instructors. Do we need to provide a handout form for instructors
- ● Some of the format is required by the journal (intro, notes to instructors)

- ● Would like to have handouts that can be provided with the manuscript submission. Ideally we want this to be something that can be printed out for people in a rush so it is ready to go
  - iii. Student Assessment is a writing assignment. But now there are issues coming up with chatGPT. Some of Gerbrand's colleagues have different approaches. Write essays with pen and paper. Others are letting students to use the AI and then reflect on it. Integrating it explicitly into the assignment to address the AI.
    - ● We are in a weird transitional state. People will be using it in the future, so whatever we write now will get overtaken by how the AI get to at the time when it is used.
    - ● Jason recommends leaving it alone right now
    - ● Writing skills is not something that is graded on for others. But Figure set 1 has writing quality. Writing quality will still matter even if it is different. Don't think it will undermine the learning goals or content
    - ● The nice thing abut this set of modules is that so much takes place through classroom discussions. The assessment is optional. So it shouldn't undermine the learning and ethics.
- h. Next Steps
  - i. Work out journal specifications
  - ii. Clean up modules
  - iii. Timeline - spend this month making sure individual case studies are ready. Then plan for this point in June where Abby synthesize and work out nitty gritty details then have review from co-authors with the goal to submit in July