

## USGS NSF GRIP Opportunity

<b>USGS Center:</b>	Pacific Island Ecosystems Research Center
<b>Project Title:</b>	The effects of invasive animal management on plant-pollinator mutualisms and plant communities in Hawaii
<b>Project Hypothesis or Objectives:</b>	Invasive animal species threaten intact Hawaiian forest communities by disrupting plant-pollinator mutualisms and incurring high levels of flower and seed predation. Removing such invaders requires large management funds, although the efficacy for restoring ecological functions to forests is yet unclear. Our objective is to advance understanding of how invasive animal removals affect plant community dynamics. USGS scientists are implementing a large-scale, replicated, experimental removal of invasive yellowjacket wasps, Argentine ants, and rats from mesic forest communities in Hawaii Volcanoes National Park. The successful intern will use this opportunity to lead studies on the response of the plant community to these removals.
<b>Duration:</b>	12 months
<b>Internship Location:</b>	Volcano, HI
<b>Area of Discipline:</b>	Plant Ecology, Botany, Pollination Biology, Population and Community Ecology, Entomology
<b>Expected Outcome:</b>	The intern will present results at a local conservation conference and ideally lead or co-author a peer-reviewed journal manuscript. The intern will also have opportunities to meet local managers (e.g., National Park Service, US Fish and Wildlife) and discuss conservation science, the utility of different management prescriptions, and careers in government science. In doing so, they will gain insight into future career options.
<b>Special skills/training Required:</b>	Desired skills include plant identification, knowledge of experimental design as pertaining to plant community dynamics, data management skills, statistical analysis preferably with R.
<b>Duties/Responsibilities:</b>	The successful candidate will work with mentors to design and implement monitoring and/or experiments that test plant community response to invasive animal removals. Possibilities

include: (1) investigating the effects of yellowjacket removal on flower abundance and fruit set in target species; (2) conducting seed predation experiments to investigate the effects of rats on seed availability; (3) testing the effects of argentine ants on seed dispersal and seedling emergence; (4) conducting seed addition and weed removal experiments to ask how ecologically important plant-pollinator mutualisms and seed predation are for plant communities relative to other ecological factors.

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