PREC: Partnerships for Research and Education in Chemistry

Michelle Bushey, Rebecca Peebles, Emanuel Waddell
NSF Chemistry
October 21, 2021, 3pm EDT

Solicitation: 21-620

https://beta.nsf.gov/funding/opportunities/partnerships-research-andeducation-chemistry-prec

PREC Aim

- Enable, build, and grow partnerships between minority-serving institutions and CHE-supported Centers, Facilities and Institutes...
 - Eight Partners for this solicitation
- Increase recruitment, retention and degree attainment by members of those groups most underrepresented in chemistry research
 - PREC Pathway
- Support excellent research and education endeavors that strengthen such partnerships

Partnership Programs Across MPS

- Programs supporting broadening participation and strengthening research infrastructure at Minority Serving Institutions (MSI) via partnerships between MSIs and designated NSF-funded Centers, Facilities and/or Institutes
- ESTABLISHED example (similar but not identical to PREC):
 - **Materials Research:** Partnerships for Research and Education in Materials (PREM), Solicitation 21-510: https://beta.nsf.gov/funding/opportunities/partnerships-research-and-education-materials-prem; contact Debasis Majumdar, dmajumda@nsf.gov
 - See examples via NSF Advanced Awards Search: https://nsf.gov/awardsearch/advancedSearch.jsp - enter "Program Element" = 7913

ALSO:

- **Physics:** PREP, Solicitation 21-610: https://beta.nsf.gov/funding/opportunities/partnerships-research-and-education-physics-prep; contact Kathleen McCloud, kmccloud@nsf.gov
- **Astronomy:** PAARE, Solicitation 13-566: https://beta.nsf.gov/funding/opportunities/partnerships-astronomy-astrophysics-research-and-education-paare; contact Hans Krimm, https://beta.nsf.gov/funding/opportunities/partnerships-astronomy-astrophysics-research-and-education-paare; contact Hans Krimm, https://beta.nsf.gov/funding/opportunities/partnerships-astronomy-astrophysics-research-and-education-paare; contact Hans Krimm, https://beta.nsf.gov

PREC Lead/PI Institutions - Eligibility

- PI must be faculty at a Minority Serving Institution (MSI)
 - Institution must have a Chemistry major
 - Additional faculty from PI's institutions can be co-PIs
 - Any additional MSIs funded through sub-awards
- Director of Center, Facility or Institute is non-co-PI Senior Personnel
 - Not on cover sheet (no Partner Senior Personnel on cover sheet)
- MSI must have 50% or more students of groups underrepresented among those holding advanced degrees in science and engineering fields
 - Blacks or African Americans, Hispanics or Latinos, American Indians, Alaska Natives,
 Native Hawaiians, and Other Pacific Islanders, and persons with disabilities
- Institutions of higher education that primarily serve populations of students with disabilities are also eligible
- Limits: 2 proposals/Partner; 1 proposal/MSI institution

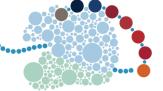
FY22 PREC Partners



University of Minnesota











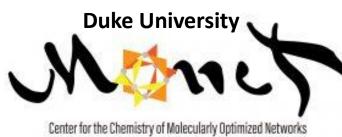












PREC Pathway

 Vision for the partnership simultaneously promotes inclusiveness and research excellence

- Enhanced re chemistry
- Excellent res MSIs and the goals
- education opportunities

..Successfully promote inclusiveness members of and lead to equity and research excellence by increasing both diversity efforts and research output in chemistry research at all Enhance bo partnering institutions.

nt by der-served in

nabled at research

earch and

- Demonstrably lead to increased diversity in chemistry research
- Impact may be at undergraduate, graduate, postdoctoral and/or faculty levels

Track 1 vs. Track 2

- Track 1
 - Limited size and scope (1-2 MSI Pls)
 - Develop capacity in at least one segment of the PREC pathway within the duration of the award
 - \$300,000/year for three years
- Track 2
 - More extensive team from one or more MSIs
 - Greater reliance on expanded research collaborations as well as education partnerships as mechanisms to support multiple components of the PREC pathway
 - \$600,000/year for three years
- Ideally, Track 1 award positions team to apply for Track 2 upon renewal
 - Other options for continuation of projects: REU, RUI/ROA, HBCU-EiR, MRI, CHE DRP single-PI and/or collaborative submissions...
 - For either track: impact is measured relative to the starting point of the institutions involved

Successful PRECs Will...

- Engage in compelling chemistry research
 - Well-integrated research program with compelling intellectual merit
 - Clear benefits from a collaborative approach with <u>substantive intellectual engagement from</u> <u>all partners and well-defined research roles</u>
- Promote increased diversity in at least one segment of the recruitment, retention, degree-attaining (PREC) pathway
 - Through research, education, and/or training opportunities
 - Challenges and progress throughout the stages of the PREC pathway are anticipated and addressed
- Propose elements that will successfully promote inclusiveness and lead to equity and research excellence
 - Increase both diversity efforts and research output at all partnering institutions
 - Clearly define purpose, challenges, and expected outcomes towards increasing diversity and research output

Successful PRECs Will...

- Establish faculty and student exchanges as a core component
- PREC partners propose metrics with which the activities in the partnership will be evaluated
 - <u>Successful PRECs can be developed regardless of differences in starting research and capacity</u> levels at the lead institution.
- Specify gains for each partner in impacts to the PREC pathway
 - Emphasize <u>increase in diversity and research output as measured relative to the beginning of</u> the award
 - Expected outcomes and impacts will be different for Track 1 vs Track 2

Review Criteria – Solicitation Specific Criteria

- Intellectual merit of the research and the potential impacts of the research and education partnership for both the Lead Institution and the CHE-supported Partner center, institute or facility.
- Goals of the proposed partnership that **enable the PREC pathway** through increasing recruitment, retention, and degree-attainment by underrepresented minorities in chemistry.
- **Roles** of the MSI and the CHE-supported center, institute, or facility in the partnership.
- Student/faculty **exchange plan** between partners as well as student mentoring.
- Adequacy of budget to the proposed activities.
- For Track 2: Assessment and evaluation plans of the partnership.

Forming Partnerships

- NSF is leaving the specific process of selecting with whom to partner to the Partners to decide
 - Only 2-4 proposals with high impact on PREC pathway will be funded
- Lead/MSI institutions have already started contacting and discussing potential proposals with Partners
 - MSI PIs should contact potential Partner institutions as soon as possible
 - Be ready to discuss your view and ideas for a potential partnership
 - Be open to advice and feedback from Partners
 - Not all partners will follow the same process for selecting partnerships
 - Partners include selected NSF/CHE CCI Centers, NSF/CHE research Facilities, and NSF/CHE research Institutes — all are different, with different science, support staff, infrastructure, and partnership capabilities

Web pages/contacts

Contacts <u>listed in the solicitation</u>:

- NSF Center for Sustainable Polymers https://csp.umn.edu/, POC: Dr. Marc A. Hillmyer, email: hillmyer@umn.edu
- NSF Center for Sustainable Nanotechnology https://susnano.wisc.edu/, POC: Dr. Robert Hamers, email: rjhamers@wisc.edu
- NSF Center for Genetically Encoded Materials https://gem-net.net/, POC: Dr. Sarah Smaga, email: sarah.smaga@berkeley.edu
- NSF Center for Synthetic Organic Electrochemistry https://cci.utah.edu/, POC: Dr. Shelley Minteer, email: minteer@chem.utah.edu.
- NSF Center for the Chemistry of Molecularly Optimized Networks https://monet.duke.edu/, POC: Dr. Stephen Craig, email:monet-cci@duke.edu
- NSF Molecular Sciences Software Institute https://molssi.org/, POC: Dr. T. Daniel Crawford, email: crawdad@vt.edu
- NSF's ChemMatCARS https://chemmatcars.uchicago.edu/, POC: Dr. Binhua Lin, email: blin@uchicago.edu
- NSF Molecule Maker Lab Institute https://moleculemaker.org/, POC: Dr. Huimin Zhao, email: zhao5@illinois.edu

Upcoming NSF/CHE Office Hour:

- Please join NSF/CHE for a discussion centering around Broadening Participation, Diversity, Equity and Inclusion in the Chemistry Community
- Friday, October 29, 4pm Eastern time
 - https://nsf.zoomgov.com/j/1607222357?pwd=TGdgaUtWc056U0JTcVZJZ2VEV1VIdz09
- The CHE Division will host community discussion of the following two topics:
 - A. What type of critical resources and structures are needed for both faculty and students so that they thrive in STEM at HBCUs, Minority Serving Institutions (MSIs) and under-resourced schools? What is inhibiting retention at all levels?
 - B. What are some of the best practices that would increase retention of students from historically underrepresented groups in STEM at graduate schools?

PLEASE keep sending us your questions.

We are also glad to meet with MSI PIs, Partner organizations and/or PI+Partner teams individually.

QUESTIONS?