Marine Institute Job Description

Position	**Postdoctoral Researcher (PDR) – Ocean Modelling**
Contract	**Temporary specified purpose contract for a maximum duration of 24 months (Funded via Interreg VA COMPASS & Interreg Atlantic Area CleanAtlantic)**
Service Group	**Ocean Science and Information Services (OSIS)**
Location	**Oranmore, Galway**

Brief Description of the Marine Institute:

The Marine Institute is a non commercial semi-state body, which was formally established by statute (Marine Institute Act, 1991) in October 1992.

Under the Act, the Marine Institute was given the responsibility:

 "to undertake, to co-ordinate, to promote and to assist in marine research and development and to provide such services related to marine research and development, that in the opinion of the Institute will promote economic development and create employment and protect the marine environment ".

The Marine Institute is the national agency responsible for marine research, technology, development and innovation (RTDI). The Marine Institute seeks to assess and realise the economic potential of Ireland's 220 million acre marine resource; promote the sustainable development of marine industry through strategic funding programmes and scientific services; and safeguard the marine environment through research and environmental monitoring.   The Institute works in conjunction with the Department of Agriculture, Food and Marine (DAFM) and a network of other Government Departments, semi-state agencies, national and international marine partners.

Our vision - *The Marine Institute, as a global leader in ocean knowledge, empowering Ireland and its people to safeguard and harness ocean wealth.*

Our Mission - *The Marine Institute, provides government, public agencies and the maritime industry with a range of scientific, advisory and economic development services that inform policy-making, regulation and the sustainable management and growth of Irelands' marine resources. The Institute undertakes, coordinate and promotes marine research and development, which is essential to achieving a sustainable ocean economy, protecting ecosystems and inspiring a shared understanding of the ocean.*

In order to achieve this vision, the MI have six service areas; (1) Ocean Science and Information Services, (2) Marine Environment & Food Safety Services, (3) Fisheries Ecosystems Advisory Services, (4) Irish Maritime Development Office, (5) Policy, Innovation and Research Services and

(6) Corporate Services.

The Marine Institute 5 Year Strategic Plan (2018 to 2022) is available here

Harnessing our Ocean Wealth (HOOW) is an Integrated Maritime Plan (IMP) for Ireland. HOOW sets out a roadmap for the Irish Government's vision, high level goals and integrated actions across policy, governance and business to enable our marine potential to be realised. Goal 2 of HOOW focuses on healthy marine ecosystems and specifically; to protect and conserve our rich marine biodiversity and ecosystems; manage our living and non-living resources in harmony with the ecosystem; implement and comply with environmental legislation (see www.ouroceanwealth.ie).

Brief Description of Service Group:

The mission of OSIS is *"To provide scientific, operational and analytical support and services to strategic RTDI and statutory monitoring programmes (at national and international level) to promote and support the sustainable development of Ireland's marine resources"*

Ocean Science and Information Services incorporates:
- Information Services & Development
- Advanced Mapping Services
- Research Vessel Operations
- Oceanographic Services
- Research Infrastructures
- Operational elements of Discovery R&D Programmes including
  - Advanced Technology including SMARTBAY
  - Ocean Energy

Summary of the Role:

The successful candidate will work within the Oceanographic Services team as a Postdoctoral Researcher, with main responsibility for delivering modelling products and services for the following projects:
- Interreg VA project COMPASS (Collaborative Oceanography for Marine Protected Areas and Species)
- Interreg Atlantic Area CleanAtlantic (Tackling marine litter in the Atlantic Area)

The successful candidate will be responsible for providing numerical modelling for the above projects and will work closely with international partners. Specifically, the candidate will contribute to the development of regional Duranand coastal scale hydrodynamic models for the purpose of supporting the delivery of Marine Strategy Framework Directive descriptors. The candidate will develop models providing hydrodynamic habitat layers in support of the management of marine protected area networks. The candidate will contribute to the development of lagrangian tools for marine litter tracking. Preparation of the reports and relevant documentation following strict deadlines and formats will also be part of the role. The candidate will also be expected to carry out other modelling duties within the modelling team as required.

Background to the Requirement

COMPASS

The COMPASS project will deliver the first fully coherent network of monitoring buoys across the regional seas of the Republic of Ireland, Northern Ireland and West Scotland. Integrating the longest continuously maintained oceanographic monitoring stations in Europe (e.g. Tiree mooring & Western Irish Sea) within a network of new buoys equipped with oceanographic sensors, acoustic recorders and advanced fish tracking technology, this exciting and innovative project will build the cross-border capacity for effective monitoring and management of Marine Protected Areas (MPAs). The project will develop long-term monitoring strategies for highly mobile protected species such as marine mammals and salmonids, and provide essential infrastructure for baseline oceanographic and ambient noise monitoring. The development of observational and data management capacity across the region will be complemented by the delivery of three truly regional scale environmental models designed to support the management of a cross-border MPA network. These models will link established modelling platforms between UK and Irish programmes at spatially relevant scales. In addition to delivering the COMPASS buoy network and infrastructure legacy, the project process itself will also consolidate the internationally recognised but currently disparate partner skills to build a truly inter-regional unit of expertise.

CleanAtlantic

CleanAtlantic addresses the issue of marine litter pollution and aims to protect biodiversity and ecosystem services in the Atlantic Area by improving capabilities to monitor, prevent and remove (macro) marine litter. A picture of current situation, existing knowledge, data and initiatives in the Atlantic regions will be drawn and gaps will be defined. Current systems to monitor and record marine litter will be reviewed, and protocols, tools and indicators will be delivered to fill monitoring needs. Modelling tools to predict the origin, circulation and fate of marine litter will be developed, and regional maps of hotspots of accumulation will be elaborated using models and innovative technologies for space, aerial, surface and underwater unmanned systems.

The Institute now requires a scientist with good understanding of ocean modelling to assist in the development of models for the aforementioned projects.

Principal Tasks:

- Expand the Marine Institute's ocean modelling services in line with COMPASS and CleanAtlantic project requirements
- Liaise closely with international project partners developing models and tools
- Develop hydrodynamic models and carry out simulations in support of Marine Protected Areas
- Develop in liaison with international project partners lagrangian particle tracking models to include behaviour of marine litter
- Carry out validation of models against observational data and cross-validation with other partners' models in the overlapping regions
- Participate in research activities that support projects milestones and related objectives and publish in the scientific literature
- Attend relevant meetings or working groups
- As necessary, carry out other modelling duties in the MI ocean modelling team.
- Any other duties as relevant to the position and grade.

Reporting Structure:

The successful candidate will be based at the Marine Institute HQ in Oranmore and will report directly to the Ocean Modelling Team Leader.

Contacts:

Marine Institute: Ocean Modelling team members within OSIS. Section Manager Oceanographic Services. Director OSIS. Data services Team. Other Sections Managers, Team Leaders, STOs and PDRs across MI Service Groups

Externally: Regular liaison with project partners and collaborators across the EU.

Education, Professional or Technical Qualifications, Knowledge, Skills, Aptitudes, Experience, and Training

Essential:

- PhD in Physical or Biological Oceanography, Civil Engineering, numerical modelling or related discipline with sound numerical background.
- Experience in running or maintaining numerical hydrodynamic models Proven track record in using one or more scripting languages, e.g. Matlab, Python or similar.
- Effective numerical and literacy skills including report writing skills.
- Numerical skills to include handling large volumes of observational and model oceanographic data.
- The ability to be well organised and work to deadlines identifying priorities and managing time effectively.
- Excellent interpersonal skills and the ability to communicate effectively at all levels both in writing and verbally with technical and scientific and non-technical groups.
- The ability to work unsupervised and to work well with others.

Desirable:

- Experience as user and/or developer of ROMS model.
- Statistical analysis of oceanographic data.
- Record of publishing in peer-reviewed scientific journals.
- Sea going experience or sufficiently fit to pass an ENG II Medical.
- A full clean Driving License.

Special personal attributes required for the position:

- An analytical approach to problem solving.
- An ability to work in an organised manner and progress work independently.
- Dynamic and reliable.
- Self-sufficiency, while being a good team player.
- Good interpersonal skills.
- Ability to effectively communicate results of teamwork in written and audiovisual formats.

Salary:

Remuneration is in accordance with the Public Sector, Department of Finance approved Salary Scale for Postdoctoral Researchers with a starting salary of €37,223 - €48,205 per annum pro-rated with time worked. You will become a member of the Single Public Service Pension Scheme.

Annual Leave:

The annual leave entitlement for a Postdoctoral Researcher is 24 working days per annum prorated to reflect time worked. Annual leave entitlements are exclusive of Public Holidays. All leave must be approved by your manager or their authorised representative in advance of being taken and in line with Marine Institute leave policies.

Duration of Contract:

The contract will be issued on a specified purpose basis for up to a maximum duration of 24 months, working full time hours (39 per week) subject to funding with a 6-month probationary period.

How to Apply:

A C.V. and letter of application, summarising experience and skill set applicable to the position should be emailed to recruitment@marine.ie or posted to Human Resources at the Marine Institute, Rinville, Oranmore, Galway. All correspondence for this post should quote reference **OSIS/PDR_ Ocean_ Modelling /May.2019**

Closing date for applications. All applications for this post should be received by the Marine Institute in advance of **on Wednesday 22nd May 2019, 12 noon.** Please note that late applications will not be accepted.

Use of Data - all personal data and the information submitted for this application will be used solely for the purpose of this campaign, after which it will be deleted in line with our data and documents policy. All information will be treated with the strictest confidence and accessed only by those involved directly in the campaign.

The Marine Institute is an equal opportunities employer