

Under the High Patronage of H.S.H. Prince Albert II of Monaco

# THE OCEAN

## GREEN SHIPPING & SUSTAINABLE ENERGY

Institut océanographique de Paris  
April 28, 2011 / April 29, 2011

The symposium aims at fostering a global view of the ocean as an ecological system, a transportation system and a source of energy. These three aspects of the ocean are becoming more and more integrated, and raise global governance issues, which will be addressed as well.



## CONFERENCE BOOKLET

## **Introduction:**

Interdisciplinary in nature, the symposium provides an opportunity to reflect on the policy and strategic implications of growing integration between four systems of central importance for the sustainable development of the planet: the ocean considered as a global ecosystem, the marine transportation system, the energy system and the global regulation system.

To promote a cross-disciplinary, cross-sector dialogue, the symposium looks successively at each of the four systems in light of its interrelationship with the other three, placing the long-term sustainable use of the ocean at the center. The symbol of this approach is a tetrahedron of which each of the four systems is an apex. The perspective associated with each single apex (e.g. the perspective of the shipping industry on the development of marine transportation) can then be reassessed within the holistic perspective of the four systems seen as a whole.

## **Scientific committee:**

René Aïd (EDF), Albert Bressand (Columbia University), Robert Calcagno (Institut océanographique), Pierre-André Chiappori (Columbia University), Ivar Ekeland (University of British Columbia & Université Paris-Dauphine), Damien Fessler (Université Paris-Dauphine), Roger Guesnerie (Collège de France), Delphine Lautier (Université Paris-Dauphine), Michel Petit (Institut océanographique), Rashid Sumaila (University of British Columbia).

## **Organizing committee:**

Ivar Ekeland (University of British Columbia & Université Paris-Dauphine), Damien Fessler (Université Paris-Dauphine), Ellena Fotinatos (Columbia University), Catherine de La Bigne (Institut océanographique), Delphine Lautier (Université Paris-Dauphine), Laurence Pécou (Institut océanographique).

**THURSDAY April 28, 2011**

**8:30am:** Registration, coffee and breakfast

**Introductory Session:**

**9:00am:** Welcome from the Host Organization

**M. Michel Petit**, Président du Conseil d'Administration, Institut océanographique

**9:10am:** Introduction to the Symposium

**Mme Marie-Pierre Gramaglia**, Conseiller de Gouvernement pour l'Équipement, l'Environnement et l'Urbanisme, Ministère d'État, Monaco

**Dr. Albert Bressand**, Executive Director of the Center for Energy, Marine Transportation and Public Policy (CEMTPP), Columbia University

**Session 1: The state of the ocean**

**9:30am:** Keynote

***The Ocean as a System***

**Daniel Pauly**, Professor and Principal Investigator of the Sea Around Us Project, University of British Columbia

**10:15am:** Panel Discussion

***Global Fisheries and Governance: An Environmental Challenge***

Chair : **Rashid Sumaila**, UBC Fisheries Centre

- **Cornelia Nauen**, European Commission
- **Jyotsna (Jo) Puri**, UNEP
- **Carl-Christian Schmidt**, OECD Fisheries
- **Gwenaëlle Le Gurun**, International Seabed Authority

**12:00pm:** Lunch

**Session 2: Marine transportation meets sustainable development**

**1:30pm:** Keynote

***Navigating the future of Marine Transportation***

**Peter Swift**, Former Managing Director, Intertanko

**2:00pm:** Panel Discussion I

***Challenges for shipping to 2030: Views from the financial sector, industry, and academia***

Chair: **Carleen Lyden-Kluss**, NYMAR/NAMEPA

- **Albert Bressand**, CEMTPP, Columbia University
- **Donald B. Frost**, Connecticut Maritime Authority
- **Jean-Yves Gueritaud**, Crédit Agricole CIB
- **Elie Chachoua**, CEMTPP, Columbia University

**3:30pm:** Coffee break

**3:45pm:** Panel Discussion II

***The governance challenge for shipping 2030: views from the multilateral organizations, flag states, and port states***

Chair: **Carleen Lyden-Kluss**, NYMAR/NAMEPA

- **Professor Dick Hodgson**, Dalhousie University in Halifax, Canada
- **Clay Maitland**, International Registries, Inc. (Marshall Islands Ship Registry), Chairman, NAMEPA
- **Dr. Thanos Pallis**, University of the Aegean and Council Member, International Association of Maritime Economists

**5:00pm:** Keynote

***Conclusion: On the road to sustainable and competitive shipping***

**Gildas Maire**, CEO, Louis Dreyfus Armateur

**5:30pm:** Conference adjourns

**FRIDAY APRIL 29, 2011**

**8:30am:** Coffee and breakfast

**Session 3: The Energy System and its Interactions with the Ocean**

**9:00am:** Keynote

***The Future of Energy***

**Ujjayant Chakravorty**, Professor and Canada Research Chair in Business and Economics, University of Alberta

**9:45am:** Panel Discussion

***The Energy System and the Ocean***

Chair : **G rard Riou**, Centre Ifremer de la M diterran e, tr sorier de l'Institut oc anographique

- **Paul Holthus**, World Ocean Council
- **Jean-Michel Lasry**, Cr dit Agricole CIB & Chair Finance and Sustainable Development
- **Delphine Lautier**, Universit  Paris-Dauphine & Chair Finance and Sustainable Development,

**12:00pm:** Lunch

**Concluding Session: The Ocean : A Holistic Perspective**

**1:00pm:** Keynote

***Global Governance of the Changing Ocean: A Science-Policy Disconnect?***

**Wendy Watson-Wright**, Assistant Director General and Executive Secretary, IOC/UNESCO

**1:30pm:** Roundtable Discussion I

***Examining Oceanic Systems: Market Perspective***

Chair: **Rashid Sumaila**, UBC Fisheries Centre

- **Ujjayant Chakravorty**, University of Alberta
- **Philippe Cury**, Institut de recherche pour le d veloppement (IRD), Ifremer & Universit  Montpellier II, membre du conseil scientifique de l'Institut oc anographique
- **Paul Holthus**, World Ocean Council
- **Carleen Lyden-Kluss**, NYMAR/NAMEPA

**2:45pm:** Coffee Break

**3:00pm:** Roundtable Discussion II

***Examining Oceanic Systems: Governance Perspective***

Chair: **Roger Guesnerie**, Collège de France

- **Albert Bressand**, CEMTPP, Columbia University
- **Ivar Ekeland**, University of British Columbia & Université Paris-Dauphine
- **Peter Swift**, Former Managing Director, Intertanko
- **Daniel Pauly**, Sea Around Us Project, University of British Columbia
- **Gérard Riou**, Centre Ifremer de la Méditerranée, trésorier de l'Institut océanographique

**4:15pm: Summary of the discussions and conclusion**

**Ivar Ekeland**, Canada Research Chair in Mathematical Economics,  
University of British Columbia & Université Paris-Dauphine

**4.45pm: End of the Conference**

## BIOGRAPHIES

**Albert Bressand** is the Aristotle Onassis Professor of Practice in International and Public Affairs at Columbia's School of International and Public Affairs (SIPA) and Executive Director of Columbia University's Center for Energy, Marine Transportation and Public Policy (...). Dr. Bressand earned advanced degrees in both mathematics and engineering at École Polytechnique in Paris and École Nationale des Ponts et Chaussées, a Diploma in European Affairs at Université Paris-Sorbonne, and an MPA and a PhD in Political Economy at the Kennedy School of Government at Harvard University.

**Elie Chachoua**, PhD is an international consultant on strategy/coordination in Climate and development issues. He specializes in multidisciplinary projects and provides services ranging from project/programme coordination to strategic analysis and advising. Elie has extensive experience and understanding of the climate negotiations process, which he covered as a consultant for academia (CEMTPP) and NGOs (Islands First). More recently, Elie has been working with the CEMTPP on the publication "Marine Transportation Scenarios to 2030", focusing on the global environmental dimension and the strategy aspects, in particular the refinement of the strategy scenarios. He has written on global environmental challenges, the GHG regulation of shipping and innovative financing mechanisms for development. (...). Elie is a Doctor in Theoretical Physics from Université Pierre et Marie Curie and holds a Master of Public Administration from the School of International and Public Affairs (SIPA) of Columbia University.

**Ujjayant Chakravorty** is Professor and Canada Research Chair in Business and Economics at the University of Alberta. He has taught at Emory University and is a visiting professor at the Toulouse School of Economics. His main research areas are resource and environmental economics. He has worked extensively on the economics of low-carbon energy including solar power, biofuels and nuclear power. His work on the economic prospects for solar energy has been extensively cited in the popular book *The Skeptical Environmentalist* by Bjorn Lomborg. His research has been published in noted academic journals such as the *Journal of Political Economy*, *American Economic Review* and *Econometrica*. He is on the editorial Board for the *Journal of Environmental Economics and Management* and *Resource and Energy Economics*. Professor Chakravorty obtained a B.S in Civil Engineering from the Indian Institute of Technology, Delhi and a Ph.D in Resource and Environmental Economics from the University of Hawaii at Manoa.

**Philippe CURY** is senior scientist at IRD (Institut de Recherche pour le Développement). He is the Director of the CRH (Centre de Recherche Halieutique Méditerranéenne et Tropicale) based in Sète France ([www.CRH-sete.org](http://www.CRH-sete.org)), of the UMR-EME 212 IRD-Iframer and University Montpellier 2, and the scientific coordinator of the Eur-Oceans Consortium that leads research on building scenarios for marine ecosystems at the European level. He has a PHD in Biomathematics (University of Paris VII- Jussieu, Paris - 1989) and an HDR (Habilitation à Diriger des Recherches) in 2007 at the University of Montpellier 2. Since 1980, he worked in Senegal, Côte d'Ivoire, California and South Africa to analyse the effect of climate on

fisheries and how to implement the ecosystem approach to fisheries. He has published more than 120 peer-reviewed articles in the main international journals (TREE, Canadian Journal of Aquatic Science, Ecology Letters, Fish and Fisheries, Marine Ecology Progress Series, Fisheries Oceanography....) and produced 9 books or book chapters (...). In 2008, he published a book for a large audience entitled 'une mer sans poisons' that is now translated in Japanese, Chinese and Catalan. He is now working on building scenarios for marine ecosystems under anthropogenic and natural forcings in the XXI century to support the emerging IPBES (analog to IPCC for biodiversity).

**Ivar Ekeland** is a former President of Université Paris-Dauphine, and held the Canada Research Chair in Mathematical Economics at the University of British Columbia until his retirement in 2011. He is a former Director of the research centers CEREMADE and Institut de Finance de Dauphine in Paris, and of the Pacific Institute of Mathematical Sciences in Vancouver. He has received prizes from the French Academy of Sciences, the French Mathematical Society, and the Belgian Academy of Sciences. He is a Fellow of the Royal Society of Canada, a foreign member of the Norwegian Academy of Sciences, and holds honorary doctorates from UBC and from the University of Saint-Petersburg for Economics and Finance. Ivar Ekeland is the founding editor of the "Annales de l'Institut Henri Poincaré-Analyse non linéaire" and he currently Editor in Chief of "Mathematics and Financial Economics". He has also written numerous books and papers in mathematics, economics and finance, and he is also a regular contributor to the journal Nature as well as to the magazine Pour la Science.

**Donald B. Frost** is the president of D.B. Frost & Associates, a marine transportation planning, consulting and arbitration firm. After graduating from the State University of New York, Maritime College with a B.S. degree in Marine Transportation and a U.S. Coast Guard license as Third Mate (Oceans), Mr. Frost sailed as a deck officer aboard U.S. flagged ships in world trade for almost three years, during which he raised his U.S. Coast Guard license to Second Mate, Oceans, Tonnage Unlimited (...). Mr. Frost served as an officer in the U.S. Naval Reserve with Military Sealift Command for eleven years before retiring. He was a founding member, Vice President and twice President (1988–92 and 2000–2004) of the Connecticut Maritime Association, Inc. with which he maintains a connection today as editor of the CMA Newsletter. He is a member of the Society of Maritime Arbitrators (SMA), The Society of Naval Architects and Marine Engineers (SNAME), the National Association of Maritime Organizations, Inc. (NAMO), and the Connecticut Maritime Coalition,

**Jean-Yves Guéritaud** is the Global Head of Ship Finance at Crédit Agricole Corporate and Investment Bank, Paris (CA-CIB). He has been in charge of the bank's shipping group since 1998. Crédit Agricole C.I.B. is the international corporate and investment banking arm of the Crédit Agricole Group. Born in 1949, he graduated from Ecole des Hautes Etudes Commerciales, Paris, in 1972 and has been continuously involved in ship-finance activities since 1980. Crédit Agricole C.I.B. is France's no.1 shipping bank and also one of the major players in the international ship-finance market. It has a long-established shipping finance tradition going back to its predecessors, CALYON, Credit Agricole-Indosuez and Banque Indosuez. The



Crédit Agricole C.I.B. shipping Group numbers 80 persons in total with specialist shipping teams in Hong Kong, Piraeus, Oslo, London Hamburg and Paris. The Crédit Agricole C.I.B. shipping portfolio adds up to USD 20 billion covering more than 1100 vessels owned by around 200 ship-owning groups world-wide, active in all segments of the shipping industry.

**Roger Guesnerie** is currently holder of the chair “Théorie économique et organisation sociale” at Collège de France, director of studies at EHESS, and president of the Paris School of Economics. Ex-student at École Polytechnique and École Nationale des Ponts et Chaussées, he has taught throughout the world. His work in public economics, on the theory of mechanisms and on general equilibrium, has made him one of the most renowned French economists. Roger Guesnerie has been a member of the editorial board of several high quality journals in Economics, co-editor of *Econometrica* from 1984 to 1989, President of the European Economic Association in 1994, President of the Econometric Society in 1996 and of the Association Française de Science Economique in 2003. He was awarded the *Medaille d'Argent* (Silver Medal) of the CNRS in 1993 and is an Honorary Foreign Member of the American Economic Association since 1997, and a member of the American Academy of Arts and Sciences since 2000.

**J. Richard Hodgson** presently lectures and conducts research in marine transportation policy and maritime administration as an adjunct professor at Dalhousie University, in Halifax, Canada. Prior to joining Dalhousie in July 2002 he undertook a three year assignment in Malmö, Sweden, with the World Maritime University, a UN subsidiary of the International Maritime Organization. He has extensive past experience in various facets of Canadian and international maritime policy and administration, having held federal positions at the Director General level for some 20 years. His scope of interest includes the economic, safety, security and environmental dimensions of shipping, marine support services and port operations, in both developed and developing countries (...). He is currently working with the Centre for Energy, Marine Transportation and Public Policy of Columbia University in New York, on a study examining the future evolution of the governance and oversight of international marine transportation.

**Paul Holthus** is founding Executive Director of the World Ocean Council – the international business alliance for Corporate Ocean Responsibility. The WOC brings together shipping, fisheries, oil/gas, aquaculture, tourism, offshore renewables and other ocean industries to catalyze business leadership and collaboration in addressing shared marine environmental issues. Paul is an environmental entrepreneur who works with the private sector to develop practical sustainable development solutions for international marine sustainability challenges. He has worked in over 30 countries in Asia, the Pacific, Central America, Europe and Africa, working with companies, industry associations, UN agencies, international NGOs, foundations, local communities and fishers.

**Jean-Michel Lasry** is Senior Scientific Advisor at CALYON and Chairman of the Steering Committee of the Chaire “Finance and Sustainable Development”. He was previously a member of the Executive Committee of CALYON Markets Activities for

four years as well as the Global Head of Research & Capital Management. Previously, he was a Deputy CEO of CPR Bank in Paris for four years. From 1994 to 1996, Jean-Michel Lasry was the CEO of the Caisse Autonome de Refinancement. From 1990 to 1993, he was a member of the Executive Committee of CDC Banking Divisions, as well as a Board Member of CDC Gestion. He worked as a Professor at Université Paris-Dauphine and École Polytechnique for 17 years. He published more than 100 scientific papers in Mathematics and Economic Journals.

**Delphine Lautier** is Professor of Finance at Université Paris-Dauphine. A member of the Steering Committee of the Chair “Finance and Sustainable Development, she is a researcher at DRM-Finance (Université Paris-Dauphine) and at the Fime Lab (Université Paris-Dauphine, CREST, EDF). Since 2000, she has also been an associate research fellow at Mines Paris-Tech. Her main areas of research are energy derivative markets and the term structure of commodity prices. She has published a number of books and articles on this topic.

**Gwenaëlle Le Gurun** joined the Secretariat of the International Seabed Authority (Kingston, Jamaica) in 2002. She is a legal officer. Since 1995, she has published some articles on the law applicable to mineral resources in the Area and on the protection of the underwater cultural heritage.

**Carleen Lyden-Kluss** is the founder of Morgan Marketing & Communications which represents the marriage of marketing communications and maritime. In addition she is Co-founder and Executive Director of the North American Marine Environmental Association (NAMEPA), the Executive Director of New York Maritime (NYMAR) and is the President of the Propeller Club, Chapter of the Port of New York/New Jersey. Carleen Lyden-Kluss graduated from Wellesley College with a BA in Political Science and History (minor in Economics) and studied Accounting at Cornell School of Business Administration. She is a member of the Connecticut Maritime Association, INTERTANKO, Women’s International Shipping and Trading Association (WISTA,USA) and The Marine Society, and serves on the Board of the Working Harbor Committee. Ms. Lyden-Kluss holds a USCG 100-ton captain’s license.

**Gildas Maire**, Chief Executive Officer, Louis Dreyfus Armateurs  
Graduated from Paris IX Dauphine University (Master's degree in Finance), Gildas Maire joined the Louis Dreyfus group in 1990 and was in charge of consolidation department in London. In 1995, he managed the energies activities department of LD Energy in France. He then joined the maritime branch of the group in 2002 and after being appointed finance and administration director of Louis Dreyfus Armateurs, he became member of the executive committee. Appointed in 2006, at age 42, chief operating officer, finance-administration he is as from 1st July 2010 chief executive officer, finance-administration, of Louis Dreyfus Armateurs group.

**Clay Maitland** has worked in the shipping industry since graduation from law school in 1968. Clay has been employed by International Registries, Inc. for 35 years and is now a managing partner of the company, which administers the Marshall Islands Ship Registry – the third largest registry in the world. He is President of the Trust Company of the Marshall Islands (TCMI), the statutory Maritime Administrator of the

Republic of the Marshall Islands. Prior to the year 2000, Clay held similar positions with regard to the maritime administration of the Republic of Liberia. Among his other affiliations: Director of the Coast Guard Foundation; Member of the American Bureau of Shipping, and of the National Cargo Bureau; Founding Chairman of the North American Maritime Environment Protection Association (NAMEPA), Chairman of the North American Maritime Ministry Association (NAMMA) Industry Advisory Board; Member of the American Bar Association, New York City Bar Association and Maritime Law Association of the United States ; former Chairman of the National Maritime Historical Society; former Chair of the Admiralty Committee of the New York City Bar Association, and of the Committee on Intergovernmental Organizations of the Maritime Law Association of the United States (MLA). Clay has served as a delegate to the Legal Committee of the International Maritime Organization (IMO). Clay received the Honorary Degree of Doctor of Letters from the State University of New York Maritime College in 2006, and was awarded the U.S. Coast Guard's Distinguished Public Service Award in 2010.

**Dr. Cornelia E. Nauen** is a Senior Policy Officer in International Cooperation in the Research and Innovation Directorate General of the European Commission. In 1979 she received her PhD. in Marine Ecology/Fisheries from the Christian Albrechts University in Kiel. From 1979 to 1985 at the Department of Fisheries of FAO in Rome, she worked on international cooperation in relation to aquatic biodiversity and combating marine pollution. End 1985, she joined the EC's Directorate General for Development in Brussels, responsible for fisheries cooperation with developing countries, particularly in Africa. Since 1999, Dr. Nauen has worked in different areas of international S&T cooperation between the EU and developing countries, most recently with a Latin America focus. Thematically, her focus was throughout on sustainable development in relation to aquatic ecosystems and related policy matters. She also heads a not-for-profit organisation '*Mundus maris* – Sciences and Arts for Sustainability' ([www.mundusmaris.org](http://www.mundusmaris.org)).

**Dr. Athanasios A. (Thanos) Pallis** is Ass. Professor at the Department of Shipping, Trade and Transport, of the University of the Aegean, Greece and the holder of a Jean Monnet grant on European Port Policy (since 2003; renewed in 2008). He holds an Adjunct Research Scholar post at the Centre for Energy, Marine Transportation and Public Policy (CEMTPP), Columbia University, New York, US where he was a Fulbright Scholar in the academic year 2008-9), He also holds a Visiting Professor post at the Centre for International Trade and Transportation, Dalhousie University, Halifax, Canada (since 2007), and lectures at the University of Antwerp, ITMMA (since 2006). His research and teaching interests include port economics and policy; (maritime) transport policies and governance; and the applications of EU microeconomic and industrial organisation policies in the maritime transport sector (...). Thanos Pallis received his BSc (Economics) from Athens University of Economics, Greece (1992), his MA (Economics of European Integration) from Exeter University, UK (1993), and his Ph.D. from the School of Management, University of Bath, UK in 1998.

**Dr. Daniel Pauly** is a French citizen who completed his high school and university studies in Germany; his doctorate (1979) and habilitation (1985) are in Fisheries Biology, from the University of Kiel. After many years at the International Center for Living Aquatic Resources Management (ICLARM), in Manila, Philippines, Daniel Pauly became in 1994 Professor at the Fisheries Centre of the University of British Columbia, Vancouver, Canada, of which he was the Director for 5 years (Nov. '03-Oct. '08). Since 1999, he is also Principal Investigator of the Sea Around Us Project, funded by the Pew Charitable Trusts, Philadelphia, and devoted to studying, documenting and promoting policies to mitigate the impact of fisheries on the world's marine ecosystems.

**Jyotsna (Jo) Puri** is currently working as adviser on green economy transformation at UNEP. She has 14 years of professional experience in the field of development specially in the areas of poverty, environment, infrastructure and energy. She has worked as associate research scientist at Earth Institute, Columbia University where she was also faculty at the School of International Public Affairs. She has led and been a team member for several thematic and country level evaluations and work in the field of rural development and environment at UNDP. She has also worked in policy assessment at the World Bank where she was the economist for the Guatemala Poverty Assessment and was a consultant at the Development Economics Research Group. Puri is the lead author of a book on development indicators produced by UNDP and the co-author of a book discussing implications of climate change commitments for developing countries. Puri holds a Ph.D. and a M.Sc. in Agriculture and Resource Economics, and a Masters in Development Economics.

An engineer by training, **Gérard Riou** began his career with a marine geophysics and oceanographic services company, where he conducted studies for offshore oil operations. He then worked at the aircraft engine manufacturer SNECMA, developing CAD software. In 1982 he joined Ifremer and developed data processing and management software before becoming responsible for Information Technology and then Marine Technology. He became Director of the Centre de Brest in 2003. He is now Director of the Centre Ifremer de Méditerranée, where he is involved in setting up marine research projects in cooperation with academia and industry. He is a trustee of the Oceanographic Institute, Foundation Albert 1st, Prince of Monaco.

**Carl-Christian Schmidt** has been the Head of the Fisheries Division in the Directorate for Food, Agriculture and Fisheries of the OECD since August 2001. He participates in a number of international fora representing the OECD and its work on fisheries, natural resource management and ocean issues. In 1997 and 1998, Mr. Schmidt set up the Marine Stewardship Council based in London, a non-governmental accreditation organization devoted to promote sustainable fisheries through certification. He holds a Master's degree in Economics and Political Science from Copenhagen School of Economics and Business Administration and a postgraduate Certificate of Advanced European Studies from the College of Europe, Bruges, Belgium.

**Dr. Ussif Rashid Sumaila** is Associate Professor and Director of the Fisheries Economics Research Unit at UBC Fisheries Centre. He specializes in bioeconomics, marine ecosystem valuation and the analysis of global issues such as fisheries subsidies, IUU (illegal, unreported and unregulated) fishing and the economics of high and deep seas fisheries. Sumaila has experience working in fisheries and natural resource projects in Norway, Canada and the North Atlantic region, Namibia and the Southern African region, Ghana and the West African region and Hong Kong and the South China Sea. He has published articles in several journals including, *Journal of Environmental Economics and Management*, *Journal of Bioeconomics*, *Land Economics*, *ICES Journal of Marine Science*, *Environmental and Resource Economics* and *Ecological Economics*. Sumaila's work has generated a great deal of interest, and has been cited by, among others, *the Economist*, *the Boston Globe*, *the International Herald Tribune* and *the Vancouver Sun*.

**Peter Swift** retired recently, after ten years, as Managing Director of INTERTANKO (The International Association of Independent Tanker Owners). He presently chairs the pan-industry "Maritime Piracy – Humanitarian Response Programme" and is involved with several seafarer welfare charities, including the Sailors' Society. He is also representing the Royal Institution of Naval Architects at key IMO meetings. He is a member of the Advisory Board of the Green Award, Chairman of the Korean Register's European Committee, a member of the American Bureau of Shipping and a Director of the Maritime Industry Foundation. He is a Naval Architect, with a doctorate in Marine Transportation Economics.

**Wendy Watson-Wright, Ph.D.**

Wendy Watson-Wright has been Assistant Director General and Executive Secretary of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC-UNESCO) since January, 2010. Headquartered in Paris, IOC-UNESCO promotes international cooperation and coordinates programmes in marine research, services, observation systems, hazard mitigation and capacity development in order to better manage the nature and resources of the oceans and coastal areas. From 2001 to 2009, she was Assistant Deputy Minister (ADM), Science Sector, in Fisheries and Oceans Canada (DFO) where she was responsible for providing the leadership, and policy and scientific direction for all science activities in the department, including oceanography, hydrography, and fisheries, aquaculture, habitat, climate and aquatic ecosystem science. Other positions she has held within the Canadian federal public service include research scientist (shellfish toxins) with the Inspection Services branch of DFO in Halifax, Nova Scotia; Director of the DFO St. Andrews (Marine) Biological Station in New Brunswick, Director General of DFO Audit and Evaluation (Ottawa, Ontario), and Director General of Strategic Policy and later Associate ADM of Population and Public Health Branch in Health Canada. A Killam scholar, Dr. Watson-Wright holds a Ph.D. in Physiology from Dalhousie University in Halifax, Nova Scotia. She has been a member of several boards including the Canadian Foundation for Climate and Atmospheric Science and Ocean Networks Canada, and was a Canadian commissioner on the Great Lakes Fishery Commission.



**The “Finance and Sustainable Development – Quantitative Approaches” Chair** is a network of researchers working together thanks to sponsorship from Crédit Agricole CIB, EDF and CDC. This project is the result of a collaboration, under the aegis of the Fondation Institut Europlace de Finance, between Université Paris-Dauphine, the Ecole Polytechnique, EDF, Crédit Agricole CIB and CDC. These partners decided to combine their intellectual and material sources in order to create a high-level, multi-disciplinary, scientific programme around the general theme of “finance and sustainable development”.

Underlying this initiative was the awareness that there is a little developed field covering the crucial topics of sustainable development, situated at the intersection of quantitative finance and various branches of economics. Within this, there is a need for innovative research studies that match the high stakes involved. The studies carried out are, by the very nature of the questions raised, multidisciplinary and are built on an ongoing dialogue between mathematicians, economists and financiers. They are articulated around three principal themes – in the long term: externalities, energy, and exhaustible resources – all of which involve major societal issues and raise unprecedented theoretical challenges.

The Chair currently brings together 24 senior researches and 15 doctoral students. It can take pride, after four years of existence, in having produced a significant number of high quality scientific works. Ten books and more than 80 research papers have been published or are forthcoming. Thirty-five conferences have been organized directly through or with the support of the Chair. Lastly, the quality of the project has resulted in the Chair receiving accreditation from the Clinton Global Initiative, in recognition of its social value and importance.

**For further information:**

"Finance & Sustainable Development - Opposition or Partnership", Paris, Economica, 2009.

“The Economics of Sustainable Development”, Paris, Economica, 2010.

<http://www.events.chairefdd.org/>



Housed in the School of International and Public Affairs at Columbia University, the Center for Energy, Marine Transportation and Public Policy has trained a new generation of policy makers and business leaders through its engaging and innovative academic and research programs. CEMTPP created the graduate-level concentration of International Energy Management and Policy (IEMP) in conjunction with the master's level degree programs at SIPA and through its diverse and distinguished faculty, the IEMP program is a leader in training students for challenging global energy issues.

In addition to academic programs, research at CEMTPP encompasses a number of subject areas, such as marine transportation, urban energy, global energy governance, and climate change. The Marine Transportation 2030 program focuses on the key drivers reshaping the maritime industry, an essential contributor to global economic and energy value-chains. The '6+1' program combines insights from six targeted research projects (which include ports & global logistics, technology, and international governance) to generate alternative scenarios for the future of the marine transportation industry to 2030. The Urban Energy Program conducts wide-ranging research on energy and climate policy, energy and carbon markets, regulation, and technology— as viewed from the perspective of cities in the US and internationally. Projects examine the rapidly expanding role cities are playing in shaping energy usage and carbon emission abatement policies. Energy efficiency, distributed power and heat generation, microgrids and smart grids and the deployment of low-carbon energy sources are analyzed as part of the broader search for the sustainable city of the future. The Global Energy Governance program fosters high-level dialogue on the policy and regulatory implications of energy interdependence. An emphasis on Eurasia, the role of transit countries, and implications of EU integration in the foreign policy and energy security fields provides insights into, and the possible reconciliation of, different national approaches to energy governance. Other research programs under development include a program on the role of energy resources and policies in the sustainable development of Africa and Institutions of Adaptation and Mitigation for Climate Change.



## **THE OCEANOGRAPHIC INSTITUTE – FOUNDATION ALBERT 1<sup>ST</sup>, PRINCE OF MONACO**

**The Oceanographic Institute is a Foundation of private rights, recognized for public use, established in 1906 by Prince Albert 1<sup>st</sup>. It includes two premises, the Oceanographic Institute of Paris and the Oceanographic Museum of Monaco.**

An erudite and adventurous reigning Prince, Albert 1<sup>st</sup> of Monaco gave his life and strength as much to the Principality as to the pursuit of scientific research. Fascinated by both anthropology and human paleontology, his later discovery of oceanography finally consumed his interest. He founded the Oceanographic Institute to promote the development of oceanography and make the results of scientific campaigns available to the public, including his own.

*« So I wanted to fill a void, by creating and establishing in Paris a centre for oceanographic studies linked closely with the laboratories and collections of the Oceanographic Museum of Monaco, where I've been gathering together for the past twenty years the results of my personal works and those of eminent collaborators from all countries of Europe. »*

Prince Albert 1<sup>st</sup> used these terms in a letter from 1906 to the French Minister of Education to explain the reasoning that led him to create both Institutes making up his foundation.

The main goal of the Oceanographic Institute, Foundation Albert 1<sup>st</sup>, is to allow the widest number of people to discover the ocean and oceanographic science. Towards this goal, the Institute developed its museum activities, educational workshops, aquariums, publications, libraries, teaching and conferences of awareness for the public. These activities occur and are shared between both premises of Paris and Monaco.





## UBC FISHERIES CENTRE

The **Fisheries Centre**, located at the **University of British Columbia**, promotes multidisciplinary study of aquatic ecosystems and broad-based collaboration with maritime communities, government, NGOs and other partners. The Fisheries Centre is the focal point for development of the widely-used Ecopath with Ecosim approach and software.

### Research Units and Programs

**Policy & Ecosystem Restoration in Fisheries (PERF)** Tony Pitcher and his research group focus on modeling and evaluation in support of policy goals that reconcile the preservation of biodiversity and services with sustainable and responsible fisheries. The group pioneers new techniques in restoration ecology for a wide range of marine and freshwater ecosystems from around the globe.

**Project Seahorse** advances marine conservation by undertaking biological and social research, then applying its findings to the management of populations, habitats, fisheries, and trades. Amanda Vincent and the rest of the team are active around the world, using seahorses as flagship species for broad issues.

The **Fisheries Economics Research Unit** studies the economics of capture and aquaculture fishery resources. Under the guidance of Rashid Sumaila, the unit explores how ecosystems can provide sustainable and equitable economic and social benefits to both present and future generations, while maintaining biodiversity and ecosystem services.

The **Aboriginal Fisheries Research Unit** combines traditional ecological knowledge and modern science to support more effective ecosystem and aquatic resource management.

The **Marine Mammal Research Unit**, led by Andrew Trites, conducts multidisciplinary research on marine mammals in the field, in captivity and in the laboratory. Members address pressing questions on the natural history, biology and conservation of marine mammals, and provide independent research and advice.

The **Sea Around Us** was established by Daniel Pauly to document large-scale impacts on marine ecosystems and find solutions to the challenges they pose. Its work is cataloged and accessible on the web, offering ecosystem data, distribution maps and catch data for more than 1,000 species, historical trends and peer-reviewed publications.

The **Quantitative Modeling Group** develops mathematical models to help fisheries biologists and resource managers adapt in the face of the extreme uncertainty that characterizes many marine ecosystems.

The **Nereus – Predicting the Future Ocean** program is an international research network that develops and evaluates future scenarios for managing fisheries in the world oceans.

