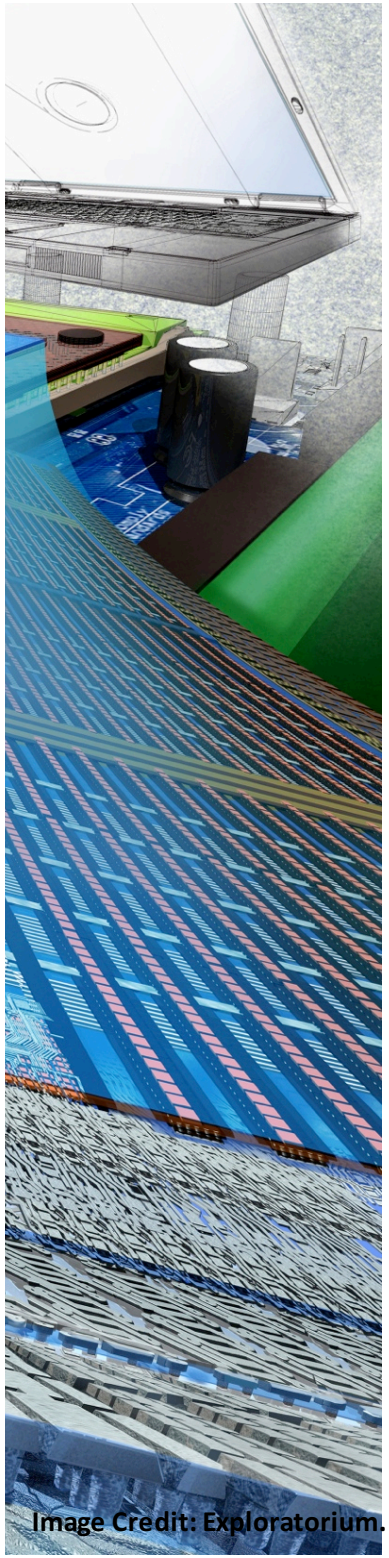


Image Credit: Exploratorium.

PI Workshop (SI2)

February 21, 2017

Irene M. Qualters

Director

Director, Office of Advanced Cyberinfrastructure

Directorate for Computer & Information Science & Engineering

SI2 launched as a result of CIF21 Vision and Strategy

Crosscutting/NSF-wide CIF21 Initiative

Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) is a portfolio of activities to provide integrated cyber resources that will enable new multidisciplinary research opportunities in all science and engineering fields by leveraging ongoing investments and using common approaches and components.

NSF 17-500 Data Infrastructure Building Blocks (DIBBs):

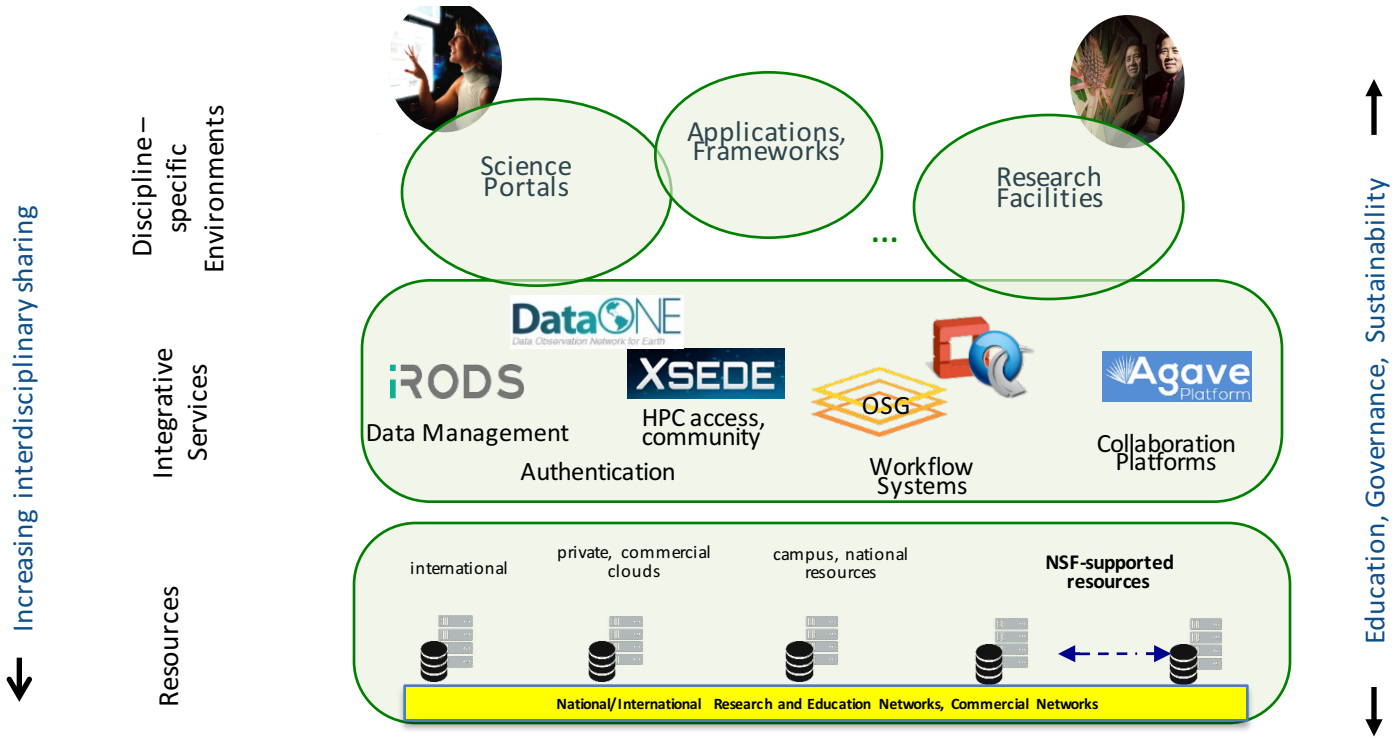
Software is an integral enabler of computation, experiment and theory and a primary modality for realizing the Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) vision, as described in NSF 10-015. Scientific discovery and innovation are advancing along fundamentally new pathways opened by development of increasingly sophisticated software. Software is also directly responsible for increased scientific productivity and significant enhancement of researchers' capabilities. In order to nurture, accelerate and sustain this critical mode of scientific progress, NSF has established the Software Infrastructure for Sustained Innovation (SI^2) program, with the overarching goal of transforming innovations in research and education into sustained software resources that are an integral part of the cyberinfrastructure.

How do we leverage your work and experience to advance Research CI?

- Where are the gaps?
- Where do you see yourselves making connections?
- What has changed in the last 5 years and how do those changes create new opportunities for scientists as well as for the CI community?

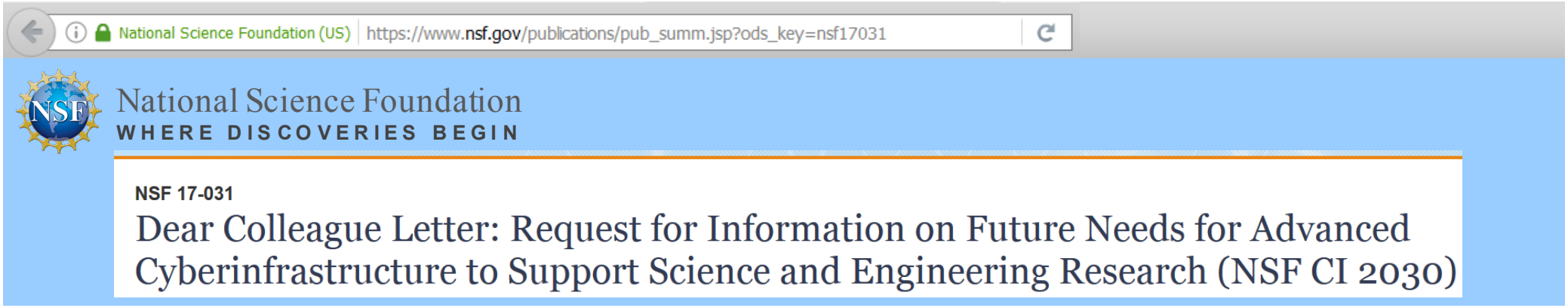
Vision for research cyberinfrastructure architecture

Moving beyond CIF21



Some personal thoughts on research-driven challenges

- Sustainable Career Paths for Software Professionals in Science?
  - Incentives
  - "Products"
  - Institutional support
- Role of Commercial/commodity infrastructure at layers
  - Interoperability in a multi-cloud, multi-institutional ecosystem
  - Collaborations
- Software Licenses
  - Promoting "transition" to industry?
  - Responsibilities of academic/research use for open use?
- Contribution to Robust and Reliable Science?
  - Reproducibility is a small aspect
  - Credibility of analyses?
  - Validation and Verification?



- NSF is launching an effort to refresh the Foundation's cyberinfrastructure vision and strategy, as the current activity, *Cyberinfrastructure Framework for 21st Century Science and Engineering* (CIF21), enters its final year.
- Through this Request for Information, NSF invites contributions from the research community to inform this planning effort.
- We request input on scientific challenges, associated cyberinfrastructure needs, and bold forward-looking ideas to advance science and engineering frontiers over the next decade and beyond.
- Deadline for submissions: April 5, 2017, 5:00 PM ET.
- Questions about this RFI? Send to nsfci2030rfi@nsf.gov.

https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf17031


THANKS!