



Sponsoring Scholars in Science Awards

Seedling Research Funding

Propose your ideas for engaging and inspiring students to pursue science, technology, engineering and mathematics (STEM). Funding will be provided for compelling K-12, higher ed and educational research initiatives designed to build student interest and awareness in the STEM disciplines.

Code 34

Topic: Using High-Tech Modeling and Simulation to Teach High School Students and Navy recruits

Objective: To design, develop and demonstrate proof-of-concept of an educational program using advanced modeling and simulation (M&S) technologies to teach basic concepts and principles in math and science (e.g., physics) to high schools students and Navy recruits

POC:

Dr. Ray S. Perez

ONR Warfighter Performance Department,
Human & Bioengineered Systems Division

Email: ray.perez@navy.mil

Phone: (703) 696-4986

Description: Increasing the number and diversity of students interested in STEM involves three interactive foundations:

- (1) Students need to have a deep conceptual mastery of foundational principles in math and science
- (2) Students should be able to apply this conceptual mastery to everyday tasks/jobs
- (3) M&S technologies and pedagogies should be developed to achieve both of the above.

The use of advanced M&S technologies for education and training has been common in the military for decades. The education community has been a relatively recent entrant into the simulation world, but the use of M&S in education has been progressing rapidly.

M&S could serve as an important tool for teaching abstract concepts and principles in math and science as well as the use of these concepts and principles in every day jobs and tasks, including naval functions. Rapid advances in M&S efforts have afforded the ability to develop educational and training tools (e.g., simulations) using the latest computer graphics, natural language processing, Web content and artificial intelligence technologies. The resulting educational simulations have the potential to accelerate the acquisition of critical math and science skills.