



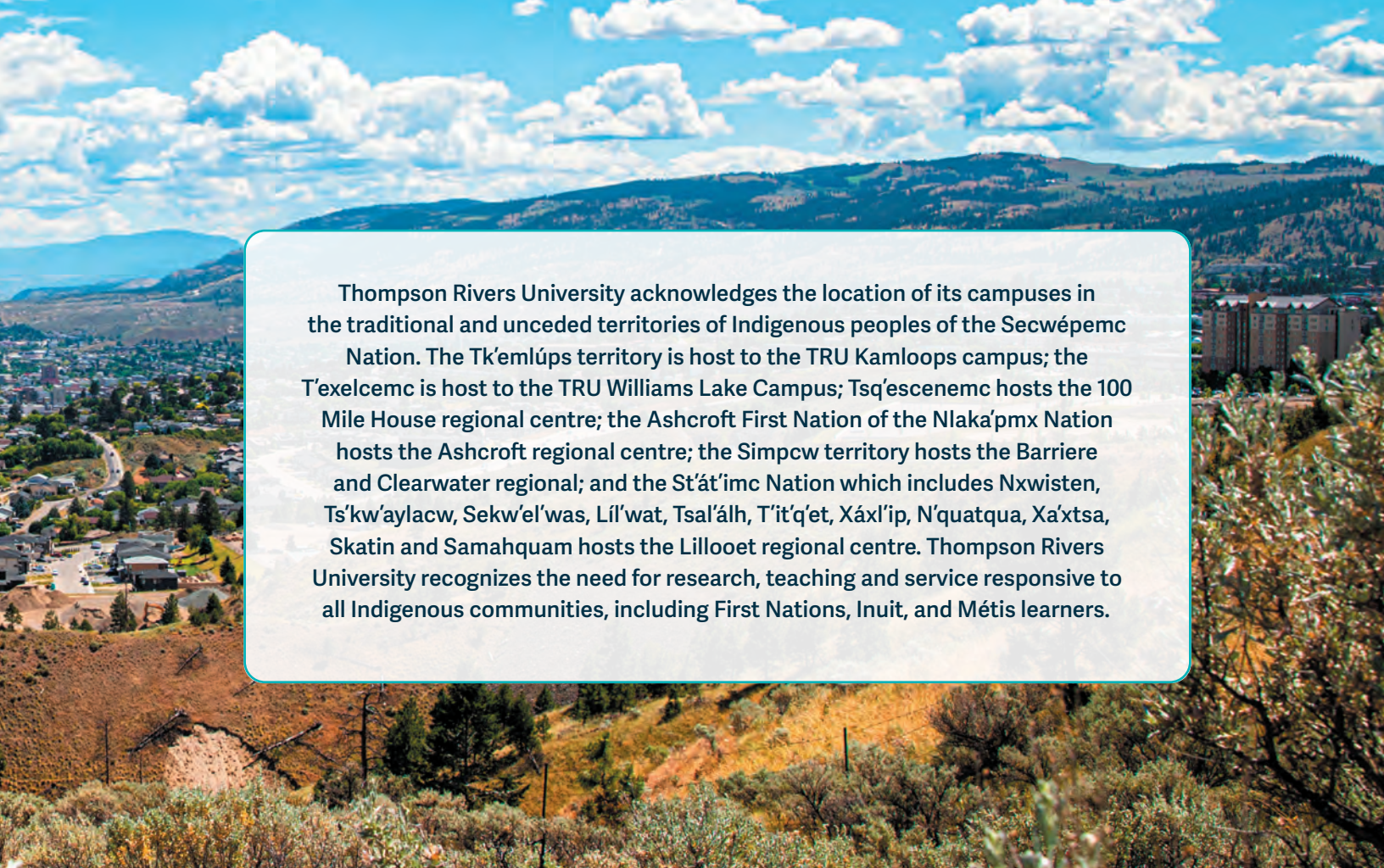
Preamble:

Over a two-year period, Thompson Rivers University (TRU) engaged in a major Strategic Consultation on Research and Graduate Studies with stakeholders within the University and among members of the larger community. The results of these discussions are helping to guide future decision-making and further define “research excellence,” “Indigenization,” “community engagement,” “equity, diversity, and inclusion (EDI),” and our commitment to “research-informed learning” in terms of their relevance and impact.

Insights drawn from the Consultation include an increasing recognition of how TRU’s success in securing federal research funding support has a cascading effect, felt during the life of the previous Strategic Research Plan through an increased allocation of Canada Research Chairs; increased infrastructure funding through the Canada Foundation for Innovation and the BC Knowledge Development Fund, including TRU’s first CFI Innovation Fund for genomics and bioinformatics

innovation and an expansion of our Indigenous research networks; through the establishment of the University’s first Industrial Research Chair (in Ecosystem Reclamation); through national recognition for our advances in research-informed learning and undergraduate research training, an increased allocation of Canada Graduate Scholarships, Research Support Funding and Undergraduate Student Research Assistants. Through the development of the Interior Universities Research Coalition, TRU has benefitted in new health science funding for the Interior region and continued support for ground-breaking, inter-institutional work in all disciplines; and through the allocation of the new Provincial Graduate Scholarships, and a Provincial Chair in Predictive Services, Emergency Management, and Fire Science.

The Consultation further reinforced the importance of linking research to student mentorship, partnership development and the ideals of community-engaged



Thompson Rivers University acknowledges the location of its campuses in the traditional and unceded territories of Indigenous peoples of the Secwépemc Nation. The Tk'emlúps territory is host to the TRU Kamloops campus; the T'exelcemoc is host to the TRU Williams Lake Campus; Tsq'escenemc hosts the 100 Mile House regional centre; the Ashcroft First Nation of the Nlaka'pmx Nation hosts the Ashcroft regional centre; the Simpcw territory hosts the Barriere and Clearwater regional; and the St'át'imc Nation which includes Nxwisten, Ts'kw'aylacw, Sekw'el'was, Lil'wat, Tsal'álh, T'it'q'et, Xáxl'ip, N'quatqua, Xa'xtsa, Skatin and Samahquam hosts the Lillooet regional centre. Thompson Rivers University recognizes the need for research, teaching and service responsive to all Indigenous communities, including First Nations, Inuit, and Métis learners.

research—with special reference to TRU's partnership with the City, and the public engagement opportunities associated with the Researcher-in-Residence Initiative; with United Way, and the social innovation research possibilities associated with the development of the United Way's Community XChange Lab; and with the Interior Universities Research Coalition and the opportunities associated with inter-institutional research collaboration, yielding increased regional impact and access to provincial and federal funding support.

The Consultation supported the harmonization of research ethics protocols across British Columbia; a renewed research focus on social and technological innovation; increased institutional support for early-career researchers; an institutional commitment to increased research space; a recognition that an interdisciplinary, collaborative and mission-driven approach is needed to address societal challenges; and a continued and deep commitment to Indigenizing research at TRU. Above all,

the consultations spoke to the importance of a shared strategic vision for the research enterprise, one that integrates research, scholarship and creative inquiry into all areas of the university, including enhanced faculty and school administrative support, coordinated departmental and divisional research planning, and the development of enhanced and equitable research experience opportunities for students at all stages of their studies.

The Consultation confirmed that an interdisciplinary ethos fostered by what faculty see as the relative absence of academic silos at TRU continues to inspire, and that the University's relationship to the communities we serve continues to grow.

Institutional Background:

As an open access research university, TRU boasts a comprehensive set of assets — including trades training, Open Learning, TRU World, career and vocational laddering opportunities, and outstanding faculty in all the traditional academic areas. The interdisciplinary research potential of these assets continues to produce impressive results, including the creation of enhanced and often unique student training possibilities.

TRU springs from two distinctive institutions: Cariboo College (founded in 1970) and the Open Learning Institute (established in 1978). They evolved, respectively, into the University College of the Cariboo (1989) and the BC Open University (1988). In 1995, UCC became — like BCOU — an independent degree-granting institution. The merger of the two in 2005 created Thompson Rivers University, a complex institution with a regional, provincial, and international mandate that is unique among Canadian post-secondaries. Because of its size, structure, and evolution, TRU has been able to approach research in novel ways that are distinct from BC's and Canada's older and larger universities. TRU is a comprehensive university committed to facilitating student access to a university education that provides a range of opportunities for learners and faculty to reach and exceed their potential. These opportunities include the career benefits of an applied and comprehensive approach to academia, and the more traditional academic benefits afforded by a research university. There is a strong focus on undergraduate research, and graduate programs are established in key areas. Since 1989, research has been part of TRU's institutional mandate; and since becoming a university in 2005, the institutional environment to support researchers has grown steadily.

Woven throughout TRU's integrated strategic planning is an awareness of the importance of place, relationships with community and, in particular, a mandate for awareness, appreciation, and cooperation with Indigenous communities. TRU maintains critical links to these communities, with its main campus in Kamloops, a secondary campus at Williams Lake, and a number of satellite campuses located in communities throughout the BC Interior. These established relations

with diverse Indigenous communities across the province make TRU a unique educational institution. The University has received national and provincial recognition and funding for its work on Indigenous undergraduate research training; the preservation and promotion of Indigenous language, culture and history; as well as for establishing leading protocols for the ownership and protection of cultural knowledge. Because of its size, structure, and evolution, TRU will take the principles of community engagement and develop national and international opportunities to allow our researchers to contribute to global research challenges.

Faculty development and renewal, student engagement and recruitment and retention, the development of graduate programming—and, indeed, our university's overall national and international reputation—are all dependent upon an enhanced institutional research profile. Universities are perhaps best understood as engines of knowledge creation and knowledge dissemination: without knowledge creation in the form of pure and applied research, universities can offer students only a hearsay version of the fields they incorporate and represent. Research capacity is critical in a knowledge society, for a key purpose of a university is to connect institutional capacities to community needs. Increasingly, the creation of faculty-mentored student research experiences is tied to “real world” issues informed by community needs, affording the co-creation of new knowledge, understandings, representations, policies and practices.

TRU is entering a new stage where research is advanced not only by individual scholars and projects, but also more and more by strategic partnerships, centres, and new forms of interdisciplinary and multidisciplinary collaboration. Initiatives that will support our graduate and undergraduate students and our faculty in the future will be advanced by synergies of ideas and funding from many branches of many governments, as well as by partners in different institutions and countries.

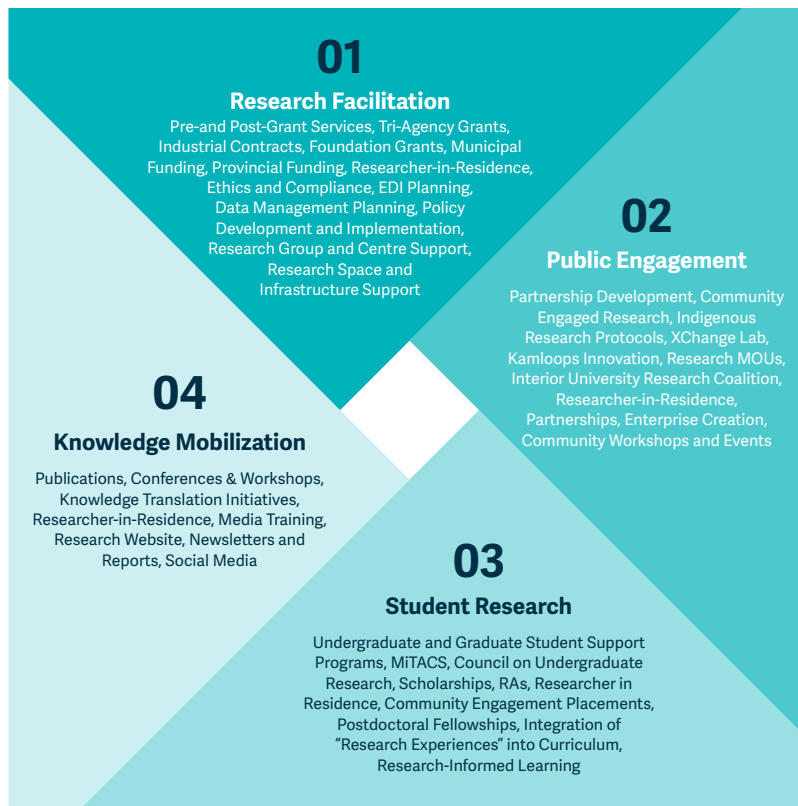
TRU's Mission

TRU is a comprehensive, learner-centred, sustainable university that serves its regional, national, and international learners and their communities through high quality and flexible education, training, research and scholarship.

Me7 xilltem tek me7 kúpentem

Tcw7it te tucw7ícwewell te qelmúcw w7ec ne TRU, me7 w7ec wel me7 xpqenwéns stémi k qwenmíns e xpqenwéns es xexewílcs ne xspqenwélléñs, thé7en e xílmes éytsell m-wí7es ell e s7éyctem te s7elkst.s.

TRU Research Services

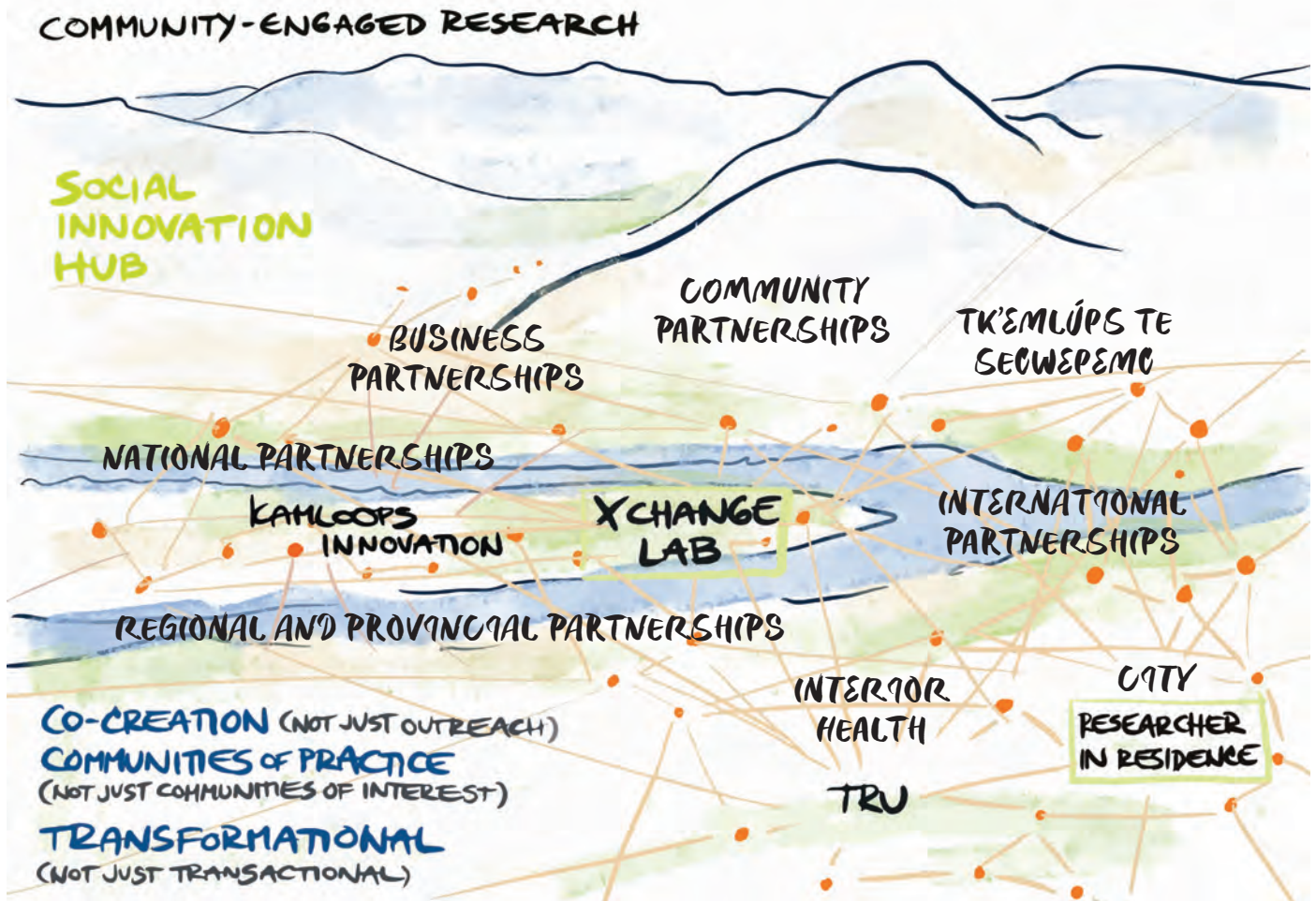


A Commitment to Partnerships

TRU's strategic focus on community-engaged research builds on a 20-year history of community-university partnership development, supported by national and provincial funding agencies, research MOUs and partnership agreements with Interior Health, the Academic Health Science Consortium, United Way, the City of Kamloops, Tk'emlúps te Secwépemc, the Interior Universities Research Coalition, and multiple community organizations representing the non-profit sector. These partnerships are directly supported by the Office of Research and Graduate Studies through funding, training workshops, and administration; with facilitation by TRU's Student Research and Innovation Generator; by TRU's XChange Lab, a social innovation hub co-located with United Way; Kamloops Innovation, giving new and growing businesses the mentorship, connections, and community they need to thrive;

the Researcher-in-Residence Initiative, engaging community-engaged projects with support from the City of Kamloops, Mitacs, and the Social Sciences and Humanities Research Council of Canada.

Community-engaged research typically accesses multiple qualitative and quantitative data sets and organizes research in terms of a mixed methods investigative strategy, including such tools as cultural mapping, network mapping, focus group interviewing, collaborative problem solving, multi-modal and artistic inquiry, knowledge translation, collective impact and shared measurement studies, and participant observation. Applied areas of interest typically include a research engagement with questions of community health, the environment, economics, politics, education, local and regional economic and cultural development,



tourism and place promotion, culture and social justice issues. The principles of engagement involve direct impact and relevance to the community, a commitment to co-creation and a sharing of expertise, and a focus at the local level but with consideration of and/or action at regional, provincial and/or national levels.

Created in 2017 by TRU, UBCO and UNBC, the Interior University Research Coalition (IURC) forms a core of research and innovation talent and infrastructure in the BC Interior. Together we educate over 40,000 students, employ more than 3,500 faculty and staff, and create an economic impact of more than \$3 billion.

The goal of the IURC is to accelerate the BC Interior's research and innovation ecosystem by harmonizing resources, enhancing student and faculty mobility, increasing academic opportunities, and establishing community connections. Over the next five years, TRU will undertake a new approach to partnerships that are ambitious, objective-driven, and strategic in their orientation. We will earn recognition as the most committed and innovative university in Canada for research and scholarship based on community partnerships.

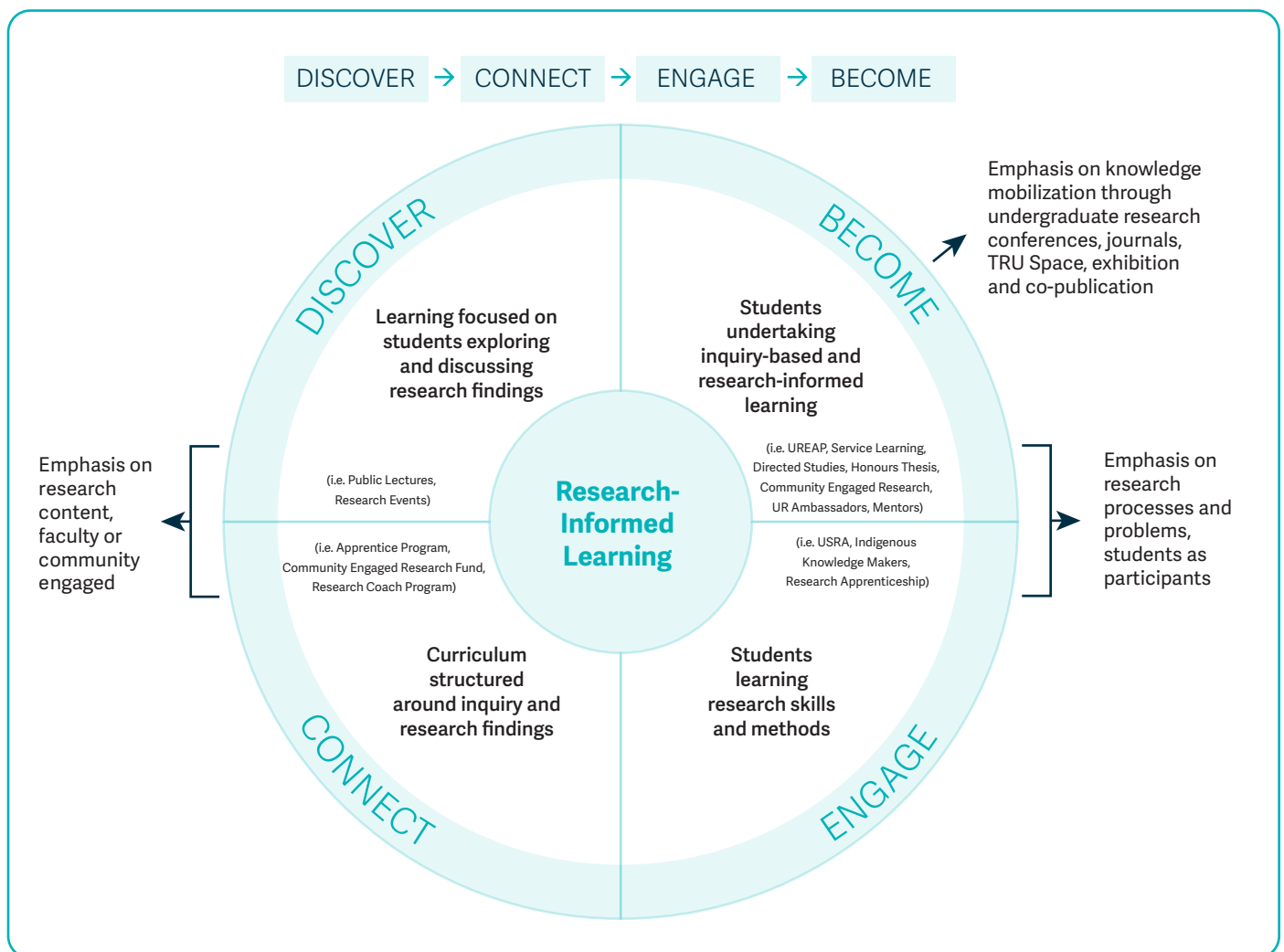


Engaging Students in Research: Discover, Connect, Engage, Become

Through the establishment of The Student Research and Innovation Generator, we will advance the integration and scaling up of hands-on student experiences tied to community-engaged research opportunities and the principles of research-informed learning. The Generator will initiate and coordinate community partnership development, enterprise creation, support for Indigenization, provision of undergraduate research experiences, community-engaged research grants and community-engaged research training, enhanced collaborations with the City and Interior Health, and co-location and a significant research presence tied to the United Way's XChange Lab, Kamloops Innovation, and the City of Kamloops' Researcher-in-Residence Initiative. Facilitation and recognition of student involvement will be supported

through the Undergraduate Research Certificate; and through such programs as the Research Apprentice Awards, the Research Coach Program, the Knowledge Makers, the Research Ambassadors, the Undergraduate Research Experience Awards, and the Graduate Student Mentor Awards. These programs provide incremental support, enabling students to *discover* and *connect* in the classroom and through faculty-driven initiatives; and to *engage* and *become* through greater involvement and hands-on experience.

Our objective in the next five years is to earn national recognition for involving graduate students in community-centred research and for excellence in undergraduate research training.

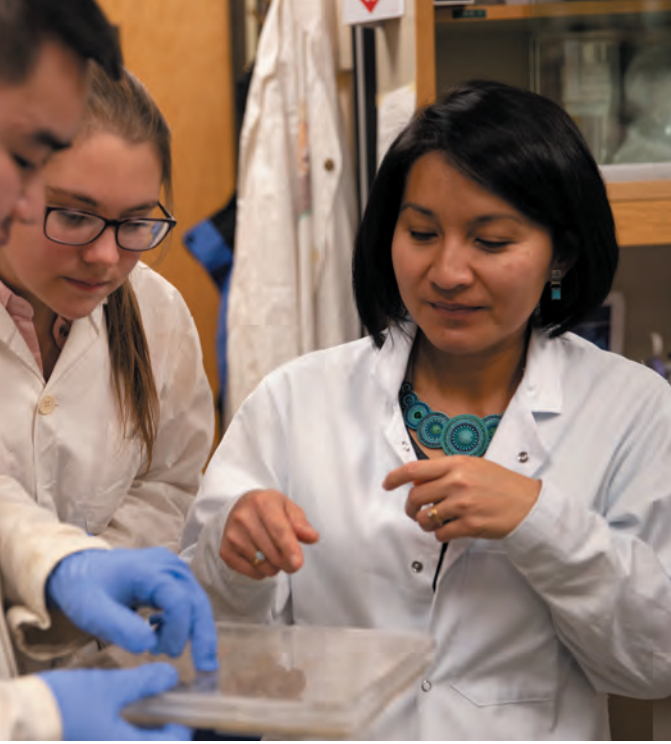


TRU's Change Goals

This strategic plan maps the research enterprise to the University's *10-Year Strategic Change Goals*:

- 1. Knúcwentem xwexwéyt es xpqenwélleńs, Eliminate Achievement Gaps** – We support students of all backgrounds to succeed and excel through equitable and scaffolded access to meaningful research experiences. Research-informed learning includes an ongoing commitment to EDI and Inclusive Excellence through programs such as the Knowledge Makers, the Researcher-in-Residence Initiative, our NSERC EDI Capacity Building Grant, and the research and public engagement programs administered by TRU's Student Research and Innovation Generator.
- 2. Nucwentéls te m-kelínemctls le tsucwlém te swestélt, Honour truth, reconciliation and rights** – We will support a thriving Secwépemc culture through respectful actions in research, seeking the further Indigenization of research through the establishment of a Working Group with relevant representation to advise on policies and administrative practices for Indigenous research and capacity building, including the funding of Indigenous research chairs for recruitment and retention.
- 3. Kukwpi7stém k stselxmém ell melúkwctem te sqlew' , Lead in community research and scholarship.** We will support all faculty members in knowledge-seeking, knowledge creation, and creative inquiry. We will earn recognition as the most committed and innovative university in Canada for research and scholarship based on community partnerships; for involving graduate students in community-centred research; and for undergraduate research training.
- 4. Me7 tsqey' k tsúntem es ctswentém, me7 sten wel me7 yews, Design lifelong learning** – We will ensure a place for knowledge creation and application as key elements of the integrated set of educational encounters designed to meet the changing needs of learners. Disciplinary thinking and training will scaffold a laddering of research experiences from school to university, from undergraduate studies to TRU's graduate programming—and from university to public engagement, personal development, and civic involvement. We will intentionally nurture the experience of discovery through research that has personal and communal relevance in a world where students and graduates will have to critically gather and assess information, inquire, learn and adapt throughout their lives and careers.





Living Our Values

Respectful relations define our behaviour. We respect each other (Xyemstwécw), the land, knowledge, the peoples of our region and beyond. The implementation of the Strategic Research Plan is aligned with our institutional values as follows:

- **Ta7 me7 tícwells k swetí7, Inclusion and Diversity** – We embrace diversity of thought and people. We recognize and embrace Indigenous and intercultural perspectives and experiences. We embody the principles of an EDI-informed university by creating a culture of inclusion that empowers all TRU faculty, staff, and students to succeed and thrive in their research pursuits. We strive to provide equitable access to meaningful and culturally aware research experiences for all students by ensuring equitable access to research-informed, inquiry-based, and practice-led learning that prepares the next generation of researchers and citizens.
- **Knucwentwécw-kt e sle7s e stsyem-kt, Community-Mindedness** – We come together to help one another (Pelkwaíl-kt es knucwentwécw-kt). We will reinforce and facilitate TRU's role and leadership in the linking of research to community social, cultural, scientific, educational, technological and economic development. We will work to respectfully and actively engage the communities that we serve in the co-creation of new knowledge. We will facilitate the development of partnerships with communities, scholars, non-profits, cultural organizations, industries, institutions, government ministries and agencies, with the aim of pursuing mutual objectives. We will ensure effective public engagement and knowledge mobilization, including support for faculty and student publication, dissemination, knowledge translation, technology transfer, commercialization, and application of research results.
- **Qwenmíntem es tselxemstém xwexwéyt re stem, Curiosity** – We seek out new ideas and embrace change, understanding they may involve risks. We break paths with creative, critical, yet thoughtful purpose. We push boundaries as a university and encourage students, faculty, staff, and the community to do the same. We will be inclusive of individual research programs, recognizing the importance of intellectual freedom for researchers to pursue their interests and passions without undue constraints and interference, and valuing the research results from individual endeavours while providing an instrument for encouraging collaboration institutionally and externally. We will encourage the application of interdisciplinary and multidisciplinary investigations that foster new knowledge, creative insight, and socially responsible development
- **Tknémentem te yucwmíntem re stem ntmicw, tsukw e stens wel me7 yews, Sustainability** – The natural world inspires us with wonder and reverence. We recognize how

the health of our societies, cultures and ecosystems rests upon wellness of people, biodiversity, and wise stewardship of precious and finite resources. We will make a real difference to the world, through the application of research in ways that improve and sustain quality of life for all. We will increase faculty and student participation in research, and increase success in external funding, with the aim of further developing the university's research culture and building sustainable research capacity. We will facilitate the intentional integration of research and scholarship with teaching and learning. We will support a spirit of scholarly and entrepreneurial inquiry leading to new discoveries, products, policies, solutions and practices that are impactful and sustainable. We will provide a sustainable research services infrastructure, ensuring a compliance environment meeting and exceeding external accreditation and funding standards; and providing support for research centres, research leadership chairs, collaborative research facilities, enhanced student research experiences, and graduate programs of the highest quality.

Xyemstém-kucw re qelmúcw ell re kwséltktens-kucw. Respectful relations define our behaviour.



The Research Challenges

TRU's Strategic Research Plan takes a mission-driven approach, with the following themes identifying major social, cultural, health, environmental, and economic areas where we see our research making a significant contribution toward developing and implementing solutions to societal challenges. These challenges reflect our areas of research strength, and emerge from TRU's Mission, Vision, Values and Change Goals. Within the next five years, TRU will tackle these challenges within an environment that supports Inclusive Excellence and builds a sense of commitment and belonging:

- 1. Understanding and responding to changing climate, its consequences for our environments (built, natural, social), and pursuing sustainable solutions**
- 2. Contributing to greater social cohesion and sense of belonging through a commitment to social justice, equity, diversity, inclusion, and social responsibility**
- 3. Strengthening health, quality of life, and cultural sustainability in our local and regional communities**
- 4. Advancing technological, social and economic development and innovation that improves people's lives**
- 5. Seeking truth, reconciliation, and rights through Indigenous-led research and capacity building**



1 Understanding and responding to changing climate, its consequences for our environments (built, natural, social), and pursuing sustainable solutions

TRU will develop new insights on the impacts of climate change to inform public policy and planning. We will help prepare our communities, our region, and the world become more climate resilient. Understanding and responding to climate change involves addressing complex issues involving ecological processes and earth science systems. It also involves addressing issues of economic and community development; hazard, risk and vulnerability analysis; gender, culture and vulnerability; risk and crisis communication; Indigenous land management and cultural sustainability; emergency preparedness, and the psychosocial dimensions of disaster response and recovery.

Because these complex issues tend to elude traditional, discipline-based structures, TRU has developed strong collaborative interdisciplinary and multidisciplinary research focusing on fire science, biodiversity, conservation ecology, grassland ecosystems, watersheds and fresh and saline water systems, and environmental monitoring. Collaborators are from the disciplines of Natural Resource Sciences, Biological Sciences, Business and Economics, Chemistry, English Studies, Geography, History, Mathematics and Statistics, Psychology, Sociology, Visual and Performing Arts, along with contributors from private, community, and government organizations.

The research motives range from the curiosity-driven to the community-engaged, with TRU's innovation agenda and support for enterprise creation intent on transforming ideas into sustainable practices, engineered devices, new technologies and materials.

TRU is located in the semi-arid BC Interior, in a region dominated by montane forest and grassland ecosystems that are important reservoirs of biodiversity. These ecosystems are under considerable pressure to be developed for resource extraction, agriculture and recreational use. In the BC Interior these communities are further challenged by global climate change and its consequences: wildfires, floods, landslides, health risks, the need to support environmental evacuees, business continuity management, supply chain management, and changing economic drivers affecting, especially, rural and remote communities.

Following significant flooding and wildfire events in 2017, the Government of BC commissioned George Abbott and Maureen Chapman to advise Government on how it can best prepare for, and manage, natural disasters in BC. Abbott and Chapman determined that, as a result of climate change and other factors, 2017 was not an anomaly and instead could be considered a “new normal” for British Columbia. In response, they identified recommendations that would enhance emergency preparedness through a proactive approach to safety and new partnerships involving First Nations and local, provincial, and federal governments. The research focus: predictive services coupled with capacity to address the psychosocial dimensions of disruption, displacement and loss experienced in complex emergencies.

TRU is uniquely positioned to provide research-informed solutions to the wicked problems precipitated by climate change. Five-year commitment: While remaining open to address new opportunities as they emerge, TRU’s researchers and entrepreneurs will work with local, provincial, and national governments, and work in concert with the Interior universities, to build out a fire science, emergency management, and innovation research cluster to address the impacts of climate change.

Sample Areas of Research activity:

- Agroforestry
- Biodiversity
- Biodegradation
- Cattle industry management and sustainability
- Climate change impacts and policy
- Ecology (animal, plant, microbial and marine)
- Ecosystem restoration
- Emergency response and recovery
- Environmental economics
- Environmental sustainability
- Fire science
- Food security
- Graph algorithms
- Greenhouse gas emissions
- Histories of Tourism, Parks and Protected Areas
- Hydrology and water management
- Invasive species
- Machine Learning
- Modeling, simulation, and data analysis
- Organic and environmental chemistry
- Range and grassland conservation and management
- Remote sensing of environmental systems
- Risk communication and crisis communication
- Small mammal conservation
- Soil reclamation
- Wildfire and emergency management

Institutional Resources:

GROUPS AND CENTRES:

- Centre for Community and Ecosystem Ecology
- Wells Gray Education and Research Centre
- Kamloops Water Treatment Centre
- Fire and Forest Ecology Centre

CHAIRS AND PROFESSORSHIP(S):

1. BC Provincial Research Chair in Predictive Services, Emergency Management and Fire Science
2. BC Provincial Regional Innovation Chair in Cattle Industry Sustainability
3. Canada Research Chair in Fire Ecology
4. Northcote and Brink Professorship
5. NSERC Industrial Research Chair in Ecosystem Reclamation

INSTITUTIONAL INFRASTRUCTURE:

1. Precision Management of Rangeland Systems for a Sustainable Future (GeoX Lab)
2. Multidisciplinary Microanalysis and Micro-imaging Lab
3. Fire Ecology Lab
4. The TRUbl/O Network, a hub for genomics and bioinformatics innovation
5. TRUGen: Applied Genomics Laboratory
6. Analytical Research Labs

MASTER’S PROGRAMS:

- Master Science in Data Science
- Master of Science in Environmental Science Program
- Master of Science in Economic Sustainable Management

Contributing to greater social cohesion and sense of belonging through a commitment to social justice, equity, diversity, inclusion, and social responsibility

This challenge area foregrounds research that seeks to deepen our collective understanding of, and engagement with, the communities we serve and the wider world. It invites continued and growing investigation into the meaning and practice of social justice and social responsibility in varied contexts, and urges us to strengthen our knowledge of, and commitment to, equity, diversity, and inclusion within all communities, local and global.

Supported by a new Master of Arts in Human Rights and Social Justice, TRU's research strength in social justice, equity, diversity, inclusion, and social responsibility involves ongoing work in the areas of Anthropology, Economics, Education, English, Geography, History, Journalism, Law, Media Studies, Philosophy, Political Science, Psychology, Social Work, Sociology, Tourism, and the Visual and Performing Arts.

Much of the ongoing research in this area is interdisciplinary and multidisciplinary. TRU has a long history of collaborative and cross-disciplinary inquiry focused on small city and rural community development, much of which engages with issues of diversity, inclusion, and social justice. Studies in the area of culture and the creative arts have also been important avenues for exploring questions of human rights, social justice, and inequities of social, political and economic power. Such work questions the meaning and location of text, authorship, audience engagement, and authority; examines issues of media representation, identity formation and performativity; and pushes research to become more creative and collaborative in describing, interpreting, and transforming society.

Ongoing research in this challenge area is rich, and spans a wide range of approaches and topics, including cultural safety, place studies, social housing and homelessness, tourism as moral practice, experience studies, cultural planning, cultural mapping, social justice and advocacy, anti-racism, equitable access to education and the law, international human rights, quality of life, children and youth, and cultural diversity. TRU has three Tier II Canada Research Chairs whose overlapping interests support this challenge: one in Culture, Communities, Children and the Law; one in Indigenizing Higher Education; and one in Rural Livelihoods and Sustainable Communities. Five-year commitment: To apply our research and entrepreneurial strengths, including interdisciplinary and multidisciplinary research, respectful community connections, partnerships and collaborations to become a regional and national leader in community research and knowledge mobilization—with the aim of driving change and improving education, social justice, social cohesion, and policy development in the communities we serve.

Sample Areas of Research Activity:

- Children, youth, and social justice
- Civil resolution tribunal
- Critical and creative inquiry
- Cultural mapping
- Early childhood education
- Environmental economics
- Equitable trade policies
- Equity, diversity and inclusion
- Human Rights
- Immigration and economic precarity
- International law and human rights
- Law and animal welfare
- Law and education
- Law and technology
- Peer-mentoring, early childhood education
- Positive youth development
- Postcolonial and poststructural power relations
- Poverty, homelessness, and inequity
- Rural livelihoods and sustainable communities
- Social Justice, inclusion, and equity in education
- Sustainable development



Institutional Resources:

GROUPS AND CENTERS:

- Canada and the Asia Pacific Policy Project (CAPPP)

CHAIRS:

1. Canada Research Chair in Culture and Communities, Children, and the Law
2. Canada Research Chair in Indigenizing Higher Education
3. Canada Research Chair in Rural Livelihoods and Sustainable Communities

INSTITUTIONAL INFRASTRUCTURE:

1. Wel Me7 Yews Network for Indigenizing Higher Education
2. Children and the Law Laboratory
3. Researcher-in-Residence Initiative
4. Rural Livelihoods and Sustainable Communities Lab
5. XChange Lab and Community Collaboration Centre

MASTER'S PROGRAMS:

- Master of Arts in Human Rights and Social Justice (in process)
- Master of Education

PUBLICATIONS:

- Canadian Journal of Comparative and Contemporary Law
- Small Cities Sustainability Studies in Community and Cultural Engagement



3 Strengthening health, quality of life, and cultural sustainability

In the next five years, TRU will work to strengthen challenges relating to health equity, quality of life, and cultural and community sustainability. Expertise includes research on socio-economic factors as social determinants of health, bioinformatics and fuzzy logic for prediction of health, respiratory therapy and sleep disorders and associated medical technologies, early childhood education, housing and homelessness, community hospice, community-based addictions research, Indigenous health, education and human rights, international social work, maternal and child health and related social and economic factors, aging research, recreational safety, community facilities that support health and wellness, improvements to outcomes of Indigenous health systems transformation, workforce training, correctional facilities, community and cultural mapping and access to health and social services, food safety and security, and optimization related to First Nations, Inuit and Metis populations, community services, early intervention studies, health policy and management, and best practices leading to the recruitment and retention of diverse health practitioners.

TRU researchers routinely engage in collaborative efforts outside the university, including strong collaborations with local and global Indigenous communities, health authorities and academic health networks, non-profit sector organizations, and other community partners, government ministries, school districts, business and private industry. Regionally-focused health research receives inter-institutional support from the Interior Universities Research Coalition and access to generous pooled funding from BC's Ministry of Health.

TRU has an established clinic in sleep disorder, breathing, and respiratory therapy involving TRU faculty and students, a sleep specialist doctor, and private industry support. Other significant research facilities include, Indigenous centers of learning, IT facilities for health optimization and informatics, geospatial modeling, and collaborative facilities with

hospitals, private clinics and community organizations. In support of this effort, and sensitive to questions of diversity and inclusion, TRU has created an endowed BC Regional Innovation Chair in Indigenous Health; a CIHR Indigenous Research Chair in Nursing; a Canada Research Chair in Rural Livelihoods and Sustainable Communities; and allocated a Tier II Canada Research Chair in Nursing. Five-year commitment: Our research and creative work will gain increased recognition for regional and national leadership in community health education and research on the social, cultural, environmental and biomedical determinants of health and wellness. Existing and emerging areas of research strength will be identified and elevated through enhanced partnership development, community collaboration, and the mobilization of existing talent and infrastructure support.

Sample Areas of Research Activity

- Aging and mental health
- Behavioral neuroscience
- Bullying vulnerable workers intervention
- COVID 19 environmental monitoring
- COVID-19 risk factors and analysis
- Health equity and health policy
- Healthcare workforce retention
- Human computer interactions
- Indigenous health systems transformation
- Indigenous wellness and wellbeing
- Mapping quality of life and culture
- Mental health resilience
- Public safety
- Religion and unbelief history
- Simulation Learning and Teaching

Institutional Resources:

GROUPS AND CENTRES:

- Centre for Respiratory Health and Sleep Science
- Community-University Research Alliance (CURA) – Mapping the Quality of Life and Culture of Small Cities
- Indigenous Health Professionals Network and Alliance
- Population Health and Aging Rural Research Centre

CHAIRS:

1. BC Regional Innovation Chair in Indigenous Health
2. Canada Research Chair in Rural Livelihoods and Sustainable Communities
3. Canada Research Chair in Nursing and Population Health (under recruitment)
4. CIHR Indigenous Research Chair in Nursing

INSTITUTIONAL INFRASTRUCTURE:

1. A Mobil Brain Imaging Lab (MoBIL)
2. All My Relations Research Centre
3. Extracellular Vesicles and Endothelial Dynamics Lab
4. Rural Livelihoods and Sustainable Communities Lab

MASTER'S PROGRAM(S):

- Master of Arts in Human Rights and Social Justice (in process)
- Master of Education
- Master of Nursing
- Master of Science in Environmental Science
- Master of Science in Economic Sustainable Management
- Master of Science in Data Science

Advancing technological, social and economic development and innovation that improves people's lives

TRU aspires to become a leader in the development of new technologies, and the adaptation of existing technologies, to engage in data-intensive discovery, delivering innovative solutions and inspired social innovations that can improve our world.

TRU has expertise in soft computing, applied mathematics, discrete mathematics, statistics, optimization and industrial automation. This research—which has wide applications in network liability, communication efficiency, quality control, enterprise scheduling and software designing—includes developing mathematical models of natural systems and human impacts on natural systems, and bioinformatics.

TRU research in this area is very diverse, including the investigation of the design of evolutionary, self-organizing, real-time systems in robotics with a focus on nanosystems, discovering algorithms for machine learning or training on neural networks and fuzzy neural networks; digital speech processing and numerical computation; handoff mechanisms to support multimedia services in wireless communications; ethernet passive optical networks; and internet multicast algorithms, and directional routing algorithms over virtual networks.

Active research involves faculty from Computing Science, Mathematics and Statistics, Business and Economics, Arts, and Trades and Technology, and collaborations with other disciplines at TRU as well as public and private sector organizations. Often working in collaboration with business and industry, TRU researchers and entrepreneurs engage in research and training that moves from discovery and invention to application and transformation. Five-year commitment: Tied closely to TRU's innovation agenda, this challenge area commits to basic and applied research, and the attraction of investment, business development, and the prototyping and commercialization of technologies that create value and improve life for business, industry, government and the larger community.

Sample Areas of Research Activity:

- Artificial intelligence
- Applied mathematics
- Autonomous Flight
- Big data
- Bioinformatics
- Cloud computing
- Computational algorithm
- Computational Social Science
- Creativity and innovation
- Data mining
- Data visualization
- Deep learning
- Discrete mathematics
- Economic sustainability
- Fuzzy logic
- Genomics, metagenomics and meta transcriptomics
- Health informatics
- Knowledge mobilization
- Machine learning
- Next generation wireless communication
- Optimization
- Robotics
- Social innovation and social enterprises
- Software Engineering
- Wireless sensor networks



Institutional Resources:

GROUPS AND CENTERS:

- Centre for Optimization and Decision Science

CHAIRS:

1. Canada Research Chair in Applied Mathematics and Optimization

INSTITUTIONAL INFRASTRUCTURE:

1. Math Computing Cluster
2. Memorandum of Understanding with Kamloops Innovation
3. Open Learning
4. Trades and Technology

MASTER'S PROGRAM(S):

- Master of Business Administration
- Master of Environmental Economics and Management
- Master of Science in Data Science
- Master of Science in Environmental Economics and Management
- Master of Science in Environmental Science

PUBLICATION(S):

- International Journal of e-Learning and Distance Education



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Seeking truth, reconciliation, and rights through Indigenous-led research and capacity building

There are numerous landmark documents that clearly define Canada's responsibility to redress its historical and genocidal relationships with Indigenous peoples. The *United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)*, endorsed by Canada in 2016, is an international instrument of reconciliation protecting culture, identity, religion, language, health, education and community as rights of Indigenous peoples worldwide.

Nationally, the 2015 *Truth and Reconciliation Commission's (TRC) Final Report* presents calls to action specific to universities, placing education at the centre of the country's reconciliation process. The *Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls* provides 231 individual Calls for Justice directed at governments, institutions, social service providers, industries and for all Canadians. The *In Plain Sight* Report provides numerous recommendations to address Indigenous-specific racism and discrimination in the BC health care system. All of these documents outline specific responsibilities and actions to be carried out at post-secondary institutions.

While recognizing that research in the service of truth, reconciliation, and rights has implications for all areas of scholarship, TRU has made the strategic decision to identify Indigenous-led research as a priority area for sustaining health human rights, capacity building, scholarly inquiry, and knowledge co-creation and mobilization. TRU's Indigenous faculty and students have received national and provincial recognition and funding for their work on the preservation and promotion of Indigenous languages, culture, health, and history; on reclaiming and mobilizing Indigenous traditional approaches to healing and wellness; on establishing protocols for the ownership of cultural knowledge; on Indigenous knowledge making and communities of practice; and on how traditional knowledge and practices have been found to enhance human health and wellness, biodiversity and ensure environmentally, socially, culturally, and economically sustainable development. TRU's researchers are exploring questions of territorial authority, Indigenous-led health equity, Indigenous-led tourism, workforce mentoring, Indigenous languages and

literature, dementia care, Indigenous health policy, Indigenization, law, and culturally safe and humility embedded health and education practices, allyship, health equity and social justice, and anti-racism. Such work in the service of communities advances Indigenous knowledge and engagement, in dialogue with knowledge keepers and a growing body of scholarship. This work also directly aligns with three of the four TRU 10-year Strategic Change Goals: elimination of achievement gaps; honouring truth, reconciliation and rights; and leading in community-engaged research and scholarship.

TRU has appointed a CRC in Indigenizing Higher Education, a CIHR Indigenous Research Chair in Nursing, and created an endowed BC Innovation Chair in Indigenous Health. The University commits to the building of a new Indigenous education and research centre, as well as to increasing its complement of Indigenous scholars. Five-year commitment: Building on the Knowledge Makers Indigenous undergraduate research training program, and with the aim of advancing Indigenous knowledge generally, TRU will actively foster the growth of Indigenous scholars, laying the groundwork for exploring a “grow-our-own” program to recruit, appoint, and mentor Indigenous academics and researchers.

Sample Areas of Research Activity

- Indigenous title and rights
- Community engagement
- Cultural safety and humility embedded education
- Economic development
- Indigenous language revitalization
- Indigenous nursing knowledge
- Indigenous health systems transformation
- Indigenous wellness
- Indigenous law
- Indigenous research methodology
- Indigenous food sovereignty
- Indigenous youth resurgence and reconciliation
- Indigenous intersectionality
- Intergenerational healing
- Indigenous workforce mentoring
- Land based healing
- Traditional knowledge and ways of knowing

Institutional Resources:

GROUPS AND CENTRES:

- All My Relations Research Centre
- Ombaashi Indigenous Research Network
- Knowledge Makers Indigenous Research Training Program
- Wel Me7 Yews Network for Indigenizing Higher Education
- Rural Livelihoods and Sustainable Communities Laboratory

CHAIR(S):

1. BC Regional Innovation Chair in Indigenous Health
2. CIHR Indigenous Research Chair in Nursing
3. Canada Research Chair in Indigenizing Higher Education
4. Canada Research Chair in Rural Livelihoods and Sustainable Communities

MASTER'S PROGRAM

- Master of Arts in Human Rights and Social Justice (in process)
- Master of Education
- Master of Nursing

PUBLICATION(S)

- Knowledge Makers Journal

Allocation of Research Chairs in Support of the Strategic Research Plan

| Research Challenges | Canada Research Chairs | | | Federal Chairs | Provincial Chairs/ Professorship |
|---|------------------------|---------------|---------------|---|---|
| | NSERC | SSHRC | CIHR | | |
| 1. Understanding and responding to changing climate, its consequences for our environments (built, natural, social), and pursuing sustainable solutions | Tier II Chair | | | NSERC Industrial Research Chair | BC Innovation Research Chair in Predictive Services, Emergency Management and Fire Science BC Regional Innovation Chair in Cattle Industry Sustainability Northcote and Brink Professorship |
| 2. Contributing to greater social cohesion and sense of belonging through a commitment to social justice, equity, diversity, inclusion, and social responsibility | | Tier II Chair | | | |
| 3. Strengthening health, quality of life, and cultural sustainability in our local and regional communities | | Tier II Chair | Tier II Chair | CIHR Indigenous Research Chair in Nursing | BC Regional Innovation Chair in Indigenous Health |
| 4. Advancing technological, social and economic development and innovation that improves people's lives | Tier II Chair | | | | |
| 5. Seeking truth, reconciliation, and rights through Indigenous-led research and capacity building | | Tier II Chair | | | |

Assessment of Outcomes

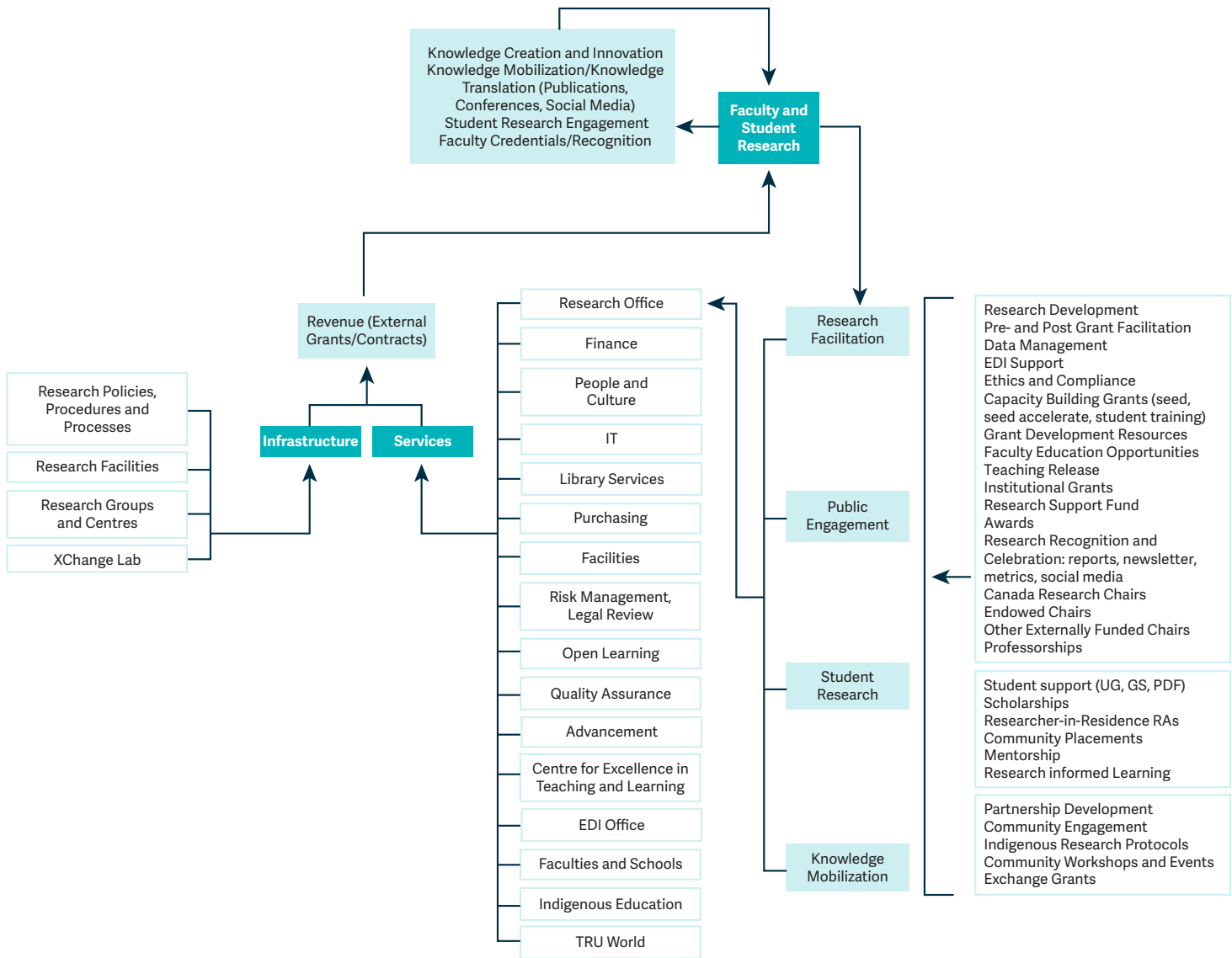
Our strategy for assessing research outcomes includes a commitment to understand and explain TRU's research culture by (1) establishing indicators of a successful culture, and (2) determining measurements for these indicators. Key measures for success include activities in the following areas:

| Outcome | Indicator |
|--|---|
| TRU supports all faculty members in knowledge-seeking, knowledge creation, and creative inquiry. | TRU faculty actively apply for external funding by preparing high quality funding applications: # of external applications submitted and # of successful applications % of faculty applying % of faculty applying/total research faculty \$/total faculty |
| | External research grants and contracts contribute to student employment/student training and regional economic growth: \$ of external applications submitted and \$ of successful applications \$ total external research expenditures and \$ expended to for student training (assistants/ associates and post-docs) |

| | |
|--|--|
| | <p>TRU faculty are creating and disseminating new knowledge: # of peer-reviewed publications, scholarly works, exhibitions, performances, and other creative works per faculty member as a percentage of total tri-partite faculty (3-year rolling average)</p> |
| | <p>TRU faculty and students are engaged in research innovation: # of innovation and enterprise creation projects initiated # of enterprises emerging from research activities # of research partnerships actively developed \$ income derived from contracts, patents, copyright, and consulting contracts</p> |
| TRU earns recognition as the most committed and innovative university in Canada for research and scholarship based on community partnerships | # of partnership-based grants submitted and value |
| | # of successful partnership-based grants and their value |
| | # of collaborative research projects with partners |
| | # of partner-led and co-designed research initiatives |
| | # of research related community outreach events |
| | # of TRU faculty and students engaged in research with community organizations |
| | # of faculty and students accessing and attending community-engaged research training modules |
| | # of TRU publications, presentations, juried exhibitions, performances, conferences, workshops, and initiatives on public engagement and community-engaged research |
| TRU earns recognition as the most committed and innovative university in Canada for involving graduate students in community-centred research and for undergraduate research training | # of students engaged in classroom-based and project-based research activities |
| | # of faculty mentors |
| | # of graduate students engaged in community centred research |
| | # of students and faculty accessing, attending, or leading Undergraduate Research Training modules |
| | # of students graduating with the Undergraduate Research Certificate |
| | # of users across Canada accessing TRU's Canadian Undergraduate Research Network (CURN) |
| | # of TRU publications, presentations, conferences, and initiatives on undergraduate research |
| | # of courses integrating research as a learning outcome |
| TRU develops an equity-minded research enterprise and fosters a culture of inclusivity | Progress toward CRC equity, diversity and inclusion goals, and establishment of University Office of EDI |
| | Ensure TRU meets or exceeds CRC transparency requirements, action plan requirements, our institutional EDI Capacity Building Grant commitments, and meets equity targets |

Annual Accountability Reports employ these indicators and provide detailed measurement and a public accounting; and the Annual Research and Graduate Studies Reports, the monthly Research Newsletter, social media platforms, and the Research and Graduate Studies Website provide a more narrative accounting of research achievements generally.

TRU Research Enterprise



Research Enterprise: strategic services, policies, and staffing that enable the University to generate ideas, create knowledge, and share that knowledge. Over the next five years, the Strategic Research Plan commits to increasing research infrastructure; supporting faculty-specific research planning; recognizing and celebrating research achievements; increasing partnership development and community engagement; scaffolding the University's commitment to Indigenization and EDI; investing in graduate students, postdoctoral fellows and early career researchers; expanding equitable access to student research experiences, and developing new research and creative spaces (both virtual and on campus).