



Westcoast Women in Engineering, Science and Technology

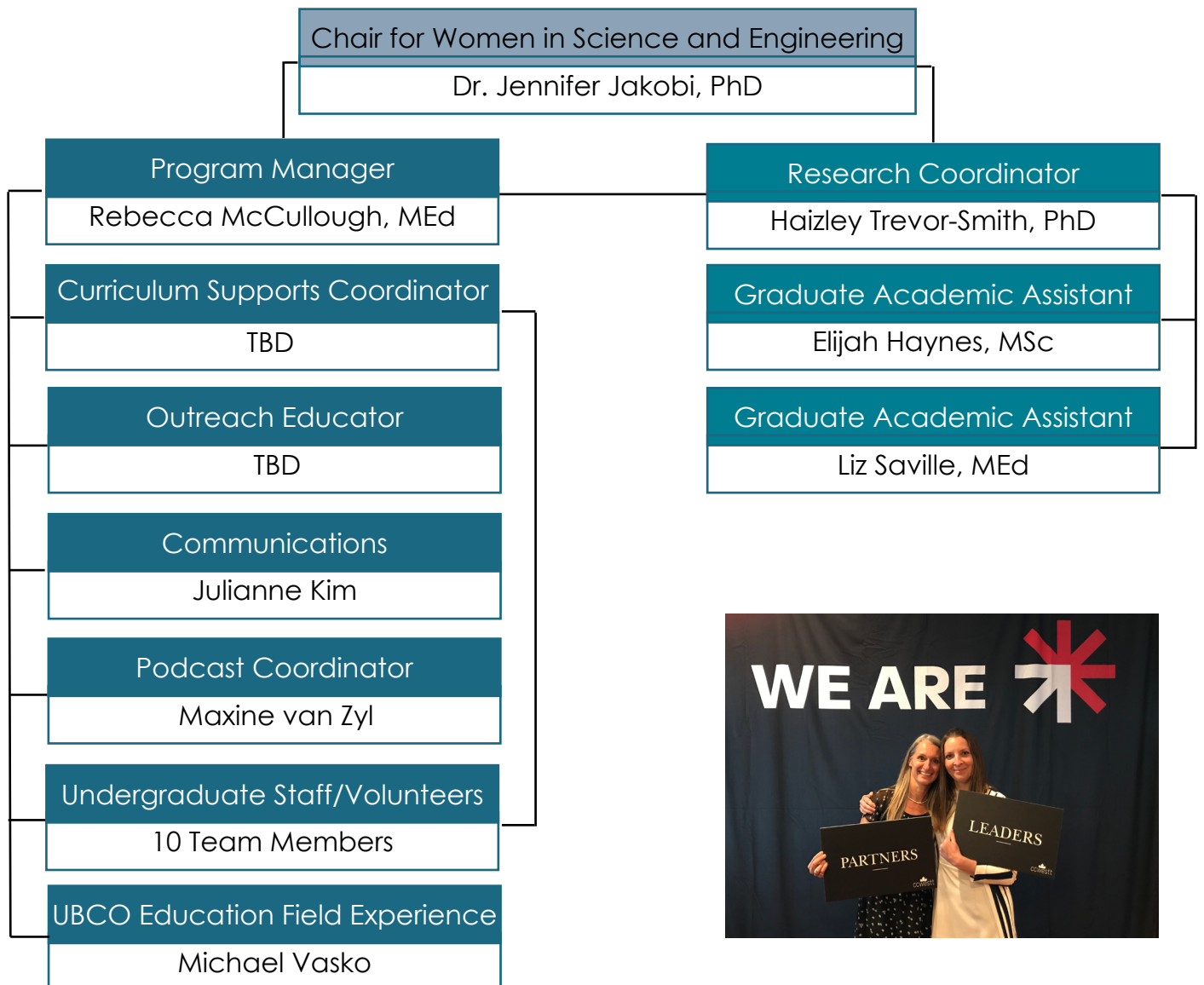
ANNUAL REPORT 2021 - 2022



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WWEST TEAM



ABOUT

Westcoast Women in Engineering, Science and Technology (WWEST) Natural Sciences and Engineering Research Council (NSERC) Chairs for Women in Science and Engineering (CWSE)

The CWSE goal is to develop, implement and communicate strategies to raise the level of participation and retention of underrepresented persons across intersectional dimensions (e.g., age, sexual orientation, Indigenous status) in Science, Technology, Engineering and Math (STEM) disciplines. The program is regionally based, and through a competitive application process one accomplished female scientist in their field is selected for each of the five regions (Atlantic, Quebec, Ontario, Prairie, and British Columbia/Yukon).

These Chairs lead innovative programs within their region and collectively, through the Network of Chairs, they create actionable goals to positively affect system changes for underrepresented persons in STEM.

Dr. Jakobi was awarded the CWSE in September 2021. The operational name is Westcoast Women in Engineering Science and Technology (WWEST) to honor the longstanding history of the CWSE program in the BC/Yukon Region. In 2014, the integrative STEM Team Advancing Networks of Diversity (iSTAND) program was developed (of the side of her desk), and this program is the operational arm of youth outreach for WWEST.

OUR VISION is to increase diversity, and grow a collaborative community through application of positive factors and forces, that excite women and underrepresented persons to pursue, and remain in, STEM careers.

With a goal to IMPACT LOCALLY and INFLUENCE NATIONALLY, the activities of the British Columbia/Yukon Chair, will advance local engagement, transformative learning, and research excellence around the three core themes of **INNOVATION**, **COLLABORATION** and **INCLUSION**.



Chairs for Women in Science and Engineering
Chaires pour les femmes en sciences et en génie

<https://stem-inclusion-stim.ca>



<https://wwest-cwse.ca/>

INNOVATION

Evidence-informed knowledge will be applied to science translation and professional workshops. The program will increase knowledge of the positive social, cultural and personal experiences that contribute to the choices of girls, women and underrepresented persons to pursue and remain in STEM fields.

TECHNICAL PAPERS

Lack of Diversity at the Top: Examining Senior Leadership in Canadian Universities. 2022. T. Franz-Odenaal, L. Behjat, L. Shannon, J. Jakobi, S. Ghose, E. Langelier

Where is the Diversity? 2022. T. Franz-Odenaal, L. Behjat, L. Shannon, J. Jakobi, S. Ghose, E. Langelier

PAPERS

Saville E, Jakobi, JM, Beaudoin, AS & Cherkowski, S (2021). Participation value of undergraduate students leading STEM outreach: evaluation of academic, personal, and professional effects. *Advances in Physiology Education*. 46(1), 140-144. <https://doi.org/10.1152/advan.00032.2021>

Saville E, Cherkowski S, Jakobi JM. Connection, Engagement and Belonging: Exploring Young Women's Positive Experiences for Building Inclusive STEM classrooms. *Alberta Journal of Educational Research*. Submitted March 2022.

PRESENTATIONS

Saville, E., Jakobi, J., Beaudoin, AS., Cherkowski, S. (2022, May). Exploring impacts of leading STEM outreach on undergraduate students: Academic, professional, and personal effects. [Paper presentation]. Canadian Society for the Study of Education Conference, Virtual.

Saville, E., Jakobi, J., Beaudoin, A., Cherkowski, S. (2022, April). Connection, engagement and belonging: Exploring young women's positive experience for building inclusive STEM classrooms. [Roundtable Presentation]. American Educational Research Association Conference, San Diego, USA. NOTE: This conference abstract is a 10page paper, customary to education.

Jakobi, JM, Saville, E., Cherkowski, S. (2022, May) Academic, Professional, and Personal Effects for Students Leading STEM Outreach. Canadian Coalition of Women in Science and Engineering (CCWEST). Halifax, Nova Scotia.

McCullough, R., Jakobi, JM. (2022, May) Building STEM Connections Through Indigenous Mentorship Outreach Programs. Canadian Coalition of Women in Science and Engineering (CCWEST). Halifax, Nova Scotia.

WORKSHOP

Examining gender diversity as a growth model for inclusion of all underrepresented persons in medical physics. Keynote presentation at the Society of Directors of Academic Medical Physics Programs. (July 23, 2021).



INNOVATION

BEST OF THE WWEST PODCASTS (DOWNLOADS: 3,100/5 EPISODES)

The goal of these podcasts is to interact with STEM focused people, who can contribute their experiences to the conversation in promoting and identifying what makes equity, diversity and inclusion in STEM so important.



THURSDAY THOUGHTS (VIEWS: 12,195/22 POSTS)

A social media campaign aimed to elevate awareness of individuals who are working to advance under-represented persons in STEM. This campaign identifies leaders and, thought processes for change, in promoting and identifying what makes equity, diversity and inclusion in STEM so important.

IMMIGRANT WOMEN IN STEM: PARTNERSHIP WITH CWSE/TECHGIRLS

In Canada there is realization of the need for sustained immigration to uphold tax-based funding of universal public services, yet immigrants continue to struggle in their attempts to integrate equitably into the labour market.



This initiative aims to increase and support immigrants trained in STEM through education and advocacy to inform coast-to-coast challenges of being certified in foreign countries, enticed to come to Canada and subsequently not supported through existing certification, accreditation and government policy.

MINDMAP TOOL TO SUPPORT EDUCATIONAL AND CAREER TRANSITIONS

Reputable resources to support underrepresented persons transitioning across STEM education and career stages have been gathered. Greater than 130 collected and verified sources are being developed into a Mindmap, with current graphical and web-based designs underway.



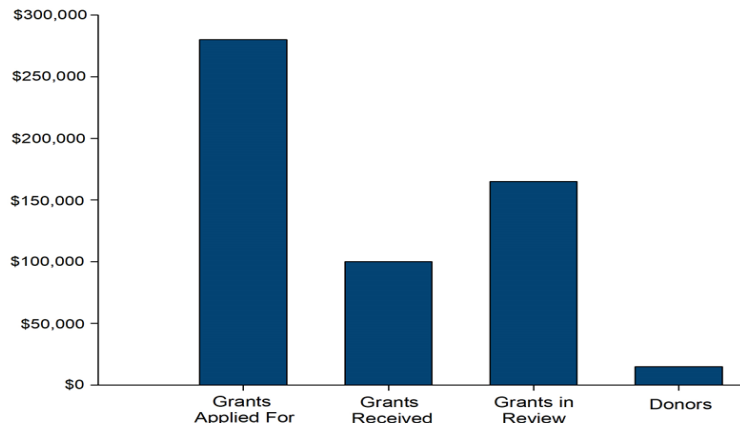
ACADEMIC ADVANCEMENT WORKSHOPS

Building upon the long-standing history and success of [CWSE Academic Workshops](#) this program is designed for faculty, across ranks, to review their accomplishments through small group consultation and make choices about academic advancement. For those of the Professor ranks, activities focus on developing approaches to build profiles to advance into leadership positions.



FUNDING SUMMARY

Program sustainability requires partnerships and donors. We are diligent in seeking out opportunities which enable us to extend our reach and programming.



COLLABORATION

This theme recognizes the need for cultivating, co-ordinating and engaging academic, industry and professional association partners. Collaboratively, the Chair will build support networks to strengthen connectedness that contributes to retention of underrepresented persons within and between STEM academic degrees and industry.



Impressions: 29,700
Followers: 126



Impressions: 12,200
Followers: 138



Impressions: 16,400
Followers: 736



Impressions: 2,500
Followers: 270

PARTNERS

WinSETT: Through partnership with WinSETT's action-oriented non-profit organization, we are developing a workshop for male leaders to support a culture of Allyship, and creating content to support the growth of diverse and equitable workplaces for underrepresented persons. Through educating persons in approaches to create actionable responses to remove systemic barriers this program aims to build systems of change to support underrepresented persons.



Indigenous STEM Mentorship Program: This initiative trains Indigenous University students in professional skills (career competencies for the workplace) through development of STEM leadership opportunities in their home nation and local school board. This program was launched at UBCO in 2021, and in partnership with UNBC in the fall of 2022 this program will expand to the Prince George and surrounding Indigenous communities. A new collaboration at Yukon University is also under development.



THE UNIVERSITY
OF BRITISH COLUMBIA



Allies Program: The shared goal of this program is to engage at risk youth in meaningful learning opportunities that includes trades, technology, and science opportunities. Participants received secondary school credit while completing on-reserve capital projects and learning science, math and engineering skills and concepts.



COLLABORATION

Partner Development Meetings: We are working with various STEM organizations and partners to expand programming into rural and remote areas of BC and the Yukon. Through creation of hubs we will expand the curriculum program and ensure that the activities are regionally specific while aligned with BC Education goals.



School District No. 22
VERNON



Central Okanagan
Public Schools
Together We Learn



UBC Okanagan STEM

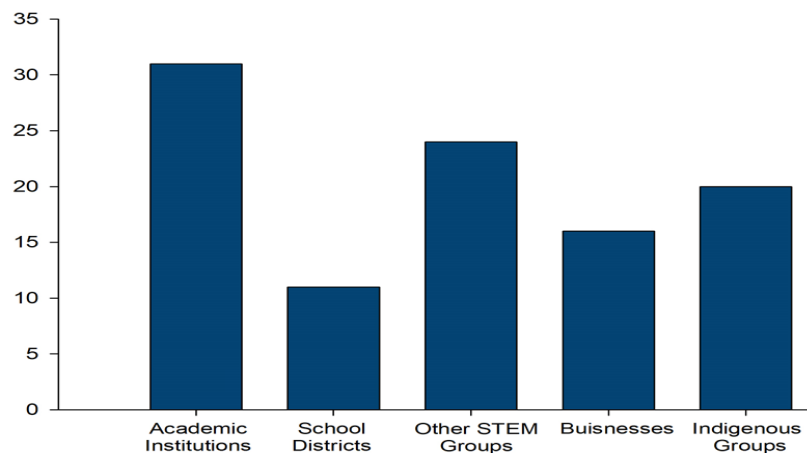


Network of Collaboration/Science for Humanity: The Network of Chairs has developed a Science for Humanity workshop series as part of the Network of Collaborations program that was launched in 2020. The goal of the Network of Collaborations is to dismantle systemic barriers faced by underrepresented groups by facilitating connections between researchers and academics from across Canada, and from all career levels in STEM. The core objective is to build collaborative networks, support ethical research, and facilitate creative collaborations in STEM.

Toolkit: Collaborative development of a Toolkit to identify equity, diversity and inclusion challenges and solutions experienced by members of a research team. The document, corresponding website and materials will help academics pinpoint areas for improvement and develop a tangible action plan to include in research approaches and grant applications.

Building Partners: We are privileged to be collaborating with a diverse and wide cross-section of academic, Indigenous, STEM, and business organizations. These partners are integral in expanding our network throughout BC and the Yukon.

Partner Development Meetings Held November 2021-August 2022



INCLUSION

Excellence in innovation and discovery depends upon diverse perspectives and equitable opportunities and approaches. A core commitment of the Chair, is to enhance and create accessible STEM experiences, along with diverse education and career opportunities, for all.

YOUTH CAMPS

Youth camps are held throughout the year, either as day camps, or week-long camps to spark curiosity and excite youth aged 5-12 in STEM related learning and activities.



iSTAND
for Diversity in STEM

INTERGENERATIONAL STEM

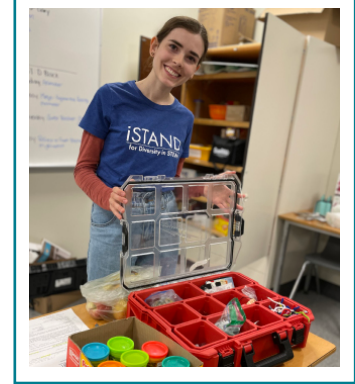
An initiative grounded on literature which indicates family supports are key to increasing diversity in STEM. This program creates shared hands-on learning opportunities for youth and parents, grandparents or caregivers to explore STEM fields and opportunities.



INCLUSION

SCHOOL CURRICULAR PROGRAM

WWEST develops lessons and outreach sessions linked to BC Education STEM-related curricular outcomes, for grades K-12. Lessons are built through conversation and individualized classroom curricular needs. Local school educators share in the learning and teaching of STEM activities through a series of sessions, typically a 4-week program, lead by the WWEST Curriculum team.

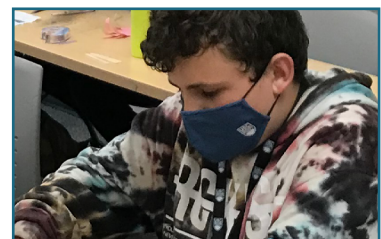
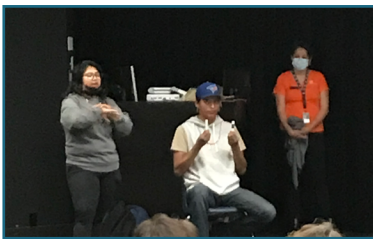


“They were amazing with my student with a visual impairment, ensuring she was able to complete it as well.”

“I loved all of the ideas and the hands on opportunities for my students to learn and grow various concepts. I am excited to use the ideas in my classroom and to make my own stem kits.”

UBCO INDIGENOUS STEM DAY

SD22 (Vernon) in conjunction with WWEST and IPS developed an opportunity for self-identified Indigenous, grade 7 students, to engage in STEM related activities hosted by various UBCO STEM groups, as well as tour the UBCO campus, with the intent on making it more accessible for all.



ENGAGEMENT SUMMARY

12,588 CONNECTIONS

NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUNE 2022	JULY 2022	AUG 2022
109	196	481	634	1041	848	6030	1361	406	1482

TIMELINE



FIRST YEAR MILESTONES



STRENGTHS



RESOURCES NEEDED



In the first year the WWEST program has demonstrable success in each of the three themes. To reinforce the existing strengths and magnify achievements sustainable funding, a UBCO reporting structure and CWSE mandate for agency on campus is crucial.

Donors

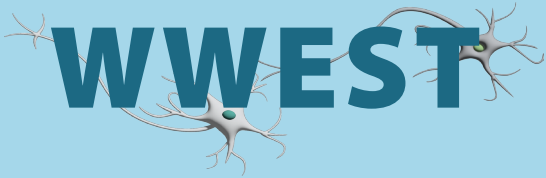


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Partners *(not previously listed)





wwest-cwse.ca



THE UNIVERSITY OF BRITISH COLUMBIA

Okanagan Campus
145 -1147 Research Road (Arts Building) Kelowna, British Columbia, Canada
V1V 1V7

wwest.ok@ubc.ca



@WWEST_UBCO