August 20, 2021 Joint Methods & CI Working Group Call

Attendees: Jessica Burnett, Jody Peters, Josh Cullen, Chris Brown, Matthew Brousil, Rob Kooper, Michael Dietze

Agenda/Notes:
1. Poll for Sept-Dec Calls: Ignore the dates and just focus on the day/time options. Also make sure your timezone is selected at the top.

2. Visualization/Decision Support Tools, User Interface Task View
   a. Continue to work on organizing resources and brainstorming tools
   b. Update from Jessica Burnett on what she is working on if she is able to attend
      i. How data products and info products are used in decision making. In fall switch to quantitative work.
      ii. Manuscript w/minor revisions to PLOS Comp Bio, *Ten Simple Rules for Creating a Scientific Web Application*
      iii. Has a (private) github repo with text and resources relevant to scientific web applications and other interactive products (notebooks) with focus on helping biol/ecol researchers. Feel free to request access. I will migrate relevant text and such over. See also this public repo

   c. Task view reorganization
      i. Need to figure out the high level categories. Currently have 17 areas listed
      ii. Once we finish nailing down the high level categories then spend time on the call adding resources and filling in
      iii. Don't need to give full tutorial on how R Shiny works, need to give high level summary of it and give pointers where to get more information. For each category is would be a page or less
      iv. Example from Workflows - Jake found a page of 200+ workflow tools that exist. Don't need to provide all those tools. Need someone to say here are the 3-5 tools that experts typically use and the tradeoffs
      v. For visualization packages - can provide pointer to an exhaustive list, but then say 90% of what we use is ggplot, plus plotly
      vi. Previous 2 task views had R and Python bias
      vii. Interactive Spatial Visualization - do we want to have something about bringing in data from the user community. You can interact, but there are controls. Designing interfaces taht allow users to add new data - not sure where that will go. Think that concept is at a higher level. It isn't unique to Interactive Spatial Visualization. It improves the interaction with the community. Is there a natural home for the concept of working with users to collect data. Data behind the scenes vs collecting data from others.

        1. One option could be to list it in the Data Ingest Task View. Funding agencies are interested in advancing community sourcing.

        2. It could go in the User Interfaces header. Libby has been working on an R Shiny app that takes in user data and reads it into a mySQL database

        3. Interactive Spatial Visualization is where Matt would look for it, but see it could have a place for it in the User Interface

viii. There is redundancy that could be cleaned up. Think about what is too close to the topic or can nest things within other headers. Think it would be good to cut down to help with wading through the information.

ix. What is the difference figures and graphs that change with user input - reactive. Plotly - you can zoom and pan, but where the data points are never change as opposed to an app that has sliders that make things change.

        1. Could put them in the same header and have 2 subheaders.

        2. Don't think it is worth separating them into high level headers

        3. Could put in data input section as a reactive

x. How is the exploratory data analysis? Is that also in the reactive?

        1. Trying to remember if this was tools or concepts.

        2. If tools - think 5 would be about what we use to build and 6 would be the off the shelf tools for exploratory data analysis. But not sue if it is different from the tools used to make plots

        3. Hassan - shared one thing of making spatial matrix and graph. It would fit under 10. Visualization under 10

xi. Exploratory Data Analysis may have been general exploration which is different that spatial. It isn't the tool, but it is about how we look at the data and explore the data.

xii. Challenge of this Task View is that sometimes there is the temptation to talk about concepts, but we want to highlight tools. There are concepts that people need to think about and that we want to include, but don't want to make it a book.

xiii. Exploratory Data analysis could be nested with 3 - use the static case to talk about general visualizations.

xiv. 1 and 2 are the big visualization topics to know about, 3-5 is how we are distributing visualizations and how do we share it, 6-9 are how are we dealing with specific types of data (time series, spatial, uncertainty), 10-11 go with the 1-2 section - things people need to be aware of. 11 is precursor to how we make the visuals. 12 is how do we make conclusions. Once I have my visualizations, how do I draw conclusions.

        1. Should 11, 12, 13 be unified or should it be moved elsewhere?

        2. 12, 13, 14 - I have my visualizations, now what. How do I tie it to my research. How do I make conclusions out of the visualizations?

        xv.   "Long term plans" is critical to include - how to you get a PB of data visualized? Moved it to Development

        xvi.   Add resources for making things production ready. Especially for decision support tool - make it available beyond a local computer. Falls within how do we share our visuals.

   d. Moving forward for next call.

        i.   We have enough sorted out. Now want to think about who wants to take the lead on cleanup and brainstorming on any of these areas. Could be signing up for a theme or a subheader - at this point, not asking people to write anything, but brainstorm organization so we can come back in a month and find out if we have missed anything.

        ii.   Jessica - will go through and add references and links to what she has already pulled together

3. Uncertainty Quantification & Propagation, Modeling & Stats and Workflow Task Views now online https://projects.ecoforecast.org/taskviews/
   a. Update from Jody - can't remember what the status was last month, but it is officially up. There was also an update on the Workflows Task View in the section about tools for workflows that replaced information about the drake package with info about the Targets package

4. Data Ingest, Cleaning, Management
   a. Placeholder until we are further along with the other Task Views or have an identified leader for this

5. NEON Ecological Forecast Challenge CI Update
   a. Quinn is traveling, but can see if anyone else has updates or questions