

Carl H. Westcott Fellowship

2023-24 Award Amount: \$10,800

Deadline for Applications: January 29, 2024

The Carl H. Westcott Fellowship is awarded each year to a graduate student whose research work is being carried out at TRIUMF or on TRIUMF-related projects.

The student applicant must be a Canadian citizen or permanent resident in Canada. Candidates should expect to receive the degree noted in their application no earlier than April 30, 2024.

Eligible Thesis Work

Eligible candidates are those whose thesis work is based on activities that involve:

- using the TRIUMF primary proton or secondary channel beams;
- using ISAC;
- nuclear medicine;
- material sciences; or
- strong collaborations with TRIUMF.

If applicable, the thesis work should have been reviewed and approved by one of the TRIUMF Experimental Evaluation Committees.

Eligible Research Programs

Off-site research programs are eligible provided that the candidate has significant research activity on site at TRIUMF or in strong collaboration with TRIUMF, and that the program is one of the following:

- ALPHA
- ATLAS
- Linear Collider R&D
- Experiments at SNOLAB (DEAP, SNO+, HALO, EXO)
- T2K

The Fellowship is tenable at any university whose faculty members are actively engaged in research at TRIUMF.

Unsuccessful applicants may re-apply in open competition in subsequent years. The Fellowship may be held simultaneously with other fellowships, scholarships or bursaries.

The applications must be forwarded by the Head or Chair of the university department where the student is accredited, citing the faculty supervisor and the degree being pursued. Application forms are available at participating universities or from the website of the physics department of the University of Alberta.

Completed applications should be returned to, preferential by email:

The Westcott Awards Committee
c/o Suzette Chan
(schan@ualberta.ca, subject: Westcott Award)
Centre for Particle Physics
University of Alberta
Edmonton AB T6G 2E1

All applications must be received by January 29, 2024. The results will be announced in May 2024.

Carl H. Westcott Fellowship

Conditions for Eligibility

The Carl H. Westcott Fellowship was created to support research activities at TRIUMF. The award is normally made to a PhD candidate who is far enough along in his or her program to have demonstrated excellent research capabilities. Usually, the award will not be given to an individual more than once.

In selecting candidates, the following guidelines will be applied:

- 1) **Nationality:** The candidate must be a Canadian citizen or have permanent resident status.
- 2) **Candidate's Home Institution:** Candidates should be an accredited student at one of the institutions listed below. However, candidates from other institutions whose faculty have significant activities at TRIUMF will be considered as well.

Member Universities of TRIUMF

- University of Alberta
- University of British Columbia
- University of Calgary
- Carleton University
- University of Guelph
- University of Manitoba
- McMaster University
- Université de Montreal
- Queen's University
- University of Regina
- Simon Fraser University
- University of Toronto
- University of Victoria
- York University

Associate Members of TRIUMF

- McGill University
- University of Northern British Columbia
- Saint Mary's University
- Western University
- University of Waterloo
- University of Winnipeg

- 3) **Expected Degree Date:** Candidates should expect to receive the degree noted in their application no earlier than April 30, 2024.
- 4) **Eligible Programs:** The Westcott Fellowship is not intended for general support of the Canadian Subatomic Physics program.
 - (a) **TRIUMF Experiments:** All candidates whose thesis work is based on activities using the TRIUMF primary proton or secondary channel beams, ISAC, or the medical physics facilities are eligible. If applicable, the thesis work should have been reviewed and approved by one of the TRIUMF Experimental Evaluation Committees.
 - (b) **Off-site TRIUMF research:** Off-site research programs are eligible provided that:
 - the candidate has significant research activity on site at TRIUMF or a strong collaboration with a TRIUMF research program, and
 - the research program is one for which TRIUMF has made a formal infrastructure commitment. To date, these commitments are for work on:
 - ALPHA
 - ATLAS
 - Linear Collider R&D
 - Experiments at SNOLAB (DEAP, SNO+, HALO, EXO)
 - T2K

Selection Process: The committee will consist of one faculty member from the University of Alberta and three others drawn from the TRIUMF consortium universities or other Canadian universities with substantial programs at TRIUMF, all of whom must be active in research at TRIUMF or on TRIUMF-related projects.

The Westcott Fellowship is administered by the Centre for Particle Physics at the University of Alberta.

Carl H. Westcott Fellowship

Application, Page 1 of 2

Applicant's Name

Complete Mailing Address

Email

Telephone

Birthdate

Immigration Status

Canadian Citizen Permanent Resident

Canadian Social Insurance No.

Degree(s) Previously Obtained
and Universities

University of Current Degree
Program

Faculty and Department

Supervisor

Degree

MSc PhD Date of Anticipated Completion _____

Title of Thesis Project

Your thesis should be related to an aspect of the formally recognized TRIUMF program. Indicate which of the following, or check the last box and provide an appropriate explanation.

- TRIUMF Experiment # _____
- ALPHA
- ATLAS
- Linear Collider R+D
- Experiments at SNOLAB (DEAP, SNO+, HALO, EXO)
- T2K
- Other _____

Carl H. Westcott Fellowship

Application, Page 2 of 2

Additional Information to be provided by applicant:

1. Transcripts of marks for all undergraduate and graduate courses.
2. Letters of reference from the applicant's thesis supervisor and one person not directly involved in the applicant's current research.
3. List of publications and conference presentations.
4. List of all previous and current awards.
5. A one page description by the applicant of his or her research work and in particular the applicant's own contribution on team projects.
6. A one-page description by the applicant of the connection of his or her research to the TRIUMF research program and the nature of the collaboration with TRIUMF.

This student has been admitted to the post-graduate degree program described. The candidate expects to receive his or her degree after April 30, 2024.

Department Head / Chair _____

Signature _____

Date _____

Carl H. Westcott Fellowship

Background and History

The Carl H. Westcott Memorial Fellowship

The Carl H. Westcott Fellowship was endowed by Mrs. Kathleen B. Westcott of White Rock, B.C. in 1986 with a \$25,000 donation to the University of Alberta as a memorial to her late husband. The original \$25,000 endowment has been augmented by the Government of Alberta from the generous and far-sighted two-for-one endowment matching arrangement with the University of Alberta. The Westcott Fellowship has been awarded in each academic year since its inauguration in 1988/89.

Dr. Carl H. Westcott – A Personal History

Carl H. Westcott was born in Reading, England on May 1, 1912. Upon completion of St. Bartholomew's Grammar School, Newbury, in 1929, he was awarded a state scholarship and one to Queens' College, Cambridge, but was prevented from taking them up until 1930 by an entrance age restriction. In the interim, he enrolled in London University as an external student receiving the 1st class B.Sc. degree in Pure and Applied Mathematics and Physics in 1932; this was followed by a 1st class B.A. degree in Physics from Cambridge in 1933. He continued his studies at the Cavendish Laboratory, Cambridge as one of the last graduate students under the direction of Lord Rutherford, receiving his Ph.D. degree in 1936 for studies of the moderation and reaction processes of the then recently discovered neutron.

From 1937 to 1940 Dr. Westcott was a Carnegie Teaching Fellow at the University of Aberdeen in Scotland, where he assisted in setting up a cloud chamber for detecting cosmic rays and initiated research work on the propagation of long wavelength radio waves. From 1940 to 1944 he worked at the Telecommunications Research Establishments, first at Swanage and then Malvern on military radar antenna designs and countermeasures to enemy jamming. He later (1948) co-authored a book called *Principles of Radar*.

In 1944 he married Kathleen Brena Shaw of Bury, Lancashire, England and transferred to the joint British/Canadian Atomic Energy Project at the National Research Laboratories in Montreal, the forerunner of Chalk River Nuclear Laboratory where the project was moved in 1945. Dr. and Mrs. Westcott returned to England in 1946 where Dr. Westcott took up a Nuffield Research Fellowship in Physics at the University of Birmingham continuing the development work on neutron and charged particle detection and electronic measurement and recording techniques. He also participated in some of the early conceptual design work for the variable radio frequency accelerating voltage system required for proton synchrotrons. In 1949 he moved to McGill University in Montreal as Associate Professor of Physics where he continued his research and development work on nuclear particle detection and measuring systems.

In 1954 Dr. Westcott joined the scientific staff of the Chalk River Nuclear Laboratory operated by Atomic Energy of Canada Ltd. specializing in the field of nuclear data for scientific and technological purposes. In this regard, he developed the "Westcott Convention" for conveniently and accurately estimating neutron reaction rates in "thermal" fission reactors. His international reputation for this and his nuclear data compilation and assessment work led to his loan to the International Atomic Energy Agency in Vienna from 1963 to 1966 where he organized a nuclear data unit to compile and assess such data on a world-wide basis.

On his return to CRNL, as well as continuing his nuclear data work, he also contributed to developments in the field of particle accelerator technology. He was the first to recognize that both positive and negative ions could be accelerated simultaneously in linear accelerators – a feature that has considerably enhanced the Los Alamos Meson Physics Facility. He was also instrumental in some of the early design studies for electron storage rings that eventually led to the EROS facility at the University of Saskatchewan. Following his retirement in 1974, Dr. and Mrs. Westcott moved to White Rock, BC where Dr. Westcott died of cancer on January 11, 1977 after a regrettably short, informal association with TRIUMF.