

NEW OBJECTIVES

WVNano/EXPOSURE

WVNano/LSAMP are sponsoring a new academic year program for freshmen and sophomores interested in science-related majors to explore cutting-edge research in WVU faculty laboratories while receiving academic tutoring in mathematics and science courses.



EXPOSURE is designed to motivate students, particularly those students that are traditionally under-represented in STEM fields, in pursuing an interdisciplinary research career and participating in undergraduate research opportunities. Upper-level undergraduate and graduate students serve as peer mentors to the freshmen and sophomore participants.



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BUILDING THE FUTURE
OF WEST VIRGINIA
ONE IDEA AT A TIME

WVNANO UNDERGRADUATE EDUCATION



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ABOUT WVNANO UNDERGRADUATE EDUCATION



THE INITIATIVE

The WVNano Initiative is the WV's focal point for discovery and innovation in nanoscale science, engineering and education (NSEE).

WVNano's central objective is to advance the research environment and diversify West Virginia's economic base through cultivation and growth of research in targeted NSE areas. The Initiative's research builds on and connects our core strengths in the bio-nano-info triad.

Our technical efforts target coordinated discovery in materials, devices, and biomolecular systems to advance molecular recognition and transport device innovation of societal impact in security, health, energy, and environmental applications.

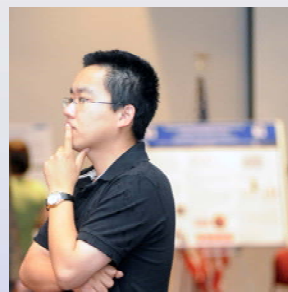
THE RESEARCH

Integrative Research Groups. Our groups are formed around the recognition and transport building blocks necessary for integrated molecular recognition systems:

- Electronic Molecular Recognition and Transduction
- Photonic Molecular Recognition and Transduction
- Nano/microfluidic Transport
- Nanokinematic Transport

Groups couple our strengths in electronic and photonic materials and devices as well as molecular biology, proteomics, and microfluidics.

THE APPROACH



Education, Human Resources Development and Outreach (EHRDO), is an integral component of WVNano. WVNano envisions a comprehensive effort to not only enhance formal education but also informal education to foster public awareness, engage-

ment and understanding of nanoscale science, engineering and technology. WVNano initiates, partners with, builds upon and extends other NSF-funded EHRDO projects and University-supported initiatives with the following goals:

- Bridge science and education via integrative programs
- Develop and diversify the STEM workforce
- Transform the academic culture and environment in order to increase retention and graduation rates among STEM students
- Support faculty development through grant training and mentoring



THE PROGRAMS

WVNano/NUE

A creative, broadly applicable, and interdisciplinary approach to prepare students for the NSE workplace
Course work and requirements:

- Intro to Nanotech Design (3 cr)
- Sophomore seminar (1 cr)
- Junior seminars (2, 1 cr each)
- Research capstone (3 cr)

WVNano/LSAMP Summer Launch

- Partnership with Louis Stokes Alliance for Minority Participation
- Three-week residential program for Rising Freshman
- Students earn 6-credit hours (mathematics or science course and university orientation course)
- Enhancement Activities

WVNano SURE

- Eight-week summer undergraduate research experience in WVNano faculty laboratories
- Coursework: 1-credit hour Seminar
- Mentored by graduate assistants as well as faculty
- Poster presentations and symposium
- Upper-Class Peer Mentors and Content Tutors

WVNano/REU

- Ten-week program involving undergraduates in meaningful ways in ongoing research programs
- Includes team-building activities as well as weekly meetings, presentations, and final poster session
- Designed to attract diversified students, especially from the Appalachian region, into careers in science, engineering, and science education
- Encourage these students to attend graduate school
- The program is designed to fit within students' major requirements.