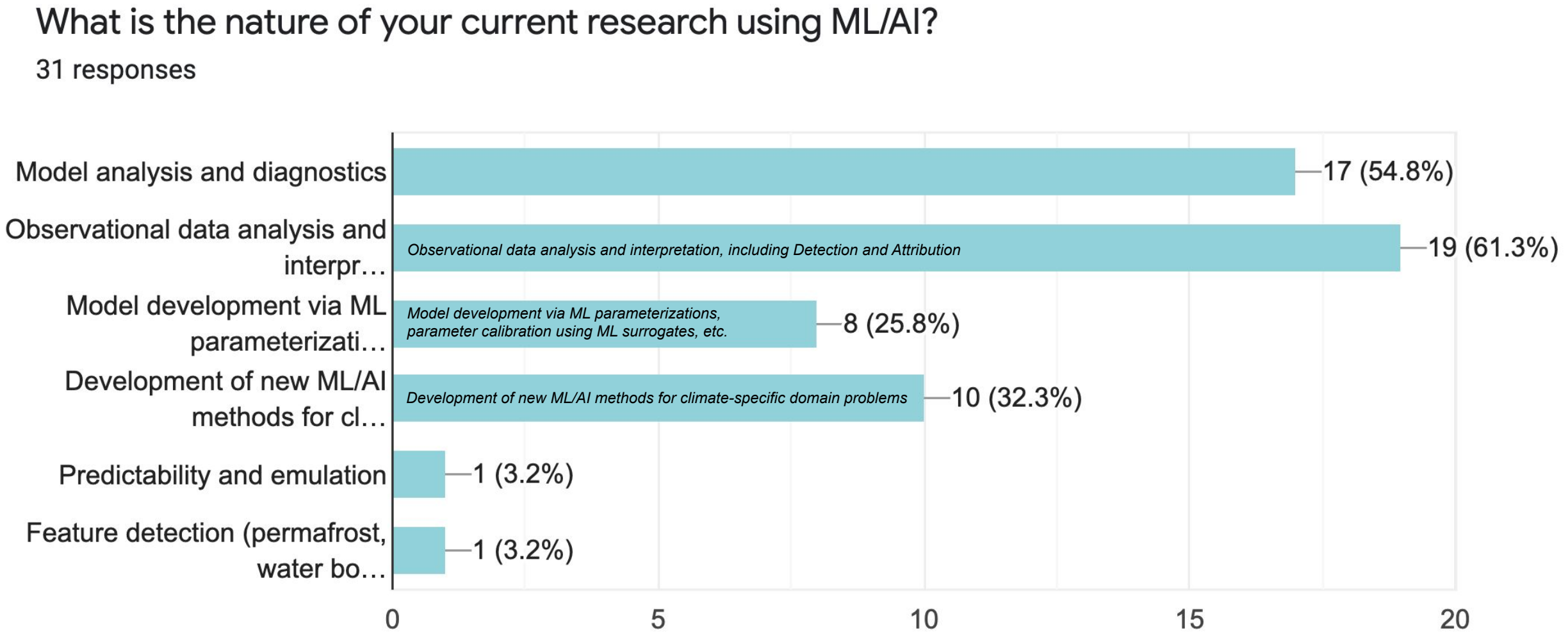
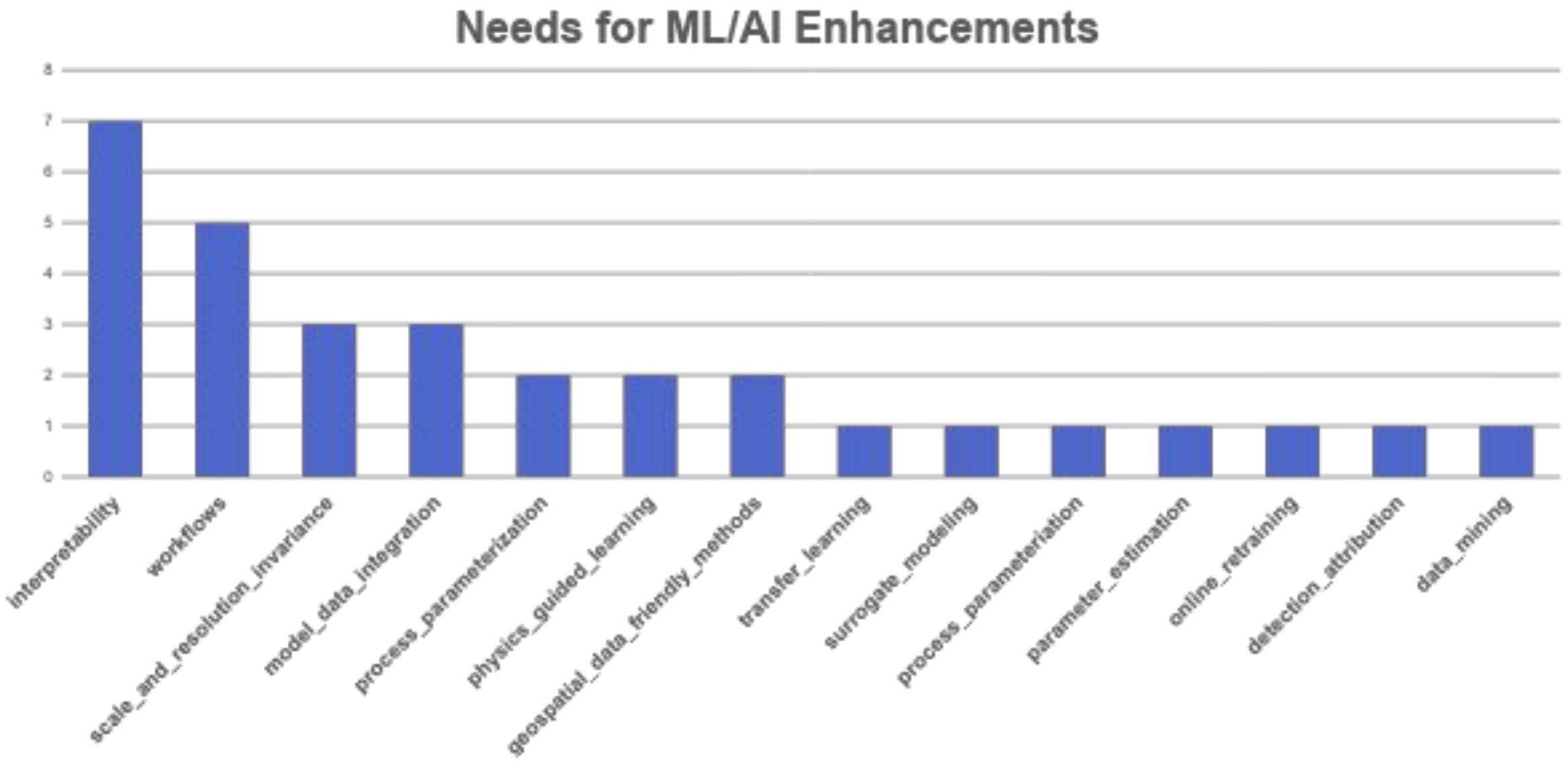
ML/AI Poll, and Questions for the Panel

- Katie Dagon (NCAR)
- Alex Hall (UCLA)
- Forrest Hoffman (ORNL)
- Balu Nadiga (LANL)
- Ruby Leung (PNNL)

(Poll) What is your Current Research using ML/AI?



(Poll) What New Methods are Needed?



(Poll) Blue Sky Applications of ML/AI in 5-10 Year Timeframe

- Enhancing predictive skill and understanding sources of predictability
- Model/data integration: UQ for state, parameters, and structural error
- Emulators for emergent behavior
- Physics-guided learning & process parameterization
- Autonomous instrument networks
- ….

Topics for the Panel

Prospects:

- What major scientific advances should we strive for by deploying ML/AI?
- What does transformative (distinctive) success look like?

Challenges:

- Can ML greatly accelerate hypothesis testing re forcings/responses/feedbacks?
- Will no-analog climates drive us to edge cases for training data sets?
- Can we develop robust upper bounds on “projectability” versus timescale?