**Pedagogy of working with [climate] ‘big’ data using RStudio**

**Introduction and Orientation**

We will spend the first 20 mins getting set up and oriented before we start.

Use Chat for questions.

You should . . .

1. Log into your RStudio Cloud account
   * If you need to make an account, go here: <https://rstudio.cloud/>
2. Add a New Space (on left menu) and name it whatever you want
3. Go to New Project (on right)
   * New Project from Github
   * Enter this url <https://github.com/oreillycm/EDDIE-CO2.git>
4. Run the first set of code to install the libraries and packages
   * Under project files (lower left region) open the scripts folder and then open the file eddie\_climate\_cahnge\_script.R
   * Highlight the first set of code under Install Libraries and hit the ‘Run’ button
   * Highlight the second set of code under Load Libraries and hit the ‘Run’ button
5. Open the Jam board (Google platform) which we will use later on

* <https://jamboard.google.com/d/1gstR6ntxPkNBtglhvlcU4NA8HUD09-hDba13zeT7lIk/edit?usp=sharing>

**Activity questions**

We will be using a Jam Board to post responses to the different parts of the activity. Jam boards are a link-based google platform, no login required.

1. Link: <https://jamboard.google.com/d/1gstR6ntxPkNBtglhvlcU4NA8HUD09-hDba13zeT7lIk/edit?usp=sharing>
2. you will share your answers by using the sticky notes tool on the left menu. It’s ok to put your sticky note on top of someone else’s!
3. Places to post:
   1. Your answer to Part A
   2. Your answer to Part C
   3. Your answer to the overarching questions

**Discussion questions/Breakout rooms**

We will be using a Jam Board to post responses from each breakout group. Jam board are a link-based google platform, no login required.

1. Link: <https://jamboard.google.com/d/1gstR6ntxPkNBtglhvlcU4NA8HUD09-hDba13zeT7lIk/edit?usp=sharing>
2. you will share the discussion responses by using the sticky notes tool on the left menu.

Breakout group discussion

Steps and Instructions

1. It is great to have your camera on!
2. Introduce yourself – name, institution, country, favorite class to teach.
3. Identify a moderator who will keep general track of time and speak up or post in the chat when it is time to move on to the next question if discussion is still happening. If nobody volunteers then it is the person with the first surname alphabetically.
4. Discuss each question (< 4 minutes per question).
5. Each question should have a different person taking notes, you can go alphabetically by last name from question 1 to the last question.
6. Post answers. Each notetaker writes the response to their question on the Jam Board. Go to the page with the question you are going to address and write your group’s response by getting a sticky note from the left menu, writing the response in the note and saving and clicking somewhere off the note for it to stick to the board. You can navigate to your question page with the arrows at the top.

<https://jamboard.google.com/d/1gstR6ntxPkNBtglhvlcU4NA8HUD09-hDba13zeT7lIk/edit?usp=sharing>

Reminder of the overarching questions for the Climate Change Activity

1. How different are current rates of change from what we have seen happen in in prehistoric time?
2. What does this suggest about whether human activity is contributing to current climate change?

Questions for discussion

When looking at these questions, you can also reframe them as ‘what might happen if we didn’t have/do that?’ to help think about the alternatives.

1. What is the value of having an overarching question?
2. What is gained by sharing answers for Part A, the first activity?
3. What do we gain from using authentic publicly available data?
4. What is the value in allowing students to choose the path of analysis?
5. Since students are making different choices about what data to use to explore pre-historic rates of change, they will end up with different answers from each other. What do the students learn when they see these different answers?
6. How does answering an overarching questions help them develop quantitative reasoning?

Reminder – the three parts of quantitative reasoning are:

* 1. quantitative skills – calculating a number
  2. quantitative literacy – using a number
  3. disciplinary context/relevancy

1. Why is it important that the students determine the number themselves, compared to you just giving them the number?