Regional Innovation Chair
Six-Year Report

2011-2017

Selkirk College

APPLIED INNOVATION
RESEARCH & CENTRE

COLUMBIA BASIN
RDI
RURAL DEVELOPMENT INSTITUTE

BC Regional Innovation Chair Progress Report

Chair Title: Regional Innovation Chair in Rural Economic Development
Institution: Selkirk College
Department: Columbia Basin Rural Development Institute, Applied Research and Innovation
Chairholder: Dr. Terri MacDonald
Institutional Contact: Angus Graeme, President and CEO
Start Date: July 1, 2011
Report Date: February, 15, 2018
Period Covered by Report: April 1, 2011 to March 31, 2017

Signatures:

_____   _____
Chairholder: Terri MacDonald   President: Angus Graeme

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Introduction

The Regional Innovation Chair in Rural Economic Development (RIC) is an endowed research chair position that was established in 2005 resulting from $1.5 million raised by Selkirk College and matched with $1.5 million from the Provincial Government's Leading Edge Foundation through BC's Innovation Council (BCIC). By supporting evidence-based planning and decision-making, innovation, and technology transfer, the RIC portfolio aims to improve the economic climate of rural communities. The RIC's research agenda is based on regional priorities and partnerships with local and regional organizations and businesses.

This report's 2011 to 2017 reporting period marks the first six years of deliverables supported by the current Regional Innovation Chair, Dr. Terri MacDonald. George Penfold held the RIC position from 2006 to 2011. The RIC also directs the research and capacity building efforts of the Columbia Basin Rural Development Institute (RDI) which was established in July 2011 (upon the hiring of Dr. Terri MacDonald) with the mandate to support evidence-based decision-making in the Columbia Basin-Boundary region through the provision of information, applied research, and related outreach and extension. The RDI is built on an 8-year partnership agreement between Columbia Basin Trust (CBT) and Selkirk College with CBT providing core funding and Selkirk College contributing infrastructure and operational support, including the BC Regional Innovation Chair in Rural Economic Development (RIC).

The CBT-Selkirk partnership has allowed the RIC to extend its reach. The RIC was originally scoped to align geographically with the Selkirk College catchment area and to focus on economic development. The RDI portfolio extends the geographic reach to include the College of the Rockies catchment area (plus the Northern Basin communities of Revelstoke and Valemount). It also extends the research portfolio beyond 'economic' to include social, cultural and environmental considerations. This reach has further been extended through research partnerships and grants. The RDI 2014-17 strategic priorities[1] (including integration of the RIC goals) included:

- Consolidate, identify gaps and build regional knowledge
- Undertake applied rural development focused research
- Support the access, use and application of RDI research and tools
- Support meaningful applied research collaboration amongst educational institutions and CBT

Since its inception, the RIC/RDI has delivered the State of the Basin initiative and has undertaken applied research projects totalling over $4 million, and has supported capacity building through training, outreach and extension. A total of 175 companies/employees and 430 community stakeholders received training, over 2,400 stakeholders engaged in outreach and extension activities, and 267 companies and 193 community stakeholders received direct research support. A total of 72 students, 60 college researchers, 147 partners and 1,410 companies participated in research, training, outreach and extension.   Projects included:

- State of the Basin and State of the Environment
- Regional Food Systems
- Business Retention and Expansion
- Employment Lands
- SME Adoption of Digital Technologies (ADT)
- Climate Adaptation
- Workforce Development
- Poverty Reduction
- Asset-Based Rural Development
- Selkirk-SME Applied Research & Technology Solutions (SMARTS I and II)

This report includes the outputs generated by and impacts attributable to RIC/RDI activities between April 1, 2011 to March 31, 2017.

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[1] Please see Appendix A for RDI Strategic Plan

Section A: Chairholder

Goals (Q1)

Based on a foundation of applied research and outreach and specific to the region's priorities, the goals of the Regional Innovation Chair in Rural Economic Development are to:

1. Develop the capacity in the region for sound decision-making in matters related to economic development, through the provision of relevant research data and analysis, together with related skill and capacity development;
2. Assist in the diversification of the regional economy through the promotion of innovation and technology transfer in existing and new enterprises; and
3. Support provincial and national networks that undertake applied research on the revitalization of high amenity, highly rural communities and regions.

Research Results (Q2)

1. Develop the capacity in the region for sound decision-making in matters related to economic development, through the provision of relevant research data and analysis, together with related skill and capacity development

State of the Basin/Digital Basin and related research projects: $2.4 million funding secured, 8 student interns, 7 college researchers, 33 local government data sharing agreements, 28 community profiles, 4 subjective well-being reports, 12 Trends Analysis Briefs, 5 State of the Basin Snapshot reports, 2 State of the Basin Full reports, Digital Basin geospatial indicator portal, website and online Research Hub catalogue. Website: http://www.cbrdi.ca/Research/State-of-the-Basin

Business Retention and Expansion project: $180,000 funding secured, 2 student interns, 5 college researchers, 30 partners, 1143 participating companies (findings compiled from first 795 companied in report link below), 14 BRE sector and community reports, 3 regional reports. BRE Regional report: http://datacat.cbrdi.ca/resource/bre-business-retention-and-expansion-report-columbia-basin-business-winter-2016;

Employment Lands project: $75,000 funding secured, 3 student interns, 3 college researchers, 30 partners, 28 community-specific Employment Lands reports, Digital Basin cadastral and zoning layers, and 1 Employment Lands Final Report: http://datacat.cbrdi.ca/resource/employment-lands-final-report-april-2013

Teck Serv Internships: $60,000 funding secured, 6 student interns, 3 college researchers, 6 partners, 6 final reports. Final reports available here: http://selkirk.ca/about-us/research/teckserv-applied-research-internship

Food Systems project: $100,000 funding secured, 6 reports, 1 webinar. Project outputs available here: http://www.cbrdi.ca/food/

Climate Adaptation project: $100,000 funding secured, 2 student interns, 4 college researchers, 5 partners, 1 indicators report, 1 literature review, 2 community-specific reports. Project is underway. Explore outputs here: http://www.cbrdi.ca/climatechangeadaptation/

Workforce Development project: $320,000 funding secured, 9 student internships, 3 college researchers, 33 partners,16 presentations at 2 regional learning events, 9 student interns, 3 college researchers, 5 Knowledge Briefs, 4 Labour Market profiles, 2 Training and Skills Development reports (home based businesses; new technology, manufacturing and metallurgy). Project is underway. Explore outputs here: http://cbrdi.ca/Projects/Workforce-Development

Building a Vibrant Futures: $92,607 secured. Project outputs available here: http://kootenays2017.crrf.ca/?page_id=649

2. Assist in the diversification of the regional economy through the promotion of innovation and technology transfer in existing and new enterprises

The RIC/RDI focuses efforts on supporting the capacity of Selkirk College to provide innovation and technology transfer support. The first step was to conduct an environmental scan of technology expertise and a scan of small and medium sized enterprises (SME) needs undertaken in 2013. Over the last 5 years, the capacity of Selkirk College to meet the innovation and technology transfer needs of companies has increased, especially in the area of digital fabrication and geospatial technologies as evidenced by the ADT and SMARTS projects detailed below and the recent submission of a $2 million Innovation Enhancement proposal. The RIC/RDI's role has been focused on proposal development (National Research Council, Natural Sciences and Engineering Research Council of Canada) and related post-secondary applied research and innovation capacity support. As outlined below, 263 companies have received training and/or direct support from college and student researchers.

Adopting Digital Technologies (ADT) project: $306,644 funding secured, 26 training courses and workshops delivered to 175 employees at 142 companies, technology advisory services and direct technology adoption support provided to 29 companies (9 companies receiving direct support), 5 digital technology adoption videos, 1 final report. Explore outputs here: http://www.cbrdi.ca/research-areas/applied-research/selkirk-sme-adoption-of-digital-technologies-pilot-project/   The ADT project was featured as a national digital technology adoption case study: https://www.nrc-cnrc.gc.ca/eng/irap/dtapp/resources/casestudy_05.html

Selkirk-SME Applied Research and Technology Solutions (SMARTS) projects: $412,630 funding secured, 31 student interns, 16 college researchers, 14 companies received support through technology-focused applied research projects, 41 companies received direct technology support or advisory services. Overview available here: http://selkirk.ca/research/smarts

3. Support provincial and national networks that undertake applied research on the revitalization of high amenity, highly rural communities and regions

In an effort to support innovation and collaborative learning Strategic Doing training and workshops have been delivered in partnership with regional and provincial networks and the Purdue University's Agile Strategy Lab. As detailed in Table 1, in less than 2 years, the RIC/RDI supported the training of 430 highly qualified personnel to use Strategic Doing to co-construct 42 Pathfinder Projects, over 50% of which are now complete. The RIC was recently nominated for the University Economic Development Association's Awards of Excellence: http://universityeda.org/value-to-members/best-practice-sharing/awards-of-excellence/awards-of-excellence-2017-finalists/regional-workforce-development-in-rural-british-columbia-canada/ . View video here: https://vimeo.com/237651738

Metric	Target Performance	Actual Performance
# workshops	8	9
# training / participating	250	395
# pathfinder projects	30	42
# project completed	15	22
# strategic partners	8	13
# deep dive 3 day training courses	2	2
# HQPs participating in deep dive training	30	35

Table 1. Strategic Doing Metrics, 2015 to 2017

As detailed in Table 2 below, between 2014-2017 the RIC/RDI reached 30,442 stakeholders through the website, 193 community stakeholders received direct research support, 71 workshops and presentations have been delivered to 2,401 community stakeholders, and 8,510 reports have been downloaded. And as detailed above, an additional 430 partners received strategic doing training, 267 companies received training and/or direct research support from college and student researchers, and 1143 companies participated in the Regional Business Retention and Expansion program.

Key Performance Indicators	2014-15	2015-16	2016-17	TOTAL
Total Visitors	8,059	8,616	13,767	30,442
Total Visitors - New	3,508	4,313	7,554	15,375
Total Visitors - Returning	4,551	4,303	6,213	15,067
Digital Basin Layers Viewed	4,066	2,486	4,331	10,883
Report Downloads *(note: started collecting Sept 3, 2014)*	1,565	3,728	3,226	8,510
Data Provision / Research Advisory Services	44	35	114	193
Brokering / Referrals	11	22	Not available	33
Training Workshops / Presentations	32	17	22	71
Training Workshops / Presentations Attendees	604	842	955	2,401

Table 2. RDI Key Performance Indicators, 2014-2017

The RIC is also the Vice-Chair of the Kootenay Association for Science and Technology, an active member (and former Board Director) of the Canadian Rural Revitalization Foundation, Lead/Co-Lead for the following Rural Policy Learning Commons theme teams: Natural Resource Development, Research Centres, and Governance, and an active member of the BC Applied Research and Innovation Network (BCARIN) and the Strategic Doing Network. An example of a research partnership emerging from these networks is a recent comparative study of Scotland and the Kootenay Region focused on the future of the forestry workforce, including elements related to technology and innovation.

Five Year Plan, 2018-2022 (Q3)

An external evaluation conducted on the RDI in 2017 revealed there is a healthy foundation of familiarity with the RDI across target client groups (local government, economic, social, cultural and environmental non-profits), the RDI is recognized as a hub of regional information, and RDI products and services have effectively supported a multitude of planning and development projects. However, evaluation findings suggest that a narrowing of focus with respect to target audience and more targeted provision of products and services could position the RDI for improved impact moving forward. A key opportunity for improvement lies in being able to ensure a strong match between the products and services the RDI provides and the needs of the communities it serves.

The following renewed draft strategic priorities[2] build on evaluation findings with a refined focus to target the needs of companies[3] and local government partners.

Strategic Priority 1: Support evidence-based planning and decision-making
- Report on conditions and trends through the State of the Basin initiative
- Provide direct research support to local government partners
- Host an online hub of data and research

Strategic Priority 2: Engage in applied research to address complex challenges
- Help to build strategies to address regionally-defined challenges and solutions
- Support applied research projects that address prioritized challenges and solutions

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[2] to be refined and approved by the RIC/RDI Regional Advisory Committee and Selkirk College
[3] specific to the region's identified target clusters (forestry, metals & mining, tourism, advanced manufacturing and technology)

- Connect companies to post-secondary resources that can support innovation and technology transfer

Strategic Priority 3: Support regional collaboration and capacity building
- Broker connections across networks both internal and external to the region
- Provide targeted training and skills development
- Support regional innovation and collaborative learning

Leveraging Funds (Q4)

As detailed in Table 3, the RIC has helped to secure over $4.2 million in funding to address research and extension needs and to support the advancement of rural development priorities.

Project	External Funding Source	Funding Secured	Partner Cash Contributions	Total
State of the Basin	Columbia Basin Trust (CBT)*	2,400,000	0	2,400,000
Business Retention and Expansion	Columbia Basin Trust (CBT)	180,000	0	180,000
Employment Lands	Province of BC, Community Futures, CBT	50,000	25,000	75,000
Teck Serv Student Internships	Teck Trail Operations	60,000	0	60,000
State of the Environment	BC Real Estate Foundation, CBT	50,000	50,000	100,000
Regional Food Systems	BC Real Estate Foundation, CBT	50,000	50,000	100,000
Climate Adaptation	BC Real Estate Foundation, CBT	50,000	50,000	100,000
Adopting Digital Technologies	National Research Council	306,644	0	306,644
Selkirk-SME Applied Research & Technology Solutions (SMARTS)	National Research Council	242,000	28,097	270,097
Selkirk-SME Applied Research & Technology Solutions (SMARTS 2)	National Research Council	140,545	1,988	142,533
Workforce Development	Social Sciences and Humanities Research Council, CBT	240,000	180,000	420,000
Building Vibrant Futures	Social Sciences and Humanities Research Council	49,607	43,000	92,607
Total		3,818,796	428,085	4,246,881

Table 3. Funding Leveraged, 2011-2017
* CBT contribution is reflective of the 8-year partnership agreement which ends in 2019

Research Outputs (Q5)

Publications and presentations specific to the Regional Innovation Chair. (Please see Appendix D for Terri MacDonald's Canadian Common CV).

a) Publications (indicate status, ie. submitted/published)

Books: 1	Presentations: 71
Peer-Reviewed Papers: 0	Reports: 74
Technical Papers: 0	Other: 41 (community reports, Knowledge Briefs)

b) Conference Presentations
National: 10   International: 2
c) Patents/Intellectual Property
Applications: 0   Approved: 0

Collaborations (Q6)

The RIC has worked with close to 150 research partners during this reporting period. Strong relationships with local government, economic development practitioners, companies, and academic networks have effectively been leveraged to access research grants and expand the reach of the RIC/RDI. An example of the extensive network of research partners, the list below details partners participating in the Social Sciences and Humanities Research Council of Canada (SSHRC) funded Workforce Development in Rural BC project[4].

1. College of the Rockies
2. Okanagan College
3. College of New Caledonia
4. Vancouver Island University
5. Simon Fraser University
6. University of British Columbia-Okanagan
7. University of Northern British Columbia
8. University of Alberta
9. University of Guelph
10. St. Mary's University
11. Memorial University
12. Canadian Rural Revitalization Foundation
13. Rural Policy Learning Commons
14. Rocky Mountain School District 6
15. Arrow Lakes School District 10
16. Revelstoke School District 19
17. Kootenay-Columbia School District 20
18. Columbia Basin Trust
19. Association of Kootenay Boundary Local Governments
20. Kootenay Association for Science and Technology
21. Community Futures Organizations of Kootenay Boundary
22. Columbia Basin Boundary Economic Development Practitioners Network
23. Kootenay Workforce Development Initiative
24. Ktunaxa Nation Council
25. Columbia Basin Alliance for Literacy
26. Columbia Power
27. Teck Metals
28. Unifab Industries
29. NTC Information Society
30. City of Revelstoke
31. Lower Columbia Initiatives Corporation
32. Slocan Valley Economic Development Commission
33. District of Sparwood

Training of Highly Qualified Personnel (Q7)

In addition to the 430 HQPs that received Strategic Doing training, an additional 72 student received training by participating in applied research projects through CAP stone projects and / or co-op research internships. As detailed in Table 4 below, the RIC has directly supported 1 post-doctoral student, 11 graduate students, and 21 college students.

	# Students
Undergraduate	21
Graduate	11
Post-Doctoral	1
Total	33

Table 4. Number of Highly Qualified Personnel

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[4] Not listed below are an additional approximately 40 industry advisors that provide direction on the Kootenay Workforce Development Initiative (KWDI) through the KWDI Steering Committee or Cluster Advisory Teams (metals & mining, forestry, tourism, advanced manufacturing, tourism).

As detailed in Appendix B, Dr. MacDonald also has/is serving as thesis advisor to the following students in partnership with the following post-secondary institutions.

University: Vancouver Island University
Degree: Master of Arts in Sustainable Leisure Management
Student Name: Shannon Bence
Title: Young Adults Perceptions of the Attractiveness of Rural Living
Completion Status: completed 2015

University: University of Guelph
Degree: Rural Studies Ph.D.
Student Name: Tracey Harvey
Title: Economic Implications of Policy Change in Rural Regions: Legalizing Cannabis in the Kootenays
Completion Status: in progress

University: Simon Fraser University
Degree: Master of Resource Management (Planning)
Student Name: Michael Huck
Title: Co-constructing Rural Climate Adaptation: Insights from the State of Climate Adaptation and Resilience in the Basin Pilot Project
Completion Status: in progress

University: Royal Roads
Degree: Doctor of Social Sciences
Student Name: Susie Myers
Title: Nature Education in Early Childhood Education
Completion Status: in progress

Research Impacts (Q8)
Research impacts related to industry (e.g. spin offs, patents, processes) have not yet been identified. A future evaluation of ADT and SMARTS projects is expected to generate related findings. Research impacts related to health and health care are not applicable. The following impacts are related to fundamental knowledge and public policy.

An independent evaluation of the RIC/RDI was conducted in the Spring of 2017. Highlights related to research impacts include:
- 92% of respondents report products and services met their needs
- 93% of respondents report products and services are easy to use
- 88% of respondents report products and services made a difference in their planning and/or decision-making.

Please see Appendix C for the *Columbia Basin Trust: Columbia Basin Rural Development Institute Evaluation Final Report, May 29, 2017*.

An impact evaluation was also conducted on the 3-year Business Retention and Expansion pilot project in 2015. Results indicate research resulted in the following outcomes:

- Improved workforce
- Improved business management capacity
- Improved long-term land-use planning
- Increased levels of entrepreneurship
- Reduced leakage from the local economy
- Improved productivity within related business
- Increased local job opportunities, job retention and growth
- Improved business climate, including business and expansion conditions
- Improved development processes
- Increased local investment
- Improved communications leading to improved network support
- Improved levels of action-focused economic development activities
- Improved capacity for economic development delivery

For more information please see the BRE Best Practices and Regional Success Report:
http://datacat.cbrdi.ca/resource/columbia-basin-business-retention-and-expansion-best-practices-regional-success

Appendix A. RDI Strategic Plan

Columbia Basin Rural Development Institute Strategic Plan (2014-2017)

VISION

The Columbia Basin Rural Development Institute (RDI) envisions a resilient region where Columbia Basin-Boundary communities thrive as a result of collaborative learning and informed decision-making.

The RDI has a long-term vision of itself as a regional research centre that:

- Is the first place communities[1] and researchers go to access information and rural development research on the region.
- Has a proven track record of effectively conducting and supporting research, and of helping stakeholders make best use of that research.
- Has well-established and productive working relationships with others in the region whose activities are related to the RDI's mandate and with provincial and national rural development networks.
- Has consistent and widespread community support for the RDI's activities based on proven usefulness in meeting rural development needs.
- Is financially sustainable over the long-term.

MISSION
To support informed decision-making by Columbia Basin-Boundary communities through the provision of information, applied research and related outreach and extension support.

STRATEGIC PRIORITIES

1. Consolidate, identify gaps and build regional knowledge

2. Undertake applied rural development focused research

3. Support the access, use and application of RDI research and tools

4. Support meaningful collaboration amongst educational institutions and CBT

STRATEGIC PRIORITY 1: Consolidate, identify gaps and build regional knowledge

1. **Undertake research that provides information on economic, social, cultural and environmental conditions and trends in the Columbia Basin-Boundary region:**

- Compile and manage priority datasets.
- Develop and monitor relevant indicators.
- Interpret data and highlight important trends and conditions.
- Compile an inventory of regional research and rural development plans.

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[1] The RDI defines 'communities' as "local governments, organizations and First Nations that have an interest in furthering rural development" and rural development as "the process of improving the quality of life and economic, environmental, social and cultural well-being of people living in relatively isolated and sparsely populated areas".

2. **Identify and address priority data gaps:**

- Encourage the standardization of data collection methods across communities.
- Access data from a variety of sources to address priority data and indicator gaps.

STRATEGIC PRIORITY 2: Undertake applied rural development focused research

1. **Lead, broker, and support applied research partnerships related to identified research priorities**

- Identify research that will benefit the region
- Lead and support high priority regional applied research projects
- Broker and support college-community applied research projects
- Provide advisory services to support community-based applied research projects

2. **Assist in the diversification of the regional economy through the promotion of innovation and technology transfer in existing and new enterprises:**

- Broker and support college-company applied research and development projects.
- Promote best practices, innovation and collaboration in economic development.

STRATEGIC PRIORITY 3: Support the access, use and application of RDI research and tools

1. **Raise awareness and provide opportunities for communities to access and use RDI research and tools**

- Engage in communication and outreach activities to encourage the use of appropriate RDI research and tools by communities.
- Support the use of RDI research and tools through the provision of training and extension services.
- Connect communities to support organizations and other communities with similar rural development and / or research goals.

2. **Contribute to the awareness of rural development issues, challenges, and opportunities:**

- Participate in provincial and national rural development networks.
- Promote rural development best practices and share lessons learned from similar rural regions to Basin-Boundary communities.

STRATEGIC PRIORITY 4: Support meaningful applied research collaboration amongst educational institutions and Columbia Basin Trust

1. **Improve information sharing and collaboration between CBT and RDI:**

- Ensure mechanisms are in place to support ongoing collaboration, information sharing, and shared decision making related to applied research projects.
- Include data generated by applicable CBT research and funded projects into RDI knowledge products.
- Support cross-referrals between CBT and RDI.

2. **Improve information sharing and collaboration across post-secondary institutions:**

- Ensure mechanisms are in place to support ongoing information sharing and collaboration across the colleges related to the RDI and applied research.
- Provide opportunities for students to engage in applied research.
- Encourage regional applied research partnerships with post-secondary institutions from within and outside of the region.

3. **Support applied research capacity improvements at the region's colleges:**

- Assist in the development of college policies and procedures that support applied research and development activities.
- Promote the integration of applied research within administrative functions.
- Connect companies and communities with available college applied research supports.

Canadian Common **CV** commun canadien

Protected when completed

Dr. Terri MacDonald

Correspondence language: English
Date of Birth: 12/18

Contact Information

The primary information is denoted by (*)

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Dr. Terri MacDonald

Language Skills

Language	Read	Write	Speak	Understand	Peer Review
English	Yes	Yes	Yes	Yes	Yes

Degrees

2002/9 - 2008/5	Doctorate, Philosophy, Educational Studies, University of British Columbia Degree Status: Completed Thesis Title: The Power to Define: Newspaper Representations of Educational Choice in Edmonton and Calgary, 1990-2005 Transferred to PhD without completing Masters?: No Supervisors: Dr. Charles Ungerleider
1996/9 - 2000/5	Master's Thesis, Masters of Arts, Educational Policy and Administration, The University of Calgary Degree Status: Completed Thesis Title: Long-Term Effects of a Junior High School Science Retention Program for Girls Supervisors: Dr. Betty Donaldson
1991/9 - 1995/5	Bachelor's, Bachelor of Science, Biology, Lakehead University Degree Status: Completed
1991/9 - 1995/5	Certificate, Ontario Teaching Certificate, Science, Lakehead University Degree Status: Completed

Credentials

2016/12	Strategic Doing Certification, Purdue University

User Profile

Research Specialization Keywords: adopting digital technologies, community development, evidence-based decision-making, regional innovation, rural economic development, workforce development

Employment

2018/3	University of Guelph Adjunct, Professor
2011/7	Research Director, Columbia Basin Rural Development Institute Selkirk College Full-time

2011/7	Regional Innovation Chair in Rural Economic Development Selkirk College
2011/9 - 2011/12	Sessional Lecturer West Kootenay Teacher Education Program, Castlegar campus, University of British Columbia Part-time, Lecturer Tenure Status: Non Tenure Track
2006/1 - 2011/7	Research Director Perception Research
2004/1 - 2006/1	Research Director Centre for Innovative and Entrepreneurial Leadership
2003/1 - 2004/1	Economic Development Coordinator Community Futures of Central Kootenay
2002/6 - 2003/1	Research Consultant Nelson Community Services Society
2001/9 - 2002/5	Teaching Assistant Educational Studies, University of British Columbia Part-time Tenure Status: Non Tenure Track
2001/9 - 2002/5	Academic Management Assistant Educational Studies, University of British Columbia Part-time Tenure Status: Non Tenure Track
2001/1 - 2001/8	Policy Intern Political Studies, University of British Columbia Full-time Tenure Status: Non Tenure Track
2000/1 - 2000/6	High school Science Teacher L.V. Rogers High School
1998/9 - 1999/6	High school Science Teacher Rideau High School
1997/9 - 1998/6	High school Science Teacher Rockland High School
1995/5 - 1996/5	Elementary Teacher St. Mary's Islington Primary School, London England
1994/5 - 1994/8	Internship Human Resources and Development Canada
1993/5 - 1993/8	Internship Forestry Canada

Affiliations

The primary affiliation is denoted by (*)

2015/3	Vice-Chair, Board of Directors, Kootenay Association for Science and Technology

Research Funding History

Awarded [n=8]

2017/3 - 2022/3 Co-applicant	Advanced Digital Technology and the New Rural Economy, Grant

Funding Sources:

> Natural Sciences and Engineering Research Council of Canada (NSERC)
> Innovation Enhancement Grant
> Total Funding - 2,067,234

Co-applicant : Ian Parfitt; Jason Taylor;

Principal Applicant : Rhys Andrews

2014/6 - 2021/6 Co-applicant	Rural Policy Learning Commons: Building Rural Policy through International Comparative Analysis, Grant

Funding Sources:

> Social Sciences and Humanities Research Council of Canada (SSHRC)
> Rural Policy Learning Commons
> Total Funding - 2,500,000

2018/4 - 2020/3 Principal Applicant	Building regional resilience through informed decision-making, collaborative action and capacity building, Contract Project Description: This project is comprised of a scalable and replicableaction-focused approach designed to build the capacity of regional networks toexperiment, innovate, and adapt actions to meet rural development challengesand opportunities. The proposed initiative builds on learnings from SelkirkCollege's Columbia Basin Rural Development Institute, emerging ruraldevelopment literature, and rural policy directions from across Canada andother countries to facilitate evidence-based decision-making, theco-construction of solutions and related policies, and purposeful capacity buildingdesigned to foster regional resiliency. Using a phased and place-basedapproach, partners will come together around complex opportunities andchallenges with the goal of co-constructing and implementing solutions. The Regional Districts of East Kootenay, Central Kootenay and Kootenay Boundary will receive direct research support designed to address priority research questions. Research Uptake: Local government engagement and consultation

Funding Sources:

2018/4 - 2020/3	Columbia Basin Trust Total Funding - 100,000 (Canadian dollar) Portion of Funding Received - 100,000 (Canadian dollar) Funding Renewable?: No Funding Competitive?: No
2018/4 - 2020/3	Regional District of East Kootenay Total Funding - 40,000 (Canadian dollar) Portion of Funding Received - 40,000 (Canadian dollar) Funding Renewable?: No Funding Competitive?: No

	2018/4 - 2020/3	Regional District of Central Kootenay Total Funding - 40,000 (Canadian dollar) Portion of Funding Received - 40,000 (Canadian dollar) Funding Renewable?: No Funding Competitive?: No
	2018/4 - 2020/3	Regional District of Kootenay Boundary Total Funding - 40,000 (Canadian dollar) Portion of Funding Received - 40,000 (Canadian dollar) Funding Renewable?: No Funding Competitive?: No

2016/5 - 2019/5
Principal Applicant

Regional Workforce Development in Rural BC, Grant

Funding Sources:

Social Sciences and Humanities Research Council of Canada (SSHRC)
Community and College Social Innovation Fund
Total Funding - 240,000

2016/4 - 2019/3
Co-applicant

Open Data for Open Government in Rural BC, Grant

Funding Sources:

Social Sciences and Humanities Research Council of Canada (SSHRC)
Community and College Social Innovation Fund
Total Funding - 240,000

Principal Applicant : Ian Parfitt

2011/7 - 2019/3
Principal Investigator

Columbia Basin Rural Development Institute, Contract

Funding Sources:

Columbia Basin Trust
Columbia Basin Rural Development Institute
Total Funding - 2,350,000

2017/9 - 2018/9
Principal Applicant

Different by Design, Grant, Operating

Funding Sources:

	2017/9 - 2018/9	Social Sciences and Humanities Research Council of Canada (SSHRC) Connections Total Funding - 40,200 (Canadian dollar) Portion of Funding Received - 40,200 (Canadian dollar) Funding Renewable?: No Funding Competitive?: Yes

2016/9 - 2017/12
Principal Investigator

Measuring Progress on Adapting to Climate Change, Grant

Funding Sources:

BC Real Estate Foundation
Communities Adapting to Climate Change
Total Funding - 50,000

Completed [n=2]

2014/8 - 2017/1
Principal Applicant

Selkirk SME Applied Research & Technology Solutions Project, Grant

Funding Sources:

National Research Council Canada (NRC) (Ottawa, ON)
Industrial Research Assistance Program
Total Funding - 249,998

2013/1 - 2014/2
Principal Applicant

Selkirk SME Adoption of Digital Technologies Pilot Project, Grant

Funding Sources:

National Research Council Canada (NRC) (Ottawa, ON)
Digital Technology Adoption Program
Total Funding - 306,644

Under Review [n=4]

2018/4 - 2020/3
Principal Applicant

Building a competitive advanced manufacturing cluster, Grant

Funding Sources:

Province of BC
BC Rural Dividend Fund
Total Funding - 100,000

2018/4 - 2020/3
Principal Applicant

Building a competitive forestry cluster, Grant

Funding Sources:

Province of BC
BC Rural Dividend Fund
Total Funding - 100,000

2018/4 - 2020/3
Principal Applicant

Building a competitive tourism cluster, Grant

Funding Sources:

Province of BC
BC Rural Dividend Fund
Total Funding - 100,000

2018/4 - 2020/3
Principal Applicant

Building a competitive technology cluster, Grant

Funding Sources:

Province of BC
BC Rural Dividend Fund
Total Funding - 100,000

Program Development

2019/9	Research, Industry Engagement, Selkirk College
	Program Title: Advanced Internet Application Development
	Course Level: College

Program Description: This is a technical training program that teaches current programming skills that have the biggest impact and relevance to the current labour market needs. Training students in the most important aspects of coding, giving them the opportunity to immediately apply their new coding skills to solve real world problems. The program is geared toward those looking to start a career as a web application developer. Graduates will develop strong coding skills with a solid understanding of business practices, the skills to communicate clearly and concisely about business technologies, and to present, implement and maintain emerging web-based technologies to help organizations meet the demands of the ever-changing technical landscape.

Unique / innovative characteristics: - Module based program consisting of 5 distinctmodules allowing for multiple entry points based on past experience - Online delivery may be option for the future - Consistent teaching methodology built onsuccesses in standard College practice - Internship - experiential learning using real-world projects - Agile development models incorporated intoproject and program delivery

Co-developers: Taylor, Jason

2019/9	Research, Industry Engagement, Selkirk College
	Program Title: Digital Fabrication and Design
	Course Level: College

Program Description: The Digital Fabrication and Design program is designed to prepare students for employment or advancement in the fields of digital fabrication, advanced manufacturing, engineering technologist, and solid modeling, with an emphasis on emerging technologies and strategies. The Digital Fabrication and Design program will teach hands on skills for a wide variety of digital fabrication production facilities. Instruction is primarily delivered in work groups, with peers, mentors, and machines.

Unique / innovative characteristics: TheEmerging Technologies portion of the program is designed for delivery using aproblem-based learning approach. re and augment advancedproduction techniques. The EntrepreneurialBusiness portion of the program will include training, discussion and guestspeakers presenting topics related to intellectual property, invention,business models and open-source models, entrepreneurial thinking for industry. Students applythe knowledge and skills developed through these activities in the completionof a major Design Project that must incorporate the CAD/CAM process. The majorDesign Project allows students to generalize, apply and synthesize the conceptslearned over the duration of the course. This experiential approach encourages students to "learn bydoing" and, thereby, develop the problem-solving and teamwork skillsfundamental to industry practice.

Co-developers: Taylor, Jason

Student/Postdoctoral Supervision

Master's Thesis [n=2]

Academic Advisor	Shannon Bence (Completed)
	Student Degree Received Date: 2014/5, Vancouver Island University

Academic Advisor   Michael Huck (In Progress)
                      Student Degree Expected Date: 2018/9, Simon Fraser University

Doctorate [n=2]

Academic Advisor   Tracey Harvey (In Progress)
                      Student Degree Expected Date: 2020/5, University of Guelph

Academic Advisor   Suzie Myers (In Progress)
                      Student Degree Expected Date: 2018/9, Royal Roads University

Event Administration

2016/9 - 2017/9   Organizer, Different by Design, Conference, MacDonald, T., 2017/9 - 2017/9

2017/1 - 2017/6   Organizer, Buiilding a 21st Century Workforce, Conference, MacDonald, T., 2017/6 -
                      2017/6

Conference Review Activities

2016/4 - 2016/5   Reviewer, Building Vibrant Rural Futures, Double Blind, Canadian Rural Revitalization
                      Foundation
                      Number of Works Reviewed / Refereed: 6

Research Funding Application Assessment Activities

                      External Reviewer, OMAFRA-University of Guelph Research Program, Funder, Academic
                      Reviewer, University of Guelph

                      Research Disciplines: Human Geography

Most Significant Contributions

2011/7   Endowed Research Chair (RIC) and Rural Development Institute (RDI).
                      The RIC is a $3 million endowed research position and one of only two college-based
                      endowed research Chairs in BC. The RDI is funded through an 8-year, $2.35 million
                      contribution agreement with the Columbia Basin Trust in partnership with Selkirk College.
                      The RDI's catchment area primarily includes the Kootenay Development region but also
                      extends into two other BC Development regions - extending across 4 college catchment
                      areas (there are no universities in southeast BC). The goal of both the RIC and RDI is
                      to develop the capacity in the region for sound decision-making in matters related to
                      socioeconomic development, through the provision of relevant research data and related
                      skill and capacity development. The RIC is also tasked with assisting in the diversification
                      of the regional economy through the promotion of innovation and technology transfer in
                      existing and new enterprises.

2016/5   Preparing for the Future: Building resilient rural, remote and northern communities.
                      I was invited to deliver a keynote presentation by Colleges and Institutes Canada to
                      presidents, vice-presidents and research directors at the Annual Conference in 2016. The
                      presentation explored college applied research and innovation capacity, specifically as it
                      relates to the rural context. As a Canadian Rural Revitalization Foundation Board Director,
                      I also shared findings from the Canadian Rural Revitalization Foundation's State of Rural
                      Canada report.

2016/4	Regional Workforce Development in Rural BC

This project received $240,000 in federal funding through the Social Sciences & Humanities Research Council's Community & College Social Innovation Fund, ranking in the top 10 nationally. SSHRC funding was matched with an additional $500,000 of in-kind and cash support from more than 30 partners and is positioning the region to take an informed and collaborative approach to preparing a 21st Century workforce in the BC interior. This collaborative workforce development model will be applicable to other rural regions in Canada and beyond.

2016/11	Regional Innovation and Socioeconomic Development in Non-Metropolitan Areas: BC Insights.

I was invited by the Ministry of Technology, Innovation and Citizen Service's Executive Director of Regional Innovation to join a panel presentation at the Canadian Science Policy Conference. The panel included UBC-O's Deputy Vice-Chancellor, Helios Global Technologies's CEO, Kamloops Innovation's Executive Director, UBC-O's MITACS Business Development Director, and UNBC's Master of Engineering in Integrated Wood Design Program Chair. The connections made at this conference and previous knowledge mobilization events have lead to emerging research and programming partnerships between Selkirk College and UBC-O's Faculty of Engineering and Faculty of Management in efforts to support the advanced manufacturing and metallurgical cluster in the Lower Columbia sub-region adjacent to Teck Metals.

Presentations

1. MacDonald, T., Andrews, R., Parfitt, I., Morin, J.(2018). Social Innovation in Rural BC. Canadian Institutes and Colleges Canada Conference, Victoria, Canada
   Invited?: No, Keynote?: No, Competitive?: Yes
   Description / Contribution Value: Presenter

2. MacDonald, T., Kevany, K., Vittuari, M., Loring, P.(2017). Building a sustainable food system. Canadian Rural Revitalization Foundation Conference, Nelson, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No

3. MacDonald, T., Tedman-Jones, J., Hayes, A., Handy, E., Bichler, L., Freschi, D., Andrews, A. (2017). Working together to build a regional innovation ecosystem in non-metropolitan areas: BC insights. Canadian Rural Revitalization Foundation Conference, Nelson, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No

4. MacDonald, T., Vodden, K., Carter, K., Breen, S.(2017). Place, technology and the future of rural communities within the Columbia Basin-Boundary region. Association of Kootenay-Boundary Local Governments Annual Conference, Rossland, Canada
   Main Audience: Decision Maker
   Invited?: Yes, Keynote?: No

5. MacDonald, T., Gibson, R.,Taylor, J.,Simpson, R., Cobbe, S., Joe, L.(2017). Building a thriving workforce. Columbia Basin Symposium, Kimberley, Canada
   Main Audience: Knowledge User
   Invited?: Yes, Keynote?: No

6. MacDonald, T.(2017). Building competitive clusters in the Columbia Basin-Boundary region. Association of Kootenay-Boundary Local Governments Annual Conference, Rossland, Canada
   Main Audience: Decision Maker
   Invited?: Yes, Keynote?: No

7. MacDonald, T., Gibson, R., Coletto, D., Mackenzie, I.(2017). Demographics in the Columbia Basin. Columbia Basin Symposium, Kimberley, Canada
    Main Audience: Knowledge User
    Invited?: Yes, Keynote?: Yes

8. MacDonald, T., Andrews, R.(2017). Cluster-based meets place-based: Designing workforce innovation in BC's interior. Colleges and Institutes Canada Annual Conference, Ottawa, Canada
    Main Audience: Decision Maker
    Invited?: Yes, Keynote?: No

9. MacDonald, T., Vitturari, M., Loring, P., Ashton, B., Kevaney, K. (2017). Sustainability and innovation in food systems. Rural crossroads: Challenges and opportunities for rural development learning, Bologna, Italy
    Main Audience: Researcher
    Invited?: Yes, Keynote?: No

10. MacDonald, T.(2016). Open Data for Open Government in Rural BC. Canadian Rural Revitalization Conference. Building Vibrant Rural Futures, Guelph, Canada
    Main Audience: Researcher
    Invited?: No, Keynote?: No

11. MacDonald, T., Emon, P., Sturge, C.(2016). Canadian Regional Development: The View from the Front-lines. Canadian Rural Revitalization Conference: Building Vibrant Rural Futures, Guelph, Canada
    Main Audience: Researcher
    Invited?: Yes, Keynote?: No

12. MacDonald, T.(2016). Advancing the Regional Food System in Rural BC. Canadian Rural Revitalization Conference: Building Vibrant Rural Futures, Guelph, Canada
    Invited?: No, Keynote?: No

13. MacDonald, T.(2016). Transitioning to the New Rural Economy. Association of Kootenay-Boundary Local Governments Annual Conference, Kimberley, Canada
    Main Audience: Decision Maker
    Invited?: Yes, Keynote?: Yes

14. MacDonald, T., Richards, G., Van Horn, T., Pommen, B.(2016). Forging Metal Tech Alley: Opportunities for Cluster Development. Forging Metal Tech Alley, Trail, Canada
    Main Audience: Knowledge User
    Invited?: Yes, Keynote?: Yes

15. MacDonald, T.(2016). Preparing for the Future: Building Resilient Rural, Remote and Northern Communities. Colleges and Institutes Canada Annual Conference., Ottawa, Canada
    Main Audience: Decision Maker
    Invited?: Yes, Keynote?: Yes

16. MacDonald, T.(2016). Colleges Supporting Economic Development: The Case of a Regional Business Retention and Expansion Pilot Project. Colleges and Institutes Canada Annual Conference, Ottawa, Canada
    Main Audience: Decision Maker
    Invited?: No, Keynote?: No

17. MacDonald, T.(2016). Advancing the Basin-Boundary Regional Food System. Association of Kootenay-Boundary Local Governments Annual Conference, Kimberley, Canada
    Main Audience: Decision Maker
    Invited?: No, Keynote?: No

18. MacDonald, T., Buszard, D., Cronin, M., Smith, L., Tedman-Jones, J., Wimmers, G.(2016). Regional Innovation and Socioeconomic Development in Non-Metropolitan Areas: BC Insights. Canadian Science Policy Conference, Ottawa, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

19. MacDonald, T.,. (2016). Planning the Transition to a Broadband Economy. Intelligent Communities Strategic Doing Workshop, Nelson, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: Yes

20. MacDonald, T.(2015). Aging in the Kootenays: Exploring Demographic Shifts and Implications. Association of Kootenay-Boundary Local Governments Annual Learning Event, Warfild, Canada
Main Audience: Decision Maker
Invited?: Yes, Keynote?: Yes

21. MacDonald, T.(2015). Regional Economic Development Capacity and the Impact on Business Retention and Expansion Implementation. Kootenay Regional Economic Development Forum, Creston, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: Yes

22. MacDonald, T.(2015). Regional Economic Development Capacity in the Kootenay-Boundary Region. Association of Kootenay-Boundary Local Governments Annual Conference, Nakusp, Canada
Main Audience: Decision Maker
Invited?: Yes, Keynote?: Yes

23. MacDonald, T.(2015). Applied Research and Innovation as an Emerging Opportunity for BC Colleges and Institutes. Meeting of the BC College Presidents, Vancouver, Canada
Main Audience: Decision Maker
Invited?: Yes, Keynote?: Yes

24. MacDonald, T.(2015). Applied Research and Innovation as an Emerging Opportunity for BC Colleges and Institutes. Meeting of the BC Institutes and Universities Vice-Presidents, Vancouver, Canada
Main Audience: Decision Maker
Invited?: Yes, Keynote?: Yes

25. MacDonald, T.(2015). Colleges as Anchors of Innovation in Rural Socioeconomic Development. Regional Studies Association Annual Conference, Piacenza, Italy
Main Audience: Researcher
Invited?: No, Keynote?: No

26. MacDonald, T.(2015). Resources for Informed Community Development. Association of Kootenay Boundary Local Governments Annual Conference, Nakusp, Canada
Main Audience: Decision Maker
Invited?: Yes, Keynote?: No

27. MacDonald, T.(2014). Applied Research Capacity Considerations: The Case of the Rural BC College. Association of Canadian Community Colleges Applied Research Symposium, Ottawa, Canada
Main Audience: Decision Maker
Invited?: No, Keynote?: No

28. MacDonald, T.(2013). Business Retention and Expansion: Exploring a Regional Implementation Model. Province of BC Economic Development Webinar, Victoria, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: Yes

29. MacDonald, T.(2012). State of the Basin: Monitoring Economic, Social, Cultural and Environmental Indicators in the Columbia Basin-Boundary Region. BC Rural Summit, Grand Forks, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: No

30. MacDonald, T.(2012). Research Supporting Regional Development: The Case of the Columbia Basin Rural Development Institute. Canadian Association of Geographers Conference, St. John's, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

31. MacDonald, T.(2012). Economic Trends in the Columbia Basin-Boundary Region. Association of Kootenay Boundary Local Governments Annual Conference, Trail, Canada
Main Audience: Decision Maker
Invited?: Yes, Keynote?: Yes

32. MacDonald, T.(2012). Research Supporting Regional Collaboration. UNBC's Community Development Institute Speakers Series, Prince George, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes

33. MacDonald, T.(2012). A Regional Approach to Economic Development. Community Futures of British Columbia Annual Conference, Nelson, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: No

34. MacDonald, T.(2012). Research Supporting Regional Collaboration. Canadian Rural Revitalization Foundation Annual Conference. Creating Rural Connections, Olds, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

35. MacDonald, T.(2012). Lessons Learned from Year One of the Columbia Basin Rural Development Institute. World Congress of Colleges and Polytechnics, Halifax, Canada
Main Audience: Knowledge User
Invited?: No, Keynote?: No

36. MacDonald, T.(2011). Speaking from a Rural Place: Lessons for Teacher Educators. Congress of the Humanities and Social Sciences Annual Conference, Fredericton, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

Publications

Book Chapters

1. (2015). The Role of Sustainable Management of Not-For-Profit and Co-operative Organizations in Social Housing Provision. Mike Gismondi, Sean Connelly, Mary Beckie, Sean Markey, and Mark Roseland. Scaling Up: The Convergence of the Social Economy and Sustainability. : 295.
Published, Athabasca University Press,
Refereed?: No
Contribution Percentage: 11-20

2. (2005). Attracting and retaining girls in science: The success of the Operation Minerva Project. E.L. Donaldson. Coming of age: 100 years of educating girls and women.
Published, Detselig, Calgary, Canada
Refereed?: Yes
Description / Contribution Value: Chapter author

Book Reviews

1. (2017).
    Published, Island Studies Press,
    Review Year: 2017
    Edited by Laurie Brinklow and Ryan Gibson. 2017. From Black Horses to White Steeds.
    Description / Contribution Value: Chapter reviewer

Appendix C. Summary of RIC/RDI Project Metrics

Project	External Funding Source	Funding Secured	Partner Cash Contributions	Total	Number of Students	Number of Faculty	Number of Partners	Number of Companies Supported
State of the Basin	Columbia Basin Trust (CBT)	2,400,000	0	2,400,000	8	7	33	
Business Retention and Expansion	Columbia Basin Trust (CBT)	180,000	0	180,000	2	5	30	1143
Employment Lands	Province of BC, Community Futures, CBT	50,000	25,000	75,000	3	2	30	
Teck Serv Student Internships	Teck Trail Operations	60,000	0	60,000	6	3	6	
State of the Environment	BC Real Estate Foundation, CBT	50,000	50,000	100,000	1	2		
Regional Food Systems	BC Real Estate Foundation, CBT	50,000	50,000	100,000	1	4		
Climate Adaptation	BC Real Estate Foundation, CBT	50,000	50,000	100,000	2	4	5	
Adopting Digital Technologies	National Research Council	306,644	0	306,644	4	11		222
Selkirk-SME Applied Research & Technology Solutions (SMARTS)	National Research Council	242,000	28,097	270,097	30	11		45
Selkirk-SME Applied Research & Technology Solutions (SMARTS 2)	National Research Council	140,545	1,988	142,533	1	5		
Workforce Development	Social Sciences and Humanities Research Council, CBT	240,000	180,000	420,000	9	3	33	
Building Vibrant Futures	Social Sciences and Humanities Research Council	49,607	43,000	92,607	5	3	10	
Total		3,818,796	428,085	4,246,881	72	60	147	1,410

* CBT contribution above is reflective of the 8-year agreement which ends 2019