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Data as Stepping Stones in the Research River: Using Data Across Disciplines When You're Not a Data Expert

Nina Exner
Virginia Commonwealth University, nexner@vcu.edu

DATA AS STEPPING STONES IN THE RESEARCH RIVER:
USING DATA ACROSS DISCIPLINES WHEN YOU'RE NOT A DATA EXPERT

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Many Ways of Knowing

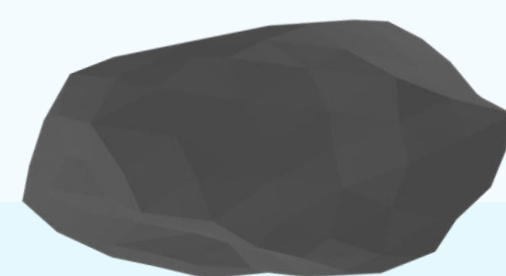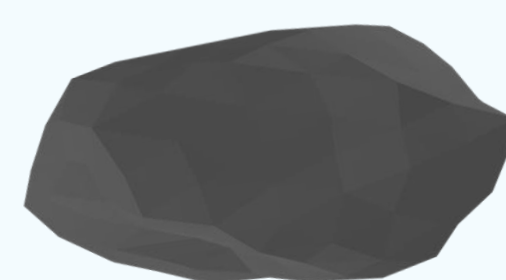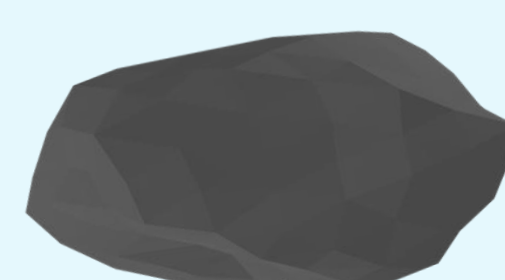Disciplines have different *epistemologies*, each with it's own view of "good" analysis
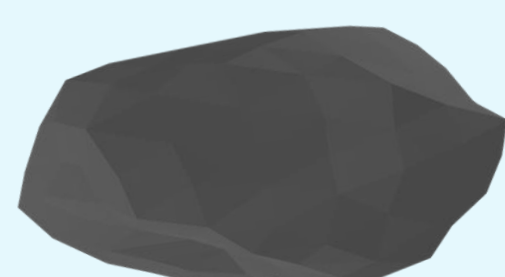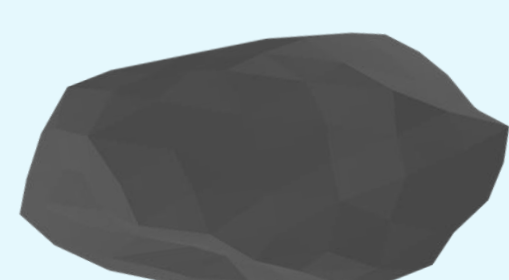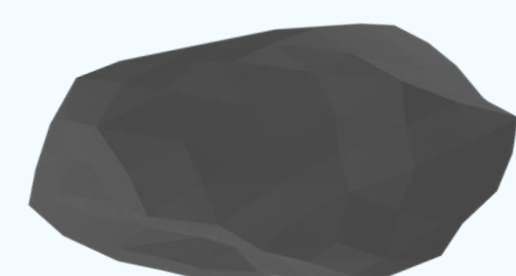
It is hard to accept other disciplines' views

Build discussions to move past assumptions

Resources like the Toolbox Dialogue http://toolbox-project.org/ help
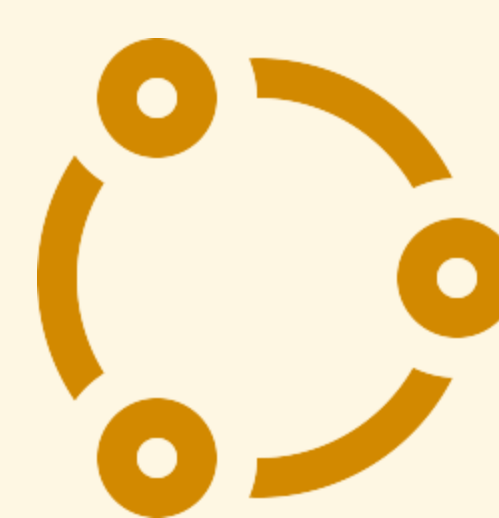
Don't Focus on the Quantitative

Data is not always numbers. For better research paths, add variety

Data include images, text, objects, observational notes, and more

Help PIs get beyond their silos by focusing on *why* this data and analysis addresses project goals

Dealing with unfamiliar methods? Concentrate on outcomes logic!

Wading into Workflows

- Good workflows support rigor, ethics, data management, and communication
  - How do computers/programs "talk" to each other to move data around?
  - How do findings come together for conclusions?
  - For computational research, ask if they can output a workflow diagram as an appendix
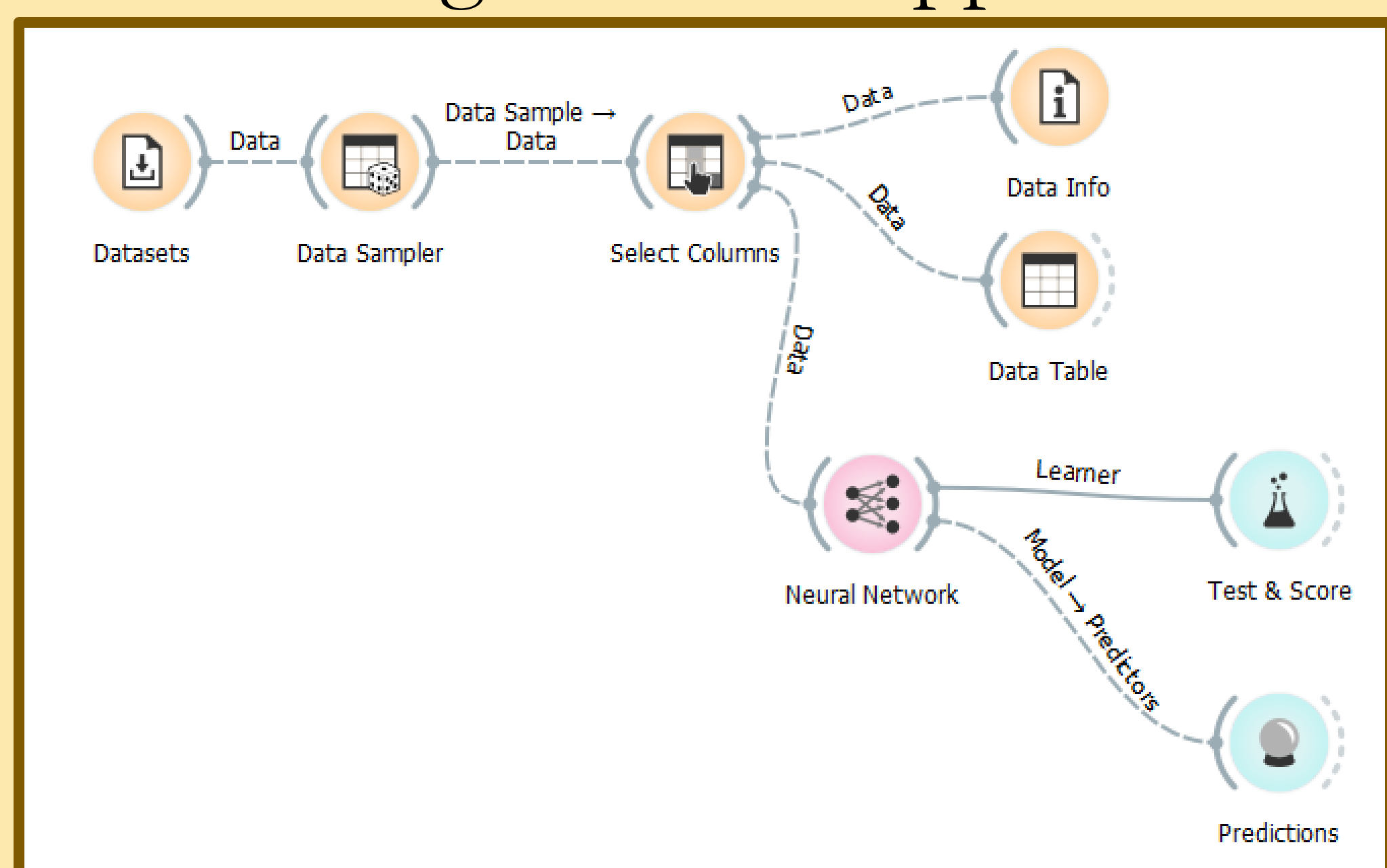
- Workflow planning supports Data Management Plans and builds Rigor & Reproducibility also supports clarity

- If the project is hard to follow, ask PIs to sketch the flow/handoffs of the data
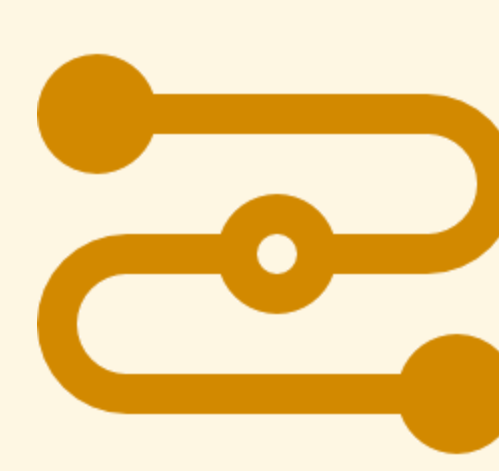
Stepping Towards Convergence

Assess convergence-readiness
- Disciplines with different data collection and analysis are more innovative, but face deeper challenges
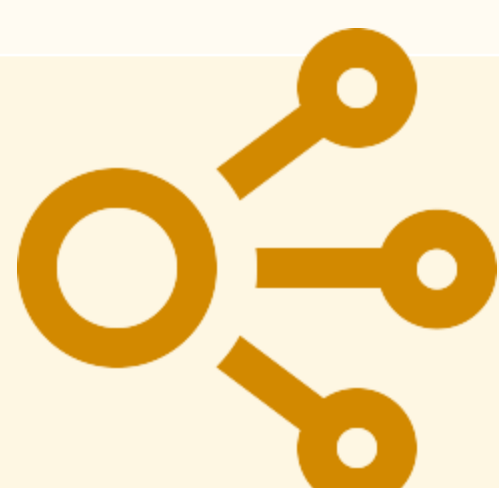- Disciplines with similar data collection and analysis concepts are more convergence-ready

RD professionals can help keep focus on the
problem ⟶ logic ⟶ solution

Data infrastructures must be flexible to support numbers, text, images, more

We use Open Science Framework https://osf.io/ which can be built, used, & shared many ways

Flexible, sharing-friendly software supports public access