Center for International Earth
Science Information Network
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Scientific Data Infrastructure:
Research Opportunities and Challenges

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Data Study Session
Tuesday 8 January 2014

Importance of SDI during Data Lifecycle
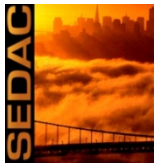
- Scientific data usually collected in <u>digital form or digitized</u>
- SDI needed to <u>produce, store and transmit</u> data in digital form
- Digital scientific data <u>includes and depends on SDI</u> components
- SDI used to <u>process, convert, and integrate</u> scientific data
- SDI needed to <u>manage and preserve</u> digital scientific data
- <u>Sharing</u> digital scientific data requires SDI
- SDI fosters <u>discovery and exploration</u> of digital scientific data
- SDI needed to <u>reuse, replicate, or compare</u> digital scientific data
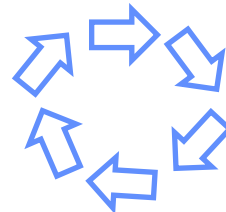
Why Should We Study SDI?
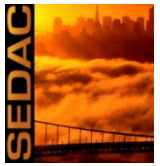
- ## Data management capabilities
  - Adapt to change in IT
  - Reduce costs for long-term scientific data management
  - Increase capacity for managing and preserving scientific data
  - Ensure sustainability of SDI and scientific data stewardship entities
  - Improve education and practices for scientific data management

- ## Use, reuse, and assessment
  - Enable use by future users and for new purposes
  - Improve understandability of the data and how they can be used
  - Enable interoperability and integration of digital scientific data
 - Improve capabilities for discovery, exploration, and analysis

Increasing Recognition for the Importance of SDI
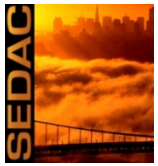
- Harnessing the Power of Digital Data for Science and Society: Report of the Interagency Working Group on Digital Data to the Committee on Science of the National Science and Technology Council. 2009. http://www.nitrd.gov/About/Harnessing_Power_Web.pdf

- Science as an Open Enterprise: The Royal Society Science Policy Centre Report. 2012. The Royal Society. http://royalsociety.org/policy/projects/science-public-enterprise/report/

- Obama, B. "Executive Order—Making Open and Machine Readable the New Default for Government Information." May 9, 2013. http://www.whitehouse.gov/the-press-office/2013/05/09/executive-order-making-open-and-machine-readable-new-default-government-

- Holdren, J. P. Increasing Access to the Results of Federally Funded Scientific Research. 2013. Memorandum for the Heads of Executive Departments and Agencies. http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf
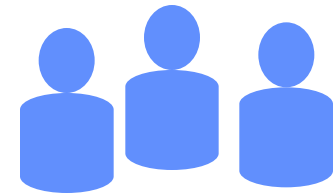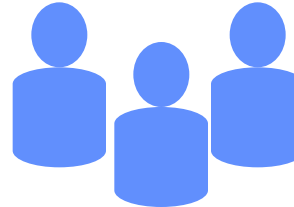
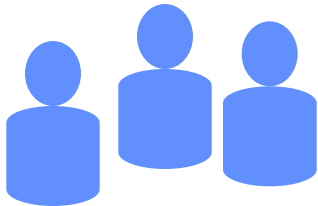# Who Should Care about SDI Research?
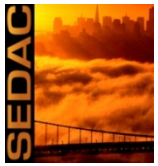
Research Sponsors
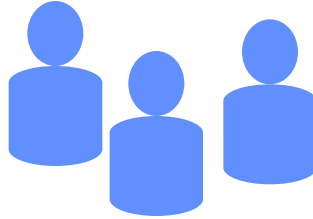
Science Data Users

Science Data Producers

Science Data Centers

General Public