

Science  Atlantic
connecting science education and research

2013-14 Annual Report





The mission of Science Atlantic is to advance post-secondary science education and research in Atlantic Canada by:

- Providing opportunities that foster and enrich students
- Supporting and inspiring researchers and educators
- Using our collective voice to address important regional science issues

Member Institutions

Acadia University
Cape Breton University
Crandall University
Dalhousie University
Dalhousie University, Faculty of Agriculture
Grenfell Campus (MUN)
Memorial University of Newfoundland
Mount Allison University
Mount Saint Vincent University

NSERC Atlantic
Saint Mary's University
St. Francis Xavier University
St. Thomas University
Université de Moncton
University of New Brunswick, Fredericton
University of New Brunswick, Saint John
University of Prince Edward Island

Executive Members

Rob Raeside, Chair
Professor, Department of Earth and
Environmental Science
Acadia University

Chris Moore, Vice Chair
Dean of Science
Dalhousie University

Debbie MacLellan, Treasurer
Interim Dean of Science
University of Prince Edward Island

Andy Foster, Member-at-Large
Associate Dean of Science
Memorial University of Newfoundland

Daniel Rainham, Member-at-Large
Elizabeth May Chair in Sustainability and
Environmental Health
Dalhousie University

Ruth Shaw, Member-at-Large
Dean of Science, Applied Science and
Engineering
University of New Brunswick, Saint John

Steven Smith, Member-at-Large
Dean of Science
Saint Mary's University



In the 2013-14 year, in addition to delivering our established student conferences, a number of projects have been advanced, including the Animal Care Scientific Merit Reviewer Database, the Science Atlantic Hall of Fame, Conference-in-a-Box, and more. I'm pleased to share a bit about these initiatives in the following pages.

Student conferences have always been our highest priority, and in this report, you will learn about this year's conferences and award winners. As well, you'll discover a bit about what's been happening behind the scenes to help with these important events. I would like to personally thank our sponsors for their generous contributions and the volunteer conference organizers for helping provide excellent experiences for top science students in Atlantic Canada.

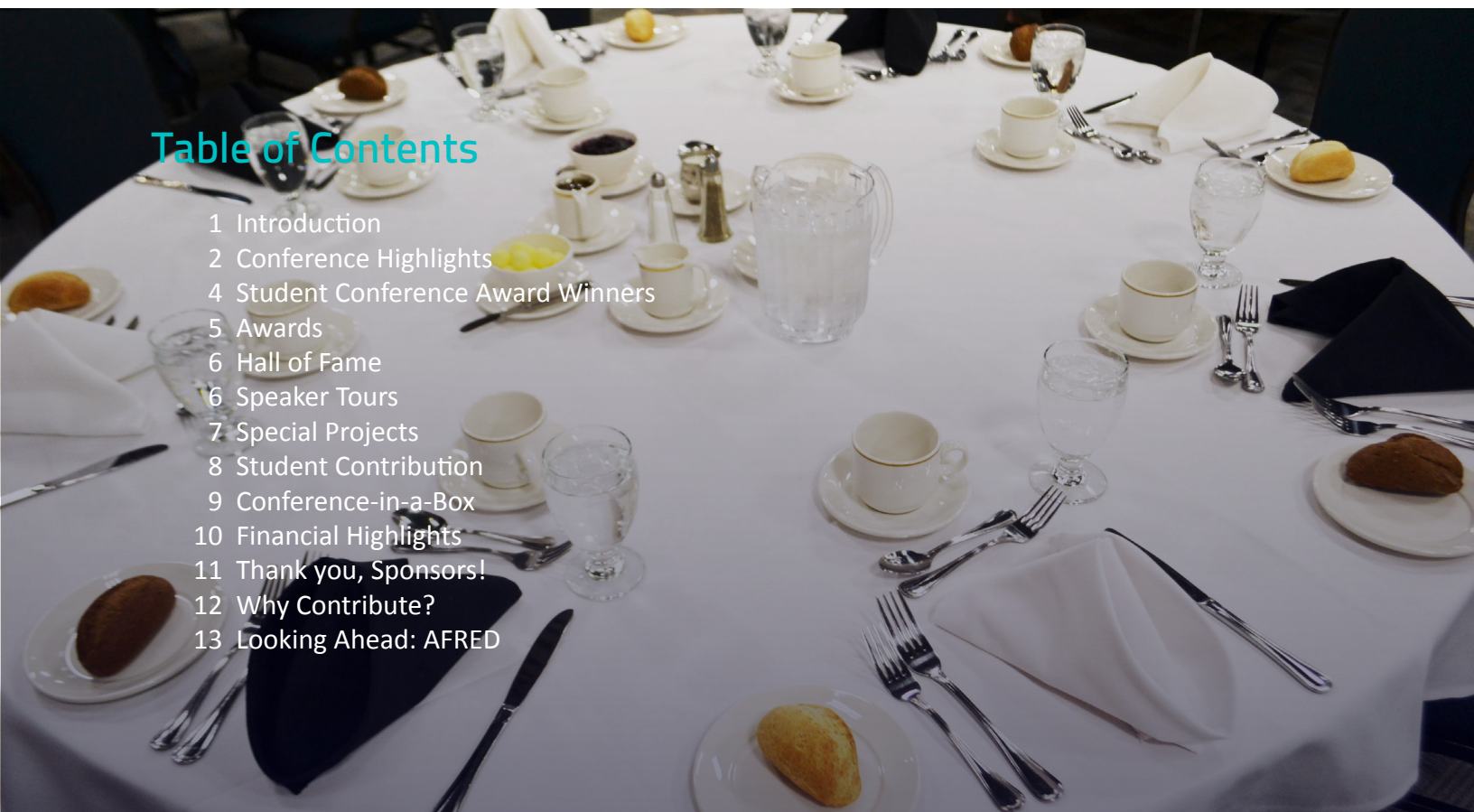
Additionally, I would like to extend a huge thank you to the faculty representatives and deans involved with Science Atlantic for giving their time and ideas to this member-driven organization, as well as to the presidents and leaders at our member institutions for supporting Science Atlantic in its mission to connect science education and research in the region.

Please take some time to look through this report. It is a great opportunity to learn more about the hard work and dedication our staff, students, volunteers, and Council members have put into our activities, and to recognize this year's outstanding science students. As well, please share the online version of this report by email or social media: www.scienceatlantic.ca/annualreport/2013-14/.

Lois Whitehead
Executive Director

Table of Contents

- 1 Introduction
- 2 Conference Highlights
- 4 Student Conference Award Winners
- 5 Awards
- 6 Hall of Fame
- 6 Speaker Tours
- 7 Special Projects
- 8 Student Contribution
- 9 Conference-in-a-Box
- 10 Financial Highlights
- 11 Thank you, Sponsors!
- 12 Why Contribute?
- 13 Looking Ahead: AFRED

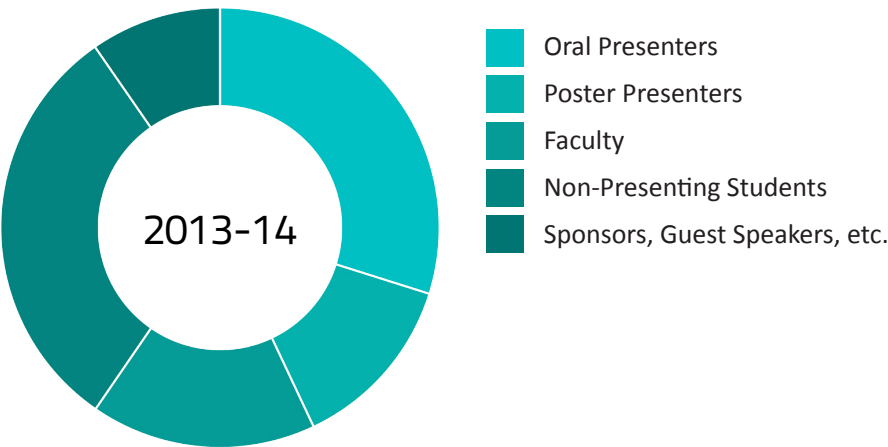
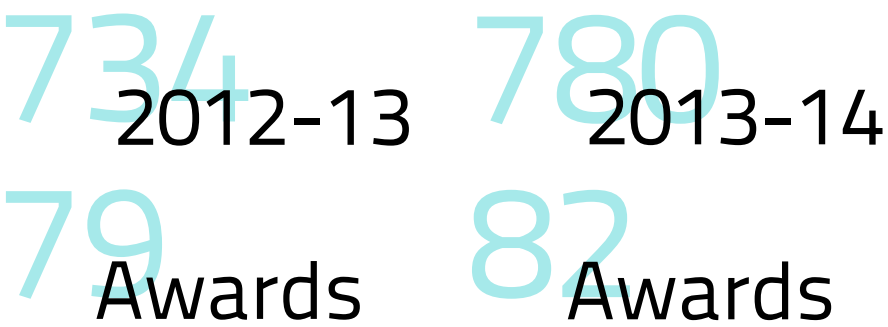


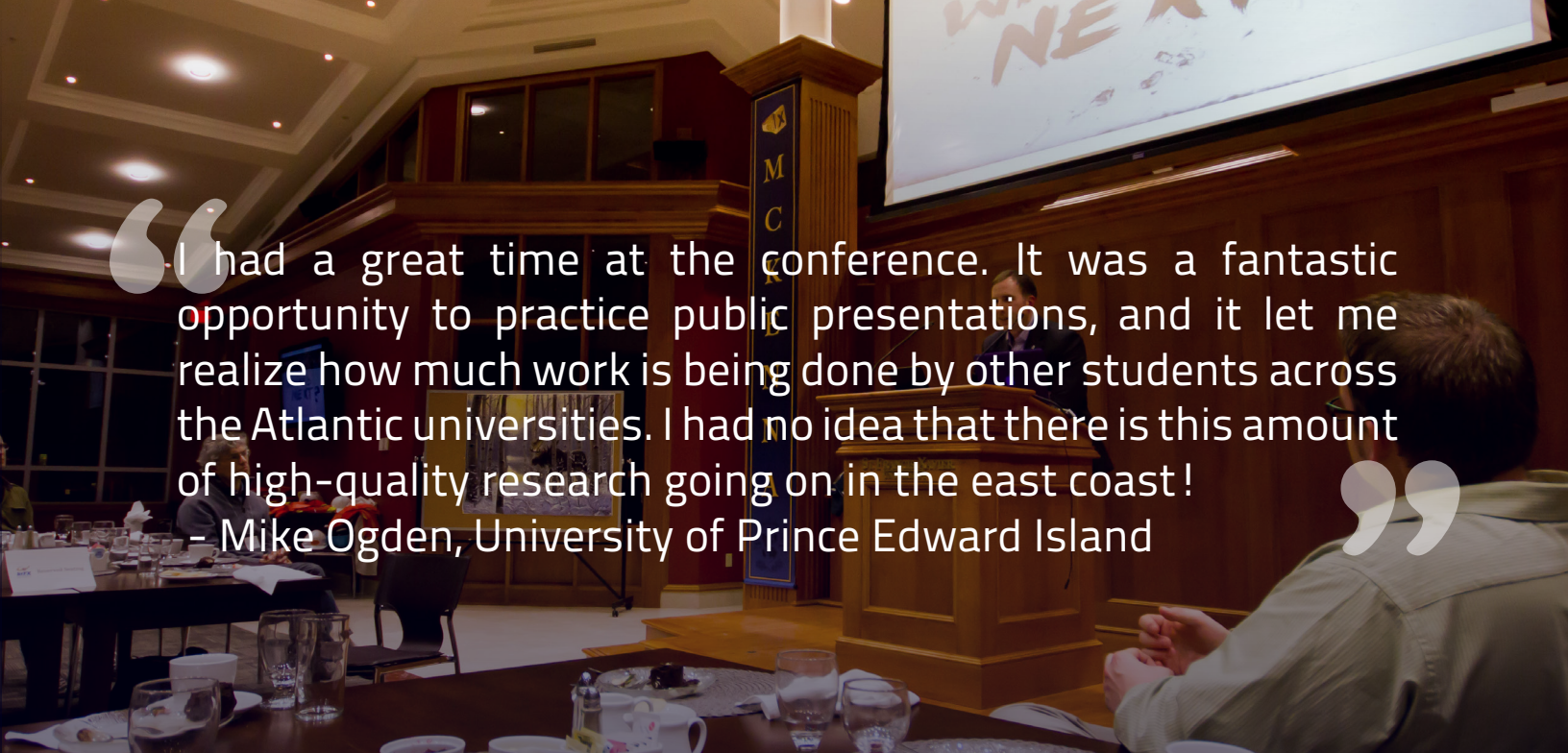


Conferences

Science Atlantic’s seven annual disciplinary and interdisciplinary academic student conferences are hosted by volunteer teams of professors and students. While all conferences have in common the opportunity for students to present their research, many conferences also have unique aspects, including field trips, industry events, and competitions.

Conference Attendance





“I had a great time at the conference. It was a fantastic opportunity to practice public presentations, and it let me realize how much work is being done by other students across the Atlantic universities. I had no idea that there is this amount of high-quality research going on in the east coast!”
– Mike Ogden, University of Prince Edward Island

Our Annual Conferences

Environment MSCS AFB
ChemCon AUPAC AUGC Psychology

Science Atlantic Aquaculture & Fisheries and Biology Conference (AFB)
Atlantic Universities Geoscience Conference (AUGC)
Science Atlantic - CIC Chemistry Conference (ChemCon)
Science Atlantic Environment Conference
Science Atlantic Mathematics, Statistics and Computer Science Conference (MSCS)
Atlantic Universities Physics & Astronomy Conference (AUPAC)
Science Atlantic Psychology Conference

Conference Attendance by University

MSVU DAL-Ag MtA UPEI Grenfell DAL
Crandall Acadia CBU StFX UNB-F
MUN UNB-SJ SMU UdeM STU

Student Conference Award Winners

Undergraduate Research Award

Anna Bishop (DAL), Environment
Jacqueline Carverhill (MtA), Biology
Zack Delaney (MtA), Mathematics & Statistics
Eric Dilcher (DAL), Physics & Astronomy
Anna Duncan (MtA), Biology
Jillian Glasgow (Acadia), Psychology
Jessica Gould (DAL), Biology
Peter Graves-Akerley (SMU), Mathematics & Statistics
Kathleen Grosicki (StFX), Aquaculture & Fisheries
Laryssa Halat (StFX), Aquaculture & Fisheries
Robie Hennigar (Acadia), Chemistry
William Herring (UPEI), Computer Science
Carl Kooka (CBU), Biology
Sarah MacLeod (StFX), Environment
Mariah Martin Schein (MtA), Computer Science
Simon Meynell (DAL), Physics & Astronomy
Lisa Mundry (Acadia), Earth Science
Anika Needham-Reece (MSVU), Psychology
Joanna Poltarowicz (DAL), Environment
Ian Roberts (MtA), Physics & Astronomy
Jennifer Saunders (DAL), Aquaculture & Fisheries
Amy Silver (DAL), Psychology
Matthew van Bommel (Acadia), Mathematics & Statistics
Sarah van der Laan (MtA), Computer Science
Jakob Vogul (DAL-Ag), Biology
Kascia White (SMU), Biology
Timothy Wingate (MtA), Psychology

Science Communication Award, sponsored by Canadian Science Publishing

Ash Arsenault (UPEI), Physics & Astronomy
Julie Colpitts (Acadia), Chemistry
Kathleen Grosicki (StFX), Aquaculture & Fisheries
Emma Hoffman (DAL), Environment
Carl Kooka (CBU), Biology
Amanda Loder (Acadia), Environment
Wesley Pitts (Acadia), Biology
Emily Ready (STU), Psychology
Ashley Robinson (SMU), Chemistry
Lynsay Thurber (Acadia), Chemistry

ACEmat Award, sponsored by ACEnet

Victoria Grandy (MUN), Chemistry
Siobhan Morris (StFX), Physics & Astronomy

AUGC Poster Award, sponsored by Imperial Oil

Siobhan McGoldrick (DAL), Earth Science

Botanical Association Award

Nakia Cullain, (DAL) Biology
Mike Ogden (UPEI), Biology

Graduate Research Award

Samuel Andrews (Acadia), Aquaculture & Fisheries
Stefana Egli (MUN), Chemistry
Daria Gallardi (MUN), Aquaculture & Fisheries
Yasaman Jami (MUN), Chemistry
Heidi Kavanagh (MUN), Chemistry
Sara Klapstein (MUN), Environment
Yi Liu (MUN), Chemistry
Kaycee Morrison (Acadia), Aquaculture & Fisheries
Kiran Sagar (MUN), Chemistry
Crystal Sweeney (Acadia), Chemistry

Chemical Institute of Canada Undergraduate Awards

Jessica Besaw (MUN)
Shawna Corcoran (CBU)
Amber Davidson (Acadia)
Brandon Fancy (MUN)
Emily Fraser (Acadia)
Landon Hiscock (MUN)
Kimberly Hyson (Acadia)
Trevor McGrath (SMU)
Alyssa Moss (CBU)
Jennifer Murphy (MUN)
Karanbir Pahil (CBU)
Eric Sampson (Acadia)
Julia Wright (Acadia)

Canadian Society of Exploration Geophysicists Foundation Award

Taylor Campbell (DAL), Earth Science

Canadian Society of Petroleum Geologists Award

Daniel Niquet (MUN), Earth Science

E. Gordon Young Award

Robert Di Lorenzo (MUN), Chemistry

Frank Shea Memorial Award

Travis White (UNB), Earth Science

Hugh Anderson Memorial Award

Ashley Robinson (SMU), Chemistry

Karen Nicholson Award in Neuropsychology

Hilary Martin (MUN), Psychology

Computer Science Programming Competition

First: D. Ackerson, T. Dixon, C. McCullough (UNB)
Second: A. Couturier, A. Handfield, D. Ouellette (UdeM)
Third: S. Coleman, D. Deveau, L. Schep (Acadia)

Mathematics Problem Solving Competition

First: Dylan Day, Patrick Murray (Acadia)
Second: Mathieu Girard, Yuhuai Wu (UNB)
Third: Adam Gardner, Christopher Pardy (MUN)



Awards

Awards are given at each student conference to recognize exceptional research and science communication skills. Additionally, a number of awards specific to each discipline are sponsored by various academic and research societies and industry.

Award Winner

Carl Kooka


At the March 2014 Biology conference, Karl Kooka, Cape Breton University, was awarded both the Science Atlantic Science Communication Award and the Undergraduate Research Award (second place) for his outstanding poster presentation.



Carl presenting his poster, *Serotonergic regulation of aggressive behaviours in the gymnotiform fish Brachyhypopomus gauderio*

"Attending and presenting at the Science Atlantic Biology conference was an amazing experience. The feedback I received from the judges on my presentation not only strengthened my defense, but my thesis as a whole.

"If I was speaking to someone else about Science Atlantic, specifically a younger biology student, I would describe how the conference is an amazing way to see the kind of research [done in the Atlantic Region]." - Carl Kooka



My time with Science Atlantic began when I was assigned to be the department's representative on the APICS Psychology Committee in 1990... It was then that I was introduced to the undergraduate student Psychology conferences. I've been a strong supporter of those conferences ever since.

- 2014 Hall of Fame Inductee

Hall of Fame

The Hall of Fame was created in 2012, in honour of Science Atlantic's 50th anniversary, to recognize current and former members who have shown exemplary service to the organization, and student alumni/alumnae who can trace the start of their careers to an influential experience as a student at a Science Atlantic or APICS event.



A. Foster (Associate Dean of Science, MUN), F. Smith, E. Goodaire, C. Couturier, L. Whitehead; Sept. 24, 2013, MUN Faculty of Science Awards Ceremony

The categories for recognition are Outstanding Member, Outstanding Contributing Member, and Outstanding Alumna/Alumnus. Twenty-four people were inducted in 2012, and nominations will continue to be accepted annually.

In 2013, four members were inducted into the Science Atlantic Hall of Fame:

- Dr. Edgar G. Goodaire, Outstanding Member
- Professor Frederick R. Smith, Outstanding Member
- Mr. Cyr Couturier, Outstanding Contributing Member
- Dr. Neil Ross, Outstanding Contributing Member

We are pleased to recognize these individuals for their many years of dedicated service to Science Atlantic and the scientific community. (You can find links to the winners' biographies at www.scienceatlantic.ca/annualreport/2013-14/.)

Speaker Tours

Several committees partner with other organizations to host speaker tours of notable scientists. Each speaker visits a minimum of three different post-secondary institutions in Atlantic Canada, and lectures are free and open to all interested. The 2013-14 speaker tours featured talks on:

Chemistry (co-sponsored with the Chemical Institute of Canada):

- *Chemistry with computers: From Schrödinger to social networks*, Jason Pearson (UPEI)
- *Entrapment of phenylalanine ammonia lyase in mesoporous silicas as reusable catalysts*, Stephanie MacQuarrie (CBU)

Geology (co-sponsored with the Atlantic Geoscience Society):

- *Complexities of space and time: Challenges to effective modelling of intertidal ecomorphodynamics*, Danika Van Proosdij (SMU)
- *Continental heat gain in a warming climate: Inferences from geothermal data*, Hugo Beltrami (StFX)

Physics and Astronomy (co-sponsored with the Canadian Association of Physicists):

- *Dual Fluid Reactor: A novel design that will revolutionize nuclear power*, Ahmed Hussein (UNBC)
- *Climate physics, climate models, and climate change*, Paul Kushner (UofT)
- *Towards a physics of evolution*, Paul François (McGill)



Special Projects

Supplemental Instruction Workshop

With the generous donation of time by Krista Bianco (University of Guelph), the National Supplemental Instruction Representative and Certified Trainer for Canada, Science Atlantic hosted an introductory workshop on Supplemental Instruction (SI) this past fall. Supplemental Instruction is a form of co-curricular academic support that supports high-risk courses rather than high-risk students. (Learn more about SI at www.canadiansi.uoguelph.ca.)

Faculty and staff from across the region were able to connect with one another as well as learn and discuss the positive impact of Supplemental Instruction on universities and students.

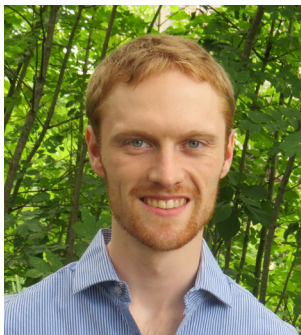
Animal Care Scientific Merit Reviewer Database

Animal research must adhere to strict guidelines regarding the ethical use and care of animals. This includes a scientific merit review of proposed research by arm's length peers who are experts in the field of the researcher before the Canadian Council of Animal Care (CCAC) grants final approval of a project.

In an effort to assist universities in our region comply with this CCAC directive, in 2013 the Animal Care Committee of Science Atlantic developed a database of volunteer reviewers from its member institutions. The network aims to provide an appropriate pool of potential reviewers with declared expertise who can be called upon to review animal care protocols. The database is currently managed by UPEI.



Science Atlantic is founded in the academic world, giving us the opportunity to work with students not simply as participants in the organization's activities, but as contributors to our various projects. From teams organizing conferences to co-op placements in the office, students are integral to the delivery of our programs. This year we were fortunate to have four co-op students working for Science Atlantic. They capably tackled a range of tasks from project management to web development to graphic design. In fact, it was a student who created this report: Jasmine Golf, a Dalhousie commerce student, developed and designed both the printed and online version.



James Curtis
Junior Web Developer
Dalhousie University
Informatics, Third Year



Jasmine Golf
Marketing and
Communications Assistant
Dalhousie University
Commerce, Third Year



Erik Naylor
Marketing and
Communications Assistant
Dalhousie University
Commerce, Third Year



Prasad Rajandran
Junior Web Developer
Acadia University
Computer Science, Third
Year

As well, two teams of Dalhousie students completed class projects using Science Atlantic as their client: an Informatics class completed a project on member data management, and an IT Project Management team reviewed our Conference-in-a-Box planning guide.

Conference-in-a-Box

The faculty and student organizers of Science Atlantic's annual conferences are often new to organizing an academic conference and therefore inexperienced in the details required to effectively plan a successful event. With this in mind, we created Conference-in-a-Box (CIAB) in 2012, a set of resources for conference coordinators. From Treasurer to Webmaster to Food and Venue Coordinator, CIAB outlines the timelines and roles for each member of the conference planning team.

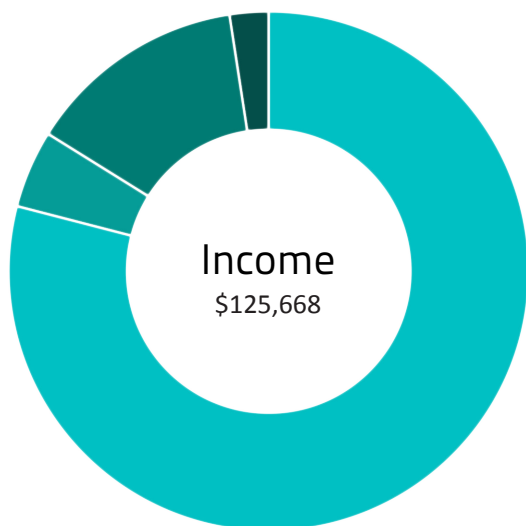
Now two years old, Conference-in-a-Box is designed to make conference planning easier and more efficient, and improving it to meet the challenges of its users is our ongoing goal. This year, a Dalhousie Informatics student, James Curtis, spent the summer developing a customized registration system. At the same time, a computer science student from Acadia, Prasad Rajandran, developed an online awards system that connects the registration data to a list of awards, allowing organizers to generate personalized certificates to present at each conference's awards ceremony. The awards system also automatically collects all necessary data to send the students their letters of commendation and prizes, saving time and resources that can now be used elsewhere.

As well, a Dal IT management student team evaluated the current site, including surveying past and current organizers. Their recommendations are the basis for the development of an updated version of the site, to be completed in 2014.



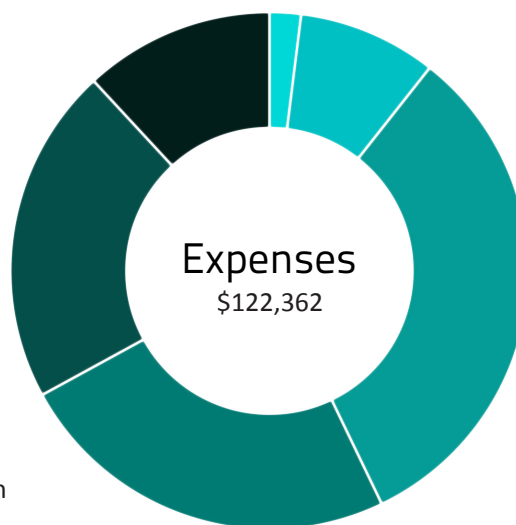


Financial Highlights



- Universities and Member Institutions
- Investments
- Donors, Sponsors, and Grants
- Other Income

- Speaker Tours
- Student Awards
- Conferences
- Member Support
- Finance and Administration
- Atlantic Facilities and Research Equipment Database (AFRED)



Detailed financials can be found at www.scienceatlantic.ca/annualreport/2013-14/.

Thank you, Sponsors !

ACEnet Institute for Materials Modeling and Simulation (ACEmat)
Aquaculture Association of Canada
Association of Psychologists of Nova Scotia (APNS)
Atlantic Association for Research in the Mathematical Sciences (AARMS)
Atlantic Elver Fishery Ltd.
Bell Aliant
Bellatrix
Belloy Petroleum Consulting
Canadian Botanical Association/L'association botanique du Canada
Canadian Centre for Fisheries Innovation
Canadian Mathematics Society (CMS)
Canadian Mathematics Society Student Committee
Canadian Psychological Association (CPA)
Canadian Science Publishing
Canadian Society for Chemistry
Canadian Society of Exploration Geophysicists (CSEG)
Canadian Society of Petroleum Geologists (CSPG)
Chemical Institute of Canada (CIC)
Chemical Institute of Canada, Chemical Education Trust Fund
Chemical Institute of Canada, Maritime Division
Chemical Institute of Canada, Newfoundland and Labrador Section
City of St. John's, Newfoundland and Labrador
Clearwater Seafoods Ltd.
Cooke Aquaculture Inc.
Council of Canadian University Chemistry Chairs
Encana
Esso Imperial Oil
Exxon Mobil
Geological Association of Canada
Human Resources and Skills Development Canada
John Wiley & Sons Canada
Lobster Council of Canada
Maplesoft Inc.
Nelson Education Limited
Newfoundland Aquaculture Industry Alliance
Nova Scotia Department of Economic and Rural Development and Tourism
Nova Scotia Department of Natural Resources
Novartis Animal Health Canada Inc.
Pearson Canada
Petrel Energy Limited
Prospectors and Developers Association of Canada (PDAC)
Royal Society of Chemistry (RSC) Publishing
Skretting North America
Springer Science+Business Media
Valox Ltd.
WISEatlantic



“Encana Corporation was pleased to sponsor the 63rd Atlantic Universities Geological Conference to support geology students pursuing careers in the earth sciences.

– Lori MacLean, Senior Communications Advisor, Encana Services Company Ltd.”

Why Contribute?

Science Atlantic is a charitable association advancing science education and research at the post-secondary level. With a very modest annual operating budget, we are able to deliver programs and facilitate connections that have a positive impact on students, educators, and researchers in the Atlantic region.

For students, our conferences provide the opportunity to give their first professional presentations and launch their research careers. For researchers and educators, our network facilitates connections that can lead to graduate student recruitment, research collaborations, and scientific and teaching discussions. For universities, our united effort strengthens their impact on science issues in the region.

We rely on both individual donors and corporate sponsors to help fund our activities. Your contributions help to:

- Fund student conferences in nine disciplines and provide travel assistance for students to attend these conferences
- Sponsor student awards recognizing excellence in research
- Fund regional lecture tours by notable scientists
- Support special projects that address regional science issues

You can donate at www.canadahelps.org/dn/16496.

Thank you for your generosity!



Atlantic Facilities and Research Equipment Database (AFRED)

Increased emphasis on the research component of Science Atlantic's mandate was affirmed during the 2010 visioning process, and a research working group was struck to address regional research issues.

The group's first goal was to develop a list of research equipment in the region that could be shared. In summer 2013, Prasad Rajandran built the first prototype of an online database to collect this information, and in the fall, Erik Naylor, a Dalhousie commerce student, began populating the Atlantic Facilities and Research Equipment Database (AFRED). Dalhousie's Aquatron Laboratory (above) and Memorial's C-CART (below) were some of its first entries.

AFRED is dedicated to increasing scientific research carried out in Atlantic Canada by reducing barriers to equipment access and increasing opportunities for collaboration, both between Science Atlantic member institutions and with non-member organizations such as industry.

There are currently over 100 individual pieces of equipment in the database, and we hope to double this number before the end of 2014 and its public launch.

“I believe AFRED will become an extremely important resource in Atlantic Canada by assisting research facilities and institutions in the establishment of new partnerships. These partnerships will drive research intensification in the region by maximizing utilization of scarce research resources and by enhancing our region's competitiveness in national funding initiatives.”

- Dr. Brent Myron, Director of Operations, CREAT Network, Memorial University of Newfoundland





© 2014 Science Atlantic
www.scienceatlantic.ca

Charitable Registration:
BN 118796127RR0001