

# Particle Physics Faculty Meeting

- Agenda
  - News/Updates
  - Committee updates

# Closure of Physics Programs at Laurentian

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- Joint Statement from CINP and IPP
  - We encourage you and your students and postdocs to participate in any or all of the following avenues of support:
    - [Use this form-letter to send a message to your MP](#)
    - [Sign a petition started by the Laurentian University Faculty Association](#)
    - [Add your name to a list of Academics in support of Laurentian University](#)

# ACOT

- Agenda
  - Particle Physics Introduction: 10'+5'
  - Scientific Computing Introduction 5'+5'
  - Science & Technology Introduction 10'+5'
  - Research Highlights (across departments): 45'+20'
  - Discussion with students and postdocs: 15'
- Feedback was very good!
  - **Thank you for preparing and presenting highlights!**
  - Seems we need ~30min more time
- Endorsement of the ALPHA hire request by ACOT
- Poster session received much praise!

# From Jens

- Leadership retreat
- Two meetings, Friday April 30<sup>th</sup> and Wednesday May 12<sup>th</sup>
- As mentioned during ACOT Parallel session, Jens made the case for
  - ALPHA BAE
  - UCN position
- No decisions

# P3

- There seems to be some discussions on the process at various levels
- Nominally the new cycle has started
- Suggest to fill in goals and objectives now
- Suggest two options
  - Email the [P3 form](#) with divisional goals and objectives (next slide) and your individual objectives by end of May
  - Happy to meet over Zoom (if preferred)

# Goals and Objectives

Key dimensions	Key Goals 5YP	Divisional goals	Objectives
Science and technology	1) Make groundbreaking discoveries across TRIUMF's multidisciplinary research portfolio	Lead and participate in SAP research including delivering high-impact results in PP, NP, experiment and theory. Publish scientific results in SAP 210 publications total.	Complete scientific and technical analysis and publish results from Particle Physics, focus on ATLAS, T2K, UCN, ALPHA, SuperCDMS to test SM and BSM.
			Use rare-isotopes to lead and execute experimental programs in nuclear structure, nuclear astrophysics, and tests fundamental physics, with focus on ISAC, and complementary external programs. Publish results
		Deliver and execute SAP theory methods to lead, guide and support the TRIUMF program	
		Enable Canadian Scientists and students to participate in research off-site (abroad, domestically), and on-site through TRIUMF collaboration or contributions for up to 400 people	Develop and research new techniques and directions in SAP for future experiments.
		Deliver Data Science and Machine Learning applications to enhance research output	Deliver machine learning techniques to enhance sensitivity of experiments or improve operation for a min of 4 projects (and publish results)
		Establish excellence in Quantum Computing	Deliver Quantum Computing and Quantum Machine applications in exploration of future scientific gains for a min of 1 project (and publish results)
			Establish TRIUMF as a center for Ion Trap based Quantum computing exploiting CFI and national collaborative projects
			Develop and deliver technical contributions to SAP physics experiments
	Support the ARIEL Project with PSD expertise with a minimum of 5 FTE effort averaged over the year.		

# Goals and Objectives

People and skills	4) Become a hub for interdisciplinary education and training		Establish TRIUMF as a center for Ion Trap based Quantum computing exploiting CFI and national collaborative projects
		Enhance national & international collaboration in applications of Machine Learning and Quantum Computing.	Exploit funding opportunities e.g. MITACS GRA to organize student/postdoc exchanges to and from TRIUMF
		Enhance career opportunities in AI and Quantum computing for under-represented groups	Maintain hiring for Coop and other junior positions emphasising inclusion practices.
			Organize TSI in Quantum computing in quantum machine learning
Innovation and Collaboration	5) Inspire Canadians to discover and innovate	Deliver expert and non-expert presentations about research and discoveries from TRIUMF (min of 100)	
	6) Translate knowledge and discovery into innovation	Deliver a concept to transfer UV photon detection technology	
		Enhance Collaboration with EGI with cross-knowledge sharing	Establish a formal MOU

# New Director

- Start date: May 17<sup>th</sup>, 2021
- Should we ask for a meeting with Nigel (similar to when Jon Bagger started)



I am certainly expecting spending the first few weeks doing the rounds at TRIUMF meeting people and groups and getting a sense of how the lab works. So, yes, happy to meet with the group, though timing will need to be rather flexible...

- Current province wide restrictions expire May 24<sup>th</sup> (1 week after Nigel starts)
- Possibly can meet outside with more than 10 people outside then or prefer to arrange video meeting before?

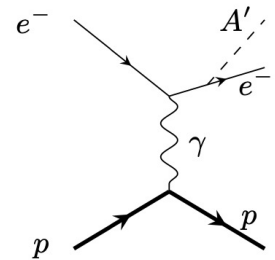


## PP-EEC

- First meeting took place April 22<sup>nd</sup> ([open talks 7:30 am - 9:30 am](#))
- Four contributions
  - Search for New Physics in  $e^+e^-$  with an Invariant Mass of 13-17 MeV using ARIEL (Darklight)
  - Rare Pion Decays: PIENUX, 10 x precision on  $R_{e/\mu}$  and Pion Beta decay
  - Search for a cosmologically-relevant boson in  $\mu^+$  decay
  - Progress Report TUCAN EDM Experiment

- Committee:

- Natalie Roe (LBNL) chair
- Concettina Sfienti (Mainz)
- Deborah Harris (York/FNAL)
- Ralf Kaiser (Glasgow)
- Natalia Toro (SLAC)
- Dave McKeen (TRIUMF)
- Makoto Fujiwara (TRIUMF)
- OSC (ex officio)



$$\mu^+ \rightarrow e^+ X^0$$

$$R_{e/\mu} = \frac{\Gamma(\pi^+ \rightarrow e^+ \nu(\gamma))}{\Gamma(\pi^+ \rightarrow \mu^+ \nu(\gamma))}$$



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### Committee report available

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Proposal/LOI	Title	Spokespoerson	Recommendation
S1722	TUCAN EDM Experiment — Progress Report	K. Hatanaka, J.W. Martin	For information only
S2127LOI	Rare Pion Decays	D. Bryman, D. Hertzog, T. Mori	Endorsed with high priority
S2129	Search for a cosmologically-relevant boson in $\mu^+$ decay	J. I. Collar	Approved for 5 days with medium priority
S2134	Search for New Physics in $e^+e^-$ Final States With an Invariant Mass of 13-17 MeV using the ARIEL Electron Accelerator	J. C. Bernauer, R.C. Corliss, R.G. Milner	Approved for 1300 hours with high priority

## Science Week

- August 16-20

Science Week 2021 will feature two main streams:

1. **Celebrate recent achievements** We want to celebrate the achievements during the last challenging year, with a particular focus on highlighting Early Career Researchers, who have lost a lot of opportunities for networking during the past year.
2. **20-Year Vision Community Engagement** We want to share with the community what we have heard in the Listening and Visioning Phase of the 20-Year Vision Development and outline the draft 20-Year Vision framework.

In addition, the regular **TRIUMF Users Group Annual General Meeting** will take place on the last day.

- Program still under discussion
- Five keynote speakers: Particle Physics, Nuclear Physics, CMMS, Life Sciences, and technical aspects (SciTech, Computing)
  - Suggestions welcome!

# Covid

- How are the groups doing
- Any concerns?

# Departure of Matthew Pearson



**AOB**

## Committee Updates

- IPP/MISnomass/Snowmass
- 20-year vision
- DND Planning
- Seminar/Colloquia
- Safety
- Space
- 5S
- Academic
- Summer schools
- Health & Wellness
- Data Science
- Diversity committee
- Return to Site Committee



## Next Meeting

- June 10<sup>th</sup>