Cyberinfrastructure for Collaborative Science

A workshop at the
National Evolutionary Synthesis Center (NESCent)
Durham, NC
May 18-20, 2011

What is cyberinfrastructure?

Research environments that support advanced data acquisition, data storage, data management, data integration, data mining, data visualization and other computing and information processing services distributed over the Internet beyond the scope of a single institution.

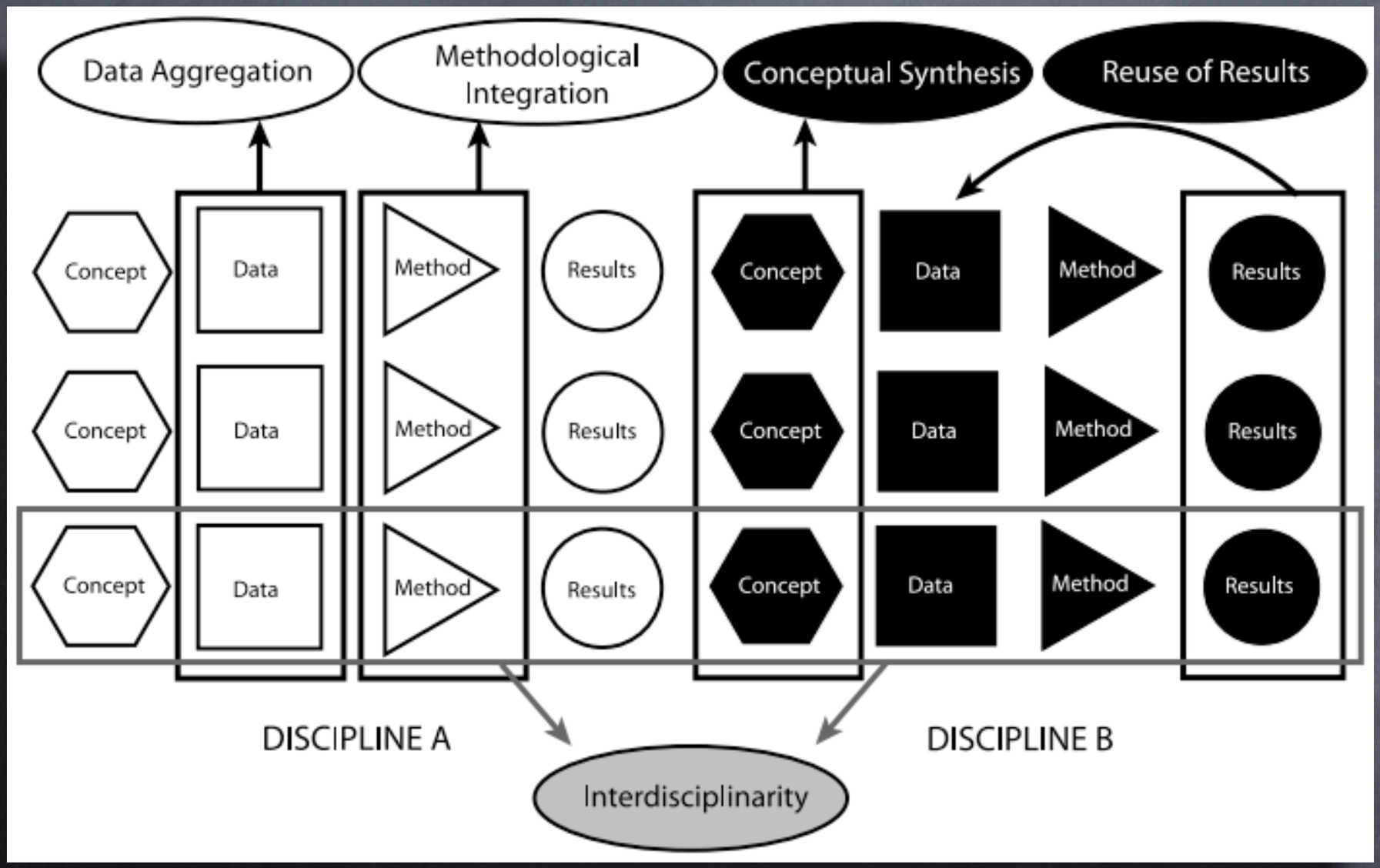
Source: Wikipedia

What is cyberinfrastructure?

"[...] the set of organizational practices, technical infrastructure and social norms that collectively provide for the smooth operation of scientific work at a distance."

Edwards et al (2007)

Collaborative science relies on CI



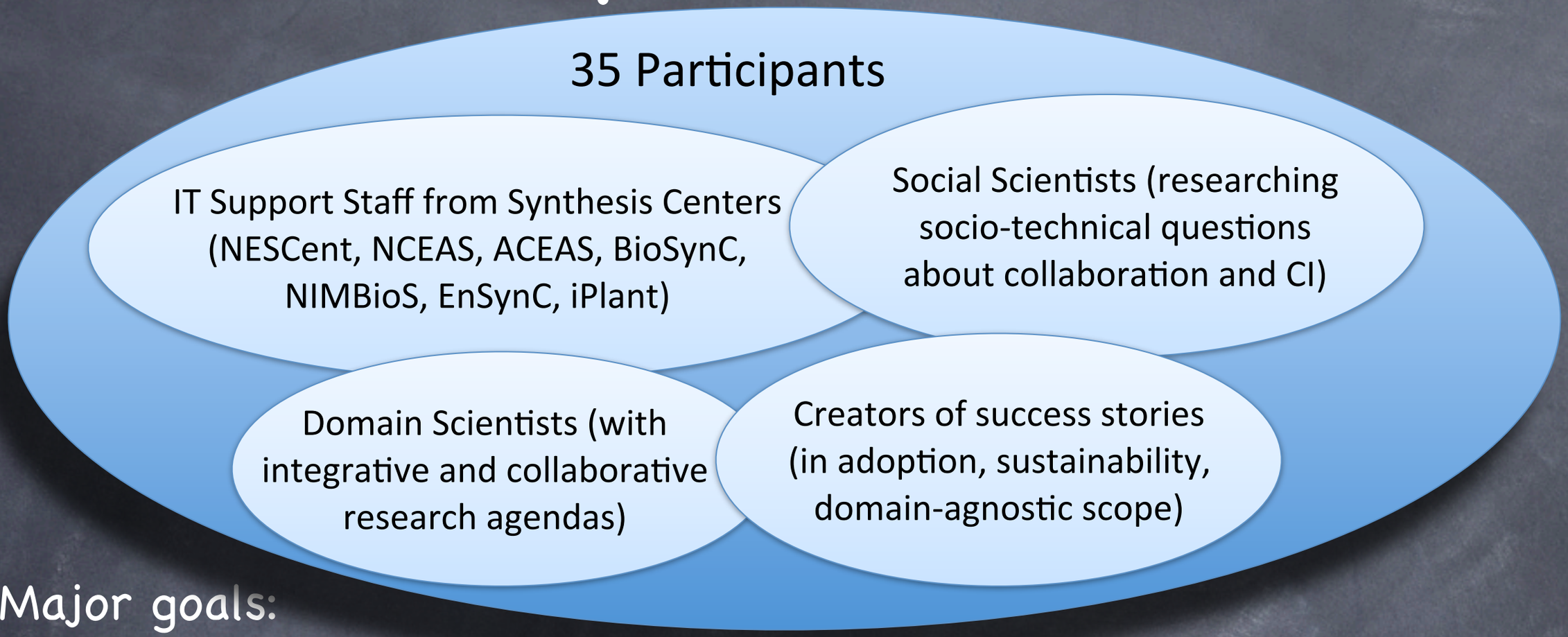
Sidlauskas et al (2010)

- Multi-disciplinary heterogenous collaboration is the prevailing mode of research supported by science & synthesis centers.

Motivation

- Most technical impediments to synthetic science are informatics infrastructure gaps.
- Synthesis centers have tackled these creatively, but so far with little coordination.
- Even though many CI issues are similar, each center is unique.
- The social challenges in effective and sustainable CI are likely harder than the technical ones.

Participants & Goals



Major goals:

- Help make technology selection and deployment more effective
- Identify common unmet user needs, and opportunities for coordination and collaboration to address them
- Enhance the collective CI capabilities of centers supporting collaborative multi-disciplinary science
- Identify the research questions to be asked for CI for collaboration

How do we achieve these goals?

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Structure: An attempt at crowd-sourcing

- Most of this workshop will be shaped by you, the participants.
- We have some questions, and were unable to agree on answers (and questions, in fact).
- We rely on you to identify answers, propose the right questions, and qualify importance.

Image credit: Vanessa DeJongh

Agenda Overview

- Day 1:
  - Creating a map of cyberinfrastructure for collaborative science
  - How will cyberinfrastructure capabilities shape the future of scientific collaboration? 5 viewpoints
  - 4 parallel break-out groups on challenges and opportunities, determined by earlier map

Agenda Overview

- Day 2: Unconference day
  - 4 x 4 parallel discussion sessions, 1 hour each
    - Session topics to be proposed and slotted in the morning.
    - **Everyone** can propose a topic.
    - Report-outs by discussion leaders.

Agenda Overview

- Day 3:
  - Strategic directions for funding agencies
  - Developing coordination among centers
  - Adjourn at about 12.30pm

Desired outcomes

- Sharing of experiences, tools, and emerging technologies for facilitating collaborative science
- Plans for improved coordination and increased mutual benefit across centers
- Better understanding socio-technical factors influencing CI adoption and sustainability
- New collaborations emerging from this event

Resources

- Wiki: http://nescent.org/wg_collabsci
- Mailing list: collabsci@nescent.org
- Concept map: http://cmap.nescent.org:8888/
- Mendeley (http://mendeley.com): Search groups for "cyberinfrastructure"
- Twitter: #collabsci
- Delicious (etc): tag with 'collabsci'
- Etherpads: http://piratepad.net/<name of pad>

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