



2016
2017

ANNUAL REPORT

Established in 2012 through Canada's federal Networks of Centres of Excellence Program, the Marine Environmental Observation, Prediction and Response Network (MEOPAR) is a national network of academic researchers and students, government scientists, and partners in the private, NGO and community sectors working together on marine risk and resilience.

MEOPAR is hosted at Dalhousie University in Halifax, Nova Scotia.

Cover: Lighthouse in Rimouski, Québec



Participants in the Winter School visit the HF Radar Station in Rimouski, Québec in March 2017.

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Message from Chair and Directors

2016-17 was an exciting year for the Network. After a successful five years creating and building MEOPAR into a powerhouse of marine risk and resilience research, we were pleased to receive renewed funding from the federal Networks of Centres of Excellence Program. The funding ensures a second five-year cycle, enabling MEOPAR's team to develop new programming that will strengthen the model we have built thus far, and increase the reach of our Network as we begin to think about Cycle III.

As the last year in our first Cycle, 2016-17 was a year of both endings and new beginnings. We learned from the successes of our early years, and began to build a team in preparation for the future. New programs were established, including a focused Research Program, a revised Training Program and a new Knowledge Mobilization Program.



L to R: Dr. Douglas Wallace, Dr. Ronald Pelot, and Dr. Robert Walker

As our Cycle I projects wrapped up, we bridged the gap to carry our expertise forward, and released partnered calls in advance of Cycle II's research funding.

Annual reports may look backward, but in our first five years lie the foundations of our next cycle. This Annual Report therefore serves as both an end-point for Cycle I, and a preview of what we are looking toward in Cycle II. We are proud of how far we have come, but we recognize that we are just getting started.

***Dr. Robert Walker**, Chair, Board of Directors;*

***Dr. Douglas Wallace**, Scientific Director;*

***Dr. Ronald Pelot**, Associate Scientific Director*



57

Projects



87

MEOPAR-Funded
Investigators



24

Universities



256

Highly Qualified
Personnel



174

Partners
(Network &
Project level)

About MEOPAR

The marine environment is undergoing unprecedented change due to phenomena including climate change, and from humankind's rapidly changing use of the ocean.

Understandably, the environment and the strength of Canada's economy are affected by our ability to observe, predict and respond to the risks and opportunities that these changes present.

This is where we see MEOPAR playing a strategic role.

Established in 2012 through Canada's federal Networks of Centres of Excellence Program, MEOPAR is a national network of academic researchers and students, government scientists, and partners in the private, NGO and community sectors working together on marine issues.

An independent not-for-profit, MEOPAR funds research, trains students, mobilizes knowledge and communicates results in the area of marine risk and resilience. For more details on our programs, please see pages 8 through 21.

There are many excellent organizations and researchers doing good work in the marine sector. Part of MEOPAR's strength lies in our connections: in the Network model, we link centres of excellence together to bring about more effective leveraging of resources, training talent and mobilizing knowledge. This approach means that we differ from many organizations by not solely housing our expertise internally; instead, our dedicated staff focus on building and maintaining connections between experts and stakeholders to develop a stronger collective network.

We are hosted at Dalhousie University in Halifax, Nova Scotia, but our network extends across the country to 24 universities and organizations in all ten provinces and three territories.

Cycle II Renewal

MEOPAR was established in 2012 as a new Network of Centres of Excellence (NCE), one of 10 in Canada.

In its first Cycle (2012-17), MEOPAR established organizational and network structures and programs; built new tools and cores for observation, prediction and response; created expert capacity; and developed new partnerships. We built our Network's capacity and began sowing the seeds of our future identity.

Under the NCE Program, every five years Networks must present the case for renewal in a competitive process, outlining the value they provide to the Canadian economy and to Canadian society. MEOPAR went through this renewal process during the 2016-17 fiscal year.

The NCE program expects research excellence, training the next generation of professionals, leveraging our funding into productive partnerships, and ensuring that our knowledge has a real-world impact beyond academic outputs.

In March of 2017, Dr. Kirsty Duncan, Minister of Science, announced that MEOPAR was successful in its renewal bid, and that we would receive funding for an additional cycle (2017-22).

We are pleased to move forward with you into the next phase of our organization, which we have entitled Strengthening Pathways. In this second cycle, MEOPAR is building on our first cycle to increase our Network's capacity in marine risk and resilience and create real-world impact through training, research, knowledge mobilization, and national and international partnerships.

\$2,787,182

non-NCE cash

\$7,738,375

in-kind contributions

\$3,500,035

NCE Grant

Righthand page: Cycle II Renewal
Announcement, held March 1, 2017
at Dalhousie University



An aerial photograph of a vast sea ice field. The ice consists of numerous irregular, white floes of varying sizes separated by dark blue water. In the lower-left quadrant, a small research vessel with a mast and equipment is positioned on a large ice floe. A person wearing a bright red jacket is visible on the vessel. In the lower-right quadrant, a small, dark, low-profile object, possibly a buoy or a small ice floe, is visible in the water.

Working with experts in sea ice and remote sensing to improve sea ice observation and prediction.

Structure: Cores

The marine environment is a broad and wide-ranging field; as a result, our network of projects and researchers is diverse.

To better support the development of our expertise, our research projects are supported by three cores: Observation, Prediction and Response. The Cores allow for sharing of key expertise and knowledge transfer activities that are relevant to MEOPAR projects, as well as to

partners and stakeholders closely related to, but outside of, the existing network.

The Cores provide support and assistance in the form of equipment, technical expertise, training, quality assurance, and skilled talent. Core activities are not tied to an individual project or research question, but support projects, research impact, and connections between projects.

Observation Core

Within MEOPAR's Observation Core, PhD student Chris L'Esperance and PI Doug Wallace (Dalhousie University) worked in close cooperation with International Submarine Engineering Ltd. (ISE) based in Port Coquitlam, BC, to repurpose ISE's unique DORADO autonomous surface vehicle into an unmanned research vessel suited to rapid environmental assessment. Dr. Brad deYoung (Memorial University) and his HQP have developed and are currently testing a new, autonomous oceanographic moored-profiler, a device that takes measurements of the water column on a fixed tether connected to the ocean floor. A spin-off company, AOSI Inc., was created and the team has had several oceanographic instrumentation companies interested in licensing the technology.

Prediction Core

In 2016-17, the Response Core developed ideas and opportunities for sharing research and expertise about impacts and solutions to marine hazards and coastal risks. In Cycle II, four 'Communities of Practice' (CoPs) will facilitate academic and stakeholder research engagement in shared efforts to promote and develop collaborative solutions to marine risk issues. These CoPs include: coastal hazards and risk governance; coastal hazards risk and recovery financing; marine risk communications; and, quick response research. A new online MEOPAR 'Response Directory' provides an accessible knowledge platform and searchable database to learn about 22 Response oriented projects happening in universities across Canada (www.meopar.ca/response_directory).

Response Core

Shortly following the very successful sessions and discussions of the ASM in June, Michael Dunphy (UBC) together with Dany Dumont (UQAR) set up a common repository for hosting and sharing, privately within the Ocean Modelling Community of Practice, the various model codes used by the different groups. The repository is hosted freely at this address <https://gitlab.com/MEOPAR> and currently includes eight members. We expect this number to increase and the repository to be populated by codes and documentation during Fall 2017, so that collaborative model development intensifies in Canada. To be part of the Prediction Core activities, contact Dany Dumont, the MEOPAR Prediction Core Lead.

Using a variety of equipment including buoys, researchers monitor ocean conditions.



12

Projects extended
through
Bridging the Gap



1

Call for
Proposals



155

Attendees at
2016 ASM



130

Articles published
in refereed
publications

Programs: Research

Approach

MEOPAR's Research Program is the foundation of our other programming, funding high-quality, original academic research. These research projects in turn allow us to train students and new researchers who work on the projects, and to mobilize the knowledge gained to ensure it reaches the end user. The projects span a range of topics within the broader field of marine research, from sea ice modelling in the Arctic to coastal flooding on the East Coast to sea colour on the West Coast—and many topics in between.

A fundamental component of the Research Program is our Call for Proposals, which enable the independent Research Management Committee to select the projects that will comprise our research portfolio. Calls may be partnered (in partnership with another funder or organization), focused (MEOPAR-funded but with specific objectives) or open (MEOPAR-funded and open to topics within our broader mandate). In 2016-17, MEOPAR had a total of 57 projects in its research portfolio.

Our Annual Scientific Meeting brings together researchers, partners and students from across the Network. The meeting, held in a different Canadian city each year, hosts approximately 150 attendees in addition to panelists, staff and partners. Researchers have the opportunity to present their work, hear from other professionals in their fields, and attend expert panels and keynotes.

In Cycle II, the Research Program will work to bring in new investigators, continue to fund high-quality, original research, and work with MEOPAR's other programs to connect results to outputs like training and real-world impact.

HIGHLIGHT: Combining Data to Understand Underwater Noise

Principal Investigator: Rosaline Canessa, University of Victoria

Project Title: "Noise Exposure to Marine Environments from Ships: NEMES"

Funding Round: Second Open Call (2014) and Bridging the Gap (2016)

At the heart of MEOPAR's programming is high-quality and original research that contributes to scientific understanding of marine risks and opportunities. Projects in our portfolio are leading edge, diverse and collaborative, with multiple partners and investigators involved.

The goal of Dr. Rosaline Canessa's project is to better understand the impact of noise exposure from ships on the marine environment, particularly for marine mammals. Using a combination of data sources including Automatic Identification System (AIS), hydrophones, acoustic modeling, and aerial surveillance, Canessa's team is building a robust picture of vessel traffic and its associated noise in the Salish Sea and Sgaan Kinghlas-Bowie Seamount Marine Protected Area in the Pacific Region, Inuvialuit Settlement Region in the Western Arctic, and Laurentian Channel in the Atlantic Region.

The NEMES project team is formed by researchers from three Canadian Universities (University of Victoria, Memorial University, Dalhousie University), industry partners (JASCO Applied Science, exactEarth, Port of Vancouver), government institutions (Environment Canada, Department of Fisheries and Oceans and the National Aerial Surveillance Program), and non-government organizations (World Wide Fund of Canada, and Wildlife Conservation Society of Canada). Highly Qualified Personnel and students were,

and continue to be, key members of the team undertaking analysis and leading scientific publications.

In the Salish Sea, NEMES team identified winter months as slightly noisier than summer months due to more frequent storms and differences in water column conditions. In winter months, low water temperatures near the surface of the water creates a sound channel that allows sound to travel greater distances. The research also established that ferries, being the vessels that more often transit Salish Sea waters, were the biggest noise contributors, followed by tugs and container ships. Small vessels, such as recreational vessels, also play a role in underwater noise, particularly during the summer months, a contributing factor that Canessa and her team hope to better understand by using alternative vessel traffic monitoring methods.

NEMES is also working to raise awareness through public presentations, community events, video, and partnerships with local authorities, to drive the message home to those using the water recreationally. By ensuring that engines are well-maintained, being aware of vessel speeds, and avoiding sudden changes of speed or direction, small and recreational boaters can reduce the noise impact of their vessel on the marine environment. Public can learn more about the NEMES project at www.nemesproject.com.



Researchers with Rosaline Canessa's project are working to better understand underwater noise.



Haida Gwaii is the focus of Phil Loring's Early Career Faculty Development Grants project.

HIGHLIGHT: Understanding Social Networks on Haida Gwaii

Principal Investigator: Philip Loring, University of Saskatchewan

Project Title: “Linking Ocean Health and Human Health: Coastal Security and Sustainability in Haida Gwaii”

Funding Round: Early Career Faculty Development Grants (2014)

Understanding the marine environment requires scientists to consider the marine environment as a whole, and those who interact with it.

Dr. Philip Loring’s project on Haida Gwaii on Canada’s western coast focuses on using local perspectives to understand the relationship between the state of the marine environment and its resources, and the wellbeing of communities on Haida Gwaii. While there are obvious links between marine resources and coastal communities—fishing, for example—Loring’s work studies less tangible connections between the ocean and coastal communities such as psychological interaction, security, and cultural identity.

Through previous work in Alaska with a broader American project called Ocean Tipping Points, Loring was asked to develop a similar approach for Haida Gwaii. The project received funding from Parks Canada, and additional funding through MEOPAR’s Early Career Faculty Development Grants. In a highly diverse and strategic region like Haida Gwaii, careful and sustainable management is vital to its long-term survival: the lower half is a National Park Reserve and Haida

Heritage Site, co-managed by Parks Canada and Haida Gwaii First Nation. However, the region is also likely to see increased shipping traffic should pipelines for moving natural gas or bitumen be developed.

The ocean’s material benefits are generally understood, and issues such as food security are certainly significant. However, Loring found that overwhelmingly, when residents talked about the marine environment, it was the non-material benefits that were most emphasized. Exploring tidal pools with grandparents, personal connections to place, healing relationships, and other traditional associations were as important as the material benefit from living in a coastal community.

Loring’s work is also contributing to an understanding of successful co-management, particularly the importance of social network analysis. The low-impact social network analysis tool designed by Loring and his team was created in a way that facilitates replication, enabling his local partners to repeat the study in a few years, or other researchers to use it in other culturally-significant areas around Canada.

HIGHLIGHT: MEOPAR's Scientific Directors

MEOPAR's scientific programming benefits from the guidance of two renowned researchers who serve as our Scientific Director and Associate Scientific Director.

Doug Wallace Scientific Director

Doug Wallace is MEOPAR's Scientific Director, based at Dalhousie University. He also holds the Canada Excellence Research Chair (CERC) in Ocean Science and Technology. Prior to his MEOPAR and CERC appointments, Doug made significant scientific contributions through the Intergovernmental Panel on Climate Change, and the US Department of Energy where he developed the first survey to measure the global distribution of fossil-fuel carbon in the oceans. A chemist by background, Doug's research interests lie in the ways chemistry impacts biological life in the ocean, and how biological life impacts the ocean's chemistry. His foci are primarily the carbon cycle and nitrogen cycle, and the interaction between those cycles in the ocean and the atmosphere.

As MEOPAR's Scientific Director, Doug works to identify and pursue opportunities for partnerships that lead to relevant scientific innovation, creating connections between people with different interests and skills and creating mechanisms that incentivize collaboration for long-lasting value.

Highlight of the year

In addition to MEOPAR receiving renewed funding, two projects stand out as highlights in 2016-17. The first is the successful field trials of the DORADO, a purpose-built semi-submersible Autonomous Underwater Vehicle (AUV) in Belcarra, British Columbia. With funding from MEOPAR, the collaboration with the Canadian Navy and International Submarine Engineering Ltd. demonstrated the capacity of unique Canadian technology for ocean observation, with significant future possibilities for unmanned research vessels.

A second highlight is MEOPAR's WHaLE project, which addresses whale-vessel risk through the use of underwater ocean gliders as well as passive acoustics and satellite ship-tracking technology. The project anticipated a situation that unexpectedly became a crisis midway through 2017. The tragedy of the later right whale crisis underscores the importance of developing science-based approaches and processes that anticipate the future needs of a changing marine environment.



Dr. Doug Wallace, Scientific Director

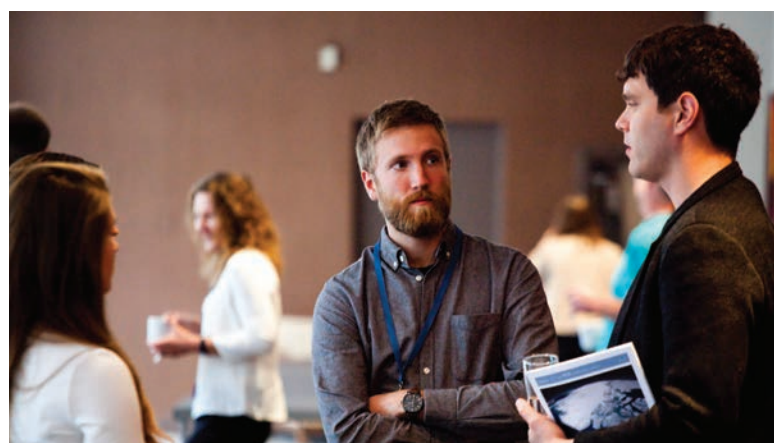
Ron Pelot

Associate Scientific Director

Ron Pelot is a Professor of Industrial Engineering, and an adjunct professor in the Marine Affairs Program, at Dalhousie University. As the Associate Scientific Director of MEOPAR, he has played a role in the development of the Response Core, the establishment of the framework for Communities of Practice, partnership development, and the program for the Annual Scientific Meeting (ASM). Ron's own area of research is marine risk analysis, and in particular maritime traffic modelling and risk management. This involves studying risks to ships, and risks from ships. As an example of the former, the effects of weather factors on fishing vessel incidents were studied, including the implications of extreme weather variations due to climate change. Ron is collaborating on several projects examining risks arising from shipping operations, including oil spills, vessel noise, invasive species from ballast water, and ship emissions. He has derived methods to help improve emergency response times to accidents or spills at sea through location models for new Coast Guard bases and positioning planning for their rescue vessels. As the navigation season is lengthening in the Arctic due to global warming, and northern development is being actively pursued, this brings new challenges for research in arctic shipping. Ron has undertaken several studies in this regard. Ron has also prepared a paper to demonstrate how each of the MEOPAR-funded projects across the Network in Cycle I contributes to understanding and mitigating ocean and coastal risks, one of MEOPAR's fundamental aims.



Dr. Ron Pelot (centre), Associate Scientific Director



Brett Favaro (MUN) and HWP Jonathan Bergshoeff (MUN) at the 2016 Annual Scientific Meeting in Ottawa

Highlight of the year

The ASM in September 2016 was a highlight of the year, with great participation from our researchers, partners and other stakeholders, a focus on knowledge mobilization and on shipping which is a key thematic topic, and effectively coupled with our Annual Training Meeting.

HQP testing skills from
the Annual Training
Meeting photography
workshop in Banff, AB

\$25,000

Training funding awarded
to HQP in 2016-17



256

Number of HQP
in 2016-17



475

Total HQP
in Cycle I



24

Representing
Universities
& Organizations



127

Full Time
Employees



80

Attendees
at ATM

Programs: Training

Approach

MEOPAR's Training Program has been an integral part of the organization for many years, providing value-added training and networking opportunities to our highly-qualified personnel (HQP) working on research projects throughout the Network. The HQP include undergraduate and graduate students, post-doctoral fellows, and research associates and technicians, with a range of experience and expertise in many areas.

Each research project in the Network includes a training component, with HQP supported by MEOPAR research funding. The project-level training plays a critical role for many in gaining research experience, completing their degrees, and developing the skills required for employment. MEOPAR also provides funding to advance training opportunities through technical courses, attending conferences, and travel to work with international colleagues.

Each year, HQP from across the country come together for an Annual Training Meeting, featuring focused sessions around professional and career development as well as tailored training in subject-specific areas. Employer tours, discussion panels, networking events and opportunities to present their work help prepare the HQP for the next steps in their careers, whether within academia or in not-for-profits, government or the private sector.

In Cycle II, the Training Program will include more hands-on opportunities such as mentorships, internships and connections with potential employers. Work-integrated learning opportunities will help ensure that the HQP are well-equipped for the transition from university to post-graduate employment, and that employers have access to a well-trained and qualified workforce in marine research.



HIGHLIGHT: Winter School

Principal Investigator: Dany Dumont, Université de Québec à Rimouski

Project Title: Winter School

Funding Round: Support provided by the MEOPAR Prediction Core

Training goes beyond what students and new researchers learn in the lab, classroom or office. By enabling HQP to have hands-on experiences outside of their usual project work, MEOPAR helps develop well-rounded, experienced researchers ready to excel in their careers.

In 2016-17, one such experience was the Winter School, organized by Dr. Dany Dumont and HQP Dr. Marion Bandet, with support through MEOPAR's Prediction Core.

For one week in March 2017, 18 participants from around the world gathered in Rimouski, Québec to discuss marine environmental prediction, sea ice dynamics—and experience ice canoeing. The Winter School offered intensive courses, lectures and hands-on experiences in true winter conditions, to get participants up close and personal with sea ice.

The training event grew out of Dumont's use of ice canoes to travel to marine coastal research sites with unstable ice. Dumont places sensors to record waves propagating through the ice to find out

what impact the wave action has on ice break-up. Dumont's unusual partnership with the ice canoe team at UQAR garnered recognition at the Montreal Ice Canoe Challenge for the innovative use of a Canadian heritage icon.

In addition to ice canoeing, attendees participated in intensive courses and lectures on several topics including ocean, wave and sea ice modelling, data assimilation, climate scenarios and code automation, along with hands-on experiences such as hiking Pic Champlain.

HQP reported that networking with early career researchers from across Canada and around the world was a highlight of the event, enabling them to discover opportunities for potential collaboration. With participants hailing from diverse fields, the intensive exposure to a variety of topics at the Winter School opened their eyes to new or more focused areas of study, as well as providing a week of building both connections and memories.



Winter School participants try ice canoes
in Rimouski, Québec



Reaching the end-user and public are key components of our knowledge mobilization program.



536

Total knowledge
transfer activities



4

Products and
Innovations



155

Conferences,
workshops &
public presentations



130

Project media
appearances
(print, radio & tv)

Programs: Knowledge Mobilization

Approach

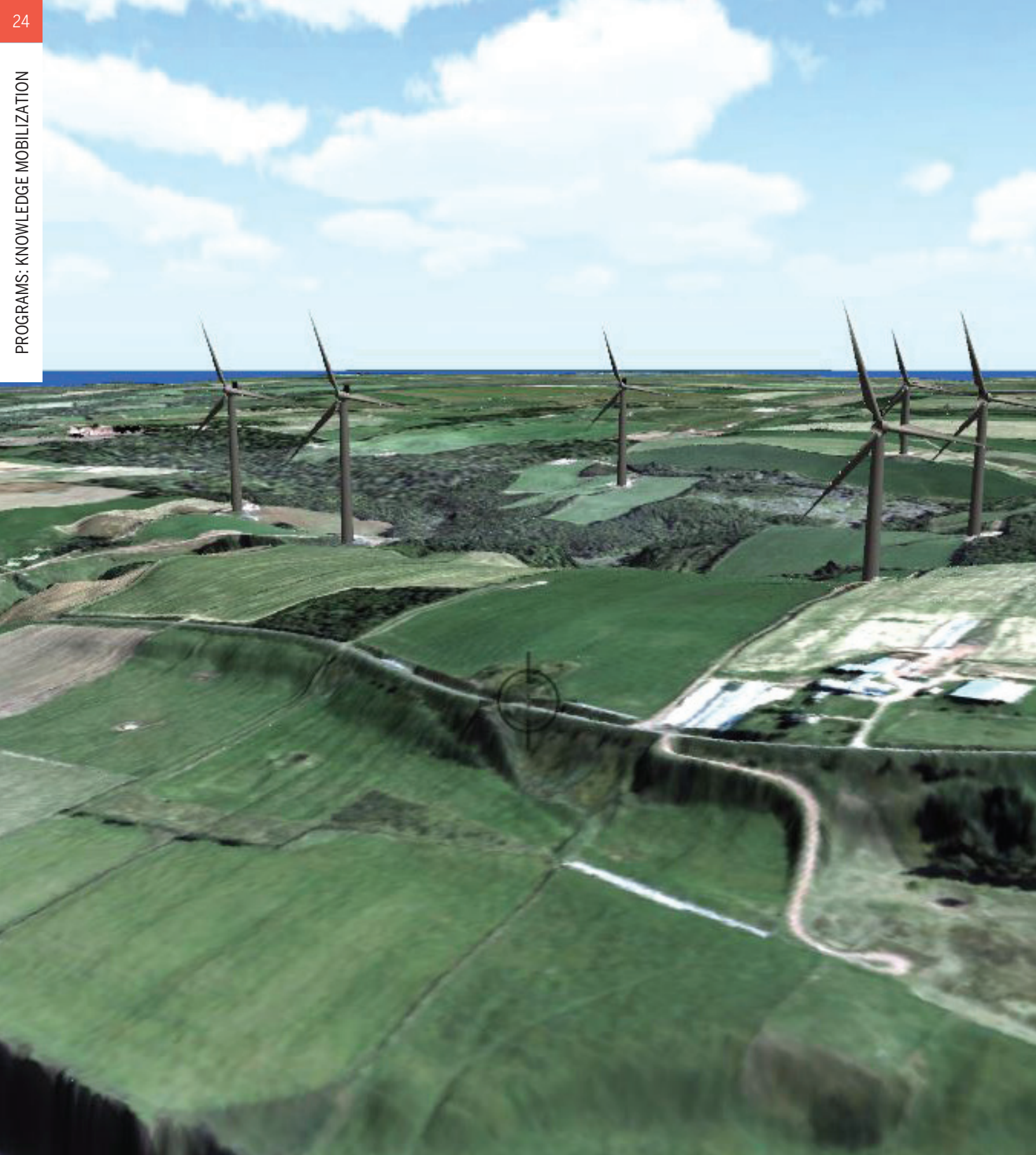
Knowledge Mobilization describes the process by which evidence (usually in the form of research findings) is applied or made useful to non-academic end-users (e.g. government organizations, policy makers, the general public, private industry or not-for-profits).

MEOPAR works to mobilize the knowledge gained through our research program to encourage social innovation and provide value for the Canadian economy and society. This is accomplished by working with key partners and end-users throughout the research cycle – from the identification of the research question, to evaluating the results of the project and putting them to use. In doing so, MEOPAR works to increase evidence-based decision making in:

- (1) Public policy
- (2) Government operations and regulations
- (3) Coastal communities
- (4) Marine industry operations

Knowledge mobilization informs all aspects of our core business including research, training and partnerships, to ensure MEOPAR's research has impact for Canada.

In 2016-17, MEOPAR created a new Knowledge Mobilization Program in anticipation of its second funding cycle. The Knowledge Mobilization program will develop new funding opportunities to encourage partner involvement and investment in academic research, as well as provide training for investigators and HQP on how to incorporate knowledge mobilization within their research plans.



A CLiVE visualization of Lennox Island's wind turbines and elevation.

HIGHLIGHT: Drones Over Lennox Island

Principal Investigator: Adam Fenech, University of Prince Edward Island

Project Title: “Testing New, Innovative and Affordable Technologies for Monitoring and Visualizing the Impacts of Sea Level Rise, Erosion and Storm Surges on Coastal Environments”

Funding Round: Irving Shipbuilding Partnership (2015)

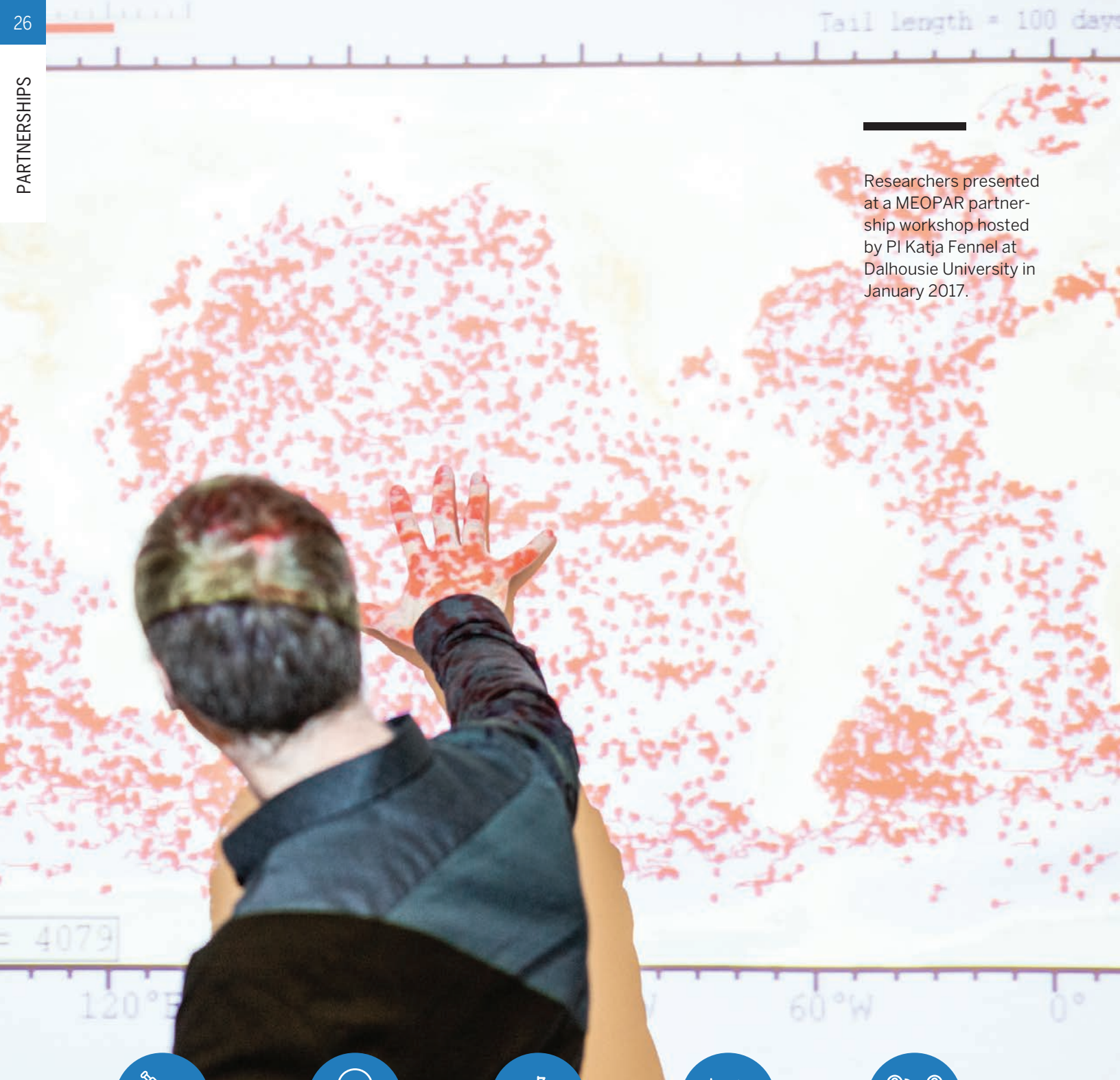
For research to have an impact on Canadians, it is vital to consider how scientific knowledge can reach the end user—whether that end user is a community, an organization, a business, or government. For Dr. Adam Fenech, this consideration is an integral part of his research on coastal erosion.

Fenech's project uses Light Detection and Ranging sensing (LiDAR) which uses a laser to obtain highly precise data about the earth's surface. While LiDAR is most commonly used with aircraft, Fenech's team has employed the use of a drone to precisely map areas of Lennox Island, a First Nation community off the coast of Prince Edward Island. The greater resolution—1 cm versus 1.5 m—in conjunction with Real-Time Kinematic (RTK) GPS allows the team to depict accurately the location of homes and topography on Lennox Island.

What makes Fenech's work even more interesting is the implementation: the team have turned the LiDAR data into a video game-style visualization, which demonstrates the risks for coastal erosion and flooding to properties in the community. Through funding

secured through MEOPAR's joint call for proposals with Irving Shipbuilding, Fenech developed the program to include architectural software, rendering buildings and houses accurately based on real life.

The visual demonstration of the risk to the community delivers an emotional as well as scientific effect: by mapping a place that people know, it drives home the real risks that climate change poses to coastal communities. The tool informs local Mi'kmaq communities in developing their adaptation and emergency management plans. Fenech's hope is that these demonstrations will prompt communities and governments to consider long-term planning and adaptation to anticipate and respond to the potential risks and opportunities of future climate change.



Researchers presented at a MEOPAR partnership workshop hosted by PI Katja Fennel at Dalhousie University in January 2017.



57

Projects



87

MEOPAR-Funded
Investigators



24

Universities



256

Highly Qualified
Personnel



174

Partners
(Network &
Project level)

Partnerships

Approach

MEOPAR partners with organizations in two ways:

1. At the network level, through partnered Calls for Proposals, workshops, Expert Fora, and special events;
2. At the project level, through active collaborations with investigators, in-kind contributions of equipment, training, sharing of facilities, or provision of data.

Partnerships take many forms, including collaborations, formal partnered calls for proposals, opportunities for research impact, training and mentorships, or partnered events. MEOPAR's partnership philosophy encourages connections with large and small organizations: the quality of the interaction is more important to us than the size of the funding envelope.

Partnering with other like-minded organizations allows MEOPAR to leverage its NCE funding, to expand our network of researchers, and to draw attention to specific subjects that may not arise organically through our more traditional Open Calls.

We welcome the opportunity to partner with other Networks, academic organizations, not-for-profits, government, and the private sector.

HIGHLIGHT: Irving Partnership

MEOPAR partnered with Irving Shipbuilding Inc. (ISI) as part of ISI's commitment to a sustainable marine industry under the National Shipbuilding Strategy. Our involvement with Irving Shipbuilding enabled MEOPAR to increase the number of projects funded within the Network, expanding the capacity and range of our research. The projects span a variety of crucial subjects addressing marine risk, with potential benefits for coastal regions, shipping and logistics, industry, environmental organizations, and First Nations communities.

Through our partnership with ISI, MEOPAR built a model for future partnerships. Having a process in place for partners to follow in turn resulted in more partnerships, building the resilience and sustainability of the Network. Partners such as ISI were a significant component of our successful renewal for our second Cycle.

By connecting with industry, we can work to ensure that our coasts and the oceans that surround them continue to be used profitably and sustainably for future generations.

HIGHLIGHT: The Year of Polar Prediction

In 2016-17, MEOPAR partnered with Polar Knowledge Canada (POLAR) and the Arctic Research Foundation (ARF) to release a partnered call as part of the Year of Polar Prediction.

The Year of Polar Prediction is a worldwide initiative of the World Meteorological Organization (WMO) that seeks to "enable a significant improvement in environmental prediction capabilities for the polar regions and beyond, by coordinating a period of intensive observing, modeling, verification, user-engagement and education activities."

By partnering with POLAR and ARF, MEOPAR was able to develop a robust targeted call of \$2.3 million, funding five projects that begin in 2017-18, and will run until 2020.

The partnership with POLAR and ARF grew out of MEOPAR's Expert Forum held around the Year of Polar Prediction in October of 2016. The Expert Forum brought together researchers, government and industry to discuss Canada's response, ensuring a Canadian presence in this key WMO initiative.



Irving Shipbuilding, Inc.



Polar Knowledge
Canada

Savoir polaire
Canada



Arctic Research Foundation



Partnering with marine industries helps ensure MEOPAR's research has an impact on the marine environment and Canadian economy.

Board of Directors, 2016-17

Dr. Robert Walker, Chair

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Vice-Chair

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Ms. Kelly Johnstone, KLM Financial,
Executive Committee

Dr. Rachael Scarth, University of Victoria,
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Dr. Wendy Watson-Wright, Ocean
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Brian Flemming, QC, Legal Counsel

Dr. Charles Lin, Environment and Climate
Change Canada

Dr. Ariane Plourde, L'Institut des sciences
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Mr. Dale Reding, Defence Research and
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Mr. Trevor Swerdfager, Fisheries and
Oceans Canada

Mr. Scott Tessier, Canada-Newfoundland
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Mr. Glenn Blackwood, Memorial University

Ms. Amanda Dean, Insurance Bureau
of Canada

Mr. Rick Schwartzburg, Networks of
Centres of Excellence, Observer

Dr. Tia Moffat, Networks of Centres of
Excellence, Observer

Staff

Dr. Doug Wallace, Scientific Director

Dr. Ron Pelot, Associate Scientific
Director

Stefan Leslie, Executive Director

Julie Atienza, Financial Controller

Alexa Reedman, Research Program

Tanya Crawford, Training Program
(to December 2016)

Laura Avery, Training Program
(from March 2017)

Alison Maunder, Knowledge Mobilization
Program

Janet Stalker, Communications
(to February 2017)

Heather Desserud, Communications
(from March 2017)

Janet Marshall, Office Administrator

Financials

The following are extracts from the audited financial statements. Full audited financial statements are available at meopar.ca

MEOPAR Incorporated Statements of operations and changes in net assets

Year ended March 31	2017	2016
Revenue		
Government assistance – NSERC and SSHRC	\$ 5,207,809	\$ 7,242,584
Partnership	428,250	203,300
Other	16,805	4,914
	<u>5,652,864</u>	<u>7,450,798</u>
Grants		
Research	3,287,787	4,537,765
Early career	-	570,863
Partnership	1,073,875	873,344
	<u>4,361,662</u>	<u>5,981,972</u>
Excess revenue over grants	<u>1,291,202</u>	<u>1,468,826</u>
Expenses		
Board insurance	15,160	15,200
Depreciation	-	3,079
Marketing and communications	79,768	69,492
Meetings and receptions	8,821	14,626
Miscellaneous	23,295	4,992
Office supplies and administration	27,001	41,704
Outreach and events	2,651	32,873
Printing and publications	2,471	1,776
Professional fees	56,640	65,812
Research management	75,810	101,801
Salaries and benefits	597,308	596,105
Training and knowledge mobilization	279,652	403,940
Travel	112,756	108,984
	<u>1,281,333</u>	<u>1,460,384</u>
Excess of revenue over expenses	<u>\$ 9,869</u>	<u>\$ 8,442</u>
Net assets, beginning of year	\$ 38,335	\$ 29,893
Excess of revenue over expenses	<u>9,869</u>	<u>8,442</u>
Net assets, end of year	<u>\$ 48,204</u>	<u>\$ 38,335</u>

The following are extracts from the audited financial statements. Full audited financial statements are available at meopar.ca

MEOPAR Incorporated

Statement of financial position

March 31	2017	2016
Assets		
Current		
Cash and cash equivalents	\$ 103,408	\$ 94,151
Receivables	288,541	20,000
Receivable from Dalhousie University	413,277	2,256,654
HST receivable	<u>52,293</u>	<u>32,552</u>
	<u>\$ 857,519</u>	<u>\$ 2,403,357</u>
Liabilities		
Current		
Payables and accruals	\$ 84,067	\$ -
Deferred revenue	<u>725,248</u>	<u>2,365,022</u>
	<u>809,315</u>	<u>2,365,022</u>
Net assets		
Unrestricted net assets	<u>48,204</u>	<u>38,335</u>
	<u>\$ 857,519</u>	<u>\$ 2,403,357</u>

The following are extracts from the audited financial statements. Full audited financial statements are available at meopar.ca

MEOPAR Incorporated Statement of cash flows

March 31	2017	2016
Increase (decrease) in cash and cash equivalents		
Operating		
Excess of revenue over expenses	\$ 9,869	\$ 8,442
Amortization of capital assets	<u>-</u>	<u>3,079</u>
	9,869	11,521
Change in non-cash operating working capital		
Receivable from Dalhousie University	1,843,377	2,137,521
Receivables	(268,541)	(20,000)
HST receivable	(19,741)	8,027
Payables and accruals	84,067	(129,637)
Deferred revenue	<u>(1,639,774)</u>	<u>(1,957,884)</u>
	9,257	49,548
Net increase in cash and cash equivalents	9,257	49,548
Cash and cash equivalents		
Beginning of year	<u>94,151</u>	<u>44,603</u>
End of year	<u>\$ 103,408</u>	<u>\$ 94,151</u>



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