2018 LECTURE TOPICS

Lecturers are asked to provide in advance a brief list of topics to be covered in their presentations. The outlines received are listed below.

UNDERSTANDING CANADA (23rd May)

Jason Grek-Martin

This lecture provides an overview of Canada for non-Canadians, highlighting its physical landscapes, historical development, demographic character, political structure, and so forth.

List of topics:

- Canada's territorial and political structure;
- Canada's physical geography (physiographic, climatic and vegetation regions) and its influence on the Canadian population distribution;
- Canada's socio-cultural regions;
- historical background and Canada's territorial evolution;
- Canada's historical and contemporary treaty relationships with Indigenous peoples;
- Canada's current demography (recent trends in terms of population growth, character and geographic distribution, natural increase vs. migration, multiculturalism as official Canadian policy); and,
- the challenge of formulating a common Canadian identity.

Key takeaway messages:

- Canada is a country of distinct regions, forged through physical isolation, geographic distance and a long history of uneven immigration from various regions of the world;
- (most) Canadians are nonetheless benign nationalists who seek to forge common values and promote national cohesion as a counterweight to ingrained regionalism;
- understanding the country's basic characteristics of physical and human geography is essential for understanding both Canada's regionalism and its ongoing search for a national 'imagined community.'

INTERCULTURAL AWARENESS (24th May)

Joanne Fraser

- Understanding one another
- Intercultural communication tips

MANAGING AT UNIVERSITY (24th May)
David Mensink

- Thriving in a foreign culture.
- Problem Solving Strategies.
- Working in Groups.
- Interpersonal Dynamics.
- Achieving Program Success.

THE SEA IN HUMAN HISTORY (25th May)
David Griffiths

- "The Sea Within" - Human biology and its roots in the sea
- "The Oceanic Circle" - Oceanic aspects of human migration from Africa around the world
- "Our Interdisciplinary Circle" - Ocean and coastal stakeholders
- "Humanity and the Blue Marble" - The meaning of ocean governance

PETER WELLS
Health of the Oceans (28th May)

- Introduction
    - Ocean health – definitions, principles
    - The importance of Health of the Oceans (HOTO)
- HOTO Approaches and Programs
    - Linkages to oceaon governance – policies, laws, regulations, etc.
    - OHI (ocean health index)
- Issues (Stresses/Problems) identified by Ocean Research
    - Legacy (well-known) issues
    - Emerging (new) issues
- Monitoring
    - Indicators and Indices
    - Examples of programs e.g. toxic chemicals plastics, climate change
- Assessment and Reporting on Ocean Health
- Urgent Actions by the Ocean Governance Community
- Information Sources

FUNDAMENTALS OF OCEANOGRAPHY (28th May)
Myriam Lacharité

The lecture 'Fundamentals of Oceanography' will be divided into four main themes.

- Fundamentals of physical oceanography: the 'perpetual ocean'
    - What is seawater?
    - How does water move? Influence of the geology and atmosphere in ocean circulation.

    - General circulation patterns in the ocean (focus on major currents and upwelling zones)
    - Brief description of waves and tides
- Fundamentals of ocean life
    - Biological productivity in the ocean
    - Food webs: from primary to secondary production
    - Basics of marine ecology: how the environment influences life in the ocean
- Ocean habitats
    - The coastal ocean (e.g. salt marshes, mangroves, coral reefs)
    - Exploring the remote ocean: from the poles to the deep seafloor
- How can technology help us better understand the ocean?
    - Remote sensing applications
    - Exploring the need for low-cost, low-impact and accessible technology to monitor ocean ecosystems

FUNDAMENTALS OF CLIMATE CHANGE (29th May)
Alexander MacDonald

- What is Climate Change?
- Overview of Climate Change Science
- Overview of Climate Change Impacts
    - Climate Change, Oceans and Coastal Environments
- Responses to Climate Change
    - Climate Change Adaptation
    - Climate Change Mitigation
- Overview of Climate Governance
- Climate Change in the Context of the Integration Exercise

VULNERABILITY ASSESSMENT AND ADAPTATION TO CLIMATE CHANGE (29th May)
Dan Lane

The lecture (1.30-4.00 p.m.) shall be divided into two parts. 'Fundamentals of Oceanography' will be divided into 4 main themes.

- Part 1 (1.30-2.35) deals with the following topics:
    - Weather vs Climate;
    - Adaptation Problem Solving;
    - Challenges for Coastal Communities;
    - Profiling Community Assets;
    - Reflecting Community Asset Importance.
- Part II (2:55-4:00) deals with:
    - Assessing Vulnerability;

- Estimating Event Impacts;
- Adaptation Strategies;
- Decision Evaluation;
- Climate Change Governance.

PLASTICS AND THE OCEAN (31st May)
Tony Walker

- Drowning in Debris: Solutions for a Global Pervasive Marine Pollution Problem

OCEAN ACIDIFICATION AND ITS IMPLICATIONS (31st May)
Kumiko Azetsu-Scott

Accelerated increase of carbon dioxide (CO_2) concentration in the atmosphere due to human activities affects the ocean by lowering its pH, a phenomenon known as ocean acidification. About a quarter of CO_2 released by human activities since the start of the Industrial Revolution in the 1800s has been taken up by the oceans. This ocean's service has slowed down the accumulation of CO_2 in the atmosphere, but there is a price to pay. CO_2 dissolves in the surface water and forms carbonic acid. Consequently, ocean pH has decreased by 0.1 units over the past 200 years, which is equivalent to a 30% increase in acidity. If global emissions of CO_2 continue at the present rate, ocean pH is predicted to fall an additional 0.3 units by 2100 (150% increase in acidity). "Ocean Acidification" has become a focus of active research over the last decade. Accelerated efforts to understand the extent and impact of ocean acidification are underway. Ocean acidification is a global phenomenon with variable regional and local consequences.

Mechanisms of ocean acidification, spatial and temporal variability, methods used in OA research, possible effects on marine organisms and ecosystems, socio-economic impacts and mitigation and adaptation strategies will be discussed.

TRADITIONAL ECOLOGICAL KNOWLEDGE (1st June)
Roger Hunka
Katherine Sorbey

Our subject will be Traditional Knowledge, or IK, or ATK, or TEC or as I refer to the many descriptors used to characterize the resurgence of the interest in "traditionology". The knowledge gained by listening and hearing, looking and seeing, touching and feeling, humbling and respecting the other who is comfortable to share and wants to share their knowledge or wisdom. A sharing made possible when we make the time to be with elders or others who have knowledge to share. As a world view TK or traditionology is the sharing of a timeless observed pattern of life - as I know it to be – a constantly fluid, interconnected, interdependent phenomena of experiences and knowledge of a time past, a time present and a time into the future – a gift of understanding forces which human kind has observed, does observe and will observe of our Mother Earth nurturing all that came before, is upon us, and must be – the fluidity of time and life.

THE ROLE OF COASTAL COMMUNITIES IN MARINE PROTECTION (8th June)
Susanna Fuller

- Community stewardship
- Role of ENGOs
- Science policy interface
- Communications
- Community based marine protected areas

OCEAN CAPACITY BUILDING IN SOUTH AMERICA AND THE CARIBBEAN (12th June)
Eduardo Marone

- Some reflections about the motto of the IOI-LAC TC.
- The IOI-TC-LAC lecturers' team.
- The IOI Training Courses, syllabus, experience and outputs in Latin America and the Caribbean.
- The past participants universe and their activities.
- The Role Playing exercises of our TC and our "Jam Sessions".
- Southern Scandinavian countries exercise.
- The produced papers from the courses (short view of content).
- Some reflections about the motto of the TC.

MARINE SPATIAL PLANNING AND MPAs (12th June)
Scott Coffen-Smout
Paul Macnab

A practitioner's perspective on the theory and practice of coastal and marine spatial planning (CMSP), including requirements for:

- data/information
- stakeholder engagement
- governance, and
- plan development.

GIS WEB MAPPING AND SIMULATION (14th June)
James Boxall
Caitlin Cunningham
Jeff McKenna
Andy Sherin
David Griffiths

- The nature of GIS and Spatial Data;
- Marine Spatial Planning and the Marine Manager;
- emerging spatial data and technology;
- Use of spatial data within an online GIS environment (ArcOnline);
- query and data changes with spatial data online;

- creation of story map/ web map showing marine related issues (hands-on case study);
- using web based mapping for scientific and policy communication (one of the key or penultimate aspects of marine spatial planning).

Lectures and hands-on will include a very brief exploration of existing projects using spatial data, also with a handout.

OCEAN EDUCATION, LITERACY AND AWARENESS (15th June)
Anna Naylor

- Ocean Literacy
- Industry Engagement
- Workforce Development
- Career Awareness

NEGOTIATION THEORY AND PRACTICE; NEGOTIATION EXERCISE (22nd June)
Diana Ginn (with Hugh Williamson)

Topics:

- What is Negotiation?
- Complexities of Negotiating in an International Context
- Preparation Focus- Need to become as informed as possible on:
    - Parties
    - Issues
    - Interests (what is each party trying to achieve?)
    - History of the dispute
    - Cultural, political, legal, economic context
    - Negotiators
- Introduction to different styles of negotiation
- Negotiation exercises

Take away: In any negotiation, lack of preparation is the biggest obstacle to getting good results; one of the most powerful ways to prepare for good results is to prepare effectively. The more complexity, the more potential unknowns, the more need for preparation.

Participants in this session will:

- learn about the complexities of negotiating in an international context and the risks of insufficient preparation;
- be introduced to different styles of negotiation, with a focus on interest-based negotiation;
- have an opportunity to engage in a negotiation, and then debrief, with the debriefing linking back go the previous discussion.

MARITIME SECURITY (26th – 29th June)
Bob Edwards
Glen Herbert

The purpose of the maritime security module is to familiarise participants with maritime security and emergency management concepts and methodologies to protect maritime interests, counter maritime threats, and meet maritime-related obligations under international law. The module will also assist participants prepare their ocean and coastal policy document which is to be presented at the end of the program.

The IOI-Canada Integration Exercise 2018 materials are the basis for the maritime security policy exercise. These materials will be augmented with additional information.

Participants will be in one of three national groups representing the countries of Antillia, Kallisto and Sepiana. Each group will use the Integrated Maritime Compliance and Enforcement (IMCE) methodology to develop an Integrated Maritime Security Policy for their country. This methodology is taken from the module's source document, *Integrated Maritime Enforcement: A Handbook* (IME Handbook), Centre for Foreign Policy Studies, Dalhousie University, and International Ocean Institute, February 2000.

First, they will identify their country's maritime interests, threats and obligations across the spectrum of marine activities: the protection of maritime sovereignty, countering illegal activity, the protection of the marine environment, the management of marine resources, and marine safety. This will include a risk analysis of maritime threats and challenges to determine priority areas. Next, they will identify the capabilities needed to address these maritime interests, threats and obligations in four categories: political, legal, operational/bureaucratic, and non-state/user. The final task is to develop policy objectives and implementation recommendations. A risk analysis as well as a quantitative analysis (using matrices) is included in the methodology to assist in developing well reasoned policies.

Some of the questions we will address:

- What is maritime security?
- What are maritime security interests? threats & challenges? obligations?
- How do I develop a maritime security policy?
- Is there a difference between a maritime security policy and a strategy?
- How can navies & coast guards be used within a maritime security regime?
- Does your country (Antillia, Kallisto or Sepiana) need a navy? or a coast guard?

Topics will include:

- A methodology to develop a maritime security policy – Bob Edwards
- Navies & coast guards within a maritime security regime – Bob Edwards
- Marine compliance & enforcement – Glen Herbert

Themes for the Maritime Security module:

- The importance of the oceans for prosperity
- The need for stability & order on the oceans and along the coasts for prosperity and sustainable development

- The importance of determining what 'capabilities' are required – political, legal, operational & non-state/user – to protect maritime interests, prevent and counter maritime threats, and meet obligations (duties) under international law when developing maritime security policies.
- The need for cooperative, coordinated and, where possible, integrated approaches to: protect maritime interests, prevent and counter maritime threats, and meet obligations.
- The importance of 'political will' and following international law when addressing maritime security threats and challenges.
- The maritime security principles of: understanding the maritime environment, prevention, response & recovery.
- The need to detect and understand what is occurring off our coasts ('maritime domain awareness'), and the necessity to respond appropriately to counter maritime security threats and support maritime interests.
- The important role of 'compliance' within a maritime security regime.
- The requirement to uphold international law.
- The need for international cooperation.

INTRODUCTION TO FISHERIES SCIENCE (3rd July)
Ross Claytor

- The role of the fishery scientist in setting management objectives
- Elements of Stock Assessment
- Fishery Scientist Credibility
- Summary of Stock Assessment Principles

POLICY DEVELOPMENT (4th July)
Kerri Graham

Policy Development, including:

- policy drivers,
- instruments,
- priorities, and
- process.

At the end, we will apply concepts using a cast study type approach.

SEAFOOD VALUE CHAIN (5th July)
Megan Bailey

- Sustainable seafood movement
- Supply chains and value chains
- Governance
- Traceability
- Socio-economic contributions

DEVELOPMENT OF NOVA SCOTIA'S AQUACULTURE POLICY & LEGISLATION (5th July)
Brennan Goreham

- Regulatory and policy development
- Regulatory and policy implementation challenges
- Regulations as a 'living exercise'
- Stakeholder relations
- Aquaculture development
- Transparency and open government

SHIPPING FUNDAMENTALS (9th July)
Jim Calvesbert

- Basic ship functions
- Some marine terminology
- The concept of a Port
- Basic ship types
- How we make shipping safer (regulation, design, certification and inspection, training).

PORT GOVERNANCE AND REFORM (10th July)
Mary Brooks

- Define governance and explore key issues in governance decisions
- Introduce some history on port reform and what leads governments to initiate reform
- Examine governance models in Canada, the U.S., and then Africa.
- Discuss port governance issues for developing countries
- Explore how port performance is measured (and by whom)
- Determining appropriate goals for various port stakeholders and impacts on port reform proposals
- Open discussion on port governance and port reform (and where the existing models fail).

MARITIME SEARCH AND RESCUE (11th July)
John Dalziel

Introduction to Maritime Search and Rescue (SAR)

- Overview of maritime SAR
- The requirement for SAR
- SAR procedures
- SAR resources
- Other notes
- Information sources

GEOLOGY AND ENERGY (13th July)
David E. Brown

- Geology 101
    - Rock Types
    - Depositional Environments
- Petroleum 101
    - Sedimentary Basins
    - Petroleum Systems Elements
- Petroleum Systems Processes

INTRODUCTION TO GEOPHYSICS (13th July)
Kris Kendell

- Geophysical methods used in marine hydrocarbon exploration:
    - gravity
    - magnetics
    - seismic
- Acquisition/operations of collecting marine geophysical data, with an in-depth discussion on seismic
- Interpretation of seismic data for the purposes of hydrocarbon exploration

EXPLORATION AND RISK (16th July)
Jennifer Matthews

- Atlantic Canada offshore
- Project Life-cycle (exploration, development, production and decommissioning)
- Health, safety and environmental considerations
- Risk and risk management

REGULATION AND THE CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY (16th July)
Elizabeth MacDonald

The power point presentation will describe how offshore oil and gas activities (exploration, production, decommissioning) are regulated.

- Mandate of the Canada – Nova Scotia Offshore Petroleum Board (CNSOPB)
- Sources of Authority and Jurisdiction
- Regulatory & Enforcement Practices
- Inter-agency Activities
- Environmental Assessment

TIDAL POWER (16th July)
Melissa Oldreive

- Clean energy context in Nova Scotia
- International experience with marine renewables
- Overview of technologies:
    - designs
    - challenges
    - opportunities
- Policy context
- Role of Fundy Ocean Research Centre for Energy (FORCE) in tidal energy development