Innovations in Advanced Cyberinfrastructure Learning and Workforce Development (LWD)

Office of Advanced Cyberinfrastructure Division (OAC)
Computer and Information Science & Engineering (CISE)
National Science Foundation

Sushil K Prasad,

Questions: sprasad@nsf.gov

MUG 2018

National Science Foundation
WHERE DISCOVERIES BEGIN

LWD: Communities of Concern

CI Contributors

Cyber Scientists
to develop
new capabilities

CI Professionals

Professional Staff
to deploy & support
new capabilities

CI Users

Area Scientists
to exploit
new capabilities

OAC

Learning and Workforce Development

Student Research Training

- REU SITES

Faculty Early Career Research

- CRII
- CAREER

Training/Workforce Development

- CyberTraining
  NSF 18-516

OAC-Core Research Program

- New Solicitation NSF 18-567
- Deadline Nov 15, 2018

OAC Core Research Program

SOLICITATION NSF 18-567

- ## Program Goals
  - ### Advanced Cyberinfrastructure (CI) research to impact the future capabilities of research CI
    - New knowledge in design, development, and utilization of robust research CI
  - ### Research career paths of cyber scientists/engineers
    - Computer as well as Computational and Data-driven Science and Engineering

OAC Core Research Program

- Translational research
  - Spanning design to practice
  - All aspects of advanced cyberinfrastructure
- Other characteristics:
  - Multi-disciplinary,
  - extreme-scale,
  - driven by science and engineering research,
  - end-to-end, <u>or</u>
  - deployable as robust research CI

OAC Core Research Program
Research Areas

- *Architecture & middleware for extreme-scale systems:*
  - Design, benchmarking, and analysis; storage, networks, and I/O; Resource management, monitoring, fault tolerance, and cybersecurity
- *Scalable Algorithms and Applications:*
  - Numerical and high-performance scientific computing methods; Data, software and visualization; and Modeling and simulation
- *Advanced Cyberinfrastructure Ecosystem:*
  Programming languages, libraries, and environments; Tools; Sociotechnical aspects

OAC Core Research Program

- Part of CISE's coordinated core program solicitations
- Only Small proposals in FY'19
  - Max $500K/award;
- Funding amount $7.5M
- Due Nov 15, 2018
- PI's *strongly encouraged* to send 1-page project summary for further guidance:
  - Sushil Prasad; Vipin Chaudhary; Stefan Robila
- Webinar on Aug 7 @ 2 pm EDT
  - Slides, audio recording to be posted

CyberTraining - *Training-based Workforce Development for Advanced Cyberinfrastructure* - NSF 18-516

- *Scalable* training, education and curricular activities for research workforce development - In advanced CI, computational and data-enabled science/engineering topics
  - MPS, ENG, GEO, EHR/DGE, CISE/CCF, BD Hub/Spoke; *OAC - lead;*
- Max $500K/award; up to 3 years in duration
- **Tracks** around 3 communities of concerns - current and future generation: *1: CI Professionals – those in support roles for research and technical aspects*
  - *2: CI Contributors – those who research and develop new CI*
  - *3: CI Users – those who effectively exploit CI for research*
- Excellent community response!
- Next Deadline: Jan, 2019

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WHERE DISCOVERIES BEGIN

Early Career Faculty Research Programs

- CAREER – NSF 17-537

- Submissions to OAC doubled in FY16, tripled in FY17; 30 active awards
- More open to non-tenure track faculty; Sr. personnel allowed

- CRII –NSF 17-552 CISE-wide – Aug

- Independent research by Faculty or research scientists in their first 3 years

Research Experience for Undergraduates - NSF 13-542 - Aug

Active research participation by undergraduate students

EAGERs, Workshops, Student Travel Grants, Interns

- Exploration of Research, Education, and Broadening Participation
- **Non-academic Research Internships** (NSF 17-091)

Join the conversation

- OAC Webinar Series
  - 3rd Thursday @ 2PM ET
- OAC Newsletter
- Follow us on Twitter @NSF_CISE

Stay informed

- Join the OAC, CISE Mailing Lists
  - Learn about NSF events, programs, webinars, etc.
  - Send email to:
    - oac-announce@listserv.nsf.gov
    - cise-announce-subscribe-request@listserv.nsf.gov

Get involved

- Reviews proposals, serve on panels
- Visit NSF, get to know your programs and Program Officers
- Participate in NSF meetings/conferences and visioning activities
- Join NSF: serve as Program Officer, Division Director, or Science Advisor

NSF Office of Advanced Cyberinfrastructure (OAC) Newsletter

Table of Contents

- About the Office
- Project Highlights
- OAC Program and Updates
- Related Events/Programs
- Subscribe to OAC Mailing List

TWEETS	FOLLOWING	FOLLOWERS
1,075	27	2,050

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