

CDI Monthly Meeting 20191113

November 13, 2019: Data Visualization Theme

Meeting Recording and Slides

Recordings and slides are available to CDI Members that are logged in to the wiki.

These are the publicly available introductory slides. Log in as a CDI member to see the other presentation slides.

If you would like to become a member of CDI, join at <https://listserv.usgs.gov/mailman/listinfo/cdi-all>.



[CDI_20191113_OpeningSlides.pdf](#), [CDI_20191113_ClosingSlides.pdf](#)

Agenda (in Eastern time)

Times are approximate.

- 11:00a Welcome
- 11:05a Working Group Announcements [CDI_20191113_OpeningSlides.pdf](#)
- 11:15a Introduction to the Visualization Theme - Lindsay Platt, USGS
- 11:20a Laura DeCicco - Visualization with R
- 11:35a Rich Signell - HoloViz
- 11:50a Ben Letcher - An interactive mapping tool: overview of the interactive catchment explorer
- 12:05p Dionne Zoanni - USGS Tableau workshop
- 12:20p Results of community voting on the statements of interest [CDI_20191113_ClosingSlides.pdf](#)
- 12:30p Adjourn

Abstracts

Introduction to the Visualization Theme

Lindsay Platt is a Water Data Scientist for the Integrated Information Dissemination Division within the Water Mission Area and holds a Bachelor's degree in Biological Systems Engineering from Virginia Tech. Her primary role is to distill large or complex water data into meaningful insights through reproducible science and innovative data visualizations. She also leads the USGS R training program, which teaches other USGS scientists how to wield the power of scientific computing to create their own reproducible workflows.

Visualization with R

Laura DeCicco works at the USGS Upper Midwest Water Science Center.

HoloViz

Rich Signell is a research oceanographer at the US Geological Survey in Woods Hole.

- i. <https://waterdata.usgs.gov/blog/furthest-water/>
 - ii. <https://waterdata.usgs.gov/blog/beyond-basic-mapping/>
 - iii. <https://waterdata.usgs.gov/blog/inlmiscmaps/>
 - iv. <https://waterdata.usgs.gov/blog/nldi-intro/>
 - c. Blodgett and DeCicco blog, "R for Water Resources": https://usgs-r.github.io/nhdplusTools/awra_2019/#/
 - d. ggplot2 blog: <https://waterdata.usgs.gov/blog/boxplots/>
4. **HoloViz**
- a. <https://holoviz.org/>
 - b. the best link for the demo files can be found at github.com/reproducible-notebooks
 - c. The link to the reproducible notebooks demo of HoloViz is: <https://github.com/reproducible-notebooks/HoloViz-CDI-Demo>
5. **Interactive Mapping Tool**
- a. The interactive catchment explorer can be found at <http://ice.ecosheds.org/>.
 - b. These tools were built for decision makers, and we'd like to explore further how visualizations affect decisions.
6. **Tableau**
- a. <https://support.chs.usgs.gov/> - CHS Help Center (Search "Tableau")
 - b. <http://listserv.usgs.gov/mailman/listinfo/chs-tableau> - sign up for the Tableau list serv for announcements
 - c. [USGS Tableau Microsoft Team](#)
7. **Community Voting Results**
- a. [2020 Community Voting Results](#)

Q&A

General

1. So is MS Teams akin to Slack?
 - a. Yes MS Teams is quite slack-like
 - b. Yes, it is the MS version of slack, and also replaces Skype for business

Visualization with R

1. Where is the best place to start to learn visualization skills (R?), for someone with minimal R knowledge?
 - a. <https://owi.usgs.gov/R/>
 - b. <https://owi.usgs.gov/R/training-curriculum/intro-curriculum/> (also an in-person class)
 - c. Hadley Wickham probably has a basic GGplot /plotting in R book
 - d. There is a free and open source R book that assumes no R prior knowledge R: <https://r4ds.had.co.nz/> The book covers both viz skills and data manipulation.also, the 3rd edition of Gggplot2 will be open source
 - e. A collection of free books on R and Data Science: <https://committedtotape.shinyapps.io/freeR/>
 - f. <https://owi.usgs.gov/R/training-curriculum/intro-curriculum/>
2. Laura, what's the best path for creating a USGS publication-ready plot?
 - a. SPN (USGS Science Publishing Network) type graphs: <http://github.com/USGS-R/smwrGraphs>
3. What's the status of R Shiny servers in USGS?
 - a. UMESC has worked with CHS to host a shiny server and it's up and running. Now just ironing out the kinks with a few display bugs. Thus far the server is UMESC-specific but hopefully the next center who sets one up will have an easier time! (Emily Weiser)
 - b. Richie do have a CloudFormation template for your R Shiny instance in CHS?
4. **In R, what formats are the maps available in?**

Holoviz

1. Reactions from the crowd to the demo: rad Rich
2. As a warning, the mybinder.org directions do not always work with the aws binder sever Rich is using
 - a. The Binder I used was the one we deployed for Pangeo on AWS: <https://aws-uswest2-binder.pangeo.io> (anyone can use that also!)

Interactive Mapping Tools

1. This ICE demo deserves a bunch of adjectives and emoticons too. I suppose there's quite a learning curve to develop something like this, though? (or build off of?)
 - a. Yes, it requires a good developer that can use VueJS, bootstrap, crossfilter, Leaflet, d3
2. **Hi Ben, what is ecosheds built on?**
 - a. See above?
3. Hi Ben, I was interested from the developer perspective why Leaflet was selected to build the web application as opposed to another platform, such as ArcGIS API for JavaScript? I am curious if there were more benefits offered or if it's because of the benefits of it being open source software?
 - a. yes, we used Leaflet because it is open source.
4. Re: understanding how hosted visualizations are used — I would suggest looking into Google Analytics events to record specific page interactions, and CrazyEgg, which creates heat maps of all clicks on a page. Google Analytics is free, and CrazyEgg requires a license

Tableau

1. Is there a gallery page of examples or some examples of Tableau to point to? This is the first time I've heard of Tableau and I'd like to explore what is already out there.
 - a. <https://public.tableau.com/en-us/gallery>
2. Is there a cost to host a Tableau dashboard on CHS? Or just the license cost? Those sorts of ongoing costs can be challenging to budget into project funds.
 - a. CHS pays for the infrastructure (server costs), and each individual user pays for a yearly license subscription that can range from 144-588 dollars per year, depending on the license you choose. CHS manages those licenses.
3. Could you repeat the date for the Tableau webinar?
 - a. November 22 at noon Eastern