

Assistant Vector Scientist, Associate Vector Scientist, and Vector Scientist

DEFINITION

The Vector Scientist classifications series, under the direction of the District's Laboratory Director, performs laboratory and field work, and research related to monitoring and controlling mosquito abundance, and evaluating arbovirus distribution.

DISTINGUISHING CHARACTERISTICS

Assistant Vector Scientist:

This class is the entry-level class within the District Vector Scientist series. This class is distinguished from the Associate Vector Scientist by the performance of more routine tasks and duties assigned to employees within the series, and by the completion of categories A and B of the California Department of Public Health (CDPH) Vector Control Technician Certification exam.

Associate Vector Scientist:

This class is the mid-level class with in the District Vector Scientist series. Employees within this class are distinguished from the Assistant Vector Scientist by the performance of the full range of laboratory and field work duties as assigned, scientific knowledge of biology and virology, participation in research at the District, presentation of the research outcomes at regional or national scientific conferences, and successful completion of categories A and B of the CDPH Vector Control Technician Certification exams. Employees at this level receive only occasional instructions or assistance as new or unusual situations arise and are fully aware of the procedures and policies of the work. Positions in this class are flexibly staffed and are normally filled by advancement from the entry-level Assistant Vector Scientist classification, or by candidates having prior relevant laboratory experience.

Vector Scientist:

This class is distinguished from the Associate Vector Scientist classification by performance of research that involves mosquitoes or arboviruses, that resulted in at least one first-author publication in a peer-reviewed scientific journal and at least one oral presentation at a regional or national scientific conference, possession of a valid Remote Pilot license from the Federal Aviation Administration for operating unmanned air systems, and successful completion of C & D of the CDPH Vector Control Technician Certification exams. This classification is distinguished from the Laboratory Director classifications at the District as the later possesses specialized responsibilities of the Division by conducting and executing various aspects of the District's mosquito surveillance and research programs.

SUPERVISION RECEIVED AND EXERCISED

Assistant Vector Scientist: The Laboratory Director provides immediate and general supervision, which may be supplemented by Vector Scientist-class employees.

Associate Vector Scientist and Vector Scientist: The Laboratory Director provides immediate and general supervision. Responsibilities may include technical supervising of seasonal/temporary staff.

Accountability

The employee is accountable to the Laboratory Director to ensure that laboratory and field work functions are carried out in accordance with District policies, California Health and Safety Code Standards, and Federal laws. Assignments may be specific or general with only desired results being specified. Recommendations on improvements to Division activities are expected.

The employee is responsible for complying with all District safety requirements and practices. Additionally, the employee is responsible for ensuring that any direct reports also comply with all District safety requirements and practices.

ESSENTIAL FUNCTIONS

Essential functions may include, but are not limited to, the following:

- Conducts surveys of mosquitoes to determine population densities and species distribution;
- Supports the Laboratory Director in monitoring mosquito populations by setting and retrieving traps, counting and identifying insects collected, and recording results in computer databases;
- Assists in the development of new surveillance tools for monitoring populations of mosquitoes;
- Performs laboratory tests of mosquitoes and birds for the presence of arboviruses using quantitative PCR and immunosorbent assay;
- Performs laboratory tests to evaluate insecticide resistance in mosquitoes;
- Works with operational staff in evaluating control methods and materials;
- Assists the Laboratory Director in writing experimental protocols, preparing datasheets for recording results, and recording, visualizing and analyzing data using various computer software;
- Use analytical and mapping software to prepare reports, maps, and graphs for mosquito and arbovirus monitoring and control operations;
- Conducts research projects, with the guidance of the Laboratory Director;
- Stays up to date with the scientific literature for the purpose of improving mosquito and arbovirus monitoring programs, and in support of laboratory research;
- Identifies mosquitoes and when possible, other insects to species that are submitted by District staff or the public;
- Maintain colonies of mosquitoes in the laboratory for research and education;
- Caring for live insects used in the District's educational programs;
- Attendance and punctuality that is observant of scheduled hours on a regular basis; and
- Other duties as assigned.

EMPLOYMENT STANDARDS

Knowledge

- Strong background in biology, molecular biology and / or ecology as it relates to mosquitoes and/or viruses;
- Familiarity with habitats and geography of Alameda County; and
- Experience with methods for analyzing and visualizing data.

Skills

- Prioritize multiple tasks using planning, organizational and time management skills;

- Technical skills should include experience with consumer-grade tools for constructing and repairing mosquito traps, general molecular biology methods, nucleic acid extraction and PCR methods (preferably quantitative PCR);
- Communicating effectively in English both orally and in writing, making presentations, and preparing written reports;
- Interacting effectively with District staff and representatives of public and private agencies;
- Use of mapping software for navigation while driving;
- Operate standard business computer hardware, mobile devices, and related software applications; and
- Understanding, interpreting, and applying complex guidelines.

Abilities

- Identify mosquitoes and other insects using dichotomous taxonomic keys;
- Demonstrate the ability to implement and analyze laboratory experiments that advance projects;
- Highly organized, motivated, and able to work independently in a collaborative team-oriented setting;
- Prepare, organize, and maintain accurate records using computer software;
- Read, understand, interpret, evaluate, and apply laws, policies, rules, contracts, guidelines, and literature of the profession;
- Write legibly and effectively in English and keep detailed records;
- Establish and maintain effective working relationships with those contacted in the course of work;
- Communicate with the public in a tactful, courteous, and professional manner; and
- Operate a motor vehicle and other specialized types of transport associated with mosquito monitoring and control in a safe and legal manner.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Education/Training and Experience Guidelines

Any combination equivalent to experience and training that would likely provide the required knowledge and abilities would be qualifying. A typical way to obtain the knowledge and abilities would be:

Experience

Assistant Vector Scientist:

Completion of a bachelor's degree from an accredited college or university with major course work in biology, physiology, microbial biology, and/or molecular biology, and experience with isolating nucleic acids and/or PCR. Experience in rearing insects, particularly mosquitoes, is desirable.

Associate Vector Scientist:

The experience described for the Assistant Vector Scientist class, successful completion of categories A and B of the CDPH Vector Control Technician Certification exams, demonstrated ability to independently and successfully monitor mosquito abundance, isolate nucleic acids from mosquitoes and conduct quantitative PCR assays, and six (6) months as an Assistant Vector Scientist, or equivalent.

Vector Scientist:

The experience described for the Associate Vector Scientist class, successful completion of categories C & D of the CDPH Vector Control Technician Certification exams, served as the pilot in command using unmanned air systems in controlled airspace, having presented the outcomes of independent research on the topic of mosquitoes and/or arboviruses at a regional or national scientific conference, and a publication as first-author in a peer-reviewed journal on the topic of mosquitoes and/or arboviruses.

Education/Training

A bachelor's degree from an accredited college or university with major course work in biology or related field.

License or Certificate**Assistant Vector Scientist:**

- A valid California Driver's license issues by the California Department of Motor Vehicles that must be maintained throughout employment and must be insurable under the guidelines set forth by the District's insurance carrier.

Associate Vector Scientist:

- A valid California Driver's license issues by the California Department of Motor Vehicles that must be maintained throughout employment and must be insurable under the guidelines set forth by the District's insurance carrier.
- Mosquito Control Technician Certificate issued by CDPH.

Vector Scientist:

- A valid California Driver's license issues by the California Department of Motor Vehicles that must be maintained throughout employment and must be insurable under the guidelines set forth by the District's insurance carrier.
- Mosquito Control Technician Certificate issued by CDPH.
- Vertebrate Vector and Invertebrate Certificate issued by CDPH.
- Remote Pilot license from the Federal Aviation Administration.

WORKING CONDITIONS/PHYSICAL REQUIREMENTS

Essentially the employee's working hours are spent in office areas and field setting; exposure to cold, heat, noise, outdoors, inclement weather, dust, dirt, vibration, chemicals, traffic, traffic hazards, confining workspace, odors, mechanical hazards, electrical hazards, explosive hazards, etc.

With or without accommodation, incumbent must be sighted in both eyes with the ability to demonstrate depth perception and color perception; have a minimum of single-ear aided hearing; be without physical limitations that would prevent climbing ladders and performing customary and usual activities associated with field operational mosquito surveillance and control activities; lift up to 50 (fifty) pounds.

Working Conditions

- Medium Work – Incumbent performs work, which involves frequent lifting, pushing and/or pulling of objects of approximately 50 pounds. Heavier lifting is an infrequent aspect of this position.
- Mobility – Incumbent must have complete and normal mobility of arms to reach and dexterity of hands to grasp and manipulate small objects; be able to stand, stoop, reach and bend, and

to walk on uneven terrain, such as field, dirt banks, natural and cement stream beds, and shallow ponds.

- Other Conditions – Incumbent may be exposed to and handle toxic and hazardous substances; be available on call for evening and weekend emergencies, as assigned; travel within and out of the county; work, when necessary, in inclement weather including sun, cold, and rain.

Adopted Date: September 14, 2016

Revised: May 2018

Retitled:

FLSA Designation: Non-Exempt

Unit: ACMAD Employee Association