

Opportunity Title: Plant Biology/Microscopy Research Opportunity

Opportunity Reference Code: ARS-FNPRU-2016-0052-06

Organization U.S. Department of Agriculture (USDA)

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How to Apply A complete application package consists of:

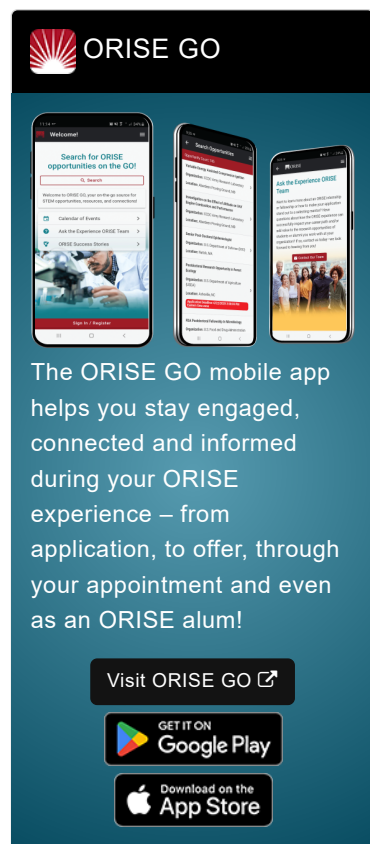
- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Selected candidate must provide proof of completion of the degree before the appointment can start. Proof must be sent to ORISE directly from the academic institution including graduation date and degree awarded. All transcripts must be in English or include an official English translation.
- A current resume/CV

If you have questions, send an email to USDA-ARS@orau.org. Please include the reference code for this opportunity in your email.

Description A postgraduate research opportunity is available with the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) Floral and Nursery Plants Research Unit (FNPRU) in Beltsville, Maryland.


The participant will use electron microscopy in research on plant pathogens affecting ornamental plants. The research will focus on identifying plant pathogens, particularly viruses, and on understanding the interactions between pathogens and their hosts, including movement and host specificity. Both transmission electron microscopy (TEM) and confocal laser scanning microscopy (CLSM) will be utilized to examine subcellular and tissue-level localization of viral particles, viral non-structural proteins, and cytopathology. TEM will also be utilized to examine negatively-stained extracts of plant tissues, and preparations of virions or virus-like particles from plant tissues or bacterial extracts. Fluorescent fusion proteins will be utilized in various confocal microscopy techniques to examine and localize interactions between viral proteins and host proteins. Additional tasks may include studying interactions of plant pathogenic fungi and biocontrol agents, as well as plant pathogenic bacteria and their hosts by TEM and CLSM.


The appointment is full-time for one year and may be renewed based upon recommendation of the ARS and availability of funding. The selected applicant will receive a stipend as support for their living and other expenses during this appointment. Stipend rates are determined by ARS officials, and are based on the applicant's academic and professional background. The participant must show proof of health and medical insurance. Health insurance can be obtained through ORISE. The participant will not enter into an employee/employer relationship with ORISE, ORAU, USDA, ARS, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.




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While participants will not enter into an employment relationship with ARS, this position requires a pre-employment check and a full background investigation.

This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the [Guidelines for Non-U.S. Citizens Details](#) page of the program website for information about the valid immigration statuses that are acceptable for program participation.

This is an equal opportunity program open to all qualified individuals without regard to race, color, age, religion, sex, sexual orientation, gender identity, national origin, mental or physical disability, covered veteran's status or genetic information.

For more information about the ARS Research Participation Program, please visit the [Program Website](#).

Qualifications To be eligible, applicants must have received a degree (BS, MS, or Ph.D.) within five years of the desired starting date in botany, plant biology, microbiology, plant pathology, or a related field of study that has equipped the applicant with the necessary knowledge, skills and abilities to perform the duties and responsibilities of the opportunity.

Preferred skills include:

- Knowledge of transmission electron microscopy (TEM; required)
- Knowledge of confocal laser scanning microscopy (CLSM; highly desirable)
- Knowledge of plant anatomy, cytology, and ultrastructure of organelles, organisms, and tissues
- Demonstrated skill in the use of a transmission electron microscope, and in standard TEM techniques including, but not limited to: fixation, dehydration, staining, embedding of tissue, preparative sectioning, ultra-thin sectioning, and negative staining for preparation of samples for observation by TEM
- Knowledge of cytochemical techniques and antibody labeling (immuno-gold; fluorescent dye) procedures for the preparation of samples for observation by TEM; and for CLSM (desirable)
- Ability to recognize the significance of unexpected results, and to make minor modifications to ensure validity of testing and data.
- Ability to work independently as well as part of a team, with good communication skills to keep team members informed and to disseminate results.
- Practical experience in the use of a confocal laser scanning microscope and knowledge of associated cytological techniques and sample preparation is highly desirable. Training in the use of a confocal laser scanning microscope will be provided for a candidate with the required knowledge and skills in the use of a transmission electron microscope.

Eligibility • **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree.

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- Requirements**
- **Discipline(s):**
 - **Life Health and Medical Sciences** ([17](#) 👁)