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Post-doctoral Fellowship: Advanced imaging of developing xylem

THE RESEARCH PROJECT

This research will be done within the “EucXylo” Research Chair (<http://blogs.sun.ac.za/eucxylo/>), a program funded mainly by the Hans Merensky Foundation (HMF), based at the Department of Forest & Wood Science at Stellenbosch University. The program aims to understand and model processes of wood formation (xylogenesis) in eucalypts.

The incumbent will primarily lead research into **non-destructive methods for observing and quantifying developmental processes in differentiating xylem** in eucalypts. This could include work in one or more directions including:

- Optimizing and developing CT-scanning procedures for visualizing cambial cells in living plants in collaboration with the CT-scanning facility at Stellenbosch University (<http://www.sun.ac.za/english/faculty/science/CAF/units/ct-scanner>) or
- Finding appropriate methods for live-cell imaging using confocal and correlative microscopy (<http://www.sun.ac.za/english/faculty/science/CAF/units/fluorescent-microscopy>) or
- Using techniques such as MRI and PET to resolve cell-level detail in deep plant tissue.

Ultimately, development of one or more approaches allowing imaging of living cambial cells and differentiating xylem *in situ* would be an ideal outcome of the post-doctoral fellowship.

The incumbent will be expected to assist with the supervision of MSc and PhD students.

ABOUT STELLENBOSCH UNIVERSITY AND THE DEPARTMENT OF FOREST & WOOD SCIENCE

Stellenbosch University (SU), which celebrated its centenary in 2018, is widely acknowledged as one of Africa’s premier tertiary education and research institutions (visit www.sun.ac.za for more information). Located in the historic tourist town of Stellenbosch, staff and students at the University enjoy a relaxed and pleasant lifestyle, close to mountains and sea. The Department of Forest & Wood Science (DFWS) in the Faculty of AgriSciences at SU, the only one of its kind in South Africa, has had a long history with the University. Attracting students from around the world, and with strong international linkages and collaborations, the DFWS prides itself on research excellence with a diverse, friendly culture.

REQUIREMENTS AND QUALIFICATIONS

- A PhD degree in an appropriate biological field completed a maximum of five years before the commencement date.
- Proven experience with non-destructive imaging techniques, for example CT-scanning and densitometry, of biological material.
- Proven experience in microscopy of plant material.

- Experience with digital image analysis.
- Good written and verbal communication skills in English are essential, with at least two strong papers already published in the scientific literature.
- Ability to function in a multicultural and multilingual environment, to work independently and to take initiative.

RECOMMENDATIONS

- Programming skills, including in R or Python.
- Some teaching or academic supervision experience.
- An existing and developing professional network.
- Experience in the development of online applications.

CONTRACT DURATION AND COMMENCEMENT

The research stipend is granted for a one-year period which could potentially be extended to a second year. The stipend is R340,000 per annum. Although the stipend is fully covered by the project, the successful incumbent will be expected to apply for additional funding to expand the scope of the research as far as possible.

Please note that post-doctoral fellows are not appointed as employees in South Africa and their fellowships are awarded tax free, but they are not eligible for standard employee benefits. For more information about post-doctoral fellowships at Stellenbosch visit

<http://www.sun.ac.za/english/research-innovation/Research-Development/postdocs>.

This position is based at Stellenbosch campus.

Commencement: **February 2021**

APPLICATION PROCEDURE

Application closing date: **18 September 2020**

Please send by email to Dr. David Drew (drew@sun.ac.za) the following documents before the closing date:

1. A brief cover letter providing motivation for your application;
2. A brief essay in which you describe your ideas about trends/opportunities in high resolution non-destructive imaging, and how you would take this further in the area of visualizing differentiating xylem in eucalypts;
3. Current, comprehensive CV with full publication list;
4. Copies of doctoral degree certificate and other relevant degree certificates and grades obtained;
5. Contact details of two referees AND please request these referees to forward confidential reports by the closing date to the same address.

Any questions about the position can be addressed to Dr. Drew at the same email address. For questions about visas and international relocation please contact Ms. Izel Rossouw (izel@sun.ac.za).

Applicants who have not received a response within 14 days of the closing date, please accept that your application has not been successful. Short-listed applicants will be contacted to arrange an interview. These candidates may be requested to provide additional information/submissions, and to undergo certain biometric/other tests.