Global Ocean Science Education Workshop

UNESCO Headquarters
Paris, France
# Table of Contents

Welcome.........................................................................................................................................................1

Workshop Goals ...............................................................................................................................................2

Agenda at a Glance, Day 1, Monday, June 13 ..............................................................................................3

Agenda at a Glance, Day 2, Tuesday, June 14 ..............................................................................................4

Agenda at a Glance, Day 3, Wednesday, June 15 .........................................................................................5

Logistics .........................................................................................................................................................6

Detailed Agenda, Day 1, Monday, June 13 ......................................................................................................7

Detailed Agenda, Day 2, Tuesday, June 14 ....................................................................................................8

Detailed Agenda, Day 3, Wednesday, June 15 ...............................................................................................9

Breakout Groups Topics and Questions .......................................................................................................10

UNESCO Goals 14 and 17 .............................................................................................................................11-15

Speaker and Panelist Biographies ...............................................................................................................16-25

Participant List .............................................................................................................................................26-28

UNESCO Map ..............................................................................................................................................29

Notes ............................................................................................................................................................30
Welcome 2016 Workshop Participants!

We are delighted to host the second Global Ocean Science Education Workshop (GOSE) at UNESCO Headquarters in Paris. UNESCO’s Intergovernmental Oceanographic Commission (IOC) in partnership with the Consortium for Ocean Science Exploration and Engagement (COSEE) and the College of Exploration welcomes our 2016 workshop participants, representing over 17 nations.

COSEE has grown from a primarily U.S. network, funded by the National Science Foundation, to an independent international organization that can now accept non-U.S. members. Since its inception, COSEE has focused on connections between ocean science research and education, integrating current research into education initiatives and training scientists, teachers, and students of all ages. The Consortium is now building bridges with the ocean policy and industry sectors.

The College of Exploration has for 25 years been building networks of ocean scientists and educators and learners of all ages around the world using technology to collaborate. The international community of ocean educators and ocean researchers working together is growing. The European Union, Canada and the USA signed the Galway Agreement in 2013 to encourage joint ocean science research projects and to work together to promote ocean literacy.

The IOC was established by UNESCO in 1960 and currently has 148 Member States. The Commission assists governments to address their individual and collective ocean and coastal management needs, through the sharing of knowledge, information and technology as well as through the co-ordination of programs and building capacity in ocean and coastal research, observations and services. It is the only UN body specialized in ocean science and services. The IOC has been a key player in the recent international debate on sustainable development as it relates to the ocean, and in the international negotiation on climate change highlighting the role of the ocean in the climate system.

In the spirit of engagement and exploration, the three hosting organizations encourage participants to build stronger connections throughout the global ocean science community - ocean scientists, students, ocean science education professionals, policymakers, and industry leaders. The 2016 workshop provides the opportunity to meet colleagues from across the globe, to engage in stimulating dialog, and contribute your expertise. We look forward to a productive workshop and a bright future for new international collaborations.

Best Regards,

Gail Scowcroft  
Executive Director, COSEE

Peter Tuddenham  
President, Col. of Exploration

Francesca Santoro  
UNESCO-IOC
Workshop Goals

2016 Global Ocean Science Education Workshop Goals:

- Bring together the ocean science, education, policy and business sectors
- Form new partnerships to take action on global ocean science education priorities
- Develop collaborative, cross-sector activities
- Set goals for the global ocean science education community, looking forward to 2017

Participants represent 17 countries in Africa, Asia, North, South, and Latin America, and Europe, as well as the European Commission.

Organized with support from:
Monday, June 13, 2016

1:00 pm  Welcome and Introductions

1:30 pm  Review of 2015 GOSE Workshop Outcomes

1:45 pm  Goals for 2016 GOSE Workshop

2:00 pm  Plenary Session: *The Role of Education and Capacity Development in the Context of International Ocean Governance*

3:00 pm  Plenary Session: *Building a Global Ocean Science Education Network*

3:15 pm  Plenary Session: *Integrative and Innovative Systems Approaches to Volatile, Uncertain, Complex and Ambiguous (VUCA) Problems*

4:00 pm  Panel I: *Science, Education, Business, and Policy Roles in Implementing International Policies Related to the Ocean*


5:15 pm  Cocktail Reception

7:00 pm  Adjourn

Notes:
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________

2016 Global Ocean Science Education Workshop
Tuesday, June 14, 2016

9:00 am   Welcome
9:05 am   Panel II: The Ocean and Human Health
10:00 am  Discussion: Prioritizing Educational Content Related to the Ocean and Human Health (Break Out Groups)
10:30 am  Coffee Break
11:00 am  Panel III: Blue Economy and Workforce Needs
12:15 pm  Discussion: Adapting Ocean Science Education to 21st Century Workforce Needs
1:00 pm   Lunch
2:00 pm   Open Space Session
3:30 pm   Coffee Break
4:00 pm   Open Space Session continued
5:00 pm   Adjourn
6:00 pm   Optional River Cruise

Notes:

_______________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

2016 Global Ocean Science Education Workshop
Wednesday, June 15, 2016

9:00 am  Welcome

9:05 am  Hands-On Session: Effective Practices in Ocean Citizen Science

11:00 am  Coffee Break

11:20 am  Hands-On Session: Effective Practices in Ocean Citizen Science continued

12:20 pm  Lunch

1:15 pm  Panel IV: Influence of Informal Science Education on Policy

2:30 pm  Discussion: Connections Between Citizen Science, Informal Science Education, and Policy

2:50 pm  Plenary Session: New Partnerships – Building on the Success of the TransAtlantic Galway Declaration

3:20 pm  Break

3:40 pm  Discussion: Goals and Next Steps for the Global Ocean Science Education Community

4:45 pm  Reflection and Adjourn

Notes:

________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________

2016 Global Ocean Science Education Workshop
Logistics

Workshop Location
All GOSE Workshop activities, including registration, will take place at the United Nations Educational, Scientific, and Cultural Organization, (UNESCO) Headquarters (Paris, France).

You must receive a badge to access the building and the meeting spaces. Badges can be retrieved from the Place de Fontenoy entrance starting at 12:15 PM on Monday, 13 June. Badges will be available at 8:15 am on Tuesday and Wednesday.

**General Session:** XII Fontenoy building (7, place de Fontenoy, 75007 Paris)

**Breakouts:** XIV Miollis building (1, rue Miollis, 75015 Paris)

Meals
Full workshop registration fee includes the following meals:

- Welcome cocktail reception on Monday 13 June at 5:15 pm
- Light refreshments during breaks on all workshop day
- Lunch on Tuesday and Wednesday 14 and 15 June.
- Please note that lunch will not be served on Monday 13 June.

- The best effort has been made to accommodate all dietary restrictions. If you have dietary questions or concerns, please see Andrea Gingras, GOSE Workshop Onsite Coordinator.
- Optional Dinner Cruise- Participants who selected the optional dinner cruise will be given information when they stop at the registration table.

Optional Dinner Cruise
Participants who selected the optional dinner cruise should meet at Marina de Paris (Port Solferino 23 Quai Anatole France, 75007 Paris) at 6:15 PM. The 1.5 hour cruise will set sail at 6:45 PM.

*The Marina de Paris Dinner Cruise starts at the Port de Solferino, next to the Musée D’Orsay. After passing the Île de Saint-Louis and the Île de la Cité (home to the famous Cathedral of Notre Dame), the tour continues past the Alexandre III Bridge. Here you will enjoy a magnificent view of the Eiffel Tower before the boat turns around in front of the Maison Radio France building.*

Wireless Internet Access

- ID : hq-air
- Password: uneswifi
**Monday, June 13, 2016**

1:00 pm  Welcome and Introductions
Francesca Santoro, Intergovernmental Oceanographic Commission (European Union, Science and Policy)

1:30 pm  Review of 2015 GOSE Workshop Outcomes and Goals for 2016 GOSE Workshop
Gail Scowcroft, Consortium for Ocean Science Exploration and Engagement COSEE and University of Rhode Island (USA, Science and Education)

2:00 pm  Plenary Session: *The Role of Education and Capacity Development in the Context of International Ocean Governance*

3:00 pm  Plenary Session: *Building a Global Ocean Science Education Network*
Gail Scowcroft, Consortium for Ocean Science Exploration and Engagement COSEE and University of Rhode Island (USA, Science and Education)

3:15 pm  Plenary Session: *Integrative and Innovative Systems Approaches to Volatile, Uncertain, Complex and Ambiguous (VUCA) Problems*
Peter Tuddenham, College of Exploration (USA and UK, Education and Policy)

3:30 pm  Coffee Break

4:00 pm  Panel I: *Science, Education, Business, and Policy Roles in Implementing International Policies Related to the Ocean*
Moderator: Francesca Santoro, Intergovernmental Oceanographic Commission (European Union Science and Policy)
Panelists:
Stephen Hall (invited), National Oceanography Centre and IOC vice-chair (UK, Policy and Business)
Bev Mackenzie, Institute of Marine Engineering, Science and Technology (UK Business)
Norma Patricia Muñoz Sevilla, Instituto Politecnico Nacional (Mexico, Science and Education)
Françoise Gaill, Centre National de la Recherche Scientifique (France, Science and Policy)


5:15 pm  Cocktail Reception

7:00 pm  Adjourn

---

**General Session:** XII Fontenoy building (7, place de Fontenoy, 75007 Paris)

**Breakouts:** XIV Miollis building (1, rue Miollis, 75015 Paris)
Tuesday, June 14, 2016

9:00 am  Welcome

9:05 am  Panel II: *The Ocean and Human Health*
Moderator: Peter Tuddenham, College of Exploration (USA and UK, Education and Policy)

Panelists:
- Corey Garza, California State University (USA, Science)
- Nawel Khelil, International Ocean Institute (Algeria, Science and Policy)
- Luis Icochea Salas, Universidad Nacional Agraria La Molina (Peru, Science and Education)
- Matthew White, University of Exeter (UK, Science)

10:00 am  Discussion: *Prioritizing Educational Content Related to the Ocean and Human Health* (Breakout Groups)

10:30 am  Coffee Break

11:00 am  Panel III: *Blue Economy and Workforce Needs*
Moderator: Ivar Babb, University of Connecticut (USA, Education and Science)

Panelists:
- Danilo Calazans, Instituto de Oceanografia (Brazil, Science and Education)
- Alessia Clocchiatti, European Commission Directorate-General for Maritime Affairs and Fisheries (Belgium, Policy)
- Luciana Ferraro, National Research Council (Italy, Science and Policy)
- Liesl Hotaling, Eidos Education (USA, Education)
- Bryan Bjorndal, Assure Controls and The Maritime Alliance (USA, Business)

12:15 pm  Discussion: *Adapting Ocean Science Education to 21st Century Workforce Needs* (Breakout Groups)

1:00 pm  Lunch

2:00 pm  Open Space Session

3:30 pm  Coffee Break

4:00 pm  Open Space Session continued

5:00 pm  Adjourn

6:00 pm  Optional River Cruise

**General Session:** XII Fontenoy building (7, place de Fontenoy, 75007 Paris)
**Breakouts:** XIV Miollis building (1, rue Miollis, 75015 Paris)
Wednesday, June 15, 2016

9:00 am  Welcome

9:05 am  Hands-On Session: *Effective Practices in Ocean Citizen Science*
  Robert Chen, University of Massachusetts Boston and COSEE (USA, Science and Education)
  Fiona Crouch, Marine Biological Association and Sea Change (UK, Science and Education)
  Judy Lemus, University of Hawaii and COSEE (USA, Science and Education)

11:00 am  Coffee Break

11:20 am  Hands-On Session: *Effective Practices in Ocean Citizen Science* continued

12:20 pm  Lunch

1:15 pm  Panel IV: *Influence of Informal Science Education on Policy*
  Moderator: Cynthia Hagley, Minnesota SeaGrant (USA, Education and Policy)
  Panelists:
  - Bernard Combes, UNESCO (France, Education and Policy)
  - Christos Ioakeimidis, Hellenic Centre for Marine Research (Greece, Science)
  - Grażyna Niedoszytko, Gdynia Aquarium (Poland, Education)
  - Douglas Meyer, The Ocean Project (USA, Policy)
  - James Wharton, Seattle Aquarium (USA, Education)

2:30 pm  Discussion: *Connections Between Citizen Science, Informal Science Education, and Policy*

2:50 pm  Plenary Session: *New Partnerships – Building on the Success of the TransAtlantic Galway Declaration*
  Paula Keener, National Oceanic and Atmospheric Administration (USA, Education and Policy)
  Ivan Conesa-Alcolea, European Commission Directorate-General for Research and Innovation (Belgium, Science and Policy)

3:20 pm  Break

3:40 pm  Discussion: *Goals and Next Steps for the Global Ocean Science Education Community* (Breakout Groups)

4:45 pm  Reflection and Adjourn

**General Session:** XII Fontenoy building (7, place de Fontenoy, 75007 Paris)
**Breakouts:** XIV Miollis building (1, rue Miollis, 75015 Paris)
Please note: There are questions below that refer to UNESCO’s Education for Sustainable Development Goals (specifically Goals 14 and 17). The goals and supporting material may be found on the following pages.

1. Tuesday, June 14, 2016, 10 am

*Prioritizing Educational Content Related to the Ocean and Human*

Based on the Panel Discussion, please discuss:

1. What are the gaps in knowledge needed to inform ocean scientists, educators, policy makers and businesses about this topic?
2. What are key ocean science content topics (both basic ocean science and more in-depth content) necessary to increase citizens’ understanding of the connections between the ocean and human health.
3. What can the global ocean science education community do to address SDG Goals 14 and 17 as they relate to this topic?
4. How could the GOSE workshop sponsors (IOC, COSEE, TCOE, and IMAREST) support future education activities related to this topic?

2. Tuesday, June 14, 2016, 12:15 pm

*Adapting Ocean Science Education to 21st Century Workforce Needs*

Based on the Panel Discussions, please discuss:

1. What skills need to be developed during ocean science student training? What is the potential for international collaborations to support this training?
2. What partnerships can be created to build knowledge, share knowledge, and take action to better prepare the 21st century workforce?
3. What can the global ocean science education community do to address SDG Goals 14 and 17 as they relate to this topic?
4. How could the GOSE workshop sponsors (IOC, COSEE, TCOE, and IMAREST) support future activities related to this topic?

3. Wednesday, June 15, 2016, 3:40 pm

*Goals and Next Steps for the Global Ocean Science Education Community*

1. What is needed to move the global ocean science education community forward?
2. What partnerships can be created to build knowledge, share knowledge, and take action?
3. What platforms exist to share knowledge globally on this topic? What new platforms need to be created?
4. How could the GOSE workshop sponsors (IOC, COSEE, TCOE, and IMAREST) build and or support partnerships?
UNESCO and Sustainable Development Goals

http://en.unesco.org/sdgs

**Education for Sustainable Development**

Sustainable development cannot be achieved by technological solutions, political regulation or financial instruments alone. We need to change the way we think and act. This requires quality education and learning for sustainable development at all levels and in all social contexts. Education for Sustainable Development (ESD) is about enabling us to constructively and creatively address present and future global challenges and create more sustainable and resilient societies.

UNESCO has been recognized globally as the lead agency for ESD. It coordinates the implementation of the Global Action Programme (GAP) on ESD, as official follow-up to the United Nations Decade of ESD (2005-2014).

**One Planet, One Ocean**

http://en.unesco.org/themes/one-planet-one-ocean

Conserving the diversity of life on Earth and ocean health is critical to global human welfare, yet essential resources are at risk from the direct results of unsustainable practices. Sustainable development cannot be achieved by technological solutions, political regulation or financial instruments alone. We need to change the way we think and act.

UNESCO is the lead agency for the UN Decade of Education for Sustainable Development (DESD, 2005-2014), which seeks to mobilize the educational resources of the world to help create a more sustainable future. Education for Sustainable Development (ESD) is about enabling us to constructively and creatively address present and future global challenges and create more sustainable and resilient societies.

Global environmental change has profound social and human dimensions. Over 30 UNESCO programmes in the sciences, education, culture and communication contribute to creating knowledge, educating and communicating about climate change, and to understanding the ethical implications for present and future generations.

UNESCO’s Intergovernmental Oceanographic Commission (IOC-UNESCO) strives to improve our relationship with the ocean through the development and dissemination of scientific knowledge and by educating the general public to improve responses to the unprecedented environmental changes and human impacts now occurring. The Commission promotes international cooperation in order to generate knowledge about the nature and resources of the ocean and coastal areas and to apply that knowledge to management, sustainable development, marine environment protection, and decision-making processes.

With the support of the World Heritage Convention, the most important natural sites receive international recognition as well as technical and financial assistance to deal with threats such as agricultural encroachment, alien species and poaching.

As part of its worldwide efforts to safeguard our common cultural heritage in its diverse forms, UNESCO adopted the Convention on the Protection of the Underwater Cultural Heritage in 2001. This international treaty sets out ethic principles for the protection of submerged heritage, provides a detailed state cooperation system, and practical scientific rules for the treatment and research of this heritage.
Goal 14: Conserve and sustainably use the oceans, seas and marine resources

http://www.un.org/sustainabledevelopment/oceans/

The world’s oceans – their temperature, chemistry, currents and life – drive global systems that make the Earth habitable for humankind. Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Throughout history, oceans and seas have been vital conduits for trade and transportation. Careful management of this essential global resource is a key feature of a sustainable future.

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
- By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
- By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
- By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation
- By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
- Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
UNESCO and Sustainable Development Goals

- Provide access for small-scale artisanal fishers to marine resources and markets
- Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want


A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level. Urgent action is needed to mobilize, redirect and unlock the transformative power of trillions of dollars of private resources to deliver on sustainable development objectives. Long-term investments, including foreign direct investment, are needed in critical sectors, especially in developing countries. These include sustainable energy, infrastructure and transport, as well as information and communications technologies. The public sector will need to set a clear direction. Review and monitoring frameworks, regulations and incentive structures that enable such investments must be retooled to attract investments and reinforce sustainable development. National oversight mechanisms such as supreme audit institutions and oversight functions by legislatures should be strengthened.

**Finance**

- Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection
- Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of ODA/GNI to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries
- Mobilize additional financial resources for developing countries from multiple sources
- Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress
- Adopt and implement investment promotion regimes for least developed countries
Technology

- Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.

- Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.

- Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology.

Capacity building

- Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation.

Trade

- Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda.

- Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries’ share of global exports by 2020.

- Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access.

Systemic issues

Policy and institutional coherence

- Enhance global macroeconomic stability, including through policy coordination and policy coherence.

- Enhance policy coherence for sustainable development.

- Respect each country’s policy space and leadership to establish and implement policies for poverty eradication and sustainable development.
**UNESCO and Sustainable Development Goals**

**Multi-stakeholder partnerships**

- Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries
- Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

**Data, monitoring and accountability**

- By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts
- By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

**Notes:**

________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
________________________________________________________________________________________________
Gail Scowcroft is the Associate Director of the Inner Space Center at the University of Rhode Island Graduate School of Oceanography, a national facility for ocean science research and education. She is the Executive Director of the Consortium for Ocean Science Exploration and Engagement (COSEE), one of the largest global networks of ocean science research and education institutions. Gail is also Director of the Alliance Office for the Climate Change Education Partnership, a network of U.S. climate change education programs. She is currently serving a four-year term on the U.S. Ocean Research Advisory Panel, the federal advisory committee established to provide independent advice and guidance to the President’s Cabinet.

Another area of Gail’s work involves the science of hurricanes. After Hurricane Katrina, she led an initiative to educate citizens along the Gulf and Atlantic Coasts about hurricane forecasts and preparedness. She is also active in the marine acoustics community and has led the *Discovery of Sound in the Sea* project for over 12 years. This project has produced a highly successful website, which receives over 13 million hits a year, www.dosits.org. She works with a team of internationally recognized experts to educate citizens and decision makers across the globe on the science of underwater sound.

For the first 18 years of her career, Gail conducted ocean science research focused on climate reconstruction and global climate change. For the last 20 years, she has served as a university administrator, directing ocean and climate science education programs. Gail is an international leader in ocean science education, lecturing across the globe on ocean science and climate change issues.
Peter Tuddenham  
College of Exploration, U.S.A.

Mr. Peter Tuddenham is a founder, Executive Director, and President of the College of Exploration (TCOE). Since 1997, Peter has created and produced hundreds of learning programs on the ocean. One of the first was a project connecting scientists at the Bermuda Biological Station for Research with professors teaching science education at Florida International University and Miami Dade Community College with students and also classroom teachers and high school students to use data from the Bermuda Atlantic Time Series. In 2001 he organized the first online conference on ocean literacy to support the National Geographic Oceans for Life project.

Peter has led the College of Exploration as partner and supporter of many NSF COSEEs (West, California, Coastal Trends, Great Lakes, Ocean Learning Communities) and is a founding member of the new COSEE – the Consortium for Ocean Science Exploration and Engagement. Current activities include supporting the creation and development of global ocean education networks, and participating in the European Union Blue Growth Sea Change Ocean Literacy project. Since 1991 he and the TCOE team have created earning experiences that link students with real world cutting-edge science and scientists by using collaborative learning technologies.

He has a Bachelor of Science Degree in Business from Regis College (now University) in Denver, Colorado. He has studied Learning Systems Behavior and Systems Design at the Saybrook University in San Francisco and the Open University in the United Kingdom.

Claudia Delgado  
IODE and Ocean Teacher Global Academy, Belgium

Dr Claudia Delgado joined the IOC Project Office for IODE in Oostende in January 2011. She is responsible for coordinating and managing the training activities developed by the OceanTeacher Global Academy and support training activities developed by other IOC Programmes.

Claudia obtained a university degree on Aquatic Environment Sciences from Porto University in 1998 and her PhD at the University of Madeira (Portugal) in April 2008. She started her professional career mainly in Madeira Island dealing with marine turtle research and conservation, amongst other marine biodiversity issues, including Environmental Impact Assessments.

After obtaining her PhD degree she was the regional focal point of the ERA-Net (European Research Area) project Net-Biome (NETworking tropical and subtropical Biodiversity research in OuterMost regions and territories of Europe in support of sustainable development) at Madeira Island. She moved to Belgium to join the IODE team in 2011.

2016 Global Ocean Science Education Workshop
Speaker and Panelist Biographies, Day 1


Stephen Hall
National Oceanography Centre and IOC vice-chair (Policy and Business), UK

Steve Hall is vice-chairperson of UNESCO’s Intergovernmental Oceanographic Commission, and Chair of the Society for Underwater Technology’s (SUT) Education and Training Committee. He is Head of the International Office at the UK’s National Oceanography Centre, where he provides international marine science policy advice to UK and overseas government bodies, and has over 25 years experience working in ocean science and technology including managing a robot submarine programme for four years, sea-going tracer chemistry work during the World Ocean Circulation Experiment in the 1990s and as the UK’s national point of contact for tsunami warning systems.

Steve has written web pages, careers advice articles and information publications for educators and young people, was author of the children’s book “Exploring the Ocean” for the 1998 International Year of the Oceans, and contributed two chapters to the 2015 book from SUT “Can a Lobster be an Archaeologist?”. He gives regular lectures to members of the public and professional groups and he is a Chartered Marine Scientist and Fellow of the Institute of Marine Engineering, Science and Technology.

Bev Mackenzie
Institute of Marine Engineering, Science and Technology (Business), UK

Dr Bev Mackenzie is the Director of Technical and Policy at the Institute of Marine Engineering, Science and Technology (IMarEST) and has responsibility for coordinating and managing the technical activities for the IMarEST membership; a role which incorporates providing opportunities for the exchange of ideas and practices and opportunities to influence the development of policy and legislation at local, regional and global levels. Dr Mackenzie has a degree in chemical oceanography and a PhD in physical oceanography from the University of Liverpool, UK with her technical specialism now covering the science and engineering policy interface with particular expertise in operational oceanography and ocean observing and issues relating to shipping and the environment.

Dr Mackenzie oversees the IMarEST contributions to the work of a number of Intergovernmental Organizations include the International Maritime Organization, the Intergovernmental Oceanographic Commission and the Intergovernmental Panel on Climate Change. In addition, Dr Mackenzie is passionate about developing activities that address gender diversity in marine and maritime science, engineering and technology and in engaging early career professions. She is a Fellow of the IMarEST and of the Marine Biological Association and is a Chartered Marine Scientist and Chartered Scientist.
Norma Patricia Muñoz Sevilla
Instituto Politecnico Nacional (Science and Education), Mexico

Born in Mexico city, biologist from National Poly-technique Institute, Ph.D. in Biological Oceanography from the University of “Aix-Marseille II” and post-doctorate at the “Ecole Pratique des Hautes Etudes” of Paris. Experienced in management of marine resources, pollution, coastal development, water resources, and integrated coastal zone management. Member of the “New York Academy of Sciences”, American Chemical Society, Mexico’s Advisory Council for Sustainable Development, and Coordinator of the Marine Observatory Jacques-Yves Cousteau. She has received 24 awards such as the “American Biographical Institute”, and the “Order of the Academic Palms” from the Government of France. She has acted as director for several research centers at the IPN. Dr. Muñoz is currently the Secretary of Research and Postgraduate Studies at the National Poly-technique Institute.

Françoise Gaill
Centre national de la recherche scientifique (Science and Policy), France

Françoise Gaill is a biologist, specialist in deep ocean ecosystems. She began her research at the National Museum of Natural History. She led the environmental department of sustainable development CNRS (Centre national de la recherche scientifique) before creating the institute CNRS Ecology and Environment. She chaired the committee operational research and innovation of the Grenelle of the sea.
Panel II: The Ocean and Human Health

Corey Garza
California State University (Science), USA

Dr. Corey Garza is an associate professor of Marine Science in the School of Natural Sciences at California State University, Monterey Bay. He serves as the principal investigator for the Marine Landscape Ecology Lab where his group employs GIS modeling and spatial statistics to study linkages between species distribution and habitat complexity in the marine environment. He is also active in promoting the participation of underrepresented in groups in STEM through research and conference based activities. Dr. Garza serves as the director for the Ocean Science REU at CSUMB and, for the last 12 years, has organized scientific and professional development sessions in Ocean Science at the annual SACNAS Advancing Chicanos/Hispanics and Native Americans in Science conference.

Nawel Khelil
International Ocean Institute (Science and Policy), Algeria

Nawel Khelil is an Algerian young researcher in integrated coastal zone management, at the national school of marine science and coastal management (ENSSMAL – Algeria), and co working with the University of Brittany (UBO- France). She is actually working on the assessment the process of integrated coastal zone management in the Algerian coastal zone; She is developing indices related to the environmental quality and also indices related to governance. She is also working on the context of the french management of the coastal zone, her of doing that is objective is to do a comparative study between the two cases and to suggest good practices for both area’s.

She is also highly interested on the social aspects in her researchers; The human dimension which is important for a good management of the coastal area’s. She is concerned of assessing the human integration in the management of the coastal zones.

Luis Icochea Salas,
Universidad Nacional Agraria La Molina (Science and Education), Peru

Luis studied at Universidad Nacional Agraria La Molina in Lima - Peru, Fishing Sciences. After that, he worked during 2 years aboard foreign trawlers from Poland and Cuban. He worked also aboard tuna clipper. In 1979, Luis obtained a scholarship Japan wherein he studied Japanese language and his Master in Tokyo University of Fisheries and Doctor course in Hokkaido University in the field of Fisheries oceanography. In 1985 returned to Peru and worked as professor in La Molina University wherein is working until now. He teaches General Oceanography and Fisheries Oceanography. He likes to teach his courses making at the same time research using real time oceanographic data. He was elected Dean of the faculty in 2 opportunities. He also worked twice as adviser of the Fisheries Minister. He was twice member of the board in IMARPE (Peruvian Sea Institute) during 3 and 4 years respectively and participated in 3 evaluation cruises of bottom resources and aboard research cruise to the Antarctic. Actually his studies are related with El Nino and Climatic changes and its influence in Marine resources and other sectors. He is president of SCOR Peru and president of Japan past scholarships member.
Matthew White  
University of Exeter (Science), UK

Mathew White is an environmental psychologist at the European Centre for Environment and Human Health, part of the University of Exeter. Since 2011 he has co-ordinated the Blue Gym project examining the potential benefits to health and well-being from interacting with the marine environment and inland waters. He uses a range a research methods to explore these relationships including analysis of large datasets, lab and field experiments, and qualitative interviews. The idea of the Blue Gym is to better understand the potential benefits to health and well-being while at the same time recognizing the risks, of interacting with aquatic environments.

Panel III: *Blue Economy and Workforce Needs*

Ivar Babb  
University of Connecticut (Education and Science), USA

Ivar G. Babb is the Director of the University of Connecticut’s Northeast Underwater Research, Technology and Education Center (NURTEC). He received a M.S. from the University of Maine and a M.A. in Marine Affairs from the University of Rhode Island.

He served as a John Knauss Sea Grant Fellow in 1987, working at the National Undersea Research Program (NURP). His current research interest is focused on the development of innovative educational programs to link research and education and the development and application of new technologies for education. He was the Director of the Center for Ocean Sciences Education Excellence - Technology and Engineering for Knowledge (COSEE-TEK). He has participated as Chief Scientist or scientist on 40 research and education cruises in the Atlantic, Great Lakes and abroad. He is also the Past-President of the National Associate of Marine Laboratories (NAML), during which time he Co-led a Strategic Visioning process for Field Stations and Marine...

Danilo Calazans  
Instituto de Oceanografia (Science and Education), Brazil

Danilo Calazans graduated in Oceanography at the Federal University of Rio Grande – FURG (1976). Danilo holds a Ph.D in Marine Biology at Queen Mary and Westfield College/Natural History Museum - London (1992). Currently is a Full Professor at the Oceanography Institute of Federal University of Rio Grande – FURG, and was the Coordinator of the Graduate Program in Biological Oceanography from 2001 to 2003. He is an expert in Biological Oceanography, specialized in larval stage identification and ecology of decapod crustaceans in estuaries and coastal marine area with more than 30 publications in scientific journals and books. Dr. Calazans teaches curriculum subjects for Oceanography and Biological Sciences Courses, and coordinates the Curriculum Practical Studies on board of R/V Atlântico Sul - FURG for students of Oceanography Courses of the Brazilian Universities. Since 2014 is Vice Coordinator of the Executive Committee for Human Resources Formation in Ocean Science of the Brazilian Interdepartmental Commission on Ocean Resources (CIRM) and the Brazilian Member State representative of IOC Capacity Development UNESCO Working Group.

2016 Global Ocean Science Education Workshop
Alessia Clocchiatti
European Commission Directorate-General for Maritime Affairs and Fisheries (Policy), Belgium

Alessia Clocchiatti joined the European Commission (DG MARE) in 2014 and works in the unit dealing with maritime policy in the Atlantic, Arctic and Outermost regions. Among the files she deals with, she is responsible of the maritime skills and blue careers file. Before joining the Commission, Alessia worked as policy advisor and was dealing with education and workforce policies. Alessia holds a Master Degree in International Relations and Diplomacy and a Post-Graduate Master in European Studies from the College of Europe.

Luciana Ferraro
National Research Council (Science and Policy), Italy

Luciana Ferraro is senior researcher at the Institute for Coastal Marine Environment of the National Research Council of Italy. Her research activity focuses on recent and fossil benthic foraminifera as environmental bio-indicators of pollution and as oceanographic, environmental and climatological proxies.

She has over 20 years of experience in marine geology and marine micropaleontology research, including leadership of oceanographic cruises and national projects. Dr. Ferraro has contributed over thirty-five scientific articles in peer-reviewed journals. For the last two years, she has Supervised the Training Programme in the frame of the projects “Technological Platform for Geophysical and Environmental Marine Survey-PiTAM” and “Integrated Systems and Technologies for Geophysical and Environmental Monitoring in coastal-marine areas-STIGEAC”. These projects were funded by the National Operative Programme (PON) ‘Research and Competitiveness’ 2007-2013 of the Ministry of Education, University and Research, which developed training for graduate and undergraduate students in the field of marine science and technology. She was also involved as tutor and teacher in the High Training program developed in the I-AMICA Project (Infrastructure of High Technology for Integrated Climate and Environmental Monitoring), which promoted courses that deal with the technical and scientific aspects of the environmental monitoring activity, the technological and instrumental aspects and management training.

Liesl Hotaling
Eidos Education (Education), USA

Liesl Hotaling, President of Eidos Education, has spent the past 20 years creating hands-on marine science and technology educational projects for primary through college students and educators. A former K-12 science teacher and adjunct community college instructor, she specializes in real time data education projects and hands-on science, technology, engineering and mathematics (STEM) educational projects supporting environmental observing networks. In addition to her teaching, she has served as the Assistant Director of the Center for Innovation in Engineering and Science Education (CIESE), Stevens Institute of Technology, and as a Station Biologist and Education Specialist for the New Jersey Sea Grant Consortium. She currently serves as the Vice President for Education on the Board of Directors of the Marine Technology Society, the co-chair of the Ocean Policy and Education Technical Committee for the IEEE Oceanic Engineering Society, and as an Officer and Program Chair for the P-12 Division of the American Society of Engineering Education. She holds a B.A. in Marine Science from Fairleigh Dickinson University, a M.A.T. in Science Teaching from Monmouth University, and a M.S. in Maritime Systems from Stevens Institute of Technology.
Bryan Bjorndal
Assure Controls and The Maritime Alliance (Business and Education), USA

Bryan Bjorndal is President and CEO of Assure Controls, a company he founded based on patented technology which provides fast and accurate testing of harmful contaminant levels in water samples. Developed by the US Navy laboratories in San Diego, “QwikLite” uses sensitive marine plankton as a biosensor, indicating harmful levels of inorganic and organic chemicals in water samples for 70% less cost and 80% faster than methods that have been used for over 30 years. He was the principal investigator on the company’s Cooperative Research and Development Agreement (CRADA) with Space and Naval Warfare Systems (SPAWAR); and is currently the principal investigator in a CRADA with the US Geological Survey (USGS) to develop measurement technologies and industry best practices for the management of ballast water for the maritime industry. He is co-author on several scientific publications and co-holder on three patents.

Hands-On Session: Effective Practices in Ocean Citizen Science

Robert Chen
University of Massachusetts Boston and COSEE, USA

Bob Chen is a professor in the School for the Environment and the Director of the Center for Coastal Environmental Sensing Networks (CESN) at the University of Massachusetts Boston. He received his A.B. from Harvard University in Chemistry and Physics and his Ph.D. in Oceanography from Scripps Institution of Oceanography. After a postdoctoral fellowship at the Woods Hole Oceanographic Institution, he has remained at UMassBoston since 1993. His research interests include carbon cycling in coastal waters, contaminants in urban harbors, and the application of coastal sensor networks to societal needs. He is also dedicated to ocean and environmental science education and outreach at the local, national and international levels. He led the Watershed-Integrated Sciences Partnership (WISP; wisp.umb.edu), COSEE OCEAN (coseeocean.net), the Boston Science Partnership, and the Boston Energy in Science Teaching (bostonscience.net) projects. He is currently a co-PI on an NSF Informal Science Education project on climate change entitled, Innovative Engagement: A Mass Transit Model for Informal Science Learning (ScienceToGo.org). He has published over 60 peer-reviewed articles in the area of coastal observations, carbon cycling, contaminant distribution and fate, and environmental education.

Judy Lemus
University of Hawaii and COSEE, USA

Dr. Judy Lemus is a science and education faculty member at the Hawaii Institute of Marine Biology at the University of Hawaii, Manoa. She develops collaborative partnerships that promote community-science interactions, integrate science and culture, and provide professional development opportunities for both young and established scientists. Dr. Lemus received her B.S. and M.S. degrees in Biology from UCLA and a Ph.D. in Marine Biology from the University of Southern California with a specialization in symbiotic systems. She led marine education and outreach programs in southern California for 10 years as the Marine Advisory Program Leader for USC Sea Grant and the Director of Education for the USC Wrigley Institute of Environmental Studies. Her citizen science work in Hawaii focuses on creating opportunities for community members that integrate science and traditional knowledge. Dr. Lemus is currently the principle investigator and director of the National Science Foundation “Center for Ocean Sciences Education Excellence” in Hawaii (COSEE Island Earth). She is an active participant of the International Pacific Marine Educators Network and a partner in the Pacific Islands Climate Education Partnership to provide professional development in climate science for high school teachers in Hawaii and the Pacific.
Fiona Crouch  
Marine Biological Association and Sea Change, UK

Fiona has worked in marine conservation, education and outreach for over 25 years. In March 2015 she began working on a new EU Horizon 2020 funded project called Sea Change which aims to ‘to bring about a fundamental “Sea Change” in the way European citizens view their relationship with the sea, by empowering them – as ‘Ocean Literate’ citizens – to take direct and sustainable action towards healthy seas and ocean, healthy communities and ultimately – a healthy planet’. She previously coordinated the Shore Thing Project for nine years. The project involved working with students, community groups and policy makers; organizing surveys to monitor the impacts of climate change on rocky shore species throughout the British Isles. She has also developed a number of education resources including the Shore Thing teachers’ pack, run training courses, developed project websites and maintained the database.

Fiona is the co-founder and President of European Marine Science Educators Association (EMSEA), has been instrumental in developing the association and organized the inaugural EMSEA conference in Plymouth. She works closely with transatlantic partners such as the National Marine Educators Association (NMEA) to develop Ocean Literacy in Europe and sits on the Board of the Asia Marine Educators Association (AMEA). In addition she is active within the citizen science, education and research community giving presentations at conferences, report writing, producing education articles and developing new innovative projects.

Panel IV: Influence of Informal Science Education on Policy

Cynthia Hagley  
Minnesota SeaGrant (Education and Policy), USA

As an extension educator, Cindy shares the science of lake and stream management with coastal communities, property owners, educators, and resource managers. Cindy also develops outreach products and programs related to Great Lakes ecosystem research and monitoring, stormwater management, shoreland property management, and the relationship between land use and water quality. Cindy holds a M.S. in Aquatic Ecology/Limnology from the University of California Davis and a B.S. in Biology from the University of Minnesota.

Grażyna Niedoszytko  
Gydnia Aquarium (Education), Poland

Grazyna has a background in environmental science, education, public relations, and communication. In the Gdynia Aquarium, she is responsible for promoting educational activities, creating educating programmes and communicating with the society by the social media tools. She serves as co-organiser of ocean literacy activities in the urban space of Pomerania province, such as Biodiversity Day, Baltic Sea Protection Day, Ecodiving Day.

Grazyna is also responsible for introducing a European Union part-financed project BalticMuseums 2.0 Plus (www.balticmuseums.org) to the Gdynia Aquarium. Through the interdisciplinary cooperation of Baltic States, the eGuides - a modern tool for reaching the modern society with the ocean knowledge, has been created. Grazyna strongly believes that education through entertainment is the best way of raising ecological awareness and building ocean literate society.

2016 Global Ocean Science Education Workshop

24
**Speaker and Panelist Biographies, Day 3**

**Christos Ioakeimidis**  
Hellenic Centre for Marine Research (Science), Greece (invited)

Dr. Christos Ioakeimidis is a Marine Scientist with a multidisciplinary scientific background in the fields of Oceanology, Oceanography, Environmental Sciences, Aquaculture and Fisheries. He has a special focus on Marine Litter, where he holds peer-reviewed publications in scientific journals, posters/symposium papers, reports and a Springer book. He has also participated in several research and monitoring cruises in the Eastern Mediterranean Sea (benthic litter, floating microplastics and on sediment).

He has been employed in both the private and public sectors, in positions of responsibility: Scientific Advisor at the Greek Ministry of Rural Development and Food, Marine Research Officer at the Presidency of the Council of the EU in Cyprus, Guest Lecturer at the University of the Aegean. Since 2013, he has been a Research Associate at the Hellenic Centre for Marine Research (HCMR) in the PERSEUS (FP7) Research Project (T2.3.5 Marine Litter), along with offering his expertise at the Marine Group of the European Topic Center (ETC/ICM) of the European Environment Agency (EEA) and participating in the EC’s Technical Group on Marine Litter (TGML). Through his involvement in the study of marine litter, Christos has developed collaborations in both the Mediterranean and Black Seas, introduced marine litter in environmental education and was actively involved in developing the EEA’s citizen-science Marine LitterWatch (MLW) smartphone App.

**James Wharton**  
Seattle Aquarium (Education), USA

Jim Wharton is the Director of Conservation and Education at the Seattle Aquarium where he works with a dynamic team committed to the Aquarium’s mission of *Inspiring Conservation of our Marine Environment*. To accomplish this, we need to change what people know about the ocean, how they feel about the ocean, and what they’re willing to do in the name of ocean conservation... and we have to do it all in the context of our local, national, and international communities. This means creating unforgettable experiences with people—at the Aquarium and beyond—that help them see the ocean as essential to their survival, as a source of hope and wonder and belonging.

Jim joined the Aquarium in 2012 from Mote Marine Laboratory where he served as Vice President of Education. He holds a B.S. from the University of Michigan, an M.S. from Oregon State University, and is currently completing a Ph.D. in educational measurement at the University of South Florida. Jim serves on the Board of Directors of the National Marine Educators Association (NMEA). He is also a member of the Conservation Education Committee of the Association of Zoos and Aquariums (AZA) and the Executive Committee of the Aquarium Conservation Partnership.

**Bernard Combes**  
UNESCO (Education and Policy), France

Mr. Combes supports UNESCO’s activities on Education for Sustainable Development (ESD). He is in charge of advocacy and communication, including publications and internet activities, public relations and learning materials development. He is the Education Sector focal point for biodiversity, and among other things, works to reinforce cooperation with other agencies and stakeholders, in regards to Communication, Education and Public Awareness activities in the areas of biodiversity, sustainable lifestyles, youth and gender issues. He is also tasked with coordinating the implementation of the Global Action Programme on ESD priority action area on Accelerating sustainable solutions at local level through partnership building and exchange of experiences.

Prior to working with UNESCO early childhood programme, he was involved with research, publications and databases on development and humanitarian NGOs and networks both at UNESCO in the Social and Human Sciences Sector and at the OECD Development Center.
Douglas Meyer
The Ocean Project (Policy), USA

As a principal with the consulting firm of Bernuth and Williamson since 2003, Douglas has worked in similar ways with other leading environmental organizations and philanthropic funders, including Defenders of Wildlife, Resources for the Future, Wildlife Conservation Society (WCS), the World Business Council on Sustainable Development, World Resources Institute and World Wildlife Fund (WWF), as well as the Bill and Melinda Gates Foundation and the Doris Duke Charitable Foundation. Previously he was on staff at The Nature Conservancy, where he focused on international communications and special initiatives, and had worked extensively in film, television and radio production. Fluent in Spanish and conversant in Portuguese, he graduated Phi Beta Kappa with a bachelor’s degree in comparative literature and Spanish from Indiana University, holds a master’s degree in

Paula Keener
National Oceanic and Atmospheric Administration (Education and Policy), USA

Paula Keener is a marine biologist and leads the Education Team for the National Oceanic and Atmospheric Administration’s (NOAA’s) Office of Ocean Exploration and Research. Paula received her BS in Marine Biology from the College of Charleston and her MS in Marine Biology from the University of Charleston. She conducted research on fishes off the Southeastern coast of the U.S. and off Belize, Central America. She leads teams of scientists and educators involved in ocean exploration expeditions in enhancing ocean literacy at national and international levels.

Paula is an Ocean Literacy Theme Co-Lead for the Tri-partite Galway Implementation Committee. She is Chair of the International Advisory Group for Sea Change, a European Union ocean literacy initiative. She served as Interagency Team Lead for Ocean Exploration for the National Ocean Policy. She was a member of The President’s Panel on Ocean Exploration and a member of the National Research Council Committee on Exploration of the Seas. She is a member of NOAA’s Education Council and Past-President of the National Marine Educators Association. Paula chairs the University of Charleston Graduate School Advisory Board. She has spent over 300 days at sea studying the ocean and its inhabitants.

Ivan Conesa-Alcolea
European Commission Directorate-General for Research and Innovation (Science and Policy), Belgium

Owning a Master of agronomist engineer (AgroParisTech) and a post-master in Ecotoxicology and Environmental management (Univ. of Paris XI), Ivan started its professional life in the unit "protection of the resources" of a potable water company and then in a SME specialised in depollution of soil and underground water. He quickly joined the International department of the French marine research institute, IFREMER, for 6 years to fundraise, build and manage international partnership and projects, in particular with Asian countries. He joined the DG Research and Innovation of the European Commission in 2005 to manage initiatives to increase the cooperation between national research programmes. He then spent two years in South-East Asia doing volunteer works for local marine conservation projects, teaching diving or guiding experienced divers in the National Park of Komodo. He came back early 2015 to the European commission as Policy Officer in the Unit Marine Resources of DG Research and Innovation. He manages research and innovation policies and projects contributing to the Blue Growth agenda for a sustainable Blue Economy. In particular, he is managing EU funded projects for the development of "Ocean Literacy" in Europe through the framework of the Transatlantic research alliance with Canada and US.
<table>
<thead>
<tr>
<th>Participant Name</th>
<th>Affiliation</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babb, Ivar</td>
<td>University of Connecticut</td>
<td><a href="mailto:ivar.babb@uconn.edu">ivar.babb@uconn.edu</a></td>
</tr>
<tr>
<td>Blakeman, Ann</td>
<td>Redrose Developments Ltd</td>
<td><a href="mailto:annblakeman@gmail.com">annblakeman@gmail.com</a></td>
</tr>
<tr>
<td>Bjorndal, Bryan</td>
<td>Assure Controls</td>
<td><a href="mailto:bryan@assurecontrols.com">bryan@assurecontrols.com</a></td>
</tr>
<tr>
<td>Calazans, Danilo</td>
<td>Federal University of Rio Grande</td>
<td><a href="mailto:doclarva@furg.br">doclarva@furg.br</a></td>
</tr>
<tr>
<td>Campillo Campbell, Carolina</td>
<td>S’Agulla</td>
<td><a href="mailto:carol@sagulla.org">carol@sagulla.org</a></td>
</tr>
<tr>
<td>Chen, Robert</td>
<td>University of Massachusetts Boston</td>
<td><a href="mailto:bob.chen.@umb.edu">bob.chen.@umb.edu</a></td>
</tr>
<tr>
<td>Clocchiatti, Alessia</td>
<td>Directorate-General Maritime Affairs and Fisheries</td>
<td><a href="mailto:Alessia.CLOCCHIATTI@ec.europa.eu">Alessia.CLOCCHIATTI@ec.europa.eu</a></td>
</tr>
<tr>
<td>Combes, Bernard</td>
<td>UNESCO</td>
<td><a href="mailto:b.combes@unesco.org">b.combes@unesco.org</a></td>
</tr>
<tr>
<td>Ivan Conesa-Alcolea</td>
<td>European Commission</td>
<td><a href="mailto:ivan.conesa-alcolea@ec.europa.eu">ivan.conesa-alcolea@ec.europa.eu</a></td>
</tr>
<tr>
<td>Crouch, Fiona</td>
<td>Marine Biological Association</td>
<td><a href="mailto:ficr@mba.ac.uk">ficr@mba.ac.uk</a></td>
</tr>
<tr>
<td>Delgado, Claudia</td>
<td>Intergovernmental Oceanographic Commission</td>
<td><a href="mailto:c.delgado@unesco.org">c.delgado@unesco.org</a></td>
</tr>
<tr>
<td>De Moor, William</td>
<td>Joint Programming Initiative Oceans</td>
<td><a href="mailto:willem.demoor@vliz.be">willem.demoor@vliz.be</a></td>
</tr>
<tr>
<td>Decker, Marilyn</td>
<td>University of Massachusetts Boston</td>
<td><a href="mailto:mjrdecker@gmail.com">mjrdecker@gmail.com</a></td>
</tr>
<tr>
<td>Eparkhina, Dina</td>
<td>European Global Ocean Observing System</td>
<td><a href="mailto:dina.eparkhina@eurogoos.eu">dina.eparkhina@eurogoos.eu</a></td>
</tr>
<tr>
<td>Ferraro, Luciana</td>
<td>National Research Council</td>
<td><a href="mailto:luciana.ferraro@iamc.cnr.it">luciana.ferraro@iamc.cnr.it</a></td>
</tr>
<tr>
<td>Frashure, Kim</td>
<td>Bunker Hill Community College</td>
<td><a href="mailto:kim.frashure@gmail.com">kim.frashure@gmail.com</a></td>
</tr>
<tr>
<td>Francoise Gaill</td>
<td>Centre National de la Recherche Scientifique</td>
<td><a href="mailto:Francoise.Gaill@cnrs-dir.fr">Francoise.Gaill@cnrs-dir.fr</a></td>
</tr>
<tr>
<td>Garza, Corey</td>
<td>California State University, Monterey Bay</td>
<td><a href="mailto:cogarza@csumb.edu">cogarza@csumb.edu</a></td>
</tr>
<tr>
<td>Gin, Iwona</td>
<td>Nausicaa, Centre National de la mer</td>
<td><a href="mailto:projects@nausicaa.fr">projects@nausicaa.fr</a></td>
</tr>
<tr>
<td>Gingras, Andrea</td>
<td>University of Rhode Island/COSEE</td>
<td><a href="mailto:agingras@uri.edu">agingras@uri.edu</a></td>
</tr>
<tr>
<td>Hagley, Cynthia</td>
<td>Minnesota Sea Grant</td>
<td><a href="mailto:chagley@d.umn.edu">chagley@d.umn.edu</a></td>
</tr>
<tr>
<td>Hall, Stephen</td>
<td>National Oceanography Centre</td>
<td><a href="mailto:sph@noc.ac.uk">sph@noc.ac.uk</a></td>
</tr>
<tr>
<td>Henderson, David</td>
<td>The Institute of Marine Engineering, Science and Technology</td>
<td><a href="mailto:david.henderson@imarest.org">david.henderson@imarest.org</a></td>
</tr>
<tr>
<td>Hotaling, Liesl</td>
<td>Eidos Education</td>
<td><a href="mailto:lieslhotaling@yahoo.com">lieslhotaling@yahoo.com</a></td>
</tr>
<tr>
<td>Participant List</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Huron, Florence</strong></td>
<td>Nausicaa, Centre National de la mer</td>
<td><a href="mailto:mrgoodfish@nausicaa.fr">mrgoodfish@nausicaa.fr</a></td>
</tr>
<tr>
<td><strong>Icochea, Luis</strong></td>
<td>Universidad Nacional Agraria La Molina</td>
<td><a href="mailto:licochea@lamolina.edu.pe">licochea@lamolina.edu.pe</a></td>
</tr>
<tr>
<td><strong>Ioakeimidis, Christos</strong></td>
<td>Hellenic Centre for Marine Research</td>
<td><a href="mailto:cioakeim@hcmr.gr">cioakeim@hcmr.gr</a></td>
</tr>
<tr>
<td><strong>Keener, Paula</strong></td>
<td>National Oceanic and Atmospheric Administration, Ocean Exploration and Research</td>
<td><a href="mailto:paula.keener@noaa.gov">paula.keener@noaa.gov</a></td>
</tr>
<tr>
<td><strong>Khelil, Nawel</strong></td>
<td>Ecole Nationale Superieure des Sciences de la Mer et de l Aménagement du Littoral</td>
<td><a href="mailto:nawkhelil@gmail.com">nawkhelil@gmail.com</a></td>
</tr>
<tr>
<td><strong>Lee, Byung-Gul</strong></td>
<td>Jeju Sea Grant Center/Jeju University</td>
<td><a href="mailto:leebg@jejunu.ac.kr">leebg@jejunu.ac.kr</a></td>
</tr>
<tr>
<td><strong>Lemus, Judith</strong></td>
<td>Hawaii Institute of Marine Biology, University of Hawaii</td>
<td><a href="mailto:jlemus@hawaii.edu">jlemus@hawaii.edu</a></td>
</tr>
<tr>
<td><strong>Kowalski, Juliette</strong></td>
<td>World Ocean Network</td>
<td><a href="mailto:info@worldoceannetwork.org">info@worldoceannetwork.org</a></td>
</tr>
<tr>
<td><strong>L’hermitte, Gaëlle</strong></td>
<td>Nausicaa, Centre National de la mer</td>
<td><a href="mailto:mrgoodfish@nausicaa.fr">mrgoodfish@nausicaa.fr</a></td>
</tr>
<tr>
<td><strong>Mackenzie, Bev</strong></td>
<td>The Institute of Marine Engineering, Science and Technology</td>
<td><a href="mailto:bev.mackenzie@imarest.org">bev.mackenzie@imarest.org</a></td>
</tr>
<tr>
<td><strong>Mata, Bernardo</strong></td>
<td>Estrutura de Missão para a Extensão da Plataforma Continental</td>
<td><a href="mailto:bernardo.mata@emepc.mam.gov.pt">bernardo.mata@emepc.mam.gov.pt</a></td>
</tr>
<tr>
<td><strong>Morisseau, François</strong></td>
<td>Agence des Aires Marines Protégée</td>
<td><a href="mailto:francois.morisseau@aires-marines.fr">francois.morisseau@aires-marines.fr</a></td>
</tr>
<tr>
<td><strong>Munoz, Norma</strong></td>
<td>Instituto Politecnico Nacional</td>
<td><a href="mailto:npmsevilla@gmail.com">npmsevilla@gmail.com</a></td>
</tr>
<tr>
<td><strong>Niedoszytko, Grazyna</strong></td>
<td>National Marine Fisheries Research Institute, Gdynia Aquarium</td>
<td><a href="mailto:gniedoszytko@mir.gdynia.pl">gniedoszytko@mir.gdynia.pl</a></td>
</tr>
<tr>
<td><strong>Oghenekaro, Efeturi</strong></td>
<td>National Oceanic and Atmospheric Administration</td>
<td><a href="mailto:efeturi.oghenekaro@noaa.gov">efeturi.oghenekaro@noaa.gov</a></td>
</tr>
<tr>
<td><strong>Papathanassiou, Martha</strong></td>
<td>Hellenic Centre for Marine Research</td>
<td><a href="mailto:mpapath@hcmr.gr">mpapath@hcmr.gr</a></td>
</tr>
<tr>
<td><strong>Patterson, Arthur</strong></td>
<td>National Oceanic and Atmospheric Administration, Ocean Exploration and Research</td>
<td><a href="mailto:arthur.e.paterson@noaa.gov">arthur.e.paterson@noaa.gov</a></td>
</tr>
<tr>
<td><strong>Pätzold, Martina</strong></td>
<td>University Bremen</td>
<td><a href="mailto:mpaetzold@marum.de">mpaetzold@marum.de</a></td>
</tr>
<tr>
<td><strong>Podlesinska, Weronika</strong></td>
<td>National Marine Fisheries Research Institute</td>
<td><a href="mailto:bujkabu@gmail.com">bujkabu@gmail.com</a></td>
</tr>
<tr>
<td>Participant</td>
<td>Affiliation</td>
<td>Email</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Rosales Quintana, Gandy</td>
<td>Universidad Nacional Agraria La Molina</td>
<td><a href="mailto:gandy.rosales@gmail.com">gandy.rosales@gmail.com</a></td>
</tr>
<tr>
<td>Russell, Annie</td>
<td>Newcastle University</td>
<td><a href="mailto:Annie.russell@ncl.ac.uk">Annie.russell@ncl.ac.uk</a></td>
</tr>
<tr>
<td>Santoro, Francesca</td>
<td>Intergovernmental Oceanographic Commission</td>
<td><a href="mailto:f.santoro@unesco.org">f.santoro@unesco.org</a></td>
</tr>
<tr>
<td>Scheurle, Carolyn</td>
<td>UPMC Observatoire Océanologique</td>
<td><a href="mailto:carolyn.scheurle@obs-vlfr.fr">carolyn.scheurle@obs-vlfr.fr</a></td>
</tr>
<tr>
<td>Schiebel, Hayley</td>
<td>Ocean Comunities in Education And Social Networks (COSEE OCEAN)</td>
<td><a href="mailto:hayleyschiebel@gmail.com">hayleyschiebel@gmail.com</a></td>
</tr>
<tr>
<td>Scowcroft, Gail</td>
<td>University of Rhode Island</td>
<td><a href="mailto:gailscow@uri.edu">gailscow@uri.edu</a></td>
</tr>
<tr>
<td>Selvaraj, John Josephraj</td>
<td>The National University of Colombia</td>
<td><a href="mailto:joj.selvaraj@unal.edu.co">joj.selvaraj@unal.edu.co</a></td>
</tr>
<tr>
<td>Sevin, Marie-Aude</td>
<td>Agence des aires marines protégées</td>
<td><a href="mailto:marie-aude.sevin@aires-marines.fr">marie-aude.sevin@aires-marines.fr</a></td>
</tr>
<tr>
<td>Tuddenham, Peter</td>
<td>College of Exploration</td>
<td><a href="mailto:peter@coexploration.net">peter@coexploration.net</a></td>
</tr>
<tr>
<td>Uiterwyk, Kristin</td>
<td>Urban Harbors Institute University of Massachusetts Boston</td>
<td><a href="mailto:kristin.uiterwyk@umb.edu">kristin.uiterwyk@umb.edu</a></td>
</tr>
<tr>
<td>Wharton, Jim</td>
<td>Seattle Aquarium</td>
<td><a href="mailto:j.wharton@seattleaquarium.org">j.wharton@seattleaquarium.org</a></td>
</tr>
<tr>
<td></td>
<td>Virtual Participants</td>
<td></td>
</tr>
<tr>
<td>White, Mat</td>
<td>University of Exeter, Medical School</td>
<td><a href="mailto:mathew.white@exeter.ac.uk">mathew.white@exeter.ac.uk</a></td>
</tr>
<tr>
<td>Bjorndal, Bryan</td>
<td>Assure Controls</td>
<td><a href="mailto:bryan@assurecontrols.com">bryan@assurecontrols.com</a></td>
</tr>
<tr>
<td>Meyer, Douglas</td>
<td>The Ocean Project</td>
<td><a href="mailto:dmeyer@theoceanproject.org">dmeyer@theoceanproject.org</a></td>
</tr>
</tbody>
</table>
General Session: XII Fontenoy building (7, place de Fontenoy, 75007 Paris)

Breakouts: XIV Miollis building (1, rue Miollis, 75015 Paris)