

**California Department of Food and Agriculture  
Division of Plant Health and Pest Prevention Services  
Plant Pest Diagnostics Branch  
Senior Environmental Scientist (Specialist)  
Duty Statement**

**I. Program/Position Identification**

Plant Pest Diagnostic Branch (PPDB) within Plant Health and Pest Prevention Services in California Department of Food and Agriculture (CDFA), serves as the official environmental resource for conducting scientific research investigation, providing timely and accurate plant pest environmental analysis, quality control services and professional expertise to county agricultural commissioners, other state and federal agencies, agri-business and environmental clients within California, nationally, and internationally. The PPDB provides a broad range of valuable services in support of CDFA's mandate of protecting agriculture and the environment. PPDB environmental analysis supports CDFA's pest exclusion and eradication programs in their tasks of identifying and combating invasive plants, plant pests and plant diseases that threaten California agriculture productivity and the natural environment. The Branch also provides environmental analysis to the United States Forest Service and other federal agencies in the detection and monitoring of invasive and destructive plants, plant pests, and plant diseases.

Under the direction of the Environmental Program Manager I (EPM1), the incumbent will perform a variety of scientific, technical, and professional duties in support of the California Biodiversity Initiative (CBI). The incumbent will provide expertise and assistance in long-term preservation, seed testing, data collection and analysis, and reporting on California's rare species germplasm collections.

<b>Classification:</b>	<b>Senior Environmental Scientist (Specialist)</b>
<b>Working Title:</b>	<b>Senior Environmental Scientist</b>
<b>License or Other Requirement:</b>	<b>Bachelors or advanced degree with a major in a biological, chemical, physical, or environmental science, or a closely related scientific discipline.</b>
<b>Position Number:</b>	<b>014-609-0765-001</b>
<b>Location:</b>	<b>3294 Meadowview Road, Sacramento, CA</b>
<b>Date Prepared:</b>	<b>January 2020</b>
<b>Work Hours/Shift:</b>	<b>40 hours/week, Monday - Friday</b>

## **II. Essential and Non-Essential Job Functions**

### **A. Essential Functions:**

#### **Function #1: Program Environmental Analysis Activities - 50%**

- Independently prepare seeds submitted from various programs in the Department and the native species collection efforts for identification using specialized laboratory techniques.
- Independently provide oversight and support in viability testing of collected seed samples prior to storage, as well as periodic testing of viability and quality during storage, particularly for species with no known testing protocols or when other partners preclude do not have the resources to perform the tests.
- In collaboration with other venture partners, collect, analyze, and interpret seed banking data, generate reports, identify gaps, and recommend corrective measures when needed, as well as develop and participate in review of performance reports according to established benchmarks and stated objectives of the California Biodiversity Initiative (CBI).
- Analyze native plant and other seeds for viability, dormancy, and plant pathogen testing, and follow protocols for safe storage according to United States Department of Agriculture long-term banking procedures.
- Assess seed germination performance in response to variables such as temperature, moisture, light, plant hormones and chemical agents, and paired laboratory/greenhouse or plant growth chamber grow-outs.
- Perform biochemical tests and x-ray examinations of seed samples as needed to assess seed quality.
- As needed, provide support and assistance with the identification of seeds from collected samples that are difficult to identify, rare, or when reference material is unavailable.
- Coordinate maintenance and calibration of equipment vital to the function of the seed physiology section of the laboratory.
- Coordinate maintenance of records for samples submitted to the seed laboratory for testing.

#### **Function #2 Research -**

**30%**

- Investigate problems negatively impacting the long-term survival of seed germplasm in storage and recommend appropriate corrective measures.

- Independently research new and more efficient methods of maintaining and evaluating seed germplasm in long-term storage.
- In collaboration with other venture partners, review and publish long-term storage protocols following USDA's long-term banking procedures, including protocols on seed quality and viability assessment, safe storage moisture contents, and physical parameters, as well as review and update standard operating procedures (SOP) as needed, to align with the objectives of the CBI.
- Participate in collaborative projects with other scientists and prepare grant applications for external funds. Research projects must include application of correct scientific methods including definition of problems, developing hypotheses, developing work plans, conducting the research, and correctly evaluating and interpreting results.
- Scientifically analyze and evaluate extremely complex and difficult physiological and environmental problems of concern to seed/plant performance in the laboratory and field, interpret and evaluate data for seed quality and crop performance issues. Develop new and innovative seed germplasm long-term storage protocols. Provide scientific guidance, review and recommendations of appropriate actions pertaining to seed and plant issues to internal stakeholders (CDFA programs and staff) as well as external stakeholders (government agencies, agribusiness and the general public).
- Publish results from scientific research investigations in peer-reviewed scientific journals, books or other publication outlets. Present analyses and results of scientific research or investigations to colleagues and other scientists at professional meetings, conferences, and technical working groups.

### **Function #3 Training/Professional Organizations/Outreach - 15%**

- Aid venture partners in technical review of information on the scientific developments, commercial production and appropriate use of native seed as a tool to improve habitat values over broad regional areas of the state.
- Mentor and train collaborators in methods of germplasm monitoring following protocols for safe storage according to USDA's long-term banking procedures, and in viability and quality testing of stored germplasm.
- Participate on scientific committees of professional associations to standardize procedures for evaluating seed quality.

- Attend professional scientific meetings in the United States or abroad to present results of scientific research, to learn new diagnostic techniques, to keep current with scientific advancements in field of expertise and responsibility, and to foster collaborations with scientists worldwide.
- Incumbent will be lead person for technical and support staff for CBI.
- Conduct training in specialized techniques for technical and support staff as necessary.

**B. Non-Essential Functions:**

**Function #1:                      Miscellaneous Duties                      -                      5%**

- Perform other job-related duties as required by supervisor.

**III. Work Environment**

The Plant Pest Diagnostic Branch is comprised of five different laboratories at the CDFA Meadowview complex in Sacramento. The incumbent works in the Seed Laboratory, which consists of 7 common rooms, storage and cold rooms and individual office/laboratories for the professional staff. Some of the rooms have both standing and sitting height counters. The laboratory has the standard equipment used in seed testing (seed dividers, electronic balances, microscopes, chemicals, glassware, fume hoods, free-standing and walk-in germinators, herbarium cabinets, vacuum and air fixtures, vacuum counting heads, x-ray machine, and electrophoresis equipment, etc.). Individual office/laboratories are equipped with one built-in standing height counter with sink and eyewash, standing height hanging bookshelves, and assorted tables and desks to accommodate microscopes and other magnification equipment, fiber-optic lights, and computers.

**IV. EMPLOYEE'S STATEMENT:**

**(Initial applicable statement)**

\_\_\_\_\_ I have read and understand the duties and essential functions of the position. **I understand Reasonable Accommodation<sup>1</sup> and how it applies to essential functions. I can perform the duties of this job without Reasonable Accommodation.**

**OR**

\_\_\_\_\_ I have read and understand the duties and essential functions of the position. **I understand Reasonable Accommodation<sup>1</sup> and how it applies to essential functions. I will need Reasonable Accommodation to perform one or more of the essential functions described in this duty statement.**

\_\_\_\_\_  
Employee Signature<sup>2</sup>                      Date

\_\_\_\_\_  
Supervisor Signature                      Date

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

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<sup>1</sup> A reasonable accommodation is an adjustment or modification to a job or workplace that allows qualified employees or prospective employees to perform the essential functions of the job successfully.

<sup>2</sup> Duties of this position are subject to change and may be revised as needed or required. If/when duties change you will be provided a revised duty statement to sign.