CESAS - Committee on Earth Science and Applications from Space

Co-Chairs: Chelle Gentemann and Steve Running

The overarching purpose for the committee is to support scientific progress in Earth system science and applications, with an emphasis on research requiring global data that are best acquired from space and to assist the federal government in planning programs in these fields by providing advice on the implementation of decadal survey recommendations. The CESAS provides an independent, authoritative forum for identifying and discussing issues in Earth Sciences and Applications from Space between the research community, the federal government, and the interested public.

At each of its in-person meetings, as appropriate, the committee may prepare concise assessments of progress on the implementation of the decadal survey's recommended scientific and technical activities.

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Current Members:
Chelle L. Gentemann, Co-Chair, Earth and Space Research
Steven W. Running, Co-Chair, University of Montana
Nancy L. Baker, Naval Research Laboratory
Molly E. Brown, University of Maryland College Park
Otis B. Brown, North Carolina State University
Ivona Cetinić, Universities Space Research Association / NASA Goddard Spaceflight Center
William E. Dietrich, NAS, University of California, Berkeley
Everette Joseph, University of Albany, SUNY
George J. Komar, NASA (retired)
Anna M. Michalak, Stanford University
R. Steven Nerem, University of Colorado, Boulder
Eric J. Rignot, NAS, University of California, Irvine
Christopher S. Ruf, University of Michigan
Duane E. Waliser, Jet Propulsion Laboratory
Eric F. Wood, NAE, Princeton University
Ping Yang, Texas A&M University

Note: New NASA ESD director on 8 June: Karen St. Germain

Staff:
Arthur Charo, Senior Program Director
Daniel Nagasawa, Assisting Staff Officer
Gaybrielle Holbert, Program Assistant
Andrea Rebholz, Program Coodinator

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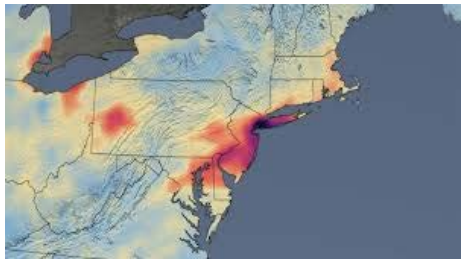
These slides are a personal assessment of issues discussed during recent CESAS committee meeting, and should not be cited or quoted as the views expressed do not necessarily reflect those of CESAS, the SSB, or the National Academies

CESAS Spring Meeting 2020

1) Rapid switch to online meeting required a substantial staff effort
2) Updates from
   - Sandra Cauffman (NASA ESD)
     i) Daily reviews of rapid CV19 research proposals
     ii) Flexibility for grants / due dates / proposals
   - Steve Volz (NOAA/NESDIS)
     i) In late 2019 NOAA signed a contract with AWS, Google Cloud, and Microsoft to host NOAA data and provide access to the public at no cost. 2 year IDIQ Contract, + (4) -2 year option periods. Open data/no charge for egress/charge for services and products built on data. Partners store data and provide access for free. NOAA Allocation (data determined by NOAA) of NLT 5 PB of storage per contract
   - Kevin Murphy (NASA/ESDS)
     i) Demonstrate the potential of cloud computing especially by bringing algorithms to the data to enable processing and analytics at scale
     ii) Improve existing data search and minimize reliance on internal search tools
     iii) Explore partnerships in Artificial Intelligence (AI)/Machine Learning (ML) to infuse these techniques to address existing data discovery, access and use challenges



CESAS identified a need for more interagency coordination on lessons-learned and efforts for cloud migration of both data and scientific expertise.

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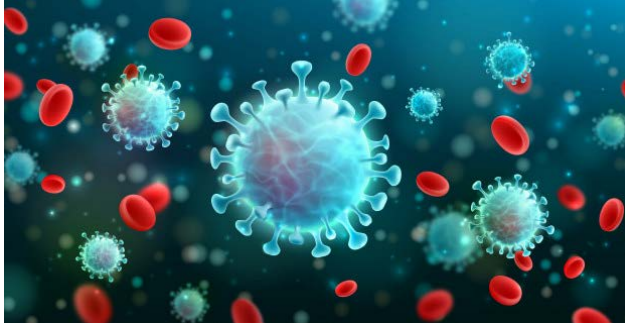
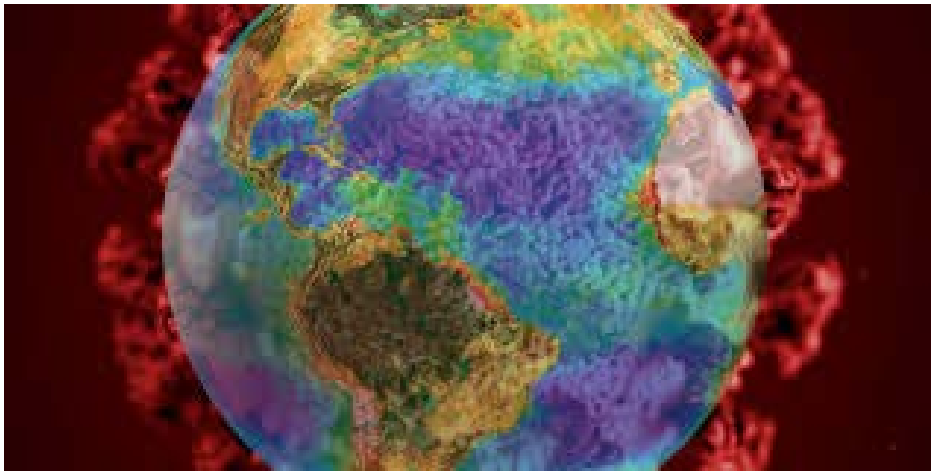
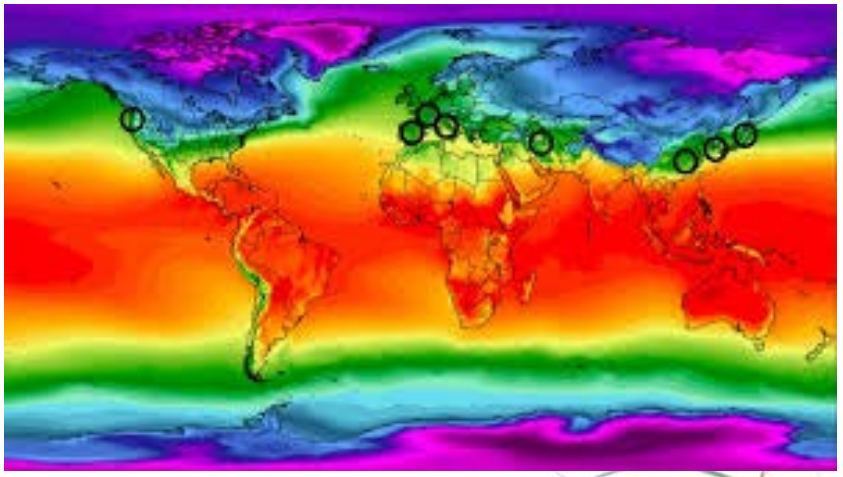
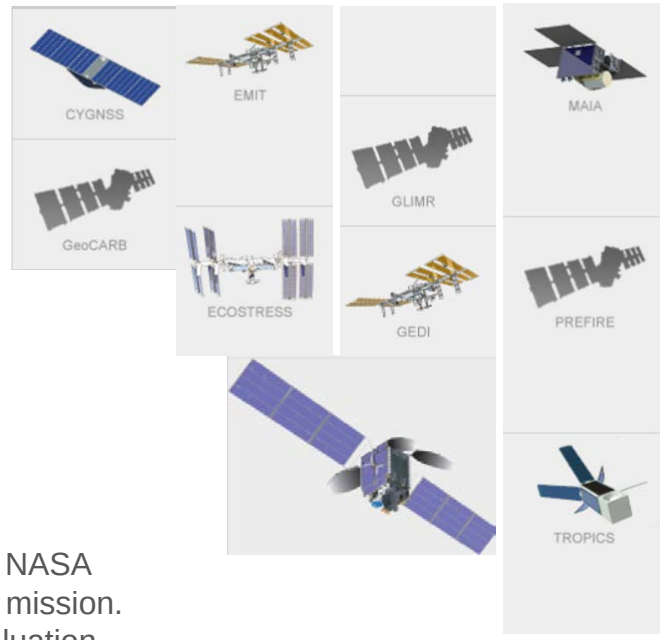


3) Developed idea for rapid CV19 response
   - Several committee members participated in Keck Institute for Space Studies (KISS) think tank.
   - Proposed to ESD a virtual CV19 workshop, feedback was for broader academy effort to:
     i) The Academies could provide a way in which there could be a broader community-government interaction so that the efforts of relevant agencies and the communities could be discussed together – for CESAS that may mainly mean NASA, NOAA, and USGS (perhaps DOD...), and internationals like ESA as well. That way, “everything could be in one place”.
     ii) Bring communities together that don’t usually happen, especially working in an “all of academies” way in which social science, economics, and medicine





“Earth Venture started about 10 years ago – it is time to evaluate what’s working and what’s not”



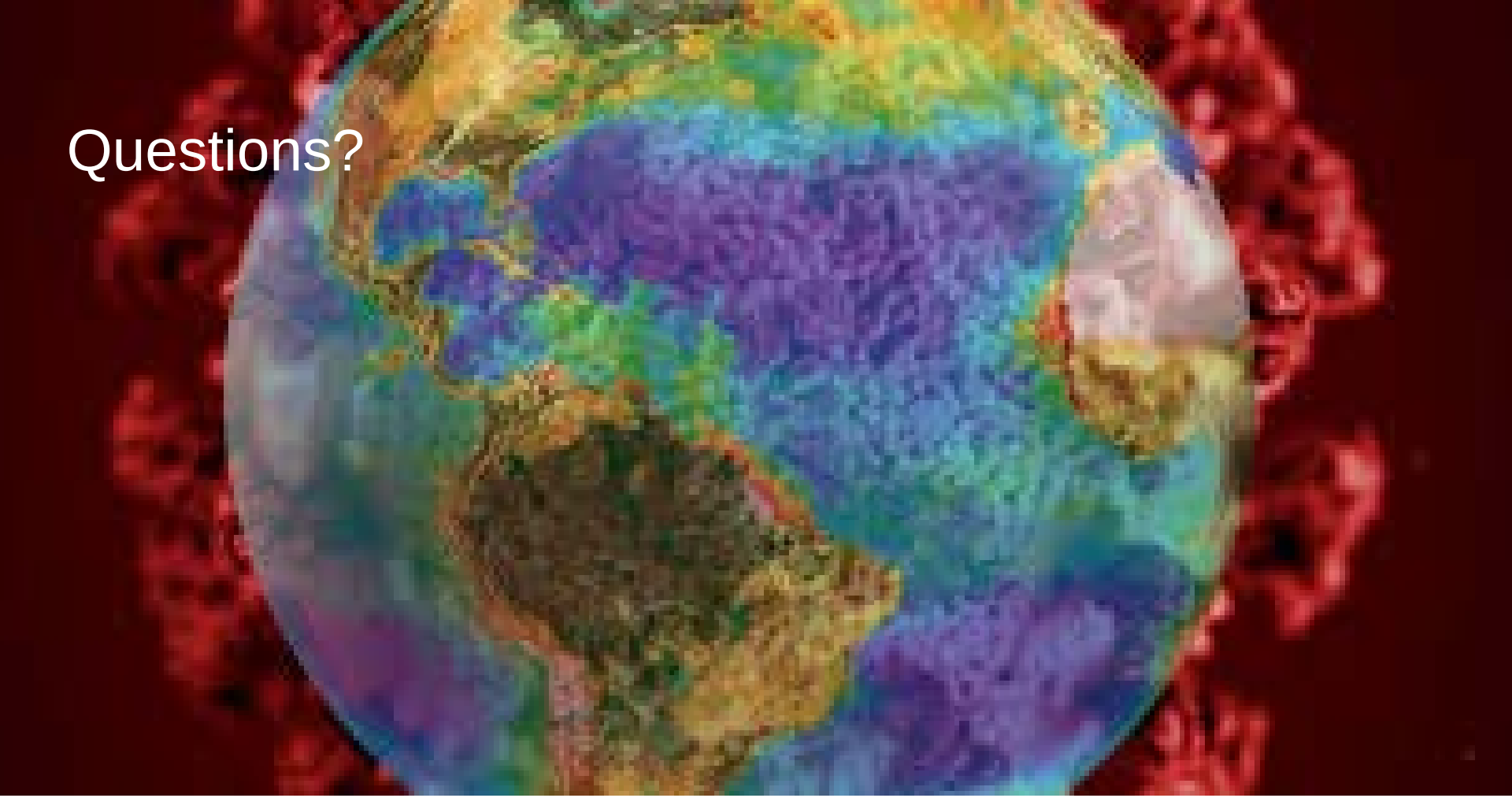
Workshop on Lessons-Learned in the Implementation of the EV-M and EV-I Strands of NASA’s Earth Venture Class

According to NASA, the foundational principles of the EV program are:

1. Science-Driven: This strongly influences the investigation objectives and the NASA evaluation process. The investigations must advance science within their baseline mission.
2. Competitively Selected: This covers the transparency, predictability, and evaluation approaches.
3. Investigations are cost constrained: The cost cap established at the start of the investigation explicitly limits the funding and other resources that NASA will provide to the investigation to accomplish the baseline investigation—this amount will never increase.
4. Investigations are schedule-constrained: The duration for completion of the PI's development, implementation, and baseline investigation operations is constrained. The overriding constraint is that relaxations to schedule constraints cannot be used to justify relaxation of the cost constraints.
5. Principal Investigator-Led: The PI–not NASA–is ultimately responsible for the success of the investigation development, implementation, and baseline operation. NASA has no responsibility to ensure that the PI’s development/implementation/operations succeed.

NASA has noted that recent EV selections have **not always adhered to these principles**; this will be a topic for discussion at the workshop.

Questions?



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