



Canadian Institute of Nuclear Physics Institut canadien de physique nucléaire

Newsletter #16, May 2020

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. Upcoming CINP Virtual Sessions

Wednesday, June 10, 2020 (all times EDT)	
Time	Event
	CINP+IPP Joint Session Chaired by G. Huber (CINP) https://zoom.us/j/91627524688?pwd=cTRiSG1VdXRvaCtQT2Q1cG82OWo0QT09
11:30	NSERC SAPES Report -- Thomas Regoire (20+5)
11:55	CFI Report -- Mohamad Nasser-Eddine (10+5)
12:10	TRIUMF Report -- Jonathan Bagger (20+5)
12:35	SNOLab Report -- Nigel Smith (15+5)
12:55	EuroStrategy Report -- Brigitte Vachon (5+5)
13:05	US Snowmass Process -- Heather Logan (5+5)
13:15	Canadian Subatomic Physics LRP -- Adam Ritz (15+10)
13:40	Adjourn
14:30	CINP Annual General Meeting Chaired by G. Huber https://zoom.us/j/93771869305?pwd=TDBGQWtUVTFYdG94NVdqRXBOcXdmQT09
15:15	DNP Annual General Meeting Chaired by C. Andreiou Register at: https://sfu.zoom.us/meeting/register/tJcvcO-vrD8qGtJqw0aj1ZRSjZpC8eGHKQou

As you are likely aware, the CINP usually has several meetings during the CAP Congress. These include the CINP+IPP Joint Session, which includes presentations from the funding agencies and the laboratories, and the CINP Individual Members' AGM. The CINP+IPP Joint Session is chaired by the CINP Executive Directors in even-numbered years, and by the IPP Director in odd-numbered years.

As CAP Congress 2020 has been canceled, these activities have moved online. Both meetings will be held on Wednesday June 10. They have been coordinated with the DNP Business Meeting, which will also be held that same day. This year's Joint Session also includes information on the Canadian Subatomic Physics Long Range Plan, so please make an effort to attend. Please mark these on your calendars, and we hope to see you there (virtually).

2. NSERC Support for CINP

We are very pleased to report that the Subatomic Physics Major Resources Support (SAP-MRS) grant funding most CINP activities has been successfully renewed for 2020-25. There has been a substantial increase in funds awarded, with an average 70% compared to 2015-20. This will allow an expansion of some CINP programs, and your input on the use of these funds will be welcomed at the June 10 AGM. The installment for 2020-21 is \$85,000.



3. Subatomic Physics Long Range Plan and CINF Town Hall Meeting

The activities to form the next Canadian Subatomic Physics Long-Range Plan (LRP) are commencing. It will cover the period extending from 2022 through 2036 and will be in effect from 2022 to 2026. The Co-Chairs of this process are Adam Ritz and Brigitte Vachon, both of whom recently served the community as members of the Subatomic Physics Evaluation Section (SAPES). Please be sure to attend their presentation at the CINF+IPP Joint Session on June 10.

The LRP Terms of Reference charge the Canadian Institute of Nuclear Physics (CINF) to lead broad consultations within the Canadian nuclear physics research community and to present a Nuclear Physics Brief to the LRPC by December 1, 2020. The CINF Brief Committee consists of the five Scientific Working Group Chairs plus the CINF Executive Director.

Briefs are welcome from any group or individual whose research activities fall within nuclear physics (according to international funding guidelines) are welcome (e.g. hadrons/QCD, nuclear astrophysics, nuclear structure, and fundamental symmetry tests at low or intermediate energies). You do NOT need to be a member of the CINF to submit a brief. However, to submit a brief it is required that you are (or shortly will be) eligible to hold an NSERC Subatomic Physics research grant.

Thank you to those who submitted intents to submit briefs to the CINF Long Range Planning process. We received 34 notices representing most activities of the Canadian Nuclear Physics community. **If you missed this deadline, please contact us ASAP.**

IMPORTANT DATES:

Friday, June 5: Draft version of Briefs are due. This is a firm deadline, as we need time to plan the Town Hall meeting. Even if your draft is in rough shape, please send it to us by this date. We also welcome early submissions. To guide your written brief, we have prepared a LaTeX template and spreadsheet. Only briefs using the template will be accepted. They are available from: <https://cinp.ca/subatomic-physics-long-range-plan>

Mon, Tue June 22,23: CINF Town Hall Meeting This meeting will be held via Zoom, roughly 4 hours/day, not including breaks. <https://zoom.us/j/98877793479?pwd=bUI1UU8vUEhNL1NwTFdYZFVibEszUT09> Agenda to be distributed later.

Friday, July 10: Final version of Briefs are due. If you expect to be late, please write to us, so we know how much of an extension you might need and we can plan for it accordingly.

Once the CINF Brief Committee has completed its deliberations, we will circulate an advanced draft of the Nuclear Physics Brief for community comment prior to submission to the LRPC. We expect this to be in mid-September, after we have had time to coalesce the community input into a coherent document.

Please mark all of these dates in your calendars, and please do not hesitate to contact any of us if you have questions or concerns.

Regards,
The CINF Brief Committee

Garth Huber huberg@uregina.ca
(Chair)

Svetlana Barkanova sbarkanova@grenfell.mun.ca
(QCD/Hadronic Physics)

Iris Dillmann dillmann@triumf.ca
(Nuclear Astrophysics)

Adam Garnsworthy garns@triumf.ca
(Nuclear Structure)

Gerald Gwinner gerald.gwinner@umanitoba.ca
(Fundamental Symmetries)

Juliette Mammei jmammei@physics.umanitoba.ca
(Education & Training)

4. Representation and Input to Various 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 and forthcoming activities include:

- Every spring, the CINP Executive Director is asked to suggest new members of the NSERC Subatomic Physics Evaluation Section (SAPES), to replace the specific expertise of outgoing members. **If you have any suggestions for the 2021-22 committee, please let Garth Huber know as soon as possible** (contact info at the end of the newsletter). Your suggestions can be either international or domestic, from any subatomic physics sub-discipline. When making suggestions, please keep in mind the Tri-Council conflict of interest guidelines, which stipulate that committee members cannot be applicants in that competition.
- The CINP made a 15 minute presentation to SAPES on *The Breadth of Canadian Nuclear Physics Research and Important Current and Future Priorities* at Large Projects Day, on Sunday, March 1, 2020 in Ottawa. Thank you to the many CINP members who provided scientific highlights for the presentation!
- Following the presentation, the CINP and IPP Executive Directors (GH and Mike Roney) took the opportunity while in Ottawa to meet with the senior leadership of NSERC (President Alejandro Adem, VP of Grants and Scholarships Danika Goosney, Director of Mathematical, Environmental and Physical Sciences Elizabeth Boston). We also met with the Assistant Deputy Minister, Science and Research Sector, at Innovation, Science and Economic Development Canada (ISED) Nipun Vats. We discussed the implementation of the recommendations of the Naylor Report, and followed up on how the new funds announced in the 2018 federal budget are being allocated, particularly to the SAP envelope.
- We are pleased to report that due in part to the efforts of CINP and IPP, the funding of the SAP envelope will be improved through to 2022. More

details are expected to be presented in the NSERC report in the CINP+IPP Joint Session on June 10, so be sure to attend.

- Garth Huber is representing CINP on the Astroparticle Community Planning Steering Committee, a long range planning exercise initiated by the McDonald Institute at Queen's University.
- Garth Huber is also representing CINP on the Carleton-Victoria-Winnipeg MRS Resource Planning Board. There is an openness to support projects from CINP members. For information, please view the information on the CINP website <https://cinp.ca/subatomic-physics-major-resources-support-facilities> or contact Garth Huber for more information (contact info at end of Newsletter).
- Rituparna Kanungo (CINP President) is the representative of Canada on NuPECC and attends the NuPECC meetings at least once per year. The next meeting will be in October 2020.
- The Advisory Committee on TRIUMF (ACOT) is a panel of international experts that meets and reports to the NRC twice a year. Garth Huber represents the CINP as a “community observer”. The committee generally finds our input to be quite valuable, providing a Canadian perspective on TRIUMF's planning and operations. **If you have specific information that would be useful to the CINP's input, please let Garth Huber know.** The next two meetings of ACOT are scheduled for November 19-21, 2020 and April 23-25, 2021.

5. CINP Individual Membership

We are pleased to report that CINP membership numbers are up from last year. Through to May 1, there were 4 new faculty members and 12 new associates. This was partly offset by a loss of 8 members (as part of our regular review process to ensure the roster remains up-to-date), resulting in a net gain of 8.

Please encourage your grad students and PDFs to join and contribute to the activities of the Scientific Working Groups (SWGs). The membership form and introduction letter are posted at:

<http://cinp.ca/membership>

or contact Garth Huber for further information.

CINP Individual Membership – May 1, 2020			
Total Membership	129	Nuclear Astrophysics SWG	47
Faculty-class Members	79	Nuclear Structure SWG	53
Associate Members	50	Fundamental Symmetries SWG	53
Experimentalists	101	Hadronic Physics/QCD SWG	45
Theorists	27	Education & Training SWG	42

6. CINP Web Server www.cinp.ca

The CINP website has been hosted on servers located at TRIUMF since mid-2019. The web software (Drupal) went through an extensive upgrade earlier in 2021. Members will notice some changes in web functionality, and hopefully improved connection speed, as a result of these changes. Many thanks to TRIUMF for the use of their server.

7. 2020 WNPPC Graduate Student Travel Awards

The Canadian Institute of Nuclear Physics (CINP) awarded \$600 graduate student travel awards to the 2020 WNPPC. The applications were evaluated by a committee: Juliette Mammei (Manitoba), Jeff Martin (Winnipeg), and Barry Davids (TRIUMF).

There were 11 applicants, and the top 7 received \$600 each.

Student	Supervisor	WNPPC Talk Title
Melanie Gascoine (SFU)	Krzysztof Starosta (SFU)	Development of multi-detector systems for gamma-ray coincidence measurements
Vijay Kumar (Regina)	Garth Huber (Regina)	Kaon Electromagnetic Form factor
Maedeh Lavvaf (Manitoba)	Russell Mammei (Winnipeg)	Environmental magnetic fields for the neutron electric dipole moment experiment at TRIUMF
Shivani Sharma (Regina)	Gwen Grinyer (Regina)	High-Precision Half-Life measurement of ^{14}O
Steve Sidhu (SFU)	Ruediger Picker (TRIUMF)	Decreasing the measurement time of the neutron electric dipole moment experiment at TRIUMF
Mukhwinder Singh (Saint Mary's)	Rituparna Kanungo (Saint Mary's)	Investigation of resonance states in ^{11}Li
Sean Vanbergen (UBC)	Ruediger Picker (TRIUMF)	A novel technique for ultracold neutron transmission measurements

8. CINP Undergraduate Research Scholarships (URS)

The 2020 competition for the URS was recently completed. The intent of the program is to allow gifted undergraduates to work with a supervisor on nuclear physics research for 16 weeks this summer. The scholarship amount was increased to \$5000, which must be supplemented by the supervisor to a total not less than \$9000. In addition, if the supervisor intends to send the student to a laboratory or work with a second collaborator for an extended period in the summer, the CINP can contribute up to an additional \$1300 to help cover transportation and lodging expenses.

Nine applications received, which were evaluated by a committee: Alexandros Gezerlis (Guelph), Chris Ruiz (TRIUMF) and GH. The top five were selected for a scholarship, of which one was delayed until fall, due to the COVID-19 shutdown. If in future years there are more applicants, we can award up to 7.

Student	Supervisor	Project Title
Kiera Augusto (Winnipeg)	Jeff Martin (Winnipeg)	Cryogenics of a new neutron source
Trang Bui (Manitoba)	Wouter Deconinck (Manitoba)	Simulation of trapped protons from neutron beta decay for the BL3 neutron lifetime measurement at NIST
Spencer Keller (Mt Allison)	Mohammad Ahmady (Mt Allison)	Proper light meson spin structure in light-front holography QCD
Kaitlyn Liang (Toronto)	Makoto Fujiwara (TRIUMF)	Commissioning of ALPHA-g Radial TPC
Emily Rettich (Fraser Valley)	Derek Harnett (Fraser Valley)	Decay rates of the lightest 1^{+} hybrid from QCD Sum Rules

9. Junior Scientist Travel Support Program (JSci)

The goal of the JSci program is to allow graduate students and PDFs to broaden their research horizon and become more mature scientists. Two types of expenditures are supported:



1) Funding to allow graduate students and PDFs to attend specialized workshops and schools not directly related to their research project, and hence not normally funded from their supervisor's NSERC grant. Examples include workshops or training opportunities on the practical applications of subatomic physics detector techniques (e.g. muon tomography in archaeology, medical imaging, etc.), new computer or digitization technologies, advanced computation techniques, or technology transfer training (e.g. patent law, venture capital, etc.).

2) Funding to enable PDFs to present their work at conferences or workshops, so they may receive external recognition for their work, improve their communication skills, and better position them for successful careers in subatomic physics. Conferences and workshops already receiving funds from CINP will not be eligible. Preference will be given to international meetings held either in Canada or abroad.

How to Apply:

The application form can be obtained from the CINP website at: <https://cinp.ca/junior-scientist-travel-support-program-jsci>

Applications are accepted on a continuing basis.

A standing committee consisting of: CINP Executive Director, Chair of the Education & Training SWG, and one representative of the CINP Board will evaluate applications as they are submitted and provide prompt feedback or decision to the applicant (typically within 2 weeks).

The total program funds available for 2020-21 is \$4000 (not counting those already approved).

10. 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 <https://cinp.ca/conference-support>

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.

Upcoming Conferences:

2nd APCTP-TRIUMF Workshop "Understanding nuclei from different theoretical approaches"

Aug 24-28, 2020 @ TRIUMF

The 2nd joint workshop of the Asia Pacific Center for Theoretical Physics (APCTP) and TRIUMF on low-energy nuclear physics brings together practitioners of the various theoretical methods to discuss possible overlaps and cross-fertilizations. We envisage involving theorists working on ab-initio calculations, the Skyrme model, and nuclear phenomenological models, allowing to explore the whole known nuclear chart, and, importantly, expanding beyond the known nuclei, which has applications in the astrophysical theatre. Because all the various theoretical approaches are aimed at describing experimental data, we plan to invite key experimental colleagues to participate in the discussions.

Conference Website:

<https://www.apctp.org/plan.php/apctp-triumf-2020>

14th Nucleus Nucleus Collisions Conference (NN2021)

**July 18 - 23, 2021
@ Whistler, BC**



The NN2021 conference is jointly organized by TRIUMF and Saint Mary's University. It is part of a triennial series with previous meetings held in Asia, Europe, USA, and South America.

The scientific program will be devoted to the latest experimental and theoretical developments in nucleus nucleus collisions with a wide range of topics. The program will consist of invited plenary and parallel session presentations, contributed presentations for parallel sessions and poster presentations. The topics include:

- Fusion and Fission
- Hadron Physics and QCD
- Relativistic Heavy Ion Collisions, QGP
- Equation of State of Neutron-Rich Nuclear Matter
- Nuclear Structure from collisions
- Nuclear Reactions
- Nuclear Astrophysics
- Heavy and Superheavy Elements
- Instrumentation and Facilities
- Applications of Nuclear Science and Technologies

Conference Website:

<https://nn2021.triumf.ca/index.html>

The 2nd APCTP-TRIUMF Joint Workshop "Understanding Nuclei from Different Theoretical Approaches"

August 24 (Mon), 2020 ~ August 28 (Fri), 2020, TRIUMF, Vancouver, Canada

11. CINP Board of Directors

The CINP Institutional Members had their annual meeting via Zoom on May 11. One of the agenda items was to elect two Board members, who are listed below. Their assigned duties will be updated at their next meeting on June 18.

Name	Institution	Email	Term Ends
Michael Gericke	Manitoba	mgericke @ physics.umanitoba.ca	June, 2023
Gwen Grinyer	Regina	gwen.grinyer @ uregina.ca	June, 2021
Sangyong Jeon	McGill	jeon @ physics.mcgill.ca	June, 2022
Rituparna Kanungo	Saint Mary's	ritu @ triumf.ca	June, 2022
Jeffery Martin	Winnipeg	j.martin @ uwinnipeg.ca	June, 2023
Chris Ruiz	TRIUMF	ruiz @ triumf.ca	June, 2021

12. CINP Contact Information

CINP Executive Director:

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

Garth Huber, Ph.D.
CINP Executive Director
c/o University of Regina
306-585-4240
huberg@cinp.ca

CINP Treasurer:

Greg Hackman
TRIUMF
hackman@triumf.ca

CINP Institutional Members:

Saint Mary's University
Mt. Allison University
McGill University
University of Guelph
University of Manitoba
University of Winnipeg
University of Regina
University of Northern British Columbia
TRIUMF

Scientific Working Group Chairs:

Nuclear Structure: Adam Garnsworthy (TRIUMF)

Nuclear Astrophysics: Iris Dillmann (TRIUMF)

Fundamental Symmetries:

Gerald Gwinner(Manitoba)

Hadronic Physics/QCD:

Svetlana Barkanova (Memorial)

Nuclear Education and Training:

Juliette Mammei (Manitoba)

This Newsletter was edited by Garth Huber. Email regarding the content of this newsletter, or suggestions for content in future CINP newsletters should be sent to huberg@cinp.ca