

National Aeronautics and
Space Administration



EXPLORE SCIENCE

NASA SEES 2020 Virtual Summer High School Internship: Mosquito Mappers

Dr. Russanne Low and Cassie Soeffing, NASA Earth Science Education Collaborative (NESEC)/ Institute for Global Environmental Strategies (IGES)

Peder Nelson, NESEC/Oregon State University

Erika Podest, NESEC/JPL

16 September 2020

NASA SEES 2020 Internship: Mosquito Mappers

During summer 2020, two SciAct projects (SEES and NESEC) provided a safe virtual summer internship experience for **114 rising high school juniors and seniors from 22 states, PR, and APO (Germany)**. The Mosquito Mappers was one cohort that was part of the larger NASA SEES project. Students analyzed coincident data collected using GLOBE Observer Mosquito Habitat and Land Cover tools. They used online data access and analysis tools, such as Collect Earth Online, AppEARS LP DAAC, Worldview, Google Climate Engine, and ArcGIS to understand the distribution of mosquito oviposition sites on the landscape. Several teams created Python code products for their projects.

Over 8 weeks, students were connected to mentors and to each other through online chats, a weekly NASA scientist webinar series, 2x weekly “Meet Up and Do Science” videoconference work sessions with mentors, and a Blackboard course platform. In the last week, student research teams presented their projects to mentors and guest scientists for feedback. The internship culminated in a public event broadcast on YouTube, *The SEES Research Showcase*, with presentations by selected research teams from the Mosquito Mapper cohort **with 3,328 views**.

Outcomes include:

- **50 completed student research projects** (team and individual)
- **Fieldwork: >7,000 observations** submitted (interns who could safely go outdoors)
- **Classified >8,000 land cover images** from NASA satellites on Collect Earth
- **8 blogs written** by interns posted on the GLOBE Mission Mosquito website
- **Papers and presentations in process**, including a co-authored publication by mentors and the 2020 Mosquito Mappers Intern Team; a coauthored presentation has been submitted to the 2020 AGU Fall meeting; two interns are also included as authors in an additional manuscript to be submitted for peer review this month
- **Several media reports (TV and newspaper)** highlighted participating interns



Above: Interns and mentors meet up online to do science and are shown sharing designs for mosquito larval traps



This activity was a collaboration between two NASA Science Activation projects: NASA Earth Science Education Collaborative (NESEC), PI - T. Schwerin, IGES and STEM Enhancement in Earth Sciences (SEES), PI - M. Baguio, TX Space Grant Consortium

“At the start of this internship, I had only known satellites collected information and that mosquitoes were annoying. Now, I have learned so much more about the elegant nuances of remote sensing in addition to the interaction between mosquitoes and the environment.”
2020 SEES Mosquito Mapper Intern

Submitted by : Dr. Russanne Low, IGES (rusty_low@strategies.org)