Institutional Capacity and Broadening Participation: Computer and Information Science and Engineering (CISE) Directorate

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QEM/ NSF Outreach Forum on Building Research and Education Capacity in CISE at HBCUs

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Why Focus on Institutional Capacity
What is Institutional Capacity?

Colleges and universities continually work to build capacity in both personnel and programs. This includes the continuing development of leaders who will facilitate the changes essential to deploying resources to increase productivity. The key tasks necessary to achieve an institution’s mission with greater efficiency also involve the buy-in of the campus community. These include: Improving the skill sets of key personnel, developing strategies to effect change, and facilitation of discussions to achieve buy-in.

- American Council on Education
  http://www.acenet.edu/higher-education/topics/Pages/Institutional-Capacity.aspx
Institutional Capacity Elements to Support CISE Research

- Faculty Research
- Faculty Professional Development
- Instrumentation
- Faculty Retention
- Curriculum Development
- Undergraduate Recruitment
- Student Retention
- Undergraduate Research
Implications of the Elements

- Enabling academic departments, disciplinary and cross-disciplinary units, and multi-organization collaborations to create well-equipped research environments that integrate research with research training;
- Currency, Relevance
- Broadening Participation
- Faculty & Student Development
- Evaluation & Assessment
- Engagement with Social Scientists (Team Composition)
Broadening Participation in Computing (BPC)
What is BPC?

• Guided by the NSF Strategic Plan…to expand efforts to increase participation from underrepresented groups and diverse institutions throughout the United States in all NSF activities and programs.

• Preparing a diverse, globally engaged science, technology, engineering, and mathematics (STEM) workforce; (The C in BPC – Computing)

• Integrating research with education, and building capacity;

• Expanding efforts to broaden participation from underrepresented groups and diverse institutions across all geographical regions in all NSF activities; and

• Improving processes to recruit and select highly qualified reviewers and panelists.
Dear Colleague Letter: Pursuing Meaningful Actions in Support of Broadening Participation in Computing (BPC)

• FY18 Pilot: plans for meaningful BPC **required:**
  • Expeditions
  • Frontiers (Cyber-Physical Systems, Secure & Trustworthy Cyberspace)
• Intention to **expand the pilot** in future
BPC requirement added to some → many → most submissions.

Medium and Large proposals in the CISE Core programs are:

• **Encouraged** to include a BPC plan at time of submission, and

• **Required** to have an approved BPC plan *at the time of award*. 
Guiding Principles for BPC Effort

• BPC requires culture change in colleges/universities, departments, classes, research groups, professional organizations & K-12

• Culture change begins with enhanced exposure to BPC throughout the CISE community

• PI engagement must be tailored to individuals and organizations as appropriate
General Observations of Project Overviews

• Strengths
  • Topic Relevance
  • Some Preliminary Analyses
  • Student Engagement
  • Broader Impacts

• Weaknesses
  • Framed as NIH project
  • Lack of Evaluation
  • Broader Impacts
  • Intellectual Merits
  • *Lack of Telling What HBCUs Bring*

Let’s Discuss