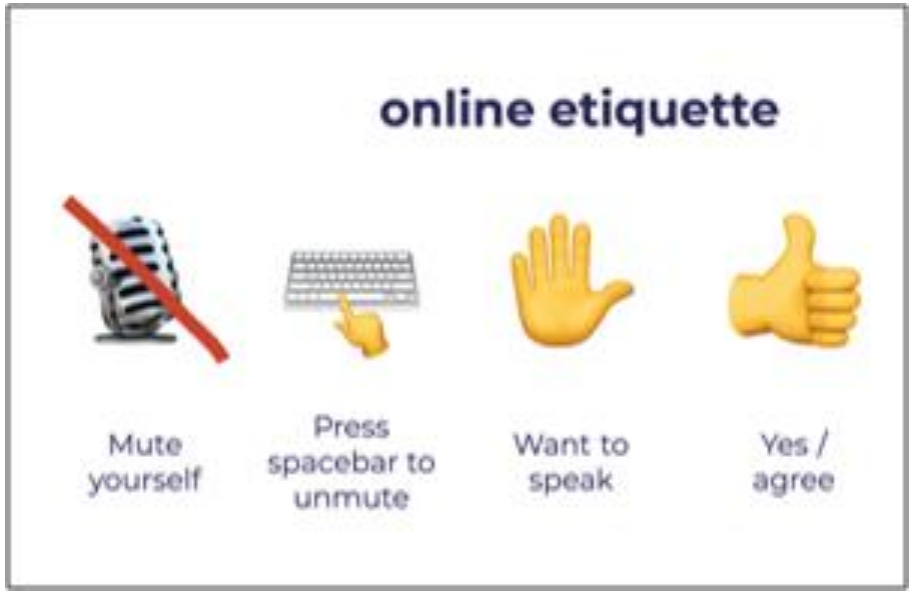
Before We Begin



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Coastal Ecology Assessment Innovation & Modeling

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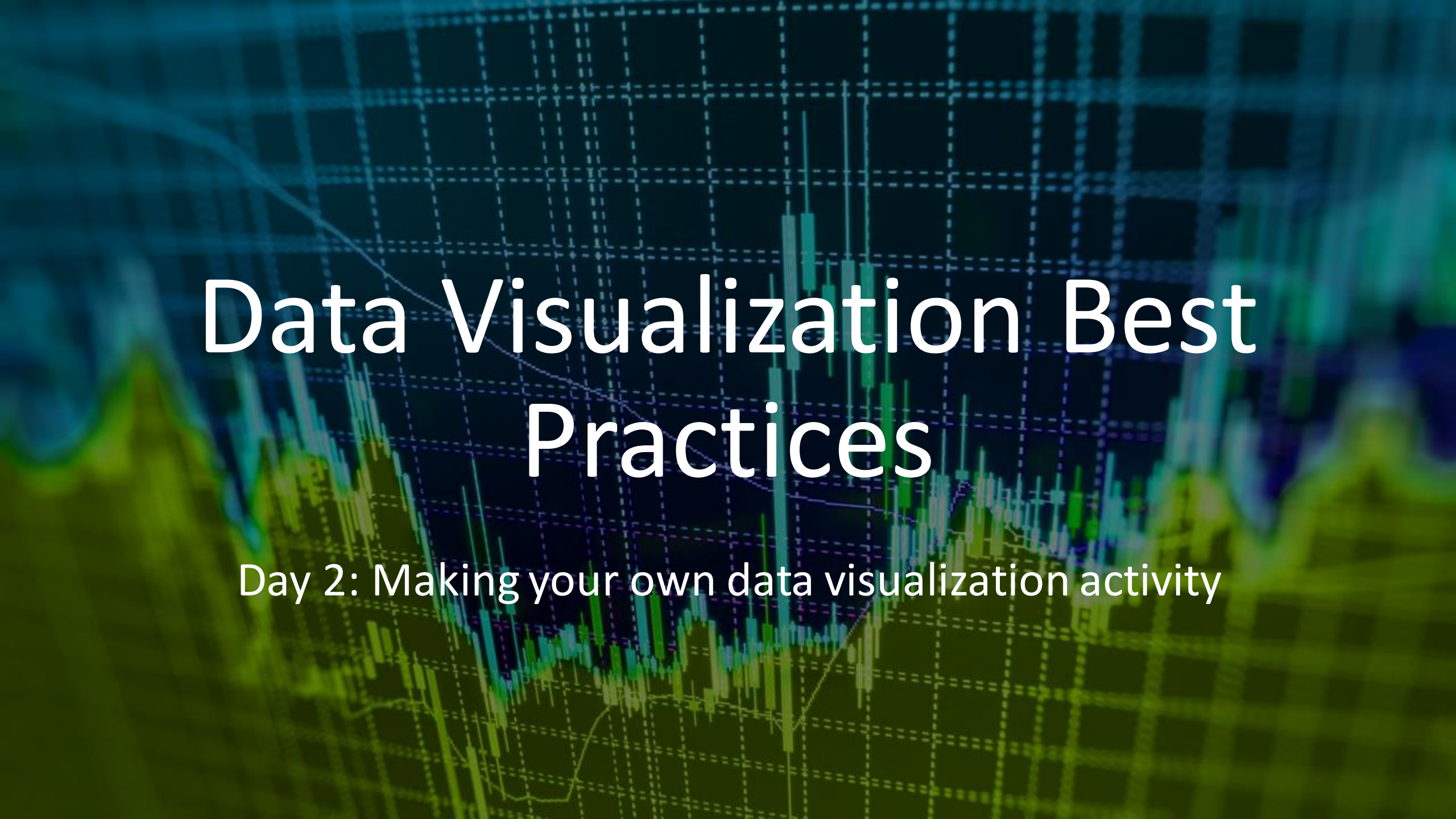


Data Visualization Best Practices

Day 2: Making your own data visualization activity

Agenda

- 9:00 – 9:15 Welcome from Dr. Geoff Bothun (RI C-AIM Lead PI, URI)
- 9:15 – 9:30 Recap of the first day
- 9:30 – 9:45 Expectations for the second day
- 9:45 – 9:55 Break
- 9:55 – 10:55 Break out groups, round 1
- 10:55 – 11:05 Break
- 11:05 – 12:05 Break out groups, round 2
- 12:10 – 12:30 Debriefing, Q&A/discussion, Planning for Day 3

Questions/Concerns? Contact us by chat or email (visulizationworkshop@gmail.com, shamouda@ric.edu, lcendella_2763@email.ric.edu)

Welcome from Dr. Geoff Bothun

RI C-AIM Lead PI, URI

Day 1 Recap

A brief summary of yesterday's session

Best Practices

- Understand your data (where it comes from, what patterns it shows you)
- Choose a visualization that accurately depicts these patterns
- Remember the key principles and practices

Principles

1: Show the data

- Including correct labels and metadata

2: Reduce the clutter

3: Integrate text and images

- Visualization must be able to stand alone and reinforce text

4: Portray data meaning accurately and ethically

- No cherry-picking or suggesting conclusions where there aren't any

Practices

1: Capitalize on consistency

2: Data that shouldn't be compared shouldn't be presented side by side

3: Don't limit design choices to default graphing programs

4: Focus on the take-home message for the audience

5: Minimize acronyms, jargon, and technical terms

6: Choose a font that's easy to read and reproduces well

7: Recognize the importance of color and benefits of Section 508 compliance

Tools

- Power BI
- Tableau
- Infogram
- Piktochart
- Excel
- Google Sheets

Links

Links to data sets and tools you could use for today's activity

Data Sets

U.S. Census Bureau: https://www.census.gov/

- Easiest to search for what you're interested in

National Water Quality: https://www.waterqualitydata.us/

National Water Information System: https://maps.waterdata.usgs.gov/mapper/index.html

Data Sets

DEM Narragansett Bay: http://www.dem.ri.gov/programs/emergencyresponse/bart/stations.php

Narragansett Bay Watershed Counts:

http://www.watershedcounts.org/marine_water_quality.html

URI Fish Trawl Survey: https://web.uri.edu/fishtrawl/data/

Data Sets

These 3 were graciously provided by Dr. Peter Meyer from the Physical Sciences department at RIC

National Oceanic and Atmospheric Administration: https://www.noaa.gov/education

United States Geological Survey: https://earthquake.usgs.gov/

- Or their new website: https://www.usgs.gov/
- Seems to be a collection of released data: https://www.sciencebase.gov/catalog/item/5474ec49e4b04d7459a7eab2

Smithsonian Global Volcanism Program: https://volcano.si.edu/

Tools

Power BI: https://wwaw.microsoft.com/en-us/download/details.aspx?id=58494

Tableau: https://www.tableau.com/academic/teaching/course-licenses

Infogram: https://infogram.com/

Piktochart: https://piktochart.com/

The Activity

What you will do

- Round 1: Work with your teammates to plan out an activity you think will engage students to learn about data visualization or data science
  - Fill out the checklist in Google Drive as your team progresses (make a copy before editing!):
    https://drive.google.com/drive/folders/1MKG5Ei5hqU12VQVJ24O5dsMwExoRgaCb?usp=sharing
  - We will help you choose a tool and find data
  - The goal of your activity doesn't *have* to be a digital visualization
- Round 2: Implement the resources you've gathered and create the activity. Work together to plan out a presentation
- Tomorrow: Each group will present their work (digital or physical) and we will choose a winner on Mentimeter

Examples

Voting: Then and Now

- Use theoretical data/data your students will make by participating

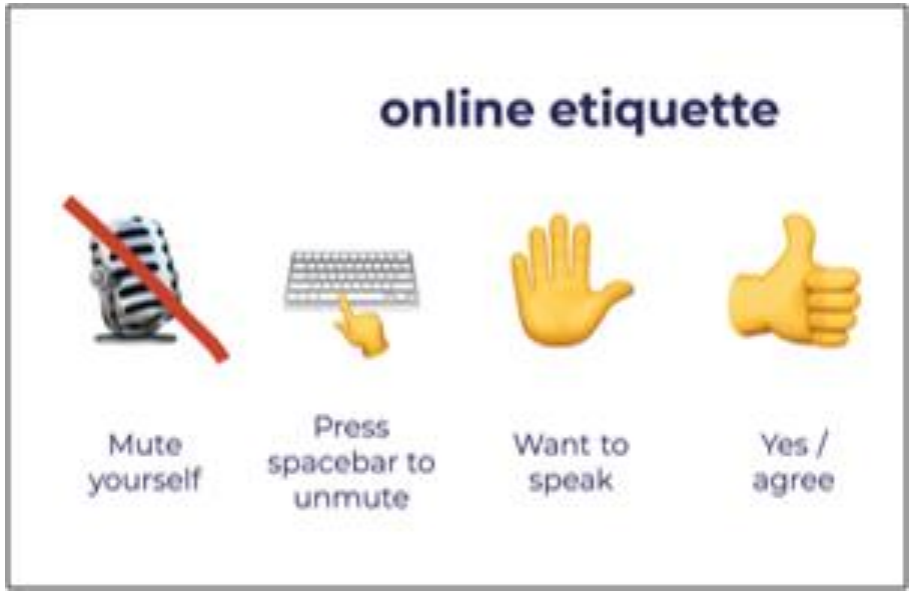
Torres Strait Tallies – A Chain of Achievements

- Making a physical visualization

Mapping America

- Using data to make a digital visualization

10-minute break



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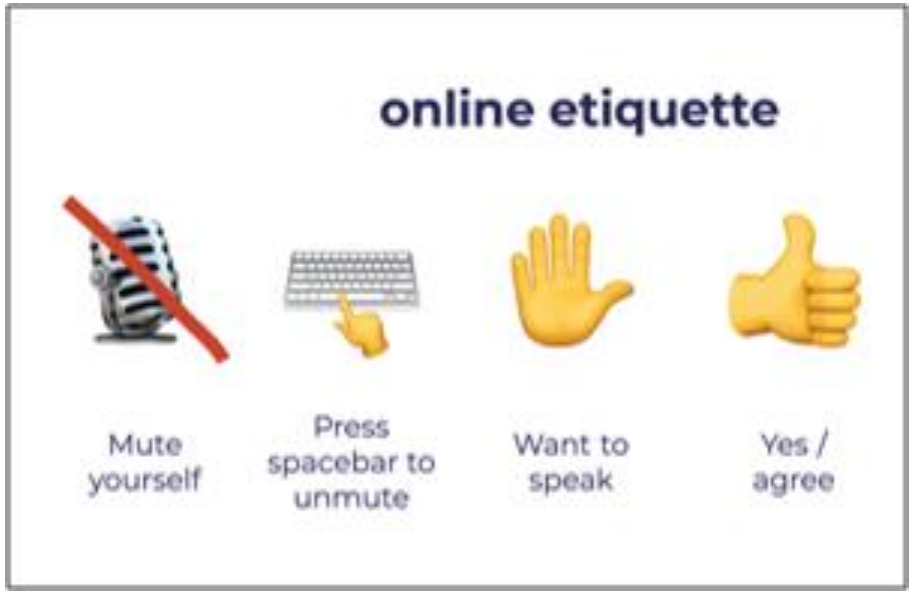
Round 1

10-minute break



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Round 2

Day 3

An overview of what will happen tomorrow and what you can do to prepare

Presenting your work

- In addition to your group presentations, students that worked on this research project will also be presenting their findings
- After them, each group will present based on a schedule we create
  - Please make sure your presentation/activity is in the Google Drive
- We will also go over the next steps you can take after this workshop ends

Questions and Discussions

Feel free to ask us anything