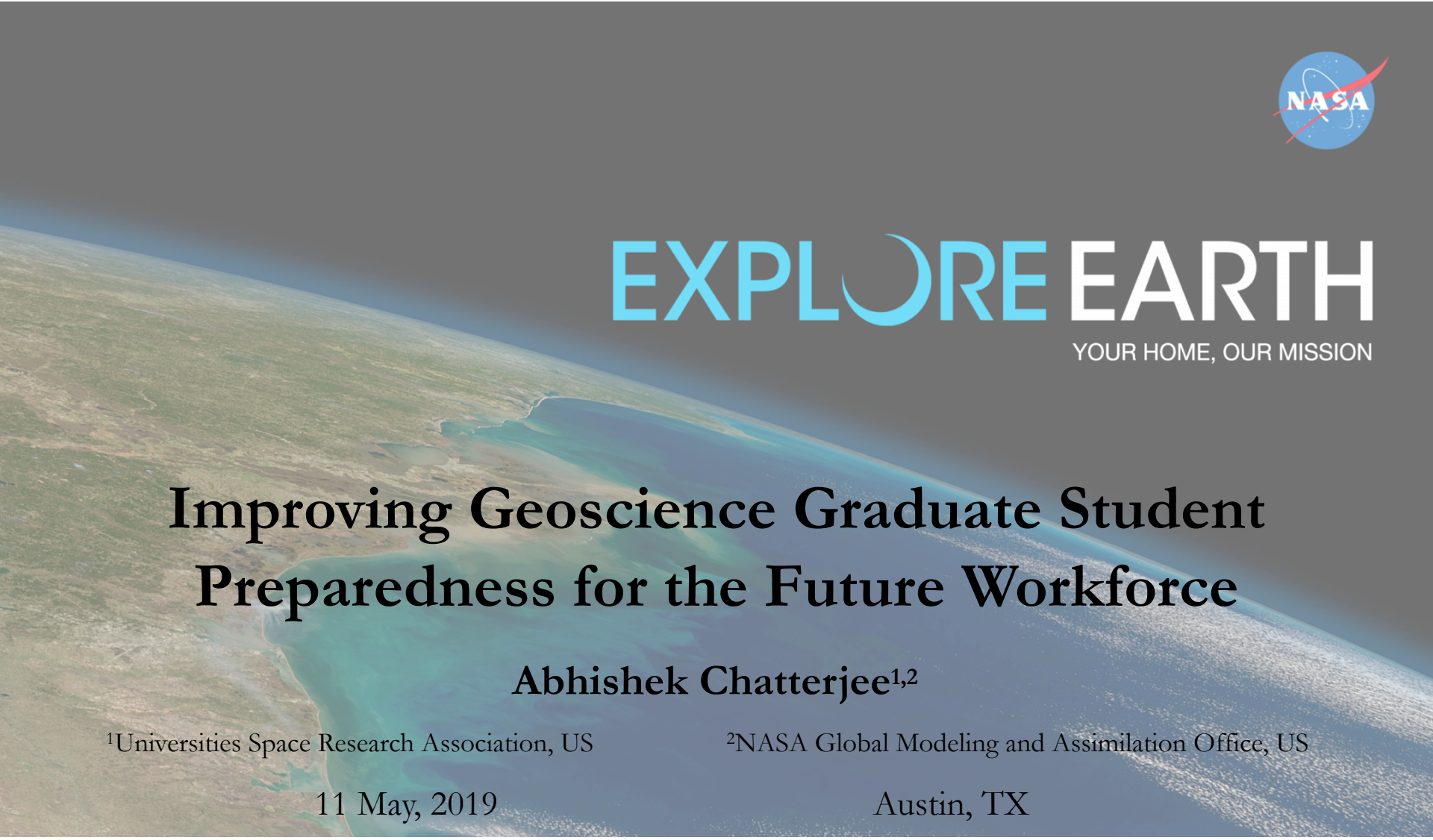

Improving Geoscience Graduate Student Preparedness for the Future Workforce

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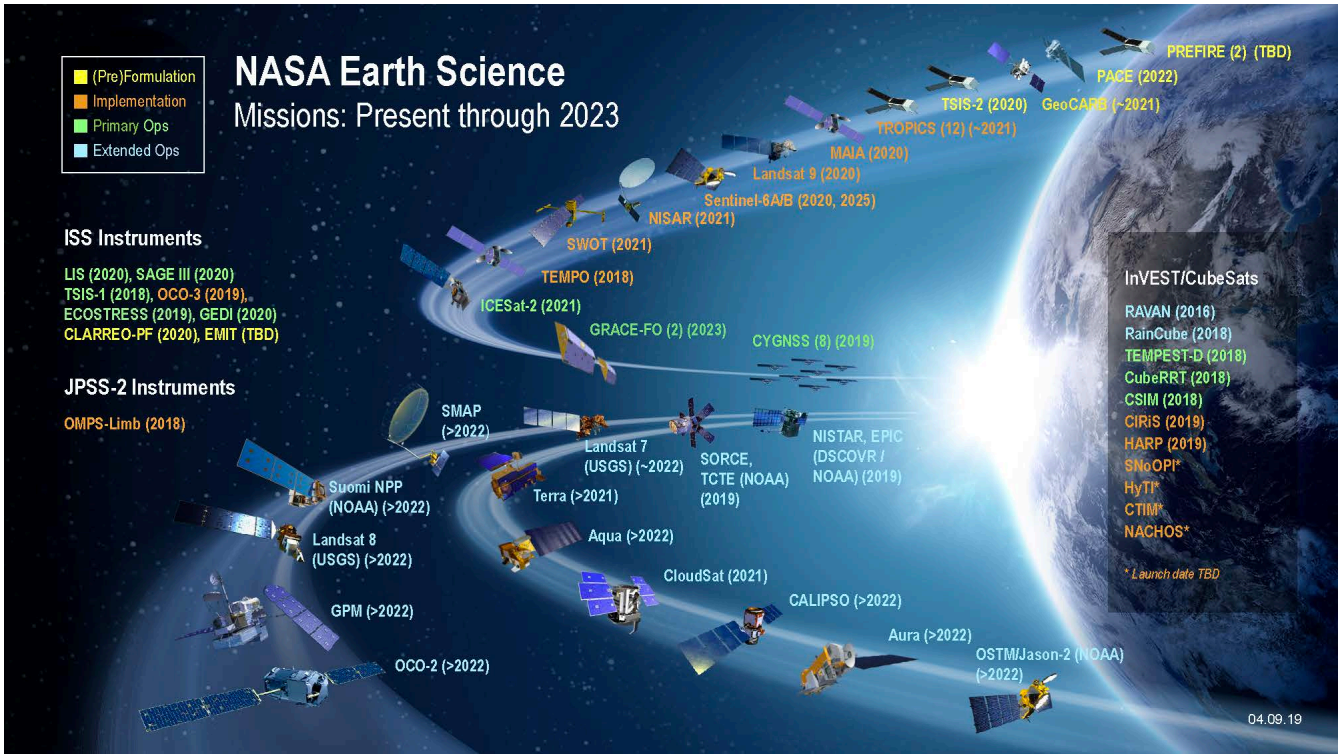
Austin, TX

NASA Earth Science Division



Earth Science Focus Areas

- Atmospheric Composition
- Weather
- Climate Variability and Change
- Water and Energy Cycle
- Carbon Cycle and Ecosystems
- Earth Surface and Interior

Earth Science Division Elements

- Flight
- Research and Analysis
- Applied Sciences
- Earth Science Technology Office

Skills and competencies: present and future

Within NASA Earth Sciences:

- ✓ exclusively PhDs are hired, newly minted PhDs are hired at a 'postdoc' level
- ✓ require fundamental and detailed knowledge in a particular domain - PhD thesis work
- ✓ three key things we watch out for - productivity, initiative and communication
- ✓ productivity (peer reviewed publications, scientific assessment reports, community papers), initiative (lead one's own research, develop funding resources), communication (oral and written skills, collaborations outside current group)
- ❖ in the future, with more and more funding cuts, initiative and communication are taking new meanings - for e.g., more and more "applications" focus, stakeholder engagement (who is the end user of your research?), communicate with policy and decision-makers, social media presence (what's acceptable, what's not) ☜ current graduate level curricula is not set up to train students along these lines

Skills current students have, what is missing…

- ✓ huge spread in professional competency - depends a bit on the advisor's background, graduate school and department structure
- ✓ highly skilled and proficient in different types of software, visualization tools - but sometime lack fundamental software language using which our Earth system models, satellite mission algorithms are developed
- ✓ current generation students are a lot more mature and innovative, versatile and comfortable working in groups, good data analyses skills
- ❖ lack the ability to synthesize information, good at detail but can't see the forest for the trees
- ❖ lack the knowhow to pursue non-academic trajectories, the way grad student curricula is setup, the first option is academia (faculty positions) / research labs
- ❖ lack of patience - learn new things, understand and be mindful of existing setups at individual institutions

Questions/Comments?

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