



# Committee on Earth Science and Applications from Space

Update from Joyce Penner,  
Committee Co-Chair

These slides are a personal assessment of issues discussed during recent meetings of the CESAS and should not be cited or quoted as the views expressed do not necessarily reflect those of the CSSP, the SSB, or the Academies



# Committee Roster

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University of Colorado

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Resources for the Future

**David L. Skole**  
Michigan State University

**Steven C. Wofsy**  
Harvard University

## MEMBERS:

**Mark R. Abbott**  
WHOI



# Focus during time of Decadal Survey

- Respond to issues that come up during D.S. but are outside their scope
- Help with issues that D.S. is facing
  - Discussion of issues surrounding “Continuity Report” and how to define “Quantitative Earth Science and/or Applications Objective”
  - Discussion surrounding Big Data issues



# March 2016 Meeting

- CESAS met during the Space Studies Board's Space Science Week, March 29<sup>th</sup> & 30<sup>th</sup>
- Presentation & Discussion with Byron Tapley, Bruce Wielicki, and Randy Friedl on the Continuity Report
- Update from Lawrence Friedl on NASA's Applied Science Program
- Presentations from Jean Luc Bald and Maurice Borgeaud on ESA's Earth Observation Programs, including the *Copernicus* Program
- Discussion with Ed Kearns, NOAA, on Big Data
- Update on International Space Station & related science opportunities from Julie Robinson, NASA



# Key Outcomes: Big Data

- Trend in earth science data is towards higher resolution, in both time and space, and a broader sampling of the spectrum
- The volumes of earth science data from many current and most future instruments has already reached a tipping point where the ability to access and analyze these large data volumes has narrowed the community to those with significant computational and bandwidth resources
- Data centers partially addressed these issues through intelligent design of data storage and access methodologies
- Big data cloud storage, access, distribution, and computation has the potential to democratize earth science research and transform the field



# Moving Forward: Big Data

- Several CESAS members feel strongly that Big Data is a critical issue for the 2017-2027 ESAS Decadal Survey
- In March, CESAS discussed possibly holding a Big Data event:
  - Workshop or 'meeting of experts'
  - Workshop could be stand alone, or held alongside Fall CESAS meeting
  - Include an invitation to the ESAS panels/executive committee of D.S.



# Key Outcomes: Continuity Follow up

- CESAS is working with Lawrence Friedl of NASA's Applied Sciences Program to convene a session on defining specific Quantitative Earth Science Objectives at the upcoming AGU meeting
- Hope to drive discussion of Quantified Objectives in the context of the Earth Science community