



The University of Oslo is Norway's oldest and highest rated institution of research and education with 28 000 students and 7000 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

The geosciences are the studies of planet Earth; the atmosphere, the hydrosphere and cryosphere, the earth's surface and it's interior. The Department of Geosciences is Norway's widest ranging academic geoscience research environment, encompassing four sections (Meteorology and Oceanography, Geography and Hydrology, Geology and Geophysics, Physics of Geological Processes) and one Centre of Excellence (Centre of Earth Evolution and Dynamics). In addition we participate in other centres and hold several ERC grants. The staff consists of 40 professors and associate professors, in addition to postdoctoral fellows, PhD students, researchers, technical staff and administrative personnel, to a total number of 240.

## Innovation Postdoctoral Research Fellowship in Hydrologic Modeling

A position as Postdoctoral Research Fellow is available at The Department of Geosciences.

No one can be appointed for more than one Postdoctoral Research Fellowship at the University of Oslo.

The appointment is a fulltime position and is made for a period of four years of which 75 % is research, with 25% compulsory work toward innovation. Together with Statkraft AS, we have been developing a new hydrologic modeling framework. The framework, known as "Shyft" is available on github, licensed under under LGPL V.3. The current position is part of an innovation initiative to establish products using the framework and the candidate will have collaboration opportunities to pursue innovation development.

### Project description:

An emphasis will be placed on the development and improved implementation of snow pack algorithms. The ideal candidate will work to: (i) Explore spatial relations of snowpack microphysical properties, (ii) Develop stochastic parameterizations of snowpack heterogeneities appropriate to incorporate into a stochastic layering scheme, (iii) Implement a hybrid snowpack model with stochastic representation of layer microphysics which enables assimilation of the tomographic observations from UiO's newly develop imaging radar. The new method will be integrated into Shyft, which is now in use operationally at Statkraft for distributed hydrologic modeling.

Several further application domains may be served by operationalization of Shyft, and there will be an opportunity to explore these options. In particular, a candidate with experience using Google's earthengine should highlight this experience. With this position, the candidate is expected to further develop routines in Shyft to extend the application domains and open the possibility for the development of further products.

The candidate will work in the section for Physical Geography and Hydrology. The section currently hosts a Strategic Research Initiative: LATICE ("Land-ATmosphere Interactions in Cold Environments" see the LATICE web site: <http://mn.uio.no/latice>. LATICE is dedicated to improving our knowledge on cold environment processes and their representation in Earth System Models (ESMs) through research on cold-regions exchange processes and particularly aims to advance the knowledge base concerning land-atmosphere interactions and their role in controlling climate variability and climate change at high northern latitude. LATICE plays a key role in integrating the research and field activities of the various disciplines of the department and nationally, including the atmosphere, the hydrosphere, the biosphere and the cryosphere. Research outcomes from LATICE are expected to improve modeling capability and it is anticipated to use Shyft as a framework to test novel parameterizations. The position is expected to contribute to innovation outcomes from these developments.

The candidate will be part of a motivated research team with a high number of early career scientists working together in a highly interdisciplinary environment. The Postdoc will play an active role in the supervision of PhD students and provide integrating activity across the PhD topics and be expected to contribute to innovation activities around Shyft.

### Qualification requirements:

The Faculty of Mathematics and Natural Sciences has a strategic ambition of being a leading research faculty. Candidates for the position will be selected in accordance with this, and are expected to be in the upper segment of their class with respect to academic credentials.

Applications are encouraged from dedicated candidates with excellent writing skills and the ability to work in a highly team-orientated environment.

Creativity and innovation are valued as is a demonstrated high working capacity, passion for research, and self-motivation. The candidate should expect to work in a highly collaborative team-oriented environment and participate in a wide array of activities related to land-atmosphere processes with an emphasis on land surface processes in cold environments.

The successful candidate must have a PhD or other corresponding education equivalent to a Norwegian doctoral degree in Geosciences, or a related discipline; e.g., a Ph.D. in Physics, Mathematics or Computer Sciences with experience in the earth sciences (with a strong background in numerical modeling. The ideal candidate will have a strong background in numerical modelling, and preferable also statistics. Previous experience with the Shyft framework is beneficial.

**The successful candidate should further demonstrate:**

- Technical expertise in scripting (e.g. Python, R) or programming (e.g. C, C++)
- Evidence of creativity and capability of independent research
- Knowledge of large data analysis and visualization tools
- Experience in the development of hydrologic and snow pack models
- Ability and willingness to participate in interdisciplinary research
- Good writing and communication skills

The main purpose of post-doctoral research fellowships is to qualify researchers for work in top academic positions within their disciplines. Please also refer to the [regulations](#) pertaining to the conditions of employment for post-doctoral fellowship positions.

A good command of oral and written English is required.

**We offer:**

- Salary NOK 490 900 - 569 000 per year depending on qualifications, in position as Postdoctoral Research Fellowship (position code 1352)
- A professionally stimulating working environment
- Attractive [welfare benefits](#) and a generous [pension agreement](#), in addition to Oslo's family-friendly environment with its rich opportunities for culture and outdoor activities

**The application must include:**

- Application letter including a statement of research interests (1 page)
- Demonstrated experience and knowledge of open source and agile software development workflows
- CV (summarizing education, positions, pedagogical experience, administrative experience and other qualifying activity)
- Copies of educational certificates, transcript of records and letters of recommendation
- A complete list of publications and up to 5 academic works that the applicant wishes to be considered by the evaluation committee
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number)

The application with attachments must be delivered in our electronic recruiting system, please follow the link "apply for this job". Foreign applicants are advised to attach an explanation of their University's grading system. Please note that all documents should be in English (or a Scandinavian language).

In assessing the applications, special emphasis will be placed on the documented, academic qualifications, the project description (whenever this is required in the call for applicants), and the quality of the project as well as the candidates motivation and personal suitability. Interviews with the best qualified candidates will be arranged.

It is expected that the successful candidate will be able to complete the project in the course of the period of employment.

**Formal regulations:**

The University of Oslo aims to achieve a balanced gender composition in the workforce and to recruit people with ethnic minority backgrounds. Please see the [guidelines](#) and [regulations](#) for appointments to Postdoctoral fellowships at the University of Oslo.

According to the Norwegian Freedom and Information Act (Offentleglova) information about the applicant may be included in the public applicant list, also in cases where the applicant has requested non-disclosure.

The University of Oslo has an [agreement for all employees](#), aiming to secure rights to research results a.o.

**Contact persons:**

For further information please contact: Professor John F. Burkhart: +47 96 82 50 11, [john.burkhart@geo.uio.no](mailto:john.burkhart@geo.uio.no)

For information about the recruitment system, please contact HR Officer Helene Jansen, +47 22857196, [h.b.jansen@mn.uio.no](mailto:h.b.jansen@mn.uio.no)

Jobbnorge-ID: 147036, Søknadsfrist: Avsluttet