

Full job description

Position Title:

Postdoctoral Fellow

Department/Unit

Department of Physics

Location

Regina, Saskatchewan, Canada (80%)

Delft, Netherlands (20%)

Deadline: 20th September 2025?

How to apply:

Please submit your application by sending your curriculum vitae, cover letter, and contact email to *Marcella.Berg@uregina.ca*. Include **“Postdoctoral Fellow Application – [Your Surname]”** in the subject line of your email.

Duration: This is a two-year appointment, with the possibility of renewal contingent upon performance and funding availability.

Job Summary & Key Responsibilities

We are seeking a highly motivated postdoctoral researcher to investigate crop root water uptake dynamics using x-ray and neutron imaging techniques. The primary focus of this position is to design and conduct experiments that utilize radiography and tomography to visualize and quantify water uptake in plant root systems under various environmental and soil conditions.

This postdoctoral position is a collaborative research opportunity between the University of Regina (UofR) and TU Delft, combining UofR's strengths in plant and environmental sciences with TU Delft's expertise in advanced imaging technologies. The successful candidate will be primarily based at the University of Regina, with scheduled research exchange within the collaboration with teams at Reactor Institute Delft. This partnership offers a dynamic, interdisciplinary environment focused on innovative approaches to studying crop optimization using cutting-edge neutron imaging techniques.

The Postdoctoral Fellow will take a leadership role in supporting all aspects of the study, including data collection, data management and analysis, and the preparation of manuscripts, reports, and presentations.

Key Responsibilities:

- Design and implement experimental protocols for neutron and X-ray imaging of plant root systems, including sample preparation, conditioning, and optimization of imaging quality.
- Conduct imaging experiments at neutron facilities and perform data analysis, including image processing, coding, and the development of measurement frameworks.
- Interpret imaging results to investigate root water uptake under varying environmental conditions (e.g., soil moisture, temperature, genotype).
- Collaborate with interdisciplinary teams including plant physiologists, soil scientists, and imaging specialists.
- Support and manage research activities by mentoring undergraduate and graduate students, contributing to research design, and supervising components of broader projects.
- Prepare scientific outputs such as academic publications, conference presentations, and other knowledge translation materials.
- Contribute to the overall progress of the research project by collaborating closely with research staff and students.

Qualifications / Requirements:

- PhD in plant science, soil science, physics, engineering, or a related discipline, completed by the start of the appointment.
- Minimum of 3 years of relevant research experience in an academic or equivalent setting, with a focus on neutron or X-ray imaging/scattering, or plant-soil systems.
- Strong skills in data analysis, including image processing and interpretation, with the ability to contribute to methodological development.
- Proven track record of successful research, including peer-reviewed publications and conference presentations.
- Excellent project management skills
- Outstanding verbal and written communication skills, including scientific writing.
- Highly organized, with strong time management abilities and the capacity to work both independently and collaboratively in interdisciplinary teams.

Assets:

- Demonstrated experience with advanced imaging techniques, preferably neutron imaging, applied to biological or environmental systems.
- Experience with grant writing.
- Experience overseeing staff or students, managing budgets, and coordinating research resources.

Salary Range/Pay Rate

CAD 60,000 - CAD 70,000 (plus benefits)

Additional Information

The University of Regina is a vibrant, research-intensive institution known for its commitment to innovation, inclusive education, and community engagement. With a strong emphasis on experiential learning and interdisciplinary collaboration, it provides students and researchers with a supportive environment to make meaningful contributions both locally and globally.

TU Delft is a world-renowned technical university recognized for its cutting-edge research, innovative engineering solutions, and strong emphasis on sustainability. With a collaborative and forward-thinking academic environment, it empowers students and researchers to tackle global challenges and drive technological progress.

Term of appointment

2 years with possibility of renewal, anticipated start date January 2026 (flexible)

For more information, contact:

Marcella.Berg@uregina.ca

i.dhiman@tudelft.nl