

Canadian Institute of Nuclear Physics Institut canadien de physique nucléaire

Newsletter #18, May 2021

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

Friday, June 11, 2021 (all times EDT)	
Time	Event
	CINP+IPP Joint Session Chaired by M. Roney (IPP) Join Zoom Meeting https://uvic.zoom.us/j/85895599784?pwd=dng3MG5nTDYwWTdHTWpvTytmN2tJdz09 Meeting ID: 858 9559 9784 Password: 541981
11:30	NSERC SAPES Report -- Allison Lister (20+5)
11:55	CFI Report -- Mohamad Nasser-Eddine (10+5)
12:10	TRIUMF Report -- Nigel Smith (20+5)
12:35	SNOLAB Report -- Clarence Virtue (15+5)
12:55	McDonald Institute Report -- Tony Noble (10+5)
13:10	Canadian Subatomic Physics LRP -- Adam Ritz and Brigitte Vachon (25+15)
13:50	General Discussion
14:00	Adjourn

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. The CINP+IPP Joint Session is chaired by the CINP

Executive Director in even-numbered years, and by the IPP Director in odd-numbered years. A particularly important presentation will be by the Canadian Subatomic Physics LRP, where their preliminary recommendations will be shown to the community for the first time.

The CINP AGM will follow the CINP+IPP Joint Session, and has been coordinated with the DNP Business Meeting, which will be held after a short break.

Friday, June 11, 2021 (all times EDT)	
Time	Event
	CINP Annual General Meeting Chaired by G. Huber Join Zoom Meeting https://uregina-ca.zoom.us/j/96410566083?pwd=WUxWNUl1VkpoVGQ2SnEveG4wc3BKZz09 Meeting ID: 964 1056 6083 Passcode: 765804
14:30	
	DNP Annual General Meeting Chaired by C. Andreoiu Join Zoom Meeting https://sfu.zoom.us/j/67722231766?pwd=Y3NEYmFuR0FJbmhSbHJvTU8wWFZYUT09 Meeting ID: 677 2223 1766 Password: 771177
15:30	

2. Welcome to our Two New Institutional Members!

The CINF is pleased to announce the addition of two new institutional members. The Institutional Members are the owners of the CINF and their Delegates are solely responsible for the nomination and election of the Board of Directors. Faculty and Associate Membership in the CINF is free. Institutional Members pay annual dues levied by the Board, which are used to support the operation of the CINF.



Dr. Paul Kench, the Dean of Science of Simon Fraser University, applied for membership on January 11, 2021. Corina Andreoiu has been named by SFU as their official Delegate. SFU has six individual members of the CINF, including two faculty (Andreoiu and Starosta), and four associate members.



Dr. Jeff Keshen, the Vice-President (Grenfell Campus) of Memorial University of Newfoundland, applied for membership on March 4, 2021. Svetlana Barkanova has been named as MUN's official Delegate. Memorial has two faculty members of the CINF (Aleksejevs and Barkanova).

The CINF Institutional Members are listed at the end of this newsletter. If you are interested in having your university apply for membership, please contact the Executive Director (contact info at end of Newsletter).

3. CINF Individual Membership

We are pleased to report that CINF membership numbers are up from last year. Through to May 1, there were 9 new faculty members and 15 new associates. This was partly offset by a loss of 2 faculty and 7 associate members (as part of our regular review process to ensure the roster remains up-to-date), and the transfer of 3 persons between faculty to associate status. The net membership gain is 15.

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://cinf.ca/membership>

or contact Garth Huber for further information.

CINF Individual Membership – May 1, 2021			
Total Membership	144	Nuclear Astrophysics SWG	54
Faculty-class Members	84	Nuclear Structure SWG	58
Associate Members	60	Fundamental Symmetries SWG	63
Experimentalists	109	Hadronic Physics/QCD SWG	50
Theorists	35	Education & Training SWG	40

4. NSERC Support for CINF

NSERC provides funding for many CINF activities through the Subatomic Physics Major Resources Support (SAP-MRS) program. The installment for 2021-22 is \$75,000.



5. Representation and Input to Various Agencies

The CINF 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:

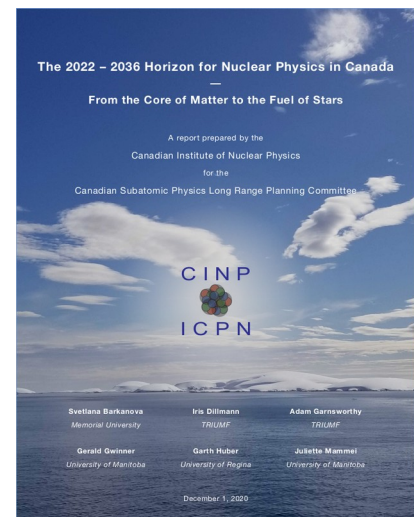
- Every spring, the CINF Executive Director is asked to suggest new members of the NSERC Subatomic Physics Evaluation Section (SAPES), to replace the specific expertise of outgoing members. CINF's suggestions for new members for the 2021-22 competition were sent to NSERC on May 13.
- On behalf of the CINF, the Executive Director wrote a letter of support for nEXO at SNOLAB on May 10.
- The CINF and IPP jointly sent a letter protesting the closure of the Laurentian University physics program on April 15 to Ontario, Federal, and local government officials. The letter was also widely distributed by CAP as an example for people to follow. The closure of the physics program sets a horrible precedent, which we must object to strongly.
- The CINF 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, February 21. Thank you to the many CINF members who provided scientific highlights for the presentation!
- 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 CINF 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 CINF's input, please let Garth Huber know.** The next ACOT meeting is scheduled for November 18-20, 2021.
- Garth Huber is also representing CINF on the Pan-Canadian MRS Resource Coordination Board,

with the goal of improving access to these resources by all SAP-funded researchers. There is an openness to support projects from CINF members. For more information, please visit the CINF website <https://cinp.ca/subatomic-physics-major-resources-support-facilities> or contact the Executive Director.

6. Canadian Subatomic Physics Long Range Plan

The CINF would like to thank all those who contributed to the long range planning document *The 2022-2036 Horizon for Nuclear Physics in Canada: From the Core of Matter to the Fuel of Stars*.

- The process was overseen by the White Report Committee, which consisted of the five Scientific Working Group Chairs and the Executive Director.
- 33 written briefs were received from CINF members, which is up from 28 in 2015. This input is crucial to the formation of the report!
- Two virtual Town Hall meetings were held to gather input, the first on June 22-23 and the second on October 26.
- The final document was submitted to the LRPC on December 1, and is available from: <https://cinp.ca/subatomic-physics-long-range-plan>



7. COVID-19 Impacts on CINP Programs

Not surprisingly, the travel restrictions in place since March 2020 have had a considerable impact upon many CINP programs, and we have had to change plans.

- For the Canadian Undergraduate Physics Conference (CUPC), we upgraded our level of sponsorship and gave a named student prize. For the Winter Nuclear and Particle Physics Conference (WNPPC), we offered enhanced student prizes, four at \$500 each. These were in place of our usual Student Travel programs, which we plan to resume as soon as circumstances allow.
- No Junior Scientist Travel Support or Conference Support funds were spent. In the case of the conferences, several of the applications have been carried forward, for when in-person conferences can resume.
- One Undergraduate Research Scholarship (URS) for summer 2020 was delayed, in the hope that planned lab travel could resume later in 2020. Eventually it was determined that travel could not occur and the scholarship was taken in winter 2021.
- Other travel expenses, such as for CINP Long Range Plan report writing, and Executive Director travel, were greatly reduced.
- The CINP has a multi-year budget plan, where any unexpended funds will be used to enhance current programs when circumstances allow.

8. CINP Undergraduate Research Scholarships (URS)

The 2021 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 is \$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.

Ten applications were received, which were evaluated by a committee: Juliette Mammei (Manitoba), Chris Ruiz (TRIUMF) and GH. The top six were selected for a scholarship, of which two plan to use the travel supplement, if circumstances allow.

Student	Supervisor	Project Title
Kiera Augusto (Winnipeg)	Jeff Martin (Winnipeg)	Fiber optic magnetometer for TUCAN EDM experiment
Gabriel Desmarais (Saint Mary's)	Greg Christian (Saint Mary's)	Spectroscopic factors of excited states in ^{24}Na and their relevance for the $^{23}\text{Mg}(p,\gamma)^{24}\text{Al}$ reaction in classical novae and type-1 X-ray bursts
Monica Figueroa (Alberta)	Andrzej Czarnecki (Alberta)	Decays of pionic atoms resulting in a muonic atom
Emma Klemets (McGill)	Thomas Brunner (McGill)	Optimization of the nEXO muon veto
Colby O'Keefe (Saint Mary's)	Rituparna Kanungo (Saint Mary's)	Investigation of structure of neutron-rich nuclei
Hrishikesh Patel (UBC)	Jason Holt (TRIUMF)	Ab-initio calculations of atomic systems for major problems in nuclear physics

9. CINP Graduate Fellowship

A new initiative for 2021 is the Graduate Fellowship program, which is a single \$12,000 scholarship to a PhD student of high merit. In addition to academic and scientific criteria, the Fellowship award application has an Equity-Diversity-Inclusion (EDI) component, where applicants wrote a 1 page description of what role a PhD student and Graduate Fellow can play in promoting and advancing EDI in our community.

14 applications were received, so the competition was very tight. The applications were reviewed by the committee: Gwen Grinyer (Regina), Svetlana Barkanova (Memorial), and David Hornidge (Mount Allison).

The CINP is pleased to announce that Jessica Churchill (McGill) has been selected to receive the 2021 Graduate Fellowship. After graduating Magna Cum Laude with a B.Sc. in Honours Physics from Saint Mary's University in 2016, J. Churchill then completed a M.Sc in Theoretical Nuclear Physics at McGill in 2018, with thesis title "Photons and Dileptons as Probes of Early-Time Dynamics in Relativistic Heavy-Ion Collisions". The Fellowship will allow this work to be further extended, under the supervision of Charles Gale (McGill). We expect to present a short report on the research progress in the May 2022 CINP Newsletter.

We thank the many students who applied for the Fellowship, and the many people who wrote letters. CINP anticipates being able to expand the program to two \$12,000 fellowships in future years.

10. Scientific Working Groups (SWG)

Following input received at the June Town Hall meeting, the Terms of Reference for the Education & Training SWG were amended to include an EDI component. Thanks to SWG Chair Juliette Mammei for this initiative.

During the White Paper writing, the idea of a Nuclear Theory SWG was discussed. Following input received from nuclear theory faculty members of CINP, it was agreed that the level of interest was sufficiently high to create the group. So far, 17 faculty members have joined the group. CINP is pleased to announce that Alexandros Gezerlis (Guelph) has been elected as the Chair.

For more information on the SWGs, please visit: <https://cinp.ca/scientific-working-groups>

11. 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 to 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.

The total program funds available for 2021-22 are \$7000.

12. Junior Scientist Travel Support Program (JSci)

The goal of the JSci program is to allow graduate students and PDFs to broaden their research horizons 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, such as workshops or training opportunities on the practical applications of subatomic physics detector techniques, new computer or digitization technologies, advanced computation techniques, or technology transfer training.

2) Funding to enable PDFs to present their work at conferences or workshops. 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 2021-22 are \$6000.



13. CINP Board of Directors

The CINP Institutional Members had their annual meeting via Zoom on May 21. 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 in early June.

Name	Institution	Email	Term Ends
Michael Gericke	Manitoba	mgericke @ physics.umanitoba.ca	June, 2023
Gwen Grinyer	Regina	gwen.grinyer @ uregina.ca	June, 2024
Sangyong Jeon	McGill	jeon @ physics.mcgill.ca	June, 2022
Rituparna Kanungo	Saint Mary's	ritu @ triumph.ca	June, 2022
Jeffery Martin	Winnipeg	j.martin @ uwinnipeg.ca	June, 2023
Chris Ruiz	TRIUMF	ruiz @ triumph.ca	June, 2024

14. 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:

Memorial University of Newfoundland
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
Simon Fraser University
TRIUMF

Scientific Working Group Chairs:

Fundamental Symmetries:

Gerald Gwinner (Manitoba)

Hadronic Physics/QCD:

Svetlana Barkanova (Memorial)

Nuclear Astrophysics: Iris Dillmann (TRIUMF)

Nuclear Education and Training:

Juliette Mammei (Manitoba)

Nuclear Structure: Adam Garnsworthy (TRIUMF)

Nuclear Theory: Alexandros Gezerlis (Guelph)

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