



2017
2018

ANNUAL REPORT



COVER Photo courtesy of Dr. Maycira Costa, University of Victoria

Photo courtesy of Dr. Brent Else, University of Calgary

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Photo courtesy of
Dr. Randy Scharien,
University of Victoria

Letter from the Board Chair

MEOPAR is a Network of Centres of Excellence that, at its core, seeks to build Canada's capacity in marine observation, prediction and response. Canada is a nation surrounded by ocean: our goal is to better understand the ways in which our actions impact the marine environment, and the ways in which the ocean impacts our communities.

It was my pleasure to join MEOPAR's Board of Directors in 2017-18, and to take on the exciting challenge of Chair upon Dr. Robert Walker's retirement at the end of March 2018.

2017-18 was a year of growth for MEOPAR. Building upon a successful Cycle I, 2017-18 was the first year of the organization's Cycle II. This was an opportunity to create new programs, hone our strengths, and intentionally grow to take advantage of new ideas and directions.

As we look forward to another year, we continue to look for new ways to build connections with organizations, researchers, communities, and the public. Please visit our website, or reach out to MEOPAR to get involved.

Yours sincerely,

DR. KAREN DODDS
MEOPAR Board Chair

About MEOPAR

The Marine Environmental Observation, Prediction and Response Network (MEOPAR) is a national Network of Centres of Excellence, connecting top marine researchers across the country with highly-qualified personnel, partners and communities. MEOPAR aims to train the next generation of marine research professionals, fund leading-edge research, and connect research results to real-world solutions.

Visit **meopar.ca** for more information.

Year In Review

2017-2018 was the first year of MEOPAR's second funding cycle. While the theme of MEOPAR's Cycle I was to build capacity, Cycle II has as its guiding theme that of strengthening pathways—between project teams, partners, and the ocean sector as a whole. The year was focused on setting a direction to set the tone for the next five years, with new and revised programming and initiatives developed in research, training and knowledge mobilization.

Upon receiving confirmation of the network's successful renewal, MEOPAR launched a call for research proposals late in Cycle I in collaboration with two funding partners. Cycle II therefore began with the initiation of five new research projects, along with seven projects previously identified and two "extension" projects. This enabled MEOPAR to continue funding leading-edge research without interruption from the transition from Cycle I to Cycle II.

2017-18 also saw the launch of MEOPAR's largest Call for Proposals, which will comprise the majority of MEOPAR's research over Cycle II. The Call, held in the fall of 2017, successfully funded 12 outstanding applications, each targeting a different aspect of the strategic plan. The call was launched early in Cycle II to ensure research results will be available before the organization approaches the end of its funding schedule.

The call leveraged partnership funding from four organizations, contributing more than \$1 million in funding (not including in-kind support). By partnering with organizations with aligned mandates and objectives, MEOPAR is able to leverage additional funding, tap into a broader

network of potential applicants, increase collaborations, and improve overall outcomes and impacts.

As a Network of Centres of Excellence, MEOPAR's strength lies in its connections. In addition to the significant partnered component of the Call for Proposals, MEOPAR also engaged partners through the 2017 Annual Science Meeting, by planning for a joint ASM in 2018 with the Canadian Meteorological and Oceanographic Society, and formalizing an international relationship with the Marine Alliance for Science and Technology for Scotland (MASTS). Based on our successful approach to partnership, we were approached by other organizations interested in future work.

The 2017-18 training program expanded considerably, with several new offerings that provided unique training opportunities to HQP. MEOPAR initiated a formal mentorship program, pairing HQP with working professionals in their field. A funding allotment was created to enable HQP to attend specialized training courses offered by domestic and international experts and institutions, which resulted in HQP travelling to Sable Island, Greenland, Norway, Nunavut, and the United States.

The MEOPAR Board of Directors is representative of Canada's oceans interests, and is supported by a professional management team and administrative centre. The Board actively monitors network progress, and provides strategic direction. Within the governance model of MEOPAR, the Board is confident that there is a clear and supportive role to play. After six



years of strong leadership by the Board Chair, Dr. Robert Walker, MEOPAR welcomed Dr. Karen Dodds, Former Assistant Deputy Minister for Environment and Climate Change, as its new Board Chair beginning April of 2018.

Last, MEOPAR is very excited to see and participate in the thriving ocean sector, including the creation of the Ocean Supercluster in Halifax, the growth of the Ocean Frontier Institute, and continued strong links with partner organizations like Ocean Networks Canada, Réseau Québec Maritime, Clear Seas Centre for Responsible Marine Shipping, and Ocean Tracking Network.

2017-18 was a strong start for MEOPAR's second cycle. We look forward to continuing to build Canada's capacity to anticipate and respond to marine risk, contributing to a vibrant and beneficial ocean sector.

Photo courtesy of Dr. Tara Martin,
University of British Columbia

Photo courtesy of Dr. Jackie Dawson,
University of Ottawa



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Projects initiated in 2017-18
(Year of Polar Prediction)



27

Total number of active
projects in 2017-18



12

New projects selected in 2017-18
(initiating in 2018-19)



\$6,191,278

Total funding awarded
through 2017 CFP*



24

Member Universities



80

Number of unique investigators
in the network

* \$5,053,278 MEOPAR funding / \$1,138,000 Partner

Network Activities: Research

MEOPAR's Research Program funds leading-edge and high-impact research relating to the organization's strategic plan. Research projects receive funding through competitive proposal processes, with all applications peer-reviewed by the Research Management Committee to ensure academic excellence and strong support to our mandate. Each project team comprises researchers, students and technicians from across Canada, as well as partners, collaborators and end-users, to achieve excellence through collaboration and multi-disciplinary work. In 2017-18, the Research Program held MEOPAR's largest Call for Proposals for Cycle II. The call included multiple partnered components, in which the research topics and objectives were co-developed with partners and end-users, along with a large open component inviting research across MEOPAR's strategic plan. Through the call, the Board approved 12 projects for funding spanning social sciences and physical sciences, with high potential for impact and world-class research breakthroughs.

April of 2017 also kicked off the Year of Polar Prediction projects, a partnered call initiative that emerged through an Expert Forum and government partnership.

Funded Research in 2017-18

Irving Shipbuilding Projects – Final Year

- 1 Assisting fisheries management by integration of data from non-specialized assets, ferries, citizens and satellites
DR. MAYCIRA COSTA, UNIVERSITY OF VICTORIA
- 2 Observing and responding to pressures on Arctic marine ecosystems
DR. BRENT ELSE, UNIVERSITY OF CALGARY
- 3 Testing new, innovative and affordable technologies for monitoring and visualizing the impacts of sea level rise, erosion and storm surges on coastal environments
DR. ADAM FENECH, UNIVERSITY OF PRINCE EDWARD ISLAND
- 4 Continuous assessment of plankton abundance and community structure in Canadian coastal waters with a novel, flow-through, high-throughput holographic microscope operated on volunteer observing ships
DR. JULIE LAROCHE, DALHOUSIE UNIVERSITY
- 5 Safer shipping through summer sea ice: new synthetic aperture radar (SAR) based tools for monitoring and predicting sea ice conditions
DR. RANDY SCHARIEN, UNIVERSITY OF VICTORIA
- 6 Prioritizing threat management strategies to ensure long-term resilience of the Fraser River Estuary
DR. TARA MARTIN, UNIVERSITY OF BRITISH COLUMBIA; DR. JULIA BAUM, UNIVERSITY OF VICTORIA

- 7 Arctic marine activities integration and synthesis (AM AIS) project: Infusing Inuit voices into Arctic marine transportation corridors and oceans

DR. JACKIE DAWSON, UNIVERSITY OF OTTAWA

- 8 Ocean observation using microbial genomics: a new baseline tool for environmental effects monitoring of marine pollution

DR. CASEY HUBERT, UNIVERSITY OF CALGARY

- 9 Monitoring marine plastics in Canada's North

DR. MAX LIBOIRON, MEMORIAL UNIVERSITY

Knowledge Transfer Extensions Projects

- 10 Climate change and extreme events in the marine environment

DR. BILL MERRYFIELD, UNIVERSITY OF VICTORIA

- 11 Downscaling atmosphere-ocean forecasts from global to harbour scales with application to the Maritimes

DR. HAL RITCHIE, DALHOUSIE UNIVERSITY

Bridging the Gap Projects

- 12 User-driven monitoring of adverse marine and weather states, Eastern Beaufort Sea

DR. DAVID ATKINSON, UNIVERSITY OF VICTORIA

- 13 Marine acoustic disturbances: shipping and marine renewable development across Canada, mitigation, management and monitoring of associated noise

DR. ROSALINE CANESSA, UNIVERSITY OF VICTORIA

- 14 Integrated Fukushima Ocean Radionuclide Monitoring (InFORM) Network: a collaborative radiation monitoring network to determine and communicate environmental risks for Canada's Pacific and Arctic Oceans from the Fukushima-Daiichi nuclear accident

DR. JAY CULLEN, UNIVERSITY OF VICTORIA

- 15 Improving marine drift and dispersion forecasts

DR. DANY DUMONT, UNIVERSITÉ DU QUÉBEC À RIMOUSKI

- 16 Integrated Coastal Acidification Program (ICAP-2)

DR. KAREN KOHFELD, SIMON FRASER UNIVERSITY

- 17 Improved observation and prediction of sea ice hazards to assist decision-making in safe and efficient Arctic shipping and offshore operations

DR. ANDREA SCOTT, UNIVERSITY OF WATERLOO

- 18 Whales, Habitat and Listening Experiment (WHaLE)

DR. CHRIS TAGGART, DALHOUSIE UNIVERSITY

- 19 Canadian Ocean Acidification Research Project (COARP)

DR. HELMUTH THOMAS, DALHOUSIE UNIVERSITY

Year of Polar Prediction

- 20 Enhancing Arctic Ocean monitoring and prediction with autonomous sensors, numerical models and social networks

DR. PHILIPPE TORTELL, UNIVERSITY OF BRITISH COLUMBIA

- 21 Forecasting Regional Arctic Sea Ice from a Month to Seasons (FRAMS)

DR. BRUNO TREMBLAY, MCGILL UNIVERSITY

- 22 Southampton Island Marine Ecosystem Project (SIMEP)

DR. C.J. MUNDY, UNIVERSITY OF MANITOBA

- 23 Improving visibility forecasting in summer time polar fog

DR. RACHEL CHANG, DALHOUSIE UNIVERSITY

- 24 Predicting the Future(s) of Renewable Energy in Canada's Arctic

DR. ADAM MONAHAN, UNIVERSITY OF VICTORIA

Cores

- 25 Observation Core

DR. BRAD DEYOUNG, MEMORIAL UNIVERSITY

- 26 Prediction Core

DR. DANY DUMONT, UNIVERSITÉ DU QUÉBEC À RIMOUSKI

- 27 Response Core

DR. STEPHANIE CHANG, UNIVERSITY OF BRITISH COLUMBIA

Member Universities

DALHOUSIE UNIVERSITY
MCGILL UNIVERSITY
MEMORIAL UNIVERSITY
QUEEN'S UNIVERSITY
RYERSON UNIVERSITY
SAINT MARY'S UNIVERSITY
SIMON FRASER UNIVERSITY
UNIVERSITÉ DU QUÉBEC À RIMOUSKI
UNIVERSITÉ DU QUÉBEC À MONTRÉAL
UNIVERSITÉ LAVAL
UNIVERSITY OF ALBERTA
UNIVERSITY OF BRITISH COLUMBIA
UNIVERSITY OF CALGARY
UNIVERSITY OF GUELPH
UNIVERSITY OF MANITOBA
UNIVERSITY OF NEW BRUNSWICK
UNIVERSITY OF OTTAWA
UNIVERSITY OF PRINCE EDWARD ISLAND
UNIVERSITY OF SASKATCHEWAN
UNIVERSITY OF VICTORIA
UNIVERSITY OF WATERLOO
UNIVERSITY OF WINDSOR
WESTERN UNIVERSITY
YORK UNIVERSITY



A map of the Pacific Northwest region, including parts of British Columbia, Canada, and Washington and Oregon, USA. The map is overlaid with a grid of red circles, each containing a number from 1 to 26, representing research project locations. The circles are distributed across the region, with a higher concentration in the coastal and southern areas. A white horizontal line is positioned above the text.

Read a description of each
numbered project on pages 10-11

22

17

7

21

15

26

3

4

11

18

19

23

9

25



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Number of HQP in 2017-18

34

Undergraduate HQP

49

Masters HQP

56

PhD HQP

32

Postdoctoral Fellows

72

Research Associates/Technicians

Photo courtesy of Dr. Adam Fenech,
University of Prince Edward Island

Network Activities: Training

MEOPAR's Training Program works to train the next generation of marine professionals, equipping highly-qualified personnel (HQP) to take on challenges both within and outside academia. The training program works to integrate soft skills and career development with technical skills and in-project training, positioning HQP to succeed and lead in their chosen career stream.

In 2017-18, MEOPAR's Training Program awarded 6 Training Awards, offering funding to HQP interested in attending workshops or taking courses to augment their project learning in areas such as science communication, leadership, project management and technical skills. MEOPAR also sponsored 25 HQP to participate in women's leadership workshops hosted by the Canadian Centre for Women in Science, and hosted a series of free public webinars throughout the year.

The Career Mentorship Program was piloted in 2017-18, matching interested HQP with mentors from industry, government or not-for-profits.

MEOPAR's Annual Training Meeting took place in Montreal in June 2017, bringing together students, postdoctoral fellows, technicians and other HQP for two days of intensive value-added training and networking opportunities.



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HQP Trained by MEOPAR



6

Career Mentorship Program
participants (pilot)



28

Women in Science
workshop participants

65

Annual Training
Meeting attendees

42

Work Integrated Learning
Program participants

186

Webinar participants



Photo courtesy of Dr. Brent Else,
University of Calgary



\$22,500

Research Connections
funding

225

Conferences and workshops
attended by Network

87

Project media mentions

110

Refereed article
contributions

10

Copyrights

Network Activities: Knowledge Mobilization

Knowledge mobilization is a critical component of MEOPAR's strategic plan: as a Network, we work to connect research to the partners, stakeholders and end-users who are best placed to take advantage of project results. 2017-18 was the first year of MEOPAR's dedicated KM program, which focused on developing a roadmap and piloting new initiatives to mobilize research results. MEOPAR's 2017 Call for Proposals included a mandatory KM plan, in which each principal investigator outlined his or her plans for engagement and knowledge transfer activities.

In 2017-18, MEOPAR organized an Expert Forum (held in 2018-19 in Vancouver) addressing climate risks for coastal transportation, in partnership with the Institute for Catastrophic Loss Reduction and Western Transportation Advisory Council (WESTAC).

2017-18 saw the establishment of a governance framework and application process for a Communities of Practice initiative, supporting the creation and maintenance of communities focused on topics such as data management, coastal resilience, and risk communication.

Finally, MEOPAR offered a Research Connections Fund to enable researchers to organize national-scope workshops, events or conferences aimed at building new partnerships.



Photo courtesy of Dr. Tara Martin,
University of British Columbia



\$771,350

Partner funding to active
projects in 2017-18

91

Project-level partners

\$2,494,421

Total in-cash contributions

\$9,374,740

Total in-kind contributions

\$11,869,161

Total cash and in-kind
contributions

Network Activities: Partners & Collaborations

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.

Board of Directors, 2017-18

CHAIR: **Dr. Robert Walker**, MEOPAR

INCOMING CHAIR: **Dr. Karen Dodds**, MEOPAR

Dr. Alice Aiken, Vice President, Research, Dalhousie University

Dr. Pierre Baril, Ministère du Développement durable Environnement et de la Lutte aux changements climatiques, Bureau du sous-ministre

Mr. Glenn Blackwood, Vice President, Marine Institute, Memorial University

Ms. Amanda Dean, Vice President, Atlantic, Insurance Bureau of Canada

Ms. Angie Gillis, Senior Director, The Confederacy of Mainland Mi'kmaw, Mi'kmaw Conservation Group

Mr. Darrell Hasiuk, Managing Director, Ulnooweg Financial Education Centre

Ms. Kelly Johnstone, President, KLM Financial

Dr. Ariane Plourde, Director, Institut des sciences de la mer de Rimouski, UQAR

Mr. Dale Reding, Director General, Defence Research & Development Canada

Dr. Rachael Scarth, Associate Vice-President, University of Victoria

Mr. Scott Tessier, Chair & CEO, Canada-Newfoundland and Labrador Offshore Petroleum Board

Mr. Trevor Swerdfager, Assistant Deputy Minister, Fisheries & Oceans Canada

Dr. Doug Wallace, Canada Excellence Research Chair Ocean Science and Technology, and Scientific Director, MEOPAR

Dr. Wendy Watson-Wright, Chief Executive Officer, Ocean Frontier Institute

Staff

Scientific Director: **Dr. Douglas Wallace**

Associate Scientific Director:

Dr. Ronald Pelot

Executive Director: **Stefan Leslie**

Research Program: **Alexa Reedman**

Training Program: **Laura Avery**

Knowledge Mobilization Program:

Alison Maunder

Communications: **Heather Desserud**

Finance: **Julie Atienza** (to June 2017);

Darlene Auld

Administration: **Janet Marshall**

(to November 2017)

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	2018	2017
Revenue		
Government assistance – NSERC and SSHRC	\$ 4,979,221	\$ 5,207,809
Partnership	796,350	428,250
Other	12,298	16,805
	<u>5,787,869</u>	<u>5,652,864</u>
Grants		
Research	3,109,630	3,287,787
Partnership	1,206,583	1,073,875
	<u>4,316,213</u>	<u>4,361,662</u>
Excess revenue over grants	<u>1,471,656</u>	<u>1,291,202</u>
Expenses		
Program Expenses		
Communications	63,340	82,582
Knowledge mobilization	35,488	6,730
Research programs	442,237	104,906
Training programs	94,181	168,017
	<u>635,246</u>	<u>362,235</u>
Administrative		
Operations and management	225,459	321,790
Salaries	617,057	597,308
	<u>842,516</u>	<u>919,098</u>
	<u>1,477,762</u>	<u>1,281,333</u>
(Deficiency) excess of revenue over expenses	<u>\$ (6,106)</u>	<u>\$ 9,869</u>
Net assets, beginning of year	\$ 48,204	\$ 38,335
(Deficiency) excess of revenue over expenses	<u>(6,106)</u>	<u>9,869</u>
Net assets, end of year	<u>\$ 42,098</u>	<u>\$ 48,204</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	2018	2017
Assets		
Current		
Cash and cash equivalents	\$ 1,295,947	\$ 103,408
Receivables	43,237	288,541
Funds held in trust by Dalhousie University (Note 5)	4,637,953	413,277
HST receivable	<u>3,772</u>	<u>52,293</u>
	<u>\$ 5,980,909</u>	<u>\$ 857,519</u>
Liabilities		
Current		
Payables and accruals	\$ 34,600	\$ 84,067
Deferred revenue (Note 3)	<u>5,904,211</u>	<u>725,248</u>
	<u>5,938,811</u>	<u>809,315</u>
Net assets		
Unrestricted net assets	<u>42,098</u>	<u>48,204</u>
	<u>\$ 5,980,909</u>	<u>\$ 857,519</u>

Commitments (Note 4)

On behalf of the Board



Director

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	2018	2017
Increase in cash and cash equivalents		
Operating		
(Deficiency) excess of revenue over expenses	\$ (6,106)	\$ 9,869
Change in non-cash operating working capital		
Funds held in trust by Dalhousie University	(4,224,676)	1,843,377
Receivables	245,304	(268,541)
HST receivable	48,521	(19,741)
Payables and accruals	(49,467)	84,067
Deferred revenue	<u>5,178,963</u>	<u>(1,639,774)</u>
Net increase in cash and cash equivalents	1,192,539	9,257
Cash and cash equivalents		
Beginning of year	<u>103,408</u>	<u>94,151</u>
End of year	<u>\$ 1,295,947</u>	<u>\$ 103,408</u>



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