NSF REU SITE
HUMAN-SWARM INTERACTION

SUMMER RESEARCH OPPORTUNITY IN ROBOTICS @ WEST VIRGINIA UNIVERSITY

Photos: NASA, WVU

Program Dates

- May 19 – July 26, 2019 (10-weeks)

Eligibility/Qualifications

- US citizen, national, or permanent resident;
- Undergraduates enrolled at institutions of higher education (students from community colleges and primarily undergraduate institutions are encouraged to apply);
- Majoring in a robotics related discipline (e.g., engineering, computer science, applied math, physics);
- Grade point average of 3.0 or above;
- Students from underrepresented groups (e.g., women, minorities, first generation college students) are especially encouraged to apply.

Apply

https://robotics.wvu.edu/nsf-reu-site
Email RoboticsREU@mail.wvu.edu for questions
Application Deadline: **April 12, 2019**

About:

This NSF-funded Research Experiences for Undergraduates (REU) Site will support summer research in robotics.

Each selected student will be supported with $5,000 stipend, paid on-campus housing, food allowance, and travel expenses up to $600.

The intellectual focus of this project is to allow one human operator to effectively manage a large robot swarm to achieve desired global objectives. Tailored around a swarm system inspired by the cooperative thermal soaring and foraging behaviors of hawks, three sub-projects will be conducted by undergraduate students during this REU project. First, a swarm testing environment with 50 custom designed robots will be developed. Second, distributed, non-hierarchical agent-level interaction rules that will allow the emergence of desirable robot swarm behaviors will be investigated. Third, novel human-swarm interaction modes for managing a large self-organized robot swarm without using a direct command and control structure between the operator and robots will be invented and experimentally demonstrated.