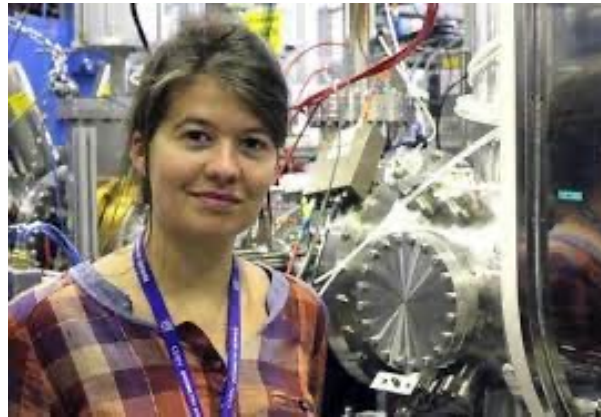


# Particle Physics Faculty Meeting

- Agenda
  - News/Update
  - Space Committee
  - Updates from Task Forces (New Initiatives)
  - Round Table

## Physical Sciences

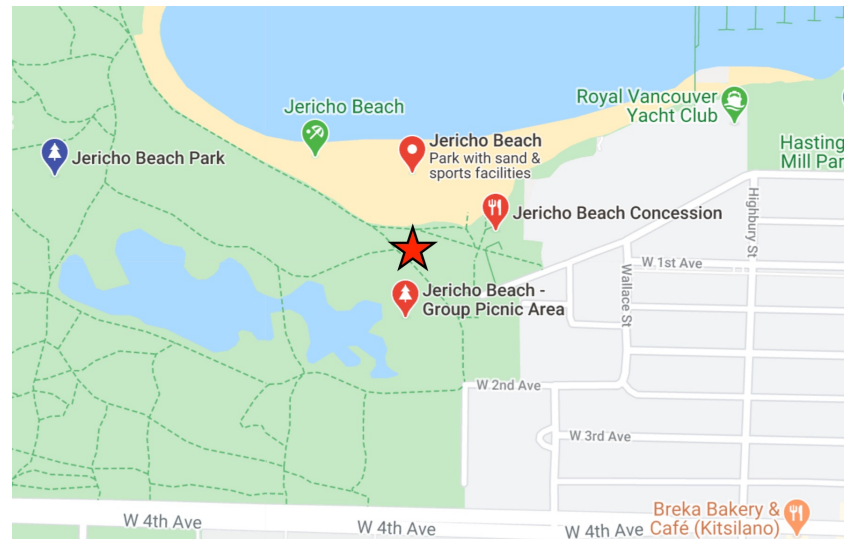
- Stephan Malbrunot-Ettenauer (BAE in Nuclear Physics) working on Radioactive Molecules
- Chloe Malbrunot (BAE in Particle Physics) working on PIONEER and nEXO
- Moved from CERN and arrived in Vancouver this Sunday!



- Welcome (back) to the West Coast!

## Welcome Party at Jericho

3



- Thursday September 8<sup>th</sup>: 5:30pm-8:30pm, near picnic area
- I will bring Pizza and desert
- Use [Slido](#) to RSVP (I'll look at the participation level) and indicate Pizza restrictions
- Bring your own drink, ideally some chairs



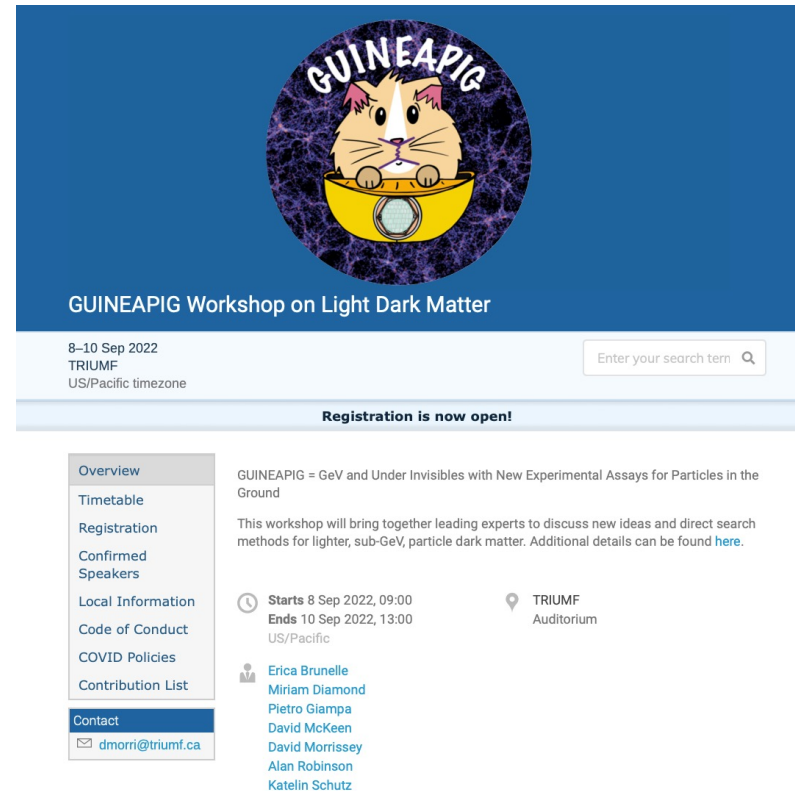
## ALPHA BAE Hire

- Offer to top candidate went out a while ago
- Delayed due to negotiations around "dual career opportunity"
- Discussed the situation with Nigel Smith last week and there is a possible solution (hopefully not too late)



## Workshop on Light Dark Matter

- From David:
- We are planning to run a workshop on light dark matter (sub-GeV or so and particle-like) at TRIUMF and remotely from September 8-10. More details can be found here:
- <https://meetings.triumf.ca/event/303/>
- I would like to invite everybody to participate in the workshop if they want to
- For this, please register at the link above



The screenshot shows the event page for the GUINEAPIG Workshop on Light Dark Matter. At the top, there is a circular logo featuring a cartoon pig wearing a yellow hard hat with a headlamp, set against a dark blue background with purple particle tracks. The text "GUINEAPIG" is written in a white, curved font above the pig. Below the logo, the event title "GUINEAPIG Workshop on Light Dark Matter" is displayed. The page includes a search bar with the placeholder text "Enter your search term" and a magnifying glass icon. A prominent banner states "Registration is now open!". On the left side, there is a navigation menu with the following items: Overview, Timetable, Registration, Confirmed Speakers, Local Information, Code of Conduct, COVID Policies, Contribution List, and Contact. The "Contact" item is highlighted in blue and includes the email address "dmorri@triumf.ca". The main content area provides details about the workshop, including the dates "8-10 Sep 2022", the location "TRIUMF Auditorium", and the time zone "US/Pacific". It also lists the speakers: Erica Brunelle, Miriam Diamond, Pietro Giampa, David McKeen, David Morrissey, Alan Robinson, and Katelin Schutz.



# Outreach Opportunities



## Communications

### Britannia Community Center & Open Science Network

Inviting local outreach organizations to visit an underserved community who may not normally have access to STEM activities.

- **When:** Sept 17th (3<sup>rd</sup> Saturday)
- **Commitment:** 10AM - 3PM (5 hours)
- **Audience:** All ages
  
- **Who:** Science World, VPL, Let's Talk Science, SWIST, Digital Moment, SFU Forensics, Math Mania (UBC/PIMS)
  
- **What:** TRIUMF Inventor Labs Arduino electronics + TBD
  
- **Ask:** 6 staff, 2 hours each (~12 hours)





## Colloquium

- From David:
- We are desperately trying to fill some colloquium spots this fall. In particular we have openings on September 22 and 29. If you or somebody you can recommend (that is local) would like to give a colloquium on these dates, please let me know.
- On top of that, it would be helpful to have another representative from particle physics on the colloquium committee. This could be a BAE, but we also sometimes have senior postdocs. Again, if you or somebody you know might be interested, send me a message.

# ACOT and IPR

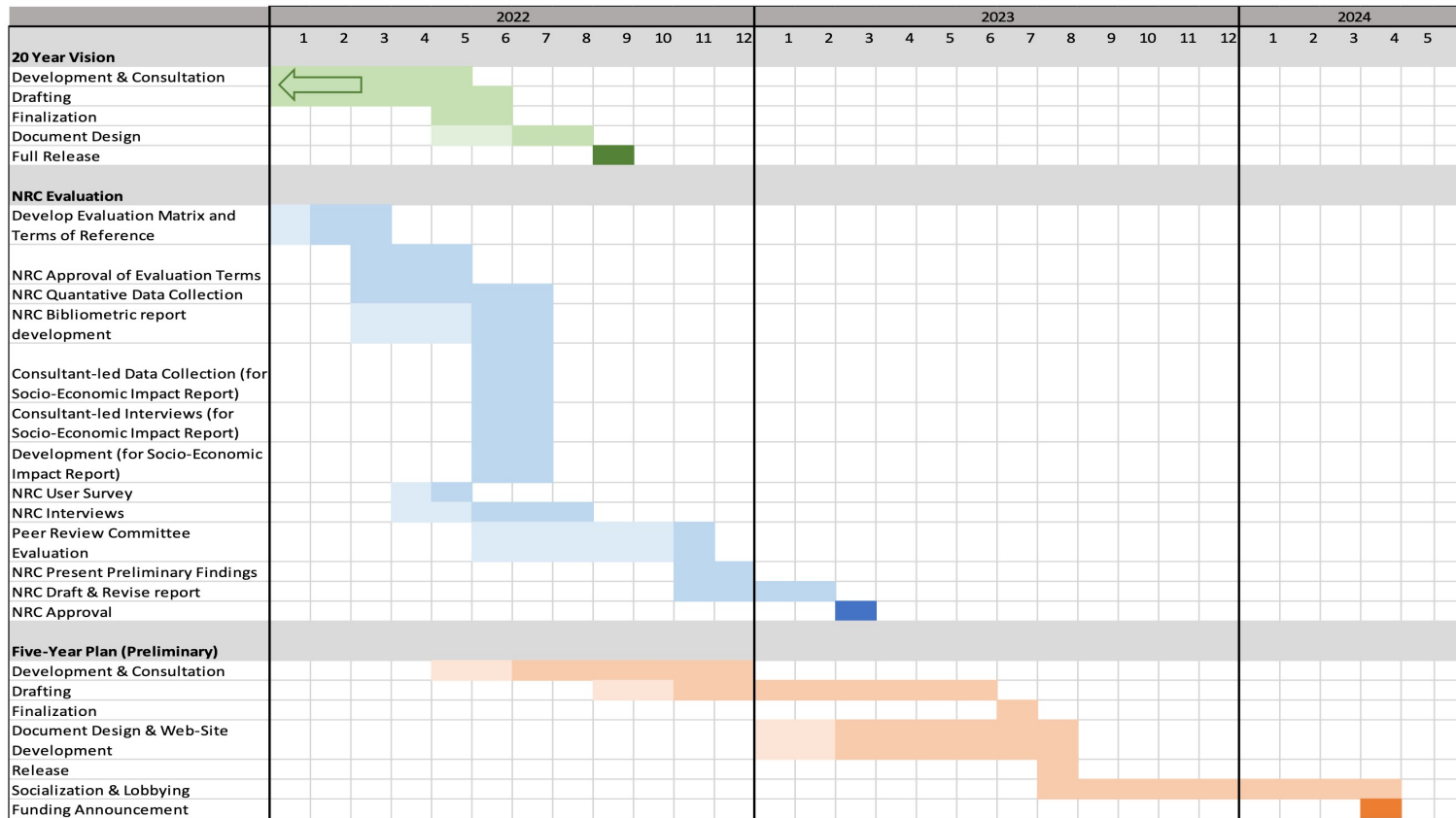
## Important Dates

- **October 24 – 27:** ACOT Fall Meeting
- **November 29 – December 1:** NRC Evaluation Peer Review Committee
- NRC has provided what is expected to be the final composition of the Peer Review Committee coming this Nov/Dec:

Name	Area of expertise	Title/Current Position	Location	E-mail Address
CHAIR Dr. Kimberly S. Budil	Engineer/physicist; organizational management	Director, Lawrence Livermore National Laboratory	USA (West)	<a href="mailto:budil1@llnl.gov">budil1@llnl.gov</a> <a href="mailto:l Larson53@llnl.gov">larson53@llnl.gov</a>
Dr. Souzan Armstrong	Commercialization	Executive Director at WORLDiscoveries	Ontario, Canada	<a href="mailto:souzan.armstrong@uwo.ca">souzan.armstrong@uwo.ca</a>
Dr. Simon R. Cherry	Nuclear Medicine	Distinguished Professor of Biomedical Engineering/Radiology at UC Davis	USA (West)	<a href="mailto:srcherry@ucdavis.edu">srcherry@ucdavis.edu</a>
Dr. Alexandra Gade	Nuclear Physics	Professor of Physics, National Superconducting Cyclotron Laboratory, Michigan State University	USA	<a href="mailto:gade@nscl.msu.edu">gade@nscl.msu.edu</a>
Dr. Catherine Kallin	Molecular and Materials Science	Professor in Dept. of Physics & Astronomy at McMaster University	Victoria, BC, Canada	<a href="mailto:kallin@mcmaster.ca">kallin@mcmaster.ca</a>
Dr. Brad Sherrill	Accelerator physics	Professor of Physics at Michigan State University	USA	<a href="mailto:sherrill@frib.msu.edu">sherrill@frib.msu.edu</a>
Dr. Elizabeth H. Simmons	Particle physicist; organizational management	Executive Vice Chancellor at the University of California San Diego.	USA (West)	<a href="mailto:ehsimmons@ucsd.edu">ehsimmons@ucsd.edu</a> <a href="mailto:jpinto@ucsd.edu">jpinto@ucsd.edu</a>
Dr. Frank Zimmermann	Accelerator physics / International lab	CERN, FCC study deputy leader	Switzerland	<a href="mailto:frank.zimmermann@cern.ch">frank.zimmermann@cern.ch</a>

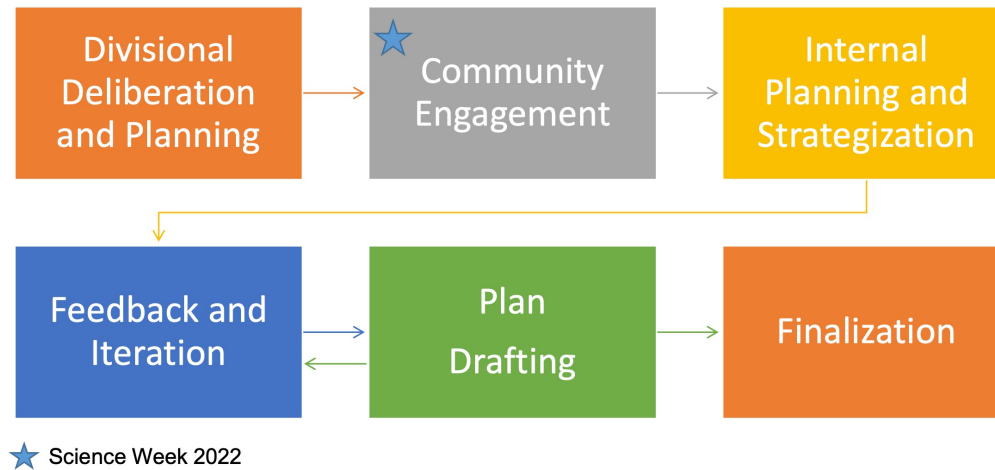


# 5YP Planning





## 5YP Planning



The feedback gathered here at Science Week will evolve our efforts and lead to future rounds of iteration, which will then be refined through input received from TRIUMF’s various oversight, advisory, and governance bodies (NRC Evaluation and Peer Review Committee\*, TRIUMF Board, Science Council, Members’ Council, ACOT, etc.).

Furthermore, given the inputs and feedback channels that already exists, a formal “expression of interest” process is not anticipated to be used in this planning cycle. Any updates or further changes to the process will be communicated through TRIUMF’s standard channels (web site, site-wide emails, newsletters, etc.).

*\* The NRC Evaluation and PRC come a year earlier than in the last cycle, allowing us the opportunity to better integrate the outcomes and feedback from this process into our planning for the Five-Year Plan.*

## New Initiatives

- [Particle Physics Planning](#) results in impact on existing and future experiments and
  - New initiatives under discussion in dedicated task forces
    - Center/platform/hub for detector development (with Science and Technology)
    - Center/platform/hub for AMO/Quantum/Precision/physics (HAICU, radioactive molecules, UCN...), across Particle & Nuclear Physics departments
- With no formal LOI process in place, how to proceed?
- Informal discussion with director, can still submit positioning documents within division
- A 1-2 page summary would certainly not do any harm and likely be appreciated

## Round Table

- ATLAS
- T2K/HyperK
- TUCAN
- ALPHA
- SuperCDMS
- DarkLight
- Pienu / PIONEER
- NA62
- n-EXO / PHAAR
- SNO+
- HALO
- g-2
- Belle 2
- Theory



## DarkLight

- CFI-IF application was submitted
- Took first beam in preliminary target tests and studying the recorded backgrounds
- Will do some more tests in the next month in other locations around the e-hall.
- Ongoing TRIUMF work is focusing on the beam line changes needed for next year's run (new quads, collimator, shielding, beam line layout, etc.) plus the trigger design finalisation and creating a detailed plan for DAQ
- First co-op student is finishing now, after a very effective summer working on trigger prototypes and simulation. Azuma fellow will join for the fall term.

## Snowmass

- Kate Pachel submitted white paper on sensitivity of collider experiments to dark matter models (arXiv:2206.03456) and gave a talk on the topic:  
<https://indico.fnal.gov/event/22303/contributions/245711/>

## ATLAS

- New public result for the machine learning effort: Point Cloud Deep Learning Methods for Pion Reconstruction in the ATLAS Experiment <https://cds.cern.ch/record/2825379>
- New Small Wheels taking data stably with most of the sectors of both wheels!
- LHC is down for ~4 weeks due to an RF cryo problem caused by a cooling tower fault; the RF cryo modules have to be warmed up for repair
- Successful data taking and completion of the 1st ITk testbeam at Canadian Light Source
- BONUS: Proof of principle of imaging text on papyrus scrolls (in parallel to ITk :)

## Hyper-K

- Hyper-K Project Advisory Committee (HKPAC) meeting was held August 24-26 with talks on mPMT and IWCD projects by TRIUMF personnel
- Postdoc Ryosuke Akutsu accepted an Assistant Professor position at KEK in September

## 1 33-m-long liquid helium transfer line successfully tested (W. Schreyer)

- from room temp. to LHe transfer in around 6 hours
- transfer efficiency around 90% ☺
- low losses as advertised

## 2 EDM storage cell tests at J-Parc completed (S. Vanbergen)

- good deuterated polystyrene-coated insulator and EDM-cell-valve performance ⇒ ready for EDM implementation
- NiP coating of electrodes showed higher losses than expected ⇒ investigating but EDM baseline foresees DLC coating anyways

## 3 Large helium pump tests (A. Brossard)

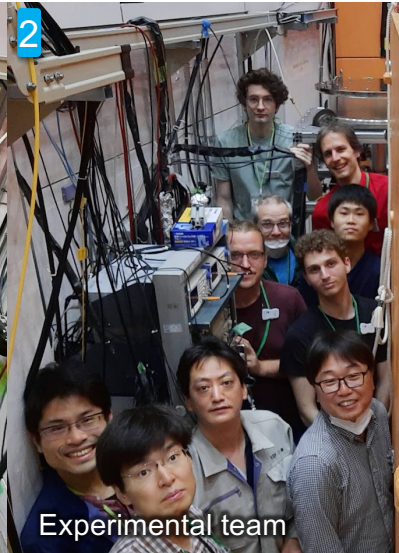
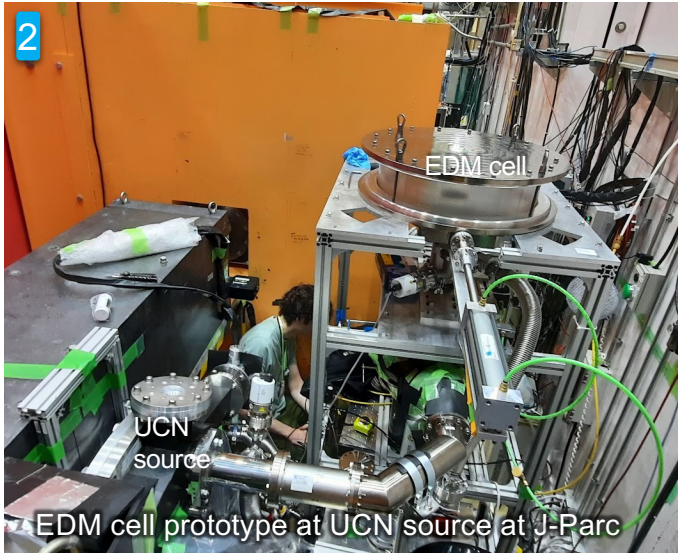
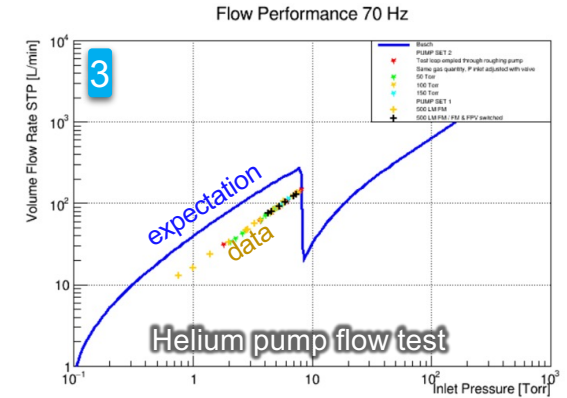
- VFDs and pump operation via PLC work well
- Cause for lower than expected performance was found to be in test setup ⇒ after small change, test will be repeated

## 4 Construction progress

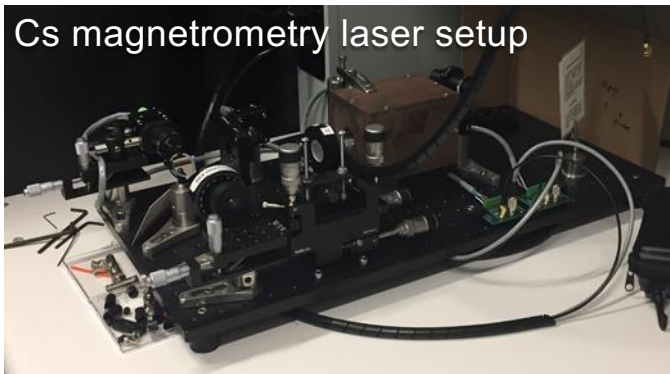
- all tail section domes are machined
- 3 months delay in delivery of cryo connection box

## 5 EAC review of project

- scientific importance of EDM experiment was confirmed
- our strategy moving forward was endorsed
- working on scope adjustments as planned







- Preparation ongoing for visit of UK company Magnetic Shields Limited (MSL): arrival on-site October 3<sup>rd</sup> for 10-12 months, assembly & installation of TUCAN nEDM magnetically shielded room (MSR) in meson hall B2 level; Progress with visa, training plan, safety regulations for contractor work, etc
- Assembly and tests with perturbation coil which will be used to confirm shielding factor of TUCAN MSR
- TUCAN magnetics lab (MOB149): installation of laser setup for Cs magnetometry, including FSAR which is about to be routed in Docushare
- Reminder: updated project structure; now implemented!  
PRJ\_407 UCN & nEDM management  
PRJ\_553 UCN source  
PRJ\_555 neutron EDM experiment



## Next Meeting

- Oct 13<sup>th</sup>



**AOB**