

Innovations in Cyberinfrastructure Learning and Workforce Development (LWD)

Advanced Cyberinfrastructure Division (ACI)
Computer and Information Science & Engineering (CISE)

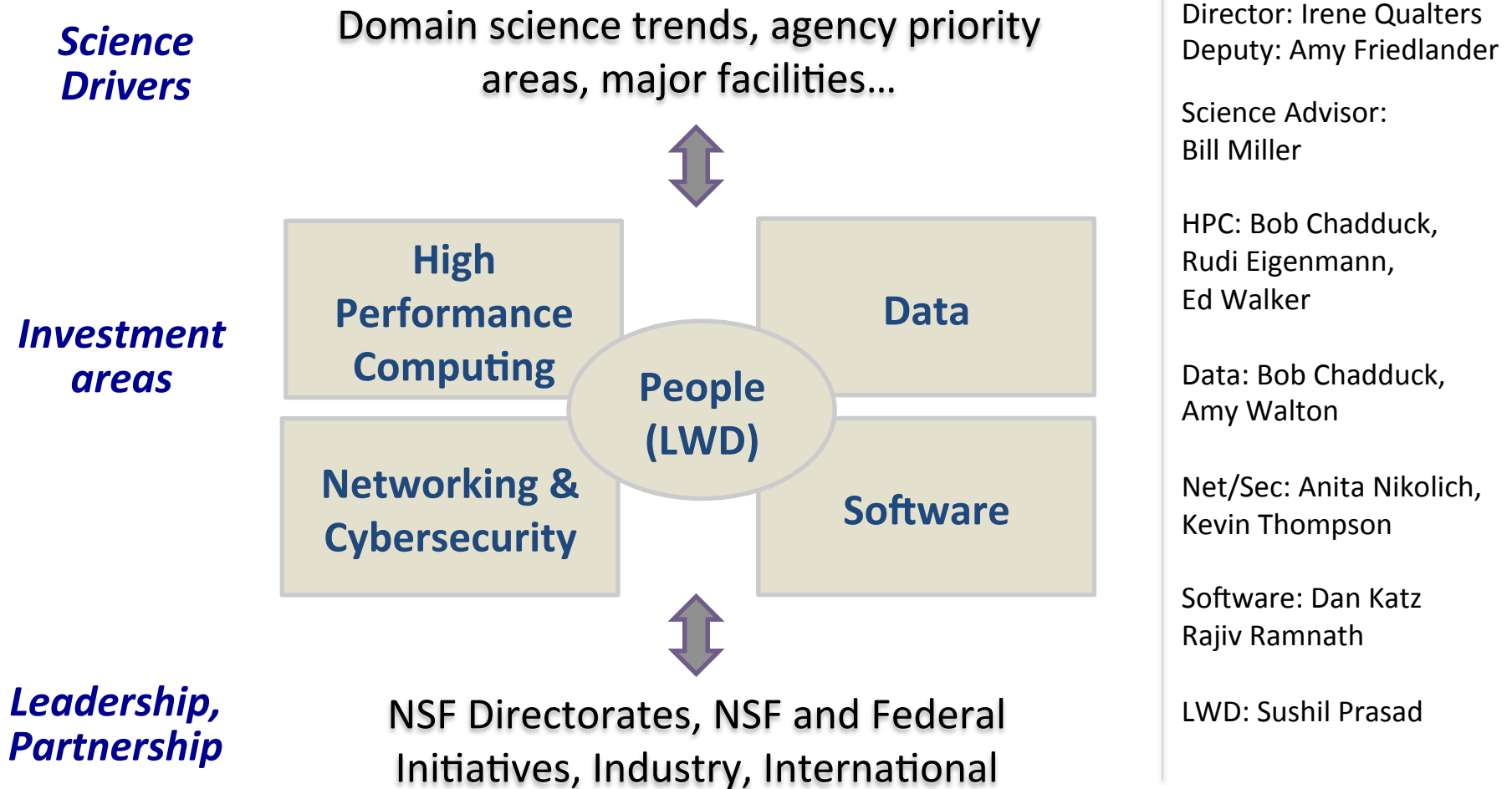
Sushil K Prasad,
Questions: sprasad@nsf.gov



National Science Foundation
WHERE DISCOVERIES BEGIN

CISE Division of Advanced Cyberinfrastructure (ACI)

Mission: Support advanced cyberinfrastructure to accelerate discovery and innovation across all disciplines



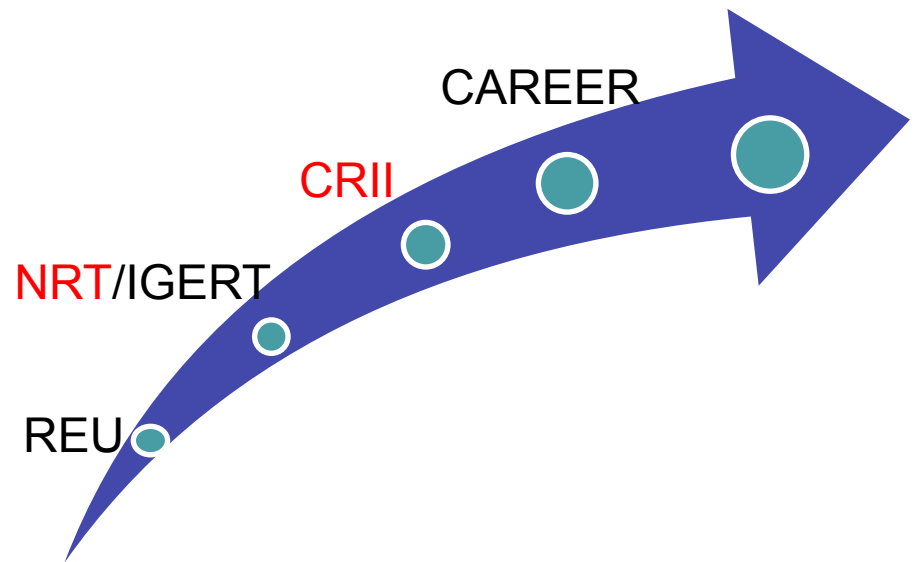
Education and Workforce as infrastructure



National Science Foundation
WHERE DISCOVERIES BEGIN

LWD: The Career Pipeline

- Goal: Build robust careers paths in Cyber-Infrastructure (CI) and Computational and Data-enabled Science and Engineering (CDSE)
- Techniques: Leverage existing programs for early-stage researchers. Develop new programs in areas of need/challenge



Faculty Early Career Development Program (**CAREER** - NSF 15-555)



- Most prestigious award supporting junior faculty as a **teacher-scholar**
 - Outstanding research, education and the integration of education and research
 - Presidential Early Career Awards ...(PECASE) – 20 best
- ACI research focus:
 - **Use-inspired and/or applied, multidisciplinary research**
 - computation and data-enabled science and engineering
- Min \$400K/5 yrs
- Deadlines by directorate: CISE: July 20, 2016

Faculty Early Career Development Program (**CAREER** – contd)



- ACI encourages proposals that are either of
 - primary interest to ACI, or
 - secondary interest to ACI (add ACI in Cover Page)
 - **Dear Colleague Letter: ACI & Career** (NSF 15-072)
<http://www.nsf.gov/pubs/2015/nsf15072/nsf15072.jsp>
- CAREER program page
 - <http://www.nsf.gov/career>
- CISE CAREER Proposal Writing Workshop
 - April 4, 2016, Arlington, in-person and online participation
 - http://carch.seas.gwu.edu/cise-career/NSF_2016.html

CISE Research Initiation Initiative

(**CRII** - NSF 15-569)

- Independent research for faculty or *research scientists* in their **first three years** (Pre-CAREER)
 - May not have any grant as PI
- ACI research focus:
 - Use-inspired and/or applied multidisciplinary research
 - **Computational and data-intensive scientists** in addition to **computer scientists**
- Award ~\$175K/ 2 yrs
- Deadline: Aug 10, 2016



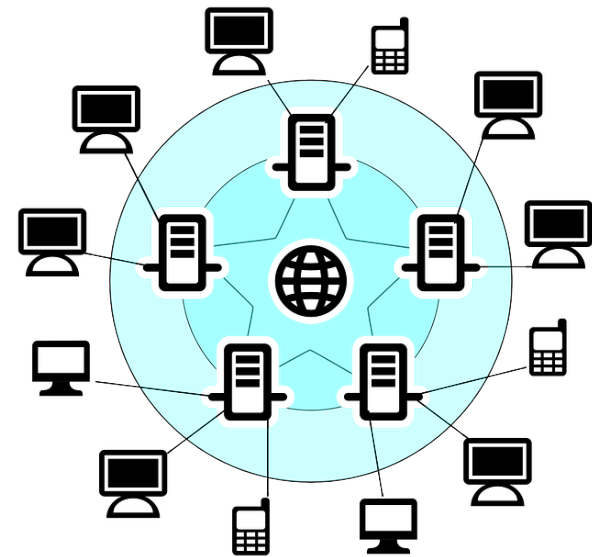
Goals of CISE Research Initiation Initiative

(CRII - contd.)

- Start a research program and career
 - The PI need not have significant prior research results or maturity
 - Start a path toward research independence
 - Develop collaborations within or across research disciplines
 - Undertake exploratory investigations
 - Acquire and test preliminary data
- Broaden community of researchers
 - Reach underserved sub-communities, under-represented groups, nontraditional institutions

Research Experiences for Undergraduates (**REU** - NSF 13-542)

- Active **research participation** by undergraduate students
- **REU Sites** are based on independent proposals
 - **REU Supplements:** component of new or continuing proposals
- Deadline: August 24, 2016
- Up to \$360K/3yr;



Research Experiences for Undergraduates (**REU** – Contd.)

School hosts summer cohort for undergrad research

- **Coherent intellectual focus** to research topics
- At least half the students are from institutions other than the host institution
- **At least half from schools with limited research potential**
- Research mentoring and support
- Social activities
- Professional development, grad school prep

NSF Research Training (NRT - NSF 15542)



- To encourage the development and implementation of potentially transformative models for **STEM graduate education** training
 - Understanding the Brain (UtB) + Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS)
 - Other: Data-enabled Science and Engineering (DESE)
- Award **\$3M**/4-5yrs
- Last round deadlines:
 - **Mandatory** letters of intent: Dec-2015
 - Feb-2016 deadline

Other LWD Opportunities within ACI

- EAGERs, Workshops, RCNs
 - Seed Exploration of Informal/Formal Training and Education, Broadening Participation
 - Students, Post-Docs, Faculty, CI Professionals
- CC* - CI Engineer -> Cyber Team
- Student Travel Grants
- *Discuss with me and other ACI Program Officers*

