Summer Research Experiences on Nanoparticles

Howard University has at least eight openings for a joint two week Undergraduates Summer Workshop organized by faculty from Howard (Dr. Tao Wei (Chemical Engineering), Dr. Hyung Bae (Mechanics Engineering), Dr. Andre Clayborne (Chemistry) and Dr. Steven Cummings (Chemistry)) and Winston-Salem State University (Dr. Xiuping Tao (Physics)). The NSF-sponsored workshop will take place from 05/18-05/29 and present a perspective of gold and silver nanoparticles especially toward their application as detection devices. Lectures and hands-on experience will include synthesis of nanoparticles, spectroscopy techniques, and multiscale simulations from quantum, atomistic and continuum scales, as well as visualization. The workshop will also include break-out sessions on research ethics and career development.

Concurrently, there will also be an eight week Summer Research Experience for at least two students to participate in a directed research project from May 18th to July 10th. The research projects include: (1) working on and testing instrumentation using various spectroscopic techniques including surface-enhanced Raman spectroscopy (SERS) to detect chemicals and amino-acids with Dr. Hyung Bae; (2) synthesis and characterization of gold and silver nanoparticles to be complexed by amino-acids and peptides with Dr. Steven Cummings.

Successful candidates will be enrolled in physics, chemistry, chemical engineering, or a related discipline. Research laboratory experience or computational experience is preferred, but not required. Candidates must display good work ethics and laboratory practice and be willing to learn new techniques and approaches. The program will provide travel support, a stipend of $500.00 per week, and housing at Howard University.

An applicant needs to fill the online form: https://forms.gle/hNUhYyNApqTns7ss7. Arrange for one-letter of recommendation to be sent directly to bionano22@gmail.com. The application deadline is April 1, 2020. Students will be notified by April 8, 2020 of their acceptance.

Located in the heart of Washington, D.C., Howard University is ranked 89th by U.S. News & World Report. It is a culturally diverse, research intensive private Historically Black University with an undergraduate enrollment of approximately 6,500. The university houses many professional and graduate programs including those in Chemistry, Chemical Engineering, Mechanical Engineering, Law, and Pharmacy. Howard University is an Equal Employment Opportunity/Affirmative Action employer and values diversity.