



**Stellenbosch**  
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saam vorentoe

**Stellenbosch University**  
**Postdoctoral Research Fellowship**  
available at the **Department of Earth Sciences, Faculty of Science**

**Project Title: Mercury biogeochemistry**

**Scope of research:**

Mercury, especially methylmercury is a neurotoxic contaminant in the ocean that affects ecosystem and human health. Over the past decades, it became clear that microbial processing within the ocean is largely responsible for the conversion from inorganic mercury to the bioaccumulative neurotoxin methylmercury. Methylmercury is then taken up by phytoplankton and bioaccumulating along the marine food chain about to harmful levels in top predators, including humans. The challenge remains to ascertain the processes and sources that lead to high methylmercury levels. This research focusses on the marine systems south of southern Africa particularly on the Southern Ocean. Few Southern Ocean observations exist that show that this remote region is a hotspot for methylmercury production, potentially threatening the wildlife and fisheries. This calls for a more thorough investigation to test whether this is a typical phenomenon for the Southern Ocean.

This postdoctoral research project is embedded into a South African-French bilateral project, with the overall scientific aim to understand the distribution, sources and pathways of mercury species in the Southern Ocean. The specific role of the postdoctoral research is to (i) to sample and measure total mercury, methylmercury, as well as gaseous and particulate mercury species (ii) to interpret data of new measurements and existing data

**Key Responsibilities:**

- Conduct field work, sample processing, analysis and data interpretation.
- Participate in local team meetings and bilateral activities. - Produce scientific publications and conference presentations.
- Contribute to develop analytical platforms to advance mercury research in SA.
- Contribute to outreach efforts and engage with stakeholders.
- Contribute to conceptualizing and writing of new research projects.
- Contribute to mentoring and training undergraduate and postgraduate students.
- Manage the project and research.

**Host:** The postdoctoral fellowship will be hosted by **Dr Susanne Fietz**, Assoc. Prof. at the Department of Earth Sciences at **Stellenbosch University** and will work closely with project partners **Dr Lynwill Martin**, SA PI for the Global Atmospheric Watch (GAW) program at **South African Weather Services** in Stellenbosch, and **Dr Lars-Eric Heimbürger-Boavida**, CNRS research scientist at the **Mediterranean Institute of Oceanography** at the Aix-Marseille-University in France.

**Requirements:**

- PhD in Geosciences, Earth or Environmental Sciences, Chemical Oceanography or related field

**Experience in the following would be an advantage**

- interactions with the public and/or stakeholders
- field work and organising short sampling campaigns, including at sea
- laboratory work under trace metal clean conditions
- supervision of under- and postgraduates

**Grant conditions**

- grant value will be R270 000 per annum
- The grant period will initially be 1 year

**Commencement of duties:** as soon as possible

**Closing date:** until position is filled

**Enquiries and application:** Send a letter of application, accompanied by a concise curriculum vitae, a Research Statement, and the names and contact details of two referees, to *sfietz@sun.ac.za*, *Lynwill.Martin@weathersa.co.za*, and *lars-eric.heimburger@mio.osupytheas.fr*

**Follow the project:**

<https://www.sanap.ac.za/scale-win22-science-team-mercury-and-trace-metal>