



Canadian Institute of Nuclear Physics Institut canadien de physique nucléaire

November 2014 Newsletter

The Canadian Institute of Nuclear Physics (CINP) is a formal organization of the Canadian nuclear physics research community to promote excellence in nuclear research and education, and to advocate the interests and goals of the community both domestically and abroad.

1. CINP Board of Directors (2014-15)

The CINP Institutional Members had their annual meeting via teleconference on May 27. One of the business was to elect two new Board members. The new Board is listed below, along with their assigned responsibilities.

Name	Institution	Role	E-mail	Term Ends
Rituparna Kanungo	Saint Mary's University	Secretary	ritu@triumf.ca	June, 2016
Jean Barrette	McGill University		jean.barrette@mcgill.ca	June, 2016
Paul Garrett	University of Guelph	Treasurer	pgarrett@physics.uoguelph.ca	June, 2015
Gerald Gwinner	University of Manitoba	Vice-President	gerald.gwinner@umanitoba.ca	June, 2017
Jeffery Martin	University of Winnipeg		j.martin@uwinnipeg.ca	June, 2017
Jens Dilling	TRIUMF	President	jdilling@triumf.ca	June, 2015

2. Consultations with External Agencies

The CINP is an advocate and representative of the Canadian nuclear physics community and is asked to attend various meetings or make presentations on its behalf. Some recent or forthcoming activities include:

- In June 2014, Compute Canada called for White Papers on Sustainable Planning for Advanced Research Computing (SPARC) from the Canadian academic, technical, and medical community. Due to the many common requirements, it was felt that a much stronger case could be made if a common document on the *Computing requirements for the Canadian subatomic physics community* could be prepared on behalf of both the Institute of Particle Physics (IPP) and the Canadian Institute of Nuclear Physics. You can download a copy of the joint IPP-CINP white paper from: <http://cinp.phys.uregina.ca/node/188>
- Jens Dilling represented the CINP at the October 10 meeting of NuPECC (Nuclear Physics European Collaboration Committee) in Edinburgh, UK and made a short presentation there on

the activities and funding of nuclear physics in Canada. NuPECC meets three times annually, and the CINF typically attends one meeting per year as an observer.

- The CINF and IPP were asked by NSERC to prepare a joint document on *The Context and Environment of Canadian Subatomic Physics Research at Canadian Universities* for presentation to the Subatomic Physics Evaluation Section (SAPES) at their November 6 policy meeting. This was in response to our request (echoed annually also in the SAPES Chair's report) to reinstate the discontinued SAPES fall site visits, given their value to both international and domestic members of the committee in understanding the Canadian research context and environment. The report was well received, and we anticipate this will become an annual submission. We are interested in receiving your specific suggestions to improve next year's version. The report can be downloaded from: <http://cinp.phys.uregina.ca/node/219>
- The CINF will make a 15 minute in-camera presentation to SAPES on *The Breadth of Canadian Nuclear Physics Research and Important Current and Future Priorities* at Large Projects Day, scheduled for March 8, 2015 at NSERC headquarters in Ottawa. Please send information on your significant 2014 research highlights, new research capabilities, or honors received, to the CINF Executive Director, Garth Huber, who will prepare the presentation from your submissions and relevant information from the most recent Subatomic Physics Long Range Plan. You may find a copy of last year's presentation at: http://cinp.phys.uregina.ca/sites/cinp/files/sites/cinp/files/CINF_science_LPD2014.pdf

3. NSERC Subatomic Physics Long Range Plan 2017-21

We have been informed by NSERC that the activities for the next Long Range Plan, covering the period 2017-21, will be launched at the 2015 Canadian Association of Physicists (CAP) Congress in Edmonton, AB. This plan is crucial for the proper operation of the Subatomic Physics Envelope, which is the source of NSERC funding to our community. A Long Range Plan Committee (LRPC) will be established by NSERC in the spring of 2015. The CINF and IPP are expected to prepare briefs that will be submitted to the LRPC by the fall of 2015. The LRPC would then lead the consultation of the community up to the summer of 2016, with the intent being to submit its report to NSERC by the end of 2016.

The CINF Brief to the LRPC will be prepared by a committee consisting of Garth Huber (Chair and Chief Editor), and the Scientific Working Group Chairs: Iris Dillmann (Nuclear Astrophysics), Charles Gale (Hadrons/QCD), Adam Garnsworthy (Nuclear Structure), Gerald Gwinner (Symmetries), Juliette Mammei (Education and Training). You should anticipate a call for written briefs from the CINF in March or April, with a Town Hall meeting most likely to be held in Edmonton just before the CAP Congress, June 13-14.

4. Winter Nuclear and Particle Physics Conference (WNPPC 2015)



The 52nd Winter Nuclear and Particle Physics Conference (WNPPC) will take place February 12-15, 2015, in Mont Tremblant, QC. The WNPPC is a national meeting for the Canadian subatomic physics community, with a special focus on providing a forum for junior researchers

(students and postdocs) and interaction with groups across Canada. The 2015 meeting is being organized by the University of Guelph and SNOLAB, and will feature sessions focusing on the research areas of interest to the Canadian nuclear and particle physics community (both experimental and theoretical).

Important Deadlines:

December 29, 2014 Early registration deadline
 December 29, 2014 Hotel room booking deadline
 January 12, 2015 Abstract submission deadline

For more information, please consult the conference website: <http://wnppc.triumf.ca/2015/>

WNPPC Graduate Student Travel Awards

The Canadian Institute of Nuclear Physics (CINP) is making available four graduate student travel awards to the WNPPC. Each award will be for up to \$500 towards student travel expenses. Students must be enrolled in graduate studies at a Canadian university and performing research in experimental or theoretical nuclear physics. The application deadline is January 19. For more information and application forms, please visit: <http://cinp.phys.uregina.ca/node/180>

5. CUPC Student Conference Support

The CINP awarded four \$500 travel grants to support undergraduate students giving talks on nuclear physics related projects at the 2014 Canadian Undergraduate Physics Conference (CUPC) at Queen's University in October. Twelve applications were received and they were evaluated by a committee: Juliette Mammei (Chair), Jean Barrette and Jens Dilling. J. Mammei excused herself for one application that she was in conflict. The recipients are:

Student	Supervisor	CUPC Talk Title
Shayne Gryba (Regina)	Zisis Papandreou (Regina)	Investigating the Expected Cosmic Event Rate Distribution in the GlueX Barrel Calorimeter using a Monte Carlo Simulation
Andrew Harrison (Winnipeg)	Russel Mammei (Winnipeg)	Robotic Field Mapper for the TRIUMF Neutron Electric Dipole Moment (nEDM) Experiment
Meg Morris (Mt. Allison)	David Hornidge (Mt. Allison)	Active Helium Target: Neutron Scalar Polarizability Extraction via Compton Scattering
Nathan Murtha (Saint Mary's)	Adam Sarty (Saint Mary's)	Investigating Performance of a Scintillation Radiation Detector Design for use at Jefferson Lab

The students were asked to acknowledge the financial support by the CINP in their presentation, adding to the visibility of the Institute at the conference. We congratulate Andrew Harrison, who was awarded 2nd place in the CUPC poster competition.

6. CINP Conference Support

The CINP extends partial funding to workshops, meetings and conferences of broad relevance to nuclear physics in Canada. Requests are appraised against the mission and goals of the CINP, and funding is contingent upon satisfactorily showing that the event will further the aims of the CINP and be of benefit its members.

Application forms for external conference support are available from <http://cinp.phys.uregina.ca/node/22> and should be returned to the CINP Executive Director, Garth Huber. Once it is confirmed the necessary information is received, the Chair of the

Scientific Working Group most closely related to the conference topic will be consulted, and a recommendation forwarded to the CINP Board for final approval.

Please note that the CINP has had to turn down some applications where the connection to nuclear physics was not clear, or if the meeting appeared to be of narrow interest (such as a collaboration meeting). Please be sure to carefully read over the criteria accompanying the application form, and contact Garth Huber if you have any questions

We hope you will be able to attend one of the following CINP-sponsored conferences:

6th International Symposium on Symmetries in Subatomic Physics (SSP 2015)



The scientific program is devoted to recent accomplishments exploring fundamental symmetries in theory and experiment in atomic, nuclear, and particle physics and thus spans a wide variety of interesting and connected topics. The conference will take place at the Delta Ocean Point Hotel, Victoria BC, June 7-12. For more information visit the conference website at: <http://ssp2015.triumf.ca/>

7th International Conference on Hard and Electromagnetic Probes of High-Energy Collisions (Hard Probes 2015)



This conference focuses on probing the properties of Quark Gluon Plasma (QGP) produced in relativistic heavy ion collisions utilizing hard probes and electromagnetic probes. These include jets, heavy quarks, real and virtual photons. Since its inception in 2004, the Hard Probes conference has made many critical contribution in understanding the interplay between the hard probes and the extremely hot and dense QGP. The conference will be held at McGill University, June 29- July 3. <http://www.physics.mcgill.ca/hp2015/>

7. NSERC Support for CINP

The CINP gratefully acknowledges support from NSERC in the form of a Subatomic Physics Major Resources Support (SAP-MRS) grant. This grant supports the CINP's external conference support program, the undergraduate research scholarship program, planning for the Long Range Plan, and other initiatives. The support for 2014-15 is \$22,500. The CINP MRS grant is up for renewal in the next competition, and an application supporting increased activities was recently submitted. More details will follow once the decision of SAPES on the award is known.

8. Recent Milestones

First Beam from TRIUMF's ARIEL E-Linac

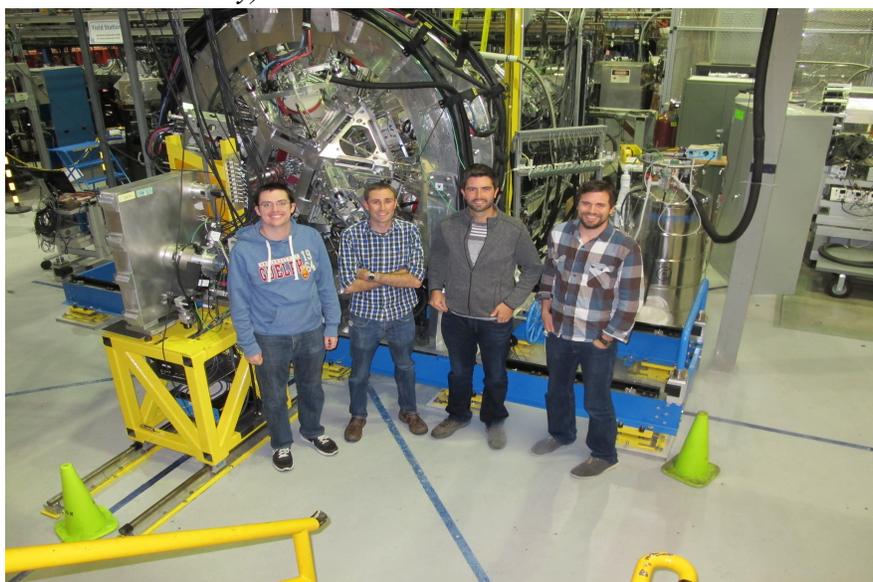
(submitted by Reiner Kruecken)

On September 30, TRIUMF's newly constructed superconducting electron linear accelerator (e-linac) produced its first particle beam at an initial energy of 23 MeV. The accelerator was designed and built in cooperation with institutions and industry across Canada. Acceleration of first beam through the complete e-linac system culminates a series of recent successes for the Advanced Rare Isotope Laboratory (ARIEL) project and sets ARIEL on its path forward to become one of the most sophisticated rare-isotope facilities in the world. For more information, please read the TRIUMF press release:

<http://www.triumf.ca/headlines/current-events/e-linac-produces-first-beam>

Commissioning of the GRIFFIN Spectrometer at TRIUMF's ISAC-I

(submitted by Adam Garnsworthy)



This photograph was taken at the end of the first night shift of radioactive beam delivery to GRIFFIN (24th Sept. 2014). Pictured from left to right: Alex Laffoley, Adam Garnsworthy, Evan Rand, Ryan Dunlop.

The Gamma-Ray Infrastructure For Fundamental Investigations of Nuclei (GRIFFIN) HPGe spectrometer has been successfully commissioned at TRIUMF-ISAC-I in September 2014. This follows several years of preparation work and a 7 month installation effort. The first experiment with this 'early-implementation' mode of GRIFFIN was then performed in the first week of October. This study of ^{115}Ag beta decay aims to better understand the Cd, In and Sn isotope astrophysical production mechanisms, taking advantage of GRIFFIN's high γ - γ coincidence efficiency. The GRIFFIN collaboration have now accepted all sixteen of the HPGe clover detectors in November and are working on completing the development work on the digital data acquisition system before the project end date in March 2015.

Jefferson Lab 12 GeV Major Milestones Reached

(submitted by Zisis Papandreou)

The 12-GeV era for Jefferson Lab (JLab) has arrived, with two important milestones reached this year. In April, the upgraded CEBAF accelerator delivered 10.5 GeV beam for the first time (1.5% duty cycle x 3 μA). Five months later, the U.S. Department of Energy (USDOE) awarded Critical Decision 4a, meaning that the 12 GeV construction phase goals had been accomplished.

JLab can now proceed to initial operations that started with an October commissioning run in Hall D, which houses the GlueX experiment. The primary goal of GlueX is to conduct a definitive mapping of states in the light meson sector with an emphasis on searching for exotic hybrid mesons. Within the first few days of beam, a second milestone was reached: multiple-track events were detected and reconstructed in the GlueX detector. A second commissioning run will take place in March-May 2015 and the start of physics running is scheduled for 2016.



Over 30 physics and engineering undergraduate students worked on the construction of the GlueX Barrel Calorimeter (BCAL) in Regina over a 25-month period. Pictured left to right: Hao Qian, Andrew Baulin, Mark Litzenberger, Yimeng Cao, Emma Plummer and Dan Kolybaba (Construction Manager).

9. DNP Photo Gallery

The CAP Division of Nuclear Physics (DNP) maintains a photo gallery on its website. Given that the NSERC LRP process will begin next year, it is very important that we have a good selection of photos that we can use to help promote our field. We are particularly interested in photos that include HQP, such as the one of the GRIFFIN commissioning on page 5. The album is located at: <http://dnp.phys.uregina.ca/photos>, where you can see a selection of photos that have already been used in CINF activities. Please contact Garth Huber if you are able to supply a photo for the gallery.

10. Upcoming Conferences and Workshops of Interest to CINF Members

Radioactive Beam Summer School - Pisa, Italy

In 2015 we celebrate 30 years since the first genuine work on radioactive ion beams (RIBs) used to study properties of atomic nuclei, leading to a burst of ever increasing activity in the field. Since then Low Energy Nuclear Physics research fed by experiments in low, intermediate and high energy heavy ion facilities has experienced a great revival which has changed deeply our understanding of nuclei and their interactions. The Italian Nuclear Physics community sponsored by the INFN is proud to organize a celebrating training summer initiative, geared towards students attracted to the field, with the title: Re-writing Nuclear Physics textbooks: 30 years of radioactive ion beam physics. For more information visit: <http://cinf.phys.uregina.ca/node/212>

12th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2015)

The objectives of the CIPANP Conference series are to encourage communications and interactions among experimental and theoretical elementary particle physicists, nuclear physicists, particle and nuclear astrophysicists, and accelerator physicists over a wide range of

topics of current interest. The conference will be held May 18-24, 2015, at the Vail Marriott Mountain Resort, Vail, Colorado. For more information visit:
<http://cinp.phys.uregina.ca/node/199>

CINP Executive Director:

If you require information about any CINP programs, please do not hesitate to contact:

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