Welcome to MEOPAR's 2nd Annual Scientific Meeting!

2015 Annual Scientific Meeting highlights:

- 150+ Network members
- Project presentations from 30 MEOPAR Investigators
- 13 MEOPeer Scientific Posters
- Partner representation:
    - Environment Canada
    - Port of Metro Vancouver
    - Department of Fisheries and Oceans (DFO)
    - World Wildlife Fund (WWF)
    - Maritime Way Scientific
    - Vancouver Island University
    - ASL Environmental Services
    - Institute for Catastrophic Loss Reduction
    - Cascadia Coast Research
- Stakeholder World Café Scientifique with graphic recording

WiFi

MEOPAR is pleased to provide complimentary WiFi access for 1 device per delegate.
Instructions:
Connect to the "Sheraton Meeting" network
Once connected, open a web browser and a splash page will appear
Password: MEOPAR15

Photography

MEOPAR is pleased to welcome Antonio LaFauci as the photographer for this year's ASM. Photographs will be taken during the meeting. The recorded materials and photographs may be used publicly for promotional purposes by MEOPAR. If you do not want pictures of you used, please advise Alexa Reedman or Janet Stalker.

Twitter

Throughout the ASM, follow MEOPAR on Twitter: @MEOPAR_NCE or tweet using the hashtag #MEOPalooza2015

Contact Alexa for

- Any dietary concerns
- Self-organization of a group activity for Tuesday evening
- Lack of or low quantities of coffee…contact immediately!

(This document can also be found on **meopar.ca**)

WELCOME

On behalf of the Board of Directors of the Marine Environmental Observation Prediction and Response Network (MEOPAR), I welcome you to the 2015 Annual Scientific Meeting.

The meeting format was designed by MEOPAR to bring together all members of MEOPAR's extensive network to communicate, evaluate and forge new working relationships between members. We are pleased to welcome you to our second Annual Scientific Meeting. This is a pivotal time for MEOPAR as we are celebrating our recent successes and laying the foundation for the Network's second funding phase.

Ocean research in Canada is of the utmost importance from sea to sea to sea. It is important to understand the physical and natural changes of the ocean, but also about the communities these systems affect and how. With the diverse experience and dedication from members of the Network on a national and international scale, we are better understanding the ocean and predicting the impact of marine hazards on human activities, ecosystems and improving response.

This year's ASM is focused strongly on impact and the preparations for renewal. The Board of Directors is eager to hear your input and we look forward to working with you over the coming year.

I would like to thank all of the researchers, industry partners, Board members and MEOPAR staff for their work towards achieving the Network's goals.

Robert Walker
Chair, MEOPAR Board of Directors
June 11, 2015

AGENDA-at-a-Glance

(Detailed description begins on page 7)

Tuesday, June 16, 2015	
Room: Pavilion Ballroom C/D (unless otherwise stated)	
8:00	Registration/Continental breakfast
9:00	Welcome, Network Updates – Scientific Director, Associate Scientific Director and Executive Director
10:30	Networking break; visit MEOPeer scientific posters (*Pavilion Ballroom foyer)*
11:00	Open Call Projects: 'High level' update: Canessa, Taggart, Cullen, Finnis
11:40	*Move to 1 of 4 breakout rooms for parallel sessions*
11:45	Parallel sessions: In-depth discovery of the science in each project: Canessa (Pavilion Ballroom B) Taggart (Orca) Cullen (Finback) Finnis (Beluga)
12:30	Lunch
1:30	Early Career Faculty, Ocean Acidification and Partnership Program Presentations (15 @ 5 mins)
3:00	Networking break; visit MEOPeer scientific posters *(Pavilion Ballroom foyer)*
3:30	Open Call Projects: 'High level' update: Dumont, Scott, Chang, S. & Atkinson
4:10	*Move to 1 of 4 breakout rooms for parallel sessions*
4:15	Parallel sessions: In-depth discovery of the science in each project: Dumont (Pavilion Ballroom B) Scott (Orca) Chang (Finback) Atkinson (Beluga)
5:00	Conclusion of Day 1, looking towards Day 2
Wednesday, June 17, 2015	
Room: Pavilion Ballroom C/D (unless otherwise stated)	
8:00	Continental breakfast
8:50	Welcome/Introduction to Day Two
9:00	Observation Core: Update
9:30	Prediction Core: Update
10:00	Response Core (NEW!): Introduction
10:30	Networking break; visit MEOPeer scientific posters (*Pavilion Ballroom foyer)*
11:00	Breakout sessions for Cores
11:30	Plenary Session: Cores Moving Forward
12:00	Lunch (Pavilion Ballroom C/D) MEOPeer Meeting: Research Project Initiative *(Pavilion Ballroom B)*
1:00	Stakeholder Connector: World Café Scientifique
3:00	Networking break; visit MEOPeer scientific posters (*Pavilion Ballroom foyer)*
3:30	Preparing for Renewal
4:00	Conclusion of Day 2, looking towards Day 3, Project meeting time (optional)
6:30-9:00	Offsite reception with CaNOE at ScienceWorld – (2) buses, see page (?) for more details

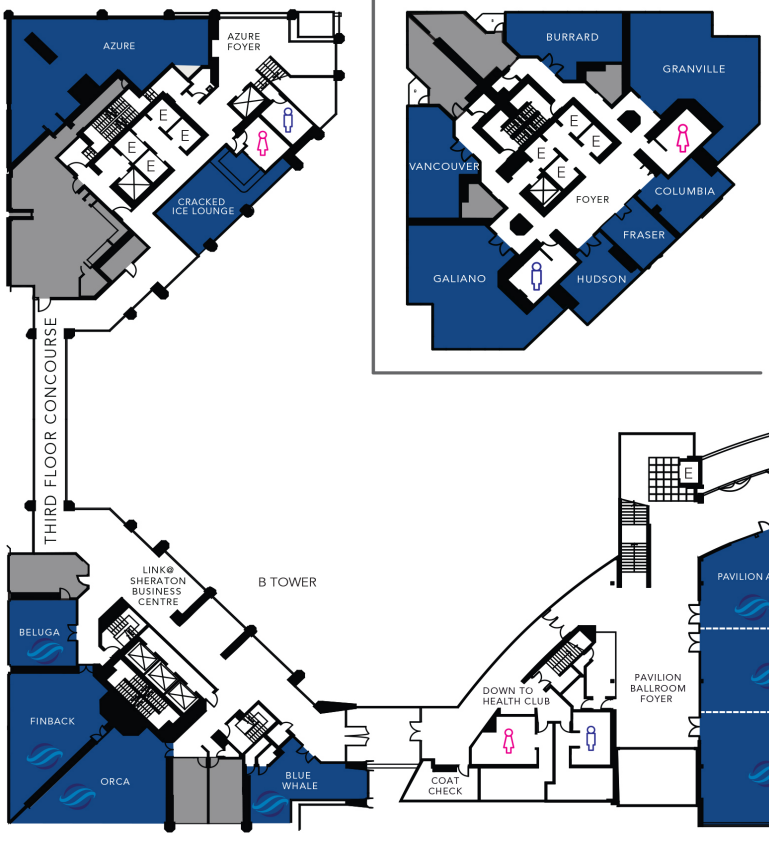
Thursday, June 18, 2015	
Room: Pavilion Ballroom C/D (unless otherwise stated)	
8:00	Continental breakfast
8:45	Welcome/Introduction to Day Three
9:00	Workshop on MEOPAR Renewal *(Pavilion Ballrooms A & B, Orca, Finback)* RMC Meeting 9 am-noon (*Beluga)*
10:00	Reporting back: Renewal: from planning to action
10:30	Networking break; visit MEOPeer scientific posters *(Pavilion Ballroom foyer)*
11:00	Special Topics *(Pavilion Ballrooms A & B, Orca)*
12:00	Lunch
1:00	Initial Projects: 'High level' update: Ritchie, Allen & Sheng, Merryfield, Fennel
1:40	*Move to 1 of 4 breakout rooms for parallel sessions*
1:45	Parallel sessions: In-depth discovery of the science in each project: Ritchie (Pavilion Ballroom A) Allen & Sheng (Pavilion Ballroom B) Merryfield (Finback) Fennel (Orca)
3:00	Networking break; visit MEOPeer scientific posters *(Pavilion Ballroom foyer)*
3:30	ASM Closing & Evaluation
4:00	Project meeting time (optional); dismantle scientific posters

Sheraton Wall Centre Floor Plans

Conference rooms highlighted with the MEOPAR wave

SOUTH TOWER

THIRD FLOOR

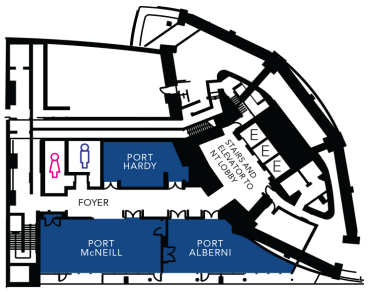


FOURTH FLOOR

NORTH TOWER

NOTES

FOURTH FLOOR



DAY ONE

Tuesday, June 16, 2015

8:00 am Registration/continental breakfast
*Registration will conclude at noon

9:00 am Welcome & Network Updates
Scientific Director Doug Wallace, Associate Scientific Director Ron Pelot and Executive Director Neil Gall will give an update on the status of the Network, discuss its future direction and the importance of the support needed from all members as we move into (apply for) renewal to the NCE Secretariat.

10:30 am Networking break
Enjoy coffee and a light snack in the Pavilion Ballroom foyer; network, meet our MEOPeers and learn about their research from their scientific posters.

11:00 am Open Call Projects
Projects from MEOPAR's Open Call that were awarded in August 2014 will each give a ten minute 'high-level' update. The principal investigators (PIs) will present in a four person panel: Rosaline Canessa (University of Victoria), Christopher Taggart (Dalhousie University), Jay Cullen (University of Victoria) and Joel Finnis (Memorial University)

11:40 am Move to breakout rooms
Please follow signs to breakout rooms down the hallway towards the South Tower of the hotel.

11:45 am Parallel Sessions
These parallel sessions will be an in-depth discovery of each Open Call project. These in-depth sessions may be presented by any member(s) of the research team.

Rosaline Canessa, University of Victoria - Modeling Ship Movements: Application for Noise Exposure to the Marine Ecosystem **(Pavilion Ballroom B)** The exposure of animals to ship-based noise is expected to increase as marine vessel activity increases, due to longer ice-free passages in the Arctic, and planned port expansions and new marine terminal construction on Canada's Pacific coast. This research is exploring and improving the utility and modeling of ship trafficked, based on AIS and other data, as an indicator of noise to enable government, industry and, even, individuals, make better decisions to mitigate marine noise impacts. http://nemesproject.com/	**Chris Taggart, Dalhousie University - Whales, Habitat and Listening Experiment (WHaLE)** **(Orca)** Ocean-going vessels pose a threat to large whales worldwide. Working with partners, WHaLE plans to use glider-mounted high frequency echo sounders (whale food) and passive acoustic monitoring (whale sounds) to find and define whale habitat and to develop, test and implement a Canadian Whale Alert system whereby areas of concentrated and classified whale sounds will be available to mobile device users and can also be transmitted to vessels via an AIS-message. Trials will occur on both the East and West Coasts of Canada.
Jay Cullen, University of Victoria - InFORM: International Fukushima Ocean Radionuclide Monitoring Network **(Finback)** The 2011 meltdown of nuclear reactors at the Fukushima Daiichi nuclear power plant (FD-NPP) released radionuclides into the atmosphere and the Pacific Ocean. Measurements indicate that a plume of seawater contaminated with FD-NPP radionuclides arrived in Canadian coastal water in June 2013. The InFORM team will build a distributed monitoring network involving government, academic, private sector and citizen scientists to acquire data, assess radiological risks and rapidly, appropriately and effectively disseminate this information the public. http://fukushimainform.ca/	**Joel Finnis, Memorial University of Newfoundland - Forecasting Grand Banks Fog: Assessment, Improvement and Application** **(Beluga)** Frequent, severe fog is a considerable health and safety concern to marine industries operation on the Grand Banks of Newfoundland. Forecasting fog remains a challenge, with predictability limited by the complexity of fog processes, sparse marine observations, and the resolution and capability of operational numerical weather prediction (NWP) systems. Methods will be explored to improve fog prediction and those showing the greatest promise will be adapted for operational use at AMEC. Research will identify barriers to forecast use, and inform efforts to increase forecast usage across industry sectors.

12:30 Lunch
Return to Pavilion C/D for a buffet lunch in the foyer.

1:30 pm Early Career Faculty, Ocean Acidification and Hubert Presentations
MEOPAR's newest funded projects include 12 Early Career Faculty researchers, two ocean acidification projects and one Partnership Program project. Newly funded, these projects are in their early stage, so each project will only present for five minutes.

Early Career Faculty:

Aldona Wiacek, Saint Mary's University– Measuring Marine Boundary Layers in an Urban Shipping Environment
Closely monitoring changes in coastal and background marine atmospheric environments in Atlantic Canada and into pristine areas of the Arctic.

Jérome Dupras, Université du Québec en Outaouais – Modelling of the Acoustic Environment and Interactions Between Whales and Ships in the St. Lawrence Estuary
Addressing the complex interactions between shipping and whales in the St. Lawrence Estuary by integrating underwater sound propagation into the 3MTSim simulator.

Natalie Ban, University of Victoria – Enhancing Ecosystem Resilience: Integrating Social and Natural Sciences
The effect of future risks, including climate change, depends on the current condition of ecosystems, which are influenced by past and ongoing human activities.

Philip Loring, Univeristy of Saskatchewan – Linking Ocean Health and Human Health: Coastal Security and Sustainability in Haida Gwaii
Examining residents' relationships with coastal and marine seascapes and identifying shared factors regarding sustainability and security in the coastal and marine context,

Jason Thistlethwaite, University of Waterloo – Insuring Canadian Coastal Communities in the Era of Wild Weather
Assessing the socio-economic impact of existing and future coastal risk on insurability for coastal communities. This study will conduct the first of its kind case study on insurability in the coastal communities of the District of Shelburne, Nova Scotia and Charlottetown, Prince Edward Island (PEI).

Haibo Niu, Dalhousie University – Improving Oil Spill Models to Support Environmental Emergency Response and Chemical Dispersant Use Policy Development
Increased oil and gas activity in Canada raises the risk of marine oil spills. The recent Deepwater Horizon disaster has shown that it is vital that a reliable deep-water oil spill model be available to predict the trajectory of oil.

Rachel Chang, Dalhousie University – Understanding the Factors that Affect the Properties of Coastal and Polar Fog
This project aims to study the formation, dissipation and visibility of fog in coastal and polar environments under non-freezing conditions.

Daniel Kirschbaum, McGill University– Evaluation, Improvement, and Communication of Short-Term Hazardous-weather Forecasts over Coastal British Columbia
This project focuses on a new short-term weather prediction system called the MEOPAR High-Resolution Ensemble Kalman Filter (MEOPAR/HREnKF), which is currently under development within the MEOPAR project "A Re-locatable Coupled Atmosphere-Ocean Prediction System".

Rocky Taylor, Memorial University– Pressured Ice: Environmental Monitoring, Modeling and Mitigation of Risk for Marine Operations
Changing conditions in the marine environment present coastal and island communities on the East Coast of Canada with challenges by potentially disrupting operations, including transportation, resupply and search-and-rescue, as well as shipping, offshore operations and other marine activities.

Brett Favaro, Memorial University – It's Too Easy Being Green: Using Underwater Video to Optimize Capture Efficiency of Invasive Green Crab to Reduce their Impact on Fisheries
European green crab (*Carcinus maenas*) are notorious invaders on the Atlantic and Pacific coasts of Canada. This species project will focus on improving the efficiency of green crab removal programs, and improving our understanding of how green crabs affect lobster catch.

Martin Krkosek, University of Toronto – Modelling and Predicting Disease Outbreak and Spread in Coastal Seas
Developing a modeling framework to understand and predict the conditions in which a coastal area is susceptible to a disease outbreak, and how such an outbreak would spread geographically.

Brent Else, University of Calgary – A Meteorological Observatory in the Northwest Passage: Understanding Sea Ice Changes and Inuit Use of Scientific Information
Understanding sea ice changes in the Northwest Passage, which presents new opportunities and risks for governments, industry, and coastal communities.

Partnership Program:

Casey Hubert, University of Calgary – Predicting the Microbial Bioremediation Response to Marine Oil Spills in Canada
Investigating the physiology and diversity of marine bacteria to deliver improved observation, prediction, and response to an accidental offshore spill in the Canadian marine environment.

Ocean Acidification:

Karen Kohfel, Simon Fraser University – Ocean Acidification in Canadian Coastal Communities: An integrated coastal acidification program (I-CAP) I-CAP proposes the development of a national coastal acidification program for Canada. The program will address what the spatial and temporal variability of carbonate chemistry in near-coastal areas where harvesters are operating is, identify the dominant controls on observed variability in near-coastal regions, how spatial-temporal variability affect species important to shellfish harvesters and coastal communities as well as to identify the socio-economic risks to Canadian coastal communities.	**Helmuth Thomas, Dalhousie University – Canadian Ocean Acidification Research Partnership (COARP)** COARnet proposes to investigate the vulnerability of living marine resources and related industries to ocean acidification (OA) in Canada, using selected coastal marine sites distributed along Canada's coastline for case studies. COARnet will investigate the threats of OA, directly and by engaging stakeholders, to local economies from seasonal to decadal (century) time scales in order to allow for informed decisions that facilitate long-term, sustainable economic use of living marine resources by subsistence to industrial-scale aquaculture or harvesting industries.

3:00pm Networking break
Enjoy coffee and a light snack in the Pavilion Ballroom foyer; network, meet our MEOPeers and learn about their research from their scientific posters.

3:30pm Open Call Projects – 'High-level' update
Projects from MEOPAR's Open Call that were awarded in June 2013 will each give a ten minute 'high-level' update. The principal investigators (PIs) will present in a four-person panel: Dany Dumont (Université du Québec à Rimouski), Andrea Scott (University of Waterloo), Stephanie Chang (University of British Columbia) and David Atkinson (University of Victoria).

4:10 –Move to breakout rooms

4:15 Parallel Sessions
These parallel sessions will be an in-depth discovery of each Open Call project. These in-depth sessions may be presented by any member(s) of the research team.

Dany Dumont, Université du Québec à Rimouski – Improving Marine Drift and Dispersion Forecasts (Pavilion Ballroom B) Examining ways to improve the forecasting of drifting objects and substances at the ocean's surface. This project addresses the dynamics of the surface boundary layer and many of the proposed developments will directly feed into the operational services already in place and managed by the CONCEPTS team and the MEOPAR Prediction and Observation Core projects.	**Andrea Scott, University of Waterloo – Improved Sea Ice Prediction Through Assimilation of Ice Thickness Info and SAR Image Classification (Orca)** Developing automated methods to assimilate data from synthetic aperture radar (SAR) sensors, which provide higher resolution information about the sea ice state. High-resolution sea ice forecasts play a critical role in improving the safety of operations in ice-infested waters. For example, ice management around offshore structures and ship routing both require knowledge of ice concentration, thickness and drift.
Stephanie Chang, University of British Columbia – Maritime Transportation Disruption: An Integrated Assessment for Coastal Community Resilience (Finback) Developing knowledge and tools to enhance the resilience of coastal communities to maritime transportation disruption. This research is expected to enhance the capacity of the stakeholders to understand the risk, prepare in advance, and respond effectively in marine emergencies, thereby reducing disaster losses to coastal communities.	**David Atkinson, University of Victoria – User-driven monitoring of adverse marine and weather states, Eastern Beaufort Sea (Beluga)** Providing Eastern Beaufort Sea region communities and companies with the accurate weather info they need to reduce risk and enhance the safety of their operations. Identifying economic activities, asking which large-scale weather patterns are of great concern, exploring how specific weather events impact stakeholders, and assessing how to provide access to accurate information in the Eastern Beaufort Sea region.

5:00pm Conclusion of Day One – *no scheduled evening programming*

DAY TWO

Wednesday, June 17, 2015

MEOPAR is thrilled to fund the Canadian Network for Ocean Education (CaNOE)'s first Annual General Meeting (AGM) through our Workshop Program. The meeting will run alongside the MEOPAR ASM on Wednesday, June 17, 2015 as the launch of the CaNOE network. CaNOE is a network for the advancement of ocean literacy in Canada with the mission of providing a platform for learning, dialogue and communication about ocean literacy in Canada.

8:00 am – Continental breakfast

8:50 am – Welcome/Introduction to Day Two

9:00 am – Observation Core Update
Presentation by lead Brad deYoung, Memorial University.

9:30 am – Prediction Core Update
Presentation by lead Dany Dumont and Philippe Lucas-Picher

10:00 am – Response Core (NEW!): Introduction
Presentation by collaborators Stephanie Chang (UBC), Barb Neis (Memorial University) and Ron Pelot (Dalhousie University).

10:30 am – Networking Break
Enjoy coffee and a light snack in the Pavilion Ballroom foyer; network, meet our MEOPeers and learn about their research from their scientific posters.

11:00 am – Cores Moving Forward
Led by Tim Fleming, facilitator from Innovation Works.

12:00 pm – Lunch and MEOPeer Meeting
Lunch will be served buffet style in the Pavilion Ballroom Foyer. Delegates are invited to eat Pavilion Ballroom C/D, while MEOPeers are invited to attend a workshop in Pavilion Ballroom B with their lunch.

1:00 Stakeholder Connector – World Café Scientifique
This café will give MEOPAR's Network Members the opportunity to connect with our partners and stakeholders. A big thank you goes to our participating organizations!

Fisheries and Oceans Canada / Pêches et Océans Canada

Environment Canada / Environnement Canada

WWF

PORT METRO vancouver

ASL Environmental Sciences

Maritime Way Scientific Ltd.
Operational Oceanography & Scientific Solutions

Cascadia Coast Research Ltd.
Ocean modelling and data anlaysis

VANCOUVER ISLAND UNIVERSITY

Institute for Catastrophic Loss Reduction
Institut de Prévention des Sinistres Catastrophiques

3:00 pm – Networking break
Enjoy coffee and a light snack in the Pavilion Ballroom foyer; network, meet our MEOPeers and learn about their research from their scientific posters.

3:30 pm – Preparing for Renewal
Led by Tim Fleming, facilitator from Innovation Works.

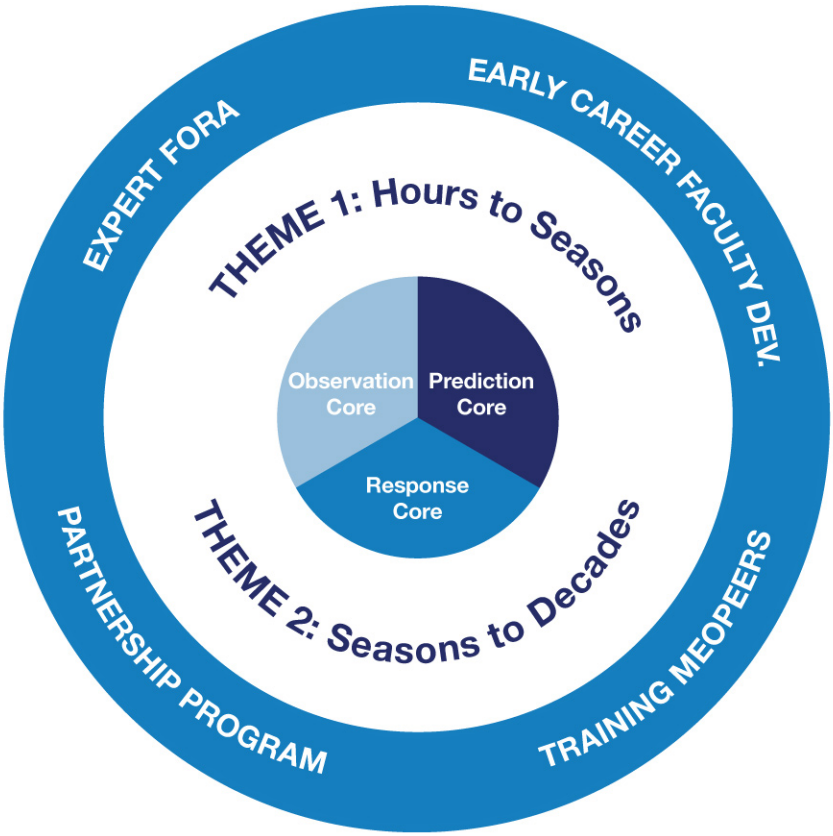
4:00 pm – Project meeting time (optional)
Projects are invited to use this time to meet.

- Ocean Gliders Canada – meeting in Beluga
- MEOPAR WHaLE project – meeting in Orca

Other projects are free to use the plenary room (Pavilion C/D) or the Finback breakout room.

6:30-9:00 pm – Offsite reception with CaNOE at ScienceWorld
MEOPAR delegates are invited to connect with CaNOE delegates during breaks and lunch on Wednesday, as well as at the offsite reception with ScienceWorld Wednesday evening.

There are two buses available for transportation from the Sheraton to ScienceWorld and back. Buses will leave the Sheraton bus loop at **6:15pm** and **6:30pm**. They will leave ScienceWorld to return to the Sheraton at **8:30pm** and **9:00pm**.

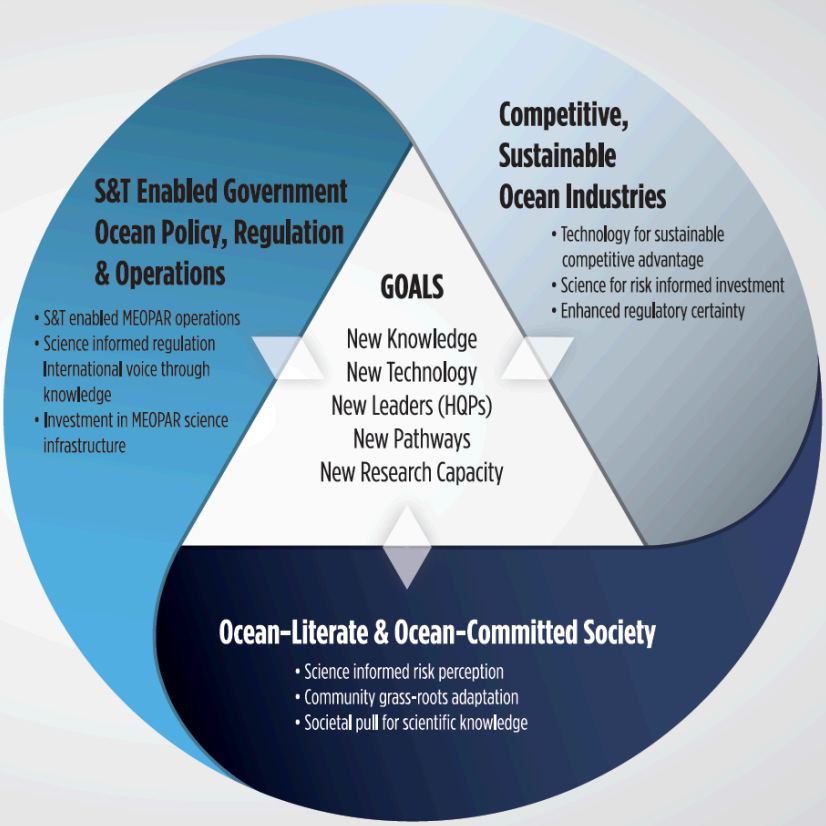


MEOPAR

MARINE ENVIRONMENTAL OBSERVATION PREDICTION & RESPONSE NETWORK

MEOPAR Strategic Outcome:

MEOPAR will deliver knowledge, technology, and people to enable Canada's communities and industry to enhance resilience and economic opportunity through an informed relationship with the changing marine environment.



PHASE 1: BUILD CAPACITY
- New Ocean Science
- New Approaches to Ocean Science

PHASE 2: OPEN PATHWAYS
- Receptors recognize value
- Research is impactful
- Network has national & international stature

PHASE 3: SUSTAIN MOMENTUM
- Receptors are committed
- Partners are investing
- Society expects Canadian ocean science leadership

DAY THREE

Thursday, June 18, 2015

8:00 am – Continental breakfast

8:45 am – Welcome/Introduction to Day Three

9:00 am – Research Management Committee (RMC) Meeting
Meeting in Beluga room until noon.

9:00 am – Workshop on MEOPAR renewal
Led by Tim Fleming, facilitator from Innovation Works. Breakouts in Pavilion Ballrooms A and B, Finback and Orca.

10:00 am – Reporting back: Renewal: from planning to action

10:30 am – Networking break
Enjoy coffee and a light snack in the Pavilion Ballroom foyer; network, meet our MEOPeers and learn about their research from their scientific posters.

11:00 am –Special Topics
Members of the MEOPAR Network were asked to submit abstracts for special topic sessions. The following three topics were selected by a subset of the RMC. These topics are

1) **Coastal Climate Adaptation Capacity-Support (Brennan Vogel and Gordon McBean), Pavilion Ballroom A**

   In Fall 2014, the MEOPAR Partnership Development Program sponsored 4 focus groups with Nova Scotia municipal stakeholders (n=35) to solicit knowledge on the 'Municipal Climate Change Action Planning' (MCCAP) process unique to Nova Scotia. Focus group participants identified three main categories of opportunity for academia to provide capacity & support for municipal adaptation decision-making:
   1. Providing service-based information to support municipal adaptation needs;
   2. Assisting with action planning by helping to fill analysis gaps to support risk prioritization and evidence-based decision-making; and,

3. Assisting with capacity building through community engagement, education and/or training for municipal councils and the public to support adaptation implementation

Some specific needs for academic collaboration discussed by participants included:

- 'Best practices', frameworks, case studies, including tools and processes, for adaptation,
- Action planning for flood management, coastal research on open space planning,
- Technical information including climate impact modeling, scenarios and mapping to local scales,
- Methods to monitor local climate change impacts
- Simplified, practical and usable applications for municipal decision-support

Focus group participants highlighted that implementation of MCCAP's may be complex, providing opportunities for academia to contribute non-biased, external research, information and knowledge to strengthen the credibility of risk prioritization and planning processes while supporting and facilitating the implementation of adaptation policy initiatives. These findings provided ripe grounds for further developing MEOPAR knowledge mobilization. In Winter 2015, a Community of Practice workshop (private sector, non-governmental, provincial government, academia) convened at the NCE – Knowledge Mobilization symposium in Halifax to further discuss MCCAP focus group findings and the opportunities for academic-stakeholder collaboration on issues of adaptation policy and planning. This session will be an excellent opportunity to convene a working group of researchers to discuss recent NCE-symposium and MCCAP focus group findings. The purpose of the workshop is to facilitate opportunities for capacity-support and collaboration between MEOPAR network researchers.

2) Example of Rapid Sharing of Knowledge Among Peers (Susan Allen), Pavilion Ballroom B

The transfer of knowledge to stakeholders is fundamental to MEOPAR. Effective/efficient research can be facilitated by knowledge sharing among peers. In this presentation we will give an example of a collection of software collaboration tools and web services that facilitate rapid sharing of documentation, results, tools and code among a geographically distributed team of researchers. They also enable instant publication to the web of aspects of the project's work that are deemed useful to the worldwide user community. The example is the configuration of the NEMO ocean model by groups working on both the Atlantic and Pacific Coasts. The tools were chosen and configured to be as lightweight as possible so as to allow the research teams to focus on model development rather than burden them with many new technologies to work with daily. Distributed version control is the foundation that ties the tools together. It is applied to not only code, but also documentation, model configurations, and analysis of model run results. A summary of the specific tools in use in the project, why they were chosen, and how they are coordinated through web services will be presented. The role that these collaboration tools played in implementing NEMO on two coasts will be highlighted and how similar systems could be configured for very different MEOPAR projects will be suggested.

3) **Community responses to marine and coastal hazards – a meta approach (Barbara Paterson and Tony Charles), Orca**

Coastal communities are unique places where society, ocean, air and earth intersect. This nexus makes coastal communities vulnerable to a complex series of coastal hazards, ranging from climate change impacts to oil spills, each with resulting social-ecological degradation. Communities have no control over the occurrence or magnitude of coastal hazards, though they can influence the effect and impact of these hazards through their subsequent responses. Based on a systematic review of the peer-reviewed literature, we present results from a meta-analysis of over 2000 documented community-level responses to both marine and terrestrial hazards, and discuss the anticipated benefits of our research for various audiences. Firstly our systematic review provides an overview of the global state of the art in community responses to hazardous events. Secondly, our research has created a knowledge repository that provides insights to Canadian coastal communities about how people elsewhere in the world are coping with similar kinds of threats. Lastly our meta-analysis demonstrates to governmental authorities that communities are not just clients but also resources with which they can partner. Thus communities, researchers and governments can use this information and together develop best practices for Canadian coastal communities based on experiences in communities worldwide.

12:00 pm – Lunch
Return to Pavilion Ballroom C/D for a buffet lunch served in the foyer.

1:00 pm – Initial Projects
Projects from MEOPAR's Initial Projects that were awarded in 2013 will each give a ten-minute 'high-level' update. The principal investigators (PIs) will present in a five-person panel: Hal Ritchie (Environment Canada/Dalhousie University), Susan Allen (University of British Columbia) & Jinyu Sheng (Dalhousie University), William Merryfield (Environment Canada/University of Victoria) and Katja Fennel (Dalhousie University).

1:40 pm – Move to breakout rooms

1:45 pm – In-depth discovery of the science in each project
These in-depth sessions may be presented by any member(s) of the research team.

Hal Ritchie (Environment Canada/Dalhousie University) – A Re-locatable Coupled Atmosphere-Ocean Prediction System (Pavilion Ballroom A) Developing a re-locatable forecast system that can be used within hours of a marine emergency (such as search-and-rescue incident or oil spill) anywhere along Canada's coastline. Through being easily and quickly re-locatable and providing a range of predictions, better decisions can be made and incorporated into emergency response plans. Ultimately, this rapidly deployable prediction system will be transferred to Environment Canada for operational use.	**Susan Allen (UBC) & Jinyu Sheng (Dalhousie University) – Building a Network of Fixed Coastal Observing and Forecast Systems (Pavilion Ballroom B)** Building the basis for an integrated observation and prediction system for Halifax Harbour, NS and the southern Strait of Georgia, BC. This project will transform observations into useful produts (e.g., forecasts of sea level, waves, currents, biogeochemical properties) in support of multiple users (e.g.. port authorities, municipalities, oil and gas sector).
William Merryfield (Environment Canada/University of Victoria) – Climate Change and Extreme Events in the Marine Environment (Finback) Quantifying the risks associated with changes in the physical properties of the marine atmosphere and ocean (e.g. extreme wind, waves, etc.) This large project consists of six separate subprojects.	**Katja Fennel, Dalhousie University – Biogeochemical Projections Under a Changing Climate (Orca)** Oceans across the globe are warming, becoming more acidic, and losing oxygen. These biogeochemical changes could have severe impacts on local marine ecosystems. Dr. Fennel's research is looking at ways to better quantify and project how marine species in Atlantic Canada will respond to these environmental changes over the coming decades and century.

3:00 pm – Networking break
Enjoy coffee and a light snack in the Pavilion Ballroom foyer; network, meet our MEOPeers and learn about their research from their scientific posters.

3:30 pm – ASM Closing & Evaluation
Lead by Scientific Director Doug Wallace and Associate Scientific Director Ron Pelot.
Please complete your evaluation.

4:00 pm – Project meeting time (optional); dismantle scientific posters

MEOPeer Posters

1. Brennan Vogel - *MCCAP focus group findings*

2. Emmanuel Devred - *Coastal Alimetry on the Scotian Shelf*

3. Pierre Dutrieux - *Simulations with the Canadian Regional Climate Model (CRCM5) over the Canadian East Coast and the North Atlantic Ocean*

4. Leticia Hernandez-Diaz - *Impact of bias correction of Global Climate Model-projected sea surface variables used as lower boundary condition for Regional Climate Model projections*

5. Sara Rezaee - *The effect of extreme weather conditions on commercial fishing vessels' safety*

6. Christopher J. Carter - *Using vulnerability indicators to develop resilience networks in the Straight of Georgia: a similarity approach*

7. Christian Seiler - *How will climate change affect explosive cyclones?*

8. Hansen Johnson - *Real-time monitoring of baleen whale distribution and habitat on the Scotian Shelf from ocean gliders*

9. Jonathan Lemay - *Hurricane Arthur and its effect on the short-term variability of pCO2*

10. Jonathan Kellogg - *InFORMative Science: Monitoring the Arrival of Fukushima Radionuclides on the Canadian Coast*

11. Colin Hughes - *Ocean Surface Wave Effects on Powering Near Intertial Motions*

12. James Shewmake - *Mapping Maritime Intersections: A Climatology of Hazards for Newfoundland Fisheries*

13. Michel Tamtare - *Improving marine drift and dispersion forecasts*

Theme 1: Hours to Seasons

May 2015

- A Relocatable Coupled Atmosphere-Ocean Prediction System - *PI: Dr. Harold Ritchie, Environment Canada/Dalhousie University*
- Building a Network of Fixed Coastal Observing Forecast Systems - *PIs: Dr. Jinyu Sheng, Dalhousie University; Dr. Susan Allen, University of Victoria*
- Straight of Georgia Indicators and Impact Scenarios – *PI: Dr. Stephanie Chang, University of British Columbia*
- Improving Marine Drift and Dispersion Forecasts – *PI: Dr. Dany Dumont, Institut des sciences de la mer (ISMER), Université du Québec à Rimouski*
- Improved Sea Ice Prediction Through Assimilation of Ice Thickness Information and SAR Image Classification – *PI: Dr. Andrea Scott, University of Waterloo*
- Modeling Ship Movements: Application for Noise Exposure to the Marine Ecosystem – *PI: Dr. Rosaline Canessa, University of Victoria*
- WHaLE: Whales, Habitat and Listening Experiment – *PI: Dr. Chris Taggart, Dalhousie University*
- Maritime Transportation Disruption: An Integrated Assessment for Coastal Community Resilience – *PI: Dr. Stephanie Chang, University of British Columbia*
- Understanding the Factors that Affect the Properties of Coastal and Polar Fog – *Dr. Rachel Chang, Dalhousie University*
- Socio-ecological Modeling of the Acoustic Environment and Interactions Between Whales and Ships in the Estuary of the St. Lawrence – *PI: Dr. Jérôme Dupras, Université du Québec en Outaouais*
- It's Too Easy Being Green: Using Underwater Video to Optimize Capture Efficiency of Invasive Green Crab (*Carcinus maenas*) to Reduce Their Impact on Fisheries – *PI: Dr. Brett Favaro, Memorial University*
- Evaluation, Improvement, and Communication of Short-Term Hazardous-weather Forecasts over Coastal British Columbia – *PI: Dr. Daniel Kirshbaum, McGill University*
- Modeling and Predicting Disease Outbreak and Spread in Coastal Seas: Sustainability in Fisheries and Aquaculture – *PI: Dr. Martin Krkosek, University of Toronto*
- Improving Oil Spill Models to Support Environmental Emergency Response and Chemical Dispersant use Policy Development – *PI: Dr. Haibo Niu, Dalhousie University*
- Pressured Ice: Environmental Monitoring, Modeling and Mitigation of Risk for Marine Operations – *PI: Dr. Rocky Taylor, Memorial University*
- Insuring Canadian Coastal Communities in the Era of Wild Weather – *PI: Dr. Jason Thistlethwaite, University of Waterloo*
- Forecasting Grand Banks Fog: Assessment, Improvement and Application – *PI: Dr. Joel Finnis, Memorial University*
- Predicting the Microbial Bioremediation Response to Marine Oil Spills in Canada – *PI: Dr. Casey Hubert, University of Calgary*
- Enabling MEOPAR Missions with Autonomous Marine Systems - *PI: Dr. Mae Seto, Dalhousie University*

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Theme 2: Seasons to Decades

May 2015

- Climate Change and Extreme Events in the Marine Environment – *PIs: Dr. Bill Merryfield, Environment Canada/University of Victoria; Dr. Greg Flato, Environment Canada/University of Victoria*
- Marine Applications and Downscaling of Seasonal Climate Predictions – *PI: Dr. Bill Merryfield, Environment Canada/University of Victoria*
- Coastal Storm Activity – *PI: Dr. Francis Zwiers, University of Victoria*
- Estimation of Extreme Wave Statistics Off the East Coast of Canada and Their Future Change - *PI: Dr. Jinyu Sheng, Dalhousie University*
- Assessing and Reducing Risk and Vulnerability to Extreme Events in Newfoundland and Labrador Fishing by Engaging Stakeholders and their Knowledge – *PI: Dr. Barbara Neis, Memorial University*
- Adapting to Climate Change Risks: Planning and Policy in Municipalities – *PI: Dr. Gordon McBean, University of Western Ontario*
- Biogeochemical Projections under a Changing Climate – *PI: Dr. Katja Fennel, Dalhousie University*
- User-Driven Monitoring of Adverse Marine Weather States in the Eastern Beaufort Sea – PI: *Dr. David Atkinson, University of Victoria*
- InFORM: International Fukushima Ocean Radionuclide Monitoring Network – PI: *Dr. Jay Cullen, School of Earth & Ocean Sciences, University of Victoria*
- Enhancing Ecosystem Resilience: Integrating Social and Natural Sciences through Marine Historical Ecology - PI: *Dr. Natalie Ban, University of Victoria*
- A Meteorological Observatory in the Northwest Passage: Understanding Sea Ice Changes and Inuit use of Scientific Information – PI: *Dr. Brent Else, University of Calgary*
- Linking Ocean Health and Human Health: Coastal Security and Sustainability in Haida Gwaii – PI: *Dr. Philip Loring, University of Saskatchewan*
- Continuous Spectroscopic Measurements of Marine Boundary Layer Composition and Evolution in an Urban Shipping Environment – *PI: Dr. Aldona Wiacek, Saint Mary's University*
- Ocean Acidification in Canadian Coastal Communities: An Integrated Coastal Acidification Program (I-CAP) – *PI: Dr. Karen Kohfeld, Simon Fraser University*
- Canadian Ocean Acidification Research Program – *PI: Dr. Helmuth Thomas, Dalhousie University*

Observation Core

- DORADO Autonomous Vehicle Development – *PIs: Dr. Doug Wallace, Dalhousie University; Dr. Mae Seto, Dalhousie University*
- Tethered Float Development – *PIs: Dr. Brad DeYoung, Memorial University; Dr. Ralf Bachmayer, Memorial University*
- CODAR Installation – *PIs: Dr. Doug Wallace, Dalhousie University; Dr. Brad DeYoung, Memorial University*
- Strait of Georgia Observations (VENUS) – *PI: Dr. Kenneth Denman, University of Victoria; Richard Dewey, University of Victoria*
- Remote Sensing Support – *PI: Dr. Marcel Babin, Université Laval*
- Shared Equipment Operations – *PIs: Dr. Doug Wallace, Dalhousie University; John Cullen, Dalhousie University*
- Support Services (DM) – *PIs: Mike Smit, Dalhousie University; Dr. Doug Wallace, Dalhousie University*
- Data Management (Social Science) – *PI: Dr. Tony Charles, Saint Mary's University*
- Workshops – *PI: Dr. Brad DeYoung, Memorial University*
- OA Measurement – *PI: Dr. Doug Wallace, Dalhousie University*

Prediction Core

- Downscaling from Large to Small Spatial Scales – *PI: Dr. Rene Laprise, Université du Québec à Montréal*
- Support for the NEMO Model – *PI: Dr. Youyu Lu, Dalhousie University*
- Assessing & Visualizing Risk – *PI: Dr. Ronald Pelot, Dalhousie University*
- Biogeochemical Model Development – *PI: Dr. Jim Christian, University of Victoria*
- Socioeconomic Indicators – *PI: Dr. Stephanie Chang, University of British Columbia*

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