

NNIN-Penn State Research Experience for Teachers Program: Antibacterial Properties of Silver Nanoparticles on Socks



Participants



**Nathaniel Eugene, Stephen Stilianos
& Douglas Schunk**



Nathaniel Eugene, a science teacher from Cross Country Elementary and Middle school in Baltimore Maryland, Steve Stilianos, a pre-service teacher from the college of education at Penn State, and Douglas Schunk, a State College Area, High School science teacher participated in 2010 Research Experience for Teachers Program under the supervision of Dr. Christine Keating a professor in the Department of Chemistry, and Dr. Steven Keating, a Senior Lecturer II, in the Biochemistry and Molecular Biology department.

Project overview

This research focused on examining the antibacterial properties of silver nanoparticles. The goal was for teachers to create engaging, hands-on, and affordable lessons that could introduce students to the field of nanotechnology as well as demonstrating its relevance to their lives.

Relevant Results

When the socks which were dipped in the Mesospray the silver colloidal solution had a zone of inhibition (no bacterial growth). The artificial sweat with a pH of 4.5 seemed to enhance the zone of inhibition over the sweat with a pH of 6. The two commercially manufactured socks showed little inhibition, which may be due to a hydrophobic property within in the sock. Dry samples showed little to no inhibition.

