



TUG AGM

Five-Year Plan 2020-2025

Reiner Kruecken

2018-07-19



Discovery,
accelerated

Five-Year Plan 2020-2025

Purpose

- Articulate TRIUMF's vision and mission
- Communicate goals and priorities for 2020-2025 & beyond
- Lay out an action plan, including a high level budget
- Secure base funding for operations

Audience

- Community
- International Peer Review Committee
- Government of Canada (i.e. NRC, ISED, Finance, etc.)

Timeline

- Consultation and internal planning through 2017
- Main themes defined Spring 2018
- Report to be released in September 2018



5YP Process - TIMETABLE

- May 31 Board Meeting
 - Approval of High Level Strategy
- June 6 ACT – Interagency Review
- June 8 Town Hall
- Mid June CAP Congress
 - Community Discussion on 5YP Elements
- **July 16-19 Science Week**
 - **50th Science Symposium**
 - **ARIEL Science Workshop**
 - **TUG AGM – final community discussion**
 - **5YP Steering Committee**
- End of July Facility Descriptions completed
- End of August Science Highlights completed
- Mid of Sept. Strategic Plan released
- End of Sept. 5YP Web-pages online
- End of Sept. Implementation Plan released
- Sept./Oct. 5YP Steering Committee
 - Red Team Review of Peer Review Presentations
- Early October Ottawa Lobbying Day
- Late October ACOT
- **Nov 13-15 International Peer Review**
- Nov 30 Board Meeting

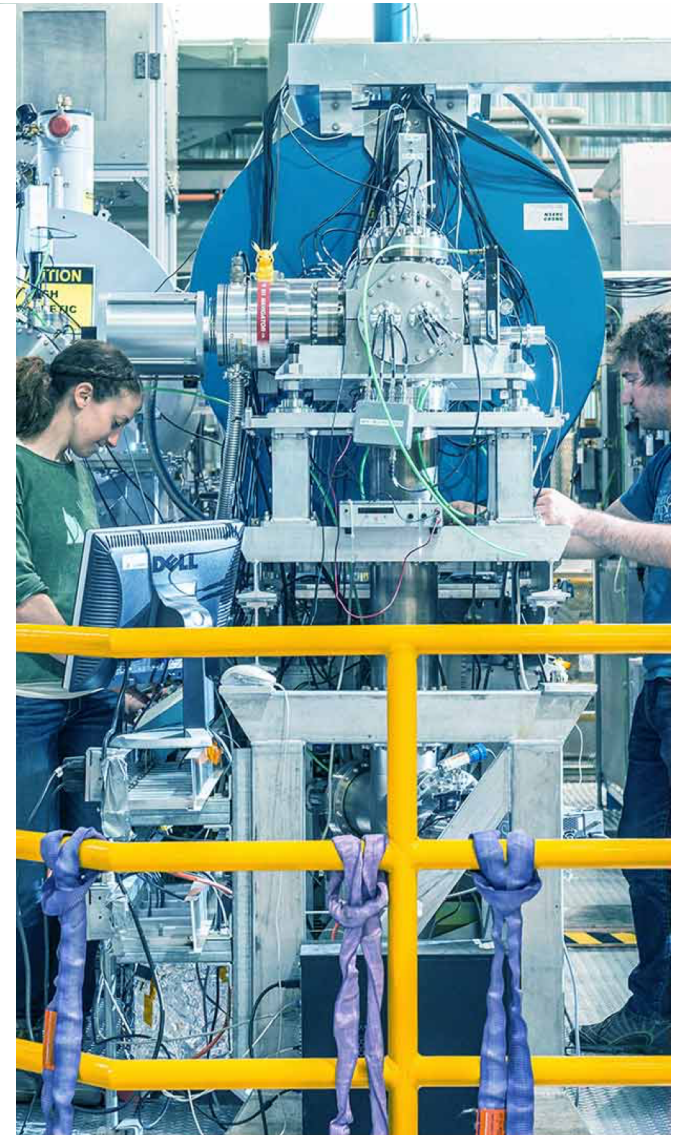
International Peer Review

November 13-15, 2018

International Peer Review Committee
will be chaired by

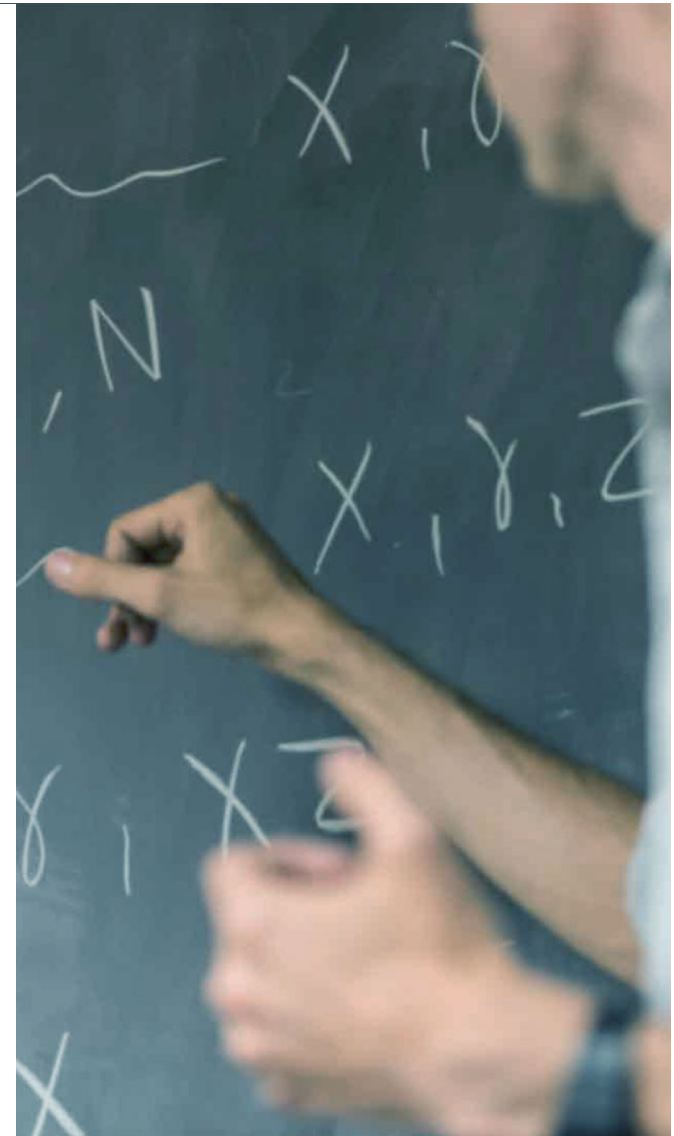
Dr. Julia Phillips

former VP and CTO at
Sandia National Laboratories



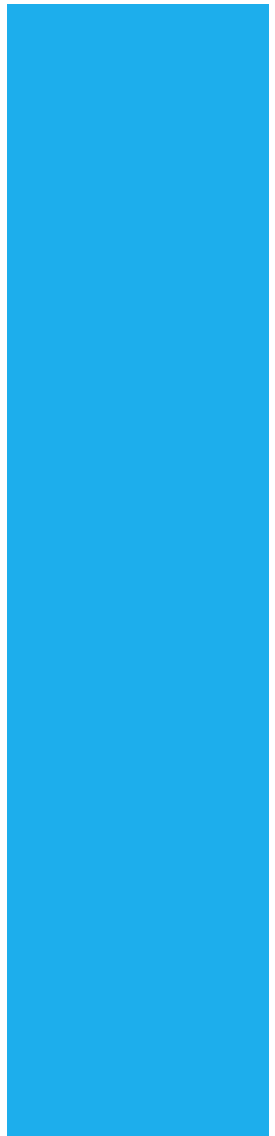
PPAC's guiding priorities

- Prioritize ARIEL and IAMI as foundational for the future of TRIUMF
- Focus on the existing multi-disciplinary, high-impact science portfolio, including strong on-site and off-site components
- Make balanced investments into core infrastructure, science support, and selected new opportunities, to maximize the benefit from ARIEL and IAMI
- Position TRIUMF for its long-term future by further developing particularly promising new ideas without affecting the efforts on ARIEL and IAMI



Science and Technology

- Goal: Make groundbreaking discoveries across TRIUMF's multidisciplinary research portfolio
 - *Why? To strengthen Canadian leadership in science and technology*
- Goal: Reinforce TRIUMF as a globally leading particle accelerator centre
 - *Why? To make Canada a destination of choice for talent, ideas, and international partnerships*



Science and Technology

- Complete and ramp up ARIEL science
 - > \$150M facility – most powerful of its type in the world
 - Supported by CFI, 5 provinces, and 21 universities
 - Will triple TRIUMF's rare isotope capabilities, enabling more science, more training, and more commercial activity



Science and Technology

- Launch IAMI – Institute for Advanced Medical Isotopes
 - > \$35M research and production facility supported by WED, INFC, British Columbia, and institutional partners
 - TR-24 cyclotron with state-of-the-art laboratories
 - Will create a global centre for nuclear medicine research and development

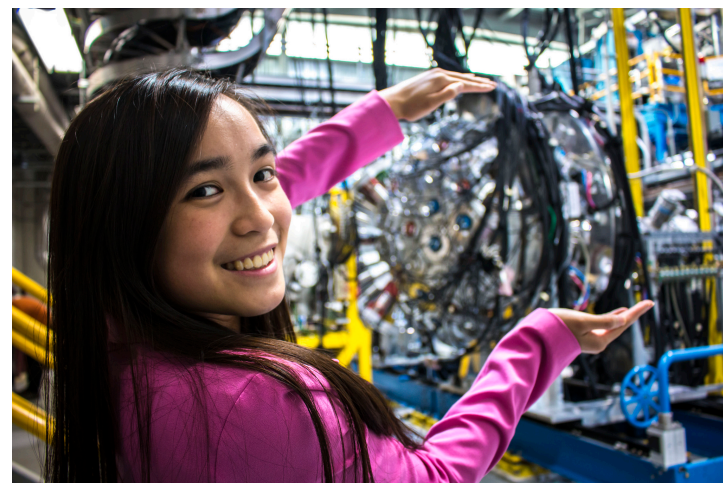


2018-07-19



Science and Technology

- Strengthen TRIUMF itself
 - Ensure equity, diversity, and inclusion underpin every activity
 - Create programs to attract, retain, and develop talent
 - Renew site infrastructure to improve productivity (cyclotron, ISAC, beamlines for materials and commercial applications)
 - Renew and expand space: Site Master Plan, new building



Science and Technology

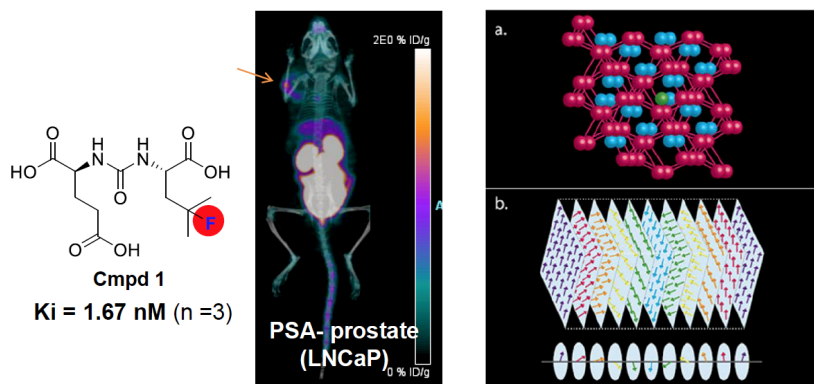
SAP Science Priorities

- Complete ARIEL and ramp science program up to full capacity (triple RIB production)
- Support high-impact science
 - On site: ISAC/ARIEL, UCN, Theory
 - In Canada: DEAP, SuperCDMS, nEXO at SNOLAB
 - Abroad: ATLAS & HL-LHC, ALPHA, NUPRISM/HyperK, LBNF accelerator?
- Make balanced investments into core infrastructure, science support, and selected new opportunities, to maximize the benefit from ARIEL and IAMI
 - ISAC, Cyclotron, Detector Facilities
- Position TRIUMF for its long-term future by further developing particularly promising new ideas without affecting the efforts on ARIEL and IAMI
 - To be determined via community initiatives in future CFI competitions

Science and Technology

■ Nuclear Medicine

- IAMI
- Alzheimer's & Parkinson's Disease
- Addiction
- Traumatic Brain Injury
- Cancer



■ Quantum Materials

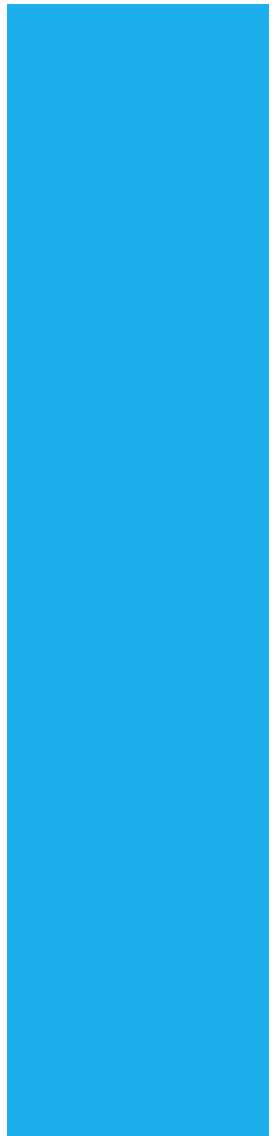
- Meson Channels and BL1A
- Expand betaNMR facility
- UBC Quantum Matter Institute
- Proposed Pan Canada Laboratory for Quantum Materials and Devices

■ Data Sciences / Quantum Computing

- ATLAS T1 – CERN
- Helmholtz Association – Germany
- Various industry partners

People and Skills

- Goal: Become a hub for interdisciplinary education and training
 - *Why? To prepare Canadians to compete in the knowledge and innovation economy*
- Goal: Inspire Canadians to discover and innovate
 - *Why? To increase access and opportunity, and strengthen Canadian society*



People and Skills

- Strengthen Canada's STEM pipeline
 - Expand TRIUMF's unique post-secondary education programs, broadening eligibility and offering a quality, hands-on, real-world experience
 - Undergraduates, Engineers in Training, Apprentices ...
 - Promote diversity and inclusion, especially women, indigenous peoples, and other under-represented minorities
 - Targeted recruiting
 - Special scholarships
 - Relationship building

People and Skills

- Strengthen Canada's STEM pipeline
 - Better prepare postdocs and graduate students for careers in- and outside academia
 - Entrepreneurship education
 - Communications training
 - Project management experience
 - Data science training
 - Leverage partnerships to attract international students and postdocs to Canada



People and Skills

- Empower future generations of discoverers and innovators
 - Take TRIUMF's outreach program nationwide
 - Establish TRIUMF as a hub for science communication and public engagement
 - Partner with like-minded organizations to carry TRIUMF's story into communities across Canada
 - Join with the BC Digital Supercluster to use VR and other digital technologies to engage urban and rural communities
 - Offer professional development experiences to teachers, science communicators, students & postdocs



Innovation and Collaboration

- Goal: Translate knowledge and discovery into innovation
 - *Why? To develop new technologies to support business-led innovation and improve the lives of Canadians*
- Goal: Increase national and international collaboration
 - *Why? To strengthen Canadian competitiveness in global discovery and innovation*



Innovation and Collaboration

- Expand TRIUMF Innovations into a national centre for commercializing disruptive technologies that cross multiple verticals
 - Medicine and drug development
 - Materials development and testing
 - Accelerator and detector technologies
 - Mining and natural resources
 - Border security
 - Oil and gas exploration
 - Data sciences



Example: PET Rock, using PET medical isotope technologies to improve mineral processing and metal extraction

Innovation and Collaboration

- Expand TRIUMF's national and international networks
- Leverage TRIUMF's networks to create teams to solve real-world problems and deliver tangible benefits to Canadians
 - Universities
 - Sister laboratories
 - Nongovernmental entities
 - Federal and provincial governments
 - Industrial partners



Helmholtz centers DESY and FZ Jülich
TRIUMF, TRIUMF Innovations
D-Wave Systems Inc., 1QBit

Summary

- TRIUMF's plan leverages past investments by government and builds on the laboratory's strong brand and global network to deliver more top-tier science, training, and innovation to Canada
- The plan will support TRIUMF's efforts to build an equitable, diverse, and inclusive laboratory. By fully exploiting ARIEL and IAMI, it will take TRIUMF to the next level and advance Canada along all three critical dimensions
 - Science and Technology
 - People and Skills
 - Innovation and Collaboration
- The plan ensures that TRIUMF will remain a jewel of which Canada can be proud
- *The plan requires \$320M from the G.O.C. through the NRC contribution agreement*

PPAC timeline for next CFI proposal round

- Anticipated CFI timeline:
 - Fall/Winter 2018: call for proposals
 - Spring/Summer 2019: LOI deadline
 - Summer/Fall 2019: Proposal Deadline
 - **Summer 2020: CFI Board decision**
- Request for PPAC submissions May 2018
- Submission deadline August 31, 2018
- PPAC meeting October 2018
 - Priorities
 - Advice to TRIUMF on Gate 0 approval



University of Alberta
 University of British Columbia
 University of Calgary
 Carleton University
 University of Guelph
 University of Manitoba
 McGill University
 McMaster University
 University of Montreal
 University of Northern
 British Columbia
 Queen's University
 University of Regina
 Saint Mary's University
 University of Saskatchewan
 Simon Fraser University
 University of Toronto
 University of Victoria
 Western University
 University of Winnipeg
 York University

To: Canadian TRIUMF Research Community
 From: R. Kruecken, Deputy Director Research, TRIUMF
 May 22, 2018

Re: Request for Proposals for anticipated CFI Innovation Fund competition

Given the most recent funding allocation in the federal budget to the Canada Foundation for Innovation, we anticipate an Innovation Fund competition starting sometime in late 2018 or early 2019, with a proposal submission deadline in the summer or fall of 2019.

In this context we would like to invite submission of Project Initiation Sheets (using this [Template](#)) by August 31, 2018 for projects that intend to submit to the upcoming CFI IF competition.

We recognize that a number of potential applications have already been part of the PPAC process in 2017. Thus, we expect that it will be rather straightforward for the proponents to update the PPAC submissions and in particular the budget and resource estimates.

TRIUMF's Policy and Planning Advisory Committee (PPAC) will meet in October 2018 to review, analyze, prioritize, and make recommendations to the TRIUMF Director based on these submissions. PPAC will not only take the scientific merit into account but also the resource requirements from TRIUMF in the context of existing commitments. PPAC may request additional information from the proponents before the PPAC meeting.

Based on the PPAC recommendations and taking into account the priorities of the Five-Year Plan 2020-25, TRIUMF will make a decision on which proposals it is able to support in the upcoming CFI IF competition and approve Gate 0 for these projects.

For proposals that relate to SNOLAB, TRIUMF and SNOLAB have agreed to align and, where appropriate, combine project governance processes in order to avoid duplication of efforts.

We also want to make you aware that TRIUMF has updated its project management process (TSOP-15) in particular with respect to the CFI process. Please review [TSOP-15](#) and associate documentation.

Following a successful Gate 0 approval in the Fall of 2018, projects need to expeditiously move to a Gate 1 review before the CFI Notification of Intent is to be submitted (anticipated for spring 2019), which fixes the proposal budget to within 10%. For Gate 1 the project needs to be well defined with top level requirement, preliminary cost estimates to support an initial budget, and as applicable a system architecture.

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 accelerated

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Thank you!

Please provide feedback

