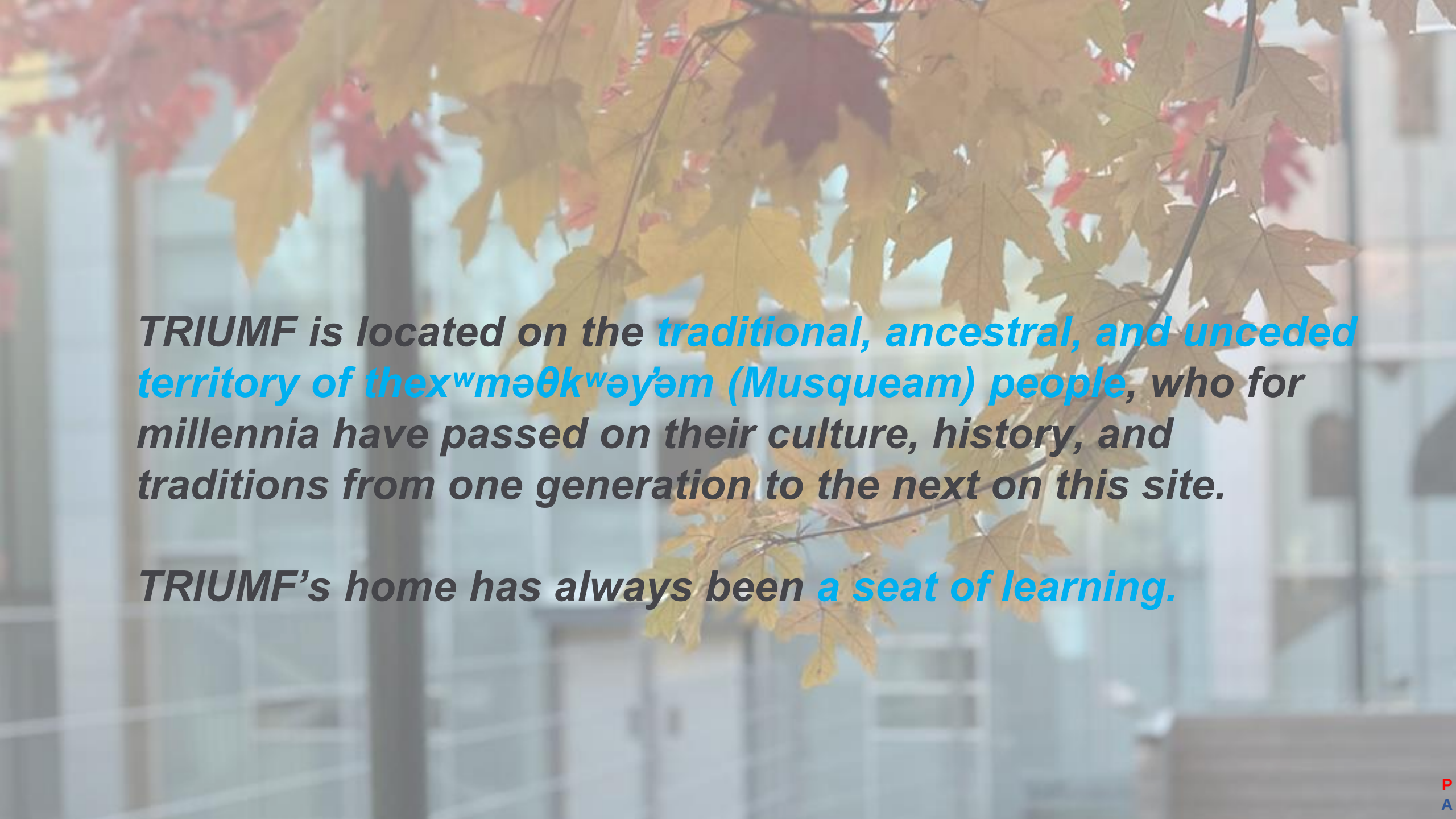
TRIUMF

Canadian research collaboration to establish a distributed Canadian FEL infrastructure.

“Welcome to this one-day workshop”

Oliver Kester
Director, Accelerator Division
December 18, 2023

Discovery, accelerated



TRIUMF is located on the traditional, ancestral, and unceded territory of thexʷməθkʷəy̓əm (Musqueam) people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.

TRIUMF's home has always been a seat of learning.

Welcome at TRIUMF,
Canada's Particle Accelerator Centre

TRIUMF is Canada's particle accelerator centre.
We are a world-class hub of research, education, and innovation that is home to ~600 staff and 200 students and post docs.

Founded in 1968 by the University of British Columbia, Simon Fraser University, and the University of Victoria, TRIUMF is a cornerstone of BC's innovation ecosystem, driving impact locally, nationally, and around the world

TRIUMF has five decades of experience in building a rich particle accelerator infrastructure that enables cutting-edge research while growing accelerator expertise.

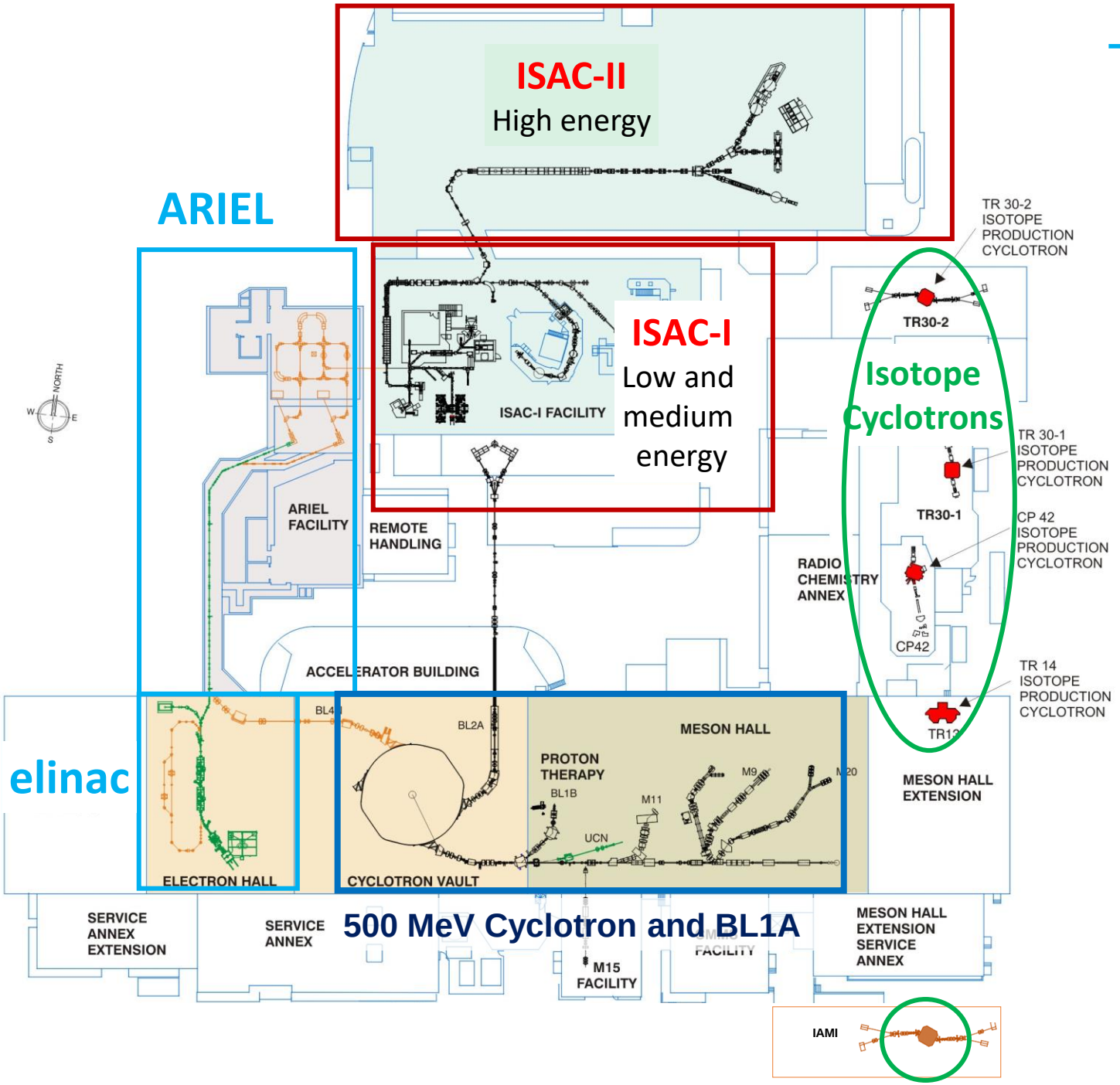
Discovery, accelerated.

Our multidisciplinary community uses TRIUMF's world-class accelerator infrastructure to drive leading-edge research that delivers impact in **science, medicine, and industry, helping position Canada as a global leader**

Member Universities:

University of Alberta
University of British Columbia
University of Calgary
Carleton University
University of Guelph
University of Manitoba
McGill University
McMaster University
Université de Montréal
University of Northern British Columbia
Queen's University
University of Regina
Saint Mary's University
Université de Sherbrooke
Simon Fraser University
University of Toronto
University of Victoria
University of Waterloo
Western University
University of Winnipeg
York University

TRIUMF accelerator complex



Primary beam driver (1974):

500 MeV Cyclotron, 300 μA, H^-
Produces rare isotopes, neutrons and muons

Isotope Separator and Accelerator facility – ISAC (1996)

- ISAC-I: Normal conducting-linac
  - 0.15-1.8 MeV/u (2000)
- ISAC-II: Superconducting-linac
  - 1.5-16.5 MeV/u (2006)

Advanced Rare Isotope Laboratory – ARIEL (in progress)

- Superconducting electron linac
  - 30 MeV, 10 mA, cw (2019)

4 (+1) Cyclotrons for medical isotope production – TR30 and TR13 designed by TRIUMF

Discovery, accelerated

What does TRIUMF do?

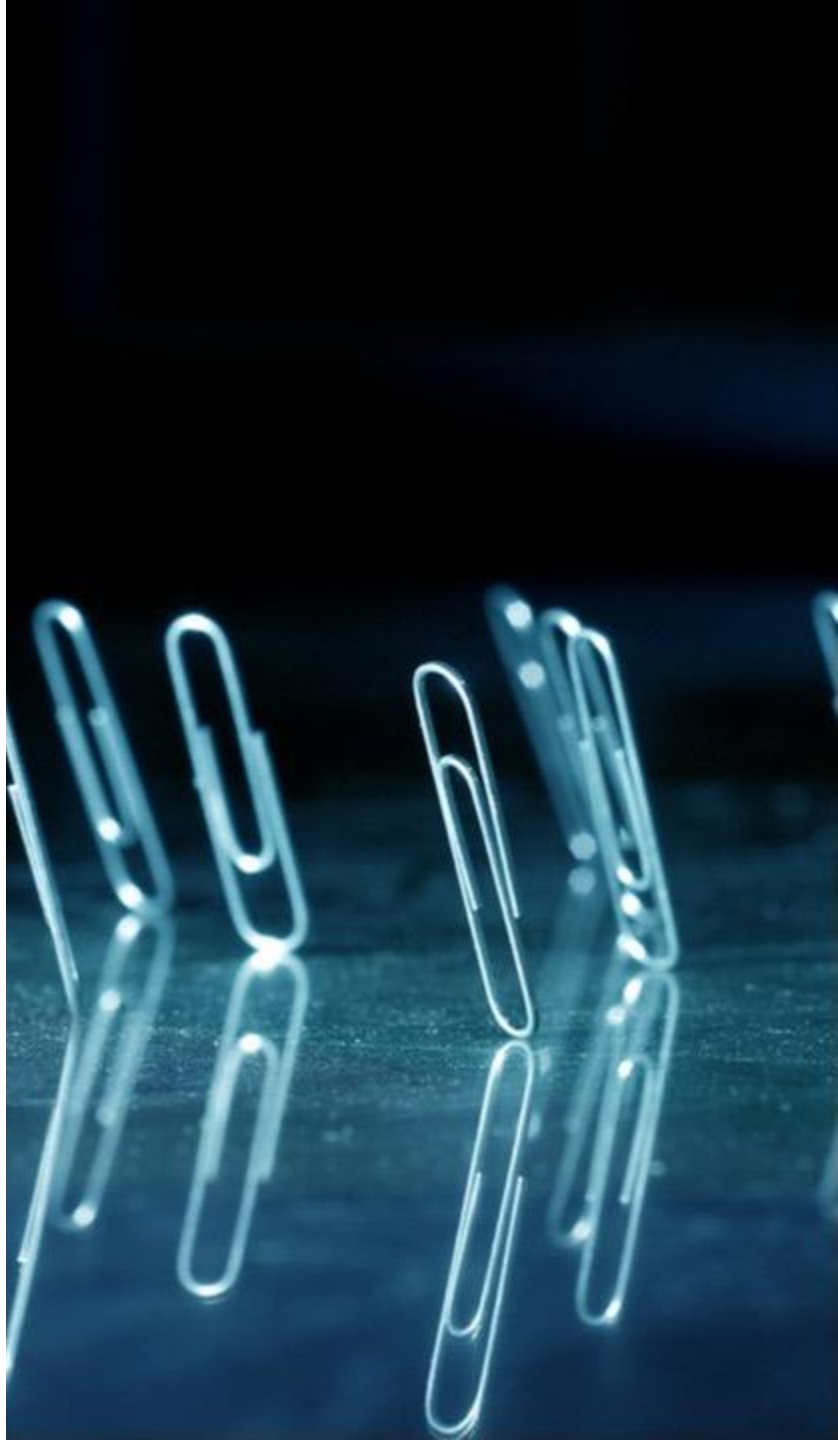
TRIUMF’s work spans the entire continuum of research from fundamental science to commercialisation

TRIUMF has cultivated a hub of excellence around a core of expertise in accelerators and isotope research

From supporting Nobel-winning research to delivering life-saving breakthroughs in health and technology, TRIUMF is a major asset in Canada's high-tech landscape

Scope of the workshop

1. Get to together to present and discuss the project status and the plans for the different sites.
2. Explore the collaboration of the partners to strengthen the projects at the different sites.
3. Discussion about further funding requests I the framework of NFRF and CFI.
4. Just enjoy the talks and the discussion!



Workshop Agenda

FEL Workshop at TRIUMF			
Location: MOB Auditorium, Date: March 19, 2024			
AGENDA			
Start		**Agenda Item**	**Presenters**
8:25 AM	30m	Refreshments	
8:55 AM	5m	Welcome	Oliver Kester
9:00 AM	45m	A Canadian Free Electron Laser	Scott Hopkins
9:45 AM	30m	The Waterloo FEL facility	Alan Todd
10:15 AM	45m	Discussion on science requirements for FEL	All
11:00 AM	30m	------coffee break-----	
11:30 AM	20m	A test bed for intense THz radiation at the ARIEL e-linac	Victor Verzilov
11:50 AM	15m	The new e-linac gun for the THz radiation project	Friedhelm Ames
12:05 PM	10m	TRIUMF's expertise in SRF for the design of an SRF gun	Bob Laxdal
12:15 PM	15m	Beam physics challenges of the TRIUMF e-linac	Hui Wen Koay
12:30 PM	30m	Discussion on THz rad facility at TRIUMF	All
1:00 PM	60m	------lunch in the MOB Boardroom-----	
2:00 PM	30m	New CLS Linac / IR FEL Linac procurement / Magnet mapping / ID Design	Mark Boland
2:30 PM	30m	Electron Source Simulations and Lab Plans	Xavier Stragier
3:00 PM	60m	Discussion on the overall collaboration, design, procurement etc.	All
4:00 PM	90m	TRIUMF tour	All
5:30 PM	45m		
6:15 PM		------dinner-----	

Enjoy the workshop!

Any questions?