

**Support for Students, Postdoctoral Fellows and Trainees to
Attend the 2022 Workshop on Targetry and Target
Chemistry (WTTC)
DE-SC0023159**

Final Technical Report

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PROJECT OBJECTIVES:

The overall goal of this project was to obtain financial support for students, postdoctoral fellows and trainees to participate in nuclear and radiochemistry-related talks and networking events at the 2022 Workshop on Targetry and Target Chemistry (WTTC) originally scheduled for 2020 and delayed due to the COVID 19 pandemic. The WTTC was widely advertised through promotional materials such as is shown in Figure 1 and at <https://wttc18.triumf.ca/>.

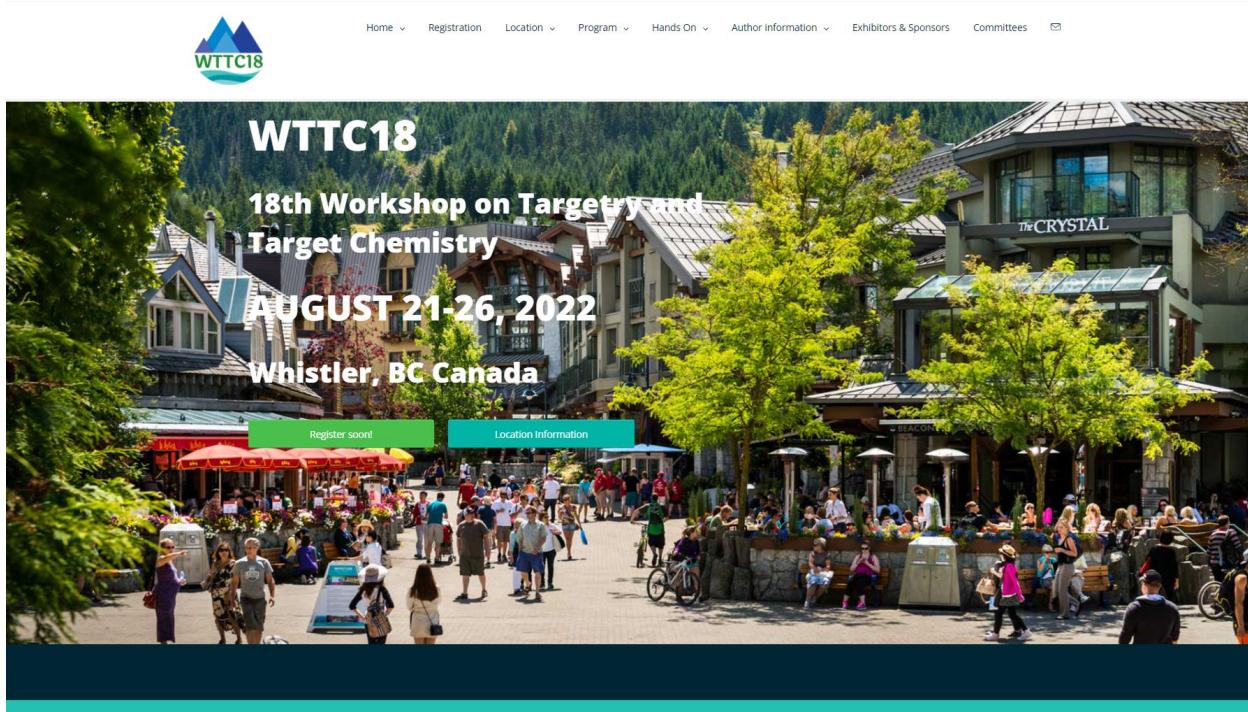


Figure 1. Promotional website for WTTC18

Importantly, emphasized the critical role radiochemistry and radionuclides can have in the development of future diagnostic and therapeutic agents. Attending the WTTC stimulated student interest in nuclear and radiochemistry, and thus, provide support making, or an impetus to make, this technical area a career choice.

The sole objective of this application was to provide financial assistance for students and trainees from academic and government institutions to attend the 2022 Workshop on Targetry and Target Chemistry meeting. The funding requested in this application was used strictly to provide bursaries for successful applicants to attend the symposia listed.

2. INTRODUCTION

This proposal addressed a need for training and recruitment of personnel who will be involved in professional careers where knowledge of radiochemistry is crucial. This is particularly pertinent for personnel working in radionuclide production, and in biological, industrial, medical and environmental fields where radionuclides are used. It is our belief that attendance of students and trainees at the radiochemistry-related symposia will provide a stimulus and excitement that will be influential in their making career decisions to work in radiochemistry-related areas.

(A) Training of Radiochemists

Highly trained workers with expertise in nuclear and radiochemistry are required to achieve the missions of DOE, including isotope production and distribution, and to develop technology-leading products in US medical, environmental, energy, and security industries. Expertise in radiochemistry is also required in academic positions exploring the use of isotopes in novel new technology and to answer basic science questions. It appears that at present the need for expertise in radiochemistry is being filled with people trained in radiochemistry, and people that have other physical science backgrounds who can be trained on the job. There is concern that personnel who are trained in other fields do not have the depth of knowledge in radiochemistry that is required to make significant advancements in the field.

This proposal responds directly to the critical shortage of highly qualified scientists in the field of radiochemistry and radionuclide production in the United States. This proposal supported an excellent opportunity for career advancement and networking including undergraduate students, graduate students, postdoctoral research fellows and other early career scientists. We strive to foster the development of a new generation of young scientists in isotope production and radiochemistry.

The recent Nuclear Science Advisory Committee's 2015 Long Range Plan for the DOE-NP Isotope program, titled "Meeting isotope needs and capturing opportunities for the future" (NSACI 2015) states:

Investments in workforce development to educate and train the next generation of nuclear scientists focused on isotope production should continue to be a priority. Funding university programs at the undergraduate, graduate and postgraduate levels enable a highly trained workforce and can also generate new technologies and ideas.

While this proposal for funding student involvement in symposia focused on radiochemistry does not address the issue of graduate education, it is an opportunity to help stimulate interest in the field of radiochemistry and radiochemistry-related disciplines. Additionally, with a focus on medical uses of radionuclides in the symposia, the students/trainees should become more aware of

the valuable human use of radioactivity, and that could allay some student issues of societal negativity towards radioactive materials.

(B) WTTC Meetings

The Workshop on Targetry and Target Chemistry (<https://wttc.triumf.ca/>) annual meetings are where isotope production professionals meet to share ideas and advance scientific and technical knowledge. The meeting provides excellent opportunities for sharing a passion for nuclear and chemistry, connecting with the world's only focused isotope production group, and advancing careers of young scientists. Approximately 200 people attend each meeting encompassing a variety of backgrounds including academia, industry and students.

(C) DOE Educational Support

DOE has played a crucial role in workforce development of professionals in nuclear and radiochemistry-related fields through support for training of students in nuclear chemistry, radiochemistry and related fields. DOE has supported research and training in radiochemistry-related fields at several universities and thus supported trainees involved in research at the undergraduate, graduate and postdoctoral levels. DOE has also actively supported sponsoring travel awards (bursaries) for students to attend and present their findings at national and international meetings. Examples of meetings where students/trainees in radiochemistry/radionuclide-related fields have had support include; International Symposia on Radiopharmaceutical Chemistry, TeraChem, Radiohalogen Symposia, and others. It is essential to increase the number of trained/qualified radiochemical professionals in the US to assure future growth of radionuclide applications in biological, medical and environmental fields. Scientific and educational meetings, such as the ACS meeting, provide an outstanding opportunity to recruit interested students and trainees with backgrounds in many areas of chemistry. However, it can be difficult to have significant numbers of young promising students/trainees attending these types of symposia without financial assistance to help offset their travel costs. In this proposal, we requested that the DOE Office of Science, Office of Nuclear Physics provide \$20,000 to be awarded to students/trainees to help offset the costs for traveling to the 2022 WTTC meeting..

3. RESULTS

The \$20,000 in direct costs was requested for students/trainees to attend the 2022 WTTC meeting.

The selection of candidates to receive the bursaries was made by members of the *Bursary Selection Committee*: Suzanne Lapi, Valery Radchenko and Conny Hoehr. Overall 12 students were supported.