COMPSCI – GUIDE TO APPLICANTS

Call 02b – Deadline 23rd September 2022

CompSci Doctoral Programme, University of Oslo, Norway

Table of Contents

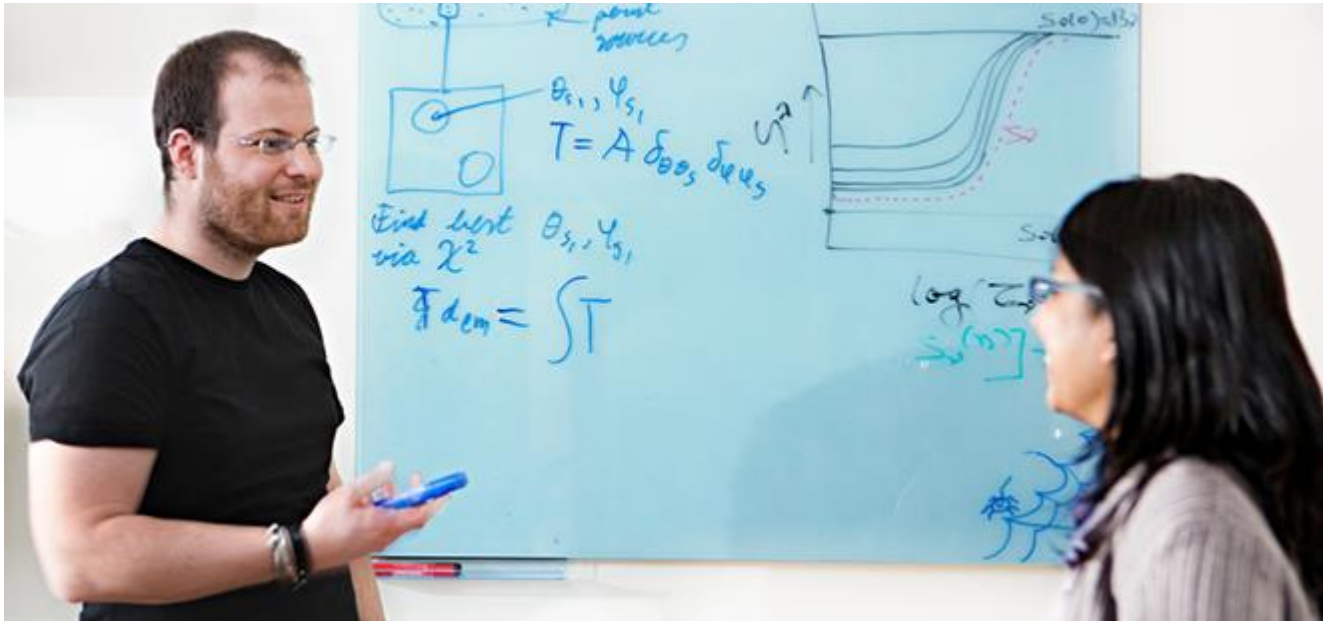## About CompSci

Programme description

Photo: Hans Fredrik Asbjørnsen/UiO

The CompSci doctoral programme will train a new generation of natural science researchers with disciplinary, interdisciplinary and transferable skills and a foundation in computational methods – providing them with the knowledge, skills and vision to digitally transform the European education, research, government and industry sectors.

Digital technology is transforming science, industry and society at large, giving rise to a need for researchers and innovators with the deep skills in computing necessary to ensure Europe becomes a driving force in the emerging digital market. CompSci will train computationally proficient researchers to become Europe's digital leaders across disciplines and sectors.

The CompSci programme is hosted by the Faculty of Mathematics and Natural Sciences at the University of Oslo, and is a 5-year programme that will recruit 32 PhD candidates for 36 months each in two calls over the programme period, a total of 1152 researcher months. It will be based on an open, transparent and merit-based selection process where aspiring researchers from any nationality will be encouraged to apply.

The doctoral programme emphasizes the development of computational skills and application and integration of these skills in a research project, in addition to transferable skills training in a cross-sector secondment. It will be open to applicants of all nationalities according to the MSCA mobility criteria. Fellowships will be awarded based on the quality of the applicant's CV, motivation letter, and match to research projects. Candidates may choose among a large set (48 topics for 32 positions) of research projects, research groups and supervisors according to the MSCA principle of individual-driven mobility.

The programme will have a reserve call, Call 2b, for applicants with deadline 23rd September 2022 and the cohort of PhD candidates will start Winter 2022/2023 (at the latest 6th January 2023). Successful candidates will be enrolled in the Faculty's doctoral programme and employed at UiO.

Contact

contact-compsci@mn.uio.no

Application and evaluation

CompSci will have two calls for applications. The reserve call, Call 2b, is open for three months from 23rd June 2022. **The application deadline for Call 2b is 23rd September 2022.**

How to apply

The application must be submitted through the "JobbNorge" application portal ([submit your application](#)). For an application to be valid, the applicant must submit a complete set of documents via the portal, consisting of:

- **Att. 1: CV** ([use supplied template](#) (Word)): Applicants must clearly explain any research career gaps and/or unconventional paths. If you have been living in Norway sometime during the last 3 years, please specify the exact duration and motives.
- **Att. 2: Motivational letter** with the selected research project ([use supplied template](#) (Word)).
- **Att. 3: Letter of recommendation** (with ranking).
- **Att. 4: Bachelor's and master's grade transcripts** with official translations. Candidates without a Master's degree have until 31st October 2022 to complete the final exam. Read more about the grade requirements [here (UiO website)](#).
- **Att. 5: Documentation of English proficiency**: Read more about how to document your English language skills and who is exempt from presenting this documentation [here (UiO website)](#).
- **Att. 6: Eligibility checklist** ([complete the supplied eligibility checklist](#) (pdf)).

Please save and upload all attachments with your surname in the file name, e.g. SURNAME_Att.3. **Please note that only documents submitted through the portal will be considered** (with the exception of Att.3: Letter of recommendation)**.**

NB! Special notice regarding Att. 3 Letter of recommendation: In Norway it is customary that the applicants receive the recommendation letters and upload them in the portal themselves. If this is not possible, please tell your referees to send their reference letters by email to our CompSci coordinator Marta Gómez Muñoz martagm@mn.uio.no and she will upload them to your application. In the subject of the e-mail your referee must indicate the reference number (JobbNorge ID) for the position and your name. This has to be done by the application deadline for the position, 23rd September 2022.

The application portal "JobbNorge" has a field for "application text" and a standard CV which is entered in the portal. **Please do not use these online forms, but instead use the CV template and the Motivational letter template. It is only these attachments that will form the basis for the evaluation.**

You can submit the application at any date until the Call closes at 23:59, Central European Time, on the deadline date. Late or incomplete applications will not be accepted.

Research projects

[Applicants must apply for a specific research project listed under "Research projects"](#) for Call 2b. It is only the projects listed under Call 2b that are open for applicants in this call.

Who is eligible?

**Applicants from all nationalities who satisfy the following requirements can apply**:

- **Formal educational requirement**: A master's degree or equivalent with a specialization as described for each particular research project. A foreign completed degree (M.Sc.-level) corresponding to a minimum of four years in the Norwegian educational system. Fluent oral and written communication skills in English.

Candidates without a Master's degree have until 31st October 2022 to complete the final exam. [Read more about the formal requirements](#).

- **Research experience**: as per MSCA requirements, the candidate must at the date of the programme call deadline be within the first four years (FTE-equivalent) of their research careers and not yet be awarded at doctoral degree.
- **Mobility requirement**: as per MSCA requirement, the candidate may not have resided and/or carried out their main activity in Norway for more than 12 months in the 3 years immediately before the programme call deadline or the date or recruitment. Researchers with refugee status, as defined by the Geneva Convention, benefit from a less restrictive mobility rule: the refugee procedure (i.e. before refugee status is conferred) will not be counted as a period of residence/activity in Norway. The secondment host country is exempt from the mobility rule.
- **Complete application**: A complete application with all required attachments must be submitted through the application portal.

Evaluation process
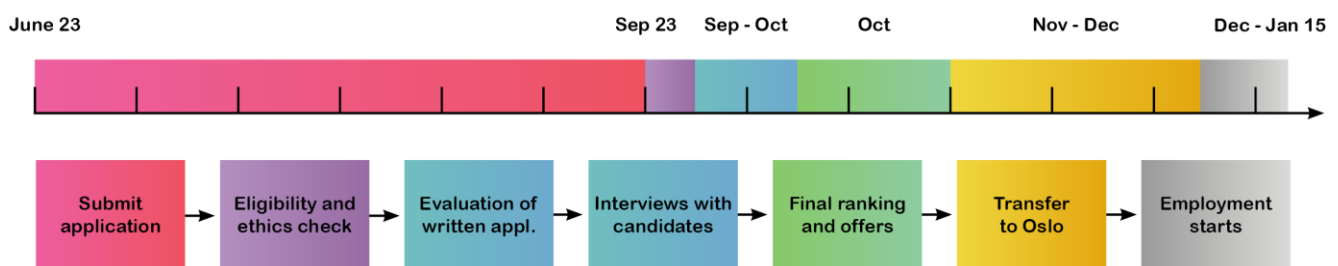
After the deadline of the call, the following steps are used to assess the candidates:

1. **Eligibility check:** The CompSci Office at UiO will check that each applicant fulfils the eligibility criteria. All the eligible and non-eligible candidates will be notified about their status by 26th September 2022.
2. **Expert panels**: The applicants for each project will be assessed by a panel of experts using the selection criteria for written application elements. At least three experts will assess each proposal independently. The composition of the panel of experts will be in line with the "European Charter for Researchers and Code of Conduct for their Recruitment", especially in terms of diverse competence, gender balance, and inclusion of members from different countries. Experts will perform evaluations on a personal basis, not as representatives of their employer, country or any other entity. They will be independent, impartial and objective, and behave throughout in a professional manner.
3. **Ranking of written application elements**: A consensus meeting will ensure a common consensus on ranking and produce a ranked list of all applicants. The selected and non-selected candidates will be notified about their status by 30th September 2022.
4. **Interviews for candidates above threshold**: The top candidates with a score above a threshold of 70% will be invited for a video interview with the evaluation panel. The interviews will follow the structure and scoring described in "Selection criteria – Interview". The interviews with selected candidates will take place between 11th October 2022 and 13th October 2022.
5. **Final ranking of candidates**: The candidates' scores from the written (60% weight) and oral (40% weight) evaluations will form the basis of a final ranking. The final ranking will be made by the Selection Committee no later than 17th October 2022.
6. **Offers**: The top candidates for each project will be offered standard contracts for the positions In November 2022. Successful candidates will start their positions preferably in Winter 2022/2023, no later than 6th January 2023.

Redress procedure

Each candidate has the possibility to ask for a redress of their evaluation at four points of time during the evaluation process: 1. After the eligibility check; 2. After the outcome of the written evaluation; 3. After the outcome of the oral evaluation; 4. After the funding decision. Within one week of the respective information to candidates, candidates can ask for redress by filling in the prepared form for redress, available on the CompSci website, and send it to the Project Office. In case of a justified redress, the application will be re-evaluated/the interview will be redone. Redress decisions are final.

Selection criteria - Written application elements

The candidates are first scored against selection criteria based on the application elements. The candidate will be scored along the following criteria, with a max score of 5 for each criterion.

Criterion	Factors	Threshold	Weight
CV, degree and skills	Grades, track record, publications and presentations, student should be in the top 25% of their respective grading system	3	45%
Motivation letter	Scientific maturity, motivation and interdisciplinary motivation	2	15%
Match with topic	Relevance of education, thesis, and courses	3	30%
Reference letter	Statement of relative rank in cohort	2	10%

In order to be eligible for the interview phase, the candidate must satisfy the threshold score and have a total score of 70%. If there are more candidates exceeding the thresholds, the candidates will be ranked based on the written material, and only the top three will be interviewed for a given project.

Priority in case of ex aquo will be: 1. CV; 2. Motivation letter; 3. Match with topic; and 4 Reference letter. In case of a draw, female applicants will be prioritized.

Selection criteria - Interview

Interviews will follow a structured template used by all interview committees to reduce bias. The interview will consist of the following parts.

Time	Contents	Threshold	Weight
15 min	Scientific presentation about previously carried out research work (e.g. MSc), or relevant work experience. Criteria: Clarity and consistency of presentation, ability to take part in a scientific discussion, Oral English skills.	3	50%
10 min	CV presentation and how candidate matches with topic. Criteria: Ability to answer CV-related questions, match CV to research topic	3	30%
15 min	Team work experience and interdisciplinary motivation. Criteria: Initiative to contribute, interdisciplinary motivation	3	20%
5 min	Candidate's questions	No	0%

A threshold score of 3 on each of the criteria is required to pass to the next stage. Priority in case of ex aquo will be: 1. Scientific presentation; 2. CV presentation; and 3. Team work. In case of a draw, female applicants will be prioritized.

Scoring

Scoring will follow standard MSCA scoring with 0-5 for each sub-criterion. The score interpretation is:

0: Fails to address the criterion or cannot be assessed due to missing or incomplete information.
1: Poor. The criterion is inadequately addressed or there are serious inherent weaknesses.
2: Fair. Broadly matches the criterion, but there are significant weaknesses.
3: Good. Addresses the criterion well, but a number of shortcomings are present.
4: Very good. Addresses the criterion very well, but a small number of shortcomings are present.
5: Excellent. Successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.

Terms and conditions

A doctoral candidate in the programme will be appointed under a fixed term employment contract with the University of Oslo. The place of work will depend on the research project the candidate is associated with. The candidate must work on the research project associated with the position.

The salary of a doctoral student will be calculated according to the Central Collective Agreement, where gross salary (with living and mobility allowances already included) within a range of NOK 479 600 to 523 200 per year depending of qualifications in a position as PhD Research Fellow.

The net salary will be paid after the deductions of tax, when applicable. Read more about the Norwegian tax system.

For further information related to moving and settling in Norway, please visit the website of the International Staff Mobility Office (ISMO). If you receive and accept an employment contract with UiO, you may contact ISMO who supports incoming international staff, PhD candidates, guest researchers and their families with relocation to UiO.

Career development

The goal of the training programme is to educate computationally literate natural science researchers and innovators, and equip them with the research, computational, and transferable skills, networks and mindsets needed to transform the European research, education and innovation arena.

The career development and training programme provides candidates with an interdisciplinary research training, training in computational methods, and training in transferable lifetime skills. The innovative training programme combines case-based learning, interdisciplinary core teams, a computational skills supervisor, and a transferable skills supervisor. This ensures that the fellows get the combined competence needed to become research and innovation leaders.

Photo: Hans Fredrik Asbjørnsen/UiO

Integration into existing training programme

The candidates will be enrolled in the PhD programme at the Faculty of Mathematics and Natural Sciences at the University of Oslo. The PhD programme is a three-year programme, requiring at least 30 ECTS of courses usually fulfilled through PhD-level courses including a 5 ECTS compulsory course in ethics.

The programme provides an additional level of support for the CompSci candidates on top of the training organized by the programme. It organizes activities to build a community among PhD candidates at UiO, e.g. annual PhD Day where PhD candidates meet, present posters and get feedback from experienced supervisors, PhD breakfast club addressing transferable skills and career development, project pitching competitions, an annual Young Talents day with a jobs fair focusing on non-academic career options, and social events. PhD candidates will have access to the UiO Career Center, and UiO organizes a PhD student alumni network that the candidates will be a part of.

Personal Career Development Plan

You will develop a Personalized Career Development Plan with your supervisors. The goal of the plan is to provide you with a set of ambitious, attainable career objectives on the short and long term, a portfolio of skills to enhance their career prospects, and an assessment framework to monitor progress and make necessary adjustments.

The plan contains research goals, computational skills goals, transferable skills goals, and secondment goals set to improve the fellow's research competencies and complementary skills. It also contains goals for dissemination and communication and for the possible exploitation of the results. The plan will be reviewed every 6 months.

Intellectual Property Rights

All PhD candidates are employed by the University of Oslo. Research results with a commercial potential will be governed by the general IPR-policy adopted by UiO
https://www.uio.no/english/about/regulations/research/intellectual-property/

If you want to register an invention or are need further information about the Intellectual Property Rights of your work, please contact the Technology Transfer Office of the University of Oslo, Inven2, for further information at Inven2.

Ethics

CompSci aims to secure high ethical standards and the programme adheres to the European Commission's ethical principles of Horizon 2020. All research projects in the programme must abide with EU and national/local ethics regulations of the University of Oslo.

Training programme

The CompSci doctoral programme will train a new generation of natural science researchers with disciplinary, interdisciplinary and transferable skills and a foundation in computational methods - providing them with the knowledge, skills and vision to digitally transform the European education, research, government and industry sectors.

Researchers need skills in computing and data science

The use of computing and data science is revolutionizing research, industry, government and society. New skills are needed to be competitive in research and innovation. This means that you as an aspiring young researcher should build solid skills in computing and data science, in addition to a disciplinary basis.

The main objectives of the training program

1	Provide each candidate with deep research skills and experience from a disciplinary.
2	Provide computational skills needed to renew the candidate's discipline.
3	Provide interdisciplinary skills and practice by working in interdisciplinary teams.
4	Learn to build international, interdisciplinary and intersectoral networks.
5	Provide fellows with transferable lifetime skills essential for the career development.
6	Expose fellows to innovation practices and entrepreneurial mindset.

This requires training and skill sets that are different from the traditional training of computer science experts, which is difficult to transfer and apply in a disciplinary setting. It requires an integration between research and methods training.

Transform your discipline through computing and data science

For example, an experimental bioscientist or a materials scientist must learn computing and data science with methods and examples that are adapted to their field of research in order for them to be able to apply these methods effectively in their field.

We believe this will provide you a combination of competences in a discipline and in digital skills needed to impact research and education in your discipline, bring a new cross-disciplinary approach to research and innovation, and help digitally transform academia and industry. It will also provide you as a young researcher with skills and competence that answer the call for a digitally competent workforce and improve your employability.

Participating in a cross-disciplinary team of doctoral fellows

In this programme you will join a team of other aspiring researchers from across the fields of science.

As a team you will first go through a three months initial intensive training in scientific programming, computational science and data science. This will help you bond with doctoral fellows in your cohort and help you build a network both within and across disciplines.

### Research training in disciplinary research groups

You will then apply and develop these skills in an individual research project in your discipline – mathematics, bioscience, geoscience, chemistry, materials science, astronomy or physics – in research groups at the University of Oslo.

The research groups and supervisors are experienced supervisors on a top international level, have a track record in interdisciplinary research, and integrate computational and disciplinary approaches.

Overview of the training programme

The PhD programme at UiO is a three-year programme, which includes 30 ECTS of courses. As part of the CompSci programme you will start with **a three-month intensive training programme** in computing and data science.
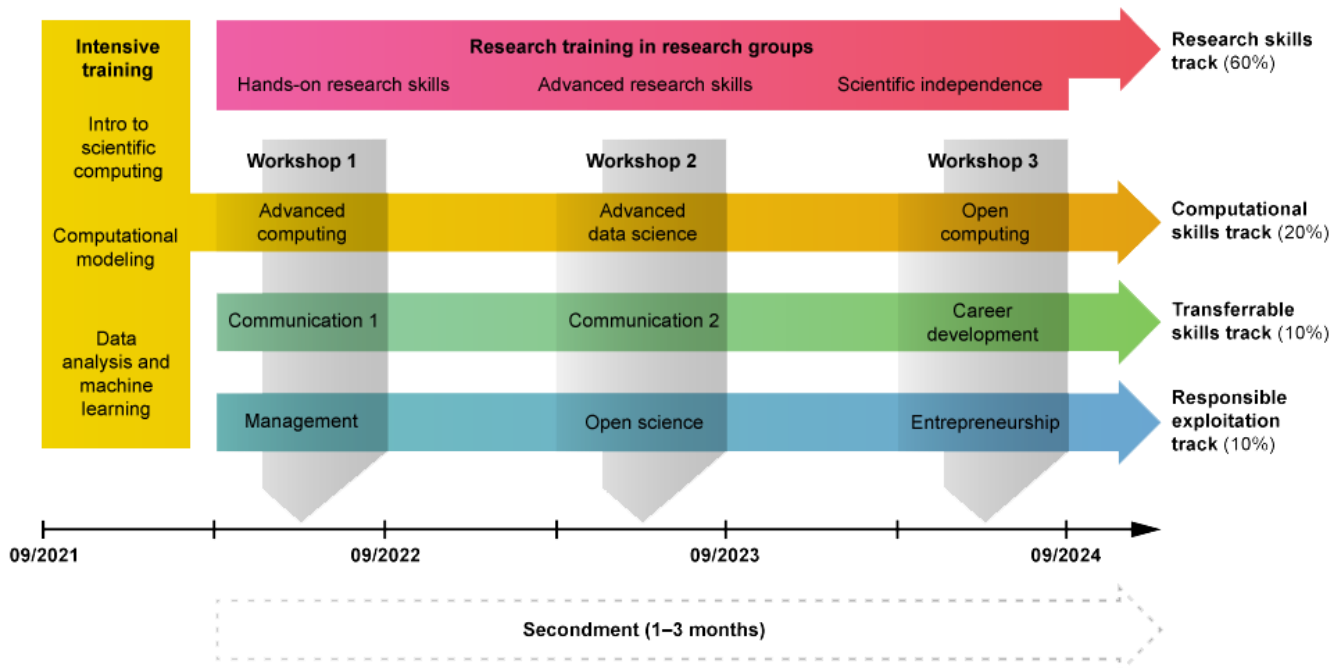
You will take the PhD-level courses FYS4150 Computational science (10 ECTS) and FYS-STK4155 Applied data analysis and machine learning (10 ECTS). These courses are project driven and both the teaching and the projects may be adapted to your background and research ambitions.

In addition, the programme consists of yearly week-long workshops that focus on advanced computing and data science skills as well as other transferable skills.

Overview of computational courses and annual workshops

Computational modeling	Data analysis and machine learning	
Numerical methods from the sciences: numerical solution of differential equation, numerical linear algebra, interpolation, numerical integration, Monte-Carlo methods, algorithmic modeling, modeling of data, visualization (C++ or Python)	Bayesian statistics and learning, common distributions, central algorithms in data analysis and machine learning, (Monte Carlo, Markov chains, Gibbs samples, data optimization, regression, neural networks, decision trees), visualization	
WORKSHOP 1	**WORKSHOP 2**	**WORKSHOP 3**
Large computing projects and hpc computing / Written communication / Intro to project management	Data structures and large data sets / Oral communication / Open science & data sharing, RRI, gender bias	Professional coding and open source / Entrepreneurship and IPR/ CV writing, interview training, grant writing

In addition to FYS-STK4155 and FYS4150, you will take a mandatory course in Science, Ethics, and Society (MNSES9100).

The remaining 5 ECTS of the 30 ECTS training programme in the PhD programme will be covered by the yearly workshops.

Employment

A PhD fellowship in Norway is normally a 3-year full time doctoral degree training, and the CompSci fellowships will be of three years duration to comply with this requirement. As a PhD you will be employed and entered into a doctoral programme.

Job appointment

Photo: Jarli&Jordan/UiO

After the departments' Appointment Committees officially have agreed to the final decision and the selection of candidates, you will be contacted. The faculty's HR section will start the process of issuing a 3-year full time employment contract including full social security and benefits, and a salary in line with the position code and the MSCA requirements. The employment contract will specify the requirement to establish a plan for the doctoral training, registration to a doctoral programme.

Foreseen start date for the CompSci programme is 15th August 2022 or at the latest 1st October 2022.

You will start your PhD programme with an intensive common training period with focus on bringing you and your fellow CompSci PhDs up on a similar level needed for completing the full programme.

Furthermore, you will be part of the Faculty's PhD introduction programme. This programme will create a mutual platform of trust, and understanding of the needed competences and insight to the expected work. You and your supervisor will together, within the first two months, set up an individual Doctoral Training Plan and the Career Development Plan (CDP).

The UiOs International staff mobility office (ISMO)

The UiOs International staff mobility office (ISMO) supports incoming international staff, PhD candidates, guest researchers and their families with relocation to UiO, and will assist you with issues related to your stay here, in addition to the help offered by the hosting department, research group and the CompSci administrative programme manager.

Moving to Oslo

International Staff Mobility Office (ISMO) at the University of Oslo will assist recruited researchers prior to their arrival, upon their arrival and during their stay.

In concrete terms, ISMO will offer assistance with

- residence permits,
- finding housing,
- help dealing with tax issues,
- finding childcare

as well as a range of other practical challenges related to moving to a new country.

Ice skating at the Christmas marked in Oslo
Photo: VisitOslo/Didrick Stenersen

The promenade at Aker brygge in Oslo
Photo: VisitOslo/Didrick Stenersen

In this context, it should be underlined that it is a prerequisite that the fellows move to Norway by the time of employment and live here during the PhD.

ISMO supports incoming international staff, PhD candidates, guest researchers and their families with relocation to UiO.

Read more about moving to and living in Oslo, work-life balance and the Norwegian welfare state by visiting the websites of ISMO.