

CAREER OPPORTUNITY

The CSIR (Council for Scientific and Industrial Research) is a leading scientific and technology research organisation, implementing projects throughout Africa and making a difference in people's lives.

Postdoctoral and Doctoral students required

CSIR Natural Resources and the Environment (NRE) unit conducts world-class, directed inter-disciplinary research and technological innovation, with partners and stakeholders, in the field of natural resources and the environment to contribute to the social, economic and environmental improvement of South Africa and Africa. NRE is looking for a number of **Postdoctoral and Doctoral students** to participate in a variety of research projects.

Water Ecosystems and Human Health

The impacts of anthropogenic pollution on ecosystems are one of the key focus areas of our research. This focus area includes research into the ecology and management of water quality, and part of this research is carried out on behalf of the Oliphant's River Forum and the major Mine Houses that seeks to reduce these impacts in the Oliphant's River catchment in Mpumalanga and Western Basin in Gauteng.

The work will aim to identify the critical variables in AMD-impacted sampling sites, and to determine their thresholds by making use of a novel set of sub-cellular indicators, as well as a comprehensive set of molecular techniques that provide accurate estimates of the ecosystem health in the study areas. This data will be used to clearly identify the sources of different stressors and will be particularly useful to develop and refine appropriate water quality management responses, decision-making processes, or remediation measures for the AMD-impacted areas.

- **Doctoral studentship (Veterinary sciences or related field) in Stellenbosch-REF 300844**

We are looking to appoint a **Doctoral studentship** for 2012/2013 to work as part of a team of biologists under the leadership of Dr Paul J Oberholster.

Qualifications and experience

- A Master's degree in veterinary sciences or related fields.
- Experience in limnology, fish health and phytoplankton dynamics, exotoxicogenomic techniques, biomarker marker development, and field work would be advantageous.
- Demonstrated ability to publish work in the peer-reviewed literature.
- Proven ability to conduct independent research.
- Good communication and interpersonal skills.
- The ability to work in a cross-disciplinary project team environment.
- Highly self-motivated.

- **Postdoctoral position (Biochemistry or related field) in Stellenbosch-REF 300845**

We are looking to appoint a **Post-doctoral Fellow** for 2012/2013 to work as part of a team of biologists under the leadership of Dr Paul J Oberholster.

Qualifications and experience

- A doctorate in biochemistry or related fields.
 - Experience in protein and nucleic acid analyses, RT-PCR analysis, EcoTilling and DNA marker development and screening, mammalian cell culturing techniques, fluorescence microscopy and bioinformatics would be advantageous.
 - Demonstrated ability to publish work in the peer-reviewed literature and writing funding proposals.
 - Co-supervision of students and research staff in training.
 - Proven ability to conduct independent research.
 - Good communication and interpersonal skills
 - The ability to work in a cross-disciplinary project team environment.
 - Highly self-motivated.
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- **Doctoral studentship (Environmental chemistry, analytical chemistry and/or environmental science) in Stellenbosch-REF300846**

The project involves the investigation into the behaviour and fate of selected pollutants in the aquatic ecosystem. It further involves the design, evaluation and characterisation of environmental ecosystems in the laboratory to mimic natural conditions in order to understand the behaviour of selected pollutants.

We are looking to appoint a **Doctoral student** for 2012/2013 to work as part of a team under the leadership of Dr Vernon Somerset. The incumbent will be accountable for quality of the data generated and safety aspects related to the work environment. Participation in the design and optimisation of experiments will also be expected.

Qualifications and experience

- A Master's degree completed or near completion.
- Experience in analytical or environmental chemistry and/or environmental science
- Experience in environmental fieldwork and sampling.
- Practical experience in data capturing and manipulation via MS Excel spreadsheets.
- Working knowledge of chemistry experiments.
- Computer literacy (MS Word and MS Excel).
- Co-supervision of students and research staff in training.
- Proven ability to conduct independent research.
- Good communication and interpersonal skills.
- The ability to work in a cross-disciplinary project team environment.
- Highly self-motivated.

Forestry and Forest Products Research Centre

The Forest and Forest Products Research Centre is a joint venture between CSIR NRE operating unit and the University of KwaZulu-Natal (UKZN). Its objective is to develop and align both contract and postgraduate research activities with the needs of the forestry and forest products sectors. In fulfilling these needs, the Centre is playing a key role in the development of forestry and forest products research competence in South Africa.

We are looking to recruit a graduate student to conduct a **doctoral study** on bio-refinery opportunities in the forest products industry. The research is funded by the National Research Foundation (NRF) and the student will be registered with UKZN. Current projects in this research domain include generation of high value products from lignin obtained from black liquor, a by-product of the chemical pulping process.

- **Doctoral studentship (Industrial chemistry, chemistry or chemical engineering) in Durban-REF 300847**

The student will work as part of a team of forest and forest products based at the CSIR-UKZN venture. The team is under the leadership of Dr Bruce Sithole.

Qualifications and experience

- A Master's in industrial chemistry, chemistry or chemical engineering.
- Experience in experimental design and data processing techniques would be advantageous.
- Demonstrated ability to publish work in the peer-reviewed literature.
- Proven ability to conduct independent research.
- Good communication and interpersonal skills.
- The ability to work in a cross-disciplinary project team environment.
- Highly self-motivated.

Earth Observation

The need to understand the consequences and feedbacks of global change on the oceans that impact significantly on the Southern African Ecosystems is one of the key focus areas of the Earth Observation research group, within the field of Marine Bio-Optics. A key capability in achieving this is an improved marine observational capability. In addition to providing an observational capability, regional ocean observation systems can also provide critical input to the coupled modelling efforts needed to provide more reliable simulations of future climate scenarios.

- **Postdoctoral position (Oceanography) in Cape Town (Rosebank)-REF300848**

We are looking to appoint a **Postdoctoral Fellow** for 2012/2013 to work as part of a team under the leadership of Dr Stewart Bernard. In particular, the research will focus on identifying the principal determinants of phytoplankton fluorescence variability in the Southern Ocean and Benguela systems from in situ measurements; developing ocean colour algorithms to determine fluorescence-based physiological and phytoplankton functional type proxies in these ecosystems; and application of these algorithms to 10-year ocean colour time series in the Southern Ocean and Benguela, in combination with the earth observation, in situ or re-analysis-based ecosystem drivers, to characterise ecosystem variability with regard to phytoplankton dynamics and succession.

Qualifications and experience

- A doctorate in the field of plant physiology, plant biochemistry or similar.
 - Demonstrated knowledge of photo-physiology and the photosynthetic machinery of vascular or non-vascular plants.
 - Experience in the measurement and analysis of the fluorescence signal to determine plant physiological parameters.
 - Experience in experimental design and data processing techniques would be advantageous.
 - Demonstrated ability to publish work in the peer-reviewed literature.
 - Proven ability to conduct independent research.
 - Good communication and interpersonal skills.
 - The ability to work in a cross-disciplinary project team environment.
 - Highly self-motivated.
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- **Doctoral studentship (Oceanography) in Cape Town (Rosebank)-REF300849**

This research will focus on the analysis of phytoplankton photo-physiology variability through High Performance Liquid Chromatography (HPLC) and complementary bio-optical/taxonomic techniques, in the Southern Ocean and Benguela, focusing on the relationship between the xanthophyll cycle and fluorescence. The study will aim to parameterise pigment-based photo-physiological and chemotaxonomic variability in these ecosystems as a contribution towards ocean colour algorithm development.

Qualifications and experience

- A Master's in the field of plant physiology, plant biochemistry or similar.
- Experience of analytical chemistry skills and/or chromatographic techniques a major advantage.
- Experience in experimental design and data processing techniques would be advantageous.
- Demonstrated ability to publish work in the peer-reviewed literature.
- Proven ability to conduct independent research.
- Good communication and interpersonal skills.
- The ability to work in a cross-disciplinary project team environment.
- Highly self-motivated.

Applications must include: CV detailing your biographical information and an academic record.

Should you meet the above requirements, please go to the URL indicated below in order to apply; select the position reference number; complete the application form and attach your CV: www.csir.co.za/apply.php

Closing date: 08 February 2012

PLEASE NOTE THAT FEEDBACK WILL BE GIVEN TO SHORTLISTED CANDIDATES ONLY.

Should you experience any problems in submitting your application, please contact the CSIR Recruitment Centre at Recruitmentqueries@csir.co.za. Please **do not** submit your application to this mailbox.

The CSIR gives preference to candidates who meet the job requirements and who will add to the cultural and gender diversity of the organisation. By applying for this position at the CSIR, the applicant understands, consents and agrees that the CSIR may solicit a credit and criminal report from a registered credit bureau and/or SAPS (in relation to positions that require trust and honesty and/or entail the handling of cash or finances) and may also verify the applicant's educational qualifications and employment history. The CSIR reserves the right not to appoint if a suitable candidate is not identified.