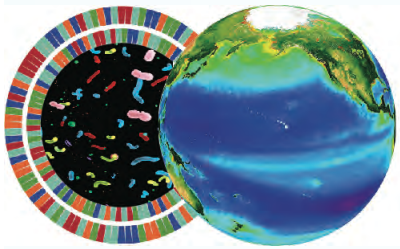


EarthCube Oceanography and Geobiology Environmental 'Omics

ECOGEO

ECOGEO Workshop 2: Introduction to Env 'Omics 25-26 July 2016

Edward DeLong – PI

Elisha Wood-Charlson – Manager

Ben Tully – VM guru

c·more

center for microbial oceanography: research and education

Center for Dark Energy Biosphere Investigations

C-DEBI

Aloha!

- 43 participants
- 13 nationalities, flights from 4 countries
- 4 new faculty, 10 postdocs, 28 graduate students, 1 undergraduate
- 17 presenters, support
- 29 universities/ institutes/ national labs

Enabling the Geosciences for 21st Century Challenges

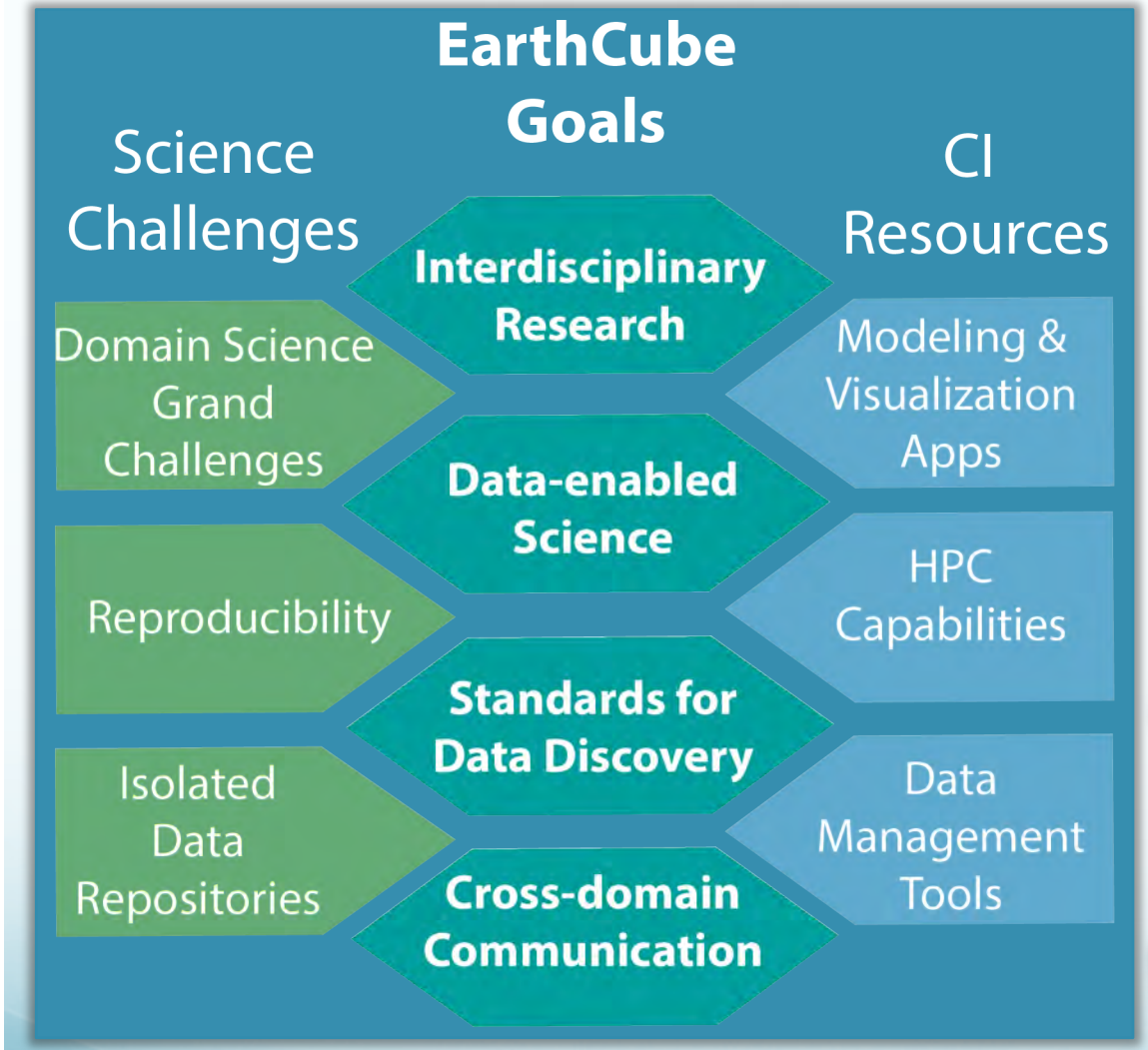
Balancing infrastructure development and scientific advancement to create sustainable, multidisciplinary solutions

EarthCube

NSF

Past, Present, and Future

Credits: from top to bottom: NOAA Okeanos Explorer Program (CC BY-SA 2.0), NASA/Kathryn Hansen (CC BY 2.0), and Canyonlands National Park/Neal Herbert (CC BY-NC-SA 2.0).

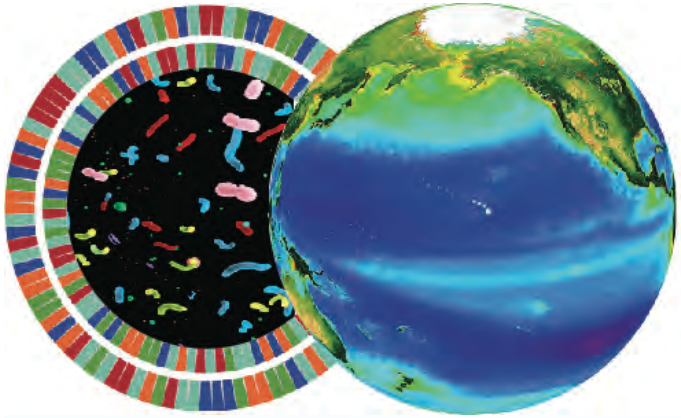


EarthCube Enabled Science

Data Discovery
Data Curation
Data Sharing

Improved tools for analysis & visualization

Tracking data from field to lab to publication



EarthCube Oceanography and Geobiology Environmental 'Omics

ECOGEO

Research Coordination Network

***'Omics* are tools that help us understand biological diversity and function in Earth system processes.**

Mission: Identify community needs (incl. training!) and develop necessary plans to create a federated cyberinfrastructure to enable ocean and geobiology environmental 'omics.

NSF

EARTHCUBE

‘Rules’ of Bioinformatics

1. Bioinformatics is a unique branch of science – not an extension of biology; means some things are difficult to master
2. Bioinformatics is not binary - every step has multiple options, programs, etc
3. Every program publicly available has a manual; some are bad and others great, but an important place to start
4. Google can answer 90% of bioinformatic problems (eventually) - Stack Overflow, Manuals, etc

‘Rules’ of Bioinformatics

5. Defaults are both useful and dangerous.
6. Remain skeptical of “best” answers → confirm results
7. There is always something new to learn - tools, commands, optimizations, etc
8. If we ‘SKIP’ something, we may not know it exists, so share your secrets as we go!

Resources

- ECOGEO Website: http://earthcube.org/group/ecogeo
  - Includes link to all information below as well as workshop 2 resources (when finished)
- Email 'ecogeo-join@earthcube.org' to join listserv
- EarthCube End-User Workshop Report:

  Gilbert *et al* 2014 Standards in Genomic Sciences (doi:10.4056/sigs.5749944)
- ECOGEO Workshop 1 Report:

  http://earthcube.org/document /2015/2015ecogeo-final-report
- Protocols.io – "ECOGEO" Group: hands-on workflows