Pacific Rim Ocean Data Mobilization and Technology (PRODIGY) Postdoctoral Fellowship in Ocean Observation, Analysis and Prediction

Applications are invited for a two-year postdoctoral fellowship (PDF) using advanced ocean observing technology, numerical modelling and data science to study oceanographic and/or geophysical processes.

Background:
The Pacific Rim Ocean Data Mobilization and Technology (PRODIGY) training program bridges the fields of oceanography, geophysics, computer science and statistics, harnessing new marine technology, data science, modelling and visualization tools to support ocean observation, prediction and knowledge mobilization. We seek a dynamic individual to contribute to this program through inter-disciplinary research, teaching, mentoring and stakeholder engagement. Applicants with a range of backgrounds and interests in ocean observations, modelling and data science are encouraged to apply.

Successful candidates will be expected to conduct primary research in one or more areas of ocean data acquisition, analysis and modelling, working under the co-supervision of at least two faculty researchers from different disciplines (*e.g.* oceanography and computer science). Research topics of interest include, but are not limited to: ocean mixing, ocean biogeochemical cycles; geophysical processes along oceanic plate boundaries, use of autonomous ocean sensors; development of numerical models and statistical methods for ocean data analysis and forecasting. Candidates will also be expected to contribute to in-class teaching and annual summer schools, and to engage with non-academic partners in government, industry and the NGO sector. Research and teaching activities will support a bi-lateral collaboration between Canada and Chile.

Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We particularly encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person.

Project Goals: PRODIGY aims to foster research and training in four key facets of the ocean data life cycle:
1) development, deployment and validation of new ocean sensors
2) data science, interactive visualization and visual analytics
3) cross-platform data integration and assimilation into models and prediction systems
4) knowledge transfer of data-rich research to key stakeholders

Project Team: The PRODIGY program brings together a dynamic, interdisciplinary group of Canadian, American and Chilean scientists spanning oceanography, geophysics, engineering, computer science and statistics. Project leaders are based at the University of British Columbia, the University of Victoria and the University of Waterloo, with academic collaborators at the Millennium Institute of Oceanography (MIO, Concepcion, Chile), the University of Washington, Monterey Bay Aquarium Research Institute and Scripps Institute of Oceanography. Additional non-academic collaborators come from government, industry and NGO sectors. Our team has access to state-of-the-art research equipment and infrastructure, including the Canadian

Pacific Robotic Ocean Observing Facility (C-PROOF), the Marine Environmental Research Infrastructure for Data Integration and Application Network (MERIDIAN) and the National Facility for Seismic Imaging (NFSI). These scientific resources, combined with the broad interdisciplinary knowledge base of our team, will create an immersive, cross-cultural training environment. Prospective candidates are strongly encouraged to contact one or more of the project Principle Investigators (see below) prior to submitting a formal application.

Position Responsibilities:

1) Deploy advanced ocean observing technology and/or develop advanced data analysis, visualization and modelling tools to study critical oceanographic and/or marine geophysical processes.
2) Publish primary research in high-impact peer-reviewed journals, and present results at international conferences.
3) Participate in teaching and mentoring activities with graduate and undergraduate students.
4) Help facilitate professional development activities, including seminars and workshops.
5) Interact with non-academic partners in government, industry and/or the NGO sector to facilitate the use of ocean observing technology and data products to address societally-relevant challenges

Requirements:

- An interest in applying data-driven observational and/or modelling approaches to important ocean-related research
- A PhD in ocean sciences, marine geophysics, data science, statistics, computer science or a related field.
- Experience working with large observational datasets and/or advanced data analysis methods and numerical models
- Willingness to work collaboratively with an interdisciplinary group of scientists with expertise in ocean sciences, geophysics, statistics and computer science
- Capacity to lead projects with collaborators and ability to complete projects in a timely manner
- Excellent communication skills

Benefits:

Fellows will gain unique interdisciplinary knowledge and skills in emerging ocean observing technology and data science, bridging fundamental and applied research from ocean technology and sustainable resource exploration, to seismic hazards and climate forecasting. Program participants will also have opportunities for professional development, including training in scientific communication, project management and stakeholder engagement. Partnership with the Millennium Institute of Oceanography in Chile will provide cross-cultural training experience, and access to comparative ocean study sites across the eastern Pacific Rim.

Additional Details: The position will be officially based at either the University of British Columbia, the University of Victoria or the University of Waterloo, with opportunities to travel between these locations for collaborative work. Opportunities also exist for research exchanges with our partners in the United States and Chile, including participation in the at the Chilean Austral Summer Institute. This is a limited term, two-year PDF position paid at a rate of $60,000 CAD per year plus mandatory employment-related benefits. Additional research funds will be provided by the project co-supervisors.

Application Procedures: To apply please submit the following by email to Dr. Philippe Tortell (ptortell@eoas.ubc.ca), with a copy to Jill Dwyer (jill.dwyer@ubc.ca): 1) a statement of interest in the position, outlining relevant teaching and research experience; 2) a current CV; 3) the names of at least two references; and 4) sample research publications. Review of applications will begin immediately, and the position will remain open until filled, with a preferred start date of Sept. 1, 2021.

PRODIGY Team Members

University of British Columbia, Department of Earth, Ocean & Atmospheric Sciences
Dr. Susan Allen
Dr. Michael Bostock
Dr. Lindsey Heagy
Dr. Philippe Tortell
Dr. Stephanie Waterman

University of British Columbia, Department of Computer Science
Dr. Raymond Ng

University of British Columbia, Department of Statistics
Dr. Matias Salibian-Barrera

University of Victoria, School of Earth and Ocean Sciences
Dr. Roberta Hamme
Dr. Jody Klymak

University of Victoria, Department of Computer Science
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Dr. Andrea Scott