



TLEF Project – Final Report

Report Completion Date: December 16, 2021

1. PROJECT OVERVIEW

1.1. General Information

Project Title:	A Pedagogical Approach to the Assessment and Enhancement of Undergraduate Student Training at BC Children’s Hospital		
Principal Investigator:	Dr. Wyeth Wasserman Please note, Dr. Wasserman resigned from his position of Vice President, Research of the BC Children’s Hospital Research Institute in May 2021. The original project lead, Jennifer Myers, also resigned from her position of Education Manager, BC Children’s Hospital Research Institute in 2019.		
Report Submitted By:	Ashley Biggerstaff		
Project Initiation Date:	April 2020	Project Completion Date:	September 2021 <i>(Finances still pending)</i>
Project Type:	<input type="checkbox"/> Large Transformation <input checked="" type="checkbox"/> Small Innovation <input type="checkbox"/> Flexible Learning <input type="checkbox"/> Other: [please specify]		

1.2. Project Focus Areas – Please select all the areas that describe your project.

- | | |
|--|--|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Resource development (e.g. learning materials, media) <input type="checkbox"/> Infrastructure development (e.g. management tools, repositories, learning spaces) <input checked="" type="checkbox"/> Pedagogies for student learning and/or engagement (e.g. active learning) <input type="checkbox"/> Innovative assessments (e.g. two-stage exams, student peer-assessment) <input type="checkbox"/> Teaching roles and training (e.g. teaching practice development, TA roles) <input checked="" type="checkbox"/> Curriculum (e.g. program development/implementation, learning communities) <input type="checkbox"/> Student experience outside the classroom | <ul style="list-style-type: none"> (e.g. wellbeing, social inclusion) <input type="checkbox"/> Experiential and work-integrated learning (e.g. co-op, community service learning) <input type="checkbox"/> Indigenous-focused curricula and ways of knowing <input type="checkbox"/> Diversity and inclusion in teaching and learning contexts <input checked="" type="checkbox"/> Open educational resources <input type="checkbox"/> Other: [please specify] |
|--|--|

**1.3. Final Project Summary**

1.4. Team Members – Please fill in the following table and include **students**, undergraduate and/or graduate, who participated in your project.

Name	Title/Affiliation	Responsibilities/Roles
Ashley Biggerstaff	Manager, BC Children’s Hospital	Program Manager, ensured the progress of the project, led the project team and implemented program changes.
Sharon Yau	Coordinator, BC Children’s Hospital	Project Coordinator, dealt with the logistics of the meetings and focus groups, project communication and implementing program changes.
Laura Christensen	Coordinator, BC Children’s Hospital	Project Coordinator, dealt with the logistics of the meetings and focus groups, project communication and implementing program changes.
Saloni Mulani	Undergraduate Student, BC Children’s Hospital	Evaluation Coordinator, led the creation of the evaluation forms and tools. Learning & Instructional Design Specialist, drafted the instructors and moderator guidelines.
Madeline Wang	Undergraduate Student, BC Children’s Hospital	Evaluation Coordinator, assisted with analyzing evaluations and focus group feedback.
Amy Inkster	Graduate Student, BC Children’s Hospital	Evaluation Coordinator, led the BCCH Summer Student Research Program focus groups (2020 & 2021).
Deema Alhusari	Graduate Student, BC Children’s Hospital	Subject Matter Expert, developed statistical curriculum content for open access videos.
Alysha Deslippe	Graduate Student, BC Children’s Hospital	Subject Matter Expert, developed statistical curriculum content for open access videos.
Jimmy Lopez	Graduate Student, BC Children’s Hospital	Video & Online Resource Expert, developed statistical curriculum content for open access videos.
Nikita Telkar	Graduate Student, BC Children’s Hospital	Video & Online Resource Expert, developed statistical curriculum content for open access videos.

1.5. Courses Reached – Please fill in the following table with **past**, **current**, and **future** courses and sections (e.g. HIST 101, 002, 2017/2018, Sep) that have been/will be reached by your project, including courses not included in your original proposal (you may adapt this section to the context of your project as necessary).

Course	Section	Academic Year	Term (Summer/Fall/Winter)
N/A			



2. OUTPUTS AND/OR PRODUCTS

2.1. Please **list** project outputs and/or products (e.g. resources, infrastructure, new courses/programs). Indicate the current location of such products and provide a URL if applicable.

Product(s)/Achievement(s):	Location:
Online Workshop Videos and Resources: The creation of open access videos and resources focused on building academic, research and professional development skills.	Statistical Video Series - https://bcchr.ca/summerprogram/statistical-videos Program Video Library – BCCHR ResearchHub Video Library is only accessible to those on the Oak Street Campus. <i>See supporting documents for details.</i>
Evaluation Forms & Tools: Standardized evaluations to gather program feedback.	<i>See supporting documents for copies.</i>
Moderator Guide: Guide for program instructors and moderators.	<i>See supporting documents for copies.</i>

2.2. **Item(s) Not Met** – Please list intended project outputs and/or products that were not attained and the reason(s) for this.

Item(s) Not Met:	Reason:
Final Report: Project report capturing all the findings and recommendations.	The COVID-19 pandemic shifted how undergraduate and graduate student programs were organized on the Oak Street Campus over the last 2 years. This was particularly true for the Summer Student Research Program which was restricted to virtual content. The program summary will be completed in August 2022, after in-person interactions are permitted. This will allow us to assess the benefits of virtual resources in tandem with in-person content.

3. PROJECT IMPACT

3.1. **Project Impact Areas** – Please select all the areas where your project made an impact.

- Student learning and knowledge
- Student engagement and attitudes
- Instructional team-teaching practice and satisfaction
- Student wellbeing, social inclusion
- Awareness and capacity around strategic areas (indigenous, equity and diversity)
- Unit operations and processes
- Other: [please specify]



3.2. What were you hoping to change or where were you hoping to see an impact with this project? – Please describe the intended benefits of the project for students, TAs, instructors and/or community members.

In an effort to continue to support the development of an enhanced, multidisciplinary learning environment for students, this project supported an assessment and re-design of the BC Children’s Hospital Summer Student Research Program (SSRP).

Since 1989, the SSRP at BC Children’s Hospital has been providing undergraduate and medical students the opportunity to gain valuable research experience by engaging in a research project and participating in a research education program. Over 1,500 students have had the opportunity to explore research on the Oak Street Campus for the last 32 years. However, despite changes in academia, student outlook and the introduction of new technologies, few changes have been made to the program curriculum.

With this project, we wanted to assess student needs, change the accessibility of the research education program and address the level of content provided. By doing this, our hope was for student participants to benefit from a research education program that addresses relevant skills training, increased engagement, and a curriculum that inspires students to pursue health sciences. Supervisors and staff on the Oak Street Campus would also benefit from having a student research assistant prepared for the rigors of research.

3.3. Were these changes/impacts achieved? How do you know they occurred? – How did you measure changes/impacts? (e.g. collected survey data, conducted focus groups/interviews, learning analytics, etc.) Describe what was learned from this process. You are encouraged to include copies of data collection tools (e.g. surveys and interview protocols) as well as graphical representations of data and/or scenarios or quotes to represent and illustrate key themes.

During the course of the project, the following objectives were achieved:

1. **Designing evaluation tools** – With the support of CTLT and students affiliated with BC Children’s Hospital, we were able to create evaluation tools to assess the SSRP and gain valuable insight from participants. This included a) pre/post evaluation forms to capture written feedback and comparable data from the research supervisor and student participants and b) a focus group to allow for in-depth discussion.

By using these tools in 2020, we were able to gain valuable insight into participant expectations and experiences, identify key areas to develop research skills in, and make enhancements for the 2021 program. By executing the evaluations tools for 2021, we were able to gauge student satisfaction and identify additional areas for improvement. *See Supporting Documents.*

2. **Online workshops videos and resources** – The following virtual learning modules were created. The introduction of the online format allowed students to also participate On-Demand, thus expanding the program participation to anyone working virtually/offsite, as well as those affiliated with external partner organizations/institutes in BC. Overall, student feedback on the benefits of a virtual participation was well received. *See Supporting Documents.*



- a. **Statistical Video Series** – Student feedback from 2020 indicated that participants would appreciate more opportunities to improve their statistical skills at various levels. Graduate Students and Undergraduate Students affiliated with BC Children’s Hospital were able to create a [6-part statistical video series](#) specifically for students enrolled in the SSRP. These videos were designed to make learning more accessible and provide an introduction to statistical terms and concepts regardless of existing background and experience. Additionally, they were formatted as short, on-demand content to allow for more flexibility.

Video	Views <i>Up to August 24, 2021</i>
Video 1: Introduction to Statistics	21
Video 2: Data Structures and Statistical Tests	12
Video 3: Descriptive Statistical Tests	8
Video 4: Regression Models	17
Video 5: R Tutorial	16
Video 6: Qualitative Analysis	11

Unfortunately, due to delays with formatting and editing, the Statistical Series was not available to participants until late June 2021. The low number of views are a direct reflection of where students were heavily engaged in their research projects at this point in time. Viewership should increase in 2022, when video will be made available to participants before they begin the research project.

- b. **Video Library** – 2020 student feedback also indicated that participants had a desire to expand on their professional development and research skills. The following workshops were offered both live and on-demand and available on our video library. While the COVID-19 pandemic caused significant challenges to program delivery on the Oak Street Campus, the virtual environment did allow us to expand our project scope to include the creation of these additional resources. *Due to the request of the facilitators, recordings are only available internally via the BCCHR ResearchHub intranet. These materials can only be accessed by the research community affiliated with the Oak Street Campus as a PHSA, BCCHR or UBC login is required.*



Video	Views <i>Up to August 24, 2021</i>	Feedback
An Introduction to REDCap. Presented by the BCCHR Data Management Team	47	“Please incorporate more workshops. I found the ones on data visualization/poster design, scientific communication, and scholarly publications the most helpful!” -Student Participant
Resilience in Health Care. Presented by Denise Findlay	55	
Effective Communication: Assertiveness and Emotional Intelligence. Presented by Real Life Counselling	60	“More workshops/professional development!” -Student Participant
Jargon Garden. Presented by SciCATS*	70	“Really did a great job moving to the online platform for SSRP!” -Student Participant
Introduction to Data Management. Presented by the BCCHR Data Management Team	60	“Well planned out and provided great opportunities to learn and grow academically.” -Student Participant
Knowledge Synthesis. Presented by E2i Librarian	73	“More workshops to build skills!” -Student Participant
Introduction to R. Presented by the BCCHR Trainee Omics Group	64	“Despite this being virtual and the students not directly interacting with team members, the overall experience was outstanding for the student.” -Student Supervisor
Effective Poster Design. Presented by Staff Scientist, BC Cancer	63	“Overall, it was a great experience!” -Student Participant
Hands-On Introduction to Clinical Genomics. Presented by BCCHR Precision Health Initiative*	32	“Thank you so much for putting this program together!” -Student Participant
Scholarly Publication. Presented by SciCATS*	34	“Thank you so much for putting this program together!” -Student Participant
Time Management (Achieve More in Less Time). Presented by Real Life Counselling	42	

* Paid Facilitator. To ensure the best possible virtual content, an external facilitator was scheduled to deliver this content.

3. **Instructor and Moderator Guidelines** – With support from presenters previously engaged with the SSRP, the BCCHR Communications Team and CTLT, a speaker guide was created for 2020. This document provided suggestions for engaging and teaching effectively. It also clearly documented how to use Zoom as a teaching tool (which was considered a new concept and platform in May 2020). When queried, facilitators found this guide especially helpful. Since its creation, edits have been made and adapted to use for other onsite workshops and seminars. It has also been shared with various partner organizations as a tool that can be modified and used for conferences and events.



4. **Final Project Report** – One intended change that has not been achieved yet is the creation of a final project report capturing all the student findings and recommendations, which could then be shared with our partner institutions. Slated as a 2-year project, evaluation tools were intended to track 2-years of the SSRP (2020, 2021). Findings to date have provided valuable insight into the SSRP, and the overall feedback has been applied to other undergraduate and graduate student programming offered by BCCHR. However, the COVID-19 pandemic had caused drastic changes to the delivery of the program, as well as student expectations. Shifting restrictions and uncertainty in 2020 meant a last-minute effort to offer a virtual program with little understanding of the technology or tools needed to do this effectively. For a better representation of student feedback, the final report will be distributed in September 2022 and allow for 2 years of comparable data.

3.4. Dissemination – Please provide a list of **past** and **upcoming** scholarly activities (e.g. publications, presentations, invited talks, etc.) in which you or anyone from your team have shared information regarding this project. Be sure to include author names, presentation title, date, and presentation forum (e.g., journal, conference name, event).

N/A

4. **TEACHING PRACTICES** – Please indicate if **your** teaching practices or those of **others** have changed as a result of your project. If so, in what ways. Do you see these changes as sustainable over time? Why or why not?

N/A

5. **PROJECT SUSTAINMENT** – Please describe the sustainment strategy for the project components. How will this be sustained and potentially expanded (e.g. over the next five years). What challenges do you foresee for achieving the expected long-term impacts listed above?

This project will continue to have lasting positive impacts on students.

The evaluation tools created will continue to be utilized. Each year this will give us the opportunity to increase student engagement, ensure students are gaining value from the programming (with adjustments made where necessary), and give students the opportunity to provide feedback about their experiences. This continued program evolution is paramount to increasing and maintaining student interest in the program, in addition to providing a rewarding research experience. Technology and internal resources are available to support this project component for the foreseeable future so no challenges are expected.



The library of online workshop videos and resources will continue to be expanded each year. By building on previous programs, we can explore new content, facilitators, tools and strategies for students to succeed. Ultimately, the use of workshop videos and online resources will offer students flexible and accessible content, thereby providing more time for networking, discussions and interactive training when safe to do so again. Online videos and resources will continue to be an open source for the Oak Street Campus, allowing everyone affiliated with the research community onsite to also access and benefit from these materials. In the future, technology and internal resources will support the expansion of the video library for years to come.

We are anticipating challenges in regards to in-person vs virtual content. Social connections and networking have been an important component of the SSRP in the past, and could not be easily replicated in a virtual environment. While online workshop were popular the past 2 years, we expect to see 'online video fatigue' in the future. We hope to combat this with engaging facilitators, short workshops focused on targeted research areas, and a balance of virtual and in-person content to allow for more flexibility.

We believe that with continued enhancements to the SSRP, this will help us inspire undergraduate students and improve the recruitment, retention and development of the next generation of health science researchers.