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20¹⁵/₁₆ ANNUAL REPORT



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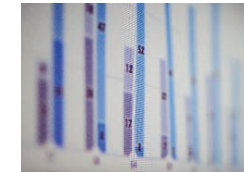
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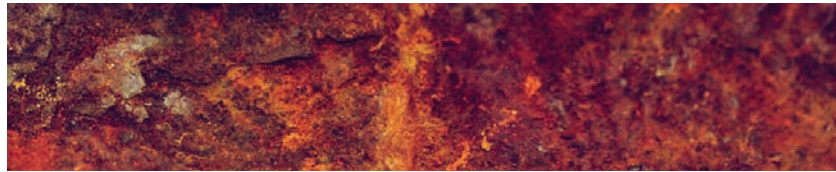


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COVER PHOTO: The CAE helicopter training and R&D centre features the first civilian Level D helicopter simulator with night vision in Canada. It currently hosts five projects that focus on human factors research in areas such as aircrew health monitoring and helmet fatigue. CAE is located in Mount Pearl, Newfoundland and Labrador.

PHOTOGRAPHY

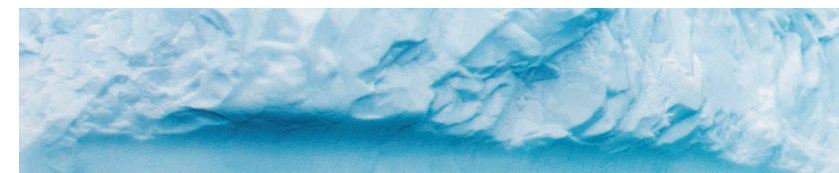
The Cover Photo: *by Maurice Fitzgerald.*

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MESSAGE FROM THE CHAIR



The Research & Development Corporation (RDC) believes that research and development (R&D) is the engine of innovation and sustainable economic prosperity. Working in a challenging global economic climate, R&D is more important today for Newfoundland and Labrador than ever before. The most innovative economies recognize periods of economic slowdown as a time when R&D is imperative for increasing productivity and building the competitive advantages required for sustainable success. RDC supported these R&D efforts in 2015-16 by successfully pursuing its mandate to increase the focus, quantity, quality, and relevance of R&D for the long-term economic benefit of the province.

This year, RDC's programs supported 121 R&D projects for a total commitment of \$20.8 million. These investments leveraged over \$48.2 million from our partners in business, academia, and government. Notable was the fact that almost two-thirds of the R&D projects supported by RDC were led by business, demonstrating an elevated commitment to innovation in the province. The reported results of our clients who completed R&D projects this year are exciting: 22 new or expanded businesses, 39 new sources of revenue, and 216 new or improved products, processes and prototypes. These breakthroughs provide a glimpse into the economic successes of tomorrow being supported by RDC today.

RDC's R&D Solutions line of business celebrated a key milestone this year when it achieved its first revenue-generating R&D service contracts. These contracts involve RDC conducting applied R&D at its Coastal Exposure Materials Testing Services site in Argentina, Newfoundland and Labrador. Associated business development has progressed steadily and we look forward to building on the site's brand, capacity, and early commercial success in years to come.

By continuing to work with leading academic experts like Dr. Craig Moore, cutting-edge businesses like eSonar and *radient360*, and world-class research institutions such as Memorial University and the College of the North Atlantic, RDC is working to leave a lasting economic impact. I invite you to learn more in this report about RDC's performance in 2015-16 and the innovative R&D projects of our clients.

This Annual Report covers the 2015-16 reporting period. During the past year we accomplished our objectives and made an important contribution towards enhancing R&D activity in support of an innovative and knowledge-based provincial economy.

As Chair of RDC, and on behalf of the Board of Directors, I am pleased to present RDC's Annual Report. This report has been developed in accordance with the legislative requirements of the Transparency and Accountability Act. My signature indicates the Board's full accountability for the results reported.

A handwritten signature in black ink, appearing to read 'Fraser H. Edison'.

Fraser H. Edison

Chair
Research & Development Corporation

OVERVIEW

BOARD OF DIRECTORS

RDC's Board of Directors includes experts from the province of Newfoundland and Labrador and around the world. Directors are experienced in a wide range of R&D activities and represent the private sector, post-secondary educational institutions and the Provincial Government.



FRASER H. EDISON, CHAIR

Fraser H. Edison, President and CEO of Rutter Inc., has extensive management experience in the finance, construction, oil and gas, and transportation industries. He previously led ConPro Group Limited in a joint venture to build the Gravity Based Structure for the Hibernia Project and subsequently the Terra Nova Floating Production Storage and Offloading System. Mr. Edison has served as President of the St. John's Board of Trade and as the Chair of the Board for the St. John's International Airport Authority.



FRED CAHILL, VICE CHAIR, P.ENG.

Fred Cahill is President of The Cahill Group of Companies. The group is involved in multi-disciplinary construction and module fabrication in Atlantic Canada and has participated in a number of projects in major industries, including oil and gas, mining, power generation, water treatment, and institutional sectors. Mr. Cahill is an active member of the community and has held such positions as Chairperson of the Newfoundland and Labrador Construction Association, Chairperson of the Construction Labour Relations Association, Chairperson of MUN's Genesis Centre, and Member of the Atlantic Canada Energy Round Table.



BRIAN VEITCH, DR. TECH., P.ENG.

Dr. Brian Veitch is an internationally-recognized expert on marine transport, offshore safety, and testing, and evaluation of advanced ocean technologies. He is currently a professor with the Faculty of Engineering and Applied Science at Memorial University. Dr. Veitch is a member of the Society of Naval Architects and Marine Engineers as well as the Royal Institution of Naval Architects.



LAURIER L. SCHRAMM, PH.D., B.SC. (HON.), P.CHEM., C.DIR., FCIC

Dr. Laurier L. Schramm is an award-winning proponent for best practices in university-industry R&D collaborations. Dr. Schramm has over 30 years of experience in R&D management, having worked in each of the industry, non-profit, university, and government sectors. He is currently the President and CEO of the Saskatchewan Research Council.



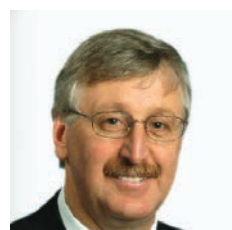
BERNARD COLLINS, B.BA.

Bernard Collins is the chairman of PF Collins International Trade Solutions, an internationally recognized expert in trade and logistics solutions for East Coast oil and gas operations. He possesses extensive knowledge of the petroleum industry, ranging from freight to offshore drilling. Mr. Collins is also an award-winning entrepreneur, having been named Entrepreneur of the Year by Memorial University's Gardiner Centre in 2012; twice named as one of the top 50 Atlantic CEOs by Atlantic Business Magazine; and named the 2005 recipient of NOIA's Outstanding Contribution Award.



KAREN MUGGERIDGE, P.ENG., M.ENG.

Karen Muggeridge has over 25 years of experience in the oil and gas sector, mainly in offshore engineering. Her positions at ConocoPhillips included: Arctic Engineering Specialist; Design Parameters Manager, Amauligak project, Beaufort Sea; and Facilities Technology Manager, Oil Sands. She completed her engineering degrees at Memorial University and started her career at C-CORE and Suncor (Terra Nova project). Ms. Muggeridge is the Convenor of ISO Arctic Offshore Structures standard and has served on numerous government and industry boards including: Program of Energy Research and Development; Women in Science and Engineering; and the Society of Naval Architects and Marine Engineers (SNAME), Arctic Section.



BOB COOPER, B.ENG.

Bob Cooper has 35 years of experience in the mining sector. He served as President of Vale INCO Newfoundland and Labrador between 2007 and 2009 and, before that, was General Manager of Operations. He has also served in executive roles with the Cape Breton Development Corporation and Hudson Bay Mining and Smelting. Mr. Cooper graduated from Memorial University with a Diploma in Engineering and from the Technical University of Nova Scotia with a Bachelor of Engineering (Mining).



MURIEL ATTANÉ, B.A. (ECON), M.A. (ECON)

Muriel Attané is Secretary General of the European Association of Research and Technology Organisations (EARTO) based in Brussels. EARTO represents the interests of 350 research and technology organizations (RTOs) across the European Union. Ms. Attané has developed extensive hands-on experience in R&D through this role and her previous position as Secretary General of the European Association of Automotive Research Partners Association, and her role as EU affairs manager at the Netherlands Organization for Applied Scientific Research, the largest Dutch RTO.



GLENN JANES, M.SC., MBA, B.SC., C.DIR. (NON-VOTING DIRECTOR)

Glenn Janes is a Rhodes Scholar and the CEO of the Research & Development Corporation. He has held a range of progressively senior positions with companies involved in research, development and technology commercialization processes, including most recently, Imperial Innovations Group plc in London, England.



MARK PLOUGHMAN, B.ENG, MBA (NON-VOTING DIRECTOR)

Mark Ploughman has spent over 25 years in the manufacturing sector. He has extensive experience in quality assurance, operations management, human resource management and new product development. Mr. Ploughman completed both his bachelor's degree in engineering and graduate degree in business administration at Memorial University. Mr. Ploughman is currently serving as the Acting CEO of the Research & Development Corporation. His permanent role is the Assistant Deputy Minister with the Department of Business, Tourism, Culture and Rural Development.

OVERVIEW

MANDATE

“Strengthen the focus, quantity, quality and relevance of research and development undertaken in the province and elsewhere for the long-term economic benefit of the province” (*Research and Development Council Act*).

VISION

R&D fuels innovation and creates economic growth and prosperity in Newfoundland and Labrador.

MISSION

By March 31st, 2017, RDC will have increased the capacity of business, academic, and government clients to perform and utilize R&D in priority areas towards the creation of long-term economic benefits for the province.

LINES OF BUSINESS

R&D PROGRAMS: RDC’s core line of business is the delivery of R&D programs that support highly-qualified people, cutting-edge R&D projects, and world-class research infrastructure. These programs are regularly evaluated to ensure they are achieving objectives. An overview of RDC’s programs is provided on the following page.

R&D SOLUTIONS: RDC delivers applied R&D services needed by businesses, to help them solve their technical challenges right here in Newfoundland and Labrador. This includes development of RDC-owned labs, test sites and facilities, most notably the Coastal Exposure Materials Testing Services site.

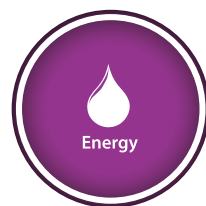
NOTE: In Strategic Plan 2014-17, RDC included two additional lines of business that are considered operational in nature. While activities are still undertaken related to policy and government coordination, and advocacy and cooperation with client groups, RDC’s reporting has been streamlined to focus solely on the two external lines of business. R&D Solutions was formerly called Asset Investment.

STAFF & BUDGET

RDC employed 39 staff (25 female and 14 male) at the end of 2015-16. The RDC office is located at 68 Portugal Cove Rd., St. John’s, NL. In 2015-16, RDC received a budgetary allocation of \$22 million and had expenses of \$22.8 million. Audited financial statements are available in **Appendix B**.

PRIORITY SECTORS

RDC focuses on promoting increased R&D activity in its priority sectors of energy, mining and minerals, and ocean technology. RDC also invests in other sectors such as aquaculture and forestry and agriculture that strengthen and diversify the provincial economy.



PROGRAMS

PROGRAM	DESCRIPTION	MAXIMUM RDC CONTRIBUTION
R&D Vouchers	Facilitates business access to external resources, including scientific and technical equipment, expertise, and research facilities	\$15,000
R&D Proof of Concept	Increases technical capacity and reduces financial risk of businesses performing R&D activities through to proof of concept	\$250,000
EmployR&D	Enables businesses to hire recent PhD graduates to support their R&D activities	\$75,000 / year (Maximum 2 years)
PetroleumR&D Accelerator	Strengthens R&D capacity in support of petroleum exploration, development and operations	\$5,000,000
GeoEXPLORE (2014-16)	Enhances geoscience R&D capacity, collaboration and industry innovation in support of mineral and petroleum exploration and development	Academia: \$250,000 Business: \$750,000
ArcticTECH (2015-19)	Advances R&D in support of Arctic technologies and enhances R&D capabilities and expertise in Arctic and other harsh operating environments	Academia: \$250,000 Business: \$750,000
SensorTECH (2015-17)	Supports sensor research, development and demonstration in simulated and real operating environments	Academia: \$500,000 Business: \$750,000
CollaborativeR&D	Increases academic-led R&D partnerships and collaboration between academia and industry	\$500,000
IgniteR&D	Attracts highly-qualified academic researchers and builds new R&D capacity in areas relevant to industry and the NL economy	\$100,000
LeverageR&D	Attracts public funding for academic-led R&D in areas relevant to industry and the NL economy	\$500,000
Research Inspired Student Enrichment (RISE) Awards	Exposes high school students to research activities at an early stage in their education	\$150,000 Annually (Max of 15 Awards)
Ocean Industries Student Research Awards (OISRA)*	Develops and retains the next generation of R&D leaders in ocean industries	Undergraduate: \$7,500 Graduate: \$40,000 (Masters), \$90,000 (PhD)

* The OISRA program is scheduled to conclude in 2016-17. Complete program information is available online at www.RDC.org/funding

SHARED COMMITMENTS

“In 2015-16, RDC’s programs supported 121 R&D projects, involving a total of 147 collaborators across academia, government and business.”

Collaboration among R&D stakeholders is a hallmark of the world’s most innovative jurisdictions. RDC actively works to foster and strengthen R&D collaborations in the province between business, academia, government, and other partners. These relationships are essential for generating sustainable economic prosperity in Newfoundland and Labrador. To ensure that these relationships continue to form and flourish, RDC’s team of business development specialists and account managers work to improve R&D activity and collaboration between stakeholders. Key collaborative achievements for RDC in 2015-16 include:

Federal-Provincial Collaboration:

In January, 2016, the Natural Sciences and Engineering Research Council of Canada (NSERC) and RDC formally announced a federal-provincial partnership. The collaboration involves co-funding R&D conducted at Memorial University that aligns with industry needs or development opportunities for the province. The partnership will notably allow applicants to follow a streamlined joint application process when applying for funding through NSERC’s Collaborative Research and Development Grants (CRD) program and RDC’s CollaborativeR&D program.

Collaboration with Genome Atlantic:

This year RDC deepened its working relationship with Genome Atlantic, one of five regional centres of Genome Canada, in an effort to identify opportunities for collaboration. This foundational

work builds on the networks of both organizations and has identified potential R&D projects that may have a positive economic benefit for the province. For example, scientific advancements in using genomics tools for the mining and energy industries was identified as an area that may lead to future R&D opportunities in Newfoundland and Labrador. Leveraging the connections of Genome Atlantic with the other regional centres will also help RDC to form collaborations between researchers in this province and scientific expertise located elsewhere in the country. By building on this year’s discussions, RDC and Genome Atlantic will explore these and other opportunities moving forward.

Supporting Collaborative R&D:

RDC promoted and supported significant collaborative R&D activity in the province this year through its suite of R&D programs. The CollaborativeR&D program is of particular relevance, as it is specifically tailored to support academic-led R&D projects with business partners. By investing in R&D projects involving partners in academia and industry, RDC is helping to foster the skill and knowledge transfer required to conduct world-class R&D. In 2015-16, RDC’s programs supported 121 R&D projects involving a total of 147 collaborators from academia, government and business.

This collaborative approach to increasing R&D activity aligns with RDC’s broader goal to enhance R&D activity in support of an innovative economy in Newfoundland and Labrador.

HIGHLIGHTS AND ACCOMPLISHMENTS

The success of RDC rests in the success of our clients. Both our R&D Programs and R&D Solutions lines of business strive to help our clients conduct world-class R&D that results in world-class innovations.

To demonstrate some of RDC's key accomplishments in 2015-16, this section provides program updates, highlights notable R&D Solutions developments, and showcases a small sample of the R&D projects supported by RDC this year.

The R&D projects featured illustrate some of the cutting-edge R&D being conducted in the province with the support of RDC, as well as their potential economic impact.

The following stories are themed to show the impact RDC has made in each of its top three strategic issues.

Serving as a Catalyst
to Support
Increased R&D

Focusing R&D
in Priority Areas

Supporting
Increased Business
R&D Investment

For a full report on RDC performance in 2015-16, please refer to **Appendix A**.

Serving as a Catalyst to Support Increased R&D

RDC serves as a catalyst to increase R&D by making strategic investments in highly-qualified people, world-class infrastructure and leading-edge R&D projects. These investments support the creation of a dynamic R&D environment that can routinely solve problems and drive long-term economic growth. To achieve this goal, RDC delivers a suite of R&D funding programs and offers applied R&D services to business and academia.

2015-16 PERFORMANCE HIGHLIGHTS

R&D Projects: RDC invested \$20.8 million in 121 R&D projects.

Leverage: RDC leveraged \$48.2 million from partners for a total project value of \$69.0 million.

Infrastructure and Equipment: RDC committed \$6.3 million towards 125 separate infrastructure and equipment investments.

Collaborations: RDC supported 147 collaborations between business, academia, and government.

Outreach: RDC sponsored 10 events and delivered 13 presentations to external stakeholders.

People: RDC-funded projects supported 331 highly qualified personnel and 136 students.

Growing the Business: R&D Solutions received its first contracts to conduct applied R&D services.

For a full report on RDC performance in 2015-16, please refer to **Appendix A**.

Growing Applied R&D Services

RDC delivers applied R&D services to industry, government and academia, to help solve technical challenges right here in Newfoundland and Labrador.

RDC's Coastal Exposure Materials Testing Services site (Coastal Exposure), located in Argentia, Newfoundland, offers year-round exposure field testing to assist customers who are developing solutions and technologies that help protect vital industry assets.

This applied R&D solution fills a gap in the North American asset integrity market, providing harsh, real-world conditions in an accessible coastal environment. Managed by RDC's R&D Solutions division, Coastal Exposure offers clients collaborative R&D project development services and a range of materials testing options, including full service corrosion expertise in one of the most corrosive natural environments in the world.

MEETING STANDARDS

Many companies require their contractors to have ISO accreditation as it indicates that the company has effective work processes and documents all of their procedures. To this end, RDC is currently working on ISO 17025 quality certification for tests performed at the Coastal Exposure site.

RDC has also made significant progress in projects related to qualifying Coastal Exposure against ISO standards. One such test, which involves using a galvanic cell to assess corrosion rates, showed that the facility's environment is 'very harsh'. Additional testing is underway to assess the environmental classification of the site. Another standardized test has demonstrated that salt spray at the Argentia facility is much higher than reported by other coastal atmospheric test facilities. These tests demonstrate the benefits clients can realize by availing of RDC's services.

COLLABORATING WITH NASA'S CORROSION LAB

RDC's comparative work between the Coastal Exposure site and NASA's Beach Corrosion Site at the Kennedy Space Center in Florida is ongoing. NASA's site has been documented as having higher atmospheric corrosion rates than any other field testing site in North America. This comparative study will provide an understanding of how corrosion progresses in a cold water climate versus a warm water climate and support RDC in demonstrating the need for corrosion field testing in both climates.

Collaboration with NASA has resulted in a newly contracted client for RDC to perform parallel testing at RDC's test site.

BUSINESS ACTIVITY

Throughout the year, RDC has promoted the Coastal Exposure site at conferences and tradeshows, and explored opportunities for new research facilities. These events have enabled RDC to network with potential clients and increase awareness of RDC's applied research and development solutions.

RDC's international advisory committee is working closely with the Coastal Exposure team to provide advice and guidance on an ongoing basis.



Program Update

GeoEXPLORE

In December 2015, RDC's Board of Directors approved an additional \$3 million for GeoEXPLORE (2014-16) to meet increasing industry demand and continue accelerating R&D specific to mineral and petroleum exploration and development.

The GeoEXPLORE program focuses on increasing geoscientific and related knowledge in the mineral and petroleum sectors, helping to reduce exploration risks and costs, enhance discovery success, improve processing techniques, and encourage resource-development opportunities throughout Newfoundland and Labrador.

The success of GeoEXPLORE (2011-13) led to the GeoEXPLORE (2014-16) program renewal in 2014, at which time RDC allocated \$3 million for further investments in mineral-and petroleum-related R&D.

With a focused approach to project investments, as well as changes in commodity prices, RDC experienced unprecedented interest in the renewed GeoEXPLORE program. Recognizing that further investment in the industry was essential to continue supporting this level of R&D and meet increasing demand, RDC's Board of Directors authorized the additional \$3 million investment in late 2015.

It is through this program that RDC is laying the foundation for continued growth and improved technology in the mineral and petroleum sectors.

This year, RDC invested in business-led R&D projects in metallurgical testing and mineral-processing flowsheet design for advanced mineral projects (*Canadian Zinc Corporation; Search Minerals Incorporated*) and in application of new exploration technologies to existing mineralized properties to improve discovery and add to resources for development (*Barite Mud Services Incorporated; Canadian Fluorspar Incorporated; and Altius Minerals Corporation*).

RDC also invested in academic-led collaborative R&D projects pertaining to vectoring techniques that point to new mineralization at existing mines (*Memorial University Department of Earth Sciences and Anaconda Mining Inc.; Memorial University Department of Earth Sciences, College of the North Atlantic and Vale Canada Ltd.*).

RDC is investing in companies to increase production, recovery and process efficiencies through technological enhancements, develop a better understanding of deposit and reservoir characteristics, and reduce environmental impacts. By encouraging innovation, collaboration, and positive commercial outcomes, RDC has demonstrated a commitment to the mining and oil industries, and has become a leader in facilitating minerals and petroleum research in Newfoundland and Labrador.





Dr. Craig Moore

Canada Research Chair in Neuroscience and Brain Repair

In Canada, and much of the developed world, the increasing incidence of brain-related diseases emphasizes the need to further research and develop effective drugs that can improve the quality of life for individuals suffering from such illnesses.

Known as “Canada’s disease”, Multiple Sclerosis (MS) is the most common neurological disease in young adults in Canada, affecting approximately 100,000 nationwide and over 1200 in Newfoundland and Labrador. While the likelihood of developing MS is based on both genetic and environmental factors, the actual cause of the disease is unknown.

As Canada Research Chair in Neuroscience and Brain Repair at Memorial University, Dr. Craig Moore is studying how inflammation in the brain can lead to injury and repair, and is looking to identify and test new drug treatments for chronic neurodegenerative diseases like MS.

While current treatments can decrease the duration and severity of an MS-related relapse or “attack”, all existing drugs eventually lose their effectiveness, and therefore do not prevent long-term progression of the disease.

With an investment from RDC’s IgniteR&D program, Dr. Moore’s focus is on identifying methods to improve the quality of life for patients and prevent long-term progression of MS. While his laboratory primarily focuses on disease mechanisms related

to MS, his findings may also be relevant for other neurological conditions, including Alzheimer’s disease, amyotrophic lateral sclerosis (ALS), stroke, and spinal cord injury.

Trained to work with both human and animal systems, Dr. Moore’s experience provides him with a unique advantage that will allow him to produce translational results, which may lead to better treatments. There was no question as to where he would establish his laboratory – with Atlantic Canada demonstrating some of the highest rates of MS in Canada, Dr. Moore identified Newfoundland and Labrador as an untapped resource to research neurodegenerative diseases.

Also through RDC’s support, Dr. Moore’s laboratory has established a new cell culture facility at Memorial University, allowing Dr. Moore and his team of scientists, physicians, nurses and trainees to develop a province-wide longitudinal database of diagnosed patients with MS. There is a lack of existing historical data on the MS patients in the province. This database will allow researchers to track patients’ immune systems over time and provide a baseline for the research.

For Dr. Moore, his passion for research is evident in his drive to better understand neurodegenerative diseases and develop long-term solutions to treat these diseases. The future of this project can truly change lives.



Bruno Gianasi

Ocean Industries Student Research Award Recipient

Bruno Gianasi is a graduate student of the Marine Biology program at Memorial University. As part of his PhD, supported by RDC's Ocean Industries Student Research Awards, Bruno is exploring the commercial potential of sea cucumber as an emerging aquaculture species in Newfoundland and Labrador. This industry-related project involves collaboration with two industry partners, Fogo Island Co-op and Sunrise Fish Farms Inc.

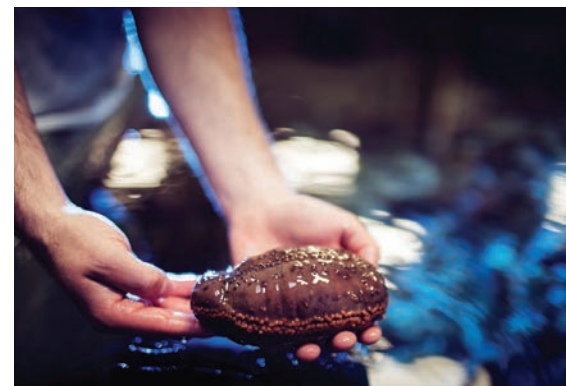
Rich in antioxidants and considered a delicacy throughout Asia, the sea cucumber is in demand for both nutritional and medicinal purposes.

As a potential aquaculture species in the province, there is a need to explore the biology of cold-water sea cucumbers in the context of captive breeding.

Bruno's research is exploring biological and ecological aspects of sea cucumber production in a laboratory setting to optimize broodstock conditioning, spawning potential and quality of juveniles.

Home to the most abundant species of sea cucumber in the North Atlantic, Newfoundland and Labrador's waters offer a rich environment for Bruno to explore the potential to sustainably diversify the province's aquaculture industry.

Providing students with opportunities to perform research and development is key to building a strong foundation of researchers. At RDC, we are making investments to support future R&D performers just like Bruno.



NL's Offshore Research Expedition

An Environmental Challenge Becomes an Opportunity

Research and development is critical to understanding offshore and harsh weather conditions. At RDC we are focused on driving technology advancements to improve operations in Newfoundland and Labrador's harsh offshore environment. With an opportunity to collaborate with leading experts in academia and business, RDC supported a Newfoundland and Labrador offshore research expedition led by ArcticNet, Statoil Canada and Husky Energy. The expedition was designed to enhance offshore safety practices and technologies related to ice hazard mitigation.

A team of 40 Canadian and international scientists and technical staff from ArcticNet, local Newfoundland and Labrador researchers, Statoil and partner organizations set out on an 18-day expedition on board the Canadian research icebreaker CCGS *Amundsen* in April 2015. The goal of the expedition was to study meteorological, sea ice, iceberg and environmental conditions and assess new data collection and ice surveillance technologies in the area northeast of Newfoundland and Labrador.

Collaboration on the research expedition promoted the flow of best practices between the private

sector and academia and expanded ArcticNet's data collection efforts, training programs and technical expertise.

RDC recognizes Statoil as a leader in developing strategic, innovative solutions to build expertise and solve challenges in harsh offshore environments. This expertise was demonstrated through the successful achievement of their expedition objectives: deploying three metocean moorings to collect long-term oceanographic data; surveying and tracking icebergs and ice islands to develop drift forecasts; validating ice detection capabilities; and sensor testing for iceberg detection. Researchers on board also collected observation data on marine mammals using advanced sonar technology and an advanced range estimation device developed in-house by Statoil.

The research expedition aligns with RDC's efforts to enhance the province's global reputation in harsh environment-related R&D by turning these challenges into strategic opportunities. As a result, this expedition has increased the level of expertise in offshore and harsh weather environments and strengthened overall R&D capacity in the province.



Focusing R&D in Priority Areas

RDC recognizes that focus is a key to economic success. To maximize returns on R&D investments, and support growth in areas of provincial competitive advantage, RDC has defined its priority sectors as energy, mining and minerals, and ocean technology. By targeting a majority of our investments in these priority sectors, while still continuing to support high potential R&D activity in other sectors, RDC strives to develop lasting competitive advantages in the province for business and academia.

2015-16 PERFORMANCE HIGHLIGHTS

Priority Sector Support: RDC invested \$14 million in 53 R&D projects in priority sectors.

Leverage: RDC projects in priority sectors leveraged \$33.1 million from partners for a total project value of \$47.1 million.

Focus: Priority sector projects represented 44% of all projects funded and 67% of project funding value.

People: RDC-funded projects in priority sectors supported 204 highly qualified personnel and 72 students.

Solutions: R&D Solutions generated RDC's first two revenue-generating R&D service contracts.

For a full report on RDC performance in 2015-16, please refer to **Appendix A**.

eSonar

A New Wave in Marine Sensor Technology

The team at eSonar Inc. understands the importance of advancements in technology in the fishing industry. Commercial fishing operations are turning to developments in marine technology to ensure they have the most advanced equipment to run an efficient and cost effective operation.

Impacted by the cod moratorium in 1992, eSonar co-founder Jim Hall transitioned from a career in the commercial fishery to begin a brand new education in marine electronics, and he hasn't looked back since. Based in St. John's, eSonar has become a leader in marine electronics equipment, with distributors installing their technology on vessels around the globe.

To remain leaders in sonar technology, eSonar is seeking to increase their suite of electronics and acoustics products for the marine and ocean technology markets. With this motivation, they have ingrained a culture of R&D in the heart of their business to always be a step ahead of industry's needs.

Seeing the promise in eSonar's technology, RDC invested in an R&D project to develop a monitoring system for the purse seine industry. As a result, successful sea trials have led to sales and system installations in Europe, and growing interest in markets throughout Asia, South America, Scandinavia and the United States.

And eSonar continues to advance technologies for this industry. With a new investment from RDC, eSonar is developing an integrated flow sensor for trawl and seine industries that will allow fisherman and researchers to take advantage of a technical method of monitoring current flow at the position of the trawl or seine. Knowing how the current is behaving will be instrumental in enabling the fishing net to be manipulated to fish more effectively and as a result vessel owners will see an increased reduction in operating costs.

"RDC-funded projects have been extremely beneficial for eSonar, not only in the sales resulting from new products, but also with helping to build and maintain a competent development team and helping to enhance the company's overall technical knowledge base," Jim Hall said.

RDC is investing in a company that has proven results and is driven for further R&D success.



Barite Mud Services

Revitalizing Rural Newfoundland and Labrador

Barite Mud Services Inc. (BMSI) has successfully completed a demonstration project, supported by RDC, to reactivate the Buchans barite-extraction-and-processing operation. This revitalization has the potential to produce high-grade barite for the Newfoundland and Labrador offshore petroleum industry, create employment, and enhance the economy in this rural region of the province.

BMSI isn't just reactivating a dormant operation, they plan to actively engage key suppliers in the offshore service sector to expand service offerings through the implementation of new processes and equipment that will increase barite recovery, enhance product characteristics, reduce costs and improve environmental outputs.

Their demonstration project tested the use of spiral gravity separators as supplementary tools to separate and concentrate barite and other heavy minerals from discarded waste material (tailings). This was a significant addition to previous mining methods and the company has matched these efforts with revised quality-control and product-testing protocols to measure and ensure consistent commercial production of barite having demonstrated high quality characteristics.

With the completion of this project, BMSI is positioned to supply the Newfoundland and Labrador offshore petroleum exploration and production industry with quality barite and proceed toward the development of new products of increased value to a broader global market.

The company plans to make environmental improvements to the existing tailings ponds from past mining operations. Once barite concentration

is in full production, they will examine whether it is possible to concentrate the sulphide metals, such as zinc and lead, as commercial products rather than re-depositing these metals back into the tailings ponds. As a result, the acid-generating capacity of the removed metals will be eliminated, further demonstrating BMSI's commitment to environmental stewardship.

RDC's investment in the project has proven successful and BMSI is now positioned to accurately forecast production, control costs, improve environmental outcomes, and maintain a sustainable operation providing long-term employment in this part of rural Newfoundland and Labrador.

"We are now empowered to launch a commercial business that, all things equal, will eventually employ 25 or more people in rural Newfoundland and Labrador for decades to come," said Mike Rose of BMSI.

Barite Mud Services Inc. has the potential to not only revitalize an historic small town operation, but provide an essential product to the province's offshore oil and gas industry.





radient360

Guided Workflows and Dashboard Analytics

Every offshore oil and gas production facility around the world has tens of thousands of assets that need to be inspected and maintained on a regular basis. Accurate and timely execution of this work is critical to the owner's bottom line and crucial to the health and safety of the field workers, production assets, and the natural environment. Facilities located offshore, in northern and Arctic regions, also face the challenge of an unforgiving climate when completing these maintenance integrity tasks.

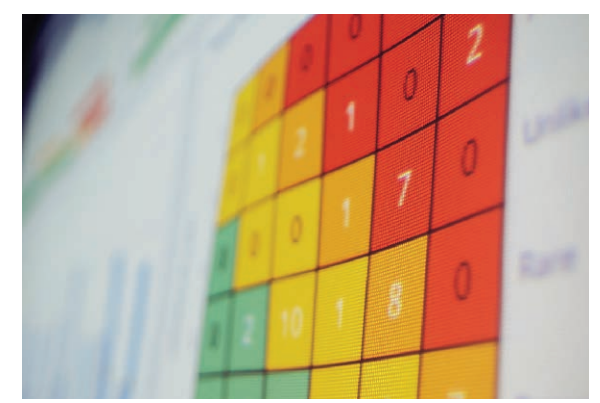
To help address the volume of work and the challenges attached to the completion of this work, *radient360* Solutions Inc. developed a workflow management and data reporting platform that is used by offshore operators to capture rich, accurate information about production assets and processes. *radient360's* technology enables offshore operators to perform paperless inspections in the field and communicate results between offshore and onshore operations in real time.

By integrating cloud and mobile technologies, *radient360's* asset integrity solutions allow onshore managers to access accurate, real-time information and make appropriate and efficient business decisions. Whether operating from a ruggedized

mobile device on a drilling platform or accessing data on a desktop computer onshore, *radient360's* asset management solutions allow for predictive management of operationally critical infrastructure and permits faster responses to maintenance issues.

RDC understands that R&D is embedded in the culture at *radient360*. In demonstration of its success, *radient360* worked in collaboration with a local industry operator to develop a solution that allowed the operator to transition from a traditional maintenance tracking and inspection process to a paperless, real-time preventative maintenance and inspection solution.

RDC's investment has enabled *radient360* to develop solutions that impact the local offshore industry, and which can be exported worldwide. By producing a high quality solution, the success of this R&D project reduces downtime and risk and allows operators to focus on their core business.



Supporting Increased Business R&D Investment

Increasing business-led R&D activity in the province is critical to creating the innovation needed for long-term economic prosperity. Businesses that routinely conduct R&D are more likely to create the new processes, products, and services needed to be competitive in the global economy. In an effort to grow business-led R&D in the province, RDC offers applied R&D services and delivers a suite of programs that invest in the people, equipment, and infrastructure required for businesses to conduct world-class R&D right here in Newfoundland and Labrador.

2015-16 PERFORMANCE HIGHLIGHTS

Business Support: RDC invested \$13.1 million in 34 business-led R&D projects.

Leverage: RDC projects leveraged \$36.2 million from business partners.

Focus: Business-led R&D accounted for 63% of RDC investment.

People: RDC-funded projects led by business supported 97 highly qualified personnel and 1 student.

Impact: RDC clients reported that completion of their R&D projects led to 22 new or expanded businesses, 39 new sources of revenue, and 216 new or improved products, processes and prototypes.

For a full report on RDC performance in 2015-16, please refer to [Appendix A](#).



CAE

Enhancing Offshore Air Transportation

Transportation of personnel to production facilities offshore Newfoundland and Labrador can be challenging for flight operators, particularly in harsh environmental conditions. With safety being the number one priority, oil and gas operators demand world-leading training that matches the local conditions.

Recognizing the environmental challenges in the region and understanding the need to provide training that matches these challenges, the Hibernia Management and Development Company Limited (HMDC) and RDC have invested in a new helicopter training and research and development (R&D) centre operated by CAE. Located in Mount Pearl, Newfoundland and Labrador, this facility brings critical new R&D capacity right to the doorstep of the province's offshore industry.

As a global leader in flight training and simulation systems technology, CAE has designed a helicopter simulator system that provides unprecedented realism for Newfoundland and Labrador's offshore facilities and local weather conditions, and features the first approved helicopter simulator with night vision capability in Canada.

With the facility now complete, five human factors research projects are now underway, where CAE

is investigating aircrew health monitoring, helmet fatigue, crew resource management, first officer performance standards, and visual display reliability in training. Focusing on safety, these projects will have the potential to provide valuable information and further enhance transportation safety and efficiencies for offshore aircrew and personnel in Newfoundland and Labrador.

Training has also begun at the facility for HMDC's helicopter service provider, Cougar Helicopters, who no longer have to use out-of-province training facilities for their pilots but instead are now availing of this state-of-the-art training centre.

By enhancing transportation safety and efficiencies for aircrew and personnel working in Newfoundland and Labrador's offshore industry, CAE and its partners have the potential to solve critical operational challenges and create a safer operating environment.



Notus Electronics

Advancing Commercial Fishing Monitoring Solutions

It was fish that brought settlers to Newfoundland and Labrador. The fishery dictated where people lived and worked, and was the driving force for our provincial economy. While the industry has seen many changes over the years, it is advancements in technology that have had the greatest impact.

With ever-changing quotas and regulations, commercial fishing operators continuously look to improve efficiencies and find new ways to enhance operations on their vessels. And the team at Notus Electronics Limited is doing just that. With an investment from RDC's SensorTECH program, Notus, in cooperation with an Icelandic company, is developing remote controllable trawl doors for the commercial fishing industry.

Historically, once trawl doors were put in the water, very little could be done to control their position. Limited by pre-set angles on the trawl doors, they were stuck in a single forward-going position,

limiting catch potential. Recognizing the value in the ability to manipulate the position of the trawl, Notus is developing technology that will allow trawl door vents to be positioned advantageously and as a result maximize their catch. With a goal to improve fishing operations, this R&D project focuses on testing and developing wireless remote controls and acoustic receivers to adjust the trawl vents in real time.

Having over two decades of experience developing wireless transponder systems for the commercial fishing industry, this new technology will complement their existing net monitoring systems and expand Notus' suite of products.

The success of this project has the potential to significantly change the commercial fishing industry, by reducing operating costs and increasing efficiencies, and reducing the impact on the environment.



PAL Aerospace

Advancing Intelligence, Surveillance and Reconnaissance

Monitoring the coast and ice management is challenging work.

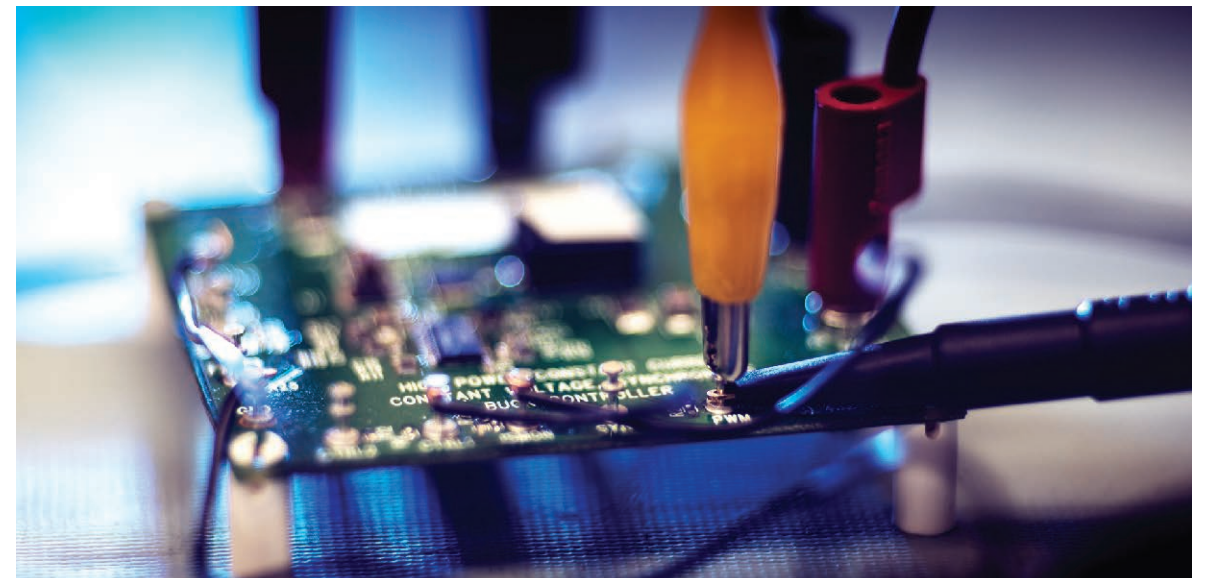
With an investment from RDC's ArcticTECH program, the team at PAL Aerospace (PAL) will enhance their existing night flash photography system. This will further support their maritime surveillance capabilities as they continue to be on the cutting edge of technological advancements within the industry.

Using visible night flash photography, PAL's advanced approach to technology can illuminate a surface area, which allows the ability to capture quality images that provide real-time identification at night.

PAL is applying their expertise within the industry and is demonstrating that their innovative concepts are not just ideas but proven solutions.

Through strategic investments in R&D, RDC is encouraging the spirit of innovation in companies such as PAL Aerospace. This continues to advance the province's reputation as a centre of excellence for research and development.

For PAL, the future of their night flash technology is bright.



OPPORTUNITIES AND CHALLENGES

Looking Forward

In today's challenging economic climate, increasing R&D in the province is more critical than ever to produce the innovation and productivity gains required for long-term economic success. When commercial opportunities are abundant, businesses focus more on extracting value for stakeholders and less on exploring new opportunities. Likewise, we adjust the focus of our activities at RDC to meet the needs of our supported sectors. Through strong and ongoing relationships, we are aware of the changing demands of our clients and stakeholders and are able to adapt as required to exploit current opportunities and explore new possibilities.

Looking forward, a key opportunity for RDC is to continue to support the growth of business-led and priority sector R&D in the province. Another strategic opportunity is to expand operations at the Coastal Exposure Materials Testing Services site in Argentina, while continuing to identify and pursue new facility investments.

The primary challenges next year are economic related. In particular, RDC will be challenged to encourage and support increased investment in R&D as businesses, academic institutions, and the Provincial Government all manage budgetary constraints. The price of oil has stabilized in recent months, but is forecasted to remain low next year, which could negatively impact R&D investments.

To ensure RDC is well positioned to capitalize on opportunities and overcome challenges, we will continue to engage with our clients and partners on collaborative approaches to meet the diverse and complex needs of individual sectors. By recognizing gaps early and often, RDC is well positioned to respond to market pressures through our suite of R&D funding programs and applied R&D service offerings. RDC's agility allows for relevant, timely and meaningful action in support of R&D investments with the greatest potential for commercial outcomes in any context.

APPENDIX A – Full Report on Performance

Strategic Issue 1: SERVING AS A CATALYST TO SUPPORT INCREASED R&D

Background: R&D drives innovation and is essential for producing the new processes, products, services, and knowledge required to be competitive in today's global economy.

Goal: By March 31, 2017, RDC will have served as a catalyst to support increased R&D investment in Newfoundland and Labrador.

2015-16 Objective: By March 31, 2016, RDC will have continued to support R&D activities and promoted collaboration among R&D stakeholders.

2015-16 Measure: RDC continued to support R&D activities and promoted collaboration through its R&D funding programs and other promotional activities.

- Indicators:**
- Number of, and RDC funding for, R&D projects
 - Amount of R&D investment leveraged
 - Number of, and RDC funding for, R&D infrastructure and equipment
 - Number of R&D collaborations supported
 - Number of outreach and promotional activities in support of R&D
 - Number of highly qualified people supported

The same set of indicators will be used to report against progress in 2016-17.

2016-17 Objective: By March 31, 2017, RDC will have undertaken activities to serve as a catalyst to support increased R&D in the province.

2016-17 Measure: RDC continued to undertake activities to serve as a catalyst to support increased R&D.

RESULTS

(1.1) Number of, and RDC Funding for, R&D Projects

# of Projects	Value of RDC Investment
121	\$20,777,919

(1.2) Amount of R&D Investment Leveraged

Total Value of Leverage	Total Value of Projects
\$48,217,179	\$68,995,098

(1.3) Number of, and RDC Funding for, R&D Infrastructure and Equipment

# of Investments	RDC Investment
125	\$6,263,506

(1.4) Number of R&D Collaborations Supported

Total 2015-16 Collaborations
147

(1.5) Number of Outreach and Promotional Activities in Support of R&D

# of External Presentations	# of Conferences/Trade Shows Attended	# of RDC Sponsored Events	# of News Articles Highlighting RDC
13	63	10	33

(1.6) Number of Highly Qualified People (HQP) Supported

HQP Supported	Students Supported *
331	136

*"Students" includes those pursuing a Master's Degree or lower

DISCUSSION OF RESULTS

In 2015-16, RDC continued to support R&D activities and promoted collaboration through its R&D funding programs and other promotional activities. GeoEXPLORE was such a successful example of R&D program delivery that the Board of Directors approved an additional \$3 million this year to cover client demand and support projects identified through business development activities. A number of outreach and promotional activities were undertaken this year in support of R&D including: sponsoring local events with broader industry profile, like the Mining Innovation Symposium and the 34th International Conference on Ocean, Offshore and Arctic Engineering (OMAEE); attending conferences and trade shows like the Arctic Oil and Gas North America Conference and the NOIA (NL Oil and Gas Industries Association) Conference along with the co-located Atlantic Canada Petroleum Show; and presenting to diverse audiences such as the NATI (NL Association of Technology Industries) Knowledge Summit and the NEIA (NL Environmental Industry Association) Notes Conference.

Among 121 R&D projects supported this year was the Offshore Research Expedition discussed earlier (page 23). This project contributed to the development of highly qualified people and the collaboration brought together the best expertise in academia and industry to collect scientific data and execute full-scale field testing of key technologies that are critical to understanding offshore and harsh weather environments. Another supported R&D project discussed earlier (page 19) is Dr. Craig Moore's research program, which included purchase of laboratory equipment to serve as a resource for scientists, physicians, and trainees to investigate key questions related to neurodegenerative diseases, with the overarching goal of improving the quality of life for the residents of Newfoundland and Labrador. RDC investments in these collaborations, people and infrastructure are required for conducting world-class R&D right here in Newfoundland and Labrador.

Strategic Issue 2: FOCUSING R&D IN PRIORITY AREAS

Background: A focused approach to R&D offers the highest potential for maximizing economic and social returns on R&D investments.

Goal: By March 31, 2017, RDC will have provided support to increase R&D investment in the priority sectors of energy, mining and minerals, and ocean technology.

2015-16 Objective: By March 31, 2016, RDC will have continued to deliver programs that focus R&D investment into priority sectors.

2015-16 Measure: RDC continued to deliver programs that focus R&D investment in priority sectors.

- Indicators:**
- Number of, and RDC funding for, projects in priority sectors
 - Amount of R&D investment leveraged in priority sectors
 - Ratio of projects funded in priority sectors versus all other sectors
 - Number of highly qualified people supported in priority sector R&D projects
 - Opportunities advanced to support new R&D facilities that increase R&D investment in priority sectors

The same set of indicators will be used to report against progress in 2016-17.

2016-17 Objective: By March 31, 2017, RDC will have undertaken activities to support increased R&D investment in priority sectors.

2016-17 Measure: RDC continued to undertake activities supporting increased R&D investment in priority sectors.

RESULTS

(2.1) Number of, and RDC Funding for, Projects in Priority Sectors

# of Priority Sector Projects	Value of RDC Investment
53	\$13,973,956

(2.2) Amount of R&D Investment Leveraged in Priority Sectors

Total Leverage in Priority Sectors	Total Value of Projects
\$33,080,808	\$47,054,764

(2.3) Ratio of Projects Funded in Priority Sectors Versus All Other Sectors

% of Projects in Priority Sectors	% of Total Funding in Priority Sectors
44%	67%

(2.4) Number of Highly Qualified People (HQP) Supported in Priority Sector R&D Projects

HQP Supported	Students Supported*
204	72

*"Students" includes those pursuing a Master's Degree or lower

(2.5) Opportunities Advanced to Support New R&D Facilities that Increase R&D Investment in Priority Sectors

Throughout 2015-16, RDC focused on developing the Coastal Exposure Materials Testing Services site in Argentina, while continuing to pursue new opportunities for its R&D Solutions line of business. The work on the site focused on business development, including developing quote and contract templates, pricing lists and strategies, and marketing materials such as trade show booths and a website, that have helped transform the test site into a true business. Marketing efforts focused on generating new clients and revenue, with staff attending and hosting booths at several major trade shows, such as those held by the Offshore Technology Conference and NACE, the leading worldwide corrosion authority. This also included delivering 2 presentations at the NACE conference in Ottawa in October 2015.

RDC also continued to examine potential opportunities for its R&D Solutions line of business, including ocean observation for radar testing, minerals analysis, and acoustic testing for the defense and sonar industry. Each of these opportunities represents a gap in services for local companies and, in the case of the acoustic testing facility, national and international clientele. The current set of prospective opportunities is concentrated in RDC's priority sectors, and the pipeline development strategy has shifted to advancing a few key opportunities through a rigorous stage gating process quicker, rather than developing a broad number of opportunities concurrently. The analytical work to examine the potential of these opportunities is ongoing, including consultations and collaboration with prospective clients and partners.

DISCUSSION OF RESULTS

In 2015-16, RDC continued to deliver programs that focus R&D investment in priority sectors, most notably GeoEXPLORE, ArcticTECH, and PetroleumR&D Accelerator. As discussed earlier (page 17), GeoEXPLORE had a strong year. Unprecedented interest in the program demonstrates increased R&D investment in RDC's priority sector of mining and minerals. This increased activity was made possible due to RDC's R&D funding commitments, 67% of which were focused across priority sectors.

Among 53 R&D projects supported this year in priority sectors was the eSonar investment profiled earlier (page 27). Upon completion of this project, eSonar plans to have a working prototype of an integrated flow sensor that includes the interface and application versatility needed to satisfy market requirements in the trawl and seine fishing industries. Actually completed this year were the highlighted Barite Mud Services (page 29) and *radient360* (page 31) projects. Outcomes discussed from these and other projects demonstrate the success of RDC's investments in R&D.

In 2015-16, RDC's R&D Solutions line of business began to establish itself as a world-class R&D performer with its work at the Coastal Exposure Materials Testing Services site. The site notably celebrated its first revenue-generating R&D service contracts in 2015-16, a trend we look forward to building on in the years to come. In addition, new opportunities being pursued for R&D facilities are focused in RDC's priority sectors, which will serve to generate additional R&D activity in these sectors in the coming years.

Strategic Issue 3: SUPPORTING INCREASED BUSINESS R&D INVESTMENT

Background: Business R&D is a critical element of an innovative and sustainable provincial economy due to its ability to drive productivity and growth.

Goal: By March 31, 2017, RDC will have provided support to increase business investment in R&D in Newfoundland and Labrador.

2015-16 Objective: By March 31, 2016, RDC will have continued to deliver programs that support business investment in R&D.

2015-16 Measure: RDC continued to deliver programs that support business investment in R&D.

- Indicators:**
- Number of, and RDC funding for, business R&D projects
 - Amount of R&D investment leveraged from businesses
 - Number of highly qualified people supported in business R&D projects
 - Opportunities advanced to support new R&D facilities that increase business R&D investment

The same set of indicators will be used to report against progress in 2016-17.

2016-17 Objective: By March 31, 2017, RDC will have undertaken activities to support increased business R&D in the province.

2016-17 Measure: RDC continued to undertake activities to support increased business R&D.

RESULTS

(3.1) Number of, and RDC Funding for, Business R&D Projects

# of Business R&D Projects	Value of RDC Investment	Total Value of Projects
34	\$13,054,151	\$51,384,001

(3.2) Amount of R&D Investment Leveraged from Businesses

Total Leverage from Business
\$36,191,519

(3.3) Number of Highly Qualified People (HQP) Supported in Business R&D Projects

HQP Supported	Students Supported *
97	1

*"Students" includes those pursuing a Master's Degree or lower

(3.4) Opportunities Advanced to Support New R&D Facilities that Increase Business R&D Investment

As outlined in the performance statement against indicator 2.5, RDC is examining a number of potential R&D Solutions opportunities, in addition to building the business for the existing opportunities at the recently opened Coastal Exposure Materials Testing Services site. This year included the celebrated milestone of having attracted the first revenue-generating applied R&D service contracts at the site. Work continues to follow-up on the pipeline of potential opportunities for other companies contacted during marketing efforts at trade shows.

R&D Solutions also worked to capitalize on potential new opportunities in 2015-16, including seeking to provide local, national, and international companies with the facilities required to test radar and sonar equipment, and to solve technical challenges related to minerals processing. Each of these opportunities should bring research revenue into the province and assist companies, located in the province and around the world, to improve their business performance with data that supports the marketing of their products.

DISCUSSION OF RESULTS

In 2015-16, RDC continued to deliver programs that support business investment in R&D, most notably R&D Proof of Concept, EmployR&D, and SensorTECH. By delivering a diverse suite of programs and advancing the ability of our R&D Solutions division to deliver new applied R&D services, RDC successfully encouraged an increase in business-led R&D this year.

Among 34 business-led R&D projects supported this year was the CAE investment profiled earlier (page 35). The helicopter simulator system, now in operation, provides unprecedented realism for offshore facilities and local weather conditions, and features the first approved helicopter simulator with night vision capability in Canada. This project also demonstrates a significant 4:1 business leverage ratio, with the Hibernia Management and Development Company Ltd. (HMDC) contributing \$13 million to the centre and its helicopter simulator system.

Notus Electronics was also supported this year, representing one of the first five SensorTECH Commercial project investments made in 2015-16 (page 37). SensorTECH is an RDC-directed research program in the area of sensor research, development and demonstration in simulated and real operating environments. As RDC's newest R&D funding program, SensorTECH has a high potential to positively impact a variety of sectors within the province including energy, fisheries and ocean technology.

By supporting economic outcomes through business R&D projects and offering applied R&D services, RDC is growing business investment while improving the capacity of businesses to consistently innovate right here in Newfoundland and Labrador.

APPENDIX B – Financial Statements

March 31, 2016

Management Certification

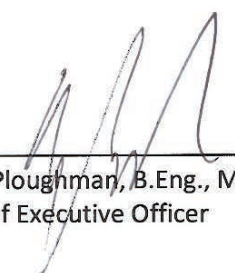
The accompanying financial statements of the Research & Development Corporation of Newfoundland and Labrador have been prepared by the Corporation's management in accordance with Canadian Public Sector Accounting Standards.

Management is responsible for the integrity and objectivity of the information contained in these financial statements, including the note disclosures. Some of the information in the financial statements is based on management's best estimate and judgment, and gives due consideration to materiality.


Management has developed and maintains a financial and management control system and practices designed to provide reasonable assurance that transactions are properly authorized, assets are safeguarded and liabilities are recognized.

Management is also responsible for ensuring that transactions comply with relevant policies and authorities and are properly recorded to produce timely and reliable financial information to maintain accountability of Research & Development Corporation of Newfoundland and Labrador funds.

The Board of Directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal control and meets periodically with management to review and discuss the financial information. The Auditor General of Newfoundland and Labrador conducts an independent audit of the annual financial statements of the Research & Development Corporation of Newfoundland and Labrador in accordance with Canadian auditing standards in order to express an opinion thereon. The Auditor General has full and free access to the financial management of the Research & Development Corporation of Newfoundland and Labrador and meet when required.



Mark Ploughman, B.Eng., MBA
A/Chief Executive Officer



Levi May, CPA, CA
Chief Financial Officer

St. John's, Newfoundland and Labrador
June 15, 2016



**AUDITOR
GENERAL**
of Newfoundland and Labrador

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors
Research & Development Corporation
of Newfoundland and Labrador
St. John's, Newfoundland and Labrador

Report on the Financial Statements

I have audited the accompanying financial statements of the Research & Development Corporation of Newfoundland and Labrador which comprise the statement of financial position as at March 31, 2016, the statements of operations, change in net financial assets, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

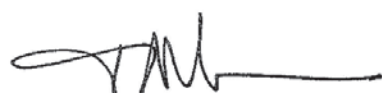
An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

Independent Auditor's Report (cont.)

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Opinion

In my opinion, the financial statements present fairly, in all material respects, the financial position of the Research & Development Corporation of Newfoundland and Labrador as at March 31, 2016, and its financial performance and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.



TERRY PADDON, CPA, CA
Auditor General

St. John's, Newfoundland and Labrador
June 15, 2016

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

STATEMENT OF FINANCIAL POSITION

As at

	March 31, 2016 \$	March 31, 2015 \$
FINANCIAL ASSETS		
Cash and cash equivalents	37,044,498	36,561,579
Receivables	31,122	53,788
	<u>37,075,620</u>	<u>36,615,367</u>
LIABILITIES		
Accounts payable and accrued liabilities (Note 5)	2,933,646	2,317,603
Deferred revenue	6,495	-
	<u>2,940,141</u>	<u>2,317,603</u>
Net Financial Assets	<u>34,135,479</u>	<u>34,297,764</u>
NON-FINANCIAL ASSETS		
Tangible capital assets, net (Note 6)	831,123	1,065,627
Prepaid expenses	27,831	56,156
	<u>858,954</u>	<u>1,121,783</u>
Accumulated surplus	<u>34,994,433</u>	<u>35,419,547</u>

Contractual obligations (Note 7)

The accompanying notes are an integral part of these financial statements.

Signed on behalf of the Board:


Director


Director

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

STATEMENT OF OPERATIONS

For the year ended

	March 31, 2016 \$	March 31, 2016 \$	March 31, 2015 \$
	Budget	Actual	Actual
	(Note 12)		
REVENUE			
Government grants	22,026,000	21,906,797	22,031,916
Investment income	622,304	476,717	623,690
Other income	-	4,378	-
	<u>22,648,304</u>	<u>22,387,892</u>	<u>22,655,606</u>
EXPENSES (Note 8)			
Program expenses – Academic	11,518,524	8,618,951	11,499,964
Program expenses – Business	6,242,373	10,396,064	5,696,300
R&D Solutions	1,232,232	623,405	533,239
Operating expenses	3,935,301	3,174,586	3,285,059
	<u>22,928,430</u>	<u>22,813,006</u>	<u>21,014,562</u>
(Deficit) Surplus	(280,126)	(425,114)	1,641,044
Accumulated surplus, beginning of year	35,419,547	35,419,547	33,778,503
Accumulated surplus, end of year	<u>35,139,421</u>	<u>34,994,433</u>	<u>35,419,547</u>

The accompanying notes are an integral part of these financial statements.

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

STATEMENT OF CHANGE IN NET FINANCIAL ASSETS

For the year ended

	March 31, 2016 \$	March 31, 2016 \$	March 31, 2015 \$
	Budget	Actual	Actual
	(Note 12)		
(Deficit) Surplus	(280,126)	(425,114)	1,641,044
Acquisition of tangible capital assets	(2,912,700)	(40,549)	(257,700)
Amortization of tangible capital assets	360,276	275,053	305,709
	<u>(2,552,424)</u>	<u>234,504</u>	<u>48,009</u>
Acquisition of prepaid expenses	-	(55,754)	(103,753)
Use of prepaid expenses	-	84,079	98,160
	<u>-</u>	<u>28,325</u>	<u>(5,593)</u>
(Decrease) Increase in net financial assets	(2,832,550)	(162,285)	1,683,460
Net financial assets, beginning of year	34,297,764	34,297,764	32,614,304
Net financial assets, end of year	<u>31,465,214</u>	<u>34,135,479</u>	<u>34,297,764</u>

The accompanying notes are an integral part of these financial statements.

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

STATEMENT OF CASH FLOWS

For the period ended

	March 31, 2016 \$	March 31, 2015 \$
OPERATING TRANSACTIONS		
(Deficit) Surplus	(425,114)	1,641,044
Non-cash item		
Amortization of tangible capital assets	275,053	305,709
Decrease in receivables	22,666	232,423
Decrease (increase) in prepaid expenses	28,325	(5,593)
Increase in accounts payable and accrued liabilities	616,043	622,824
Increase in deferred revenue	6,495	-
Cash provided by operating transactions	523,468	2,796,407
CAPITAL TRANSACTIONS		
Acquisition of tangible capital assets (Note 6)	(40,549)	(257,700)
Cash applied to capital transactions	(40,549)	(257,700)
INVESTING TRANSACTIONS		
Disposal of portfolio investment	-	26,000,000
Cash provided by investing transactions	-	26,000,000
Net increase in cash and cash equivalents	482,919	28,538,707
Cash and cash equivalents, beginning of period	36,561,579	8,022,872
Cash and cash equivalents, end of period	37,044,498	36,561,579

The accompanying notes are an integral part of these financial statements.

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

NOTES TO FINANCIAL STATEMENTS

March 31, 2016

1. Nature of operations

The Research & Development Corporation of Newfoundland and Labrador (the Corporation) is incorporated under the authority of the *Research and Development Council Act (the Act)* and is funded by the Province of Newfoundland and Labrador (the Province). The *Act* came into effect December 18, 2009. The objective of the Corporation is to strengthen the focus, quantity, quality, and relevance of research and development (R&D) undertaken within the Province and elsewhere for the long-term economic benefit of the Province.

The affairs of the Corporation are managed by a Board of Directors (the Board) appointed by the Lieutenant-Governor in Council. The Corporation is a Crown entity of the Province and as such is not subject to Provincial or Federal income taxes.

2. Summary of significant accounting policies

These financial statements have been prepared by management in accordance with Canadian Public Sector Accounting Standards (CPSA Standards) which require management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. By their nature these estimates are subject to measurement uncertainty. The most significant item for which estimates are used is the useful life of tangible capital assets. The effect on the financial statements of a change in this estimate in future periods could be material and would be accounted for in the period the change occurs.

Basis of presentation

These financial statements include the accounts relating to the operations carried on under the name of the Corporation, and have been prepared by the Corporation's management in accordance with CPSA Standards.

Cash and cash equivalents

Cash and cash equivalents consists of cash in bank.

Portfolio investments

Portfolio investments include highly liquid term deposits and guaranteed investment certificates that have maturities between three and twelve months at acquisition.

RESEARCH & DEVELOPMENT CORPORATION OF NEWFOUNDLAND AND LABRADOR

NOTES TO FINANCIAL STATEMENTS

March 31, 2016

2. Summary of significant accounting policies (cont.)

Revenue recognition

The Corporation recognizes the receipt of government transfers as revenue in the period the transfer is authorized and all eligibility criteria have been met, except when and to the extent that the transfer gives rise to an obligation that meets the definition of a liability for the Corporation. Investment income is recognized as earned. Revenue generated from the R&D Solutions line of business is recognized in the period it is earned.

Deferred revenue represents revenue invoiced but not earned.

Expenses

The Corporation recognizes expenses on an accrual basis. The cost of all goods consumed and services received during the period is expensed. Program grants are accounted for as government transfers and are recorded as expenses when they are authorized, when eligibility criteria have been met by the recipient, and when a reasonable estimate of the amount can be made.

Tangible capital assets

Tangible capital assets are recorded at cost and amortized on a straight-line basis over their estimated useful lives using the following terms:

	Term
Furniture and equipment	5 years
Computer hardware and software	2 years
Network infrastructure	4 years
Enterprise resource package software	3 years
Leasehold improvements	Lease term
Atmospheric corrosion test site	5 years

Tangible capital assets are written down when conditions indicate that they no longer contribute to the Corporation's ability to provide services or when the value of future economic benefits associated with the tangible capital assets is less than their net book value. The net write downs are accounted for as expenses in the statement of operations.

Pension costs

Employees of the Corporation are covered by the Public Service Pension Plan (the Plan) administered by the Public Service Pension Plan Corporation, the Government Money Purchase Plan administered by the Province or a self-directed RRSP. Contributions to each plan are required from the employees and are matched by the Corporation. The contributions for pensions are recognized during the period in which the services are rendered and represent the Corporation's total pension benefit obligation. The Plan

RESEARCH & DEVELOPMENT CORPORATION OF NEWFOUNDLAND AND LABRADOR

NOTES TO FINANCIAL STATEMENTS

March 31, 2016

2. Summary of significant accounting policies (cont.)

provides defined pension benefits to employees based on their length of service and rates of pay. The maximum contribution rate for eligible employees is 11.85% (2015 – 11.85%). The Corporation is not required to make contributions in respect of any actuarial deficiencies of the Plan. Total pension expense for the Corporation for the period ended March 31, 2016 was \$283,695 (year ended March 31, 2015 - \$218,452).

3. Risk management

The Corporation's management recognizes the importance of managing significant risks and this includes policies, procedures and oversight designed to reduce the risks identified to an appropriate threshold. The Board is provided with timely and relevant reports on the management of significant risks. The risks that the Corporation is exposed to through its financial instruments are credit risk, liquidity risk and market risk. There was no significant change to the Corporation's exposure to these risks or its processes for managing these risks from the prior year.

Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The Corporation's main credit risk relates to cash and cash equivalents and receivables. The Corporation's maximum exposure to credit risk is the carrying amount of these financial instruments. The Corporation is not exposed to significant credit risk with its cash and cash equivalents because these financial instruments are held with a Chartered Bank. The Corporation is not exposed to significant credit risk with its receivables as these amounts are due primarily from a Chartered Bank or the Government of Canada. Accordingly there is no allowance for doubtful accounts as all amounts are considered collectible.

Liquidity risk

Liquidity risk is the risk that the Corporation will be unable to meet its contractual obligations and financial liabilities as they come due. The Corporation's exposure to liquidity risk relates mainly to its accounts payable and accrued liabilities and its contractual obligations as disclosed in Note 7. The Corporation manages liquidity risk by monitoring its cash flows and ensuring that it has sufficient resources available to meet its obligations and liabilities. The Corporation also has access to a credit facility as outlined in Note 11.

Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: currency (foreign exchange) risk, interest rate risk and other price risk. The Corporation is not exposed to significant foreign exchange, interest rate or other price risk.

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

NOTES TO FINANCIAL STATEMENTS

March 31, 2016

4. Financial instruments

The Corporation's financial instruments recognized on the statement of financial position consist of cash and cash equivalents, receivables, and accounts payable and accrued liabilities. The Corporation generally recognizes a financial instrument when it enters into a contract which creates a financial asset or financial liability. Financial assets and financial liabilities are initially measured at cost, which is the fair value at the time of acquisition. The Corporation subsequently measures all of its financial assets and financial liabilities at cost.

The carrying value of cash and cash equivalents, receivables, and accounts payable and accrued liabilities approximate fair value due to their nature and the short-term maturity associated with these instruments.

Interest attributable to financial instruments is reported on the statement of operations.

5. Accounts payable and accrued liabilities

	March 31, 2016 \$	March 31, 2015 \$
Programs grants payable	2,289,601	1,740,038
Trade accounts payable & accruals	83,387	116,603
Payroll related accruals	560,658	460,962
	2,933,646	2,317,603

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

NOTES TO FINANCIAL STATEMENTS

March 31, 2016

6. Tangible capital assets

	Leasehold Improve- ments \$	Furniture & Equipment \$	Computer Hardware & Software \$	Network Infrastructure \$	Enterprise Resource Package Software \$	Atmospheric Corrosion Test Site \$	Total \$
COST							
Balance, March 31, 2015	835,413	537,344	356,190	47,077	259,085	263,910	2,299,019
Additions	-	5,920	17,537	-	-	17,092	40,549
Balance March 31, 2016	835,413	543,264	373,727	47,077	259,085	281,002	2,339,568
ACCUMULATED AMORTIZATION							
Balance, March 31, 2015	229,738	381,408	289,693	47,077	259,085	26,391	1,233,392
Amortization expense	83,542	70,411	66,609	-	-	54,491	275,053
Balance, March 31, 2016	313,280	451,819	356,302	47,077	259,085	80,882	1,508,445
Net book value, March 31, 2016	522,133	91,445	17,425	-	-	200,120	831,123
Net book value, March 31, 2015	605,675	155,936	66,497	-	-	237,519	1,065,627

7. Contractual obligations

The Corporation has outstanding contractual obligations under its various programs in respect of approved but not yet disbursed funds in the amount of \$39,134,509. The Corporation has also entered into a lease agreement for the rental of office space and various operating contracts totaling \$2,915,987. Approximate payment of these obligations in future years is as follows:

	Programs \$	Operating \$
2017	25,569,824	590,832
2018	8,432,515	443,300
2019	2,308,464	443,145
2020	1,618,300	442,680
2021	895,299	442,680
Thereafter	310,107	553,350
	39,134,509	2,915,987

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

NOTES TO FINANCIAL STATEMENTS

March 31, 2016

8. Expenses

The statement of operations presents the expenses of the Corporation by function. The following table presents them by nature:

	March 31, 2016 \$	March 31, 2016 \$	March 31, 2015 \$
	Budget	Actual	Actual
	(Note 12)		
Program grants	15,165,000	17,282,900	15,557,187
Salaries and benefits	4,888,149	3,784,542	3,437,117
Purchased services	1,480,385	1,000,784	1,045,486
Professional services	1,034,620	469,727	669,063
Amortization of tangible capital assets	360,276	275,053	305,709
Total expenses	22,928,430	22,813,006	21,014,562

9. Related party transactions

These financial statements include transactions with related parties. The Corporation is related, as a result of common ownership, to all Crown corporations and agencies of the Province.

During the period, the Corporation had the following related party transactions:

- Program grants expense to related parties of \$10,091,097 (year ended March 31, 2015 - \$10,843,637).
- Purchased supplies and services from related parties for \$509,413 (year ended March 31, 2015 - \$622,237).

10. Economic dependence

As a result of the Corporation's reliance on funding from the Province, the Corporation's ability to continue viable operations is dependent upon the decisions of the Province.

**RESEARCH & DEVELOPMENT CORPORATION OF
NEWFOUNDLAND AND LABRADOR**

NOTES TO FINANCIAL STATEMENTS

March 31, 2016

11. Credit facilities

Subject to the prior approval of the Lieutenant-Governor in Council and the Board, the Corporation may borrow money for purposes related to the attainment of its objectives as set out in the Act. At March 31, 2016, the Corporation had available a revolving credit facility of up to \$1,000,000 bearing interest at prime, a letter of credit of up to \$50,000 bearing interest at 1%, and VISA business card(s) with an aggregate limit of \$50,000. At March 31, 2016 the credit facility, letter of credit, and the VISA business card(s) are inactive.

12. Budgeted figures

Budgeted figures have been provided for comparison purposes and have been derived from the original estimates approved by the Board.