

What Does PREM Provide?

- \$4000 to \$6000 scholarships for each academic year for 4 years
- Summer research opportunities at both Xavier and NYU/MRSEC including \$4500 stipend and free room and board
- Mentoring by science professors working on the cutting edge of research and development of materials
- Free travel to scientific meetings and conferences
- Special preparation for graduate programs with focus in materials research
- Additional scholarships may be available

All students in chemistry must be in an ACS-certified tract or Biochemistry. All physics students must be in the B.S. program.



Funded by the National Science Foundation and aimed toward increasing the number of minority scientists in materials research.



**Rigaku Miniflex II
Desktop X-ray
Diffractometer**

**Chemical Vapor
synthesis reactor for
nanotechnology research**



**Atomic Force
Microscopy
(AFM) (Veeco
Multimode III)**

For more information contact:
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PREM, Department of Chemistry, Xavier University
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Email: MaterialsResearch@Xula.edu

Nanoscience research in
batteries, proteins, cancer

cells, magnetic materials,
and pharmaceuticals.

PREM Partnerships for Research and Education in Materials Xavier – NYU/MRSEC



NEW YORK UNIVERSITY
A private university in the public service

PREM Program

The PREM Program

The main goal of Partnerships for Research and Education in Materials (PREM) is to enhance diversity in materials research and education by stimulating the development of formal, long-term, collaborative research and education partnerships between minority-serving colleges and universities and the NSF Division of Materials Research (DMR)-supported centers and facilities. (NSF)

Eligibility

- Interest in pursuing graduate studies leading to an advanced degree (M.S. or Ph.D) in chemistry, physics, or engineering with focus in materials research.
- Freshman or above status
- At least a 2.7 GPA in math and sciences
- Major in chemistry, biochemistry, physics, or dual degree engineering
- Must be a U.S. citizen or permanent resident



Hitachi Field-Emission Scanning Electron Microscope (FE-SEM) with atomic resolution



Dr. L. Meda, Assistant Prof., Materials Chemistry
Use vapor deposition techniques to synthesize nanomaterials for energy storage technology including pace makers, smart cards, and cell phone batteries; and also work on materials for gas sensors.



Dr. V. Kolesnichenko, Assistant Prof., Inorganic Chemistry
Design and synthesis of nanometer-scale materials that enables innovative applications in the health sector. Use of nanoparticles for therapy or diagnostic imaging in living systems.



Dr. J. Zhang, Professor, Physical Inorganic Chemistry
Synthesis and characterization of nanoparticles, nanocomposites and thin films of magnetic oxides with useful electric and magnetic properties for use in the development of sensing devices and in biomedical applications.



Dr. B. Bilyeu, Assistant Prof., Materials Chemistry
Work with specialty chemicals, particularly pharmaceuticals, for which the discovery and characterization of polymorphs is essential for evaluation of shelf stability and bioavailability of the final pharmaceutical product.



Dr. A. Sunda-Meya, Assistant Prof. of Physics
Use Atomic Force Microscopy (AFM) to investigate the surface morphology of cancer stem cells (CSCs) and interaction forces between specific molecules immobilized on the tip and the cell surface.

Application

Name _____

Major _____

Classification _____ GPA _____

Phone Number _____

Email _____

Address _____

I give the PREM Program permission to access all of my school records for use in program evaluation.

Signature _____

List two instructors who are familiar with you and your career goals who can serve as a reference for you. (There is no need to provide letters of recommendation. The PREM office will contact the faculty).

1. _____

2. _____

Attach a one page essay in which you discuss your interest in the PREM Program. Explain why participation in the program is important to you and what you can bring to the program.