Mitacs Research Internships Supported by ETSI-BC Subsidies

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Year	Internship Program	Partner	Project	Objective(s)	Faculty Advisor(s)
FY22	Rural Resilience	Community Futures Central Kootenay	Rural workforce development strategy	• Identify best practices and solutions related to rural workforce development • Match best practices and solutions to local workforce issues • Understand local viability and applicability of identified solutions	Dr. Sarah-Patricia Breen
FY23	Rural Resilience	Kootenay Association of Science & Technology	Advanced manufacturing ambassador program	• Increase visibility of the Kootenay advanced manufacturing & technology sector among youth • Educate Advanced Manufacturing businesses about the benefits of Ambassador Programs as part of their recruitment	Dr. Sarah-Patricia Breen & Dr. Tracey Harvey

				strategy along with providing them resources • Cultivate mentorship opportunities between advanced manufacturing businesses & youth through Ambassador programs • Enhance current partnerships with regional school districts, post-secondary education institutions, corporations, Indigenous and community groups that are youth centered in mission and impact. • Assess the region's Advanced Manufacturing Sector in terms of economic growth and innovation	
FY23	Rural Resilience	Village of Salmo	Local transit pilot project	• Build on the existing public transit study completed for the Village of Salmo (and surrounding electoral area) to add detail to the identified options, add additional select options, and explore the specific costs and potential funding sources of all options in detail.	Dr. Sarah-Patricia Breen

FY23	Rural Resilience	Yellowstone to Yukon Conservation Initiative	Resource-dependent community futures	• Gather and analyze data to evaluate the socioeconomic impact of a transition away from resource management practices that undermine the ecological integrity of the region • Engage stakeholders (including representatives of resource sectors) to determine how they envision change and their role within it	Lauren Rethoret
FY24	Rural Resilience	Regional District of Central Kootenay	Watershed protection service case analysis	• Assist in determining the scope and design of the service through a case study review • Evaluate public support for a watershed protection service	Lauren Rethoret
FY25	Rural Resilience	Community Futures East Kootenay	Business retention and expansion for childcare providers	• Assess Nelson & area as well as Central Kootenay communities' business retention and expansion needs • Identify business-related needs and challenges for childcare providers in the Kootenay region • Share constructive business solutions with childcare providers to support the long-term	Dr. Sarah-Patricia Breen

				sustainability of these organizations	
FY25	Technology & Natural Resources	Cooper Creek Cedar	RPAS forest health indicators assessment	• Investigate drone survey applications as it relates to forest health indicators assessment. • Design drone-based remote sensing approach to attempt identification of stands affected by beetle kill, windthrow, and forest pathogens	Dr. Brendan Wilson
FY25	Technology & Natural Resources	Harrop Proctor Community Forest	Forest management hydrological modelling tool	• Improve understanding of processes of hydrological recovery in Kootenay region mixed forest stands to compare against outputs of SWE predicted by the regionally calibrated models • Analysis of Kootenay-region LiDAR based forest - snow studies will provide improved understanding of canopy effects on snow interception and ablation in open, juvenile and mature stands • Comparisons of observed and modeled SWE can be used to establish the accuracy of snow accumulation process representation in	Dr. Kim Green

				regenerating stands in the model	
FY25	Technology & Natural Resources	Nakusp and Area Community Forest	Brouse-Wensley (WRR)	• Investigate the hydrological impacts of wildfire treatment in stands of the Brouse Creek area by comparing snow surface elevation for adjacent treatment and control areas	Dr. Kim Green
FY25	Technology & Natural Resources	Regional District of Kootenay Boundary	Wetland carbon mapping in the Boundary region	• Develop and implement a climate change resilience analysis for the Boundary • Quantify ecosystem goods and services provided by watershed components (water bodies, riparian areas and wetlands, grasslands, forests) • Enhance community understanding, support, and capacity for stewardship of the Boundary area watershed through social and community engagement	David Greaves
FY25	Technology & Natural Resources	Slocan Integral Forestry Cooperative	Trozzo Creek Wildland Urban Interface (WUI)	• Use drone- and ground-based LiDAR to provide estimates of forest fuels in WUI fuel treatment units, including: ○ Estimate the volume of under canopy ladder fuels and the density of	David Greaves

				fine fuels from above ground to canopy base ○ Explore per plot canopy base height variation ○ Remove windfall from fuel estimations ○ Use drone- and ground-based lidar to estimate biomass removal by prescribed burns ○ Capture pre- and post-burn lidar, calculate forest metrics and then calculate changes	
FY25	Technology & Natural Resources	South Kootenay Lake Community Services Society	Technical aspects and considerations of greenhouse technology	• Understand current greenhouse technologies and relative merits with respect to the intended SEBC operating environment & geothermal water source temperature & flow rates • Understand the energy flow and use from deep thermal sources • Prioritize options and adapt SKL deep geothermal source to greenhouse technologies	Dr. Sarah-Patricia Breen