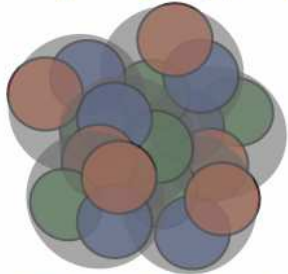


C I N P



I C P N

**Canadian Institute of
Nuclear Physics**

**Institut canadien de
physique nucléaire**

2023 Individual Members AGM

June 22, 2023

University of New Brunswick, Fredericton, NB

Agenda

1. **Executive Director's report**
2. **Financial Report**
 - Prepared by Greg Hackman
3. **Discussion Items**
4. **Comments and Suggestions from Membership**
5. **Adjourn**

What is the CINP?



- The 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.
 - Federally incorporated under the Canada Not-for-profit Corporations Act.
- Represents researchers covering all aspects of experimental and theoretical nuclear physics. Co-ordinates planning on a national scale and exchanges information within and between the various sub-fields of nuclear physics.
- Leads initiatives to strengthen the level and quality of nuclear physics research in Canada, including fellowships, undergraduate research scholarships, student travel awards, and targeted conference support.

CINP Membership Classes



INDIVIDUAL MEMBERS

- Open to any resident of Canada who has sufficient training and competence in the discipline of Nuclear Physics to enable the individual to play a significant role in the activities of the Institute.
- No dues or assessments.

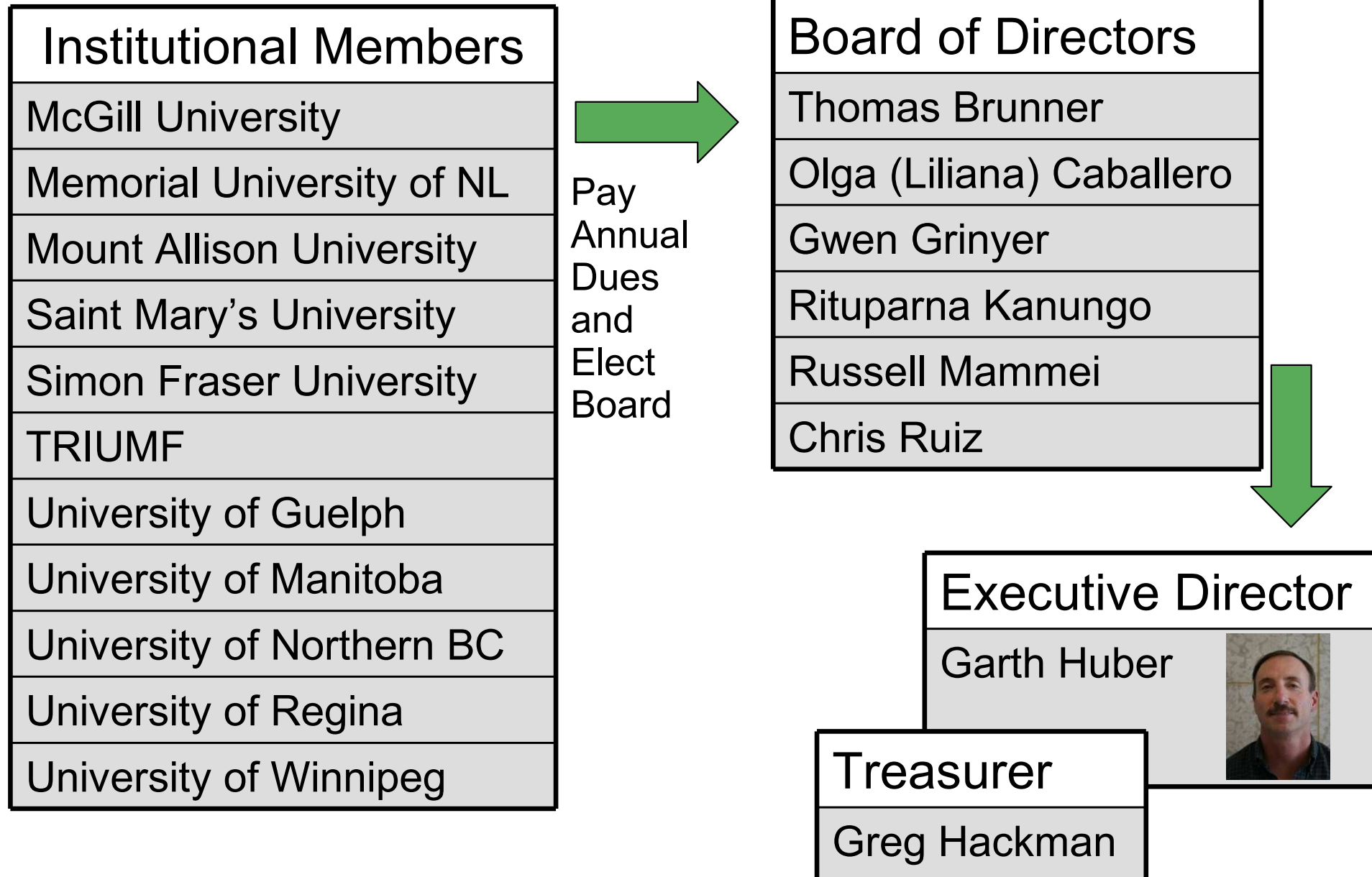
INSTITUTIONAL MEMBERS

- Universities and laboratories which are actively involved in academic research in Nuclear Physics.
- Meet annually to elect the Directors of the Institute.
- Must pay annual dues as levied by the Board of Directors.

AFFILIATE MEMBERS

- Industrial corporations, charitable organizations, etc. with staff members who have expertise in Nuclear Physics.
- Recognition will be based on annual donations.
- Qualified staff members permitted to attend Institute activities.

CINP Governance



Our thanks to:

- **Thank you to Jeffery Martin (Winnipeg) and Michael Gericke (Manitoba) who are stepping down from the CINP Board**
 - JM: Three terms as Board member (2014-23)
 - MG: Two terms as Board member (2017-23)
- Please welcome incoming Board members Liliana Caballero (Guelph) and Russell Mammei (Winnipeg), who were elected at the CINP Institutional Members meeting on May 18
- **The Institutional Members are the owners of the CINP, and have a significant say in CINP policy through the Board**
 - It's highly desirable to have a regular rotation of CINP members on the Board, and for as wide representation as possible
 - If your university is not yet listed, please consider joining us!

CINP Individual Membership

- **Small growth in membership in last year**
 - Net gain of 3 members since last year
 - 8 new Associate Members offset by net loss of 6 due to finding permanent positions outside Canada or leaving field
 - 3 new Faculty Members, offset by loss of Pearson (TRIUMF) and Muecher (Guelph)

New Faculty Members:

E. McDonough (Winnipeg)
S. Longo (Manitoba) K. Shiells (Manitoba)

Assoc to Faculty:

G. Vujankovic (Regina)

Faculty to Assoc:

J. Dilling (TRIUMF)

New Associate Members:

B. Blaikie (Manitoba)	J. Moazam (Manitoba)
L. Jokiniemi (TRIUMF)	A. Postuma (Regina)
J. Rojo (TRIUMF)	B. Quni (Manitoba)
I. Hallovic (Manitoba)	Y. Wang (UBC)

	Now	1 Year Ago	Change
As of May 1, 2023			
Faculty Level	87	86	+1
Associate	86	84	+2
Experiment Major Interest	127	127	0
Theory Major Interest	44	41	+3

Scientific Working Groups



Working Group	Members	Chair
Nuclear Astrophysics	70	Iris Dillmann (TRIUMF)
Nuclear Structure	75	Adam Garnsworthy (TRIUMF)
Fundamental Symmetries	79	Gerald Gwinner (Manitoba)
Hadrons/QCD	58	Svetlana Barkanova (Memorial)
Nuclear Theory	32	Alex Gezerlis (Guelph)
Nuclear Physics Education & Training	54	Juliette Mammei (Manitoba)

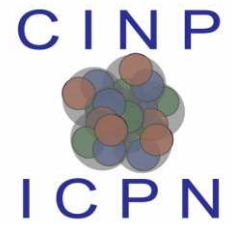
SWG Chair Duties:

- be main point-of-contact for SWG membership
- help facilitate CINP scientific program, e.g. contribute material to or suggest authors for the CINP website and newsletter, and help organize workshops
- help write the CINP Brief for input to the NSERC Subatomic Physics Long Range Plan, and to provide input on other CINP activities, such as the annual presentation at NSERC Large Projects Day and the AGM
- act as an advisor to the CINP Executive Director on related scientific issues, funding, and long range planning

- **Nuclear Physics Representation**

- The CINP is vital in giving the nuclear physics research community a coherent and strong voice
- CINP presentation at SAPES Fall Orientation Session on Dec 12, and observer at Large Project Day
 - Large Project Day is now entirely *in-camera*
- NP Community Representative at Advisory Committee on TRIUMF (ACOT), spring and fall annually
 - In person meetings have resumed
- Nigel Smith (TRIUMF Dir) has instituted a regular set of meetings with ED of CINP, IPP, McDonald Inst
- Pan-Canadian MRS Coordination Board
- Formal observer to NuPECC (Nuclear Physics European Collaboration Committee)

CINP 2022–23 Accomplishments



• Community Outreach

- CINP facilitates new connections and allows the disparate Canadian nuclear physics community to develop a common identity
- CINP website <http://cinp.ca/> content added regularly
- 2 Newsletters annually



Canadian Institute of Nuclear Physics
Institut canadien de physique nucléaire

Newsletter #19, November 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. CINP Board of Directors (2021-22)

The CINP Institutional Members had their annual meeting via teleconference on May 21, 2021. This was the first meeting that included our two new institutional members, SFU and MUN. One of the agenda items was to elect two Board members. There were no changes in Board membership, as both Gwen Grinyer and Chris Ruiz were re-elected to new 3 year terms.

The 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, 2023
Gwen Grinyer	University of Regina		gwen.grinyer@uregina.ca	June, 2024
Sangyong Jeon	McGill University	Secretary	jeon@physics.mcgill.ca	June, 2022

2. SAPES Large Project Day Changes

Large Project Day is an important event at the start of NSERC competition week. Traditionally, the day is divided into two parts, with presentations by CINP, IPP, TRIUMF, SNOLAB, Perimeter, McDonald, CFI, LRPC in the morning, and presentations by the principal investigators of large proposals (requesting an average of \$500k/yr or more) in the afternoon.

To reduce their workload on this long day, the Subatomic Physics Evaluation Section (SAPES) has decided to move the first half of Large Project Day to a separate meeting in December (date not yet finalized). SAPES feels that having the input from the community institutes and laboratories prior to their reading the grant applications will help them gain a better perspective of the Canadian subatomic physics research environment. Thus, the traditional CINP presentation on The Breadth of Canadian Nuclear Physics Research at SAPES Large Projects Day is now in December rather than February.

The screenshot shows the CINP website homepage. At the top left is the CINP ICPN logo. To its right is the text "Canadian Institute of Nuclear Physics" and "Institut Canadien de Physique Nucléaire". Below this is a navigation menu with links for Home, About CINP, Nuclear Physics, Programs, Outreach, Membership, and Governance. The main content area is divided into several sections: "Information and News" with links for Jobs/Announcements, Newsletters, Conference Support, AGM slides, and CINP White Papers; "Scientific Working Groups" with links for Overview, Nuclear Astrophysics, Nuclear Structure, Fundamental Symmetries, Hadronic Physics/QCD, and Education and Training; and "Important Links" with links for Subatomic Physics Long Range Plan, NSERC News, SAPES Chair Reports (2010-), GSC-19 Chair Reports (2001-09), and IUPAP Working Group WG.9. On the right side of the page is a large photograph of the GRIFFIN detector, a complex piece of scientific equipment with many colorful components. Below the photo is the caption "GRIFFIN with DESCANT and SCEPTAR". At the bottom of the page is a footer with the same text as the newsletter: "The Canadian Institute of Nuclear Physics 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."

- **CINP Undergraduate Research Scholarships (URS)**

- A supervisor can nominate only their best student for the award.
- \$5.5k student stipend which must be matched by supervisor to at least \$9.5k
- \$1300 travel supplement available if the supervisor intends to send the student to a laboratory or to work with a second collaborator for an extended period

- **CINP URS is complementary to the NSERC USRA in several key aspects:**

- 1) Gifted international students studying in Canada are eligible to apply for the CINP URS, but not the NSERC USRA
- 2) An important element of the URS is the optional Travel Award, which allows the supervisor to send student to a lab or work with second collaborator for an extended period. This can have a significant impact on the quality of the research experience for some undergrads. The NSERC USRA has no such component.

CINP 2022–23 Accomplishments



2023 CINP Undergraduate Research Scholarships

Student	Supervisor	Project Title
Bui Trang (Manitoba)	Savino Longo (Manitoba)	Ultracold neutron detector for the TUCAN experiment at TRIUMF
Jason Froats (Guelph)	Paul Garrett (Guelph)	Study of beta–decay of ^{110}Ag to ^{110}Cd with GRIFFIN spectrometer
Gabriela Gelinas (Calgary)	Michael Wieser (Calgary)	Development of laser ablation source to assess ^{222}Rn exposure in biological materials
Laura Hubbeert (Mt Allison)	David Hornidge (Mt Allison)	Elastic Compton scattering from ^{12}C with the CATS detector
Zachary Saunders (Saint Mary's)	Ritupana Kanungo (Saint Mary's)	Viewing Borromean nuclei with transfer reactions
Zu Ying Yu (SFU)	Krzysztof Starosta (SFU)	Fusion–evaporation reaction rate predictions for TIGRESS and TIGRESS integrate plunger measurements

- **10 applications were received**
- **Selection Committee: Juliette Mammei (Manitoba), Adam Garnsworthy (TRIUMF), GH**

• CINP Graduate Fellowship

- Program began in 2021
- Two \$12,500 fellowships to PhD student of high merit
- In addition to academic and scientific criteria, the application has an 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
- 9 applications were received for fellowship, competition very tight
- **Selection Committee:** Juliette Mammei, Chair (Manitoba), Jason Holt (TRIUMF), Sangyong Jeon (McGill), Jeff Martin (Winnipeg)

Gareth Smith (UBC, TRIUMF)

Supervisor: Makoto Fujiwara

He has been working with the ALPHA collaboration towards measuring the gravitational force on trapped antihydrogen atoms. Splitting his time between TRIUMF and CERN, his research focuses on the implementation of a time-of-flight scintillator detector. This will reject the background of cosmic rays which otherwise obscures the antihydrogen signal.

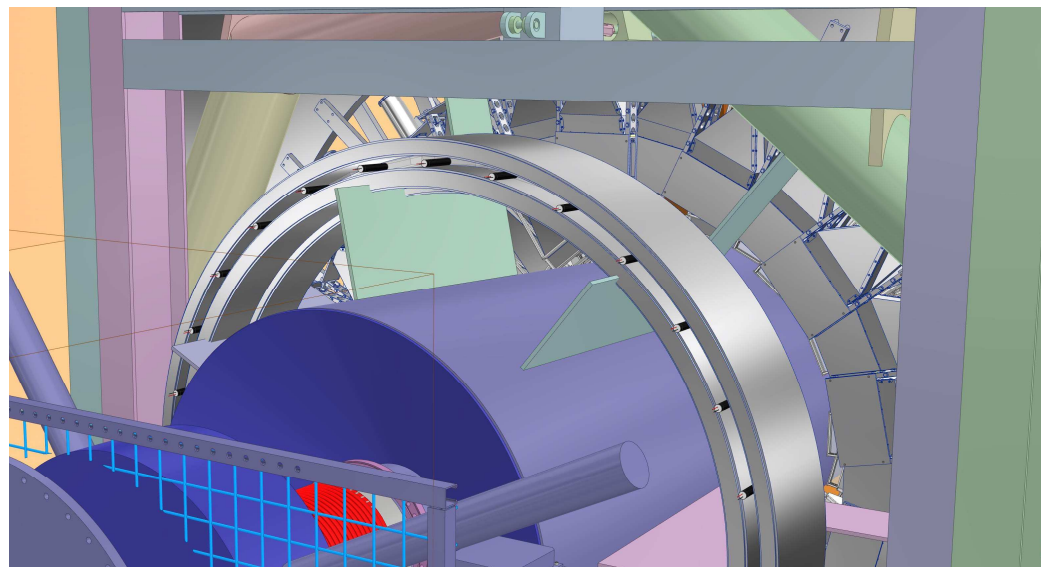
Alicia Postuma (Regina)

Supervisor: Garth Huber

Alicia will analyze u-channel data from JLab, in which the meson is produced at a backwards angle. This reaction provides novel access to the meson cloud of the proton, specifically the qqq - $qq\bar{q}$ part of the proton wave function. Results will be compared to different theoretical models to determine the best description of hadronic reactions in the transition regime.

2022 Graduate Fellowship Report

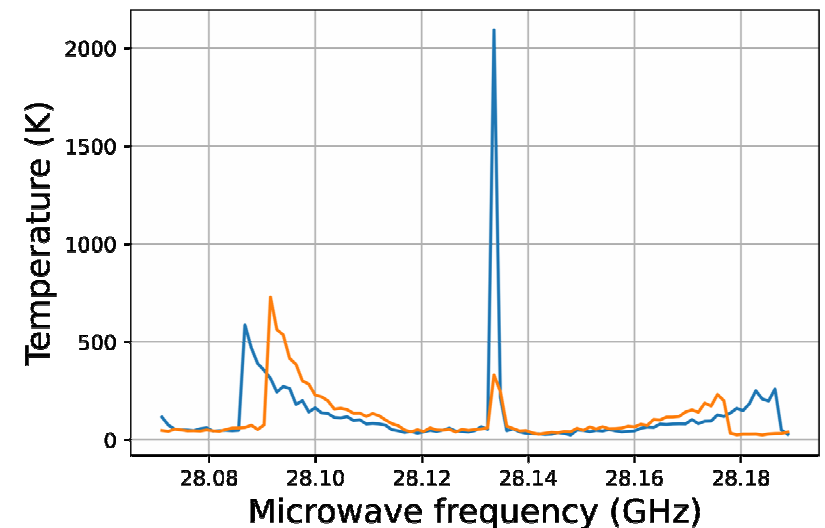
- **Fatemeh Gorgannejad (Manitoba)** *Supervisor: Wouter Deconinck*
- **Validation of the design for the MOLLER pion background detector**
- In the MOLLER experiment, an 11 GeV longitudinally polarized electron beam with a rapidly flipping spin is directed toward a liquid hydrogen target to measure in A_{PV} electron–electron scattering
- The dominant sources of background are due to electron–proton scattering in the liquid hydrogen target, which causes pion production through processes such as inelastic and deep inelastic scattering
- A dedicated pion detector system operates in integrating mode during main data–taking to measure pion asymmetries, and in low–current counting mode to measure the pion background fraction
- The optimal geometry and position of the pion detector system to maximize the signal from pions were determined, and the results from the simulations were verified by cosmic testing of the first prototype at the University of Manitoba, and beam tests carried out at the Mainz Microtron (MAMI)



- For more details, please see the article in the May CINP Newsletter

2022 Graduate Fellowship Report

- **Adam Powell (Calgary)** *Supervisor: Timothy Friesen*
- **Electron Cyclotron Resonance (ECR) Magnetometry for ALPHAg**
- ALPHAg is a new experiment at CERN with the goal of measuring the gravitational free fall of antihydrogen through the slow release of magnetically confined atoms
- The difference in potential across the ALPHAg trapping region is equivalent to a magnetic field difference of 4×10^{-3} T, so it is vital for magnetic fields to be controlled and measured to high precision
- Since charged particles in a magnetic field oscillate with a cyclotron motion at the ECR frequency, $f_c = qB/2\pi m$, one can determine the ALPHAg magnetic field through measurements of this frequency
- For electrons in a 1 T field, this cyclotron frequency is around 28 GHz, a microwave frequency that can propagate in the ALPHAg penning traps
- The technique uses small electron plasmas produced in rapid succession, and a frequency sweep, to probe this frequency and the corresponding field
- To confirm the magnetic fields are controlled and understood to the required precision an extensive characterisation of the magnetic environment was also performed



• For more details, please see the article in the May CINP Newsletter

CINP NSERC Expenditures

– Prepared by Greg Hackman



FY22 (preliminary)	
FY21 Carry Forward	92,921
FY22 Installment	75,000
LRPC Sponsorship Refund	4,000
Late FY21 Expenses	2,780
Representation Travel	6,935
Conference Sponsorship	6,300
Undergrad Scholarships	30,000
URS Travel Supplement	2,600
Graduate Fellowships	24,000
Junior Scientist Travel	4,500
Student Conf Support	8,450
Recruitment	2,000
Misc	0
FY22 Expenses	87,565
FY22 Balance	84,356

FY23 (budgeted)	
FY23 Installment	75,000
Late FY22 Expenses	3,215
Representation Travel	
ACOT (2 trips)	3,400
Other domestic	3,000
International	5,300
Conference Sponsorship	10,000
Undergrad Scholarships	33,000
URS Travel Supplement	3,900
Graduate Fellowships	25,000
Junior Scientist Travel	7,000
Student Conf Support	9,000
Recruitment	2,000
Misc	1,670
FY23 Projected Expenses	106,485
FY23 Projected Balance	52,871

Slowly drawing down COVID19 surplus

CINP Private Account

– Prepared by Greg Hackman



FY22 (preliminary)	
FY21 Carry forward	\$23,660
FY22 Dues assessed	\$24,000
Executive Director	\$24,000
AGM 2022 Expenses	\$140
Finance Expenses	
Audit	\$3,552
Bank	\$0
Industry Canada	\$0
Total FY22 Expenses	\$27,692
Year End Balance	\$19,968

FY23 (budgeted)	
FY23 Dues assessed	\$25,500
Executive Director	\$24,000
Finance Expenses	
Audit	\$3,587
Bank	\$100
Industry Canada	\$30
Total FY23 Expenses	\$27,717

- Small annual deficits, due in part to annual audit fees.
- Projected private account balance at end of FY28: \$5,152

• CPA: Dudley & Company LLP, Regina

3. Discussion Items

- **Suggestions for new SAPES members**
- **URS selection criteria**
- **CAP Vogt Medal and Fellowship nominations**

4. **Comments & Suggestions from Membership**

5. **Adjourn**

SAPES Member Suggestions



NSERC has asked CINP to suggest new SAPES members for the 2024 competition and beyond

Retiring Members:

- *Alison Lister*, University of British Columbia, Exp High Energy Nuclear & Particle Physics
- *Ingo Wiedenhoever*, Florida State University, Exp Nuclear Physics & Astrophysics, Nuclear Reactions
- *Mary Convery*, Fermilab, Exp Accelerator R&D, High Energy Physics
- *Paul Garrett*, University of Guelph, Exp Low Energy Physics
- *Pedro Vieira*, Perimeter Institute, Th Quantum Fields & Strings
- *Meenakshi Narain*, Brown University, Exp High Energy Physics, Hadron Collider

General Future Recruitment:

- Exp. Particle Physics & Astrophysics, Dark Matter & High Energy
- Exp. Nuclear Physics, Ultracold Neutrons
- Th. Particle Physics, Dark Matter & Cosmology
- Th. Particle & Nuclear Physics

URS selection criteria



- The CINP Board has asked for a review of the URS selection criteria, with an aim to making them more explicit
- **Criteria Used To Date:**
 - Student grades
 - Alignment of the project with the CINP LRP Brief
 - Student's identified role in the research project
 - Equity and Scientific breadth
- **Discussion Questions:**
 - Should preference be given to students with more (or less) research experience?
 - What about any preference to graduation date?
 - Should students already receiving an NSERC USRA (or equivalent other award) that summer be given priority? Or removed from the competition?

CAP Vogt Medal and Fellowships

- Should CINP help facilitate the nomination of worthy members for the CAP/TRIUMF Vogt Medal?
 - If so, what process should we follow?
- Similarly, what about nominations for CAP Fellow?
- Fortunately, CAP is changing the timeline for medal and fellow nominations. The next call is expected Sept 1, with nominations due Dec 1. This will allow much more time to prepare a nomination package, comparable to the APS nomination timeline.

Agenda Items

- 4. Comments & Suggestions from Membership**
- 5. Adjourn**