EU-U.S. Joint Consultative Group Meeting on Science and Technology Cooperation – February 2013

- Focus on developing the knowledge and technologies that can foster economic growth, create jobs and help solve shared challenges, such as in health, climate change and food security
- Explored how to advance cooperation in transatlantic marine, maritime and Arctic research, transport research, health research and materials science
Background

- Galway Statement on Atlantic Ocean Cooperation – Signed May 2013
  - Agreement between US, European Union, Canada to join forces on Atlantic research
  - Goals are to better understand the Atlantic Ocean and to promote the sustainable management of its resources
  - Study the interplay of the Atlantic Ocean with the Arctic Ocean, particularly with regards to climate change
  - Recognizes that Atlantic research will in many areas be more effective if coordinated on a transatlantic basis
A New Era of Trans-Atlantic Cooperation

The Galway Statement on Atlantic Ocean Cooperation
Launching a European Union – Canada – United States of America Research Alliance
24th May 2013

To provide a vision for enhanced cooperation on both sides of the Atlantic and a set of jointly agreed priority actions to provide the means to achieve these goals.
Key Challenges

- Integration of historical and paleo data, ocean observing and forecasting systems to provide better indicators of past, current and future environmental status
- Advance existing technologies, ecosystem and biogeochemical models, and develop empirical and modelling approaches to enable the quantification of evolutionary change in ocean systems
- Quantify the effects of multiple stressors on biogeochemistry, organisms and ecosystems
Key Research Areas

- Implement ecosystem approach to improve the stewardship of natural resources
- Main stream chemical and biological (including genomic) sensors as well as robotic and autonomous systems for ocean observation
- Evaluate the role of biodiversity in the health and functioning of ecosystems and the maintenance of ecosystem services
- Shared data collection, management and information infrastructure
- Standardize sampling and observation techniques, common data standards
Background

- **Future Earth** - New 10-year international research initiative focused on connecting research and responses to societal challenges

- International Collaborative Research Actions – issue annual multi-lateral calls for research (Belmont Forum)

- IMBER and SOLAS – international global environmental change programs that are making the transition to Future Earth

- WRCP collaborations - CLIVAR
Background

- Euro-Basin 2010-2014 – focus on North Atlantic
- OCB workshop summer 2013 NSF expressed interest in a North Atlantic-Arctic initiative
- Proposal to develop workshop for joint US, Canada, EU effort in North Atlantic-Arctic began summer 2013
- Workshop convened April 2014
Workshop Objectives

Considering the targets of the Galway Declaration, identify and report on potential areas for trans Atlantic collaboration which

- link basic and applied research
- span disciplines from physical oceanography to socio economics

As a starting point, the following themes have been put forward
Workshop Scientific Themes

- **Gateways**: Implications of warming, freshening, and more open Arctic-North Atlantic gateways for circulation, biogeochemical cycling, and marine ecosystems.
- **Circulation**: Role of large-scale (e.g., AMOC) versus meso- to sub-mesoscale processes (e.g., eddies, fronts) in different parts of the Atlantic-Arctic system and feedbacks to biogeochemistry and ecosystem structure and function.
- **Spring bloom dynamics**: Interactions between physical, biogeochemical, and ecological processes involved in the initiation, evolution, and termination of the spring bloom and associated sensitivities to climate and circulation changes.
- New Knowledge
Workshop Scientific Themes

- **Sustainable fisheries:** Collective impacts of fishing pressures, climate, and ocean circulation changes on key North Atlantic fisheries, including the lower trophic levels that support them.

- **Marine ecosystem health:** Sensitivity of marine biodiversity and ecosystem resilience to climate and circulation changes.

- **Prediction:** Development, validation, and application of advanced earth system models to predict future changes and inform decision-making.

- **Translation of new knowledge into advice**
Agenda

- Cross-cutting presentations – provide current understanding
- Four breakout groups
  - Overarching interdisciplinary science questions
  - Relevant international activities and resources
  - Knowledge gaps and future needs
  - Research tools and approaches

- Outcome – Science plan/implementation strategy that provides advice to funding agencies on key science issues for North Atlantic-Arctic system