

ANTHONY T. CHARLES

Pew Fellow in Marine Conservation

Natural Resource Management & Governance: Sustainability, Resilience, Bioeconomics and Policy

Coastal & Ocean Management / Community-Based Management / Integrated Spatial Management

Finance, Information Systems & Management Science / Environmental Studies
Saint Mary's University, Halifax, Nova Scotia B3H3C3 Canada

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EDUCATION

B.Sc. (1978) Honours degree, Carleton University (Ottawa); Governor General's Medal.

Ph.D. (1982) University of British Columbia (Vancouver); Natural Sciences and Engineering Research Council's 1967 Science Scholarship. Thesis Supervisor: Colin Clark.

EMPLOYMENT

1985- Professor of Management Science & Environmental Studies (Cross-Appointment), Saint Mary's University, Halifax, Nova Scotia (Assistant Professor, 1985-88; Associate Professor, 1988-94; Professor, 1994-).

2006 Visiting Scientist, Policy and Planning, Fisheries Department, Food and Agriculture Organization of the United Nations (FAO), Rome, Italy.

1982-85 Head Research Scientist, Salmon Stock Assessment, Fisheries Research Branch, Department of Fisheries and Oceans, Vancouver, British Columbia.

1978-82 Instructor, Department of Mathematics, University of British Columbia, Vancouver, British Columbia.

HONOURARY ACADEMIC POSITIONS

2002- Adjunct Professor, Marine Affairs Program, Dalhousie University, Halifax, Nova Scotia.

1986- Adjunct Professor, School for Resource and Environmental Studies, Dalhousie University, Halifax, Nova Scotia.

1991-92 Visiting Professor, Economic Sciences Research Institute, University of Costa Rica, San Jose, Costa Rica.

PROFESSIONAL AWARDS, HONOURS AND APPOINTMENTS

International

- 2008- Subject Editor, *Marine and Coastal Fisheries* (American Fisheries Society journal).
2001- Pew Fellow in Marine Conservation, Pew Charitable Trusts.
2006-2010 Elected President, International Institute of Fisheries Economics and Trade.
2008 Visionary Award, Gulf of Maine Council on the Marine Environment.
2000-2006 Editorial Board Member, *Fish and Fisheries* (Blackwell Science journal).
2002-2006 International Advisory Council, University of British Columbia Fisheries Centre.
1991-2004 Associate Editor, *Natural Resource Modeling*.
2001-2003 Elected President and Past-President, Resource Modeling Association.
1985-2001 Canadian Correspondent, Fisheries Economics Newsletter.
1992-1999 Chair, Committee on Resource Policy Issues, Resource Modeling Association.
1992-1997 Co-Chair, Socioeconomics Network, International Institute for Fisheries Economics and Trade.
1988-1991 Elected Director, Board of Directors, Resource Modeling Association.

National

- 2008- Chair, Steering Committee, Robin Rigby Trust.
2001- College of Reviewers, Canada Research Chairs Program, Government of Canada.
2006-2010 Member, Science Advisory Council, Canadian Department of Fisheries & Oceans.
2006-2009 Member, Board of Directors, Ocean Management Research Network.
2001-2005 Director / Chairperson, Ocean Management Research Network.
2001-2003 Renewable Marine & Forest Resources Cluster Group, Environment & Sustainable Development Indicators Initiative, National Round Table on Environment & Economy.
2000-2002 Member, Industrial Engineering Reallocation Committee, Natural Sciences and Engineering Research Council of Canada.
2000-2002 Member, Research Management Committee, AquaNet Network of Centres of Excellence (on aquaculture).
1998-1999 Chairperson, Industrial Engineering Grant Selection Committee, Natural Sciences and Engineering Research Council of Canada (NSERC) (Member, 1996-1999).
1996-1998 Board of Directors, Oceans Institute of Canada (Member, 1991-2002).
1996-1998 Member, Panel on Change and Canadian Marine Fisheries, Canadian Global Change Program, Royal Society of Canada.
1993-1998 Ministerial Appointment, Fisheries Resource Conservation Council.
1978-1982 Natural Sciences and Engineering Research Council's 1967 Science Scholarship, University of British Columbia (Vancouver).
1978 Governor General's Medal, Carleton University (Ottawa).

Atlantic Canada

- 2008- Member, Stakeholder Advisory Council, Eastern Scotian Shelf Integrated Management, Department of Fisheries and Oceans, Government of Canada.
- 2003-2011 Member, Advisory Committee on the Sable Gully, Department of Fisheries and Oceans, Government of Canada.
- 2009-2010 Ministerial Appointment, Panel of Expertise on Parks, Government of Nova Scotia.
- 2001-2005 Chairperson, Environmental Studies Committee, Atlantic Provinces Council on the Sciences (Also: Member, 1989-1991, 2009-).
- 2000-2005 Member, Fishery Advisory Committee, Atlantic Policy Congress of First Nations Chiefs.
- 1998-2004 Member, Advisory Committee, Bay of Fundy Fisheries Council.
- 1996-2004 Member, Research and Advisory Committee, Fundy Fixed Gear Council.
- 2001-2002 Chairperson, Indicators Working Group, *Rural Communities Impacting Policy* CURA Project, Dalhousie University and Coastal Communities Network (Member, 2001-2005).
- 1999-2001 Member, Fisheries and Marine Core Group, Voluntary Planning Nova Scotia.
- 1999-2001 Member, Steering Committee, *Social Research for Sustainable Fisheries* CURA Project, St. Francis Xavier University, Antigonish, Nova Scotia.
- 1996-1998 Member, Coastal Zone Management Committee, Nova Scotia Round Table on Environment and Economy.
- 1994-1996 Chairperson, Environment and Development Committee, Ecology Action Centre (Halifax, N.S.) (Member, 1990-2001).

PROFESSIONAL AND COMMUNITY SERVICE

Lecture Series Coordinator

“Fisheries and Coastal Lecture Series” (a series of public lectures and workshops presented to fishers, researchers and the public), Saint Mary’s University, Halifax (1987-).

Conference Organizer

- Canadian Society for Ecological Economics – Halifax Conference (2007).
- Ocean Management Research Network, National Conferences: Ottawa (2002, 2003, 2005).
- World Conference on Natural Resource Modelling: Halifax (1988, 1999).
- International Workshop on Integrated Fish Farming: Wuxi, China (1994).

Organizational Memberships

International Institute for Fisheries Economics and Trade, International Society for Ecological Economics, International Association for Study of the Commons, Resource Modeling Association, Coastal Zone Canada Association, Fishermen and Scientists Research Society.

Journals for Which Referee Duties Performed

Society and Natural Resources	Ecology and Society
Conservation Biology	Marine Resource Economics
Fish and Fisheries	International Journal of Global Environmental Issues
Ecological Economics	Scandinavian Journal of Economics
Ecology and Society	Bulletin of Mathematical Biology
Ecological Modeling	Canadian Journal of Fisheries and Aquatic Sciences
Land Economics	Journal of Environmental Economics and Management
Natural Resource Modeling	Canadian Journal of Administrative Sciences
Asian Fisheries Science	Mathematical Modelling
International Economic Review	Mathematical Biosciences
ICES Journal of Marine Science	American J. of Mathematical and Management Sciences

FISHERY AND MARINE MANAGEMENT EXPERIENCE: CANADA

- 2006-2012 Principal Investigator, Coastal CURA Community-University Research Alliance. [This 6-year project studies and supports community involvement in local-level and large-scale integrated management initiatives relating to coastal and ocean management in the Maritimes.]
- 2001-2011 Director and Board Chairperson (2001-2005), Board Member (2006-2011), Ocean Management Research Network. [The OMRN is a Canadian network of researchers and research users with interests in human uses of the oceans and the management of these uses. I served as the Director of the network, and in particular the activities of its National Secretariat, for its initial five years.]
- 2006-2009 Member, Science Advisory Council, Fisheries and Oceans Canada. [Advised the Assistant Deputy Minister for Science, in Canada's Department of Fisheries and Oceans, on science policy, integration of governmental and academic science, and emerging directions for research on Canada's fisheries and marine environments.]
- 2001-2006 Director, 'Turning the Tide'. [This project, funded by my Pew Fellowship in Marine Conservation, works with fishery organizations and First Nations in Canada's Maritimes region to support community-based fishery management and positive collaboration among native and non-native fishery participants, through organizational, research, outreach and educational activities.]
- 2001-2005 Founder and Chair, Environmental Studies Committee, Atlantic Provinces Council on the Sciences. [APICS has an institutional membership including all the region's universities and many government research centres. I was invited to establish this committee of APICS, with a mandate to support environmental and resource management education and student involvement.]
- 1996-2005 Advisor, Bay of Fundy and First Nations Fisheries: Fundy Fixed Gear Council (1996-2005), Bay of Fundy Fisheries Council (1998-2005), Atlantic Policy Congress of First Nations Chiefs (2000-2005).

- 2001-2003 Member, Renewable Marine and Forest Resources Cluster Group, Environment and Sustainable Development Indicators Initiative, National Round Table on the Environment and the Economy. [Developed fisheries and marine indicators for incorporation in national accounts.]
- 1996-98 Member, Board of Directors and Management Committee, Oceans Institute of Canada. [Provided strategic and medium-term decision making for this independent NGO focusing on oceans and coastal management and policy.]
- 1993-1998 Ministerial Appointment, Fisheries Resource Conservation Council (Chairperson, FRCC Management and Regulations Committee). [Advised Government of Canada on conservation requirements for Atlantic Canada fisheries, implementation of resource management decisions and conservation impacts of conservation options.]
- 1992-1999 Chairperson, Standing Committee on Resource Policy Issues, Resource Modeling Association. [Developed an information base to facilitate application of analytical methods to resource management decisions in government and the private sector.]
- 1982-85 Head Research Scientist, Salmon Stock Assessment Unit, Fisheries Research Branch, Department of Fisheries and Oceans (Vancouver, B.C.). [Establishment and management of a research unit providing scientific input for senior fishery managers and senior decision makers, analysing policy options for Pacific fisheries, and developing retrospective stock assessment methods.]
- 1983-1985 Chairperson, Canada-U.S. Coho Salmon Technical Committee, and Canadian Technical Advisor, Canada-U.S. Salmon Treaty Negotiations. [Involved in drafting treaty language, and advising the Canadian Chief Negotiator on matters concerning coho salmon.]

FISHERY AND MARINE MANAGEMENT EXPERIENCE: INTERNATIONAL.

- 2003-2011 Author of reports for the Food and Agriculture Organization of the United Nations (FAO) & the Organisation for Economic Co-operation and Development (OECD): “Governance of Tenure in Small-Scale Fisheries: Key Considerations” (for FAO, 2011); “Good Practices in the Governance of Small-Scale Fisheries, with a Focus on Rights-Based Approaches” (FAO, 2010); “Integrated Ocean Management and the Fisheries Sector: Economic Tools and Governance Structures” (for OECD, 2011); “The Human Dimension of Fisheries Adjustment: Overview of Key Issues and Policy Challenges” (for OECD, 2006); “The Social Effects of Subsidies to the OECD Fisheries Sector: Key Issues and Analytical Directions” (for OECD, 2003).
- 1987- Lecturer, Training Programme for the Management and Conservation of Marine Resources, International Oceans Institute, Halifax (annually).
- 2006-2010 President (and President-Elect). International Institute of Fisheries Economics and Trade. [Major international association of economists and related professions dealing with economic, market and trade aspects of fisheries and aquaculture].
- 2006 Visiting Scientist, Food and Agriculture Organization of the United Nations, Rome, Italy. [Participated in organizing and implementing Workshops on Ecosystem Approach to Fisheries, and on Marine Protected Areas and Fisheries Management.]

- 1999-2004 Researcher, “Integrated Coastal Zone Management Education in Cuba” CIDA Tier II project. [Developing, implementing and supporting interdisciplinary masters programs on coastal zone management in three Cuban universities.]
- 2003, 2004 Invited Participant, International Workshop on International Fisheries Instruments and Factors of Unsustainability and Overexploitation, Food and Agriculture Organization of the United Nations (Mauritius 2003, Cambodia 2004).
- 1997-98 Coordinator (Canadian), “Fisheries Management Planning”, Oceans Institute of Canada and Organization of Eastern Caribbean States. [Implementation of fishery management plans with stakeholder consultations in nine OECS member states.]
- 1996-1997 Coordinator, “Aquaculture Economics in Developing Countries”, Food and Agriculture Organization of the United Nations. [Production of regional assessments and annotated bibliographies of state of knowledge in aquaculture economics, by a global team of researchers.]
- 1993-96 Principal Investigator (Economic Research) and Financial Manager, “Genetic Diversity in Aquaculture: Programme for Economically and Socially Sustainable Conservation and Development”, funded by the International Development Research Centre of Canada. [Examined the biological, economic and social aspects of genetic improvement and biodiversity conservation in aquaculture, for China, Thailand, Indonesia and the Philippines.]
- 1994 Principal Researcher, “Study on the State of Research in Marine Sciences”, a contractual report by Cartis Ltd. for the Costa Rican National Council for Research in Science and Technology. [Production of a strategic assessment of marine science research in Costa Rica.]
- 1992 Consultant, “Medium Term Planning Process for Research Programming”, International Centre for Living Aquatic Resources Management (ICLARM), Manila, Philippines. [Assessed research agenda for this international fisheries organization.]
- 1991-92 Visiting Researcher, Economic Sciences Research Institute, University of Costa Rica; Fisheries Management Section, Faculty of Biological Sciences, National University, Costa Rica.
- 1991-1993 Coordinator, “Global Fisheries Socioeconomics Survey Project”, a project funded by the International Development Research Centre of Canada. [Assembled and analysed research on fisheries & aquaculture socioeconomics in developing nations globally.]
- 1991 Consultant, “Fishery Management and Development: A Policy and Strategic Assessment”, International Centre for Ocean Development. [Preparation of a draft fishery policy.]
- 1989-1994 Lead Economics Researcher, “Chinese Integrated Fish Farming”, International Development Research Centre of Canada. [Analysis of fish farm data, institutional capacity-building and technical training.]

TEACHING AND UNIVERSITY SERVICE

Teaching of the following Environment and Natural Resource Courses:

ENVS2300 Environmental Science
ENVS4440 Environmental Policy
ENVS4450 Natural Resource Management (also listed as Geography GEOG4424)
ENVS4460 Methods of Environmental and Natural Resource Analysis (also GEOG4444)
ENVS4499 Seminar in Environmental Science
ECON3361 Fisheries Economics
ECON3362 Economics of Natural Resources and Environmental Management
ECON6611 Sustainable Resource Management
MGSC6690 Management Science of Natural Resources
ACST3302 Fishery Crisis: Past, Present and Future
MARA5021 Fisheries Management (Marine Affairs / Env'l Studies, Dalhousie University)
BIOL5846 Topics in Fisheries Management (Biology, Dalhousie University)

Teaching of Other Courses:

ECON3322 Current Economic Problems: Canada and the World
MGSC1205 Quantitative Methods for Commerce I: Finite Mathematics
MGSC1206 Quantitative Methods for Commerce II: Calculus/Probability
MGSC1207 Introductory Statistics for Commerce
SMBA506 Introductory Decision Analysis I: Statistics
SMBA507 Introductory Decision Analysis II: Operations Research
MGSC402 Operations Research Methods and Application
SMBA690 Operations Research Methods and Applications

Memberships on University Academic Units, Boards and Committees (Saint Mary's University):

- Coordinator, Environmental Studies Program (2010-2011) and Member, Environmental Studies Program Executive Committee (1996-).
- Senate Committee on Sustainability (2009-).
- Faculty of Graduate Studies and Research, Executive (2002-).
- International Development Studies Program Committee (1986-2002, 2005-).
- Panel of Full Professors, University Review Committee (2000-2003, 2009-).
- Atlantic Canada Studies Program Committee (1986-).
- Board of Governors (2007-2010).
- University Senate (2000-2002; 2007-2010).
- University Sustainability Committee (2007-2010).
- Search Committee, Ph.D. Program Director, Faculty of Commerce (2003).
- Board of Directors, International Education Centre (1990-93).
- Review Committee, Computer Science & Business Administration Joint Degree (1986).
- Senate Research Committee (1985-88).
- Research Chair (1987-88), Chairperson (1988-89) and Board member (1989-91, 1999-2003), Gorsebrook Research Institute for Atlantic Canada Studies.

RESEARCH GRANTS (SINCE 1990)

- 2011 Social Sciences and Humanities Research Council of Canada, Partnership Grant: “Community Conservation Research Network: Exploring Local-Level Environmental Stewardship Across Land and Sea” [One of thirty-five successful research proposals across Canada, out of over 150 ‘letter of intent’ submissions] (\$20,000).
- 2009-2014 Natural Sciences and Engineering Research Council of Canada, Discovery Grant: “Fishery, Coastal and Ocean Management: Integrated Systems Approaches for Sustainability and Resilience” [Nominated for DAP award supplement] (\$237,500).
- 2006-2012 Social Sciences and Humanities Research Council of Canada , Community-University Research Alliance: “Community-based Governance of Coastal Resources: Social, Economic and Policy Linkages in the Canadian Maritimes” (\$990,000).
- 2010-2015 Natural Sciences and Engineering Research Council of Canada, “Canadian Capture Fisheries Research Network”, Co-Investigator (\$1,000,000).
- 2006-2008 Fisheries and Oceans Canada, and Social Sciences and Humanities Research Council of Canada, Ocean Management National Research Network, Co-Investigator (\$1,000,000).
- 2004-2009 Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Decision Support for Fisheries and Ocean Management: Systems Approaches, Integrated Models and Sustainability Indicators” (\$135,000).
- 2001-2005 Fisheries and Oceans Canada, and Social Sciences and Humanities Research Council of Canada, Ocean Management National Research Network, Principal Investigator (\$526,500).
- 2001-2004 Pew Charitable Trusts, Pew Fellowship in Marine Conservation (\$225,000).
- 2000-2004 Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Sustainability Assessment in Natural Resource Systems” (\$135,000).
- 2000-2003 Social Sciences and Humanities Research Council of Canada, Research Development Initiative, “Developing an interdisciplinary participatory research methodology to further community-based resource management” (with F. Berkes, J. Kearney and M. Wiber, \$104,000).
- 1996-2000 Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Strategic Planning for Sustainable Development in Fisheries and Aquaculture” (\$92,000).
- 1996-97 Royal Society of Canada, Canadian Global Change Program, Grant to Support Participation on “Panel on Change and Canadian Marine Fisheries” (\$4,000).
- 1996-1999 Social Sciences and Humanities Research Council of Canada, Strategic Research Grant: “Fisheries, Uncertainty, and the Precautionary Approach to Resource Management” (with G.R. Munro and others, \$80,000).

- 1995-96 International Development Research Centre of Canada: “Sustainability Indicators for Aquatic Resource Systems” (\$3,500).
- 1993-1996 International Development Research Centre of Canada: “Genetic Diversity in Aquaculture: Programme for Economically and Socially Sustainable Conservation and Development” (with R. Doyle, Z. Basiao and J. Leith, \$400,000).
- 1992-1996 Natural Sciences and Engineering Research Council of Canada, Operating Grant: “Integrated Bio-Socio-Economic Modelling of Fisheries and Aquaculture Industries” (\$84,000).
- 1991-1993 International Development Research Centre of Canada: Coordinator, “Global Fisheries Socioeconomics Project” (\$10,000).
- 1989-1995 International Development Research Centre of Canada: “Chinese Integrated Fish Farming” (\$60,000).
- 1990-91 Department of Fisheries and Oceans Research Grants: “Fisheries and Aquaculture in Atlantic Canada: Bioeconomic Models & Policy Analysis” (\$12,000).

CONTRACTUAL RESEARCH

- 2011 Food and Agriculture Organization of the United Nations (FAO): “Governance of Tenure in Small-Scale Fisheries: Key Considerations”. [Writing of thematic paper and participation in FAO workshop in Rome, 2011.]
- 2010 Food and Agriculture Organization of the United Nations (FAO): “Good Practices in the Governance of Small-Scale Fisheries, with a Focus on Rights-Based Approaches”. [Prepared for Regional Workshops on “Securing Sustainable Small-Scale Fisheries: Bringing together responsible fisheries and social development”.]
- 2010-2011 Organisation for Economic Co-operation and Development (OECD): “Integrated Ocean Management and the Fisheries Sector: Economic Tools and Governance Structures”. [Prepared for the OECD Committee on Fisheries.]
- 2009-2010 Canadian Department of Fisheries and Oceans: “Identification of Social and Cultural Values in support of Integrated Oceans Management”. [Led a team to facilitate and report on a workshop to review social, economic and cultural assessment in Canada’s oceans, and a workshop on identification of social and cultural values in support of integrated oceans management.]
- 2007 Canadian Department of Fisheries and Oceans: “Social, Economic and Cultural Overview and Assessment for Ocean Management”. [Led a team to produce a review of major global experiences in assessing coastal and marine areas, from the perspective of human dimensions, with the aim of creating the knowledge basis required for ocean management initiatives.]

- 2006 Organisation for Economic Co-operation and Development (OECD): Keynote Paper and Presentation on “The Human Dimension of Fisheries Adjustment: Overview of Key Issues and Policy Challenges” for the Expert meeting on the Human Side of Fisheries Adjustment, Paris, France.
- 2003 Organisation for Economic Co-operation and Development (OECD): “The Social Effects of Subsidies to the OECD Fisheries Sector: A Scoping Paper on Key Issues and Analytical Directions”.
- 1999-2001 Food and Agriculture Organization of the United Nations (FAO): “Use Rights” chapter in Fishery Manager’s Guidebook. [Member of international team selected by FAO to develop a handbook oriented to fishery managers, particularly in developing countries.]
- 1996-1997 Food and Agriculture Organization of the United Nations (FAO): “Aquaculture Economics in Developing Countries”. [Coordinator of a project to produce regional assessments and annotated bibliographies of the state of knowledge in aquaculture economics.]
- 1994 Costa Rican National Council for Research in Science and Technology (CONICIT): “Study on the State of Research in Marine Sciences”. [Principal researcher, strategic assessment of marine science research throughout Costa Rica.]
- 1991 Canadian Department of Fisheries and Oceans: “Analysis of Fixed versus Re-randomized Stations in a Groundfish Trawl Survey”. [Supervision of research on the efficiency of sampling methods for fishery trawl surveys.]
- 1991 International Centre for Ocean Development: “Fishery Management and Development: A Policy and Strategic Assessment”. [Assessment of programming in fisheries management and development, and preparation of a draft fishery programming policy.]
- 1990 Canadian Department of Fisheries and Oceans: “Fishery Law Enforcement: Applications of Economic Analysis and Operations Research Models”. [Compilation of available research on the economics and operational analysis of law enforcement in fisheries.]
- 1987-1988 GTA Fisheries Consultants: “Economic Analysis of Inshore Atlantic Groundfish Fleets”. [Statistical analysis of aggregate fisher cost and earnings data.]

POST-GRADUATE FELLOWS AND VISITING FACULTY / RESEARCHERS

2011	Yetunde Agbeja	United Nations – Nippon Fellow; researcher visiting Saint Mary’s University from Nigeria (University of Ibadan) – studied fishery governance and applications to Nigeria.
2009	Robert Capistrano	United Nations – Nippon Fellow; researcher visiting Saint Mary’s University from the Philippines – studied aboriginal fishing rights in the Philippines and Canada.
2008	Nopparat Nasuchon	United Nations – Nippon Fellow; researcher visiting Saint Mary’s University from Thailand (Department of Fisheries: Chumphon Marine Fisheries Research and Development Center) – studied community fisheries in Gulf of Thailand.
2007	Alfredo Ortega, Ph.D. Angel Herrera, Ph.D.	Visiting Researchers. Collaborative research: interactions among multiple ocean uses (Mexico, Costa Rica, Canada).
2000-2001	Silvia Salas, Ph.D.	Post-doctoral Fellow. Research topic: Bioeconomic Models of Lobster Fisheries in Canada and Mexico.
1999-2000	Xiongzi Xue, Ph.D.	Post-doctoral Fellow. Research topic: Comparative Analysis of Coastal Zone Management in China and Canada.
1996	D. Rajasenan, Ph.D.	Shastri Scholar (1996). Employment: Department of Applied Economics, Cochin University of Science and Technology, India.
1995	Carsten Lynge Jensen	Visiting Researcher (1995). Danish Institute of Fisheries Economics Research, Esbjerg, Denmark.
1990-1992	Chiwen Yang, Ph.D.	Post-doctoral Fellow. Employment: financial analyst, New York, USA.
1988-1990	T. Kenchington, Ph.D.	Post-doctoral Fellow. Employment: fishery consultant, Gadus Associates, Halifax, Nova Scotia.
1989	Moustapha Deme	International Centre for Ocean Development, Trainee. Centre de Recherches Oceanographiques, Senegal.

SUPERVISION / EXAMINATION OF GRADUATE STUDENTS

- Current Lisette Muaror-Wilson, Interdisciplinary Ph.D.
Dalhousie University (Supervisor).
“Social-Ecological Systems: Assessing Risks and Enhancing Resilience in the Context of Community-Scale Coastal Management”
- Current Kate Bigney, Interdisciplinary Ph.D.
Dalhousie University (Supervisor).
“Interactions and Linkages of Community-Based Management and Ecosystem-Based Management for Fisheries and other Coastal Resources”
- Current Mauricio Castrejon, Interdisciplinary Ph.D.
Dalhousie University (Supervisor).
“Spatial Analysis and Governance of Fisheries in the Galapagos Islands”
- Current Rachel Long, Master of Applied Science.
Saint Mary’s University (Supervisor).
“Ecosystem-Based Management Applied to Small-Scale Fisheries in Canada”
- Current Melina Puley, Master of Environmental Studies.
Dalhousie University (Supervisor).
“Local Involvement in Fisheries Management for the Canadian Maritimes”
- Current Sam Juru, Master of Arts – International Development Studies.
Saint Mary's University (Supervisor).
“Coastal Communities in Maputaland, South Africa: Livelihood, Conservation and Tourism Interactions”
- 2011 Caitlin Dix, Master of Arts – International Development Studies.
Saint Mary's University (Supervisor).
“Interactions of Climate Change and Development Initiatives in Small Island Developing States, with an Application to Tuvalu”
- 2010 Tiffanie Rainville, Master of Environmental Studies.
Dalhousie University (Supervisor).
“Climate Change in Ecuador’s Coastal Communities and Mangrove Ecosystems: Local Knowledge, Perceptions and Priorities”
- 2010 Sarita Williams-Peter, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“A Framework for Good Governance: Increasing the Economic Gains of Small-Scale Fishers through Fish Marketing”
- 2009 Hannah Parris, Ph.D.
Australian National University (External Examiner).
“Governing Complex Commons: Essays in Regional Tuna Management in the Western and Central Pacific Ocean”

- 2009 Maria Hauck, Ph.D.
University of Cape Town (External Examiner).
“Rethinking Small-scale Fisheries Compliance: From Criminal Justice to Social Justice”
- 2009 Orlando Harvey, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“Community-Led Integrated Coastal Zone Management: Case Study from Malpeque Bay, Prince Edward Island”
- 2007 Minerva Arce, Interdisciplinary Ph.D.
Dalhousie University (Supervisor).
“Livelihoods, Aquatic Resources and Non-Monetary Values of Local Natural Resources in Mexico’s Lowland Maya Area”
- 2007 Lisette Muaror-Wilson, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“Community-Scale Coastal Social-Ecological Systems”
- 2006 Carolyn Hedley, Master of Environmental Studies.
Resource & Environmental Studies, Dalhousie University (Thesis Committee).
“An Assessment of the Eastern Scotian Shelf Integrated Management Initiative”
- 2005 Jorge Angulo, Ph.D.
Interdisciplinary Studies, Dalhousie University (Thesis Committee)
“Marine Protected Area Development in Cuba”
- 2005 Laura Loucks, Ph.D.
Resource & Environmental Management, Simon Fraser Univ. (Thesis Committee)
“The Evolution of the Area 19 Snow Crab Co-Management Agreement: Understanding the Interrelationship Between Transaction Costs, Credible Commitment & Collective Action”
- 2005 Kate Bigney, Master of Environmental Studies.
Resource & Environmental Studies, Dalhousie University (Thesis Committee).
“Community-Based Quota Management of the Scotia-Fundy Groundfish Fishery”
- 2005 Pramod Ganapathiraju, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“The Trawl Fishery of India’s Northeast Coast: An Analysis of catches, seasonal changes and ecological impacts”
- 2004 Merlina Andalecio, Ph.D.
Department of Biology, Dalhousie University (Thesis Committee).
“Assessment of Fishery Management Systems in Selected Bay Areas in the Philippines”

- 2004 Angel Herrera, Ph.D.
Northwest Center for Biological Research (CIBNor, Mexico). (Thesis Committee)
“Environmental Indicators for Sustainable Development of the Tourism Industry in La Paz and Los Cabos, Baja California Sur: Comparison and Recommendations”
- 2004 Gina Funicelli, M.B.A.
Faculty of Commerce, Saint Mary’s University (Supervisor).
“Innovation in the Fisheries Industry: How Will Acadian Communities in Southwest Nova Scotia Plan Their Future?”
- 2004 Peter Hayes, M.A.
International Development Studies, Saint Mary's University. (Thesis Committee)
“Participatory Micro-Integration of Vulnerable Coastal Communities into Climate Change Adaptation Strategies for Sustainable Livelihoods: A Case Study of Dominica”
- 2004 Kofi Ankamah, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“Modern Approaches to Fisheries Monitoring, Control and Surveillance: An Assessment of their Relevance to Developing Countries”
- 2003 Lucia Fanning, Ph.D.
Interdisciplinary Studies, Dalhousie University (Thesis Committee)
“Influence Analysis of Policy Network Actors on Decisions Affecting Ocean Use and Space in Atlantic Canada”
- 2003 Tavis Potts, Ph.D.
University of Tasmania (External Examiner).
“Sustainability Indicators in Marine Capture Fisheries”.
- 2002 Jennifer Hatt, Master of Atlantic Canada Studies.
Saint Mary’s University (Supervisor).
“On the Shoreline of Success: A Grower-Centred Examination into Definitions of and Impacts on Success in Aquaculture Ventures in Nova Scotia”.
- 2002 Heather Boyd, Master of Environmental Studies.
School for Resource & Environmental Studies, Dalhousie University (Supervisor).
“Fisheries Indicators: Development and Evaluation of Indicators to Monitor Fisheries Sustainability at the Community Level”.
- 2002 Erin Breen, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“A Brief Exploration of Community Priorities in Three Newfoundland Fishing Communities and their Relationship with Indicators to Monitor Fisheries Sustainability”.

- 2001 Pierre Clement, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“The Role of Scientific Advice in the Management of Salmon Mariculture Development in Southwest new Brunswick”
- 2001 Bertrand LeGallic, Ph.D.
Universite de Bretagne Occidentale, Brest, France (External Examiner).
“Bioeconomic Modelling and Sustainable Management of a Complex System of Common Renewable Resources. Application to the Case of English Channel Fisheries”.
- 2001 Carolyn Moore, Master of Environmental Studies.
Resource & Environmental Studies, Dalhousie University (External Examiner).
“The Application of an Environmental Management Strategy to Fisheries: A Case Study of the Fishery of the Chippewas of Nawash First Nation”.
- 1999 Tara Barnable, Master of Environmental Studies.
School for Resource & Environmental Studies, Dalhousie University (Supervisor).
“Use Rights and ‘Community’ Management: Case Studies of a Scotia-Fundy Experiment”.
- 1998 Jennifer Graham, Master of Environmental Studies.
Resource & Environmental Studies, Dalhousie University (Thesis Committee)
“Making Links: Participation in Community Fisheries Management in Nova Scotia and the Philippines”.
- 1998 Laura Ferriera, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“Economic Analysis of the Shrimp Trawl Fisheries of Trinidad”.
- 1997 Clarrie MacKinnon, Master of Marine Managemen.
Marine Affairs Program, Dalhousie University (Supervisor).
“The Northwest Atlantic Fisheries Organization: An Objective, Internal View”.
- 1997 Andre Kong, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“A Critical Review of the Jamaica Conch Management Plan: Management Recommendations for the Artisanal Conch Fishery”.
- 1997 Michael Honeth, Master of Marine Management.
Marine Affairs Program, Dalhousie University (Supervisor).
“Individual Transferable Quotas: Nova Scotian Fishing Communities in a Closed Ocean”.
- 1997 Blair Richards, M.B.A.
Faculty of Commerce, Saint Mary’s University (Supervisor).
“Halterm Gatehouse Research Project”.

- 1996 Aggrey Ambali, Ph.D.
Biology, Dalhousie University (Thesis Committee).
“Relationship Between Domestication and Genetic Diversity of Tilapias in Malawi”.
- 1996 Maureen Connolly, M.B.A.
Faculty of Commerce, Saint Mary’s University (Supervisor).
“A Survey-Based Analysis of Nova Scotian Fishermen Investment Behaviour”.
- 1996 Sean McDonnell, M.D.E.
Economics, Dalhousie University (Thesis Committee).
“An Integrated Bioeconomic Analysis of Atlantic Salmon Aquaculture”.
- 1996 Ian Joyce, Ph.D.
Interdisciplinary, Simon Fraser University (External Examiner).
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- 1994 Narendra Jain, M. Applied Science.
Industrial Engineering, Technical University of Nova Scotia (Thesis Committee).
“A Multi-Scenario Decision Model for the Engineering Economics of Capital Intensive Projects”.
- 1993 Cherdsak Virapat, Ph.D.
Biology, Dalhousie University (Thesis Committee).
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- 1993 Hisafumi Kusuda, Ph.D.
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- 1993 Veronika Brzeski, M.Sc.
Biology, Dalhousie University (External Examiner).
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- 1992 Mary Gregory, M.A.
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- 1991 Olu Olojede, Master of Environmental Studies.
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- Charles, A. "Fishery conflicts: A unified framework". *Marine Policy*, 16(5):379-393 (1992).
- Charles, A. "Canadian fisheries: Paradigms and policy", p.3-26 in: *Canadian Ocean Law and Policy*. D. VanderZwaag (editor), Butterworths, Markham (1992).
- Charles, A. "Sustainability lessons from the fishery sector", p.151-173 in: *Sustainable Development and Economic Policies in Latin America*. Olman Segura (editor), Universidad Nacional, Heredia, Costa Rica (1992) (Spanish).
- Charles, A. "Uncertainty and information in fishery management models: A Bayesian updating algorithm". *American Journal of Mathematical and Management Sciences* 12:191-225 (1992).
- Charles, A. "Small-scale fisheries in North America: Research perspectives", p.157-184 in: *Research and Small-Scale Fisheries*. J.R. Durand, J. Lemoalle and J. Weber (editors), ORSTOM, Paris France (1991).
- Charles, A. "Bio-socio-economic dynamics and multidisciplinary models in small-scale fisheries research", p.603-608 in: *Research and Small-Scale Fisheries*. J.R. Durand, J. Lemoalle and J. Weber (editors), ORSTOM, Paris France (1991).
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- Charles, A. and C. Yang, "A decision support model for coastal fishery planning: Optimal capacity expansion and harvest management", p.71-88 in: *Operations Research & Management in Fishing*. A.J.M. Guimaraes Rodrigues (editor), Kluwer Academic Publishers (1990).
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- Charles, A., M.L. Cross, and R.L. Mazany, "Fisheries regulation and investment behaviour: A conceptual framework and its relevance to the Nova Scotia fishing industry", p.622-640 in: *Proceedings of the Fourth Conference of the International Institute of Fisheries Economics and Trade*. Esbjerg, Denmark (1990).
- Bradfield, M., A. Charles, G. MacDonald, M. MacDonald and R. Williams (Editors), "*Economic Democracy in Atlantic Canada: Proceedings of a Conference on Popular Participation and Development*", Gorsebrook Research Institute, Halifax, 43p. (1990).
- Charles, A. "Bio-socio-economic fishery models: labour dynamics and multiobjective management". *Canadian Journal of Fisheries and Aquatic Sciences* 46:1313-1322 (1989).
- Charles, A. Book Review of "Taking Risks: The Management of Uncertainty". *Canadian Journal of Operational Research and Information Processing (INFOR)* 27:122-125 (1989).
- Charles, A. "Fishery Socioeconomics: A survey". *Land Economics* 64:276-295 (1988).
- Charles, A. "In-season fishery management: A Bayesian model". *Natural Resource Modeling* 2:599-629 (1988).
- Charles, A. "Investment in natural resource industries: Applications of operations research methods", p.303-317 in: *Strategic Planning in Energy and Natural Resources*. B. Lev, J. Bloom, A. Gleit, F. Murphy and C. Shoemaker (editors), North-Holland (1987).
- Charles, A. "Cost/benefit Analysis and Fish Finding Technology", unpublished manuscript, prepared for: Seminar on Fish Finding Technology, Technical University of Nova Scotia, Halifax, Canada (1987).
- Charles, A. "Coastal state fishery development: Foreign fleets and optimal investment dynamics". *Journal of Development Economics* 24: 331-358 (1986).
- Charles, A. "Coastal fisheries, investment planning and the role of foreign fleets: An economic analysis", p.205-216 in: *Proceedings of the International Conference on Fisheries*. GERMA (editors), Rimouski, Canada, (1986).
- Charles, A. "Nonlinear costs and optimal fleet capacity in deterministic and stochastic fisheries". *Mathematical Biosciences* 73:271-299 (1985).
- Charles, A. and G.R. Munro, "Irreversible investment and optimal fisheries management: A stochastic analysis". *Marine Resources Economics* 1:247-264 (1985).

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- Charles, A. and M.A. Henderson, "*Chum salmon stock reconstructions for 1970-1982. Part I: Queen Charlotte Islands, North Coast and Central Coast, British Columbia*", Canadian Manuscript Report of Fisheries and Aquatic Sciences, No. 1814 (1985).
- Charles, A. "Escapement estimation: From an economics perspective", p.251-258 in: *Proceedings of the Workshop on Stream Indexing for Salmon Escapement Estimation*. P.E.K. Symons and M. Waldichuk (editors), Canadian Technical Report of Fisheries and Aquatic Sciences No. 1326 (1984).
- Henderson, M.A. and A. Charles, "*Reconstruction of British Columbia pink salmon stocks: 1970-1982. Part I: Queen Charlotte Islands, North Coast and Central Coast*", Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 1785 (1984).
- Starr, P.J., A. Charles and M.A. Henderson, "*Reconstruction of British Columbia sockeye salmon stocks: 1970-1982*", Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 1780 (1984).
- Charles, A. "Optimal fisheries investment: Comparative dynamics for a deterministic seasonal fishery". *Canadian Journal of Fisheries and Aquatic Sciences* 40:2069-2079 (1983).
- Charles, A. "Optimal fisheries investment under uncertainty". *Canadian Journal of Fisheries and Aquatic Sciences* 40:2080-2091 (1983).
- Charles, A. "Effects of parameter uncertainty and Bayesian updating on fisheries investment", p.36-40 in: *Mathematical Models of Renewable Resources II: Proceedings of the Second Pacific Coast Conference on Mathematical Models of Renewable Resources*. R. Lamberson (editor), Humboldt State University Mathematical Modeling Group, Arcata USA (1983).
- Charles, A. "The role of randomness in renewable resources: Optimal fisheries investment under uncertainty", p.40-44 in: *Mathematical Models of Renewable Resources: Proceedings of the First Pacific Coast Conference on Mathematical Models of Renewable Resources*. R. Lamberson (editor), Humboldt State University Mathematical Modeling Group, Arcata USA (1982).
- Margolick, M., A. Charles and J.F. Helliwell, "*The Value of Information to Electricity Investment Planners*", University of British Columbia Programme in Natural Resource Economics, Resource Paper #70 (1981).
- Margolick, M. and A. Charles, "*Future electricity requirements in B.C.: A Comparison of Forecasts Made by B.C. Hydro and the B.C. Ministry of Energy, Mines and Petroleum Resources*", Society Promoting Environmental Conservation, Vancouver, Canada (1980).

INVITED CONFERENCE PRESENTATIONS

2011. "Policy Adaptation and Dynamic Governance of Marine Social-Ecological Systems: Coping with Climate Change and Economic Change". Comparative Studies of Climate Effects on Polar and Sub-Polar Ecosystems: Progress in Observation and Prediction. ESSAS 2011. Seattle Washington USA.
2010. "Human Dimensions of Ecosystem-based Fisheries Management". Ecosystems 2010: Global Progress on Ecosystem-based Fisheries Management. 26th Lowell Wakefield Fisheries Symposium. Anchorage, Alaska USA.
2010. "Presidential Opening Commentary". 15th Biennial Conference, International Institute of Fisheries Economics and Trade, Montpellier, France.
2009. "Integrated Bio-Socio-Economic Analysis and Advice for Fishery Management: A Reflection", ICES Annual Science Conference 2009, Berlin Germany.
2009. "Fisheries Subsidies and Small-Scale Fisheries". Special Session: Key Questions on the Road to a WTO Agreement. North American Association of Fisheries Economists Conference 2009. Newport, RI, USA.
2009. "Property Rights in Fisheries: Whose Ocean is it Anyway?", Property Rights Dialogue Session, Ocean Management Research Network 2009 Conference, Ottawa Canada.
2008. "Human Rights and Fishery Rights". Global Conference on Small-Scale Fisheries. Food and Agriculture Organisation of the United Nations. Bangkok, Thailand.
2008. "Sustainable Coasts, Sustainable Communities, and the Role of Coastal Management". Fourth Coastal Zone Asia-Pacific Conference. Qingdao, China.
2008. "The Ecosystem Approach to Fisheries". Special Session: Reframing Fisheries Governance to Include Poverty Reduction: Do Different Frames Alter the Picture Presented to Policymakers?. 14th Biennial Conference, International Institute of Fisheries Economics and Trade, Nha Trang, Vietnam.
2007. "Human Dimensions of Marine Protected Areas", European Symposium on Marine Protected Areas, Murcia, Spain.
2007. "Adaptive Co-Management: Some Comments", National Conference, Ocean Management Research Network, Ottawa, Ontario.
2006. "The Human Dimension of Fisheries Adjustment: An Overview of Key Issues and Policy Challenges", Expert Meeting on the Human Side of Fisheries Adjustment, OECD. Paris, France.
2005. "Bioethics of the Sea: How do we responsibly manage and regulate fishery resources?", Workshop on Bioethics of the Sea, Nordic Committee on Bioethics, Bergen, Norway.

2005. "The Big Picture: Fishery Management, Ocean Management and Biodiversity", Workshop on Biodiversity Challenges for Fisheries Management, International Conference on Biodiversity Science and Governance, Paris, France.
2004. "Policy and Management for Sustainable and Resilient Coastal Fisheries", COASTFISH Conference on Coastal Fisheries in Latin America and the Caribbean, Merida, Mexico.
2004. "Toward Sustainable and Resilient Fisheries: A Fishery-System Approach to Overcoming the Factors of Unsustainability", International Workshop on Factors of Unsustainability in Fisheries: Addressing Management Challenges, Siem Reap, Cambodia.
2004. "A Socioeconomic Analysis of Individual Transferable Quotas and Community-Based Fishery Management", 2004 Annual Meeting, Northeastern Agricultural and Resource Economics Association, Halifax, Nova Scotia.
2004. "Learning from Coastal Management to Improve Fisheries Management", Coastal Zone Canada 2004 Symposium on *Innovative Integration of Fisheries and Coastal Management*, St. John's, Newfoundland.
2003. "Climate Change and Fisheries: A Socioeconomic Perspective on Impacts and Adaptation", Workshop on Impact and Adaptation Responses of Fish and Fisheries to Climate Change, Canadian Climate Impacts and Adaptation Research Network (C-CIARN), Ottawa ON.
2002. "Turning the Tide: Community Management of Fisheries and Coastal Resources", Aboriginal Policy Research Conference, Indian and Northern Affairs Canada, Ottawa Ontario.
2001. "Marine Conservation Challenges: The Human Angle", Conference of the Canadian Council on Ecological Areas, Charlottetown PEI.
2001. "Facilitating Community-Based Management in the Canadian Maritimes through Participatory Research: Defining the Research Issues" (with M. Wiber, J. Kearney, F. Berkes), *People and the Sea: Maritime Research in the Social Sciences*. University of Amsterdam and Netherlands Institute for the Social Sciences, Amsterdam.
2000. "Designing and Implementing Marine Protected Areas: Coping with Complexity", Marine Exclusion Zones in Europe: A Facilitated Multidisciplinary Conference, Southampton UK.
2000. "Use Rights: Overview and Multi-Objective Analysis", Property Rights Session, 10th Conference of the International Institute for Fisheries Economics and Trade, Corvallis U.S.A.
1998. "Managing Ocean Resources for Sustainability: The Case of the Fishery", International Conference on the Economics of the Oceans, Lisbon Portugal.
1997. "Living with Uncertainty", Fisheries Management under Uncertainty Symposium: Objectives and Uncertainties in Fisheries Management with Emphasis on Three North Atlantic Ecosystems, Bergen, Norway.

1997. "Marine Conservation Areas", Workshop on Marine Conservation Areas for Newfoundland, Summit of the Sea Conference, St. John's, Newfoundland.
1996. "Property Rights and Use Rights in Fisheries" (Commentary: Francis Christy Presentation), International Institute for Fisheries Economics and Trade", Marrakech, Morocco.
1995. "Bio-Socio-Economic Modelling of Management Options in Invertebrate Fisheries", North Pacific Symposium on Invertebrate Stock Assessment and Management, Department of Fisheries and Oceans, Nanaimo, Canada (1995).
1995. "People and Fish: Sustainable Development of Aquatic Ecosystems", Canadian Society of Zoologists, 1995 Meeting, Rimouski Quebec.
1995. "The Path to Sustainable Fisheries", XXIII Pacem in Maribus Conference, International Ocean Institute, Puntarenas, Costa Rica.
1995. Discussant, "Sustaining the Fisheries Resources: Implications for Industrial Structure and the Labor Market", Conference on Sustainable Development and the Labour Market, Canadian Employment Research Forum, Ottawa, Ontario.
1993. "From Fishing to Farming: Bio-Socio-Economic Models of Occupational Transformation", Fourth Annual Common Property Conference, Manila, Philippines.
1993. "Conflict in the Coastal Commons: Canada and Costa Rica", Fourth Annual Common Property Conference, Manila, Philippines.
1992. "Sustainable Development and Resource Analysis: Developing World Challenges", Fifth Interdisciplinary Conference on Natural Resource Modelling and Analysis, St. John's.
1991. "Aquaculture and Fishery Models: Applications in the Developing World", 10th Pacific Coast Conference on the Mathematical Modeling of Renewable Natural Resources, Resource Modeling Association, Arcata CA.
1991. "Sustainability Lessons from the Fishery Sector", International Conference on Economic Policies for Sustainable Development in Central America, San Jose, Costa Rica.
1989. "Small-Scale Fisheries in North America: Research Perspectives", Conference on Research in Small-Scale Fisheries, IFREMER/ORSTOM, Montpellier, France.
1988. "Bioeconomic Modelling in Fisheries and Aquaculture", International Workshop on Statistical Ecology and Its Application in Fisheries, Wuxi, China.
1987. "Fish, Capital and Information: A Bayesian Simulation Model", Canadian Operations Research Conference, Calgary, Alberta.
1982. "Fisheries, Dynamics and Uncertainty: Major Developments in the Economics of Fisheries Management", Programme in Natural Resource Economics Conference, University of British Columbia, Vancouver, British Columbia (with C.W. Clark and G.R. Munro).

1981. "Irreversible Investment and Optimal Fisheries Management: A Stochastic Analysis", Workshop on Uncertainty and Fisheries Economics, University of Rhode Island, Providence R.I. (with G.R. Munro).

INVITED PRESENTATIONS: SEMINARS, WORKSHOP AND PUBLIC LECTURES

2010. "Meeting Development, Conservation and Trade Reform Goals: The Role of Small-Scale and Artisanal Fisheries". World Trade Organization (WTO) Public Forum 2010. Geneva, Switzerland.

2010. "Success Stories in Saving the Seas". Keynote Lecture, Opening Ceremony, Training Programme on Ocean Governance: Policy, Law and Management. International Ocean Institute. Halifax, Canada.

2010. "The 2009 Nobel Prize in Economics: Conflict and Cooperation, Communities and Conservation". Invited Lecture. Saint Mary's University. Halifax, Canada.

2010. "Tying Together Fisheries, Communities and Sustainability". Keynote Lecture, Second Annual Fishermen's Forum. Gulf Aquarium and Marine Station, Cheticamp, Nova Scotia.

2010. "Local Engagement and Large-Scale Results in Marine Conservation". Invited Seminar, Pew Charitable Trusts. Washington, DC, USA.

2010. "Managing Fisheries and Coasts in an Era of Climate Change". Invited Lecture. ECOSUR. Chetumal, Mexico.

2010. "Sustainability Indicators at Community and Regional Scales with Marine Applications". Invited Lecture. CINVESTAV. Merida, Mexico.

2010. "Small-Scale Fisheries: Connecting Human Rights, Fishing Rights and Food Sovereignty". Invited Seminar. International Development Studies. Saint Mary's University. Halifax N.S. (with Sherry Pictou).

2009. "Catch Shares and Use Rights: Approaches & Issues", Workshop on Managing for Socio-Economic Objectives in Catch Share Systems, Gulf of Maine Research Institute, Beverly MA USA.

2009. "Human Dimensions of Marine Protected Areas", Gully Advisory Committee, Fisheries and Oceans Canada, Bedford Institute of Oceanography, Dartmouth Canada.

2009. "Rights-Based Fishery Management", Pew Fellows 2009 Annual Meeting, Pew Charitable Trusts, Portland Maine USA.

2006. "Benefits and Costs of Implementing the Ecosystem Approach to Fisheries", Norwegian College of Fishery Science, University of Tromsø, Tromsø, Norway.

2006. "Benefits and Costs of Implementing the Ecosystem Approach to Fisheries", University of

Brest, Brest, France.

2006. "Ecosystem Approaches, MPAs, Fisheries and People", Bedford Institute of Oceanography, Halifax, Canada.
2006. "People and Fish: Policy and Management for Sustainable Coastal Fisheries", Fisheries Department, Food and Agriculture Organization of the United Nations. Rome, Italy.
2006. "Fishery Ecosystems and Ocean Space", Fisheries Department, Food and Agriculture Organization of the United Nations. Rome, Italy.
2005. "Challenge and Change on Atlantic Coastlines: Communities, Fisheries and Managing Together". MacNutt Memorial Lectures, University of New Brunswick, Saint John & Fredericton.
2004. "Success Stories in Saving the Seas", Saint Mary's University, Halifax Canada.
2004. "Past and Future Directions in Fishery Management", AquaLink Workshop on Innovation and Outlook in Fisheries, Vancouver Canada.
2004. "Sustainability and Resilience in Resource Systems: Indicator Frameworks and Policy Directions", (a) CINVESTAV, Merida, Mexico, and (b) EcoSur, Chetumal, Mexico.
2002. "Developing Indicators for Fisheries and Oceans Management", Oceans Branch, Fisheries and Oceans Canada, Ottawa Canada.
2002. "Fisheries and Oceans Indicators", Harvest Fisheries Seminar Series, Bedford Institute of Oceanography, Fisheries and Oceans Canada (Marine Fish Division / Invertebrate Division / Anadromous Fish Division), Dartmouth Canada.
2002. "Fishery Indicators: Conceptual Approaches and a Canadian Application", Imperial College, London U.K.
2000. "Uncertainty and Risk: Implications for Forecasting and Management", Climate Change and Adaptations Science Workshop, Department of Fisheries and Oceans, Halifax Canada.
2000. "Living with Uncertainty: The Precautionary Approach", Workshop on the Precautionary Approach, Department of Fisheries and Oceans, Halifax Canada.
1998. "Atlantic Canada's Groundfishery and the Fisheries Resource Conservation Council", Department of Biology, Dalhousie University, Halifax, N.S.
1997. "Sustainable Coastal Fisheries: Policy Directions for Improved Resource Management", Study Group on the Economic Uses of the Oceans, Independent World Commission on the Oceans, Lisbon, Portugal.
1995. "The Economics of Gear Technologies", Panel on Harvesting Technology, Coastal Communities Network, Cornwallis, N.S.

1995. "Fisheries Economics", Workshop of the Fishermen and Scientists Research Society, Antigonish, N.S.
1993. "Impacts of Uncertainty and Stochasticity on Industry Investment Strategies", Department of Industrial Engineering, Technical University of Nova Scotia, Halifax, N.S.
1993. "International Development Agencies and Their Response to UNCED", public lecture, Dartmouth Regional Library, Dartmouth, N.S.
1993. "Natural Resources and Sustainable Development: Micro Projects and Macro Environments", International Development Studies, Saint Mary's University, Halifax, N.S.
1993. "Crisis in the Atlantic Fishery", member of multidisciplinary panel, Department of Economics, Dalhousie University, Halifax, N.S.
1992. "Sustainable Development in Costa Rica", International Education Centre, Saint Mary's University, Halifax, N.S.
1991. "Environment and Economics", Symposium on Nova Scotia's Sustainable Development Strategy, Biology Department, Dalhousie University, Halifax, N.S.
1991. "The Canadian Atlantic Groundfish Fishery", Institute of Fisheries Analysis, Simon Fraser University, Burnaby, B.C.
1991. "Integrated Fish Farming in China", Aquaculture Program, Faculty of Biological Sciences, National University, Heredia, Costa Rica.
1990. "The Real World of Atlantic Fisheries: Interdisciplinary Perspectives", Department of Oceanography, Dalhousie University, Halifax, N.S.
1990. "Fish and Ships: Challenges to the Atlantic Fishery", Halifax Field Naturalists, Spring Lecture Programme, Halifax, N.S.
1990. "The Structure of the Fishing Industry", Training Programme for the Management and Conservation of Marine Resources, International Ocean Institute, Halifax, N.S.
1989. "Management of Coastal Fisheries", Coastal Zone Management graduate course, School for Resource and Environmental Studies, Dalhousie University, Halifax, N.S.
1988. "Fisheries Economics", Training Programme for the Management and Conservation of Marine Resources, International Ocean Institute, Halifax, N.S.
1987. "Fisheries Investment with Imperfect Information", Workshop on Using Bioeconomics in Setting Quotas, Department of Fisheries and Oceans CAFSAC Marine Environment and Ecosystems Subcommittee, Dartmouth, N.S.
1987. "Fisheries Economics", Training Programme for the Management and Conservation of Marine Resources, International Ocean Institute, Halifax.

1987. "Cost/Benefit Analysis in Fish Finding Technology", Seminar on Fish Finding Technology, Technical University of Nova Scotia, Halifax, N.S.
1987. "Fishery Development", International Development Studies program, Saint Mary's University, Halifax, N.S.
1986. "Fisheries Bioeconomics", Northwest Atlantic Fisheries Centre, Department of Fisheries and Oceans, St. John's, Newfoundland.
1986. "Fisheries Investment with Imperfect Information", Canadian Atlantic Fisheries Scientific Advisory Committee, Department of Fisheries and Oceans, Dartmouth, N.S.
1986. "Bioeconomics and Fisheries Modelling", Gulf Fisheries Centre, Department of Fisheries and Oceans, Moncton, New Brunswick.
1984. "Fishery Management Models", Peruvian Marine Institute, Callao, Peru.
1983. "An Economic Analysis of Inshore vs. Offshore Fisheries", Program in Natural Resource Economics, University of British Columbia, Vancouver, B.C.

CONFERENCE PRESENTATIONS (Contributed)

(For published conference papers, see under "Publications" above.)

2011. "Integrated Ocean Management and the Fisheries Sector: Economic Tools and Governance Structures". North American Association of Fisheries Economists. Honolulu, Hawaii USA.
2011. "Small-Scale Fisheries: On Rights, Trade and Subsidies". North American Association of Fisheries Economists. Honolulu, Hawaii USA.
2011. "Coastal Communities, 'Integrated Management' and Participatory Coastal Governance". People and the Sea: Maritime Research in the Social Sciences. University of Amsterdam, Amsterdam, Netherlands (with the Coastal CURA team).
2011. "Using a Well-Being Lens to Evaluate Fishery Instruments". People and the Sea: Maritime Research in the Social Sciences. University of Amsterdam, Amsterdam, Netherlands (with D. Armitage, C. Bene, and S. Coulthard).
2010. "Small-Scale Fisheries: Connecting Human Rights, Fishing Rights and Food Sovereignty". Coastal Zone Canada. Charlottetown, PEI, Canada (with Sherry Pictou).
2010. "Community Governance Perspectives Support Social-Ecological Systems and Resilience". Coastal Zone Canada. Charlottetown, PEI, Canada (with Lisette Wilson).
2009. "The Interaction of Fisheries and Climate change: Socioeconomic and Management Perspectives". ICES Annual Science Conference 2009, Berlin Germany.

2009. "Fisheries and the Marine Environment in Nova Scotia: Searching for Sustainability and Resilience". North American Association of Fisheries Economists. Newport, RI, USA.
2009. "Local-level Marine Conservation: The Ecosystem Approach, Integrated Management and Community Rights". International Marine Conservation Congress. Washington DC USA.
2009. "Coastal Communities Saving the Seas". Beyond the Obituaries: Success Stories in Ocean Conservation. Smithsonian National Museum of Natural History. Washington DC USA.
2008. "Community Fishery Rights". Fifth World Fisheries Congress. Yokohama, Japan.
2008. "Coping with Global Change: Community Perceptions of Social-Ecological Systems" (with Lisette Wilson). Coping with Global Change in Marine Social-Ecological Systems. GLOBEC Conference. Food and Agriculture Organisation of the United Nations, Rome, Italy.
2008. "Adaptive Co-management for Resilient Marine Systems". Coping with Global Change in Marine Social-Ecological Systems. GLOBEC Conference. Food and Agriculture Organisation of the United Nations, Rome, Italy.
2008. "The Ecosystem Approach to Fisheries: Managing Social-Ecological Systems. Coping with Global Change in Marine Social-Ecological Systems. GLOBEC Conference. Food and Agriculture Organisation of the United Nations, Rome, Italy.
2008. "Sustainability and Resilience in Fisheries: Policy Directions and Management Institutions". 14th Biennial Conference, International Institute of Fisheries Economics and Trade, Nha Trang, Vietnam.
2008. "Inland Fisheries and Livelihoods of the Mayan Zone in Quintana Roo, Mexico". 14th Biennial Conference, International Institute of Fisheries Economics and Trade, Nha Trang, Vietnam.
2007. "Coastal and Ocean Management: Balancing Local and Large-Scale", National Conference, Ocean Management Research Network, Ottawa, Ontario (with Daniel Lane, Roland Cormier and Michael Chadwick).
2007. "Scaling the Boundaries Between Marine Protected Areas and Fisheries Management: A Framework for Decision-Making", Sixth International Conference, Science and Management of Protected Areas Association (with Jessica Sanders).
2007. "Creating Community-based Indicators to Monitor Sustainability: A Fisheries Case Study", Conference of the Canadian Society for Ecological Economics, Halifax N.S. (with Heather Boyd).
2007. "Fishers' Performance and Relative Importance of Factors Determining Profitability in Small Scale Fisheries", 2007 Forum, North American Association of Fisheries Economists, Mérida, México (with Silvia Salas).

2007. "Socioeconomic and Distributional Impacts of Fisheries Subsidies", 2007 Forum, North American Association of Fisheries Economists, Mérida, México.
2007. "Community-Based Management and Community Fishery Rights", 2007 Forum, North American Association of Fisheries Economists, Mérida, México.
2006. "Marine Protected Areas and Fisheries Management: A Framework for Decision-making". Coastal Zone Canada 2006, Tuktoyaktuk, Northwest Territories.
2006. "Benefits and Costs of Implementing the Ecosystem Approach to Fisheries", Bergen Conference on Implementing the Ecosystem Approach to Fisheries (September 2006), Bergen, Norway.
2006. "Community Fishery Rights: Issues, Approaches and Atlantic Canadian Case Studies", 13th Biennial Conference, International Institute of Fisheries Economics and Trade, Portsmouth, UK.
2005. "Community Fishery Rights in Canada's Atlantic Region", Workshop on New Developments in Rights-Based Fisheries Management: Community Fishing Rights (August 2005), University of Southern Denmark, Esbjerg, Denmark.
2004. "Designing Integrated Indicator Systems: A Case Study of Nova Scotia Fishery and Marine Environment Accounts", 8th Biennial Conference, International Society for Ecological Economics, Montreal, Quebec.
2004. "Turning the Tide: Community Management of Fisheries and Coastal Resources", 4th World Fisheries Congress, Vancouver B.C.
2004. "Participatory Research Supporting Community-Based Fishery Management", 4th World Fisheries Congress, Vancouver B.C.
2002. "Community-Based Fisheries Management", Ocean Management Research Network National Conference, Ottawa, Ontario.
2001. "Distributional Impacts of Marine Protected Areas: A Bioeconomic Analysis", World Conference on Natural Resource Modeling, Logan, Utah, USA.
2000. "Sustainability Indicators for Natural Resource Systems: An Integrated Framework and a Fishery Application", EcoSummit 2000, Halifax, N.S.
1999. "Marine protected areas, uncertain stock structure and biodiversity conservation", World Conference on Natural Resource Modeling, Halifax, Nova Scotia.
1998. "Atlantic Canada's Fisheries Resource Conservation Council", Coastal Zone Canada, Victoria, B.C.
1998. "Coping with Uncertainty: Canada's Fisheries Resource Conservation Council", Symposium on Confronting Uncertainty in Evaluation & Implementation of Fishery Management

- Systems, International Council for the Exploration of the Sea (ICES), Cape Town, South Africa.
1996. “Beyond the Status Quo: Re-thinking Fishery Management”, Symposium on Reinventing Fisheries Management, University of British Columbia, Vancouver, B.C.
1995. “A Predictive Model of Illegal Fishing”, World Conference on Natural Resource Modelling, Pietermaritzburg, South Africa (with R.L. Mazany and M.L. Cross).
1994. “Sustainable Fisheries: People and Resources”, American Fisheries Society 124th Annual Meeting, Halifax, N.S.
1994. “Bio-Socio-Economic Modelling and Sustainability Analysis”, Seventh Interdisciplinary Conference on Natural Resource Modelling and Analysis, London, England.
1994. “Costa Rican Coastlines: Mangroves, Reefs, Fisheries and People”, Coastal Zone Canada, Halifax, N.S.
1994. “Chinese Integrated Fish Farming: Estimation of Production Functions”, International Workshop on Integrated Fish Farming, Wuxi, China (with H. Chen and B. Hu).
1993. “Bioeconomic Models of Fishery/Aquaculture Interactions”, International Conference on Fisheries Economics, Bergen, Norway.
1992. “Of Mangroves, Coral Reefs and Sustainable Communities: Costa Rica’s Common Property Fisheries”, Third Annual Common Property Conference, Washington, D.C. USA.
1990. “Sustainable Fisheries: Management Paradigms and Bio-Socio-Economic Models”, (First) Conference on the Ecological Economics of Sustainability, Washington, D.C. USA.
1990. “Natural Resource Investment Models”, 3rd Interdisciplinary Conference on Natural Resource Modelling and Analysis, Cornell University, Ithaca, N.Y. USA.
1989. “Fisheries Regulation and Investment Behaviour”, Annual Meeting, Canadian Economics Association, Laval University, Quebec (with Leigh Mazany and Melvin Cross).
1989. “Behavioral Models of Illegal Fishing”, 2nd Interdisciplinary Conference on Natural Resource Modelling and Analysis, Tallahassee, Florida USA.
1988. “Fisheries Regulation, Investment and Institutional Arrangements in Nova Scotia”, Annual Meeting, Canadian Economics Assoc., Windsor, Ontario (with Leigh Mazany & Melvin Cross).
1988. “Bioeconomic Models of Fishery Development”, International Conference on Biomathematics, Xi’an, China.
1988. “Bio-Socio-Economic Resource Models: Labour Dynamics & Multiobjective Management”, Interdisciplinary Conference on Natural Resource Modelling & Analysis, Halifax.

1988. "The Truncated Lognormal, Bayesian Updating and Optimal In-Season Fishery Management", Canadian Operations Research Society Conference.
1987. "Socioeconomic Fishery Models: The Role of Labour and Community Dynamics", Canadian Economics Association Meeting, Hamilton, Ontario.
1987. "A Bioeconomic Simulation Model of Fleet Dynamics and Fishery Development", Sixth Pacific Coast Resource Modelling Conference, Vancouver, B.C.
1987. "Adaptive Management of an Uncertain Natural Resource: An Optimization Model with Bayesian Updating", 1st International Conf. on Industrial & Applied Mathematics, Paris, France.
1986. "In-season Fisheries Management: A Bayesian Model", Fifth Pacific Coast Resource Modelling Conference, Newport, Oregon USA.
1986. "Fishery Development and Foreign Fleets: An Economic Optimization Model", Canadian Economics Association Meeting, Winnipeg, Manitoba.
1985. "Inshore vs. Offshore: Bioeconomic Analysis of Sequential Fisheries", Fourth Pacific Coast Resource Modelling Conference, San Louis Obispo, CA USA.
1985. "The Value of Information to Electricity Investment Planners", Atlantic Schools of Business Conference, Acadia University, Wolfville, N.S.
1984. "Computational and Numerical Methods in Renewable Resource Management", Society for Industrial and Applied Mathematics Meeting, University of Washington, Seattle WA USA.
1984. "Bayesian Fisheries: Investment and Management Strategies with Imperfect Information", Canadian Applied Mathematics Society, University of British Columbia, Vancouver, B.C.
1982. "A Stochastic Two-State Two-Control Model of Optimal Fisheries Investment", Society for Industrial and Applied Mathematics 30th Anniversary Meeting, Stanford Univ., Stanford CA USA.
1981. "Bioeconomic Fisheries Management", Western Regional Meetings, The Institute of Mathematical Statistics and Biometric Society, University of Victoria, Victoria, B.C.