Canadian Institute of Nuclear Physics
Institut canadien de physique nucléaire

Newsletter #14, May 2019

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 Sessions at the CAP 2019 Congress

As is now customary, the CINP and IPP are hosting a joint session at the CAP Congress at Simon Fraser University in Burnaby, BC. As last year, the CINP sessions are planned near the end of the Congress, following the Vogt Medal talk. Please plan your travel accordingly.

Thursday, June 6, 2019	
Time	**Event**
7:00	**CINP Breakfast Board Meeting** (by invitation only)
9:15	**CAP-TRIUMF Vogt Medal talk**
9:45	**CAP-CRM Prize talk**
10:15	**Health Break**
	CINP+IPP Joint Session
10:45	NSERC SAPES Report -- Brigitte Vachon (20+5)
11:10	CFI Report -- Olivier Gagnon (15+5)
11:30	TRIUMF Report -- Jonathan Bagger (20+5)
11:55	SNOLab Report -- Nigel Smith (15+5)
12:15	**CINP Annual General Meeting** (be sure to select your lunch option)

2. 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, expenses for the Long Range Plan, and other initiatives. The CINP MRS grant was renewed for 5 years in the 2015 competition, and the installment for 2019-20 is $48,000.

CINP will be preparing a new MRS grant application this fall, covering the years 2020-25. Your suggestions for the application are welcome!

NSERC CRSNG

3. 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 2020-21 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 and IPP submitted joint input to the *European Strategy for Particle Physics 2020,* based on the recommendations of the most recent subatomic physics long range plan. You may download a copy from: http://cinp.ca/node/218

- 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, February 24, 2019 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, CFI and CANARIE, as well as the Assistant Deputy Minister, Science and Research Sector, at Innovation, Science and Economic Development Canada (ISED). The meetings discussed the needs of Subatomic Physics High Performance Computing (HPC) given the government's planned phase-out of Compute Canada as part of its new Digital Research Infrastructure plan, follow last year's Fundamental Science Review. We also discussed with NSERC our concerns on how the new funds announced in the 2018 budget are being allocated, particularly to the SAP envelope.

- After further consultations with High Performance Computing (HPC) users, a joint CINP-IPP submission was sent to ISED in late April. A copy is available on the CINP website at: http://cinp.ca/node/218 Following the submission of our document, we were informed by ISED of efforts by Universities Canada and the U15 consortium of research universities to put forth a proposal to run the new organization that would eventually replace Compute Canada.

- 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.

- Rituparna Kanungo (CINP President) made a presentation on the Canadian nuclear physics program at the NuPECC meeting in February.

- 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 meeting of ACOT is scheduled for November 14-15, 2019 in Vancouver.

4. CINP Web Server www.cinp.ca

The CINP website was recently transferred from the University of Regina to TRIUMF. Members will hopefully notice an improvement in connection speed, as well as the more consistent URL domain.

Many thanks to Zisis Papandreou (Regina) for providing webserver management since 2010. Thanks also to Chris Ruiz (TRIUMF) for working with the web service provider on the transfer.

5. CINP Individual Membership

CINP membership numbers are up slightly from last year. There was an increase of 4 in the number of faculty members, due to two new people joining CINP and two formerly associate members gaining faculty positions. Associate memberships are reviewed every 3 years; 3 were removed from the roster due to leaving the field, and 2 transferred to faculty-level. This was offset by the addition of 5 new people, total Associate memberships are unchanged from last year.

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/node/19

or contact Garth Huber for further information.

CINP Individual Membership – May 2, 2019			
Total Membership	118	Nuclear Astrophysics SWG	43
Faculty-class Members	76	Nuclear Structure SWG	47
Associate Members	42	Fundamental Symmetries SWG	47
Experimentalists	88	Hadrons/QCD SWG	43
Theorists	29	Education & Training SWG	41

6. CINP Treasurer Announcement

Iris Dillmann has requested her term as CINP Treasurer to finish at the end of the current NSERC grant. Greg Hackman (TRIUMF) has been appointed as Treasurer-Elect. He will work with GH on CINP's new NSERC application this fall, and take over full Treasurer duties starting April 1, 2020.

Many thanks to Shirley Reeve (formerly of TRIUMF), who is working with Iris Dillmann on putting together improved financial templates to be used in our annual filings with the federal government.

7. Scientific Working Group Review

The CINP bylaws require that the activities and leadership of every Scientific Working Group (SWG) be reviewed by the Board of Directors every 5 years. The leadership portion of this review is now completed.

Four of the five SWG Chairs had indicated a willingness to stay on for another term. GH is pleased to report that he received several messages of support in favor of the current Chairs. However, there were no further nominations. They have been renewed by the CINP Board for a further 5 year term.

Charles Gale (McGill) has served as the Chair of the Hadrons/QCD SWG for the last 10 years. He believes that it is time for new leadership for the SWG. Charles has done a great job, and we thank him very much for his service to both the SWG and the CINP.

We would also like to thank the many members of the Hadrons/QCD SWG for bringing forward possible names for consideration as Chair. We are pleased to announce that Svetlana Barkanova (Memorial) has been nominated, and she has accepted the nomination.

Working Group	Chair	Institution	Email
Education & Training	Juliette Mammei	Manitoba	jmammei @ physics. umanitoba.ca
Fundamental Symmetries	Gerald Gwinner	Manitoba	gwinner @ physics. umanitoba.ca
Hadrons /QCD	Svetlana Barkanova	Memorial	sbarkanova @ grenfell. mun.ca
Nuclear Astrophysics	Iris Dillmann	TRIUMF	dillmann @ triumf.ca
Nuclear Structure	Adam Garnsworthy	TRIUMF	garns @ triumv.ca

We are pleased with the renewed committee of SWG Chairs and we look forward to working closely with them on important tasks, such as the new NSERC MRS grant application this fall, and the next CINP Brief to the NSERC Subatomic Physics Long Range Planning Committee in 2020.

8. 2019 WNPPC Graduate Student Travel Awards

The Canadian Institute of Nuclear Physics (CINP) awarded $600 graduate student travel awards to the 2019 WNPPC. The applications were evaluated by a committee: Dr. Michael Gericke (Manitoba), Dr. Sangyong Jeon (McGill), and Garth Huber.

There were 10 applicants, but travel grants could only be given to the first six qualified applicants. Due to weather issues, one of the recipients could not make their flight to the conference, and the award was given to the first alternate selected by the committee. The top six ranked applicants were:

Student	Supervisor	WNPPC Talk Title
Tegan Beattie (Regina)	Zisis Papandreou (Regina)	Analysis of Major Decay Channels of the η(548) and η'(958) for GlueX
Wolfgang Klassen (Manitoba)	Jeff Martin (Winnipeg)	Magnetometry and magnetic-field decomposition for TUCAN nEDM experiment
Bryn Knight (Guelph)	Liliana Caballero (Guelph)	Degenerate neutron capture within neutron star crusts with TALYS
Marilena Lykiardopoulou (UBC)	Ania Kwiatkowski (TRIUMF)	Mass Measurements of Neutron-Deficient Ytterbium
Tsvetelin Totev (McGill)	Thomas Brunner (McGill)	Measurement of Cherenkov Radiation in Liquid Xenon
Shihao Wu (Memorial)	Aleksandrs Aleksejevs (Memorial)	Next-to-Leading Order Dilepton Production Calculations

9. CINP Undergraduate Research Scholarships (URS)

The 2019 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 is for $4000, which must be supplemented by the supervisor. 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.

Eleven applications received, which were evaluated by a committee consisting of: Elie Korkmaz (UNBC), Juliette Mammei (Manitoba), Chris Ruiz (TRIUMF). The caliber of the competition was very good, and we regret that we were only able to award scholarships to the following five students. We believe we have a good case to ask for increased funding for this program in the upcoming NSERC application.

Student	Supervisor	Project Title
Antoine Belley (McGill)	Jason Holt (TRIUMF)	Ab-initio theory for neutrinoless double beta decay nuclear matrix elements
Jenna Chisholm (Mt Allison)	David Hornidge (Mt Allison)	Compton scattering studies at the Mainz Microtron
Mario Tovar (McMaster)	Fujiwara Makoto (TRIUMF)	Development for machine learning based analysis for the ALPHA-g time projection chamber
Yilin Wang (McGill)	Thomas Brunner (McGill)	Gas-dynamic calculations for the development of an RF-ion funnel for EXO
Connor Waterfield (Saint Mary's)	Rituparna Kanungo (Saint Mary's)	Investigation of unbound open quantum systems beyond the neutron drip-line

10. Junior Scientist Travel Support Program (JSci)

The goal of the CINP Junior Scientist Travel Support Program is to allow graduate students and PDFs to broaden their research horizon and become more mature scientists. Initially, the program supports two types of expenditures:

1) 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.

The applicant is expected to make their case for funding according to the training or scientific opportunity that will be enabled by the travel, the quality of the applicant, and the need for funds.

Available Funds:

Following the successful roll-out of this program last year, the funds available for 2019-20 has been increased to $10,000. We anticipate the typical award to be: $1500-2500 for application type 1, $500-$1000 for application type 2. The applicant is encouraged (but not required) to use the CINP support to leverage additional sources of funding.

Applications are accepted on a continuing basis. So far, we have approved 1 award for fiscal year 2019, with $9000 remaining to be spent by March 31, 2020.

How to Apply:

The application form can be obtained from the CINP website at:

http://cinp.ca/node/565

Submit your application to the CINP Executive Director at huberg@cinp.ca at least 2 months (preferably even earlier) before the expected date of travel. 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).

JSci Awards for Fiscal Year 2018		
Junior Scientist	**Supervisor**	**Proposal**
Ahmed Foda (Regina)	Zisis Papandreou (Regina)	Type 1 – INFN School of Statistics, Salemo, Italy ($2000)
Mukut Kalita (TRIUMF)	Gerald Gwinner (Manitoba)	Type 2 - Towards parity nonconservation measurements in francium, SSP2018, Aachen, Germany ($771)
Florian Kuchler (TRIUMF)	Jeff Martin (Winnipeg)	Type 2 – Overview on searches for electric dipole moments, ICNFP, Kolymbari, Greece ($1000)
Yan Li (McGill)	Charles Gale (McGill)	Type 2 – Fluid dynamics of out of equilibrium boost invariant plasmas, ICUNNC, Venezia, Italy ($1000)
Ryohei Matsumiya (TRIUMF)	Jeff Martin (Winnipeg)	Type 2 – Cryogenic design for TUCAN's new UCN source, APS-DNP, Hawaii ($1000)
Wolfgang Schreyer (TRIUMF)	Jeff Martin (Winnipeg)	Type 2 – Producing ultracold neutrons with a spallation source and superfluid helium, APS-DNP, Hawaii ($1000)

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 its members.

Application forms for external conference support are available from http://cinp.ca/node/22

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.

12. CINP Board of Directors

The CINP Institutional Members had their annual meeting via teleconference on May 10. One of the agenda items was to elect two Board members. The new Board is listed below. The assigned duties will be updated at their next meeting during the CAP Congress in June.

Name	Institution	Email	Term Ends
Michael Gericke	Manitoba	mgericke @ physics. umanitoba.ca	June, 2020
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, 2020
Chris Ruiz	TRIUMF	ruiz @ triumf.ca	June, 2021

13. 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:

Iris Dillmann
TRIUMF
dillmann@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)
Hadron Structure/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