April 20, 2020 Education Working Group Call

Attendees: Mary Lofton, Jason McLachlan, Anna Sjodin, Diana Dalbotten, Mike Dietze, Jody Peters

Agenda/Notes:

- Prep for RCN
    - Google doc to request resources people know about [LINK REMOVED]
    - Put goals in box. Color code a box for each section to make it easy
    - Point to this doc in the RCN presentation highlight that if:
        - A)People have resource(s) - add them to the list
        - B) If you want to be involved in the discussion - fill out the doodle poll by May 15 (Friday after workshop)
        - This RCN is not focused on Education, but the next meeting is. So we want to use this meeting to help get set up and recruit additional group members
    - Anna and Jason will work on the slide deck/recording
    - Diana will work on Diversity presentation
- Updates
    - Undergrad level: Since the last call Diana/Jason - talked about REU plans for this summer. Diana is organizing a large REU program. Jason is teaching a course at ND's field station. Want to combine forces. Alyssa will help with this.
- What are the topics for an Undergrad ecological forecast course?
    - location/community based
        - Could guide perspectives / examples
    - No way will get into the weeds on computing
    - Process from the perspective of people who have an interest in the land
    - Have examples with code that instructors walk through. Decide how far along these lines to go
    - Diana: how to tap into the larger REU community
        - How can we reach out to this community
        - Tool applications?
        - "What is forecasting" lecture - good way to get EFI/forecasting out to a large group of undergrads
- Grad level: NEFI summer course is going virtual
    - Have long/short videos from the 2018 course
    - How to use the summer courses as a week long course.
    - But also how to use the resources to do online learning
    - Figure out good platform for hosting online courses.
    - Short assessments at the end of each video
    - Things to retain from in person course: will try to do course projects, group discussions, Q&A time after presentation videos

    - Design modules that are scalable. For example, create activities that have parts a&b which are doable by undergrads, parts c&d which are doable by grad students
    - Think of converting from R to something Shiny-like to make the activities more interactive graphic way. Still gets the concepts across, but doesn't require the grad level of how to implement.
    - Undergrads - knowing forecast/uncertainty exists
    - Melissa's videos about structured decision making don't have math in them. Could be used at the undergrad level now.
    - Use the videos and try to achieve the larger goals of making them usable, accessible, and more scalable.
    - Diana would be a good test case for whether something would be interesting/valuable to an undergraduate
- VT - starting to think about how to bring the 4000 level (juniors and senior) Freshwater Ecology online for next fall. It isn't forecasting specific. But concepts could overlap. Mary is willing to help if the forecasting opportunities overlap with the class.
    - Are there any models that are part of this course already? It's easy to put a forecasting perspective on other modeling activities (e.g. change a sensitivity analysis to a sensitivity analysis)
- How to approach math from Alyssa).
    - Not helpful to show code. If you are shown code but don't apply it
    - If the goal is to approach forecasting from high level/theoretical, then may not want to get into computational
    - Example: have model of aboveground forest productivity, have info from flux tower and tree rings which gives better constraints on how ecosystem works
    - To get at the broader concept - think of it like presenting the discussion section of paper instead of the results section
    - Show what data could be useful for answering a question - tree ring example (Jason) and water/Quasi (Diana) example
    - Show students example of what has been done with graphical representation and explain what it means to a non-scientific/scientific audience
    - Once you found the dataset and how to show what people do with the data, then it is also nice to work to show students how to manipulate the data (this is the more in-depth need)
    - What is the difference between modeling and forecasting. How do you become a forecaster instead of modeler and why would you want to?
    - Lots of students will be exposed to modeling this summer.
- Moving Forward
    - Diana/Jason and Mike/Jason - put together a set of tasks people in the group can decide where to get involved