



**Atlantic Provinces Council on the Sciences
Biennial Report
April 1, 2001 – March 31, 2003**

Our Mission

The advancement of science and technology through education and public awareness and the promotion of scientific literacy, education and research throughout the region

Message from the Chair of the Council



Nowadays, as costs of higher education continue to rise, the phrase “value for money” has become part of our every day vocabulary. Measured against this yardstick, APICS, the Atlantic Provinces Council on the Sciences, has to rate as one of the best educational deals around.

Always recognised for its solid commitment to enhancing the undergraduate experience, APICS has become a regional voice for the promotion of science education and research. The list of activities is impressive: organising student conferences and lecture tours by leading scientists, maintaining a web site and internship program for high school students, releasing a position paper on the new high school math curriculum, lobbying the federal government for increased research funding and amendments to animal care legislation, granting awards for science communicators, and the list goes on. Based on the range of activities alone, APICS' record is exceptional.

It is not possible in this message for me to comment on all that APICS is involved in, so I shall confine my remarks to what many people consider APICS' main activity: undergraduate student conferences. Modelled after full-fledged scientific conferences, students give oral or poster presentations, gain invaluable experience in communicating science to a discerning audience, and benefit from the confidence-building that these opportunities afford. Having attended many of these conferences myself, I can attest that students always give interesting, informative and highly polished accounts of their work. In some cases, students take their APICS presentations to national or international conferences, ably representing our region to the country and the world. Perhaps the greatest benefit of these conferences lies in the networking that occurs outside the formal setting, as students from different institutions discuss science and socialize. Some students meet faculty from other Atlantic research schools and develop Masters and PhD connections. There is no other counterpart in Canada to these conferences, which will always remain at the heart of what we do.

In the opening, I made the seemingly presumptuous claim that APICS gives good value for money. Each of the activities presented in this report is carried out with the same zeal and commitment as our conferences. We have just undergone a Strategic Planning exercise that identifies our goals and priorities. Clearly, our ability to deliver on these goals will be linked to our effectiveness in spreading the message about the good work APICS does and in securing sustainable funding. Perhaps this report will contribute in this direction. It makes for very good reading.

With every good wish.

Roger Gordon
Dean of Science, University of Prince Edward Island and Chair, APICS



Message from the Executive Director

To put two years of activity in one page is a daunting task. On the one hand, there is so much to say; on the other, the overview of these two years has already been ably captured in this report.

So instead, let me tell you about what has excited me the most over the last two years. In a word: growth. The growth of APICS has been tangible. We have seen two organizations join us, a new committee form, and the APICS/Canpolar Science Communication Awards expand to three categories. We've had an ongoing dialogue with the departments of education and the media regarding the new high school mathematics curriculum. We've seen a new program take life as the Youth Education and Communications (YEC) program ramped up to a fully interactive, youth-inspired website in 2002 and a pilot high school internship program slated to occur in summer 2003.

Certainly not least, we have engaged in strategic planning to determine the organization's immediate needs and long term goals, and have renewed the Council's commitment to the mandate of promoting science education and research. Through these planning sessions, APICS has not only confirmed its continued focus on enhancing undergraduate student opportunities in the Atlantic region, but also has formalized its commitment to creating opportunities at the high school level, including endorsing the YEC program beyond its first three years of seed funding from NSERC.

Growth, of course, brings many challenges: supporting and informing a larger and more active membership; continuing our commitment to improve communications with the departments of education, media, and the public; and managing more activities without a significant increase to the financial and human resources at APICS' disposal. As well, we have faced a loss in our small nest egg due to the volatility of the markets. Fortunately, we have been able to build our resources through grants to hire students and contract staff – expanding this one-person office sometimes to three staff working on specific projects. With this welcome but uncertain support comes additional strain since there is always urgency to find that next income stream to keep new activities operating. Beyond this though, volunteers from our member institutions, students, and individuals from community at large make it possible to achieve what we do.

Our biggest responsibilities in the coming year include developing a multi-faceted approach to building an ongoing, sustainable income base to support the strategic goals identified and to implement the YEC internship pilot effectively. With the dedication of our membership and partners, I am confident that we will be able to develop the infrastructure needed for these new directions, while continuing to carry out the activities for which APICS has been known for the past 40 years.

Lois Whitehead

Strategic Planning

Beginning in August 2002, APICS Council embarked on a strategic planning process to identify the most important priorities for the organization. Although the process is not yet complete, six key long and short term objectives have emerged. Long term objectives are based primarily on the themes of education and public awareness as well as networking and communications to increase the involvement of individuals and institutions other than universities. It is additionally imperative to build on the existing relationships with current members, advocate for funding, and build APICS' name as the "voice of Atlantic science."

Short term objectives deal largely with resource issues. The majority of challenges that threaten APICS' sustainability and growth are due to limited financial and human resources. Sufficient ongoing funding is the solution to the many of these challenges. To remain a vibrant and growing organization, APICS is considering a variety of actions to increase its resource base and visibility, and will continue in the strategic planning process into the next year.

Activities and Programs

Committee Activities

It is often said that located at the heart of APICS are its committees. The membership of our 11 discipline specific and interdisciplinary committees is comprised of academic representatives from our 18 member institutions. Through each of the committees' hard work and dedication, undergraduate science students in the Atlantic Region participate in conferences, lecture tours and other science education events.



Aquaculture Committee members and student presenters

Committee Activity Updates

New Committee: Environmental Studies

The APICS Environmental Studies Committee was established in 2001, led by Dr. Tony Charles of Saint Mary's University. This transdisciplinary committee has a mandate to provide fora for students and faculty to discuss courses, curricula and field work, share common interests, participate in public education activities, and meet in conferences. The Committee also promotes diverse approaches to studies in secondary and post secondary institutions. Since its inception, the Committee has developed a web site, compiled a compendium of environmental programs in the region, and convened a meeting with student representatives from across the region to initiate planning for conferences and other activities. Their first student conference is scheduled for October 2003.

The Atlantic High School Mathematics Curriculum: Implications for Universities

Since 2000, members of the Mathematics & Statistics Committee have been observing the effects of the new Atlantic high school mathematics curriculum, which is being implemented in stages across the provinces over a five year period. At the request of Council, the Committee prepared a report entitled *The Atlantic High School Mathematics Curriculum: Implications for Universities*, which was released in April 2002.

The report identifies eight recommendations for universities and departments of education as well as suggestions for teachers, parents, and students to improve learning success.

Widespread media and public attention led to the development of two errata reports on the textbooks developed for the curriculum. Corrections for the *Mathematical Modeling* textbook series were released in November 2002, and a similar report on the *Constructing Mathematics* textbook series will be released in May 2003

International Competitors

The Atlantic Canadian Association for Computing Machinery Programming Competition, sponsored in part by APICS, was held at Saint Francis Xavier University in 2001, and at Mount Allison University in 2002. Each year, the winners from these competitions proceed to the Northeast North American ACM Programming Contest at the Massachusetts Institute of Technology.

Programming

In 2001, the Saint Mary's University team won at the Northeast level, proceeding to the World Finals in Hawaii, where they received an honourable mention for their ability to solve highly complex problems. Again in 2002, the University of New Brunswick team placed at the Northeast level, and proceeded to give an excellent representation of the Atlantic Canadian ability at the World Finals in California.

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Lecture Tours

Chemistry:

- 2002 – Dr. Kevin Smith (UPEI): *Benzamidinato complexes of Cr(II) and Cr(III)*
- 2002 – Dr. Jeff Banks (Acadia): *Towards applied nonoscience: Developing new materials for catalytic applications*

Earth Science:

- 2002 – Dr. John Gosse (Dalhousie): Applications of cosmogenic nuclides to derive paleoclimate information from alpine and continental environments
- 2002 – Mr. Tim Fedak (Dalhousie): Recent vertebrate fossil discoveries from the Hettangian McCoy Brook Formation

Physics & Astronomy:

- 2003 – Dr. Jordan Kyriakidis (Dalhousie): Quantum engineering of artificial atoms and molecules
- 2003 – Dr. Randy Kobes (University of Winnipeg): Fractal music and musical fractals



Psychology student poster presentation

Conferences

- | | |
|--------------------------|---|
| Animal Care | <ul style="list-style-type: none">APICS & Canadian Council on Animal Care Spring Workshop, May 18, 2002APICS & Canadian Council on Animal Care Spring Workshop, April 21, 2001 |
| Aquaculture | <ul style="list-style-type: none">13th APICS Aquaculture Conference, March 7–9, 200312th APICS Aquaculture Conference, March 8–10, 2002 |
| Biology | <ul style="list-style-type: none">APICS Universities Undergraduate Biology Conference, March 7–9, 2003APICS Universities Undergraduate Biology Conference, March 8–10, 2002 |
| Chemistry | <ul style="list-style-type: none">28th ChemCon 2002, May 17–19, 200227th ChemCon 2001, May 18–20, 2001 |
| Computer Science | <ul style="list-style-type: none">Computer Science Programming Competition & Conference, October 18–19, 2002Computer Science Programming Competition & Conference, October 19–20, 2002 |
| Earth Sciences | <ul style="list-style-type: none">52nd Atlantic Universities Geological Conference (AUGC), October 24–26, 200251st AUGC, October 25–27, 2001 |
| Environmental Studies | <ul style="list-style-type: none">New Committee; first conference slated for October 2003 |
| Mathematics & Statistics | <ul style="list-style-type: none">26th APICS Mathematics & Statistics Conference, October 18–20, 200225th APICS Mathematics & Statistics Conference, October 19–21, 2001 |
| Physics & Astronomy | <ul style="list-style-type: none">Undergraduate Physics & Astronomy Conference (AUPAC), February 7–9, 2003AUPAC, February 1–3, 2002 |
| Psychology | <ul style="list-style-type: none">26th APICS Psychology Undergraduate Honours Conference, May 1–2, 200225th APICS Psychology Undergraduate Honours Conference, May 18–19, 2001 |

APICS Conference Award Winners

Aquaculture 2003

Kristen Doncaster (DAL – NRC)
Shawn Flynn (UNB)
Jillian Westcott (Atlantic
Veterinary College, UPEI)
Joanne Harding (MUN)
Leah Lewis (DAL – NRC)
Maia Thistle (MUN)
Hannah McKenzie (DAL – NRC)

2002

Adam Cooke (NSAC)
Joanne Harding (MI/MUN)
Jason Mullen (DAL)
Johanne Lewis (OSU/MUN)
Kristen Doncaster (NSAC)
Kelly Ash (DAL – NRC)

Psychology 2002

Michelle Rees (MUN)
Lana Bradley (STU)
Marie-Claude Doucette
(UdeM)
Cheryl Techentin (MSVU)

Physics & Astronomy (AUPAC) 2003

James Rioux (UNBF)
Sara Temple (MUN)
Brian Quirt (MtA)
Fraser Turner (StFX)
Chris Young (MUN)
Shoan Kale (DAL)
Micah McCurdy (DAL)
Michael Arthurs (UPEI)

2002

Laura Filion (StFX)
Joshua Bray (SMU)
Andrew Coristine (UNBF)
Meghan Halse (UNBF)
Gillian Ryan (StFX)
Julie Theriault (UdeM)
Simon de Vet (DAL)

Biology (AUUBC)

2002

Dominique Chaput (MtA)
Meghan Elkink (StFX)
Catherine Hynes-Doherty (StFX)
Vashni Skipper (MtA)
Victoria Burdett-Coutts (DAL)
Shanna Flavelle (MtA)
Sylvie Rimella (DAL)
Gabrielle Tompkins (StFX)

Computer Science Programming Competition

2002

Blair Doyle, Jonathan Sharkey,
Steven Perron (SMU)
Murray Patterson, Peter Harnish,
Peter McCracken (Acadia)
Graham Fyffe, Nathan Scott,
Sean Falconer (UNBF)

2001

Steven Perron, Chad West,
Jonathan Sharkey, Jamie Layne (SMU)

Earth Science 2002

Amy Tizzard
(Acadia)
Nicolette Stanley
(UNB)
Patrick Collins
(DAL)



Mathematics & Statistics

2002 – Mathematics

Hong-jun Yang & Yuanquan Zhang (MtA)
Jessica McDonald & Ben Seamone (MtA)
Adam Clay & Micah McCurdy (DAL)

2002 – Statistics

C. Christoduolou, E.L. Cannon & D.E.
MacLachlan (Acadia)
M. Belliveau (MtA)
S. Garg, M. Madden, A.C. Mather & T.M. Oikle
(MtA)

2001 – Mathematics & Statistics

James Michael & John Klapstein (DAL)
Joel Paterson (SMU) & Steve Yang (MtA)
Jason Colburne & Chris Pollock (MtA)

Chemistry (ChemCon) 2002

Elizabeth Turner (SMU)
Shaun MacInnis (UCCB)
Aya Sode (DAL)
Faisal Aldaye (DAL)
Geraldine Gomez (MSVU)
Sarah Conrad (MSVU)
Ian Young (DAL)
Krista Hawco (MUN)
Korey Conroy (DAL)
Louise Dawe (MUN)
T.T. Yu (Acadia)
David Gallant (UPEI)
Jason Pearson (UCCB)
Ivan Hemeon (SMU)
Jenene Roberts (MUN)
Chris Rodgers (StFX)

2001

Krista Hawco (MUN)
Gaetan LeClair (UdeM)
Chris Grant (StFX)
Adam Sherren (UPEI)
Ivan Hemeon (SMU)
Jonathan Watts (Dal)
Sean Canning (MUN)
Nicholas Warner (SMU)
Andrea Armstrong (UNBF)
Carla Dumaresque (Acadia)
Tara Burchell (StFX)
Jonathan Comeau (StFX)
Jeremy Hughes (MUN)
Wendy Lines (MUN)
Jason Pearson (UCCB)
Jenene Roberts (MUN)
Andrea Lantz (SMU)
Sarah Conrad (MSVU)
Lori Anthony (Acadia)
Gwen MacIsaac (StFX)
Margaretha Michels (SMU)
Bobby Ellis (DAL)
Sandy Lancelot (DAL)
Douglas MacLaren (DAL)
Paul Ragogna (DAL)
Heather Spinney (DAL)
Douglas Jackson (DAL)
Krista Affleck (UPEI)
John Riley (DAL)
Patricia Laws (DAL)
Kathryn Rankin (DAL)
Karen Cheng (DAL)

APICS Online Resources

There are a variety of online resources for the numerous APICS activities:

- Each Committee manages an APICS website giving information about upcoming activities, publications and conferences
- The Aquaculture and Environmental Studies Committees have recently made their websites bilingual
- The Earth Science Committee makes their student project abstracts available via their website
- The Psychology Committee has released a piece for students providing tips on effectively delivering poster and oral presentations
- Also available in both hardcopy and online is *Preparing for University Calculus* that was released by the Mathematics & Statistics Committee giving students entering first-year university calculus the opportunity to see what is expected of them
- YEC Online (www.yeconline.ca) is an excellent tool for junior and senior high school students to obtain exciting information about science, and give feedback.

www.apics.dal.ca

Awards

Every year, APICS plays a significant role in the Regional Science Fairs across the Atlantic Provinces. APICS shows its support by having APICS representatives present Science Communication Awards and Honourable Mention Certificates to deserving students at each of the Regional Fairs. The overall winning students at the regional level continue on to the Nationals, representing their home towns and provinces.

APICS participates each year in 11 Regional Science Fairs:

New Brunswick

One Regional Fair

Prince Edward Island

One Regional Fair

Newfoundland

Eastern Newfoundland
Western Newfoundland
Central Newfoundland

Nova Scotia

Annapolis Valley
Chignecto Central West
Chignecto East
Southeast
Strait Region
Tri-County



Canpolar Science Communication Awards

For the past three years, APICS and Canpolar East Incorporated have sponsored the APICS/Canpolar Science Communication Awards recognizing remarkable individuals that have contributed a great deal to science and science promotion in the Atlantic Provinces.

Scientist Category:

For outstanding leadership, commitment and excellence in communication of scientific research to the general public

The 2001 Award was presented to Dr. Richard Wassersug, Professor of Anatomy and Biology at Dalhousie University. Dr. Graham Williams, a Geologist with the Geological Survey of Canada in the Atlantic Region at the Bedford Institute of Oceanography, was presented with this award in 2002.



Dr. Richard Wassersug and Ms. Sandra Devlin at the 2001 Awards

Professional Communicator Category:

For engaging the public in the excitement of science and technology and its relevance in everyday life

This award was given out for the first time in 2001 to Ms. Sandra Devlin, a freelance journalist from Moncton, New Brunswick.

Teacher Category:

For commitment to inspiring students through excellence in science teaching

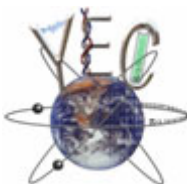
In 2002, Mr. Charles Blinn, a Physics teacher and Vice Principal at Millwood High School in Dartmouth, Nova Scotia, was the inaugural winner of this award.



Dr. Graham Williams and Mr. Charles Blinn at the 2002 Awards

Youth Education and Communications (YEC) Program

The YEC Program was first established in 2001 as a three phase project to promote science to youth aged 13–18 throughout the Atlantic region. Primary funding comes from the Natural Science and Engineering Research Council (NSERC) with assistance from the Information Technology Industry Alliance of Nova Scotia (ITANS) for Phase II.



Phase I (2001-2002): Transition Survey

In the first stage of the program, APICS surveyed 1245 students in second-year science classes at 12 Atlantic post-secondary institutions. The questions focused on factors leading students to study sciences, their preparedness for university study, and their satisfaction with the university experience. Many of these findings have relevance for guidance and admissions personnel, as well as for educators developing science programs at the high school and university level.

The questions were factored into eight areas: students' perception of their overall satisfaction; learning skills; interest in personal development; financial concern; degree of focus; motivation to succeed; and influence of external and social factors in their choice of program. The levels of these factors were influenced by gender, place of residence, family education, science discipline and university grade performance.

The principal investigator is preparing the findings for publication in 2003-2004.



Memorial students completing survey

Phase II (2002-2003): YEC Online

In 2002, an online portal was created. YEC Online gives youth an opportunity to access information about science and to “explore science on your own terms.” YEC Online is youth driven and fully interactive, allowing youth to participate and recommend what is included on the site.

www.yeconline.ca

Phase III (Summer 2003): YEC Internship Program Pilot

The final stage of the YEC Program places youth from grades 11 and 12 in the laboratories of remarkable Atlantic scientists. Interns will experience firsthand what scientists really do, how various fields of science work, and have hands-on experience that will aid in preparing them for university. This pilot program will run for eight weeks in the summer of 2003, and with the procurement of ongoing funding, will become a core activity of APICS in conjunction with YEC Online

Council Membership

Member Institutions and Representatives

Acadia University

Dr. Cy MacLatchy

Atlantic Baptist University (ABU)

Dr. Seth Crowell

Centre of Geographic Sciences (COGS)

Mr. Bruce Hicks (2002–)

Dr. Simeon Roberts (2000–2002)

Department of Fisheries and Oceans:

Bedford Institute of Oceanography

(BIO) Dr. Michael Sinclair represented

by Dr. Rene Lavoie

Dalhousie University (DAL)

Dr. Christopher Moore

Huntsman Marine Science Centre

Dr. Mark Costello

Memorial University of Newfoundland

(MUN) Dr. Robert Lucas

Mount Allison University (MtA)

Dr. Felix Baerlocher (2002–2003)

Dr. Vince Reinsborough (2001–2002)

Mount Saint Vincent University (MSVU)

Dr. Sheva Medjuck

National Research Council: Institute for M:

Biosciences (NRC)

Dr. John Van der Meer

Nova Scotia Agricultural College (NSAC)

Ms. Lynn Crosby

Saint Mary's University (SMU)

Dr. David Richardson

St. Francis Xavier University (StFX)

Dr. Ed McAlduff

Université de Moncton (UdeM)

Dr. Charles Bourque

University College of Cape Breton (UCCB)

Dr. Hal Jorch

University of New Brunswick (UNB)

Dr. Allan Sharp – Fredericton Campus

Dr. Keith De'Bell – Saint John Campus

University of Prince Edward Island (UPEI)

Dr. Roger Gordon

Committees and Chairs

Animal Care

Dr. Robert Adamec – MUN

Aquaculture

Dr. Neil Ross – NRC (2002 –)

Dr. John Burka – UPEI (1999–200)

Biology

Dr. Jim Kemp – UPEI (2002 –)

Dr. Roger Lee – MUN (1998–2002)

Chemistry

Dr. Julian Dust – MUN (2002 –)

Dr. Dale Keefe – UCCB (1998
2002)

Computer Science

Dr. Gerard Dueck –

UNB Fredericton

Education

Dr. Fred Smith – MUN (2002 –)

Mr. Doug Ralston – Nova Scotia
Teachers Union (2001–2002)

Earth Sciences

Dr. Jarda Dostal – SMU

Mathematics & Statistics

Dr. Edgar Goodaire – MUN

Environmental Studies

Dr. Tony Charles – SMU

Physics & Astronomy

Dr. Craig Bennett – Acadia (2002 –)

Dr. David Tindall – DAL (1998–2002)

Psychology

Dr. Peter MacIntyre – UCCB

Executive

Chair

Dr. Roger Gordon – UPEI (2002 –)

Dr. Zoe Hayes – STFX (1998-2002)

Vice – Chair

Dr. David Richardson – SMU

Treasurer

Dr. Grant Gardner –

MUN

Past – Chair

Dr. Zoe Hayes – StFX

Members-at Large

Dr. Keith De'Bell – UNB (2002 –)

Dr. Peter MacIntyre – UCCB (2002 –)

Ms. Lynn Crosby – NSAC (2002 –)

Dr. Merzik Kamel – UNB SJ (2000-2002)

Dr. Roger Gordon – UPEI (2000-2002)

Dr. John van der Meer – NRC

(1999-2002)

Financial Information

For years ending March 31

	2003	2002	2001
Revenues			
Membership Fees	\$61,640	\$58,855	\$57,935
Grants	39,476	16,294	3,000
Investment Income	292	1,330	6,302
Miscellaneous	3,131	-	-
Total Revenues	<u>\$104,539</u>	<u>\$76,479</u>	<u>\$67,237</u>
Expenses			
Staffing & Professional Fees	\$56,743*	\$34,814	\$27,726
Conferences, Awards, Committee Activities, YEC Program	44,964	33,467	18,060
Public Relations, Office & Travel	10,145	10,093	10,582
Investment Loss	15,568	-	-
Total Expenses	<u>\$127,420</u> <u>(\$22,881)</u>	<u>\$78,369</u> <u>(\$1,260)</u>	<u>\$56,368</u> <u>\$10,869</u>
Net Assets			
Unrestricted	\$49,882	\$72,763	\$74,023
Restricted	4,208	4,029	3,308
Total Net Assets	<u>\$54,090</u>	<u>\$76,792</u>	<u>\$77,331</u>

*Includes Strategic Planning Facilitator and unbudgeted severance pay for previous Executive Director



Environmental Studies students meet for the first time with APICS committee members in February 2003



"Claims of enhancement of vision by wearing yellow-filtered lenses," presenter at the 2002 Psychology Conference

APICS Sponsors and Partners

Antigonish Chamber of Commerce

Association of Atlantic Universities

Atlantic Association for Research in the Mathematical Sciences

Atlantic Coastal Zone Information Steering Committee

Atlantic Geoscience Society

Atlantic Section of the Chemical Institute of Canada

Canadian Association of Physicists

Canadian Council on Animal Care

Canadian Institute for Photonic Innovations

Canpolar East Inc.

Chemical Institute of Canada

Digital Eve Nova Scotia

Genesis Technologies

Information Technology Industry Alliance of Nova Scotia

JADE Communications

JDS Uniphase

Learning Design Studios

MacDonald, Dettwiler and Associates Ltd.

Merck Frosst

Natural Sciences and Engineering Research Council of Canada

Sepracor Canada

Staples Business Depot



Atlantic Provinces
Council on the Sciences
c/o Dalhousie University
1390 LeMarchant Street
Halifax NS B3H 3P9
Telephone: (902)494-
3421
Fax: (902) 494-6643
Email: apics@dal.ca
www.apics.dal.ca