on a path of growth and success
ANNUAL REPORT
2013
2014
ATLANTIC CANCER RESEARCH INSTITUTE
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VISION
CONTRIBUTE TO FINDING CURES FOR CANCER BY BEING A LEADER IN INNOVATIVE RESEARCH.

MISSION
UNDERSTANDING CANCER AND FINDING SOLUTIONS:
• By fostering interdisciplinary research;
• By transferring scientific innovation towards patient care;
• By contributing to the training of future researchers.
The Atlantic Cancer Research Institute (ACRI) is located in the Dr. Georges L. Dumont University Hospital Centre, in Moncton, New Brunswick. ACRI’s Atlantic Canada connection has led to work and collaboration with researches and universities across Atlantic Canada and beyond. With an on-site lab, ACRI scientists perform clinical trials and embark in unique research. Through ACRI initiatives, researchers have revealed new and innovative methods of cancer detection and treatment, with the goal of improving cancer-related care such as early detection, better diagnostics and prognosis tools, and improved treatments for patients. ACRI continues to direct its research towards a more personalized and improved patient care. New technologies have permitted us to take the next steps forward in our research which has and will continue to have an impact on patient care here, in our region.

Since its inception in 1998, ACRI has evolved to become a leading not-for-profit biomedical research centre in Atlantic Canada. Research that is base right here in Atlantic Canada benefits us all as it brings innovation and solutions right to our own communities and to market.
A YEAR OF GROWTH

MESSAGE FROM THE PRESIDENT AND SCIENTIFIC DIRECTOR

The year 2013-14 was a year of significant growth and research success for ACRI. Our team of dedicated researchers and staff are committed to find solutions for the terrible disease that is cancer. The courage and perseverance of people serve as a constant motivation to each and every one of us to continue to find better ways to diagnose and treat this disease. There is much to be hopeful though as every day new discoveries and innovations are improving the chances of winning this battle.

In the past year we completed our expansion with additional space in the Dr GL Dumont University Medical Center. We now have more research space which allows us to accommodate our growing research teams and expanded clinical translation research. We are very appreciative of the valuable assistance of Vitality Hospital Network allowing us to expand in their flagship institution and worked with us to facilitate the project. The synergy we have with the hospital clinicians and staff locally and throughout the Atlantic Region is a valuable component of our research program and we look forward to continuing to grow these relationships.

I am very proud of the talented team of researchers at ACRI. They have built impressive research teams around them and are having breakthrough success in building a successful research program in various cancers including breast, prostate, kidney and colon. Their efforts have been recognized and rewarded by research granting organizations both provincial and national. Their research focus is twofold and aims at understanding the biology of cancer and using that knowledge to translate discoveries into clinical application.

We are very hopeful that our ongoing projects based on our exosome and microvesicle capture technology will lead to exciting advancements in cancer diagnosis. These cell derived particles are increasingly recognized as important communication vehicles that circulate in body fluids and contain biological information that can be used for early detection and diagnosis of many types of disease in addition to cancer. The technology that we commercialized in partnership with New England Peptide is now being sold to the worldwide research market. This first of its kind technology allows researcher to rapidly isolate cancer derived information from a simple blood or urine test to improve the sensitivity and accuracy of existing diagnostics and identify new ones. We are very optimistic that our technology will have numerous applications in the diagnostic field as we continue to pursue our research.

We are also very optimistic about a major new research project that was funded by the Atlantic Innovation Fund. The project will involve the identification of gene targets for the development of new therapies for cancers including lung, breast and kidney. The project was made possible by the efforts of all team members and leverages our numerous partnerships. We feel that this is a promising area of research and hope that we will be able to improve patient care through new biological approaches that target cancer cells and avoid ill effects to normal cells.

We are also very indebted to the community, corporate and government who generously support our research. The breakthroughs of today would have never occurred without the support of years past. This year, we have also benefited greatly from the generous support of the population through our Cancer Research Saves Lives campaign. We are particularly grateful to the Caisses Populaires Acadiennes to have combined donations from the public during the holiday season.

The growing and determined team, numerous partners, volunteers and our Ambassador program as well as donors who support our work are the biggest factor in our success. We thank the volunteer members of our Board and our Scientific Advisory Board. Thanks to the support of these dedicated and creative advisors, we continue to grow.

Dr. Rodney Ouellette, M.D., Ph.D.
President and Scientific Director
MESSAGE FROM THE PRESIDENT OF THE BOARD OF DIRECTORS

Over the past two years, I have had the privilege to work with the members of ACRI’s management and research teams, in particular Dr. Rodney Ouellette, president and scientific director. I want to commend them on the exceptional work and accomplishments for which they have been recognized over the past year. During that time, the organization has evolved through maturity, innovation, motivation and perseverance. I am hardly the first to make this observation; among other distinctions, I extend my heartfelt congratulations to Dr. Ouellette on his being recognized as one of New Brunswick’s top three applied researchers at the New Brunswick Innovation Foundation’s R3 Gala.

The board of directors continues to keep close watch on the achievements of ACRI’s scientific and administrative components. It has been exciting to watch ACRI’s visibility steadily increase at the regional, national and international levels. Clearly, the fact that a specialized research centre is located right here in Atlantic Canada is a source of pride for many.

ACRI’s research team continues to expand, and the day-to-day challenge remains raising the funds required to move forward with the team’s projects. The launch of the new Cancer Research Saves Lives fund-raising campaign is a step in the right direction in terms of ensuring the continuity of research efforts.

My role as president of the board of directors continues to be highly motivating and, on a personal level, immensely rewarding. The board of directors looks forward to embracing the next year with full energy and confidence that ACRI will continue to persevere whatever the obstacles. The advances we have witnessed this year in terms of collaboration, commercial development, innovation and retaining talent provide ample reassurance of this. The ACRI team continues to demonstrate its capacity for innovation.

I would also like to thank the community throughout the Atlantic Provinces for its ongoing support. Together, we can beat this devastating disease.

Gilles LeBlanc
President of the Board of Directors
SUCCESS THROUGH COMMERCIALIZATION

The Atlantic Cancer Research Institute and New England Peptide (NEP), a manufacturer of biotechnology products based out of the greater Boston area, recently launched a new company. Excipio Technologies Inc., which will carry out its work at the ACRI laboratory, is responsible for commercialization of Vn96, a peptide developed by ACRI and NEP.

Excipio Technologies creates solutions for pharmaceutical and diagnostic companies to fulfill an existing need for faster, more specific and more efficient exosome isolation leading to development of more effective diagnostic tests and therapeutic technologies based on biomarker analysis. The new enterprise's mandate also includes seeking new applications for the Vn96 technology.

ACRI continues to promote and support the innovative technologies developed under the auspices of its research. Over the course of the past year, we signed collaboration agreements with private-sector companies in Italy, Northern Ireland, the United States and Canada. These new initiatives will support us in advancing research initiatives to identify which factors are modified in cancer cells with a view to developing innovative cancer screening and treatment approaches.

The intellectual property developed through our research programs is a highly important asset. To maximize the value of this intellectual property, ACRI continues to submit its innovative technologies to patent offices throughout both North America and Europe. The four patents submitted to date by ACRI are currently under review. ACRI is aware that maintaining the assistance provided by the federal and provincial governments depends on its capacity to convert research outcomes into commercial products.

Vitalité Health Network, in conjunction with the Atlantic Cancer Research Institute (ACRI), is pleased to announce that it is now equipped to offer next-generation DNA sequencing technology for diagnostic purposes. ACRI was one of the first research centres in Canada to acquire the Ion Proton Sequencer manufactured by Life Technologies, in 2012. ACRI is now making this device available for use by the molecular genetics laboratory at Dr. Georges-L.-Dumont University Hospital Centre in Moncton.

The molecular genetics laboratory has developed a series of diagnostic and prognostic tests for cancer and other diseases and is continuing to develop new tests to support non-invasive screening for certain fetal diseases. The new service, called the Molecular Diagnostic and Sequencing Laboratory, will be equipped to analyze patient samples from throughout New Brunswick and beyond beginning in early March 2014.
The past year has seen several positive changes for ACRI that have expanded our capacity to perform cutting-edge cancer research. Specifically, renovations of new laboratory space were completed on the fourth floor of the Hotel-Dieu Pavilion, effectively increasing our capacity by one third. This has seen an increase in research activity and the installation of several new pieces of equipment that will allow us to take our research in new and innovative directions.

ACRI is fortunate to be one of the first research centres in Canada to have begun to perform genomics research with the Ion Proton and Ion Torrent Next-Generation Sequencing platforms from Life Technologies. Using these platforms, ACRI scientists are now able to look at individual cancer genomes from patients, understand how these cells become cancerous, and translate these discoveries to develop new diagnostics and therapies. This technology is accelerating the pace of discovery to levels that we could not imagine only a few years ago. Dr. Nicolas Crapoulet has joined ACRI as a Research Scientist and is responsible for directing the Next-Generation Sequencing facility.

ACRI has also embarked in a new direction for its cancer research: synthetic lethality. The concept of synthetic lethality seeks to identify the “Achilles’ heel” of cancer cells by identifying genes whose presence is absolutely required for cancer cell survival, but is not important for the survival of normal, healthy cells. Once these genes have been identified, ACRI scientists hope to exploit them as novel targets for cancer therapy. This project has received significant funding from the Atlantic Canada Opportunities Agency in the form of a $2.8 million Atlantic Innovation Fund grant.

The excellence of cancer research at ACRI has also received recognition through the awarding of new research grants to ACRI scientists and trainees from agencies such as the Canadian Institutes of Health Research, the Lung Cancer Research Foundation, the Breast Cancer Society/QEII foundation, the Beatrice Hunter Cancer Research Institute/Cancer Research Training Program, the New Brunswick Innovation Foundation, and the New Brunswick Health Research Foundation. The research team is grateful for this support, which in combination with financial support from community should provide for exciting discoveries in the year ahead and beyond.

Selected Publications


The Cancer Research Saves Lives campaign was founded to help raise community awareness and interest in relation to ACRI throughout the Atlantic Provinces with the goal of establishing a support network for the cancer research carried out at the Institute. Atlantic Canadians are encouraged to be part of the solution by supporting ACRI through donations, by becoming a friend of the Institute and by helping to grow a caring community of supporters. All this is facilitated by the campaign website, the use of social media and, above all, the assistance of the campaign cabinet, whose members we thank for their diligent efforts.

**How donations and research funding will be invested**

- Identification of new cancer therapies by synthetic lethality screen $6M. With researchers recruited in our initial capital campaign, the team is moving forward with a novel approach to identify cancer “weak spots” and focus on these genetic vulnerabilities to develop new therapies for lung, kidney and breast cancer. The promise of this project is to find better biological therapies that will target the cancer cells and not harm the normal cells thereby providing better treatments while reducing potential side effects for the patient.

- Extracellular vesicle capture technology for minimally invasive diagnosis of cancer $3M. Using our proprietary Vn96 capture technology we are able to isolate important communication vehicles in biological fluids such as blood, urine and saliva. These vehicles called extracellular vesicles or exosomes contains the same genetic information as the cancer cell that produced it thereby allowing us to detect and diagnose the cancer even before it is detectable through other traditional means. The potential is the development of several diagnostic tools that could be used in a routing clinical setting and provide rapid and accurate diagnosis for prostate, breast and gastro-intestinal cancer.

- Recruitment of new research expertise $1M. ACRI has become an attractive center for up and coming young researchers and we have the opportunity to recruit the best and the brightest talent from around the world. It is important to provide the start-up equipment and resources that are required to ensure that our young researchers succeed at the national and international level. In our last capital campaign these investments allowed us to invest in the most cutting edge technologies such as Next-Generation Sequencing which is propelling our research and patient care to new heights.

**Reasons to Support – Key Messages**

- ACRI’s ongoing research has made significant contributions to the global fight to cure cancer with important discoveries in recent months, and more ground-breaking research taking place every day.

- By donating to ACRI, you are both funding important science and creating a research centre of excellence unique to the region, where solutions will be found in our very own backyard.

In addition to producing paramount research in Atlantic Canada, ACRI allows some of our brightest minds to do cutting edge research close to home. For too long the perception existed that to achieve anything worthwhile, you would need to leave our region to do so.
CAMPAIGN CABINET

Bobby Orr
榮譽主席

Camille H. Thériault, N.B

Donald Savoie, N.B

André Vincent, N.B

Jean-Guy Vienneau, N.B

Brian Ostrosky, N.B

Larry Nelson, N.B

Senator Percy Mockler, N.B

Ray Roberge, N.B

John Rowe, P.E.I.

Don Mills, N.S

Senator Percy Mockler, N.B

Larry Nelson, N.B

Brian Ostrosky, N.B

Ray Roberge, N.B

John Rowe, P.E.I.

Cabinet Members not pictured:
Art McDonough, N.B
Paul Bourque, N.B

Aldia Landry, N.B

Dr. Rodney Ouellette, N.B

Sophie Thériault, N.B

Donna Alteen, N.S

Alain Bosse, N.B

Jason Cleversmith, P.E.I.

René J. Collette, N.B

Bernard Cyr, N.B

Hélène Eusanio, N.B

Senator George Furey, N.L

Jacqueline Grouard, N.B

Valdo Grandmaison, N.B

Renald Guignard, N.B

David Holt, N.B

David King, N.L

Gilles Leblanc, N.B

Marc Leblanc, N.B

Martin Leblanc, N.B

Denis Losier, N.B

Ronald Losier, N.B

Paul Mailet, N.B

James McKenna, N.B

Don Savoie, N.B

Camille H. Thériault, N.B

Jean-Guy Vienneau, N.B

André Vincent, N.B

Hélène Eusanio, N.B

Senator George Furey, N.L
IN THE COMMUNITY

The Acadia Life Holiday Challenge helped to raise $47,750.

Sales of a special burger at relISH raised $639 for cancer research.

The National Bank Golf Tournament turned over over $20,000 of funds raised to ACRI.

La Vie en Rose donated $2,500 towards breast cancer research.

The Blossom of Hope initiative helped to raise $350 for ACRI.

The “A Twenty for Hope” committee raised $44,000 for cancer research.

The Wake Up Call Breakfast for prostate cancer contributed $30,000 to cancer research.

The Bobby Orr Golf Tournament was nominated for an excellence in philanthropy award.
Atlantic Cancer Research Institute Inc. Statement of Operations  
Year ended March 31, 2014

**Revenues**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Research and Government Grants</td>
<td>$2,340,889</td>
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<tr>
<td>Fundraising campaign &amp; other donations</td>
<td>450,053</td>
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<tr>
<td>Research &amp; medical services rendered</td>
<td>1,103,112</td>
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<tr>
<td>Others</td>
<td>52,693</td>
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<tr>
<td></td>
<td>3,946,747</td>
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**Expenses**

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<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Salaries &amp; benefits</td>
<td>2,222,604</td>
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<tr>
<td>Laboratory supplies</td>
<td>746,085</td>
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<tr>
<td>Administration &amp; Overhead expenses</td>
<td>1,258,052</td>
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<tr>
<td></td>
<td>4,236,741</td>
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</table>

**(Deficit)** ($289,994)

Atlantic Cancer Research Institute Inc.  
Balance Sheet As of March 31, 2014

<table>
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<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Current Assets</td>
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<tr>
<td>Capital assets</td>
<td>2,316,521</td>
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<tr>
<td>Total Liabilities</td>
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</tr>
<tr>
<td>Net Assets or Equity</td>
<td>$4,645,075</td>
</tr>
</tbody>
</table>

The ACRI ended the 2013-2014 fiscal year with a deficit of $289,994.

The deficit is caused mainly by the high cost of set-up a new platform of technology: Next Generating Sequencing (NGS) and also by the high cost to protect our intellectual properties discovered by our research activities.

During the year, the Institute invested more than $400,000 in state-of-the-art technology and more than $550,000 to acquire and renovate additional lab space and office space. The Institute is now doubling its operating space from 8,000 square feet to 15,000 square feet.

This investment, long overdue, will allow our highly qualified personnel to conduct the research in a more productive and favorable environment. The initial offerings of the Molecular Diagnostic and Sequencing Laboratory will include a specialized genetic test for lung and colon cancers. The test can be used to identify mutations in 22 different genes present in these cancers, ensuring that patients receive effective, targeted treatment while also keeping diagnostic costs down.

The total revenues for this year is slightly higher than last year, however, the research grants obtained is 22% higher than the previous year, this is a good indication that our research teams are more successful in the research grants applications.

The ACRI has always conducted its operations based on the budgeted targets set by the management team, to accomplish this; productivity is tracked very closely plus a vigorous internal control mechanism to help attain stated objectives.