PhD Scholarship in biogeochemistry / soil science in Australia.

**Soil organic matter storage in deep soils**

Soil measurements rarely extend below the top 20 cm of agricultural soils. However, what we do in these top 20 cm (cultivating, tilling, fertilising, etc) may dramatically alter the structure and function of deeper soil, where we now know large quantities of carbon and nitrogen are stored. Understanding how sub-surface processes affect, and are affected by, farm fertility is the new frontier of soil science. This PhD project will provide the first quantification of the nitrogen stored and recycled below the rooting zone in Australian soils. Stable isotope ($^{15}N$, $^{13}C$) and radioisotope ($^{210}Pb$, $^{137}Cs$) techniques will be used to assess the quantity and turnover of soil organic matter.

The candidate will be based in the Centre for Coastal Biogeochemistry (www.scu.edu.au/coastal-biogeochemistry) at Southern Cross University in northeastern New South Wales. The Centre received the highest rank of 5.0, well above world average, in geochemistry in the most recent national assessment of research excellence. The project involves active collaboration with researchers at CSIRO Agriculture & Food, the Department of Primary Industries Victoria, and Federation University. It is expected that the candidate will spend part of their time based with these collaborators while undertaking field work in South Australia and Victoria.

Applicants must have an Honours or Master degree, undertaken in English, in a related field such as biogeochemistry, soil science, environmental chemistry, or closely related. The project will involve extended periods of on-farm field sampling as well as intensive laboratory work. Experience with isotope and/or soil techniques is preferred.

The PhD scholarship is funded by the Soil CRC (https://soilcrc.com.au) and will provide a tax-free stipend of $27,500 for up to 3.5 years, including a tuition fee waiver for international students. PhD scholars through the Soil CRC will have opportunities to develop their industry knowledge and relevance, through additional training and networking opportunities associated with the Soil CRC, and will be part of nationwide cohort of Soil CRC postgraduate students. They will have the opportunity to work with researchers, farmers groups and industry from across Australia and New Zealand through the Soil CRC PhD program.

Interested applicants should send a CV and short (< 1 page) statement highlighting their research background and interests, with respect to the criteria above, to Dr Naomi Wells (naomi.wells@scu.edu.au). Only short-listed applicants will be notified. Closing date October 18, 2019. Starting date is flexible, but preferably by February 2020.

Performance through collaboration