ATLANTIC OCEAN RESEARCH ALLIANCE

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Overview

• Galway Statement and the Atlantic Ocean Research Alliance
• Overarching Objectives
• Tri-partite Galway Implementation Committee
• Priority Areas of Cooperation
• Priority Area Working Groups and Accomplishments
• Coordination of Programs and Resources
  ✓ Canadian Ocean Science and Technology Community
  ✓ European Commission Horizon 2020 Consortiums & Future Horizon 2020 Projects in Support of Galway Statement
  ✓ United States Collaborative Research Program on the Coupled North Atlantic-Arctic System and Dear Colleague Letters
• Horizon 2020 Atlantic Ocean Research Alliance Coordination & Support Action
• Questions and Discussion
The Galway Statement on Atlantic Ocean Cooperation

Signed in Galway on 24 May 2013 in three originals in the English language.

For the European Union
Máire GOGHEGAN-QUINN
Commissioner for Research, Innovation and Science

For the Government of Canada
Edward FAST
Minister of International Trade and Minister for the Asia-Pacific Gateway

For the Government of the United States of America
Dr Kerri-Anne JONES
Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs

Maria DAMANAKI
Commissioner for Maritime Affairs and Fisheries

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Galway Statement on Atlantic Ocean Cooperation – Overarching Objectives

• Improve ocean health and stewardship
• Promote sustainable management of resources
• Improved ecosystem assessments and forecasts and deeper understanding of vulnerabilities and risks, including climate change
• Generate new tools to increase resilience, conserve rich biodiversity, manage risk and determine social, environmental, and economic priorities
Tri-Partite Galway Implementation Committee

Co-chaired by Canada, the European Commission, and the United States

• **Trevor Swerdfager**, Assistant Deputy Minister, Ecosystems and Oceans Science, Fisheries and Oceans Canada

• **John Bell**, Director of Bioeconomy, Agriculture, Food, Marine in Directorate-General for Research and Innovation, European Commission

• **Craig McLean**, NOAA Assistant Administrator for Oceanic and Atmospheric Research
Priority Areas of Cooperation – “The What”

Ocean research and observation efforts subsequently defined under statements of purpose in which we have agreed to work together in the following priority areas of cooperation:

• Atlantic Seabed Mapping and Characterization
• Aquaculture
• Ocean Literacy, including Information Management and Dissemination
• Ocean Health and Stressors
• Ocean Observation and Prediction
• Marine Microbial Ecology (EU-US)
In working together to advance results in the identified areas of research cooperation, we will seek to improve efficiencies and effectiveness by:

• Organizing, aligning and leveraging research activities in a way that takes advantage of opportunities for synergies in work already underway and the use of infrastructure or installations

• Better coordination of data sharing, interoperability and coordination of observing infrastructure

• Promoting researcher mobility

• Coordinating the planning and programming for better alignment of relevant activities and resources
Formal tri-lateral working groups have been established to advance scientific planning under agreed upon areas of priority research

- Aquaculture
- Ocean Literacy
- Atlantic Seabed Mapping

Establishment of formal working groups in remaining areas of research cooperation evolving
Aquaculture Working Group Accomplishments

- Joint Roadmap of activities developed
- Detailed Roadmap including scientific findings and outputs, for each of the topics identified to be developed at the World Aquaculture Society conference held in Las Vegas in February 2016
- Database of existing collaborations under development
- List of well-developed priority topics, including identification of leads and specific actions to be implemented in the near future:
  - Impact assessment modeling and carrying capacity
  - Spatial planning
  - Escapees – modeling genetic impact from escaped farm fish
Ocean Literacy Working Group Accomplishments

- **Transatlantic Ocean Literacy Implementation Strategy**
- Linkages established with Horizon 2020 Blue Growth projects *Sea Change* and *ResponSEAble* producing first set of products (videos, evaluation methodology, webinar and webdoc)
- TOL Workshops on developing outreach activities in research project (TOL2015) and sharing experiences from both side of the Atlantic at annual conferences of key marine education organizations in US, Europe and Canada
- Introduction of 2 new Impact Criteria in Horizon 2020 for selection of proposals: Social Benefit (OL, Citizen Science, Education) and Career Development (Blue Skill, Vocational Training for Blue Jobs)
- Lawrence Hall of Science training of ocean educators performed at Gothenburg University
Atlantic Seabed Mapping Working Group Accomplishments

- Draft Terms of Reference developed for review
- White Papers developed:
  - *Improving, Sharing, Discovery & Access of Seafloor Data in the North Atlantic*
  - *Technology: Methods for Collecting Data*
- Three opportunistic trilateral surveys completed:
  - *Celtic Explorer* Transect from St. John’s Newfoundland to Galway, Ireland (June 2015)
  - *CCG Louis St. Laurent* Transect from Halifax, Nova Scotia to Tromso, Norway (July 23- August 3, 2015)
  - *L’Atalante* Transect from Guadeloupe to the Azores (February 2016)
- Initial planning for a joint mapping campaign
Coordination of Programs and Resources

**EU:** Horizon 2020 - the European Union Framework Programme for Research and Innovation

Specific calls earmarked for the implementation of the Galway Statement (Atlantic Ocean/ Arctic Cooperation) in 2014-15 & 2016-17 Work Programmes – total EU funding of € 120 million

**USA-EU:** A Collaborative International Research Programme on the Coupled North Atlantic-Arctic System

**USA:** NSF and NASA Dear Colleague Letters

**Canada:** Alignment of research in Galway Statement priority areas by Canadian ocean science and technology community being realized through existing mechanisms and programs
EU-CANADA-US research consortiums established under ‘Galway tagged’ marine thematic areas

<table>
<thead>
<tr>
<th>Project</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>AORAC-SA</td>
<td>Provide scientific, technical and logistical support in developing and implementing Atlantic Marine Research Cooperation.</td>
</tr>
<tr>
<td>EU-PolarNet</td>
<td>Establish an ongoing dialogue between policymakers, business and industry leaders, local communities and scientists to increase mutual understanding and identify new ways of working that will deliver economic and societal benefits.</td>
</tr>
<tr>
<td>AtlantOS</td>
<td>Developing in-situ Atlantic Ocean Observations for a better management and sustainable exploitation of the maritime resources - Optimizing and Enhancing the Integrated Atlantic Ocean Observing System</td>
</tr>
<tr>
<td>DiscardLess</td>
<td>Strategies for the gradual elimination of discards in European fisheries</td>
</tr>
<tr>
<td>AquaSpace</td>
<td>Ecosystem approach to making space for aquaculture</td>
</tr>
</tbody>
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### Galway Statement Implementation

**EU Horizon 2020 Funded Projects**

<table>
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<th>Project</th>
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<tr>
<td>INMARE</td>
<td>Enhancing the industrial exploitation potential of marine derived enzymes</td>
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<tr>
<td>LAkHsMI</td>
<td>Develop a new bio-inspired technology to make continuous and cost-effective measurements of the near-field, large-scale hydrodynamic situation, for environmental monitoring in cabled ocean observatories, marine renewable energy and port/harbor security.</td>
</tr>
<tr>
<td>PrimeFish</td>
<td>Developing innovative market orientated prediction toolbox to strengthen the economic sustainability and competitiveness of European seafood on local and global markets</td>
</tr>
<tr>
<td>ResponSEAble SeaChange</td>
<td>Ocean Literacy – Engaging with Society – Social Innovation</td>
</tr>
<tr>
<td>ATLAS SponGES</td>
<td>Improving the preservation and sustainable exploitation of Atlantic marine ecosystems</td>
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</tbody>
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The Arctic Dimension

Three topics addressing "The Arctic dimension" in the 2016-2017 Work Programme: total budget of € 40 million

• BG-09-2016: An integrated Arctic observation system € 15 million

• BG-10-2016: Impact of Arctic changes on the weather and climate of the Northern Hemisphere € 15 million

• BG-11-2017: The effect of climate change on Arctic permafrost and its socio-economic impact, with a focus on coastal areas € 10 million
“... to facilitate development of a core vision for advancing the next phase of research on the North Atlantic-Arctic system and strengthening international collaborations within and between the European Union and North America.”

• Gateways: Implications of warming and freshening.
• Circulation: Implications of large- to submeso-scale.
• Spring Bloom Dynamics: Initiation, evolution, termination.
• Sustainable Fisheries: Impacts of all of the above and fishing pressure.
• Marine Ecosystem Health: Resilience to change.
• Prediction: Robust models for decision-making.
• New Knowledge: And translating it into Advice
The NSF Dear Colleague Letter: A Near-Term Action Plan For Advancing the Galway Agreement 2016-2018

- NSF 16-006 acknowledges community interest in North Atlantic-Arctic research and invites submission of proposals at one of the regular Ocean Sciences or Polar Sciences submission times.

- Formal or informal collaboration with non-US colleagues encouraged but not required.

- Submitted proposals will compete with and be evaluated along with other regular proposals.

- Potential investigators are advised to discuss ideas with program managers in advance.

- Release date: October 13, 2015

Enter 16-006 in the Search box to access the letter.
• EXPORTS Program Goal: to develop a predictive understanding of the export and fate of global ocean primary production and its implications for the Earth’s carbon cycle in present and future climates (link to satellite observations)

• An EXPORTS Science Definition Team to draft the implementation plan has been selected and announced (September 2015)

• In line with the recently released NSF Dear Colleague Letter, NASA released an open competition on 3 December 2015 to welcome proposals in support of Galway and the first phase of EXPORTS (data mining and modeling/OSSEs): http://nspires.nasaprs.com/external/viewrepositorydocument/cmdocumentid=448034/solicitationId=%7BEAB4311C-7130-7F75-BDC2-AB50BCC8A900%7D/viewSolicitationDocument=1/A.3%20OBB%20Amend%2033.pdf

• An open competition for the field component of EXPORTS planned for late 2016

• EXPORTS tentatively to begin in 2017
Galway Statement Implementation
Canadian Ocean Science and Technology Community

- Canadian performers and funders of ocean science and technology engaged in and/or supporting Galway Statement Horizon 2020 research consortiums and tri-lateral working groups
- Canadian ocean science and technology community integrated into all ‘Galway tagged’ Horizon 2020 projects to date
Galway Statement Implementation – Horizon 2020 Coordination and Support Action (AORA-CSA, BG14)

• Supporting International Cooperation Initiatives: Atlantic Ocean Cooperation Research Alliance

• Eleven funded work packages to provide scientific, technical, and logistical support to the identified priority areas of research under the Galway Statement and its implementing Working Groups

• Support activities include the organisation of expert and stakeholder meetings, workshops, conferences, activity inventories, mapping exercises, etc.
How AORAC-SA fits in:

Trilateral Galway Implementation Committee

EU

EC DG RTD

AORA-CSA Secretariat

Coordination & Support Action

Coordination, Communications, Networking WP1-3

WP 4  WP5  WP6  WP7  WP8  WP9  WP10  WP11

Coordination

Research & Underpinning Themes

High Level Board
Galway Statement Implementation – Coordination and Support Action (AORAC-SA, BG14)

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<td>Seabed Mapping</td>
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<td>Information Management and Dissemination</td>
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AORA-CSA Work Packages

- Oceanic Platform of the Canary Islands (PLOCAN)
- Institute of Marine Research (IMR)
- Havforskningsinstituttet

Shared Access to Infrastructure

[Image of logos and symbols]
### AORAC-SA Who we are:

<table>
<thead>
<tr>
<th>Work Package</th>
<th>WP Leader</th>
<th>Organisation</th>
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<tbody>
<tr>
<td>Governance &amp; Coordination</td>
<td>Peter Heffernan</td>
<td>Marine Institute Ireland</td>
</tr>
<tr>
<td>Networking &amp; Conferences</td>
<td>Peter Heffernan</td>
<td>Marine Institute Ireland</td>
</tr>
<tr>
<td>Communications</td>
<td>Peter Heffernan</td>
<td>Marine Institute Ireland</td>
</tr>
<tr>
<td>Ecosystem Approach</td>
<td>Mark Dickey-Collas</td>
<td>ICES</td>
</tr>
<tr>
<td>Ocean Observation</td>
<td>Joaquín Brito</td>
<td>PLOCAN</td>
</tr>
<tr>
<td>Marine Biotechnology</td>
<td>Sigurður Björnsson</td>
<td>RANNÍS</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>Wojciech Wawrzynski</td>
<td>ICES</td>
</tr>
<tr>
<td>Ocean Literacy</td>
<td>Ana Noronha</td>
<td>Ciência Viva</td>
</tr>
<tr>
<td>Seabed &amp; Benthic Hab. Mapping</td>
<td>Pål Buhl-Mortensen</td>
<td>Institute Marine Research</td>
</tr>
<tr>
<td>Shared Access to MRI</td>
<td>Aurélien Carbonnière</td>
<td>IFREMER</td>
</tr>
<tr>
<td>Knowledge Sharing Platform</td>
<td>Neil Philip Holdworth</td>
<td>ICES</td>
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</tbody>
</table>
Thank You!
Back Up Slides
Aquaculture Working Group Accomplishments

New areas for collaboration that have been discussed and agreed to:

- Outreach: Public perception, public acceptance
- Fish health and disease (including disease transmission) and climate change
- Harmful algal blooms and mollusc disease and climate change
- Integrated Multi-Trophic Aquaculture (IMTA)
- Sensors
Ocean Literacy Working Group Accomplishments

What's next:

- Horizon 2020 SeaChange & ResponSEAble work programmes
- Linkage with other AORA groups: Aquaculture and Seabed Mapping
- Consolidating the community of actors and developing linkages between main initiatives not yet in relation across the Atlantic including through Marine educators associations
- Continuation of building receptacle of tools free of access for Ocean Literacy actions
- Development of a joint approach to evaluate Ocean Literacy progress initiated by EMSEA and Lawrence Hall of Science