



PEA Job Description

1. Position Identification	
Position Number	992264
Position Title:	<i>Junior Staff Scientist, Geophysics</i>
Department:	<i>Ocean Networks Canada</i>
Reports to:	<i>Senior Staff Scientist</i>
Number of Direct/Indirect Reports	Direct _____ Indirect _____
Classification Level	<i>SG 10</i>
Last Updated	<i>May/2020</i>

2. Position Summary

[Ocean Networks Canada](#) is a world-leading organization supporting ocean research and discovery, and ocean observing technology innovation. ONC is a not-for-profit society that operates and manages cabled observatories in the coastal and deep Pacific and Arctic Oceans on behalf of the University of Victoria that supply continuous power and Internet connectivity to various scientific instruments located in coastal, deep-ocean, and Arctic environments. ONC’s cable arrays host hundreds of sensors distributed in, on and above the seabed along with mobile and land based assets strategically located, instruments that address key scientific and policy issues (subsea earthquakes and tsunamis, ocean acidification, marine biodiversity, etc.) within a wide range of environments.

The core ONC user base is composed of scientists accessing the facility and data archives to conduct world-leading research. The ONC Science Services department provides a wide range of services to assist in the planning, execution, and completion of marine research, with the primary outcome being world leading scientific publications.

Within the Science Services department, itself a part of the User Engagement Division, Junior Staff Scientists contribute to the execution of science-based services as articulated in the [Strategic Plan of ONC](#), in which serving the research users and providing scientific solutions to stakeholders are core mandates. The Junior Staff Scientist, Geophysics, works with and reports to Senior Staff Scientist to facilitate research support activities for ONC users and stakeholders, particularly focusing on their respective area of competency. In conjunction with staff from the ONC Data Team, the Junior Staff Scientists are responsible for validating data quality through managing sample collection and analysis. They are also responsible for ensuring users receive the data necessary to support their research objectives. In this capacity, they may also be responsible for collecting and transferring field samples to external science users. Under the direction of the Staff Scientists, they assist with multivariate earth-ocean data analysis.

The Junior Staff Scientist, Geophysics, will support the ONC Science team in the geophysical programs in seismology, tectonics, seafloor geodesy as well as gas hydrates, sea bed dynamics and geological storage of CO₂. In particular, they will assist with managing the seismological data acquisition, analyzing geophysical data streams, coordinating sensor tests and calibrations, collating data sets, and supporting the scientific community by organizing workshops and with generating publications and proposals. The Junior Staff Scientists also work with Data Team members to assemble and publish observatory data sets. Junior Staff Scientists assist in the planning and execution of annual maintenance expeditions and other field-based activities as they relate to instrument preparation, data integrity, and sample collection. Together with the other members of Science Services, they also support workshops, conference presence and other user engagement activities as required.

3. Key Responsibilities and Expectations

Key Responsibilities. % of time	Expectations:
User Engagement Support 60%	<ul style="list-style-type: none"> ● Work with the Staff Scientist team to coordinate research and scientific support activities for users within their specialty area ● Work directly with current and new scientific users to support their data needs with a goal to efficiently produce scientific publications ● Support user directed data analysis and integration, including scalar, acoustic, multi-dimensional, and image-based data to meet ONC user needs as they relate to publishing scientific papers ● Work independently to plan, organize, and lead <i>in situ</i> field sample collection and analysis (e.g. Winkler oxygen analysis) for sensor data validation and calibration-check purposes ● Work with the Data and Data Stewardship teams to develop and publish ONC data sets ● Become familiar with ONC data streams in their area of expertise, the signals they contain, any noise or data quality issues, and how these data can be used by the scientific community ● Participate in off-site meetings (e.g. workshops, conferences and symposia) with existing and potential research groups to assess their specific scientific goals and data needs ● Work independently with Data Team members to assess instrument performance issues and provide guidance to improve instrument configuration, data assessment procedures, and data quality standards
Improve ONC Services 20%	<ul style="list-style-type: none"> ● Work with the Data Team and Software Engineering to review and improve data products ● Work with the Staff Scientists to organize, run, and take action from user engagement workshops, compiling and assessing user objectives ● Work with data stewardship to maintain accurate meta-data. ● Work with the Staff Scientists to update and maintain content on the various ONC web pages and portals, accessed by the science user community as part of their research activities ● Support external meeting activities, such as staffing ONC Booths, at both national and international conferences and symposia ● Work with the Staff Scientists and the Project Management Office using web-based tools to report and track science initiative progress to the user community ● Work with other Staff Scientists to track and compile facility use summaries, status reports, data publication, and research product metrics
Support Field Operations 20%	<ul style="list-style-type: none"> ● Support maintenance cruise planning and preparation, prioritizing operation and maintenance activities as they relate to data validation to best serve the user community ● Prepare gear and apparatus necessary for sample collection and analysis during maintenance operations ● Participate in cruises to collect and store data validation samples ● Assist other cruise activities related to the servicing of all infrastructure and instrument systems, including recovery, cleaning, testing, and re-deployment ● Prepare post-cruise reports, complete shore-based sample analysis, and manage the shipment of third-party samples

4. Classification Factors:

Problem-Solving:

The Junior Staff Scientist must possess the technical skills and ability related to marine research, demonstrating scientific integrity and knowledge. A strong understanding of scientific instrument capabilities, configuration, and data assessment is required. Strong quantitative and oceanographic data interpretation skills, including data analysis and quality assessment are essential. The Junior staff Scientist must understand how query tools work, how data are retrieved and converted, analyzed, and ultimately presented. The Junior Staff Scientists are a primary liaison supporting facility user's access to integrated data services, assisting with their data analysis and the publication of observatory data sets. The Junior Staff Scientist must work independently over long periods, solving complex data analysis problems with minimal supervision.

Responsibility for Financial & Material resources:

The Junior Staff Scientist does not have direct responsibility for budget or materials expenditures. However, in developing and executing the sample collection and analysis tasks, they will provide input into the Staff Scientists' management of the Science Supplies budget. The Junior Staff Scientist also shares material responsibility for data products with Data Team staff and the Staff Scientists.

Responsibility for Human Resources:

The Junior Staff Scientist must be self-motivated, independent, and capable of operating under minimal supervision. Junior Staff Scientist will be supervised by Senior Staff Scientist (direct), and provide guidance and oversight (indirect) for sample analysis, data quality, product development, and data services within the Operations and User Services departments. This position may be responsible for supervising interns or trainees at any given time.

Impact of Decisions and Actions:

The Junior Staff Scientist will be accountable to both ONC as an organization and the user community in assisting scientists to publish research using ONC data. In assisting the organization and the user community to publish both data and scientific results, the Junior Staff Scientist position has a critical impact on the success of ONC. The Junior Staff Scientist will also be responsible for managing all aspects of sample collection and analysis, and the integration of this analysis into the over-arching efforts of data quality assessment. Numerous key ONC metrics depend on the success of the science user community supported directly by the Junior Staff Scientists.

Independence:

The Junior Staff Scientists will be working under the informed guidance of the Senior Staff Scientists. They must be well organized and able to manage, track, and provide brief summaries of numerous on-going multidisciplinary research initiatives. Junior Staff Scientists are expected to plan, organize, and execute complex oceanographic sample collection activities, followed by rigorous sample analysis and reporting. This position has the authority to work directly with our science users to assess, analyze, compile, and prepare integrated data products for scientific publication. Building on scientific data analysis skills, the Junior Staff Scientist will make critical decisions on data validation and quality issues as directed by the Senior Staff Scientists and the science user community.

5. Summary of qualifications:

The successful applicant will have a minimum of a Masters (M.Sc.) degree in Marine Geophysics, including experience in seismometry, geodynamics, and/or geodesy, with at least 2 years of relevant data analysis experience in an observational, experimental, or modelling in Geophysical marine science discipline. An equivalent combination of education, training, and work experience may be considered where appropriate.

Essential qualifications include:

- Oceanographic expedition experience, including collecting, processing, and analyzing samples at sea
- Significant work experience using advanced programming environments (e.g. MATLAB, R, Python, or IDL) to analyze and integrate multi-dimensional, multi-variate data
- Significant work experience in data visualization and the presentation of data analysis
- Experience in producing accurate scientific communications, including peer-reviewed publications, conference abstracts and presentations, and summaries for broader audiences

In addition, the following attributes and experience are highly desirable:

- Experience with modeling and computer simulation
- Experience with web content management and web-based interactive collaboration environments
- Experience with web-based data access technologies
- Experience in organizing, running, and summarizing scientific workshops
- Experience in preparing regular briefings and status reports
- A sound reputation in the marine science community, either locally or nationally combined with data related marine science publications either as the lead or with a co-author.

Assets include:

- Excellent analytical, critical thinking and problem solving skills
- Superior communication skills, both written and verbal
- Ability to build and maintain productive working relationships with all stakeholders
- Ability to work independently and collaboratively in a team environment
- Proven track record achieving project goals on time and produce deliverables of a high quality

Employee's Signature:	Date:
Manager's/Supervisor's Signature	Date: