Particle Physics
Faculty
- Andrzej Czarnecki (theory)
- Doug Gingrich (exp.)
- Roger Moore (exp.)
- Jim Pinfold (exp.)
- Alan Shotter (TRIUMF)

Emeriti
- Faqir Khanna (theory)
- Helmy Sherif (theory)
- Glen Stinson (beam physics)
- Peter Kitching (exp.)
- John McDonald (exp.)

Adjunct & Research Scientists
- Marc de Montigny (Campus Saint-Jean)
- Ian Blokland (Augustana Faculty)
- Dave Hutcheon (at TRIUMF)
- Andy Miller (at TRIUMF)
- Bryan Caron

Research Associates/Post-docs
- Experiment:
  - Jiansen Lu (ATLAS)
  - Richard Soluk (ATLAS)
  - Ernest Aguilo (DØ, ½ Alberta)
- Theory:
  - Kouhei Hasegawa
  - Mohammad Hedayatipoor
Technical Staff

Technicians
- Drew Price
- Jan Soukup
- Jan Schaapman

TRIUMF
- Wayne Faszer

Clerical Staff
- Suzette Chan
- Viola Kuhn

Electronics Shop
- Bill Burris
- Lars Holm
- Len Wampler
- Pat Wong

Machine Shop
- Gibert Lachat
- Tony Paget
- Boris Tomasevic
- Paul Zimmermann

Computing Staff
- Jay Haverstock
- Jim MacKinnon
Infrastructure and Facilities

machining

electronics

computing

x-ray accelerator
Students

ATLAS
- Hussain Ahmed (PhD)
- Sang Hee Han (MSc)
- Logan Sibley (MSc)
- Stephan Swedish (MSc)
- Wei-Yuan Ting (PhD)
- Yushu Yao (PhD)

Theory
- Alexey Pak (PhD)
- Matthew Dowling
- Dinh Binh Thanh

TWIST
- Rob MacDonald (PhD)

DØ
- Kevin Chan (MSc)

CDF
- Long Zhang (MSc)
History of Experimental Students

7 MSc students graduated (last 5 years):
• 4 now in PhD programs (2 at other universities)
• 1 MSc in Education Program
• 1 electronics job at Netherlands Space Agency
• 1 job at Bubble Technologies

8 PhD students graduated (last 5 years):
• 1 professor (EE South Dakota)
• 1 TRIUMF research scientist/computing
• 6 RA (3xATLAS, DØ, MINOS, HERMES)
Current Program

Experiment Program
- ATLAS
- SNOLab
- With TRIUMF:
  - ISAC: DRAGON, TUDA/TACTIC, EMMA
  - TWIST
  - HERMES
- GlueX
- DØ
- CDF
- STACEE
- ALTA
- MOEDAL

Theory Program
- Precision tests of the standard model
- Many-particle systems
- Thermal Lie algebras
- Relativistic nuclear dynamics
- Interactions of electromagnetic and weak probes with nuclei
- Mathematical physics
TRIUMF/ISAC

- **TRIUMF**: Canada’s National Laboratory for Particle and Nuclear Physics
- **Location**: Vancouver on UBC campus
- **ISAC facility**: Isotope Separation and ACceleration
- **Physics**: study nuclear astrophysics and element synthesis in universe
SNOLAB

Sudbury Neutrino Observatory Laboratory

- Has obtained very successful solar neutrino results
- **Underground Science:**
  - Low energy solar neutrinos
  - Neutrinoless double beta decay
  - Detection of neutrinos from Supernova explosions
  - Dark matter searches
- **Alberta facility:** reduction of very low radioactive backgrounds
CERN/LHC

- **CERN**: World’s largest particle physics laboratory
- **Location**: Swiss/French boarder outside Geneva
- **LHC**: Large Hadron Collider, highest energies
**ATLAS:** Large detector system with Canadian participation

**Some Scientific Goals:**
- Higgs: What give particles mass?
- SUSY: For every particle is there a partner with different spin?
- Hierarchy: Do we live in only 4-D spacetime?