

## July 16, 2021 Joint Methods & CI Working Group Call

Attendees: Mike Dietze, Jake Zwart, Denis Valle, Libby Mohr, Lyndsie Wszola, Matt Brousil, David LeBauer

Regrets: Jody Peters - someone please take notes during the call [Jake can take notes]

Agenda/Notes:

1. Introductions
2. Announcement: Upcoming [R Shiny Seminar Series](#) - 1 hour calls with 15 min presentation of an app speaker developed and 45 min of a “bare-bones” Shiny app that specifically focuses on the key technical feature that is the topic of the given webinar. The speaker will demonstrate the components of this feature and will guide attendees in applying this feature in the example R code as well as its potential use in other Shiny apps.
  - a. August 10, 2021: Storing Data on User Interactions with the App on SQL Database, *Fabio Caltabellotta (Oregon State University)*, [Registration Link](#)
  - b. August 17, 2021: Creative Visualization of Model Results and Uncertainty in Shiny, *Margaret Siple (NOAA-AFSC)*, [Registration Link](#)
  - c. September 14, 2021: A Primer to Creating Interactive Maps with Leaflet in Shiny, *Thomas Connor (University of California, Berkeley)*, [Registration Link](#)
  - d. Note from Jody - we are already at 20-25 people registered for each call so far!
  - e. Goal: Focus on shiny app developed and how it can be useful to the broader community. Often times it’s hard to find shiny information online and having a presentation from someone should help transfer information on how to develop shiny apps for forecasting application
  - f. [David] Building shiny apps on top of databases can have some security issues. Would be good to go over these complications in the SQL presentation
  - g.
3. Winter Shiny course
  - a. Lyndsie and Denis offered a course in May 2021, there was a lot of interest, and they wanted to provide another course, but in person
  - b. Early plans to have in-person course in January 2021 at U of Florida. Still figuring out logistics
4. [NEON Ecological Forecast Challenge](#) CI Update
  - a. Quinn and Carl both off this call
  - b. There are a couple new helper functions to pull down the forecasts and scores - this is helpful for pulling together results for upcoming talks
  - c. Some new upgrades to the Shiny app that displays the forecast results
  - d.
5. Visualization/Decision Support Tools, User Interface Task View

- a. Continue to work on organizing resources and brainstorming tools
- b. Since our last call, Denis put us in touch with Jessica Burnett who shared the [sciwebapps GitHub repo](#) which is an open source and community-driven repository for resources, information, discussions, and suggested practices for creating, communicating, and improving Scientific Web Applications.
- c. **Jessica would you mind sharing about this and the best practices guidelines for visualization and decision support tools? (Jessica not on today's call)**
- d. Denis and Jessica (and others) submitted a Ten Simple Rules for creating interactive decision support tools to Computational Biology
  - i. Thinking about who maintains the tools, reproducible, etc..
- e. A big challenge about the task view will be to narrow down the list of tools
  - i. Even within Shiny, there are so many tools available how do you decide which tools / applications to highlight?
  - ii. Might think about things that are specific to visualization vs more general - e.g. speeding up code is a general problem and maybe doesn't belong in this task view (although is important to effective visualizations)
- f. This task view more than the others might need a principles section. This shouldn't be an R shiny tutorial but can point to good R shiny tutorials
  - i. This also shouldn't be a comprehensive task view
- g. Should interactive visuals have their own category?
- h. Maybe categories could be
  - i. Static graphs
    - 1. Maps
    - 2. Timeseries
    - 3. Etc...
  - ii. Gifs
  - iii. Videos
  - iv. Interactive graphs
- i. Interacting with the social science working group could help make the principles section more robust. What is best way(s) to visualize data
  - i. How many principles are well-established vs. still under debate about what is the best way to convey information (e.g. bar chart vs boxplot)
  - ii. Just knowing that there is debate around principles of the visualization would be valuable to include in the task view
  - iii. Can also link to accessible visualization textbooks for further reading
- j. A lot of design choices will depend on intended use. So principles will vary depending on the audience and application
  - i. There might be some core principles and some other principles that may be a bit more fluid depending on the application
- k. Color should probably be its own subheading
  - i. How to go about picking colors (principles of colors in visualization)
  - ii. Also a section for what tools are out there for picking colors and color palettes

- l. In general, we should try to reduce redundancy among sections - e.g. reference other sections / subsections
  - m. Should user interfaces be its own subsection or integrated into others?
    - i. Seems like it should / could be its own subsection
  - n. Reactive subsection under interactive subheading. Reactive meaning that the user provides input and the visual changes in response
  - o. Decision support tools
    - i. In previous meetings, the social science team didn't point to any generic tools that are used for decision support
    - ii. Is this too broad of an activity that there are so many tools out there that can be used?
    - iii. Dashboards seem like the most specific to decision support
    - iv. Seems like it's common to have someone build a specific tool, whether that's a website or another app, so maybe this is why specific tools don't come to mind?
    - v. R shiny and others tools allow the scientist or end user to develop own tools
  - p. An outcome might be that there aren't any general decision support tools and there needs to be one (or a few)
    - i. But see: Tableau, Power BI
  - q.
6. Uncertainty Quantification & Propagation, Modeling & Stats and Workflow Task Views now online <https://projects.ecoforecast.org/taskviews/>
- a. Update from Jody - code has been updated, but Jody needs to work with Quinn when he is back from traveling to resolve GitHub Actions so that the updated code reflects on the bookdown page. Once the Action issue is resolved the Uncertainty and Workflow Task Views will be ready to go public. When it is ready to go public Jody will share on Slack/Twitter/Newsletter
7. Data Ingest, Cleaning, Management
- a. Placeholder until we are further along with the other Task Views or have an identified leader for this
    - i.