



**Norwegian University
of Life Sciences**

Jobbnorge-ID: 137819

Søknadsfrist: Closed

Nettside:

Omfang:

Varighet:

PhD scholarship within Environmental Radioactivity/Radioecology - Modelling radionuclide transfer - Ref. no 17/01890

The Faculty of Environmental Sciences and Resource Management (MINA) has a vacant 3 year Ph.D-position within environmental radioactivity/radioecology. The research will focus on modelling transfer of radionuclides in the environment with a focus on food-chains, and is connected to the CoE CERAD.

The Faculty of Environmental Sciences and Natural Resource Management (MINA) has about 200 employees and undertakes teaching, research and dissemination within the fields of geology, soil science, environmental chemistry, forestry, ecology, natural resource management, renewable energy, nature based tourism. The faculty has ca. 600 students, and approximately 90 PhD-students. The employees of the faculty are significant participants in their respective fields of expertise, both nationally and internationally and have a high level of scientific production. For more information: <https://www.nmbu.no/en/faculty/mina>

Research project

In 2013 the CERAD Center of excellence was established. CERAD focuses on new scientific knowledge and tools for better protection of people and the environment from harmful effects of radiation. For more information see <http://cerad.nmbu.no/>

The present PhD project will be an integrated part of CERAD and the work will be performed in close collaboration with other projects on dynamic transfer and multiple effects, thus offering scientific synergy and stimulating environment to the PhD- candidate. The CERAD consortium provides expertise on different aspects relevant to the PhD, including various tools and methodologies used in modelling the transfer and fate of radionuclides in environmental systems. The PhD work will also be part of national and international project collaboration.

A key uncertainty in radiological risk assessment can be attributed to the environmental transfer of radionuclides. The use of equilibrium or steady state models (as often adopted by scientists assessing the risks associated with radioactivity in the environment) do not allow the true dynamics of the system to be captured, especially in cases where ambient concentrations are changing rapidly. Several modelling tools and approaches have been developed in recent years to address this limitation, but many of these have not been validated widely or adapted for application under diverse situations/scenarios. The objective of this project will be to further develop and test models used for radiological risk assessment (with emphasis on food-chains) in combination with experimental and field studies to parameterize the dynamic transfer model.

Main tasks

The main tasks of the PhD position are to:

- Review and evaluate existing models with a view to further develop models describing the dynamic transfer of radionuclides
- Incorporate existing models within a developmental platform wherein future modifications can be introduced and testing carried out
- Participate in experimental work and field studies using I-131 tracer applications
- Synthesise information from relevant ongoing experimental studies with a view to parameterising dynamic models
- Validate model prognoses through comparisons with extraneous datasets and through (e.g. model-model) intercomparisons
- Explore the influence of variability in model parameter values on model output

The work will include:

- Development of process based models
- Exploring the influence of physico-chemical form on radionuclide transfer and how this might be modelled robustly
- Testing the efficacy of process based models
- Investigations into the importance of region-specific parameters for radionuclide transfer
- Use data within the dynamic ERICA Tool development used for environmental impact assessments for ionizing radiation (<http://erica-tool.com/>).

In collaboration with supervisors, the successful candidate is expected to prepare a work and research plan for the PhD scholarship period within the first few months of the appointment. Visits to institutions abroad must be expected.

Academic qualifications

The successful applicant must meet the conditions defined for admission to a PhD program at NMBU.

For this position, a master degree in biophysics, radioecology, mathematical modelling environmental chemistry, or other relevant fields, is required. The degree must correspond to a five-year Norwegian degree program, where 120 credits are at master's degree level. For more detailed information on the admission criteria please see the [PhD Regulations](#) and the relevant [PhD programme description](#).

Desired Academic qualifications:

Experience of risk assessment and modelling environmental systems would be expected, and some experience with experimental work would be an advantage. For candidates without competence within radiation, the Radiation protection course (KJM350) offered at NMBU will be mandatory.

Applications will be evaluated according to the following criteria:

- Experience with mathematical modelling
- Experience with risk assessment
- Good knowledge of the English language - both written and oral.

Personal qualities

Personal characteristics important for the position are:

- Strong motivation
- Creativity and ability to work result-oriented, accurate and structured.
- Analytical ability
- Ability to work independently as well as ability to be a good team player.
- Good communication skills, both related to research and presentations in general.

NMBU offers:

- An academic institution with a strong focus on environmental sciences and dedication to professional development, dissemination and competence.
- An interdisciplinary and inclusive environment that offers exciting research and development opportunities.
- An attractive benefits package and welfare schemes.
- Attractive combination of rural surrounding and proximity to Norway's capital city, Oslo.
- Opportunities for outdoor activities with access to excellent hiking areas around Oslo and proximity to the Oslofjord.

Remuneration

The salary for PhD-scholarship start at wage grade 50 on the Norwegian Government salary scale upon employment and follow ordinary meriting regulations.

For especially well-qualified applicants, alternative salary placement could be considered.

Employment is conducted according to national guidelines for University and Technical College PhD scholars.

Further information

For further information, please contact Prof Deborah Oughton; email: deborah.oughton@nmbu.no phone +47 9542882 or Dr Justin Brown, email: Justin.brown@nrpa.no +47 40646511

Application

To apply online for this vacancy, please click on the '**Apply for this job**' button above. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

Application deadline: 01.06.2017

Applications should include (electronically) a letter of intent, curriculum vitae, full publication list, copies of degree certificates and transcripts of academic records (all certified), and a list of two persons who may act as references (with phone numbers and e-mail addresses). Publications should be included electronically within the application deadline. The relevant NMBU Department may require further documentation, e.g. proof of English proficiency.

Printed material which cannot be sent electronically should be sent by surface mail to Norwegian University of Life Sciences, Faculty of Environmental Sciences and Natural Resource Management (MINA), P.O. Box 5003, NO-1432 Ås, **within 1st June 2017**. Please quote reference number 17/01890

If it is difficult to judge the applicant's contribution for publications with multiple authors, a short description of the applicant's contribution must be included.

A compulsory contribution of 2 % is made to the Norwegian Public Service Pension Fund. A good working environment is characterized by diversity. We encourage qualified candidates to apply, irrespective of gender, physical ability or cultural background. The workplace will if necessary be facilitated for persons with disabilities.

According to the Freedom of Information Act § 25 the list of applicants for this position may be made public irrespective of whether the applicant has requested that his/her name be withheld.

Tilleggsinformasjon

Arbeidssted: