



AMUNDSEN SCIENCE STRATEGIC PLAN 2021/25

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#### PROVIDING CRITICAL SCIENTIFIC ACCESS TO ARCTIC SEAS NOW AND FOR THE FUTURE

"As an Arctic nation, Canada should be at the forefront of the international effort to understand the significant changes that are occurring in the region, how they will impact Canadian citizens, and the scale of the socio-economic impacts associated with these changes. Therefore, to study the Arctic Ocean requires an icebreaker that operates effectively under challenging conditions."

"It is clear that the research capabilities provided by the *Amundsen* have been essential and critical for Canadian researchers to maintain a presence on the international level, in Arctic science. Overall, the past and recent contributions by this facility were clearly beneficial to the nation and especially populations in Canada's Arctic regions."

> International Midterm Review Expert Committee, September 2019



MESSAGE FROM SCIENTIFIC LEADER AND CEO



The changing Arctic is the new frontier of scientific discovery, industrial development, and socio-economic innovation. Robust and long-term information on the Arctic environment is required to develop policies and adaptation strategies to realize a prosperous, sustainable and healthy North that will benefit Indigenous peoples, northerners and all Canadians, now and in the future. However, much of the Canadian Arctic is a vast inaccessible territory adjacent to shallow marginal seas bordered by a deep ice-covered ocean. Studying the Arctic using a state-of-the-art research icebreaker carrying sophisticated instrumentation and various support crafts (e.g. helicopter) represents one of the most effective ways to acquire information on both the marine and continental Arctic regions. Research icebreakers enable large teams of scientists and holders of traditional knowledge to conduct interdisciplinary studies of complex issues and are often the yardstick of a country's commitment and stature in the study of polar seas.

In Canada, the research icebreaker CCGS *Amundsen* has brought new life to the country's research effort in the Arctic Ocean since 2003. Equipped with cutting-edge scientific instrumentation, the ship has enabled numerous national and international research initiatives that has propelled Canada in the leading pack of nations studying the changing Arctic Ocean. The ship's annual presence in the Arctic in support of major initiatives such as the Network of Centres of Excellence ArcticNet, the Canadian International Polar Year, and the Inuit Health Surveys, has bolstered Canada's international stature in the study and stewardship of the Arctic. Because of its prominence as an Arctic nation, Canada must stay at the forefront of the international effort to understand the ongoing transformation of the Arctic and to anticipate the geopolitical, economic, social, environmental, and climatic consequences of these changes.

After nearly two decades of operations, the CCGS Amundsen has become the most capable, widely used, and successful research vessel in Canada. The ship is expected to remain fully in force until at least 2035, thanks to the Vessel Life Extension refit to be completed by 2022. In preparation of the next 15 years, a battery of scientific equipment has been already replaced, upgraded, or acquired to keep the ship technologically up to date. These include new sonars, a more capable Remotely Operated Vehicle, a fully equipped Autonomous Underwater Vehicle, large temperature-controlled incubators, refitted laboratories, and advanced profiling and underway sensors. In addition, the ship is now equipped with more powerful cranes to enable more deck operations and a modern Dynamic Positioning system for enhanced station keeping.

The focus of the next four years will be to live up to the vision and mission statements and align our actions to meet our strategic objectives. A primary goal is to continue to diversify and augment the user pool by supporting even more programs led or co-led by Indigenous peoples, developed by under-represented provinces, or comprising an international component. A complementary objective is to ensure an efficient distribution and interoperability of data nationally and internationally and foster open science best practices. This will enable a much larger community of researchers to use the data and produce much more scientific results. Internally, we expect to strengthen and expand the human capacity to develop, maintain and operate the *Amundsen*'s specialized equipment based on equity, inclusiveness and diversity principles. Amundsen Science further intends to consolidate a plan to maintain at-sea research capacity, especially for Canadian universities, among the future fleet of Coast Guard icebreakers.



Professor Marcel Babin Scientific Leader and Chief Executive Officer, Amundsen Science. On behalf of the Board of Directors



BACKGROUND



In 2002, the Canada Foundation for Innovation (CFI) accepted a proposal by a consortium of Canadian universities and federal agencies to transform the decommissioned CCGS *Sir John Franklin* into a state-of-the-art research icebreaker. The CFI grant allowed major structural transformations to adapt the vessel for science and the acquisition of a diverse pool of scientific equipment attached to the infrastructure. A substantial contribution from Fisheries and Oceans Canada – Coast Guard enabled the completion of modifications to the ship. The newly mobilized research icebreaker was re-christened CCGS *Amundsen* on August 26, 2003 in honor of the Arctic explorer Roald Amundsen.

Starting in 2014, the CCGS *Amundsen's* capacity as a national Arctic research platform was further consolidated by grants from the CFI Major Science Initiatives Fund to maintain, update and operate the icebreaker and her pool of scientific equipment, facilitate user access, and firm up the organizational model. In 2015, the scientific program of the CCGS *Amundsen* coordinated by Université Laval (U. Laval) was incorporated under the Canadian federal Corporations Act as Amundsen Science. As of 2022, the CCGS *Amundsen* will have completed its Vessel Life Extension, an extensive refit jointly supported by the Coast Guard and Amundsen Science to add another 15 years of operational life span and keep the vessel on the cutting edge of science and technology.

By giving Canadian researchers and their international collaborators unprecedented access to the Arctic Ocean and ice-covered northern seas, the research icebreaker CCGS *Amundsen* has been a major catalyst in revitalizing Canadian Arctic science over the last 20 years. The ship's facilities and sophisticated pool of equipment make it a versatile platform for scientists in the natural, health and social sciences along with their partners from government, industry and Northern communities. The vessel has spent over 2,500 research days at sea, traveled over 280,000 nautical miles, and enabled more than 45 major multidisciplinary research programs, including several international studies and strategic partnerships with the industry and governmental agencies. In light of her achievements, the CCGS *Amundsen* was chosen by the Bank of Canada to adorn the \$50 polymer bank note.



+ 45 major multidisciplinary research programs

Beyond the contribution to Canada's Arctic research effort, the CCGS *Amundsen* is part of the international Arctic Research Icebreaker Consortium and substantiates Canada's contribution to the 2018 Agreement on Enhancing International Arctic Scientific Cooperation and 2021-2030 UN Decade of Ocean Science for Sustainable Development. The CCGS *Amundsen* directly supports collaborations with other Arctic countries to ensure that the necessary knowledge is acquired to fully support actions to sustainably manage Arctic seas. This cooperation takes place through diverse projects that document marine biodiversity and ecosystems, monitor their response to climate change, provide vital information on marine hazards, and assess the risks of increased maritime traffic and resource exploitation.

The strategic plan of Amundsen Science for 2021-2025 represents an update of the 2019 plan and builds on several analyses of stakeholders, users, strategic issues, organizational risks, and equity, diversity and inclusion notions undertaken over 2018-2021 to identify challenges and opportunities for the CCGS *Amundsen* as an Arctic marine research platform. Analyses were put into the historical context of the ship, including the most recent COVID-19 pandemic, and the strategic plan was updated by senior management with the support of the Board of Directors. Goals included: (1) to define directions and review our guiding principles while keeping with our vision as a national leading-edge research facility; (2) to update our mission and strategic objectives to include actions to ensure inclusive and equitable access to the facility; and (3) to consolidate our approach to the governance and management of the facility based on risk management and equity, diversity and inclusion principles.





#### EQUITY, DIVERSITY AND INCLUSION STATEMENT

Amundsen Science is committed to equity, diversity and inclusion (EDI) and rejects all forms of discrimination in our organization and within the research activities we support. We adhere to the principles of the <u>Dimensions EDI</u> <u>Canada charter</u>, which aims to promote research excellence as well as innovation and creativity throughout the post-secondary environment by integrating EDI principles into concrete practices.

Amundsen Science understands that the concept of EDI embraces representation from all ages, career stages and professional status, geographies, races, national, cultural, and socio-economic backgrounds, marital and family status, genders, gender identities, sexual orientations, and physical abilities. As part of our commitment to EDI, we are committed to cultivating awareness of how assumptions impact our interactions and decision-making both internally and externally, and to developing effective strategies to remove any barriers to equality of representation in our organization and equitability of access to the facility that may arise as a result.

We are committed to understanding EDI on different levels and acting upon EDI challenges in a number of ways, for instance:





### **Dimensions** Participating institution

- We recognize that First Nations, Métis and Inuit are rights-holding as First Peoples of Canada, and we acknowledge the privilege of conducting research on their lands and waters. We commit to an inclusive access to the facility by providing opportunities for community engagement and incorporating projects developed or co-designed by Indigenous peoples.
- We adhere to one code of conduct that prioritizes the health, experience and wellbeing of every person aboard the ship, and we recognize what makes them and others the unique individuals they are in order to consider differences and act respectfully.
- We promote the appointment of a diversified group of individuals on the Board and Standing Committees with a balance in gender and professional and geographical representation, while keeping the best mix of skills and expertise to ensure strategic thinking and optimum effectiveness.
- We recruit new talents within the organisation through a transparent process and based on human potential measures in addition to hard skills and knowledge. Daily, we help individuals understand what drives and drains them in their tasks to keep them in roles, on projects and on teams where they naturally thrive.
- We bring awareness of diversity and inclusion to the workplace by providing training to management, staff, Board and Committee members, and users of the facility to make them conscious of the cultures and knowledge of First Peoples of Canada and gain a deep understanding of EDI notions.

We acknowledge that living up to EDI best practices is an organic, ongoing process, shaped by interactions between Board members, management, support staff, users, partners, and rightsholders. Amundsen Science is committed to work together to learn and lead through specific actions addressing biases and barriers that may limit the services and experience provided by the research icebreaker CCGS *Amundsen* and related research and support infrastructures.





#### AMUNDSEN SCIENCE TEAM



MARCEL BABIN Ph.D. in Biology Université Laval SCIENTIFIC LEADER AND CEO ALEXANDRE FOREST Ph.D. in Oceanography Université Laval EXECUTIVE DIRECTOR AND COO ANISSA MERZOUK Ph.D. in Oceanography Université Laval MARINE RESEARCH COORDINATOR



LUC MICHAUD MSc in Marine Biology Université Laval SCIENTIFIC EQUIPMENT MANAGER



MARTINE DESGAGNÉS BSc in accounting Université du Québec à Rimouski CHIEF FINANCE OFFICER



SIMON MORISSET MSc in Ocean Science Université du Sud Toulon-Var SENIOR OCEANOGRAPHIC INSTRUMENTATION PROFESSIONAL



AMÉLIE DESMARAIS MSc in Atmospheric and Oceanic Science McGill University LOGISTICS, ADMINISTRATIVE AND

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DANIEL AMIRAULT BSc in Technologies of Ocean Mapping Memorial University MARINE GEOMATICS PROFESSIONAL MARCIA PEARSON MSc in Water and Coastal Management Universidad de Càdiz OCEANOGRAPHIC INSTRUMENTATION PROFESSIONAL



TAHIANA RATSIMBAZAFY MSc in Water Science Institut National de la Recherche Scientifique DATA MANAGEMENT AND VALORIZATION COORDINATOR

PASCAL GUILLOT MSc in Physical Oceanography Institut des Sciences de la Mer de Rimouski CTD-ROSETTE COORDINATOR

LUIZ FELIPE FERNANDES Diploma in Electronics ELECTRONICS AND EMBEDDED SYSTEMS PROFESSIONAL



CASSANDRA CHARETTE Diploma in Administration ACCOUNTING AND MANAGEMENT TECHNICIAN



VÉRONIQUE ROCHEFORT MSc in Communication science Université de Montréal COMMUNICATION MANAGER



CATHERINE MARCIL MSc in Oceanography Institut des Sciences de la Mer de Rimouski LOGISTICS AND ADMINISTRATIVE COORDINATOR



#### GOVERNANCE AND MANAGEMENT



Amundsen Science is the not-for-profit corporation hosted at U. Laval that manages the scientific mandate of the CCGS *Amundsen* via a renewed Cost Sharing Agreement (2019) with the Canadian Coast Guard. Amundsen Science coordinates access to the icebreaker for science, provides financial, logistical and technical support to user programs, and maintains, develops and operates the central pool of scientific equipment. Thirteen universities and two Arctic colleges are official members of the Amundsen Science Corporation, but the broader user base comprises more than 125 national and international institutions and organizations.

The Board of Directors is responsible for the overall governance of the facility. The Scientific Leader and CEO is appointed by the Board with the mandate of providing strategic direction and oversight of the Amundsen Science program and general management and governance of the organization. The Scientific Leader is a non-voting member of the Board.

The Budget and Finance Committee oversees the integrity of financial procedures. Its key functions are to review the financial statements and annual budget, evaluate existing financial and internal controls, policies and procedures, and to report its conclusions and provide recommendations to the Board.

The Risk Review Committee assists the Board in fulfilling its corporate governance oversight responsibilities with regard to the identification, evaluation and mitigation of operational, strategic and external environment risks. The Committee has overall responsibility for monitoring and approving the risk policies and associated practices and responsive actions.



# GOVERNANCE AND MANAGEMENT

The Governance and Nominating Committee is responsible for assisting the Board in developing principles and systems for the management of corporate governance. The Committee identifies candidates and recommends nominees for Director and Committee appointments, and evaluates their performance and effectiveness.

The User Advisory Committee formulates recommendations on the prioritization of programs and develops a preliminary expedition plan. Access to the *Amundsen* for science is allocated using an impartial process that evaluates and ranks the different programs requesting ship time, berths and subsidies from the Amundsen Science Ship Time fund. All user programs are required to submit a formal Ship Time application.

The Infrastructure Development Committee provides advices and recommendations regarding the development and upgrading of the *Amundsen's* pool of equipment, thus ensuring that the facility remains a state-of-the-art research platform.

The Equity, Diversity and Inclusion Committee creates and enhances practices that promote fairness equity and inclusion through the identification, mitigation, and elimination of the impact of implicit bias and discrimination in practices and policies that may support systemic barriers, and to promote the advancement of diversity within the scientific program of the *Amundsen*.



The Administrative Center of Amundsen Science performs the day-to-day management and administration and is at the core of the performance and service level of the organization. Specialized personnel work within four main units: (1) accounting and human resources; (2) data management and cybersecurity; (3) technical services and operations; and (4) logistics and communications. The Executive Director/COO alongside the Chief Finance Officer and Marine Research Coordinator supervises these interdependent units to ensure the overall operation of the facility according to directions set by the Board. A key position is also the Ship Equipment Manager working at the interface between technical operations and accounting with a particular focus on the preparation of bid and tender opportunities. Together, the Leadership Team supervises the administrative and technical personnel, oversees the day-to-day management of the facility, liaises with the community of users, and coordinates the annual *Amundsen* expedition with the Canadian Coast Guard.







To maintain Canada as a global leader in the multidisciplinary and multinational scientific exploration of the changing Arctic Ocean with the primary objective to inform the sustainable development of the Arctic.





To provide equitable access to a state-of-the-art research icebreaker to collect the data and observations that will inform decisions on environmental, economic, and societal issues of strategic importance to Canada.





#### ACHIEVING OUR MISSION

We achieve our mission by:

- **orchestrating** the deployment of the different science programs using the *Amundsen*, or potentially other icebreakers as needed;
- **acting** as the liaison between the community of users and the Canadian Coast Guard;
- **facilitating** new national and international research initiatives and partnerships;
- conducting the annual scientific mobilization and demobilization of the icebreaker(s);
- **providing** logistical, technical and financial support to the community of users;
- **maintaining,** operating and upgrading the existing pool of scientific equipment; and
- **developing** and adapting new oceanographic technologies in support of the scientific mandate of Amundsen Science.





Strategic planning at Amundsen Science is guided by three main principles :

• We are dedicated to building knowledge for Canadians. We facilitate leading edge research that pushes the frontiers of knowledge for the benefit of Canadians, in particular for populations of Arctic regions, and the world;



- We are dedicated to enable excellence in research and training. We encourage high-quality scientific research by focusing on competitive, equitable and inclusive access to the facility, cutting-edge science equipment, a skilled technical workforce, and multidisciplinary programs;
- We are dedicated to organizational excellence and to cultivating awareness of how unconscious biases impact our decision-making. We adopt streamlined and effective governance and management practices that focus on the productive use of resources to deliver on complex research programs.



## STRATEGIC OBJECTIVES 2021-2025

Strategic objectives were formulated to sustain and expand the capacity of the facility, maintain and develop the user community as we emerge from the COVID-19 pandemic, consolidate our organizational model, and enable Canada to maintain its position at the leading edge of Arctic science by operating a reliable, efficient and accessible marine research infrastructure. The objectives aim to ensure substantial benefits to the broad marine and Arctic research community in Canada with ramifications at the international level.





STRATEGIC OBJECTIVES 2021-2025 1. DEVELOPING, ADAPTING AND MAINTAINING THE FACILITY'S CAPACITY

The exceptional capacity of the *Amundsen* to conduct research effectively in the extreme environments of the Canadian North resides in her specialized pool of equipment. Maximizing the scientific return of operations at sea requires the constant maintenance of the pool of equipment made possible by stable funding from the CFI Major Science Initiatives Fund. Amundsen Science will continue to focus on equipment availability, field readiness, longterm reliability of equipment, and the continuous improvement of the equipment pool with leading-edge instrumentation to enable innovative research.

Constant efforts to upgrade and expand the *Amundsen's* pool of equipment over the next four years will be critical for the facility to remain competitive and scientifically relevant. Amundsen Science will continue to advance its technological capabilities to keep level with the international research icebreaker offer. The upgrade of the ship's scientific sonars will be completed during the Vessel Life Extension dry dock 2021-22 and several equipment recently renewed, including our Remotely Operated Vehicle, will be made available to the community of users. New technologies such as Autonomous Underwater Vehicles and Unmanned Aerial Vehicles will be adapted for Arctic deployments to develop Canadian capacity in the emerging field of robotic oceanography, with a specialization in the study of ice-covered seas.





AMUNDSEN SCIENCE STRATEGIC PLAN 2021/25



STRATEGIC OBJECTIVES 2021-2025 1. DEVELOPING, ADAPTING AND MAINTAINING THE FACILITY'S CAPACITY

Strengthening and expanding the human capacity to develop, maintain and operate the specialized pool of scientific equipment is essential for the delivery of high-quality data and novel observations. Continuous staff training and the involvement of Amundsen Science personnel in international technical communities and forums will provide a competitive edge to our services. Recruitment of new technicians and staff is framed by our commitment to EDI, a source of excellence and innovation across all our activities. Research and development activities geared towards the improvement of the infrastructure will continue to be conducted in collaboration with academic centers, government departments and the industry.

Although the CCGS *Amundsen* remains an asset owned by the Government of Canada, the long-lasting partnership with the Canadian Coast Guard rests upon a signed Cost Sharing Agreement that has secured a minimum number of dedicated science days per year as well as several managerial duties for the vessel such as crewing, refueling, general maintenance, safety and certification. This agreement allows Amundsen Science to focus on the management of the science programs, while the Coast Guard fulfills a role of operator. Amundsen Science will work in the coming years towards the transposition of this unique model in Canada within the next fleet of Coast Guard icebreakers that is expected to come online in the 2030's.



2. DIVERSIFYING THE USER COMMUNITY AND USER ACCESS MECHANISMS

The *Amundsen* has been a major catalyst in the revitalization of Canadian Arctic science and has supported a large and growing community of users since 2003. New generations of researchers now make use of the *Amundsen*, and the ship is no longer a facility dominated by a few large users. The diversity of programs has jump-started in recent years owing to the development of several new academic-governmental joint projects and to the evolution of the ArcticNet Marine Program into distinct stand-alone projects as the Network approaches its theoretical conclusion in 2024 (although plans are on the drawing board to make ArcticNet a perennial research entity in Canada).

Despite the COVID-19 pandemic, which drastically affected the scientific expedition in 2020, the user pool requesting access to the *Amundsen* has been fully maintained as we enter this new cycle of strategic planning. Users are expected to further increase in both number and diversity owing to the plethora of scientific and technological issues raised by a changing Arctic Ocean. Strengthening user engagement and diversifying our user community both nationally and internationally will contribute to the sustainability of the facility and to the growth of a dynamic and relevant research enterprise.







2. DIVERSIFYING THE USER COMMUNITY AND USER ACCESS MECHANISMS

Amundsen Science seeks to support more Indigenous research interests and training aboard the CCGS *Amundsen*. Already, several field programs are co-developed in collaboration with northern communities and community engagement is done on a routine basis during the annual Arctic expedition. In 2021, Amundsen Science has initiated a close partnership with the <u>ArctiConnexion</u> organization to further alleviate any barrier to access the facility and support indigenous communities in the development of funding applications for research projects based out from the *Amundsen*. Increased synergy with the Nunavut Arctic College and other local research centres (e.g., Ittaq) will also ensure the hiring of Indigenous trainees as part of the annual Arctic expedition.

The Arctic is a strategic international arena where several scientific, environmental and geopolitical challenges converge. Addressing complex Arctic issues is beyond the capacity of one single nation and can only be carried out in close scientific and operational cooperation with other countries. Amundsen Science is committed to broaden the scope of research programs accessing the facility and facilitate high-level international partnerships targeting emerging questions about the changing North. Strategic collaborative initiatives such as the Arctic Research Icebreaker Consortium and the French Fleet Ship-Time Exchange will be supported and meshed with existing research programs.

User access will continue to be allocated through a transparent and unbiased evaluation process for all programs requesting Ship Time. The best Canadian research programs and the most relevant for Canada's North will have access to the ship and its pool of scientific equipment. Collaborations with government departments and the private sector will be encouraged. Thanks to the increase in the CFI contribution from 40% to 60% of the overall O&M costs of the facility recommended by the 2017 Fundamental Science Review, access to the CCGS *Amundsen* will continue to be significantly facilitated for Canadian academic-based user programs.



STRATEGIC OBJECTIVES 2021-20253. INCREASING DATA USAGE AND BOOSTING THE SCIENTIFIC YIELD

Massive volumes of ocean, climate and health related data sets have been gathered from the CCGS Amundsen since 2003. Advanced analytics on these datasets can provide meaningful information and knowledge, which would benefit all stakeholders and effective decision-making in the whole picture of Canadian and International Arctic research. A first step towards this goal is to ensure that all historical data are configured on a set of open formats and standards and can also support interoperability between various numerical environments. The underlying rationale to this ongoing process is to provide long-lasting and readily available resources to support different research activities, including Big Data and next-generation analytics. All datasets will also be assigned a Digital Object Identifier (DOI) to track their usage. Over 2021-2025, we intend to pursue the ongoing standardization and open access diffusion of all Amundsen datasets, especially as part of the Canadian Consortium for Arctic Data Interoperability project, an integrated Canadian Arctic data management system that facilitates information discovery and enable interoperability across data repositories.

We further aim to make Open Science a driving force of our organization and to foster open access to scientific publications, research data, and field observations of all kinds. A key challenge remains to ensure that Open Access does not apply only to information generated by the central pool of equipment of the CCGS *Amundsen*, but also to data from specific research projects and individuals of our broad user base. An Open Access policy is being implemented as part of the ship-time application process, which will limit user programs to reapply for ship-time on the *Amundsen* if they do not adhere to the principles and norms of Open Science <u>as recommended by the UNESCO in 2021</u>. This will ensure that the whole user community of the *Amundsen* will contribute to the Open Science movement aiming to make science more accessible, democratic, efficient, and transparent.



STRATEGIC OBJECTIVES 2021-2025 3. INCREASING DATA USAGE AND BOOSTING THE SCIENTIFIC YIELD

Another effort undertaken towards boosting the scientific yield will be to develop data papers to present large or expansive datasets collected by the CCGS *Amundsen* annually, accompanied by all the necessary metadata to describe the content, context, quality, and structure of the data. A primary focus of these data papers to be developed by Amundsen Science and partners will be on the core datasets acquired with the central instrumentation pool of the ship. The key objectives of these data papers will be to provide a citable journal publication that will bring credit to the facility and its specialized technical team, to describe the data in a comprehensive structured form based on facts about the data rather than hypotheses, and to bring the existence of the data to the attention of the broader research community.









STRATEGIC OBJECTIVES 2021-20254. STRENGTHENING THE ORGANIZATIONAL MODEL AND BEST PRACTICES

"The governance of the facility is commendable: it is highly collaborative, with strong stakeholder engagement that includes the major players in Canadian Arctic research. The roles of the facility's management committees (...) are well defined and they aim at operating in an inclusive way."

International Midterm Review Expert Committee, September 2019

The organizational structure of Amundsen Science already provides the basis for the sound governance and management of the facility through various committees, specialized administrative units, and a dedicated and multidisciplinary technical team. The appointment of a new Scientific Leader and new Chair of the Board in 2020 brought new impetus to the facility, which resulted in substantial changes at the Board level to better meet our commitment to EDI. Four new women, including two from the North, were appointed as Board members in 2021. Geographical representation from all regions of Canada has been improved and a new international member was also appointed. All new Board members bring distinct skills and expertise on various key topics, such as Arctic fisheries, autonomous ocean systems, harmful chemicals inputs, Arctic science management, and ocean color time series. We intend to further continue diversification of the Board and Standing Committees over the next four years.



STRATEGIC OBJECTIVES 2021-20254. STRENGTHENING THE ORGANIZATIONAL MODEL AND BEST PRACTICES

In preparation to the development of the 2021-2025 strategic plan, an exhaustive risk assessment exercise was conducted to enhance reporting and monitoring of organizational risks. A cloud-based Enterprise Risk Management system tailored to the needs of Amundsen Science was finalized in 2021. The work was conducted in collaboration with <u>Mobius One</u> to ensure an efficient entry of risks and update of response actions in a timely manner. This advanced solution and global risk management tool will be used by management in collaboration with the newly created Risk Review Committee of Amundsen Science to assist the Board framing contributing factors and impacts of these risks, key current controls, and improvement opportunities. Risks affecting the CCGS *Amundsen* will be periodically reviewed over 2021-2025 in a more consistent manner than ever before.

The management structure at Amundsen Science rests upon four key positions: the Executive Director, the Marine Research Coordinator, the Ship Equipment Manager, and the Chief Finance Officer. Currently composed of two women and two men, these key positions ensure smooth day to day operations and an efficient delivery of services to the community. A prominent principle within management is to align actions with our goals and to prioritize these actions based on importance and time sensitivity. Supervision of the various sub-units of Amundsen Science (finance, technical, logistical, communications, and information technology) is supported by a clear delegation matrix and ownership of tasks. A key objective of 2021-2025 is to further improve accountability of the various team members through quantitative and measurable targets, especially with respect to Equity, Diversity and Inclusion.







### Amundsen Science

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