

**Experiential Learning Framed in a Tribal Context – Infusing the
Salish Kootenai College Undergraduate Life Sciences Program with
Entrepreneurship**

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CONTEXT

A traditional saying attributed to Nicholas Black Elk, an Oglala Lakota (Sioux) healer and visionary as told to John Neilhardt in his text 'Black Elk Speaks' provides the context for this project: *"Everything an Indian does is in a circle, and that is because the power of the world always works in circles"* (1). This project's tribal framework is embodied within the symbolism of the circle, which represents the infinite, natural cycles, diversity, connection, collaboration, and equality. In the Lakota language, "Cangleska Wakan" signifies being connected in one continuous process of growth and development, with Cangleska being circle and Wakan meaning holy or sacred. It is Black Elk and Cangleska Wakan that serve as guides for the design of this project to deeply engage students in experiential learning by curriculum. Through the lens of tribal contexts and under the guidance of Black Elk and Cangleska Wakan (see title page), the Life Sciences entrepreneurial education experience will enhance community, education and careers for all participating students.

NARRATIVE

Introduction

Salish Kootenai College (SKC) is the Tribal College of the Flathead Indian Reservation in western Montana, chartered by the Confederated Salish & Kootenai Tribes (CSKT) in 1976. SKC is one of the founding institutions of the American Indian Higher Education Consortium (AIHEC) and widely regarded as a leader in Native American education empowering students to improve their communities through education, research, service, and entrepreneurship. The SKC four-year Life Sciences (LS) Bachelors undergraduate program is the only one of its kind in the AIHEC network, offering quality education and research experiences to prospective Native American scientists. The Center of Excellence for Tribal Entrepreneurial Education (CETEE), a recently funded unique initiative housed at SKC, works with strategic partners to advance interdisciplinary collaborations to infuse entrepreneurship education into different fields, including STEM. The mission of CETEE is focused on tribal communities to enhance workforce development, provide access to capital and develop entrepreneurial education and programming.

An overwhelming majority of the LS students are female and express a desire to serve and contribute to their tribal communities after they complete their education, in effect, completing their personal circle. The scarcity of Native entrepreneurial efforts in STEM are rooted in unique challenges faced by Native American communities on reservations. There is a lack of role models representing successful entrepreneurship and the challenges geographical locations present, a lack of access to capital funds, limited networking opportunities and a lack of enhancement of the individual entrepreneurial mindset and capacity (2). Many of these barriers can be addressed by infusing entrepreneurial learning into Life Sciences curriculum, which will allow students to gain new skills and experiences they carry with them back to their reservations (3-6). Enhancing the entrepreneurial capacity for employment on the reservation is essential for the long-term economic health of the community and can only be achieved by addressing the lack of entrepreneurial skills in the Life Sciences program (2).

This proposed program is centered on infusing experiential entrepreneurship learning into the existing LS curriculum to bridge the gap between student education and identified opportunities within the life sciences sector. Not all students will go on to be entrepreneurs. Under the watchful eyes of Cangleska Wakan, experiential entrepreneurship education will provide students the skills needed to take on leadership roles in government, non-profits, academia and established companies in the STEM field. In partnership with CETEE, the LS faculty will develop

and implement an entrepreneurship infusion model steeped in experiential learning and Tribal contexts. This partnership will not only enhance the rigorous undergraduate Life Sciences program at SKC but will also provide new opportunities for highly underrepresented Native Americans in STEM (7). This proposed infusion model is the first of its kind in the AIHEC network and has never been undertaken at any tribal college before now.

An additional rationale supporting the timing of this proposed project is the fact that the Flathead Valley's Life Sciences entrepreneurial landscape is changing rapidly and opportunities for employment and innovation through entrepreneurship are emerging quickly. In April 2019, the US Small Business Administration announced a partnership between Montana Technology Enterprise Center (MonTEC), Montana Bioscience Alliance, Montana World Trade Center, the University of Montana, Missoula Economic Partnership, and Swan Valley Medical for the development of a Bioscience Cluster Initiative (8). This initiative will provide technical support, training, and mentoring to life sciences businesses, entrepreneurs and students. Dr. Westbroek and Ms. Parry, the principal investigators of this project, recognize the importance of the Bioscience Cluster Initiative and the opportunities it can create for SKC LS students. Therefore, they have fostered a relationship with the Montana Bioscience Cluster Initiative (MBCI).

Objectives and Activities

The overall goal of infusing entrepreneurial elements into the LS curriculum is to enhance the student learning experience through learning and applying two methodologies: scientific and entrepreneurial, creating new thinking for students as “change-makers. This goal will be accomplished by the three objectives described below supported by activities facilitating (1) insight into entrepreneurship, (2) the entrepreneurial mindset, and (3) becoming an entrepreneur. We will be successful when the LS students are participating in the listed activities, gaining entrepreneurial experience, networking with professionals, demonstrating competencies from the education materials, forming their first startup ventures and completing their circle of learning. Tangible work products from this program include innovative pedagogy, tribal based story-telling and embedded activities in curriculum that can be shared publicly with other educators at the annual Venture Well conference.

Objective 1: LS Faculty and Students Will Gain a Deeper Understanding of Entrepreneurship

LS faculty and students will gain a deeper understanding of entrepreneurship through customized curriculum infusion for students, supported by professional development for faculty. The infusion includes implementing models of ‘experiential learning by doing and doing again’, and creative pedagogical approaches to solving real world problems (9), all of which are known through the words and vision of Black Elk.

Objective 1. Activity 1: Participating LS faculty will attend a workshop on entrepreneurial experiential education and pedagogy

Rationale and Description: CETEE will provide a professional development workshop to support LS faculty to learn the entrepreneurship curriculum framework and creative pedagogic appropriate for experiential learning in tribal contexts in higher education.

Expected Outcome and Assessment: The LS faculty will be able to implement entrepreneurial pedagogy, tools, activities and events in real-time to support experiential learning for students in LS courses. *Assessment* will include competency-based observations for LS faculty to deliver a sequence of activities utilizing the entrepreneurial tools and complete activities.

Objective 1. Activity 2: Develop and Implement Customized Entrepreneurial Education Materials for Life Sciences

Rationale and Description: Instructional material will be developed in close collaboration with Mr. Paul Gladen, the Director of Blackstone LaunchPad and NSF I-Corps at the University of Montana, and his team. The developed material will use central elements from the NSF I-Corps curriculum and will be themed around the Flathead Valley bioscience ecosystem and will be carefully vetted for tribal context and intercultural respect (10). The materials will be instructional, experiential or exploratory in nature with the intention to stimulate student contributions from their experience. Modules will be developed to address topics including (1) the differences and similarities between the scientific and entrepreneurial mindset and methodologies (2) how to identify a problem in Life Sciences, (3) the components of a good Pitch, (4) customer discovery, (5) developing the Business Model Canvas, and (6) applying the principles of Lean Startup. The multimedia content will include case studies, profiles, interviews with local and regional bioscience entrepreneurs, and professional advisors. Material generated from the experiential learning content will be curated and incorporated into supporting course materials and resources (e.g. podcasts, success stories and testimonials). A Handbook for startup ideation and pitch strategies will be provided from existing resources.

Expected Outcomes and Assessments: LS faculty will have instructional support materials for solving problems in Life Sciences framed with tribal elements and a common language. Outcomes for students include being able to compare and contrast the scientific and entrepreneurial method, noting similarities and divergences. Students will master the NSF I-Corps steps for problem solving. Students will be able to identify key characteristic of a successful bioscience innovator and relate it to the tribal leadership characteristics. The evaluation of the experiential learning is derived from student participation in learning activities in the classroom and beyond, including short presentations and reflections after each major NSF I-Corp step. *Assessment* of the learning will be through peer validation of uploaded videos of presentations and documents and an evaluation survey distributed for students to rank their satisfaction with the educational materials. Students will receive credit for the I-Corps activities.

Objective 2: Students will Develop and Demonstrate an Entrepreneurial Mindset

LS students will develop and demonstrate an entrepreneurial mindset through participation in experiential learning activities such as Pitch and Business Model competitions, Bootcamp and Start-up weekend events, networking, conferences and workshops, and interactions with entrepreneurs from diverse backgrounds. Students and inter-disciplinary student teams will develop their entrepreneurial mindset as they learn to work across disciplines and experience peer-to-peer learning amongst engaged colleagues. Through these participatory activities, students will identify how their entrepreneurial mindset is in step with Cangleska Wakan and in harmony with new opportunities in their communities, their education and their careers.

Objective 2. Activity 1: Students will Participate in Pitch and Business Model (BM) competitions, Bootcamp (BC) and Startup Weekend (BSW) events

Rationale and Description: Numerous entrepreneurial activities across different disciplines will be implemented to create a range of activities and events for students to participate in. The feature event will be ‘Startup Weekend’ which brings entrepreneurs together to turn an idea into action by creating a new business in 54 hours. For this project, SKC plans to host a Bioscience Startup Weekend (BSW) in year 2, inviting a group of 100+ participants with rich and diverse talents, including SKC LS students, SKC faculty, members of the Bioscience Cluster initiative, other tribal

colleges through the CETEE network, project collaborators, Blackstone Launchpad members, local schools and colleges, local government, civic organizations and local community members. Mr. Paul Gladen and his Blackstone Launchpad team as BSW lead, in partnership with Dr. Westbroek and Dr. Comstock of LS faculty, Ms. Parry of CETEE will plan, organize and implement the SKC LS Bioscience Startup Weekend (BSW) event.

Planning commences a year before the target date and will be managed in two phases: Phase I – Year 1: Incremental lead-in activities, such as Pitch and Business Model competitions and Bootcamp, will be provided by Launchpad and CETEE as promotion events to create awareness and educate the community and potential participants on what Startup Weekend means and how it is conducted. Phase II – Year 2: Four months prior to the event, the BSW Lead team will file the application to host the event, addressing the requirement to raise event sponsorship, secure the SKC venue, find local mentors and judges, promote the event and recruit attendees.

Expected Outcomes and Assessments: Student outcomes include self-efficacy as innovators and problem-solvers captured in pre-event and post-event surveys, self-identifying personal outcomes and an expanded network through participation. Evaluation of the event includes an event survey administered by Startup Weekend and the collection of submitted presented business ideas as student solutions to bioscience problems worth solving. Other evaluation points include the number of registered attendees (industry experts, mentors, guest speakers, invited Tribal representation and local government, etc.) and the audience count. Students will receive credit for active participation in the lead-in events and Startup Weekend.

Objective 2. Activity 2: *Students will build a network through interaction with LS entrepreneurs*

Rationale and Description: MBCI networking events and interaction will be incorporated into student networking interactions within the local region and SKC campus. Using the circle as a metaphor, LS students will be participating in networking events in the MBCI and also inviting members of the MBCI to participate in SKC campus-based networking activities. SKC LS social media will be utilized to publicize activities, engagement and events. A key feature of tribal participation will be a cultural exchange at events with SKC LS students offering the ‘honoring’ to open and close selected networking events.

Expected Outcomes and Assessment: Student teams will be formed around the network activities and events interacting with LS entrepreneurs. The teams will be pitching research and business ideas to engage the entrepreneurs and MBCI members. *Outcomes* will include engagement with the entrepreneurs and businesses including on-site research opportunities, job shadowing and internship placements. *Assessments* include students fulfilling new experience opportunities and documenting their network interactions through a range of reflection exercises incorporated in the LS curriculum.

Objective 3: Students will become entrepreneurs

LS students and student teams will become entrepreneurs by advancing their ideas into start-ups. Students will apply their skills and knowledge to start and manage a start-up in the context of a student-focused, co-working environment with the support of their faculty network and collaborators. CETEE manages the ‘Hatchery’, serving as a pre-incubator workspace supporting the most promising student-led startup businesses prior to joining an Incubator and exploring commercialization. During Hatchery residence, promising student teams will be encouraged to apply for the Venture Well E-Team program.

Objective 3. Activity 1: *Students and student-teams will start and manage their start-up venture*

Rationale and Description: Under the mentorship of CETEE and the ‘Hatchery’, LS student founders will be provided with mentoring and emotional and technical support to launch their first business venture. Student businesses will be developed and mentored over 2 years to reduce the chances of failure of an early stage start-up, along with being provided support and access to resources to create start-up viability. A priority for LS startups will be supporting customer discovery for the startup businesses and identifying potential access to capital.

Expected Outcomes and Assessment: LS student teams will represent outcomes based on their ability to produce ongoing impact in the form of new entrepreneurs created and potential to generate jobs and revenue. These outcomes will be captured in monthly reports while a member of the Hatchery, accompanied with self-assessment milestones every quarter for the time of their Hatchery membership. *Assessment* includes identifying the number of exits of startups from the Hatchery, locating to an Incubator, the Venture Well E-Team program or as a registered business.

Major Milestones with Student Participation Projections During Grant Period

		YEAR 1				YEAR 2			
	Terms	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Objective 1	Activity 1 Faculty #	Workshop 4					ANNUAL CONFERENCE		
	Activity 2	Develop & Implement Entrepreneurship Educational Materials							
Objective 2	Activity 1 Students #		Pitch 20		BC 20	BM 20	BSW 20		
	Activity 2	Networking via events and activities							
Objective 3	Activity 1 Team #					Startup Teams in Hatchery 2			

Table 1: Major Milestones with Student Participation Projections During Grant Period

Principal Investigators and Participating Faculty: This project will have two principal investigators, Dr. Wendy Westbroek (primary and lead) and Ms. Zen Parry (co-primary, sub-lead) and one participating faculty member, Dr. Clay Comstock. Both PIs bring unique expertise needed to effectively manage and execute every aspect of this project and have diverse professional backgrounds and a large body of accomplishments in their respective fields. Both Dr. Westbroek and Ms. Parry serve(d) as PIs on other awarded grants and are experienced in securing and managing funds, timely execution of project milestones and monitoring project progress. Mr. Paul Gladen will serve as a key collaborator on this project.

Program Sustainability: The primary strategy for sustainability of this project is to identify diverse funding sources and revenue streams to ensure that partial or smaller versions of the program can be implemented if one or more sources of funding expires. The diverse contingency plan will provide time to locate alternate financial resources to expand the program without losing a presence in the community and college and not jeopardizing community trust. As part of planning and implementing this program, short-term and long-term sustainability strategies will be the foundation for sustainability. We will seek sponsorship and underwriting for events such as Pitch competition and Startup weekend from the local Bioscience ecosystem, the MBCI, local tribal entities, the regional Development Commission, local Chambers of Commerce, and the SKC Foundation Alumni. We will partner with Blackstone Launchpad and NSF I-Corps at the University of Montana on funding opportunities. We will partner with Tribal government for funding opportunities with the CETEE network. We will submit proposals to NSF-TCUP, which is the NSF strand for Tribal colleges, for funding for expansion of the project.

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