Reliability, reproducibility and replicability in data-intensive ecology

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Replicability & reliability in data-intensive ecology

- Macroecological and timeseries data is limited in supply
- Simulation is helpful, but ultimately limited as well
- Room for improvement re: data availability and transparency of workflows

Research DOF and theory development

- Preregistration makes good sense for *experiments*, but what about theory development & devising new analytical methods?
  - Qualitative predictions vs. quantitative ones
  - Transparency in the model development process
    - Git logs?
    - Multiverse

Community for reproducible science

- Large and growing ecosystems of tools
- Vibrant online community - e.g. Twitter
- Nuanced and ongoing conversation: how best to
    - Make tools that are accessible to all researchers
    - Communicate about these tools
    - Encourage behavior change
- ReScience journal
- A longer history in psychology, biomedical communities

Supporting open science

- A largely volunteer-driven community
- Nonprofits supporting open science exist (but do not seem well-known among academic scientists!)
  - Code for Science and Society
  - McDonnell Foundation
  - Moore Foundation
  - Sloan Foundation
  - Etc?