

IPP Director's Report

2019 Annual General Meeting of Individual Members

J. Michael Roney

7 June 2019

Simon Fraser University, B.C.

Agenda

- Adoption of Agenda
- Directors Report to IPP Members and Council Election Results
- Results of IPP MRS grant
- Technical Resources: Detector Support for Frontier Technology


Minutes of 2018 IPP AGM:

http://www.ipp.ca/governance/meet_mins.shtml

Joint CINP-IPP Meeting Agenda

THURSDAY 6 JUNE 2019
Simon Fraser University

NSERC SAGES Chair Report

Brigitte Vachon 

SWH 10081, Simon Fraser University

10:45 - 11:10


News from CFI

Olivier Gagnon 

SWH 10081, Simon Fraser University

11:10 - 11:30


TRIUMF Director Report

Jonathan Bagger 

SWH 10081, Simon Fraser University

11:30 - 11:55

SNOLab Director Report

Nigel Smith 

SWH 10081, Simon Fraser University



11:55 - 12:15

IPP AGM Agenda

Friday 7 JUNE 2019

Simon Fraser University

THEME FOR PROJECT REPORTS: Computing needs and experiences with Compute Canada resources and how to ensure they are improved with the new Digital Research Infrastructure organization that is being put together by ISED

IPP Director's Report & Council Election Results	<i>Michael Roney</i>
<i>SCC 9002, Simon Fraser University</i>	09:00 - 09:30
European PP Strategy Update	<i>Brigitte Vachon</i>
<i>SCC 9002, Simon Fraser University</i>	09:30 - 09:45
Canadian Particle Physics Computing Issues	<i>Randy Sobie</i> 
<i>SCC 9002, Simon Fraser University</i>	09:45 - 10:00
McDonald Institute Report	<i>Tony Noble</i>
<i>SCC 9002, Simon Fraser University</i>	10:00 - 10:15
EXO-200 and nEXO	<i>Thomas Brunner</i>
<i>SCC 9002, Simon Fraser University</i>	10:15 - 10:30
T2K and HyperK	<i>Akira Konaka</i>
<i>SCC 9002, Simon Fraser University</i>	10:30 - 10:45
NA62	<i>Douglas Andrew Bryman</i> 
<i>SCC 9002, Simon Fraser University</i>	10:45 - 11:00

IPP AGM Agenda

Friday 7 JUNE 2019
Simon Fraser University

Belle II	<i>Christopher Hearty</i> 
<i>SCC 9002, Simon Fraser University</i>	<i>11:20 - 11:35</i>
PICO	<i>Alan Robinson</i>
<i>SCC 9002, Simon Fraser University</i>	<i>11:35 - 11:50</i>
ATLAS	<i>Peter Krieger</i>
<i>SCC 9002, Simon Fraser University</i>	<i>11:50 - 12:10</i>
SuperCDMS	<i>Dr Wolfgang Rau</i>
<i>SCC 9002, Simon Fraser University</i>	<i>12:10 - 12:25</i>
IceCube	<i>Roger Moore</i> 
<i>SCC 9002, Simon Fraser University</i>	<i>12:25 - 12:40</i>
SNO+	<i>Mark Chen</i>
<i>SCC 9002, Simon Fraser University</i>	<i>12:40 - 12:55</i>
Close	<i>Michael Roney</i>
<i>SCC 9002, Simon Fraser University</i>	<i>12:55 - 13:00</i>

IPP Council

2018-2019 IPP Council

- Ken Clark (2020) - SNOLAB
- Darren Grant (2019) - Alberta
- Blair Jamieson (2020) - Winnipeg
- Reda Tafirout (2021) - TRIUMF
- J. Michael Roney [Chair] (2023) - Victoria
- Pierre Savard (2019) - Toronto
- Daniel Stolarski (2021) - Carleton

Many thanks to Pierre and Darren for your contributions and dedicated service !

IPP Council Elections

- Call for Nominations to Council announced April 11 by Adam Ritz, IPP Secretary-Treasurer.
- Nominations closed Monday, May 2

Candidates, in alphabetical order:

- Thomas Brunner (McGill-TRIUMF)
- Erica Caden (SNOLAB)
- Bernd Stelzer (SFU)

- Election took place electronically May 8-23
- Votes were tallied by independent staff
- 64 members cast at least one vote

IPP Council Elections

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- Nominations closed Monday, May 2

Candidates, in alphabetical order:

- Thomas Brunner (McGill-TRIUMF)
- Erica Caden (SNOLAB)
- Bernd Stelzer (SFU)

Thank you Thomas, Erica and Bernd for agreeing to stand for election and offer to serve our community in this important way

IPP Council Elections

2019 IPP Council Election Results:

- Thomas Brunner (McGill/TRIUMF) – 30
- Erica Caden (SNOLAB) – 47
- Bernd Stelzer (SFU) – 37

Welcome Erica Caden and Bernd Stelzer to the IPP
Scientific Council for the next three years

IPP Council

2019-2020 IPP Council

- Erica Caden (2022) - SNOLAB
- Ken Clark (2020) - SNOLAB
- Blair Jamieson (2020) - Winnipeg
- Reda Tafirout (2021) - TRIUMF
- J. Michael Roney [Chair] (2023) - Victoria
- Bernd Stelzer (2022) - SFU
- Daniel Stolarski (2021) - Carleton

Activities of Council

Met 9 times this year – two in-person (one at CAP Congresses)

- 15 June 2018 – old and new Council in person at CAP congress in Halifax
- 27 June 2018
- 26 July 2018
- 12 September 2018
- 18 September 2018
- 5 December 2018
- 20 January 2019 - IPP Summer Student Fellows selection; in person
- 26 March 2019
- 2 May 2019
- Next meeting Friday 6 June 2019 – old and new Council in person at CAP Congress in Burnaby

Activities of Council

Activities of IPP Council in 2018-2019

- Complete Recruitment of IPP Research Scientist
- IPP MRS Renewal: Grant preparation and review
- Submission to European Particle Physics Strategy Update
- Engage in TRIUMF Five Year Planning exercise
- National computing infrastructure concerns
- Digital Research Infrastructure changes: CFI replacement
- Maintain the Summer Student programme: grow support from universities
- Continue limited support for conferences: leverages support from universities
- IPP moved to charitable status
- Dr. Richard Teuscher promoted to Principal Research Scientist

Activities of Council

Brief to ISED regarding Digital Research Infrastructure

Establish Joint IPP CINF Computing Task Force:

A. Garnsworthy(TRIUMF), D. Gingrich, G. Huber, C. Jillings(SNOLAB), R. Lewis, J.M.Roney, R. Sobie, R. Tafirout(TRIUMF)

Briefing at:

www.ipp.ca/pdfs/DRI-Brief-for-ISED-IPP-CINF.pdf

Brief was accompanied by letters of support from TRIUMF and SNOLAB

IPP Research Scientists

Research Scientist (Starting year)	Project: w/data	Project in Construction Phase/Future	Host Institution
Francois Corriveau (1991)	ATLAS	ILC; ATLAS upgrade	McGill
Christopher Hearty (1994)	<i>BABAR</i> , Belle II	Belle II	UBC
Nikolina Ilic (2019)	ATLAS	ATLAS upgrade + long baseline neutrinos; DAQ support	Toronto
Robert McPherson (1997)	ATLAS	ATLAS upgrade	Victoria
Steven Robertson (2003)	<i>BABAR</i> , Belle II, ATLAS	ATLAS upgrade; Belle II	McGill
Randall Sobie (1987)	ATLAS, Belle II HEPNET	ATLAS upgrade, Belle II	Victoria
Richard Teuscher (2005)	ATLAS	ATLAS upgrade	Toronto
Alexander Wright (2012)	SNO+, PICO	PICO, SNO+	Queen's

New Individual Members Recommended by IPP Council this past year

Aaron Vincent – Theorist
PhD (2012) McGill
Faculty, Queen's

Joe Bramante – Theorist
PhD (2013) Hawaii
Faculty, Queen's

Mohammad Ahmady – Theorist
PhD (1991) Western Ontario
Faculty, Mount Allison

Ruben Sandapen – Theorist
PhD (2003) Manchester
Faculty, Acadia

Juan Pablo Yanez – Experimentalist
PhD (2014) Humboldt
Faculty, Alberta

Nikolay Kolev – Experimentalist
PhD (2003) Houston
Faculty, Regina

Several other applications will be considered at today's IPP Council Meeting

MRS Resources

Carleton Technical Team (MRS Supported)

- For more than 20 years, the Carleton Technical Team has been contributing to subatomic physics via R&D, Testing, Large-Scale Assembly and Delivery, and Maintenance of particle detector systems for a variety of projects in Canada and around the world.
- The Carleton MRS is managed, in conjunction with the Victoria and Winnipeg MRS teams, by the local manager (Kevin Graham) working with a Prioritization Board. The Board is constituted from SAP researchers across Canada and requests for support are reviewed and approved by the Board. Board members also act as liaison to the community insuring that the community is aware of the available resources.

Personnel Supported

- **Machinist/Technician** - precision small parts fabrication, welding, vacuum/gas system cleaning and assembly, leak-checking,
- **Electronics Specialist and Electronics Technician**
 - analog and digital readout systems, power supplies, equipment certification, soldering, circuit design, cabling, system modeling and control
- **Designer** - 3-D modeling, concept development, detailed design drawings for fabrication (e.g. CNC), as-built drawings, FEA calculations
 - ⇒ working closely with CPARC and SNOLAB engineers based at Carleton

MRS Resources

University of Victoria

- Detector laboratory supporting projects for many years
 - S. de Jong (previously P. Poffenberger) started 2017
- Building expertise in FPGA development and programming
 - Current FPGA projects on for ATLAS liquid argon calorimeter and Belle II calorimeter
 - Previous projects included ALPHA, Ariel II
- Additional resources include clean room, vacuum test equipment, local machine shop, electronics shop and general laboratory space

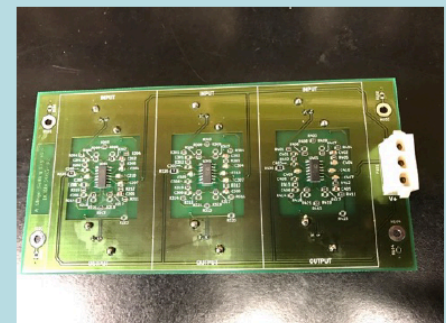
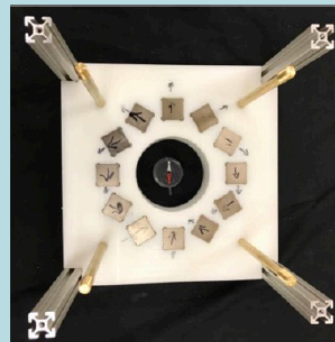
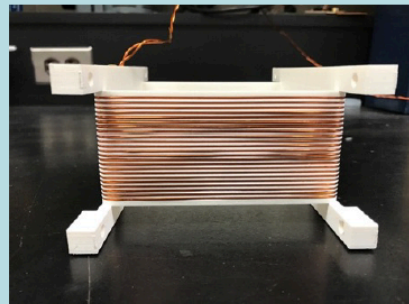
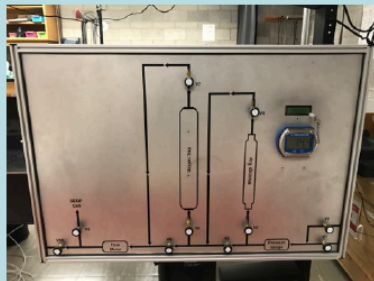
MRS Resources

Winnipeg NSERC SAP MRS Resource

For examples of past projects supported by David Ostapchuk see:
www.uwinnipeg.ca/physics/research/nserc-funded-sap-mrs-technician.html

Past projects: UCN, Medical physics, AMO

- Technician: David Ostapchuk (MSc Physics)
- General detector fabrication support
 - Electronics PCB, simple machine work, 3D printing, laser cutting
 - Access to North Forge Fabrication Lab (www.northforge.ca)
 - Larger machined parts contracted out to local machine shops
- Resource allocated by UVic/Carleton/UWinnipeg allocation board



MRS Resources at University of Alberta

Based at the University of Alberta, the CPP+ MRS Centre is available to provide help with NSERC funded projects.

Full details of the nature of available support is available on the [CPP+ Major Resources Support Centre website](#) and includes [CPP+ MRS Experts](#) as well as other facilities.

Potential users who are members of the Canadian subatomic physics community are encouraged to apply to the [CPP+ Operating Committee](#) by filling in an [CPP+ online application form](#).

CPP+ Resources

MRS Base - CCIS
General Assembly & Laboratory Area
The Advanced Machining Facility and
Machine Shop
The Electronics Shop
The National Institute for
Nanotechnology
The X-ray Facility and Radiation
Laboratory
Radon Reduced Lab.

CPP+ MRS Experts

Christopher Ng
Mircea Cadabeschi
Paul Davis
Richard Soluk

**MRS Resources for electronics
development are also available at
University of Montreal**

IPP Summer Student Fellowships

- May and June in Canada with a subatomic physics project supported by NSERC USRA undergraduate student programme plus supervisor's research grant; followed by July and August at CERN participating in the CERN summer school programme of daily lectures and hands-on research in afternoons
- CERN offers positions to non-member state countries 'at cost'
- IPP pays for travel to CERN and stipend to augment USRA funding
- Gives Canadian students unrivalled opportunity to experience CERN's International research environment

IPP Summer Student Fellowships

- IPP Scientific Council identifies excellent students from across Canada in very competitive environment
- IPP RS Steven Robertson is now managing this programme for IPP
- In 2018 46 applicants - five students supported: 1 from BC, 3 from Ontario, 1 from Quebec → Students went to UVic, Carleton, McGill, Queen's before going to CERN
- Particular encouragement to non-CERN experiments to take students in first two months
 - in 2019 there are projects in ATLAS and SNO+

IPP Summer Student Fellowships

- Contributions now coming from McGill, Alberta, Victoria, Toronto
- Each provided \$20k in funding to this programme to support students from their home institute or being supervised by a faculty at their home institute.
- Time to renew some of these funding agreements...
- McDonald Institute also contributing funds
- Carleton University joining the group of university partners funding students this year
- More university players are encouraged to join this effort

IPP Summer Students 2019

Year	Name	Undergrad	Supervision
2019	Samantha Connolly Genevieve Hayes Kaitlyn Liang Khaled Madhoun Doris Rusu	Queen's Queen's UT Mississauga Carleton Windsor	Queen's UBC Toronto Carleton Victoria

IPP Support for Conferences

- Council has a modest budget for contributions to Canadian particle physics conferences
 - focus: encouraging student participation
 - leverage of funds from other sources
- The following conferences have been supported in the last year
- NNN2018 (“Int’l Workshop on Next generation Nucleon Decay and Neutrino Detectors”)
- WNPPC2019
- TRISEP 2019
- Testing Gravity 2019
- FPCP 2019
- Lepton Photon 2019 – August in Toronto

Communications with NSERC

- Need to communicate the process by which new Discovery Grant funds are allocated across disciplines for the sake of transparency.

IPP MRS Renewal

- IPP is supported by an NSERC MRS thematic grant out of the Subatomic Physics envelope
- Thematic MRS grants can be awarded for up to 5 years
- the previous award of \$1.1M/year was for 3 years ending FY2018/10
- The IPP grant was renewed in April 2019:
 - FY 2019/20 \$1.20M
 - FY 2020/21 \$1.35M
 - FY 2021/22 \$1.35M
 - FY 2022/23 \$1.40M
 - FY 2023/24 \$1.40M
- The grant application included a request for a 9th Research Scientist which was not funded. Most of the rest of the request, which focused on improving the Research Scientist salaries, was funded. IPP was also instructed to deploy the Early Career Fellowship program that was in the request

Early Career Development Fellowship

- Proposal follows from a consultation with the theory community
- Awarded in a national competition it will provide funds for students and postdocs to spend some time at an international lab, school or institute.
- Proposed budget: \$ 35, 250 (3 two-weeks, 3 one-month, 1 four-month trips)
- No more than 2 awards per institution per year.
- Pilot program for 5 years

Benefits

- Increases international exposure of theory students and postdocs.
- Encourages international collaboration of faculty members.
- Helps the students and postdoc to promote their career (prestige of winning a nationally competitive fellowship, letter of recommendation, etc...)
- Attractive feature for potential students and postdocs.
- Complementary to existing programs.

Focus of coming year for IPP

- **Continue to produce outstanding science !!!**
- Participation in SNOLAB planning
- Secure HL-LHC accelerator contribution from Canada – overall CERN-Canada engagement
- Maintain the IPP Base Programme
 - IPP Research Scientists
 - Summer Student programme: grow support from universities
 - Continue support for conferences: leverages support from universities
 - Initiate the Early Career Fellowship Program
- Seek out additional sources of funding to augment NSERC MRS funds
 - IPP is now a Charitable Organization
 - Consider Annual Report
 - **New website is needed – work already begun**
- Build a database of HQP career paths after completion of training in the field
 - Include private sector success stories
- Build a database of Canadian industrial contracts awarded from funds granted to our field

Work has started on developing a new IPP webpage....



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Background image featuring miniature black hole simulation from ATLAS, CERN.

Additional Material

IPP Summer Students

Year	Name	Undergrad	Supervision
2015	Dicaire Grant Morningstar Ojeda	Ottawa UBC McMaster McGill	Carleton TRIUMF Toronto McGill
2016	Abernathy Fascione Krupa Tomalty Trischuk	Queens Queens UBC/Okanagan McGill Toronto	St. Mary's Queens TRIUMF Toronto Carleton
2017	Barron Kudzman-Blais Richardson Wandler Egan	Alberta Toronto Laurentian Alberta McGill	Alberta UBC SNOLab Alberta UBC
2018	Lia Formenti Luke Polson Joshua Sandor Jon Corbett Gareth Smith	Guelph Victoria McGill Queen's Carleton	ATLAS at McGill Belle II at Victoria Theory at McGill SuperCDMS at Queen's ATLAS at Carleton

IPP Summer Students

Year	Name	Undergrad	Supervision
2007	Rabinovitch	Yale	TRIUMF
2008	Guindon Ilic Louca McCarthy	Ottawa Waterloo Waterloo Queens	Carleton Toronto McMaster Carleton
2009	Abouzeid Dupuis Feige LaFlamme Low	Carleton Victoria McGill McGill UBC	Toronto Victoria Toronto McGill McGill
2010	Krizka Moult LeBlanc Pachal Picard	Simon Fraser UBC Acadia Victoria Victoria	Toronto Victoria TRIUMF Victoria Montreal

IPP Summer Students

Year	Name	Undergrad	Supervision
2011	Buck Burke Collins-Fekete McDonald Portillo	Carleton Victoria Laval MacMaser Alberta	Carleton UBC Carleton Simon Fraser Alberta
2012	Abdel-Aziz Bluteau Boone Friedl Killick	Toronto Acadia UBC Carleton Carleton	Toronto TRIUMF UBC Carleton Carleton
2013	Abidi Hedrich Layden Rettie Waslaski	Toronto Thompson Rivers Waterloo Ottawa UBC	Carleton/UofT SFU McGill TRIUMF Toronto
2014	Noordeh Quenneville Strickland	York SFU Memorial	York SFU Victoria