Earth, Ocean and Atmospheric Sciences

Post-doctoral Position at the University of British Columbia in Oil Spill Modelling with MEOPAR

The Department of Earth, Ocean & Atmospheric Sciences at the University of British Columbia invites applications for a Postdoctoral Fellow in the field of numerical modelling of oil spills in the coastal ocean. The successful applicant will conduct research as part of MIDOSS (Model of Impact of Dilbit and Oil Spills in the Salish sea). MIDOSS is a three year project funded by MEOPAR to improve our scientific knowledge and tools to support evidence-based planning both in preparation for, and in response to, an oil spill in the Salish Sea.

MEOPAR (meopar.ca) is an NSERC Network of Centres of Excellence and offers a training program and other benefits.

The position is for one-year, renewable for a second year, and preferred start date is September 2018. The application deadline is Jun 5, 2018 but will be extended if a suitable candidate has not been found.

Project and Responsibilities

Shipping associated with Canada's largest port, Vancouver, is increasing. The proposed Trans Mountain pipeline expansion will bring a more than six-fold increase in the number of tankers transiting the Salish Sea, and they will be carrying diluted bitumen (Dilbit). MIDOSS will improve modelling of Dilbit in the coastal ocean, prediction of near-surface currents, and risk communication strategies for the diverse decision-making groups involved. MIDOSS will produce risk exposure products to aid in community planning and in mapping ecosystem vulnerability. In addition, MIDOSS will produce predictions of strong currents and extreme high/low water for pilots to help reduce ship accidents.

The post-doctoral fellow (pdf) will develop the oil spill exposure product and in the process will implement a coupled oil spill prediction system and evaluate it. Specifically, the pdf will develop a stochastic modelling framework, probably using Monte Carlo methods, for varying spill location, and the high-performance computing workflow to facilitate computational demand. The fellow will assist in coupling the MOHID oil spill model in the SalishSeaCast operational framework. They will assist two graduate students in evaluating the system by hindcasting a series of documented small spills. They will work with the third student to integrate the stochastic simulations into oil spill risk exposure products for stakeholders.

The project is cross-country and cross-discipline. The successful applicant will be primarily supervised by Prof. Susan Allen, and will also interact with Prof. Stephanie Chang (UBC) particularly on the risk exposure products and Prof. Haibo Niu (Dalhousie University) particularly on the MOHID oil spill model.

Additional responsibilities will include: reporting to MEOPAR, publication of the results in peer-reviewed international journals and partial supervision of undergraduate and/or graduate students working on other aspects of the project.

Minimum Qualifications and Experience

A Ph.D. together with a strong background in numerical modelling of ocean flows and interest in risk communication, particularly in producing risk information products that would be useful to a range of non-academic stakeholders. Candidates with experience using NEMO and/or ocean oil spill models are preferred. The position is for one-year, renewable for a second year, and preferred start date is September 2018. Salary is commensurate with educational level and experience; the minimum salary is $48,000 per year plus benefits.

How to Apply

Applications, including a CV, copies of two relevant publications, and the names, e-mails and phone numbers of three referees should be sent to Dr. Susan Allen (sallen@eoas.ubc.ca). The application deadline is Jun 5, 2018 but it will be extended if a suitable candidate has not been found.

UBC hires on the basis of merit and is committed to employment equity. All qualified persons are encouraged to apply. We especially welcome applications from members of visible minority groups, women, Aboriginal persons, persons with disabilities, persons of minority sexual orientations and gender identities and others with the skills and knowledge to engage productively with diverse communities. Canadians and permanent residents of Canada will be given priority.