



# Canadian Institute of Nuclear Physics Institut canadien de physique nucléaire

## November 2017 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 (2017-18)

The CINP Institutional Members had their annual meeting via teleconference on May 11. One of the agenda items 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
Michael Gericke	University of Manitoba		mgericke@physics.umanitoba.ca	June, 2020
David Hornidge	Mt. Allison University		dhornidge@mta.ca	June, 2018
Sangyong Jeon	McGill University	Secretary	jeon@physics.mcgill.ca	June, 2019
Rituparna Kanungo	Saint Mary's University	President	ritu@triumf.ca	June, 2019
Jeffery Martin	University of Winnipeg	Vice-President	j.martin@uwinnipeg.ca	June, 2020

We thank outgoing members Gerald Gwinner and Jens Dilling for many years of service on the CINP Board. Gerald will continue as Fundamental Symmetries SWG Chair, in addition to his new role as Chair of the DNP. Jens resigned in October due to his responsibilities at TRIUMF, and the Institutional Members have decided to keep this seat vacant until their next regular meeting in May, 2018.

### 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 2017-18 is \$45,000.



### 3. 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 and forthcoming activities include:

- The CINP Executive Director and Board wrote letters to Prime Minister Trudeau, the Ministers of Science, ISED and Finance on July 17, to encourage them to accept the recommendations of the *Advisory Panel for the Review of Federal Support for Fundamental Science*, including in particular the recommended funding increases for discovery-based science. For more information on the recommendations of this review (commonly known as the Naylor Report), please visit <http://sciencereview.ca/>

## INVESTING IN CANADA'S FUTURE

Strengthening the Foundations of Canadian Research



- We received responses from all of the Ministers' Offices, with the longest one being from Kirsty Duncan, the Minister of Science, on September 13, whose letter included: *“I am very pleased with the thorough work of the Advisory Panel on Federal Support for Fundamental Science, and I am in agreement with the majority of its recommendations. For example, I agree that we should strengthen coordination and governance in administering funding; ensure access to funding for our younger researchers; continue to support equity and diversity in academia; and make the research system more nimble in helping researchers to seize new scientific opportunities.”*
- On July 21, we also submitted input to the House of Commons Finance Committee pre-budget consultation, to urge the federal government *“to implement, as soon as possible, and at the highest priority”* the recommendations of the Naylor Report. Further to this, the CINP Executive Director, Garth Huber, was invited to appear in person before the finance committee in Saskatoon, SK on October 3, where he fielded questions from several of the MP's present on the benefits of implementing the recommendations of the report.
- The CINP and IPP presented the joint document on *The Context and Environment of Canadian Subatomic Physics Research at Canadian Universities* to the Subatomic Physics Evaluation Section (SAPES) at their October 24 fall policy meeting. This document is needed because many SAPES members are not very familiar with the Canadian research funding process and the research environment at Canadian universities. We would like to thank the many CINP members for providing updated information for this document over the last several months. The updated report can be downloaded from: <http://cinp.phys.uregina.ca/node/219>
- The CINP 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 Monday, January 29, 2018 at NSERC headquarters in Ottawa. **Please send information on your significant 2017 research highlights, new research capabilities, or honors received, to the CINP Executive Director, Garth Huber, who will prepare the presentation from your submissions and relevant information from the Subatomic Physics Long Range Plan.**

#### 4. 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.

#### 5. Winter Nuclear and Particle Physics Conference (WNPPC 2018)



The 54th Winter Nuclear and Particle Physics Conference (WNPPC) will take place February 15-18, 2017, in Mont Tremblant, Quebec. The Winter Nuclear and Particle Physics Conference 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.

Important dates to consider:

January 5, 2018: Early registration deadline - early registration is free for students;

January 15, 2018: Hotel room booking deadline - rooms will start to be released after this date;

January 15, 2018: Abstract submission deadline.

The meeting runs from Thursday February 15 to Sunday February 18. Participants should arrive Wednesday evening, February 14h or Thursday afternoon, February 15th -- there will be a Thursday evening session, followed by a Reception. Friday and Saturday will have morning and evening sessions, leaving the afternoon free to enjoy Mont-Tremblant's activities. There will be a Conference Banquet on Saturday night. Sunday will have only a morning session. Plan your travel accordingly. For more details please consul the conference web site <http://wnppc.triumf.ca>

#### **2018 WNPPC Graduate Student Travel Awards**

The Canadian Institute of Nuclear Physics (CINP) is making available up to six graduate student travel awards to the 2018 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 15.** **For more information and application forms, please visit: <http://cinp.phys.uregina.ca/node/180>**

## 6. Undergraduate Student Conference Support

The CINP awarded four \$500 travel grants to support undergraduate students giving talks on nuclear physics related projects at the 2017 Canadian Undergraduate Physics Conference (CUPC) held at Carleton University in Ottawa, ON on October 20-24, 2017. The applications were evaluated by: Drs. Juliette Mammei (Manitoba), Sangyong Jeon (McGill) and Adam Garnsworthy (TRIUMF).

Student	Supervisor	CUPC Talk Title
Bo Leng (Alberta)	Andrzej Czarnecki (Alberta)	Computer simulations of tetron four-quark states
Alexandre Mamaev (McGill)	John Crawford (McGill)	Laser stabilization using spectroscopy of stable rubidium
Thanh Nguyen (McGill)	Thomas Brunner (McGill)	Status of the nEXO $^{136}\text{Xe}$ isotope neutrinoless double beta decay experiment
Maeve Wentland (Mt. Allison)	David Hornidge (Mt. Allison)	Neutron Scalar Polarizabilities: Background Simulations for Experimental Extraction via Compton Scattering

All students were asked to acknowledge the financial support by the CINP in their presentation.

## 7. Registration open for Excellence in Detector Instrumentation and Technology School, March 5-16, 2018

(submitted by Marcello Pavan)

The Excellence in Detector and Instrumentation Technologies (EDIT) school take place at Fermilab, Batavia, IL. The School is being organized by the Fermi National Laboratory, with participation from TRIUMF and the Canadian Centre for Particle Astrophysics (CPARC).



EDIT will train High Energy/Nuclear Physics graduate students and post-docs in a wide variety of techniques in particle detection through an in-depth plenary lecture each day on the physics of detectors, followed by six-hours of hands-on training. The the students will be placed into 4 groups and after 2 days of this advanced training, the groups rotate to a different station. Stations will cover techniques in: Photodetection, Silicon Tracking, Neutrino Detection and Test Beam. The first and last days will have special displays, with representatives of industry showing their latest technology. See <http://edit2018.fnal.gov> for registration and course details.

This school is a great opportunity for your students and post-docs to get in-depth training to prepare them for their experimental careers. CINP has granted \$2000 of travel funding to the school organizers for eligible students at Canadian universities working on nuclear physics research. Application deadline is Dec 8. Please contact Marcello Pavan at [marcello@triumf.ca](mailto:marcello@triumf.ca) for more information on this funding opportunity.

## 8. CINF Sessions at the CAP 2018 Congress

As is now customary, the CINF and IPP are hosting a joint session at the CAP Congress at Dalhousie University in Halifax, NS. Note that there are expected to be some significant changes to the CAP Congress timetable, and as a result, the CINF sessions will now be near the end of the Congress, instead of our usual time on Monday. Please plan your travel accordingly.

Time	Event
<b>Thursday, June 14, 2018</b> (to be confirmed)	
<b>7:30</b>	<b>CINF Breakfast Board Meeting</b> (by invitation only)
<b>10:30</b>	<b>CAP-TRIUMF Vogt Medal talk</b>
<b>11:00</b>	<b>Coffee (15)</b>
<b>11:15</b>	<b>CINF+IPP Joint Session</b> (with lunch)
<b>13:15</b>	<b>CINF Annual General Meeting</b>



## 9. Obituary: John M. D'Auria (submitted by Dave Hutcheon and Colin Jones)

John D'Auria (1939-2017) earned his Ph.D. in Nuclear Science at Yale in 1966, with nuclear spectroscopy as his specialty. Following a post-doctoral fellowship at Columbia University, he was appointed as Assistant Professor in Chemistry at Simon Fraser University in 1967. The Department had established nuclear science at the outset as a teaching and research program, given the anticipated emergence of TRIUMF. John participated in the early planning of the TRIUMF laboratory.

Following a sabbatical at CERN/ISOLDE in 1975-76, John committed himself to the construction at TRIUMF of a facility for production and on-line separation of short-lived radioisotopes. He led a group that (with modest funding and much resourcefulness) built the TISOL on-line facility. Most notable among TISOL experiments was "Red Giant", that used beta decay of a Nitrogen-16 beam to study a reaction of prime importance in astrophysics, the capture of alpha particles by Carbon-12. Ready availability of alkali beams at TISOL was key in launching a program for study of beta decays in neutral atom traps (TRINAT).

The success of TISOL led directly to the construction of ISAC I, with the capability of being able to accelerate radioactive ions separated on-line to energies of interest for nuclear astrophysics. John was grant holder and project leader for design and construction of the flagship experimental facility of ISAC I, the DRAGON mass separator. Under John's leadership, DRAGON became the world's premier facility for study of radiative capture using radioactive beams. DRAGON gave training to many students and post-doctoral fellows.

John retired from SFU in 2004 as Professor Emeritus, but continued research that combined mass separators with his long-standing interest in medical applications for radioisotopes. In recognition of his outstanding contributions to the field of nuclear science and the major developments at TRIUMF, John was elected a Fellow of the American Physical Society in 2016.

John brought enthusiasm and excitement to any project or experiment. He created a worldwide network of collaborators and former students in the nuclear astrophysics community. ISAC has opened up new fields of study not only in nuclear astrophysics, but also in nuclear structure, tests of the standard model and in unique applications in condensed matter physics.

In May of 2017 John was diagnosed with ALS. After a brief but very courageous fight, he died October 22, 2017. John is survived by his wife, Jacquie, his children Ellen and Geoffrey and his grandsons Aidan and Jonah.

## **10. CINP Contact Information**

### **CINP Executive Director:**

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

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University of Manitoba  
University of Regina  
TRIUMF

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University of Guelph  
University of Winnipeg  
University of Northern British Columbia

*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*