

Day 1 [Friday, April 9, 2021]		
10:00-10:35 am	Land Acknowledgement, Opening Remarks, and Keynote Address	
10:00-10:10 am	Patti Victor, University Siya:m: Land Acknowledgement	
10:10-10:20 am	Richard Chandra, Director of Research Services: "Undergraduate Research at TWU: Endless Possibilities"	
10:20-10:35 am	Anita Coté, Canada Research Chair: "The road to CRC: Big things come in small packages"	
10:35-10:45 am	<b>BREAK</b>	
	<b>Zoom Room 1</b>	<b>Zoom Room 2</b>
10:45-11:00 am	Jiawei Liang	
11:00-11:15 am	Kathryn Dyck	Aubree Farrell
11:15-11:20 am	Maddisen Brown	
11:20-11:25 am	Christine Miranda	
11:25-11:30 am	Natalie Bruner	
11:30-11:35 am	Beth Reimer	
11:35-11:40 am	Ziyuan Guo	
11:40-11:45 am	Hoi Ling Fan	
11:45-11:50 pm	Delia Anderson	
11:50-12:00 pm	<b>Q&amp;A</b>	
12:00-12:30 pm	<b>LUNCH</b>	
12:30-12:45 pm	Cedrick Iyumva	
12:45-1:00 pm	Kanto Irimoto	
1:00-1:15 pm	Faith Tan	Elza Coutinho
1:15-1:30 pm	Alexander Macdonald	
1:30-1:45 pm	<b>BREAK</b>	
1:45-2:00 pm	Maria Goncharova	
2:00-2:15 pm	Alan Brooke	Janessa Friesen
2:15-2:30 pm	Hannah Merritt	
2:30-2:45 pm		Alayna Witzel
2:45-3:00 pm		
3:00-3:15 pm		
3:15-3:30 pm		
3:30-3:45 pm		
3:45-4:00 pm		
Day 2 [Monday, April 19, 2021]		
	<b>Zoom Room 1</b>	<b>Zoom Room 2</b>
10:00-11:00 am		Erik Johnston
11:00-12:00 pm		Hannah Holbrook
12:00-1:00 pm		Jade Stobbart
1:00-2:00 pm		Stefanie Pappenus
2:00-3:00 pm		Jordyn Laird
3:00-4:00 pm		Jillian Sherwood

10:45 am-11:00 am

PRESENTATIONS

## Zoom Room 1

*Effects of Reactive Oxygen Species and Manuka Honey on Staphylococcal Small Colony Variants*

Jiawei Liang

Being part of human normal flora, staphylococci are associated with various acute and chronic bacterial infections in humans. Many chronic staphylococcal diseases have been affiliated with the presence of small colony variants (SCVs). The heightened tolerance to antibiotics of SCVs exacerbates the paramount crisis of antibiotic resistance, more effective ways such as reactive oxygen species (ROS) and Manuka Honey (MH) to treat staphylococcal infections are therefore considered. ROS is one of the components of the human immune system that works to scavenge intracellular bacteria engulfed by phagocytic cells, while MH with its effective agent being methylglyoxal (MGO) is capable of clearing antibiotic-sensitive and antibiotic-resistant strains of bacteria. Through this presentation, the possible values of treating staphylococcus SCVs with ROS and MH will be discussed, as well as our previous findings with MH and the future research direction.

11:00 am-11:25 am

PRESENTATIONS

## Zoom Room 1

*Current State of the Salish Sucker (Catostomus catostomus) in the Salmon River, BC*

Kathryn Dyck

The Salish sucker (*Catostomus* sp.) was listed under the Species at Risk Act (SARA) in 2005 and are currently limited to 10 locations in British Columbia. Due to habitat destruction and poor water conditions it was hypothesized that the subpopulation of Salish suckers in the Upper Salmon River may have migrated to the lower reaches for survival. Subsites in the Lower Salmon River were visited in the fall in which Feddes traps were used to capture fish. Captured Salish suckers were anaesthetized and marked with fluorescent elastomers for the purpose of creating a population estimate. No Salish suckers were captured in the lower reaches of the Salmon; however, water quality was within the acceptable limits for aquatic life. Best management practices such as restoration projects are encouraged to improve the survival of the Salish sucker.

## Zoom Room 2 (continues until 12:00 pm)

*COVID-19: How Cognitive Emotion Regulation Strategies and Resiliency Affect Undergraduate Student Well-being*

Aubree Farrell

The effects of the COVID-19 pandemic have brought a variety of challenges to university students. Specifically, higher levels of COVID-19-related stress and anxiety pose difficulties that manifest in the personal and academic lives of students. The present study was interested in understanding the relationship between cognitive emotion regulation strategies (CERQ-18), levels of resiliency (CD-RISC) and student personal/academic well-being. Hypothesis of this project include: (1) students with higher personal and academic well-being will engage in more adaptive coping strategies and have higher levels of resiliency. Results offer insight at specific factors that contributed to lowering a student's risk for experiencing a 'student crises'.

11:15 am-11:30 am

PRESENTATIONS

## Zoom Room 1

*The ILK Interactome: A Therapeutic Target at Cancer Centrosomes*

Maddisen Brown

Centrosomes are the main microtubule-organizing center in cells, forming two poles in a cell undergoing bipolar division. Though cancer cells have more than one centrosome at each pole, they cluster these centrosomes in order to divide in a pseudo-bipolar manner and thereby avoid death during aberrant mitotic divisions. These “cancer” centrosomes are uniquely susceptible to anti-mitotic chemotherapeutic drugs that cause them to uncluster. Our results indicate that the anti-ILK drug QLT alone unclusters centrosomes and is an effective anti-mitotic glioblastoma treatment; however, combination treatment of anti-ILK and anti-Abl (imatinib) drugs is increasingly effective in causing aberrant mitosis and cell death.

*Title not provided*

Christine Miranda

[Abstract not provided]

*GIS assessment of riparian reserve widths in critical habitat for the Salish Sucker (Catostomus sp.) in British Columbia since the Species at Risk Act was enacted*

Natalie Bruner

The Salish Sucker (*Catostomus sp.*) is a Species at Risk, primarily due to habitat loss. Riparian vegetation is significant for the survival of the Salish Sucker because it buffers stream temperatures, prevents erosion, and provides suitable habitat. In this research, the changes in riparian vegetation widths within critical habitat for Salish Suckers that have occurred since the Species at Risk Act (SARA) was enacted were found. This was done using ArcGIS Pro to compare the riparian vegetation widths in the ten watersheds containing Salish Sucker found in 2004 to the riparian vegetation widths in 2021. A key finding is that watersheds west of Abbotsford experienced only a decrease in riparian vegetation, while watersheds to the east of Abbotsford mainly experienced an increase in riparian vegetation. These findings help indicate where habitat restoration efforts should be focused.

11:30 am-11:50 pm

PRESENTATIONS

## Zoom Room 1

*Habitat Suitability Mapping for the Oregon Forestsnail in Surrey, BC*

Beth Reimer

[Abstract not provided]

*Dendrochemical Analysis on Western Redcedar for Investigating Environmental Pollution History by Zinc from a British Columbia Site*

Ziyuan Guo

Attempts for emission monitoring have been made only in the past few decades and archived data for historical deposition of pollutants is rarely available. In this study, the applicability of using dendrochemical analysis on western redcedar for investigating environmental pollution history by Zn was validated. Tree core samples were taken from a historically polluted area by heavy metals released from a copper mine in British Columbia (Britannia

Mine). Zn profile stored in the tree rings was determined through atomic absorption spectroscopy and the Zn distribution trends were shown to correspond to historical events that influenced Zn loadings in the area.

*A Comparative Study of Air Pollution in Developing Countries*

Hoi Ling Fan

The purpose of this research is to investigate the differences between levels of air pollution in developing countries and how air pollution affects people's health. This is done by collecting data from the IQAir website to make a comparison between New Delhi, Bangkok, Mexico City, and Santiago and research secondary data on the health problems related to air pollution. The research question is, are there any differences between the levels of air pollution and health problems in the Global South? The hypothesis is air pollution levels do not vary among cities and they have the same health problems in the Global South. The methods are created two Excel spreadsheet and recording the air quality index, PM 10, PM 2.5, and carbon monoxide for 15 days at four different time periods, 3:00 a.m., 6:00 a.m., 12:00 p.m., and 7:00 p.m. during Fall and Spring semester. Also, collect secondary data from academic journal articles, reports from the government, textbooks, and books to find out the health problems related to air pollution among these countries.

*Title not provided*

Delia Anderson

[Abstract not provided]

11:50 am-12:00 pm

Q&A in Zoom Room 1

12:00 pm-12:30 pm

LUNCH; PRESENTATIONS

Zoom Room 1

Lunch break

Zoom Room 2 (continues until 1:00 pm)

*Young adult experiences and felt impacts of Evangelical Purity Culture*

Anna Marie Ellena

Purity culture has been criticized for a sex-negative, abstinence-only, and gendered approach with problematic messages and outcomes, such as shame, self-blame, confusion, lack of adequate sexual education, and the perpetuation of harmful gendered stereotypes and expectations. The present study investigated the individual's experience of purity culture and the potential impacts of this on intimacy to better understand, and lend further validity to, the phenomenon. Qualitative phenomenological methodology was utilized and data collected via open-ended interviews with 10 participants. A seven-step process of analysis resulted in eight themes reflective of those who have experienced purity culture and largely in line with the observations and findings from previous studies.

12:30 pm-12:45 pm

PRESENTATIONS

## Zoom Room 1

*A sneeze in Bujumbura brings pneumonia to Kigali: The Burundian Hutus and A Continuity of Historical Blindness*

Cedrick Iyumva

In the spring and summer of 1972, Burundi's exclusionary Tutsi government was systematically killing its Hutu population with the aim of permanently suppressing ethnic Hutu from future power. The United Nations and the international community, both fully aware of the mass atrocities occurring within the country, chose non-intervention in Burundian internal affairs. As repression continued, and a succession of Tutsi-led governments ruled on, Burundi continued to see human rights violations against her Hutu population fall into oblivion. In 1994, genocide exploded across the border in Rwanda, killing mostly Tutsi, and once again the history of the Burundian Hutu was suppressed from world consciousness. This paper uses the 1994 Rwandan genocide as a fulcrum for understanding the historical blindness towards the Burundian Hutu. While previous scholarship has emphasized colonial legacy and short-term metastasis of ethnic polarization in Rwanda as the causal factors of the Rwandan genocide, this paper explores the historical blindness towards the Burundian Hutu as the necessary precursor for genocide.

12:45 pm-1:00 pm

PRESENTATIONS

## Zoom Room 1

*Commutativity: mathematical symmetry*

Kanto Irimoto

When you add two numbers, changing the order of the numbers does not change the result. As an example,  $2 + 3$  is the same with  $3 + 2$ . In mathematics, this property is called commutativity. There are operations that do not have the property. For instance, subtraction is not commutative because changing the order of numbers may change the result (e.g.  $3 - 2$  does not equal  $2 - 3$ ). The question is: When is an operation commutative? We researched commutativity in different mathematical groups using a probabilistic approach.

1:00 pm-1:15 pm

PRESENTATIONS

## Zoom Room 1

*Laban Effort Analysis via Conducting Gestures using Neural Networks*

Faith Tan

This research investigates a novel method for conducting gesture recognition, testing viability of the Laban Movement Analysis (LMA), a framework that comprehensively describes human motion, as a gesture recognition tool. We used neural networks to determine machine-learning algorithms' abilities to understand four of the LMA qualities via 2, 3, and 4 beat conducting gestures. A high accuracy in classifying the various Laban qualities was achieved, yielding a maximum accuracy rate of 99.85% in one area. The goal of our research is to show the use of deep learning in understanding and classifying Laban features through musical conducting gestures.

## Zoom Room 2 (continues until 2:00 pm)

### *Mimicking of the Crowd: The Impact of Dispositional Traits on the Tendency to Conform on the Internet*

Elza Coutinho

Our social behaviours greatly influence the way we communicate, interact and conform to societal norms. Since technology is now an integral part of our lives, how does the process of conformity change when physical interaction is absent? Are there certain personality characteristics that mediate conformity online? This current study aims to explore how certain dispositional traits (self-esteem and self-monitoring) impact the tendency to conform on the internet. Correlations between self-esteem, self-monitoring, and the tendency to conform are explored through questionnaires to shed insight into how these factors interact and impact social behaviours on the internet.

1:15 pm-1:30 pm

PRESENTATIONS

## Zoom Room 1

### *Challenges in Plastic Waste Diversion and the Need for a Systemic Overhaul*

Alexander Macdonald

Plastic use has become ubiquitous in the modern world. Plastics are present in every sector of the economy and their environmental pervasiveness (i.e. degradation into microplastics) leads to many toxicological problems. In Canada, only 9% of plastics are recycled, which is evidence of systemic problems in how plastic waste divergence is approached. Ultimately, plastic products should not be viewed as disposable but rather as a valuable resource. For instance, unrecovered plastics products were valued nationally at \$7.8billion CAD in 2016. Along with the need to develop new plastics, improved recycling methods/alternatives are discussed herein, such as carbonization, upcycling, and bio-alternatives.

1:30 pm-1:45 pm

BREAK for Zoom Room 1

1:45 pm-2:00 pm

PRESENTATIONS

## Zoom Room 1

### *Seedling (*Reynoutria x bohemica*) establishment post deposition from various aquatic disturbances and growth stages*

Maria Goncharova

*Reynoutria x bohemica*, bohemian knotweed, is one of the world's worst invasive weeds and is frequently observed near riverbanks which suggests that knotweed can disperse by waterways. This study aims to further research hydrochory; specifically, if knotweed can survive deposition into soil after it reaches various growth stages (germinating, exhibiting cotyledons, exhibiting true leaves) under no, low, and high-water disturbance. Results demonstrate the influence of water disturbances on survival post deposition and a decrease in survivability post establishment for seedlings growing past the germinating stage in aquatic disturbances. These results will help improve knotweed prevention and management strategies near riverbanks.

2:00 pm-2:15 pm

PRESENTATIONS

## Zoom Room 1

*Tetrathiafulvalene radical cations: An organic alternative to silver*

Alan Brooke

Tetrathiafulvalenes (TTFs), a group of organosulfur compounds, are the most studied class of heterocycles. TTFs, particularly in their oxidized salt form, are best known for their unique electrical properties and use as organic semiconductors. TTFs have been researched extensively within the fields of electro- and materials chemistry, however, their applications within organic chemistry are severely limited. Herein, is reported the synthesis of some tetrathiafulvalene derivatives, their oxidation to radical cation salts, and use as redox reagents in organic synthesis.

## Zoom Room 2 (continues until 3:00 pm)

*Exposure to sexualized representations of women changes womens' perceptions and rape beliefs.*

Janessa Friesen

Sexualized images of women are pervasive in Western culture, from mainstream media to pornography. Research suggests that these sexualized representations influence male perceptions of women and propagate rape myths. Our study explored whether these effects extend to women's perceptions and beliefs. Using an experimental design, we found that women (n=213) perceive sexualized (vs. non-sexualized) same-sex peers as less human and less similar to themselves. Additionally, reading a rape scenario about a sexualized victim increased rape acceptance in women with low rape-victim empathy. These findings indicate that sexualized representations influence women's perceptions of other women and their rape beliefs.

2:15 pm-2:30 pm

PRESENTATIONS

## Zoom Room 1

*The Impact of Water Saturation on Regeneration Rates in Knotweed Rhizome and Stem Fragments (Reynoutria x bohemica) Post Deposition*

Hannah Merritt

Reynoutria x bohemica, Bohemian knotweed, is one of the world's most invasive weeds, and is frequently observed near riverbanks. This study explores how water saturation impacts stem and rhizome fragment regeneration in soil by observing growth rates after 0, 15, and 30 days of water saturation prior to planting. The results of this study found that greater water saturation for rhizome fragments increased their growth rates in soil, whereas stem fragments were only able to survive in water and died when placed in soil. These findings were used to further explore the nature and invasiveness of knotweed.

3:00 pm-4:00 pm

PRESENTATIONS

## Zoom Room 2

*The effect of threat-related face traits on perception and trusting behaviours in non-hearing and hearing adults*

Alayna Witzel

Studies have shown that non-hearing people (Deaf and hard of hearing) have deficits in face processing skills. Our study extends this evidence, by looking at whether these impairments affect the perception and use of facial information related to threat. We compared non-hearing and hearing individuals' performance in an economic

task, where participants shared coins with high- and low-threat-looking individuals. Overall participants (n=256) gave less money to high-threat faces and to male faces. Nevertheless, non-hearing (vs. hearing) men were less sensitive to cues of threat in male faces. These results identify male non-hearing individuals as a group potentially vulnerable to exploitation.

## Day 2

10:00-11:00 am

PRESENTATIONS

Zoom Room 2

*Music and Moral Decision Making*

Erik Johnston

[Abstract not provided]

11:00-12:00 pm

PRESENTATIONS

Zoom Room 2

*The Impact of COVID-19 on People Experiencing Homelessness*

Hannah Holbrook

During the COVID-19 pandemic, a number of restrictions have been put in place that have impacted people experiencing homelessness. Previous research has demonstrated how health protocols have been used as a form of discrimination unfairly targeted at people experiencing homelessness. These protocols have a dehumanizing impact on people experiencing homelessness as it demonstrates a lack of control over their environment. While health protocols are necessary to keep the public safe, this study explores how their implementation has impacted people experiencing homelessness and their sense of identity. This study aims to explore people's experiences and highlight how implementing health protocols could be improved during this pandemic and in the future. This study was conducted through open-ended, semi-structured interviews with ten co-researchers who are currently experiencing homelessness using Colaizzi's descriptive phenomenological method. The study found seven themes related to co-researcher's experiences, including: Time and Routine, Restricted Social Contact, Reduced Autonomy/ Individuality, Minimization, Exacerbated Mental Health, Housing and Resources, and Affirmation and Acceptance.

12:00-1:00 pm

PRESENTATIONS

Zoom Room 2

*Overt-Competitive Performance and Intrasexual Competition Among Men*

Jade Stobbart

Sex differences in aggression are well-supported. Men, compared to women, engage in more direct aggression. Meanwhile, women prefer indirect methods of aggression. In addition to differences in preference, there may be sex differences in the effectiveness of these aggression methods. Men engage in more task-based competitions than women, which impacts their social status. We suggest information regarding a male's performance may have implications for their access to resources. This study examines the impact of men's gossip in comparison to the impact of their overt-competitive performance on their social resources. We hypothesize that information



regarding negative performance will be more effective than negative gossip and neutral information when male participants evaluate male dyads. The results of this study will be discussed during the presentation.

1:00-2:00 pm

PRESENTATIONS

Zoom Room 2

*The Accuracy of Psychopathy in Media and in the Public Consciousness*

Stefanie Pappenfus

The concept of a psychopath has become a common concept in media, and in the consciousness of the general public. This study aims to examine the relationship between the accuracy of psychopathic representation in media and in the public's perception, by dividing participants into groups of those who have formal and accurate education regarding psychopaths and the people who have learned about psychopaths solely through media consumption. Participants answered a variety of questions regarding themselves, and their ability to identify psychopathic traits and characteristics. Using a multi-variant analysis approach, I examined the participant's quantitative and qualitative answers to investigate the perception of psychopaths that each person had and how that corresponds to media consumption and formal education regarding the clinical understanding of psychopaths. Consistent with original hypotheses, there was a considerable difference in the views, understandings, and opinions of the participants who had clinical understandings compared to those who did not. These differences and the ramifications of these findings will be explored during this presentation.

2:00-3:00 pm

PRESENTATIONS

Zoom Room 2

*Judgements about criminal behaviour*

Jordyn Laird

Participants read a hypothetical crime scenario involving rape and murder in which the race of the perpetrator and race of the victim were systematically varied as either Caucasian, African American, or Indigenous to determine levels of implicit bias in the general population. Participants also completed the Defining Issues Test (version 2 short form) in order to determine whether principled moral reasoning mediated levels of bias. Consistent with past research by Pfeiffer and Ogloff (2003) and Anthony and Longman (2017), the study showed race of victims and race of perpetrator effected judgments made in criminal justice scenario and that moral reasoning levels played a mediated role in implicit bias. It is plausible that participant deemed the value of a Caucasian life greater than the value of an African American or Indigenous life. Implications of these finding for the criminal justice system and Canadian society are explored.

3:00-4:00 pm

PRESENTATIONS

Zoom Room 2

*Motivation, Eating Habits, and Body Image Satisfaction in Young Adults*

Jillian Sherwood

[Abstract not provided]