NSF Research Infrastructure Workshop 2022
Cyberinfrastructure and Major Facilities

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Outline

- Overview of the work of the NSF CI Tiger Team (TT)

- Intersections with broader community goals/interests

Major Facility CI Challenges & Opportunities

- CI == Compute, data, networking, services, workforce

- Essential to mission and impact

- Complex and evolves rapidly

- Important to integrate and leverage the national CI ecosystem

Opportunities:

- Maximize science impact

- Democratize access

- Consolidate and integrate

- Respond to emergent needs

- Accelerate, not limit

NSF Facilities CI Workshop (2019): http://www.facilitiesci.org/

NSF Major Facilities Cyberinfrastructure Tiger Team: Charge

1. How do we more effectively **set agency CI expectations** across the MF lifecycle?

2. How can NSF **review and oversight processes** be organized to infuse appropriate CI considerations during each life-cycle stage, including at conceptual, preliminary, and final design?

3. How can NSF best instill an "**evolutionary mindset**" around CI at conception? By what **mechanisms** can this be fostered?

4. How can NSF MFs be **better aligned with and leverage NSF's broader investments** in CI resources, services, and expertise?

5. What other **approaches and services can NSF offer** to incentivize sustainable and portfolio-oriented CI considerations?

Summary of NSF CI TT Recommendations

- Define NSF expectations for all aspects of Major Facility CI
  - Research Infrastructure Guide (RIG)

- Create and maintain CI Plans & regularly evaluate
  - NSF external panel reviews for design, construction & operations

- Leverage existing CI resources and services
  - Increase awareness; incentivize reuse; align investments

- NSF portfolio approach to CI resources and services
  - Scalable and sustainable crosscutting services; centers of excellence

- Establish NSF-wide Major Facility CI working group
  - CI expertise, awareness, and oversight

Relevance and Timeliness of Workshop's Topics

- Guiding principles and best practices for large-scale data management and dissemination:
  - Challenges and Opportunities
    - RI success
    - RI impacts
    - Democratization of access

- Cyberinfrastructure Training: Challenges and Opportunities
  - IDEA as a guiding principle/not an after thought
  - ERIs in HCI Building; not forgetting the traditional
  - MSIs; HSIs, TCUs, HBCUs; persons with disabilities, etc.
  - Focus on both pipeline and culture/climate change

Welcome to the CI Compass Workshop.

We look forward to the outcomes of your discussions.

Thank you.