Oregon State University
Department of Botany and Plant Pathology
Postdoctoral Scholar in Maize Vascular Development

Position Information

Department: Ag Botany / Plant Pathology (ABP)
Position Title: Postdoctoral Scholar
Job Title: Postdoctoral Scholar
Appointment Type: Fellow
Job Location: Corvallis
Position Appointment Percent: 100
Appointment Basis: 12
Faculty Status: Post Doctorate
Tenure Status: Fixed-Term
Pay Method: Salary
Recommended Full-Time Salary: starting at $54,840/year

Position Summary

The Department of Botany and Plant Pathology invites applications for a full-time (1.0 FTE), 36-month, fixed-term Postdoctoral Scholar position. Reappointment at 12-month intervals will be at the discretion of the Department Head based on annual performance review.

A postdoctoral scholar position is open in the laboratory of Dr. Samuel Leiboff for the genetic investigation of maize vein development. Veins transport solutes/water between organs and are therefore essential for addressing society's need for improved agricultural and bioenergy performance during future environmental challenges. Recent genetic evidence in maize shows unanticipated physiological and genetic diversity amongst veins as demonstrated by the existence of specialized vein mutants. Many of these mutants are unmapped and their mechanism of action is unknown. Although each vein's anatomical development is stereotyped, vein initiation events are dynamic over the life of each plant and vary in position and developmental behavior within domains of the same organ. We seek a developmental biologist to join our team and shape the mechanistic investigation of the previously secret genetic language that defines maize veins.

We are currently engaged in single cell genomic and quantitative genetic investigations exploring the production of specialized veins at a genome-wide scale. The applicant will be responsible for the evaluation of candidate cell-specific markers and vein patterning alleles that are discovered by single cell RNA sequencing and GWAS. No prior informatics, machine learning, or quantitative genetics training is required, but would be available, should the applicant desire interdisciplinary training. The applicant will use molecular localization techniques such as RNA in situ hybridization, immunohistolocalization, and fluorescent reporter constructs to assess the spatial and temporal dynamics of putative vein development genes. Reverse genetic analysis via mutagenesis, a public library of insertion lines, or CRISPR/Cas9 allele generation will be available to the applicant as well as preconstructed advanced mapping populations for mapping-by-sequencing of specialized vein mutants. Research will be conducted primarily in the lab but will

require propagation and phenotyping of germplasm in the greenhouse and local University farm during the summer nursery.

The applicant is required to have a recent Ph.D. in the biological sciences related to plant developmental biology, molecular biology, genetics, or genomics. Required skills include basic molecular biology, plant histology, microscopy, and genetic analysis.

The applicant will work closely with the project PI, graduate and undergraduate students, and/or technicians and will be responsible for analyzing results, writing manuscripts, and contributing to the development of research approaches and directions. No prior postdoctoral experience is required. The position will be renewed annually, dependent upon achieving project goals. The position is based at Oregon State University, Corvallis, Oregon.

To be considered for this position, send a CV, copies of up to three relevant publications, a cover letter that includes 1) professional interests 2) general research interests and 3) dimensions of diversity important to your career, and the names and contact information for up to three references to leiboffs@oregonstate.edu. Please include “Vein Development Postdoc” in the subject header. Informal inquiries are welcome at the same address. Review of applications will begin September 30, 2022 and will continue until the position is filled. Position start date is negotiable and can be deferred based on applicant need.

Position Duties

75% Research

- Design, acquire, and construct potential cell marker molecular localization strategies
- Characterize vascular genetic mutants
- Test mechanistic hypotheses for the construction of the maize vascular system

20% Writing and Reporting

- Carefully catalogue experimental designs and genetic pedigrees
- Write manuscripts based on results from experiments
- Present posters and/or talks at regional and national meetings

5% Service

- Contribute to departmental or professional committees and outreach activities

Minimum/Required Qualifications

Recent (no earlier than 07/2017) Ph.D. in the biological sciences related to developmental biology, molecular biology, genetics, or genomics

Basic molecular biology skills, understanding of plant anatomy, and hands-on familiarity with microscopy (confocal preferred)

Preferred (Special) Qualifications:

A demonstrable commitment to promoting and enhancing diversity

Working Conditions / Work Schedule:

Research will be conducted in the greenhouse, field, and lab.

Posting Detail Information:

Number of Vacancies: 1
Anticipated Appointment Begin Date: 01/01/2023
Anticipated Appointment End Date: 12/31/2025
Posting Date: 08/30/2022
Closing Date: open until filled

Special Instructions to Applicants

When applying you will be required to attach the following electronic documents:

1) A resume/CV; and

2) A cover letter indicating professional interests, general research interests, and dimensions of diversity important to your career.

3) You will also be required to submit the names of at least three professional references and their e-mail addresses as part of the application process.

For additional information, please contact: Sam Leiboff at leiboffs@oregonstate.edu

OSU commits to inclusive excellence by advancing equity and diversity in all that we do. We are an Affirmative Action/Equal Opportunity employer, and particularly encourage applications from members of historically underrepresented racial/ethnic groups, women, individuals with disabilities, veterans, LGBTQ community members, and others who demonstrate the ability to help us achieve our vision of a diverse and inclusive community.