Building Institutional Support for Mentoring

Critical Issues in Mathematics Education
Mentoring for Equity
March 24, 2023

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A quote:

In the current system, a student or scholar will "apprentice" to a more senior scientist ... . The model works when there are mentoring, a supportive research environment, and growth opportunities that lead to rewarding, independent careers. Unfortunately, each provision of this contract is strained.

Shirley Malcom and Sudip Parikh, Science, editorial, Feb 2023

My Lens

- Personal background
- DMS Division Director
- Provost at Tennessee
- Dean at Nebraska and Ohio State
- DGS and Chair at Iowa
- Tenured faculty member
- Mentoring various career stages
- Previous mentoring workshop organizer

Lessons Learned

- Team effort
- Alignment with departmental leadership
- Admissions
- Financial support

Lessons Learned (cont.)

- Mentees first
- Meet them where they are
- Growth mindset
- Humility, what can I do better?

Lessons Learned (cont.)

- Systems
- The success of HBCUs and MSIs
- The role of the AMS
- The role of PhD granting institutions
- The role of NSF

Paths forward

- The department is key
- Allies, at all levels
- AAAS Sea Change
- TIPSE COME-IN
- Funding

NSF's Three Priorities

- Strengthen basic science
- Missing millions
- Technology, Innovation, Partnerships

Two Review Criteria

- Intellectual Merit
- Broader Impacts

Division of Mathematical Sciences

- One of five divisions in MPS Directorate (Mathematical and Physical Sciences)

- Core disciplinary support ANT, ANL, AM, CM, MB, TGA, PCF, STAT

- Institutes

- Workforce

- Infrastructure

- Partnerships within NSF and outside

Division of Mathematical Sciences

- PRIMES

- Leaps and Ascend

- MSPRF

- Career

- RTG's

- Partnerships with EDU

- DEI in DMS

Division of Undergraduate Education

- Improving Undergraduate STEM Education (IUSE)

- Robert Noyce Teacher Scholarship Program

- NSF Scholarships in STEM (S-STEM)

- IUSE: Hispanic-Serving Institutions (HSI)

Division of Graduate Education

- **Graduate Research Fellowship Program (GRFP)**
- **NSF Research Traineeship Program (NRT)**
  - Traineeships
  - Innovations in Graduate Education (IGE)

Division of Equity for Excellence in STEM (EES)

- **Advance Program**
- **Alliances for Graduate Education and the Professoriate (AGEP) Program**
- **Centers of Research Excellence in Science and Technology (CREST)**
- **EDU Core Research (ECR) Program**
- **Excellence Awards in Science and Engineering (EASE)**
- **Hispanic-Serving Institutions (HSI Program)**
- **Historically Black College and University Undergraduate Initiative (HBCU-UP) Program**
- **Inclusion Across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)**
- **The Louis Stokes Alliances for Minority Participation (LSAMP) Program**
- **Tribal Colleges and Universities Program (TCUP)**

Division Of Research on Learning in Formal and Informal Settings

- The EDU Core Research (ECR) program of fundamental research in STEM

- The Discovery Research K-12 (DR- K12)

Other Resources

- Department of Education
- Other federal agencies
- Federal labs
- Sloan and other foundations
- Colleagues

A closing comment

My goal in mentoring is to help others to have the opportunities that I had or wish that I had had.

Valerie Sheares Ashby, lecture at NSF, Feb. 2023

Thank you!

Questions?