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"Isotopes for Science and Medicine" Program Funded Via NSERC CREATE Initiative

TRIUMF & UBC to Enrich Student Training With Interdisciplinary Collaborations

(Vancouver, BC) – At a ceremony today at McGill University, Minister of State (Science and Technology) Ed Holder announced a significant investment in job-related training at eight Canadian institutions through NSERC's Collaborative Research and Training Experience (CREATE) initiative. Through CREATE, key programs will be funded to train young researchers as they transition from academia into the Canadian workforce. One of these programs, led by TRIUMF and UBC, is the Isotopes for Science and Medicine (ISOSIM) program. ISOSIM will provide young scientists with enriched training experiences in the production, preparation, and innovative application of isotopes for science and medicine.

The ISOSIM program will train undergraduate students, graduate students, and postdoctoral researchers at UBC and TRIUMF from fields associated with isotope sciences in an individually tailored, interdisciplinary curriculum that will build on and complement the education in their specialty field. Unique in Canada, this program offers a combination of interdisciplinary isotope-related training ranging from pure to applied sciences, industrial internships, and mobility with German research institutions with unique large-scale equipment and scientific infrastructures.

"ISOSIM represents a timely and nationally important training initiative and is built on a world-class collaborative research environment," says Dr. Reiner Kruecken, TRIUMF's Science Division Head and Professor at UBC Department of Physics and Astronomy. Kruecken is leading the ISOSIM initiative and is joined by over twenty collaborators from UBC, TRIUMF, and several research institutes in Germany.

ISOSIM is poised to create the next generation of leaders for isotope-related industries and markets, including commercial, public health, environmental, and governmental sectors, as well as academia. The combination of research institutions like UBC, TRIUMF, and the BC Cancer Agency with Canadian companies like Nordion Inc., and Advanced Cyclotron Solutions Inc., have transformed Vancouver into a hub for isotope-related research and industries, emerging as "Isotope Valley".

The inspiration for the ISOSIM program came from an interdisciplinary TRIUMF-led team who, in response to the isotope crisis, demonstrated non-reactor methods for producing the critical medical isotope Tc-99m. This required a coordinated approach of physicists, chemists, biologists, and engineers.

Similar interdisciplinary efforts are needed for expanding the use and application of isotopes in key areas. While their medical use is widely known, isotopes enjoy growing importance in many fields. Isotopes are used as tracers to examine the trace flow of

nutrients and pollutants in the environment. Isotopes are also used to characterize newly designed materials and the behaviour of nanostructured materials that play a key role in modern electronics devices. The production and investigation of very short-lived radioactive isotopes, also known as rare-isotopes, is a central approach in nuclear physics research to understand the nuclear force and how the chemical elements heavier than iron were formed in stars and stellar explosions.

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About the ISOSIM Collaborators

ISOSIM will enable student mobility by building on strong existing international collaboration between UBC/TRIUMF and partners in Germany: the Helmholtz Centres GSI for Heavy Ion Research (Darmstadt), HZB for Materials and Energy (Berlin), DESY (Hamburg), the Alfred Wegener Institute for Polar and Marine Research (Bremerhaven) as well as the Laboratory for Preclinical Imaging and Imaging Technology, Siemens-Foundation (Tübingen), MPI Stuttgart and GE Global Research Munich. Collaborators from TRIUMF and UBC include those in the areas of Ocean Science, Nuclear & Accelerator Physics, Medical Physics, Radiopharmaceuticals, Nuclear & Physical Chemistry, and Material Science.

About TRIUMF

TRIUMF is Canada's national laboratory for particle and nuclear physics. TRIUMF is one of the world-leading facilities for the production and use of isotopes and one of its three research themes is *Advancing Isotopes for Science and Medicine.* Together with its partner AAPS, Inc., TRIUMF also seeks to commercialize its technologies for the benefit of all Canadians. Located on the south campus of the UBC, TRIUMF receives operating support from the Government of Canada through a contribution agreement via National Research Council Canada; the Government of British Columbia provides capital for new buildings. TRIUMF is owned and operated as a joint venture by a consortium of the following Canadian 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, Simon Fraser University, University of Toronto, University of Victoria,

University of Winnipeg, and York University. For more information, please visit us at http://www.triumf.ca and follow us on Facebook and Twitter @TRIUMFLab.