Postdoctoral Position
Mosquito Ecology
University of California, Davis

The Vector Genetics Laboratory (VGL) at the University of California, Davis is seeking applications for a post-doctoral research scholar position in the area of MOSQUITO ECOLOGY. The VGL is dedicated to research and training in the areas of population & molecular genetics, genomics and bioinformatics of insect vectors of human and animal disease. The VGL research agenda is aimed at expanding knowledge that may be applied to improving control of disease vectors and at the same time addresses problems of interest in the field of evolutionary genetics. The VGL has links to multiple Graduate Groups and Centers on the UC Davis campus, including the Center for Population Biology, Department of Evolution and Ecology and the One Health Institute. Find out more about the VGL at: https://vectorgeneticslab.ucdavis.edu/

Background:

The VGL is a member of the University of California Malaria Initiative (UCMI) which is a collaborative group comprised of members from four UC campuses (UC Berkeley, UC Davis, UC Irvine, and UC San Diego) plus Johns Hopkins University. UCMI researchers have proposed and developed a cost-effective, sustainable, and environmentally responsible strategy for the eradication of human malaria from Africa. This strategy is based on genetically modifying populations of the mosquito that transmits malaria by introducing two genes that encode products that destroy the malaria parasite as it develops in the mosquito vector. These anti-parasite genes are coupled with a Cas9-based gene drive which facilitates their introduction and spread through natural populations. The objective is elimination of malaria transmission by elimination of the parasite within the mosquito but not the mosquito itself. Details about UCMI may be found on our website, https://stopmalaria.org/

The VGL's role in UCMI is to conduct field trials of the modified mosquitoes. The island nation of São Tomé and Príncipe (STP) was ultimately identified as an ideal field site. These two oceanic islands are located in the Gulf of Guinea, roughly 300 kilometers off the coast of west Africa. The VGL project has a team of mosquito biologists and state-of-the-art laboratory and insectary facilities on-site in STP where field and laboratory research has been ongoing since 2019. In addition, we have a very large local team of community and stakeholder engagement workers.

Project Description. The Mosquito Ecology post-doc will be part of a project that is focused on the ecology and genetics of populations of the primary malaria vector, *Anopheles coluzzii* and species with which this mosquito interacts on São Tomé and Príncipe islands. The goal of the ecology project is to assess the impact of introducing genetically engineered *An. coluzzii* both on natural populations of this species as well as potential impacts on non-target species with which *An. coluzzii* may interact. The Mosquito Ecologist will interact with our mathematical modeling and population genomics groups, and it is hoped that these interactions will synergize the individual work of each group.

Job Description. We are seeking a person with a strong background in quantitative ecology, an interest in island ecology and experience in conducting field work. The Mosquito Ecologist will be responsible for providing leadership in the conduct of all field work. He/she should be capable of dealing with the logistical challenges often faced while conducting field work in the tropics and be capable of managing field collection teams. The effort at each field site will include intensive collection of adult and larval *An. coluzzii*, sampling and identification of non-target macro- and microorganisms sharing the aquatic environment with *An. coluzzii*, identifying collection sites and scheduling field collection work. On return to the lab at Davis the mosquito ecologist will be responsible for DNA extraction and utilization of established molecular methods to: (*i*) identify *Plasmodium* infected individuals, (*ii*) identify insecticide resistance genotypes, and (*iii*) identify blood meal sources. We have developed multiplex molecular assays for this work.

The Mosquito Ecologist will be working as part of an interdisciplinary team that includes expertise in population genetics, molecular genetics, genomics, bioinformatics, mathematical modeling and the acquisition and analysis of remotely sensed data. The team is located across the University of California system including UC Irvine, UC Berkeley, UC San Diego and of course UC Davis. The person filling this position will be based at the Vector Genetics Laboratory at UC Davis. The candidate should be available to spend periods of up to 3 months at a time in the field.

Candidate qualifications include the following: (i) quantitative methods in ecology, (ii) experience in conducting field work, (iii) leading field collection teams, (iii) the application of genetic markers for species identification, insecticide resistance genes, blood-meal analysis, etc. The post-doc filling this position should be willing to work as part of an interdisciplinary team and should have experience or interest in one or more of the following: landscape ecology/genetics, island biogeography, population genomics, bioinformatics, and/or mathematical modeling.

Support is available for 2 years, starting not later than May 20, 2024.

Position Information:

Salary Range: $64,480 – $71,908 contingent on candidate experience.

Full Time

Duration: 2 years, starting no later than May 20, 2024

Location: University of California, Davis, California USA

Benefits Eligible including Medical, Dental, Vision, 401(k), etc.

How to Apply

Please e-mail cover letter explaining your interest and qualifications, resume and the names and contact information for three references to Christine Coleman cmhandy@ucdavis.edu with the subject line “Ag02-Mosquito Ecology”. This position will remain open until filled, but candidates able to start on or before May 20, 2024 will be given preference. This is a 2 year position with the possibility of extension pending funding.