CESAS - Committee on Earth Science and Applications from Space

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.

NATIONAL ACADEMIES Sciences Engineering Medicine

Current Membership

Everette Joseph,** Co-Chair, NCAR

Steven W. Running, Co-Chair, U Montana

Nancy L. Baker, Naval Research Lab.

Elizabeth Barnes, Colorado State Univ.

Molly E. Brown,* University of Maryland

Otis B. Brown,* NC State University

Ivona Cetinić, USRA/NASA GSFC

William E. Dietrich, NAS, UC Berkeley

George J. Komar, NASA (retired)

Anna M. Michalak, Stanford University

R. Steven Nerem,* University of Colorado

Eric J. Rignot,* NAS, UC Irvine

Christopher S. Ruf,* University of Michigan

David Sandwell, UC San Diego/Scripps

Duane E. Waliser, Jet Propulsion Laboratory

Ping Yang, Texas A&M University

Staff:

Art Charo, Senior Program Officer

Gaybrielle Holbert, Program Assistant

* Term expires June 30, 2022

** Term expires June 30, 2022; an extension is being requested.

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Spring Meeting – Key Topics

- Progress in the Implementation of the Decadal Survey—Discussion with Karen St. Germain, Director, NASA ESD
- NASA Open Science Initiative—Discussion with Chelle Gentemann, Senior Scientist, Farallon Institute
- NASA and Administration Climate Initiatives—Discussion with Kate Calvin, Chief Scientist, NASA
- Development of an integrated interagency climate observing system
- Since the CESAS meeting:
  - The Academy has become involved in the issue of how to establish inventories of GHGs
  - There is also potential legislation concerning the monitoring of domestic methane "super-emitters"
  - June 8, 2022: House S&T Hearing, "Detecting and Quantifying Methane Emissions from the Oil and Gas Sector"

CESAS Spring Meeting at SSW—Follow-Up

- Committee is seeking a briefing from NASA ESD on possible early termination of EOS Terra spacecraft (https://www.earthdata.nasa.gov/learn/articles/from-terra-to-terra-firma).
- Committee interested in arranging briefings from the NASA teams developing the "Designated Observable" missions after they have passed Mission Concept Review MCR (expected soon). Members have varying familiarity with the DO missions.
- Committee member Dave Sandwell and staff had discussions with NASA and the Academy Board on Earth Science and Resources regarding state of the geodetic infrastructure and possible Academy activities. No firm plans yet.
- Committee expressed interest to NOAA NESDIS in an ad hoc meeting of experts or workshop that would explore options for GOES-17 now it has become an on-orbit spare to GOES-18/GOES-West.
- Committee had previously provided NASA ESD with comments on a draft task statement for the midterm assessment of the 2017 decadal survey for Earth science and applications from space. Waiting for ESD response.

Future Plans

- Continue interaction with NASA regarding the statement of task for the midterm, an early opportunity to help shape the next decadal
- Continue discussions with NASA and NOAA regarding survey implementation and development
- Arrange for briefings on EOS potential early termination
- Arrange for briefings from Designated Observable teams
- Assist as appropriate with development of a study or workshop on monitoring methane emissions
- Planning for the Fall meeting

Backup Slides

Pre-pub now online; edited and printed copies by June 30, 2022.
https://nap.nationalacademies.org/catalog/26499/lessons-learned-in-the-implementation-of-nasas-earth-venture-class

CESAS Members on the Study

- Otis Brown
- Ivona Cetinic
- George J. Komar
- Duane E. Waliser

Statement of Task:

• Measures of success for EV-I and EV-M endeavors;
• The experiences of Principal Investigators, Project Managers, and Institutions in the proposing, implementation, and operation of EV investigations;
• EV foundational principles, including the means by which they are implemented and enforced, as well as the implications of non-conformity;
• Potential trades among cadence, cost (including cost caps), and risk in implementing future EVs;
• An assessment of the implications of the changing launch vehicle and hosted payload markets for future EVs; and
• Lessons-learned for consideration in future implementations of EV-I and EV-M program elements.

Midterm Assessment of the 2018 Decadal Survey for Earth Science and Applications from Space

- Midterm Assessments are Congressionally-mandated. They typically assess progress in survey implementation, provide guidance on actions that might be taken in the remaining survey interval, examine lessons-learned and make recommendations to prepare for the next decadal survey.
  - Per recommendation in survey, NASA will ask the Earth science midterm to assess progress in the suborbital element of the Earth Science Division's Earth Ventures, a component of the Earth System Science Pathfinders. (EV-Instrument and EV-Mission are being studied at the request of NASA in a stand-alone SSB study.)
  - DEI issues expected to receive greater attention in the next decadal.
- Schedule for ESAS Midterm: Begin in Spring 2022 for delivery in Summer 2023.
- CESAS is reviewing NASA's draft task statement and is providing feedback.