



23<sup>rd</sup> ANNUAL

[web.uvic.ca/~nowcam](http://web.uvic.ca/~nowcam)

---

# *Northwest* Cognition & Memory *Student Conference*

---

April 28-30, 2022

Sustainable Energy Engineering Building

**SURREY CAMPUS**

SIMON FRASER UNIVERSITY

---

# Table of Contents

Program at a Glance.....	3
Keynote.....	4
NOWCAM Mission Statement.....	5
Getting to the Conference.....	5
Parking Information.....	6
Gala Information.....	6
Internet Access.....	6
Presenter Info.....	6
Use of Face Coverings.....	6
Acknowledgements.....	6
Program.....	7
Thursday.....	7
Friday.....	7
Saturday.....	7
Poster List – Friday.....	9
Poster List – Saturday.....	11
Abstracts.....	13
Friday.....	13
Saturday.....	23
Driving Directions and Transit Map.....	33

**Program at a Glance**

**THURSDAY, APRIL 28<sup>TH</sup>, 2022**

7 pm - late No Host Reception (social event), Dominion Bar + Kitchen (Civic Hotel)

**FRIDAY, APRIL 29<sup>TH</sup>, 2022**

8:30 - 9:00 am Registration  
 9:00 - 9:20 am Opening Remarks  
 9:20 - 10:20 am Paper Session I: Emotion  
 10:20 - 10:45 am Break (refreshments provided)  
 10:45 - 11:30 am Paper Session II: Learning and Cognition  
 11:30 - 1:15 pm Lunch (not provided)  
 1:15 - 2:45 pm Poster Session I (refreshments provided)  
 2:45 - 3:15 pm Break  
 3:15 - 4:30 pm Paper Session III: Witnesses and Memory  
 4:30 - 4:40 pm Break  
 4:40 - 6:00 pm Keynote Address: Gary L. Wells  
 6:00 - 10:00 pm Gala Dinner, Civic Ballroom at the Civic Hotel

**SATURDAY, APRIL 30<sup>TH</sup>, 2022**

9:00 - 9:30 am Registration  
 9:30 - 10:30 am Paper Session IV: Cognitive Neuroscience  
 10:30 - 10:45 am Break (refreshments provided)  
 10:45 - 11:45 am Paper Session V: Cognitive Biases  
 11:45 - 12:00 pm Break  
 12:00 - 1:15 pm Paper Session VI: Face Perception and Eyewitness Identification  
 1:15 - 1:20 pm Break  
 1:20 - 2:50 pm Poster Session II (pizza lunch provided)

## Keynote Address

Friday April 29<sup>th</sup> at 4:40 pm



Gary L. Wells

Distinguished Professor, Iowa State University

### **Mistaken Eyewitness Identification and Convictions of the Innocent: A Four-Decade Reflection on Robust Phenomena, Safeguards, and Frameworks**

Reflecting on 40+ years of research on eyewitness identification, I will describe what I believe to be the three most reliable, robust, and expository phenomena in eyewitness identification from lineups. These three are the removal-without-replacement effect, differential filler siphoning, and the post-identification feedback effect. These three phenomena, along with the failure to use double-blind eyewitness identification procedures with lineups, can explain almost every proven case of mistaken identification that resulted in convictions of innocent people. In addition, I will describe a third category of variables that is importantly distinct from my original two-category distinction between system and estimator variables, namely reflector variables.

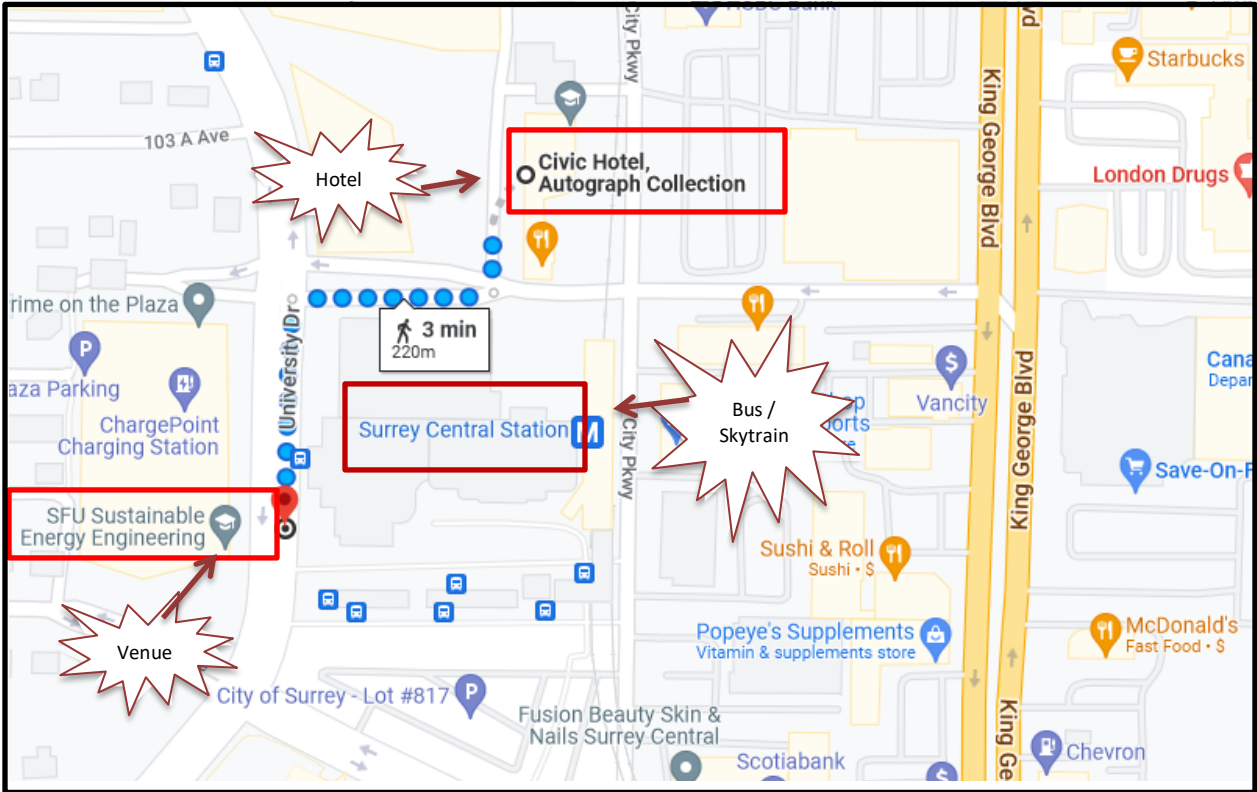
**NOWCAM MISSION STATEMENT**

The Pacific Northwest is home to numerous wide-flung Psychology departments with strengths in cognition and memory. NOWCAM provides a forum for faculty and students from these departments to get together and discuss their latest research. Interactions with other researchers can spark innovations and cross-fertilizations that move the research forward in new and exciting ways. In any case, it's good fun to get together with friends and colleagues who share similar interests, chew the cognitive rag a bit, and quaff a beer or two over a good meal.

The aim of NOWCAM is to support Pacific Northwest faculty and student researchers working in the general area of memory and cognition by creating an annual venue in which they can share their current research activities with an informed, sympathetic, and good-humoured audience. With the exception of keynote addresses, NOWCAM favours papers and posters presented by students (usually with faculty as co-authors). This gives students an opportunity to develop their chops, and faculty a chance to sit back and relax.

**GETTING TO THE CONFERENCE**

The conference venue is the Sustainable Energy Engineering building, at SFU's Surrey Campus (10285 University Dr, Surrey, BC V3T 0N1). It is located directly across the parking lot from Surrey Central Skytrain Station. It is also a 3-minute walk from the Civic Hotel (location of the No Host Reception and the Gala Dinner). See p. 34 for additional driving and transit directions.



## PARKING INFORMATION

Paid parking lots are available near the conference venue. We recommend the parking lot on 102a Ave, half a block west of University Drive, which is right behind the Sustainable Energy Engineering Building (if using Google Maps, type in “13386 102a Ave”). Cost is \$0.75/hr or \$5/day.

## GALA INFORMATION

On Friday, April 29th at 6:00pm a gala dinner will be held in the Civic Ballroom at the Civic Hotel (13475 Central Ave, Surrey, BC V3T 0L8). The hotel is near the conference venue (see map on p. 5). All with gala tickets are invited to go to the hotel immediately after the keynote address.

## INTERNET ACCESS

Visiting members of eduroam-supported institutions may securely connect to the EDUROAM wireless network. Authentication and support of eduroam for visitors is provided by your home institution. The best way to prepare to use EDUROAM for wireless access on a device at another institution is to ensure it works properly at your home institution before travelling. Further information can be found at <http://eduroam.org>.

## PRESENTER INFO

Each speaker will have 10 minutes to give their presentation, followed by 5 minutes for questions. The first speaker of each session has been assigned as the session chair.

## USE OF FACE COVERINGS

BC lifted its indoor mask mandate in March and SFU does not require masks to be worn on its campuses. We do, however, encourage attendees to wear a mask when indoors and social distancing is not possible.

## ACKNOWLEDGEMENTS

NOWCAM 2022 received financial support from the SFU VP Academic, SFU Faculty of Arts and Social Sciences, SFU Department of Psychology, SFU Cognitive Science program, UVic Department of Psychology, and UBC Cognitive Science area. NOWCAM 2022 also would not have been possible without the operational support of a small army of SFU graduate students: Madison Harvey, Daniel Derksen, Nikola Klassen, Emma Kruisselbrink, Crystal Huang, and Shelbie Anderson.

# Program

**THURSDAY, APRIL 28<sup>TH</sup>, 2022**

**7 pm – late: No Host Reception (social event)**, Dominion Bar + Kitchen (located in Civic Hotel)

**FRIDAY, APRIL 29<sup>TH</sup>, 2022**

**8:30 – 9:00 Registration**

---

**9:00 – 9:20 Opening Remarks**

---

**9:20 – 10:20 Paper Session I: Emotion**

Do all negative emotions narrow attention to a particular tree?

*Anna Maslany, Keagan Leighton, & Peter Graf*

Emotion regulation flexibility and mental health outcomes

*Ezra Persad & Hanna Conradi*

The heart remembers what the mind forgets: Meta-analysis of emotional enhancement on episodic memory for emotional pictures

*Nada Alaifan & Peter Graf*

Emotion recognition of genuine versus posed expressions

*Tahirih Nasser, Amy Dawel, Jim Tanaka, & Amy vanWell*

---

**10:20 – 10:45 Break** (refreshments provided)

---

**10:45 – 11:30 Paper Session II: Learning and Cognition**

Gazer: The temporal and spatial resolution of a web-based eye tracking system

*Amy vanWell & Jim Tanaka*

Don't fret, you're not in treble: The effects of music genre and personality on performance in different cognitive tasks

*Daphnnie Robyn A. Flores & Shayna Rusticus*

Getting a handle on meaning

*Noah Moise, Daniel Bub, & Michael Masson*

---

**11:30 – 1:15 Lunch** (not provided)

---

**1:15 – 2:45 Poster Session I** (refreshments provided)

---

**2:45 – 3:15 Break**

---

---

**3:15 – 4:30 Paper Session III: Witnesses and Memory**

- Perceptions of the reason for a delayed report of a crime  
*Madison B. Harvey, Heather L. Price, & Deborah A. Connolly*
- Perceived credibility of tele-forensic interviews  
*Nikola R. Klassen, Madison B. Harvey, Heather L. Price, & Deborah A. Connolly*
- Assessment of eyewitness reliability in Canada: A judicial review  
*Brayden Anderson, Ryan J. Fitzgerald, & Kaila C. Bruer*
- Online co-witness conformity: Validating a virtual procedure and testing the impact of warnings  
*Bennett King-Nyberg & Kelly Grannon, Timothy Friesen, Andy Ballesteros, Madison Mah, Eric Mah & Stephen Lindsay*
- The cost of source monitoring in recognition of instances of repeated events  
*Eva Rubínová & Heather L. Price*
- 

**4:30 – 4:40 Break**

---

**4:40 – 6:00 Keynote Address**

- Mistaken eyewitness identification and convictions of the innocent: A four-decade reflection on robust phenomena, safeguards, and frameworks  
*Gary L. Wells*
- 

**6:00 – 10:00 Gala Dinner, Civic Ballroom, Civic Hotel**

**SATURDAY, APRIL 30<sup>TH</sup>, 2022**

---

**9:00 – 9:30 Registration**

---

**9:30 – 10:30 Paper Session IV: Cognitive Neuroscience**

- Searching for visual singletons without a feature to guide attention  
*Daniel Tay, David McIntyre, Steven Hillyard, & John McDonald*
- Patch it up: Validation of a low electrode density low-cost mobile EEG system  
*Elsa (Elle) Parsons, Katherine Boere, & Olav E. Krigolson*
- Investigating the neural functional connectivity which underlies conscious versus subliminal processing of auditory oddballs  
*Kira Dolhan, Eric Hochstein, Adam Krawitz, & Olav E. Krigolson*
- The effects of relatedness on reward learning signals  
*Mathew Rocha Hammerstrom & Olav E. Krigolson*
- 

**10:30 – 10:45 Break (refreshments provided)**

---

**10:45 – 11:45 Paper Session V: Cognitive Biases**

---



---

Truthiness doesn't need clarification *for now*  
*Daniel G. Derksen, Megan E. Giroux, Deborah A. Connolly, Eryn J. Newman, & Daniel M. Bernstein*

Metacognitive hindsight bias in children and young adults  
*Liam Ruel, Liam A. Ruel, Rakefet Ackerman, Kirandeep K. Dogra, Calvin Campbell, Iarenjit K. Rai, Megan E. Giroux, & Daniel M. Bernstein*

Generalizing the materials based bias effect  
*Steve Lindsay, Majd Hawily (presenting), & Kaitlyn Fallow*

Should faculty care about multimedia design for learning? The effects of multimedia design in a full-semester course  
*Kayla Garvin, Carmen Itzel Symonds, & Kristie Dukewich*

---

**11:45 – 12:00 Break**

---

**12:00 – 1:15 Paper Session VI: Face Perception and Eyewitness Identification**

Eyewitness identification decisions in young and middle-aged adults  
*Emma Kruisselbrink & Ryan J. Fitzgerald*

Accuracy of eyewitness descriptions  
*Crystal Huang & Ryan J. Fitzgerald*

Confidence lexicon: An evidence-based approach for interpreting eyewitness confidence  
*Pia Pennekamp & Jamal K. Mansour*

Catching criminals at the border: The impact of low mismatch prevalence on imposter identification and prospective person memory  
*Camryn Yuen, Ryan J. Fitzgerald, & Stefana Juncu*

Does the face say it all? How face information influences body perception  
*Katelyn Forner, Isabella Schopper, & Jim Tanaka*

---

**1:15 – 1:20 Break**

---

**1:20 – 2:50 Poster Session II (lunch provided)**

---

**POSTER SESSION I FRIDAY (1:15 – 2:45)**

- 1 Alcohol use and decision making in older adults  
*Kamaljit Bajwa, Kirandeep K. Dogra, Paneet Gill, & Daniel M. Bernstein*
- 2 Caffeine does not enhance learning at the neural level  
*Andrew J. Daniels, Robert Trska, Chad C. Williams, & Olav E. Krigolson*
- 3 Children's long-term memory for a staged repeated event  
*Becky Earhart, Sarah L. Deck, Sonja P. Brubacher, and Martine B. Powell*
- 4 Risky decision-making from ages 3 to 89  
*Vince Jasper M. Dizon, Kirandeep K. Dogra, Daniel G. Derksen, Joshua A. Weller, M. Kyle Matsuba, & Daniel M. Bernstein*
- 5 Dorsal and ventral stream interactions in a manual construction task  
*Adrianna S. Griep, Keilin R. C. Gorman, Mia W. Nevin, & Jenni M. Karl*

- 6 Assessing the impact of emotional responses on starcraft in-game performance: fuzzy logic for sentiment analysis  
*Rohan Ben Joseph, Justin O'Camb, & Scott Harrison*
- 7 Measuring conformity in co-witness discussions using a novel, fully-automated coding scheme  
*Bennett King-Nyberg, Kelly Grannon, Andy Ballesteros, Eric Mah, & Stephen Lindsay*
- 8 The effects of fatigue on environmental adaptation  
*Fynn La Boucan, Anya Nazaroff, Zoe Garlinski-Gonsky, Mathew R. Hammerstrom, Chad C. Williams, & Olav E. Krigolson*
- 9 Four times as much fake news: Parallel replications of Basol et al.  
*Steve Lindsay, Evan Anderson, Juno Brill, Adam Carr, Doug Cawthorne, Tommy Cusano, Maddy Davies, Emily Faris, Zoë Gilson, Laurel Halleran, Calvin Heise, Samantha Hicks, Sofiya Kearney, Daniel Lee, Shahana Mamdani, Hannah Mott, Uzay Oztaylan, Katie Pagdin, Marcel Petruzzelli, Rina Pinsky, Eloisa Roldan, Mahir Shetty, Brittany Skov, Daniel Toneguzzi, Lucy Webber, Kaitlin Wulowka, Megan Graham, & Kaitlyn Fallow*
- 10 Thin-slice judgments of autistic and non-autistic children by university students  
*Julia N. Lukacs, Troy Q. Boucher, Nichole E. Scheerer, & Grace Iarocci*
- 11 Exposure and congruency effects in preference and memory for auditory and vibrotactile stimuli  
*Kevin McKillop & Javid Sadr*
- 12 Trust but verify: The biasing effects of uncheckable information in workplace investigations  
*Gabrielle S. Miller & Carla L. MacLean*
- 13 Motivation and the modulatory influence of value prediction errors  
*Patrick Montgomery, Mat Hammerstrom, & Olav E. Krigolson*
- 14 Using EEG to predict fatigue with 86% accuracy?  
*Anya Nazaroff, Zoe Garlinski-Gonsky, Fynn La Boucan, Mathew R. Hammerstrom, Chad C. Williams, & Olav E. Krigolson*
- 15 The effect of age, sleep, SES, and diabetes on cognitive control in older adults  
*Amie M. Orsetti, Lori M. McCullough, Dawn-Leah L. McDonald, Nathan Cassidy, M. Kyle Matsuba, & Daniel M. Bernstein*
- 16 Is it who you know? Cross-race perception of facial expressions in Black and White groups  
*Allison B. Rolle, Kyla Basbaum, Amy Van Well, & Jim Tanaka*
- 17 Assessing mild cognitive impairment using portable EEG: An investigation of the P300 component  
*Hannah Smith, Robert Trska, Cora Bell, Alex Henri-Bhargava, & Olav E. Krigolson*
- 18 The effects of screen time on adolescents' and young adults' social experiences  
*Imran Elysa Tatla, Andrea Hughes, & Lesley Jessiman*
- 19 Sleep deprivation and motor learning: Pasta matrix reaching task and horizontal ladder walking test  
*Stephanie R. U, Milad Hafezi, Arman Virk, Daniel S. Marigold, Dylan F. Cooke, & Brianne A. Kent*
- 20 Longitudinal relations between expressive language and executive function during the preschool years  
*Meryssa Waite & Ulrich Mueller*

<b>POSTER SESSION II (SATURDAY, 1:20 – 2:50)</b>
--

- 1      The effect of gender ambiguity on credibility judgements: A study of cognitive fluency (Experiment 1)  
*Jeevan S. Bains, Nathan M. Cassidy, Carla L. MacLean, Daniel M. Bernstein, Daniel G. Derksen, Deborah A. Connolly, & Justin Kantner*
- 2      Age and sex effects on affective theory of mind across the lifespan  
*Kamaljit Bajwa, Kirandeep K. Dogra, Travis Takarangi, Daniel G. Derksen, Kyle M. Matsuba, & Daniel M. Bernstein*
- 3      Take a step outside towards improved brain function  
*Katherine Boere, Kelsey Loyd, Olav E. Krigolson, & Gordon Binsted*
- 4      Participating in CREP as a solution to the replication crisis  
*Fergus Dalton & Zoë Francis*
- 5      Fatigue enhances reward processing and learning in the brain  
*Zoe Garlinski-Gonsky, Fynn La Boucan, Anya Nazaroff, Mathew R. Hammerstrom, Chad C. Williams, & Olav E. Krigolson*
- 6      Early cognitive development: Exploring the interrelations of executive functions during the preschool period  
*Zoë Gilson, Ulrich Mueller, & Jonathan Rush*
- 7      Applications of fNIRS to measure age-related differences in cortical activity  
*Keilin Gorman, Mark Rakobowchuk, & Claudia Gonzalez*
- 8      Mind the (empathy) gap: Using moral reframing to increase empathy and COVID-19 vaccination attitudes across the political divide  
*Michelle Grafton & Sven van de Wetering*
- 9      Coming back to campus: The effect of emotion on memory for the first day of classes in UBC students  
*Deea K. Dev, Victoria Wardell, Christopher R. Madan, & Daniela J. Palombo*
- 10     Parallel “direct” replications as class projects: A case study  
*Steve Lindsay, Evan Anderson, Juno Brill, Adam Carr, Doug Cawthorne, Tommy Cusano, Maddy Davies, Emily Faris, Zoë Gilson, Laurel Halleran, Calvin Heise, Samantha Hicks, Sofiya Kearney, Daniel Lee, Shahana Mamdani, Hannah Mott, Uzay Oztaylan, Katie Pagdin, Marcel Petruzzelli, Rina Pinsky, Eloisa Roldan, Mahir Shetty, Brittany Skov, Daniel Toneguzzi, Lucy Webber, Kaitlin Wulowka, Megan Graham, & Kaitlyn Fallow*
- 11     Validating mobile EEG for assessment of cognitive impairment using an n-back task  
*Sierra Hall, Robert Trska, Cora Bell, Alex Henri-Bhargava, Olav E. Krigolson*
- 12     Do hot and cold executive functions moderate the relationship between age and the sunk-cost effect?  
*Zachariah I. Hamzagic, Daphnnie Robyn Flores, Amanda Dumoulin, M. Kyle Matsuba, & Daniel M. Bernstein*
- 13     Validation of mobile EEG for cognitive impairment assessment: An investigation of the N200 component  
*Sara Keating, Robert Trska, Cora Bell, Alex Henri-Bhargava, & Olav E. Krigolson*
- 14     Spontaneous and cued temporal order references among children 9-11 years old

- Manuela Ceballos Sterling, Nikola Klassen, Heather L. Price, & Angela D. Evans*
- 15 Trustworthy bias in judicial and economic decision-making  
*Jordan McEvoy & Shawn Geniole*
- 16 The timing of attention capture and eyewitness memory construction  
*Matthew Papaly, Julia Murray, Sierra Curlott, & Ira E. Hyman Jr.*
- 17 Assessing the perceptual characteristics of emotional and non-emotional simulations using natural language processing  
*Omran K. Safi, Oliver Bontkes, & Daniela J. Palombo*
- 18 Crime and biased punishment: The biasing effect of pretrial incarceration on judgement  
*Bria M. Schael, Carla L. MacLean, Heather L. Price, & Deborah A. Connolly*
- 19 Burnout and resilience among medical professionals during COVID-19  
*Andre Zamani, Kalina Christoff, Steven Reynolds, Alex Rauscher, & David Hodges*
- 20 Investigating individual differences in visual word recognition using a lexical decision task and the north american adult reading  
*Jessica Silverman, Olivia Longpre, Ipek Cukurova, Amy vanWell, & Jim Tanaka*

# Abstracts

FRIDAY APRIL 29<sup>TH</sup> 2022

**Paper Session I: Emotion (9:20 – 10:20)**

**Do all negative emotions narrow attention to a particular tree?**

*Anna Maslany, Keagan Leighton, & Peter Graf*

[annamaslany@psych.ubc.ca](mailto:annamaslany@psych.ubc.ca)

A picture of rotten food will evoke a strong negative emotional reaction. Consistent with Fredrickson's (2005) Broaden-and-Build theory, the scope of visual attention should narrow. However, not all negative stimuli or events have the same effect. The plate of rotten food would make us move away, but if we see a picture of people mourning at a funeral this would not occur. In lab, participants viewed disgusting, sad, and peaceful pictures. After a sequence of pictures, participants attention scope was measured using a flanker task (e.g., AAHAA). If attention narrows, participants will be faster and more accurate to identify the middle letter, because they will not experience the interference of outside flankers. Results suggest that not all negative emotions narrow the scope of visual attention.

**Emotion regulation flexibility and mental health outcomes**

*Ezra Persad, Hanna Conradi, & Catherine Ortner*

[persade12@mytru.ca](mailto:persade12@mytru.ca)

Emotion regulation encompasses the ways in which we modulate the severity, duration, and timing of an emotional event. The idea that we vary emotion regulation strategies as the situation changes has been termed emotion regulation flexibility. Although it is clear that emotion regulation is related to mental health, there has been little research examining the relationship between flexible emotion regulation and mental health. We examined how flexibility in reappraisal, acceptance, and rumination, according to long-term motives and intensity, predicted mental health outcomes. After training on each strategy participants, rated three contextual variables (intensity and short- and long-term motives) for eleven vignettes and rated the extent to which they would use reappraisal, rumination, and acceptance. We used regression to assess how flexibility predicted mental health outcomes.

**The heart remembers what the mind forgets: Meta-analysis of emotional enhancement on episodic memory for emotional pictures**

*Nada Alaifan & Peter Graf*

[nada.alaifan@psych.ubc.ca](mailto:nada.alaifan@psych.ubc.ca)

Emotional events (e.g., a graduation celebration or a funeral ceremony) are better remembered than neutral events (e.g., preparing breakfast on a particular day). Considerable evidence is mainly available from research on autobiographical memory, but the evidence from episodic memory remains unclear. This meta-analysis aimed to examine whether there is an emotional enhancement effect on episodic memory for valenced pictures, and whether the magnitude of this effect is the same for recall and recognition memory. I also examined the influence of a number of potential moderators in the magnitude of the emotional enhancement effect for both recall and recognition. The main findings of my meta-analysis revealed a medium-to-large emotional enhancement effect on episodic memory. The emotional enhancement effect was more pronounced for recall than for recognition.

**Emotion recognition of genuine versus posed expressions***Tahirih Nasser, Amy Dawel, Jim Tanaka, & Amy vanWell*[tahirihaltair@gmail.com](mailto:tahirihaltair@gmail.com)

In everyday life emotions may be genuine (e.g., smiling at a loved one) or posed (e.g. smiling to be polite). We investigated how perceived sincerity influences emotion recognition, using a collection of naturalistic expressions. Participants were presented a 2 x 2 array of faces, each with a different expression and were prompted to identify one of six target emotions. The target was either a genuine expression amongst posed distractors, or a posed expression amongst genuine distractors. Expressions displaying posed anger and surprise were more accurately and faster identified than genuine anger and surprise. While genuine fear and sadness were identified more accurately and faster than their posed counterparts. This suggests differences in emotion recognizability and saliency between posed and genuine expressions.

**Paper Session II: Learning & Cognition (10:45 – 11:30)****Gazer: The temporal and spatial resolution of a web-based eye tracking system***Amy vanWell & Jim Tanaka*[amyvanwell@gmail.com](mailto:amyvanwell@gmail.com)

At the University of Victoria, we have developed a new web-based eye tracking program called Gazer. In two experiments, we tested the temporal and spatial properties of Gazer. In an exogenous cuing task (Experiment 1), we found that Gazer produced eye movement results that were comparable to the results of the laboratory Eyelink 1000 system. In Experiment 2, we used a Where's Waldo visual search task where participants identified the location of a Waldo target via a space bar response. Analysis revealed that participants initiated an endogenous eye movement to the Waldo target approximately 3000ms before their space bar response. Together, the results indicate that the Gazer system has sufficient temporal and spatial resolution to collect reliable eye tracking data via the internet.

**Don't fret, you're not in treble: The effects of music genre and personality on performance in different cognitive tasks***Daphnnie Robyn A. Flores & Shayna Rusticus*[DaphnnieRobyn.Flores@kpu.ca](mailto:DaphnnieRobyn.Flores@kpu.ca)

The Mozart Effect suggests that listening to Mozart's classical music leads to enhanced spatial ability (Jaušovec & Habe, 2005; Rauscher et al., 1994). According to Eysenck's Theory of Cortical Arousal, further stimulation applied to over-stimulated introverts leads to poorer performance but under-stimulated extroverts to enhanced performance on reasonably difficult tasks/exams (Dobbs et al., 2011). Therefore, this study's purpose is to investigate the effects of different music genres and the extroversion-introversion personality type on performance on different exam types. This 3 (classical, lo-fi, and silence) x 2 (extroversion and introversion) quasi-experimental study is currently ongoing, with 244 usable responses so far, and will be analyzed using three ANCOVAs for each exam type (reading comprehension, spatial ability, and numerical reasoning), controlling for sex differences in exam performance.

**Getting a handle on meaning***Noah Moise, Daniel Bub, & Michael Masson*

[noah.moise10@gmail.com](mailto:noah.moise10@gmail.com)

We confirm prior evidence that constituents of motor actions play a role in identifying objects with handles (e.g., a frying pan). Subjects held in working memory action plans for reaching actions; these action plans specified both the laterality of the hand to be used (left or right) and a wrist orientation (vertical or horizontal). Speeded object identification was impaired when a pictured object matched the action on only one of these two categorical dimensions (e.g., a frying pan with its handle facing left, an action plan involving the right hand and horizontal wrist orientation), relative to when the object matched the action on both dimensions or neither dimension. This phenomenon only occurred for semantic tasks (i.e., naming) and persisted when objects with handles were presented for naming preceded by pictures of non-graspable objects. The implications of these results for the distinction between pragmatic and semantic modes of processing will be discussed.

### Poster Session I (1:15 – 2:45)

#### 1. Alcohol use and decision making in older adults

*Kamaljit Bajwa, Kirandeep K. Dogra, Paneet Gill, & Daniel M. Bernstein*

[kamal-bajwa@hotmail.com](mailto:kamal-bajwa@hotmail.com)

Decision-making is an important skill when evaluating possible risks and benefits in one's everyday life. This skill is impaired among prevalent alcohol users due to reward-seeking behaviour and their inability to learn from experience. Past work has examined context-dependent alcohol use (i.e., participants who are intoxicated during the testing phase). However, few studies have examined the long-term effects of alcohol use on decision-making, especially in older adults. Participants ages 56 and above completed two decision-making tasks – Cups ( $n = 76$ ) and Sunk-Cost Fallacy ( $n = 52$ ). Neither task revealed significant effects. Given that our study was underpowered, our findings are inconclusive. Future research should explore the long-term effects of alcohol use on decision-making in older adults.

#### 2. Caffeine does not enhance learning at the neural level

*Andrew J. Daniels, Robert Trska, Chad C. Williams, & Olav E. Krigolson*

[andrewdaniels2026@gmail.com](mailto:andrewdaniels2026@gmail.com)

Caffeine is the most widely consumed psychoactive substance in the world, though the effects of caffeine on learning remain under investigated. In the present work, we sought to investigate the effects of caffeine on neural learning systems. Specifically, we had participants with varying levels of caffeine complete a gambling task while we recorded EEG activity. During the gambling task, we measured a neural signal tied to reinforcement learning - the reward positivity. We found that there was no enhancement in reward positivity amplitude with caffeine consumption. As such, caffeine does not appear to improve one's ability to learn at the neural level.

#### 3. Children's long-term memory for a staged repeated event

*Becky Earhart, Sarah L. Deck, Sonja P. Brubacher, & Martine B. Powell*

[s.deck@griffith.edu.au](mailto:s.deck@griffith.edu.au)

Previous literature has characterized children's memory for repeated events, but few studies have included long retention intervals. In this study, 4- to 8- year-old children were interviewed about an occurrence of a staged repeated event both shortly after the event, and two years later. The quality (e.g., content, amount recalled) and accuracy of their memory

reports were examined. Children's memories were surprisingly resilient, given the immense challenge they faced in recalling an individual occurrence of a relatively mundane event after a long delay. For example, all children recalled accurate information about the event, and confabulations were rare. The pattern of findings suggest that children identified an event boundary between the staged repeated event and other activities, which supported long term memory.

#### **4. Risky decision-making from ages 3 to 89**

*Vince Jasper M. Dizon, Kirandeep K. Dogra, Daniel G. Derksen, Joshua A. Weller, M. Kyle Matsuba, & Daniel M. Bernstein*

[vince.dizon@email.kpu.ca](mailto:vince.dizon@email.kpu.ca)

This study investigated changes in the propensity for risky decision-making across the lifespan. We tested the robustness of risky decision-making using a child-friendly version of the Cups task. We collected "smileys" instead of currency across a lifespan sample of people aged 3 to 89 years ( $N = 539$ ). Participants chose between either a safe option (where outcome is known; win/lose 1 smiley) or risky option (where outcome is unknown; win/lose  $>1$  smiley or nothing). Participants made more advantageous choices (i.e., consistent with expected-value sensitivity) for risky gains than for risky losses. Importantly, across risky gains and risky losses, expected-value sensitivity increased with age, but declined in older age. This study shows non-linear age-related changes when evaluating risky choices.

#### **5. Dorsal and ventral stream interactions in a manual construction task**

*Adrianna S. Griep, Keilin R. C. Gorman, Mia W. Nevin, & Jenni M. Karl*

[adrianna.griep43@gmail.com](mailto:adrianna.griep43@gmail.com)

Increasing evidence surrounding the Dual-Stream Theory indicates that the ventral stream may draw upon stored information to modify movements produced by the dorsal stream. We hypothesized that constructing a familiar figure, compared to an unfamiliar figure, should activate schemas in the ventral stream, facilitating faster and more accurate movements produced by the dorsal stream. Participants reconstructed both a familiar and unfamiliar figure using the same set of blocks, while 3D motion tracking recorded peak grasp aperture, peak wrist velocity, time to peak velocity, and total movement duration. Results revealed that total movement duration varied significantly during reach-to-grasp movements when constructing an unfamiliar figure. The idea that the ventral stream may contribute to movement production even after minimal experience with a task is discussed.

#### **6. Assessing the impact of emotional responses on Starcraft in-game performance: Fuzzy logic for sentiment analysis**

*Rohan Ben Joseph, Justin O'Camb, & Scott Harrison*

[rbjoseph@sfu.ca](mailto:rbjoseph@sfu.ca)

This study examines the relationship between emotions expressed during a Starcraft session (using chat data) and performance within the game. While there has been a lot of academic focus in mining and labeling factual data, there is little research on the applications of opinion-mining and categorizing subjective data. This is especially true for video game chats. In order to gauge strength of emotion, we utilize fuzzy logic to describe word meanings (that are at best subjective) by determining the extent to which they belong or don't belong to a predefined class (a value between 0 and 1). This is then used while performing sentiment analysis and compared to the player's performance using metrics laid out in foundational work conducted by the SFU Cognitive Science Lab.



---

### **7. Measuring conformity in co-witness discussions using a novel, fully-automated coding scheme**

*Bennett King-Nyberg, Kelly Grannon, Andy Ballesteros, Eric Mah, & Stephen Lindsay*  
[bennett.kingnyberg@gmail.com](mailto:bennett.kingnyberg@gmail.com)

Research shows that co-witnesses often influence each others' memory reports after discussing an event (memory conformity). Qualitative co-witness discussion data is rich, and there are numerous ways to code/analyze it, with potential implications for results. We have created an in-depth coding scheme that attempts to quantify theoretically important discussion elements (e.g., exposure to correct/incorrect information). We also introduce a fully-automated Python program that codes formatted transcripts of co-witness discussions. This program can be easily adapted to be usable with similar study materials/designs. We consider the advantages and disadvantages of the new scheme relative to others.

### **8. The effects of fatigue on environmental adaptation**

*Fynn La Boucan, Anya Nazaroff, Zoe Garlinski-Gonsky, Mathew R. Hammerstrom, Chad C. Williams, & Olav E. Krigolson*  
[fynnsage@gmail.com](mailto:fynnsage@gmail.com)

The world is constantly changing and our ability to adapt involves updating our expectations of the environment. Yet, changing our expectations, and thus adapting to our environment, is impeded by fatigue. Here, we sought to examine the neural effects of fatigue on our ability to monitor and adapt to changing environments. Participants with varying levels of fatigue performed an oddball task while neural activity was recorded via electroencephalography (EEG). We found neural patterns associated with updating our expectations to increase, rather than decrease, with fatigue. These findings suggest that some aspects of adapting to changing environments are enhanced when we are tired.

### **9. Four times as much fake news: Parallel replications of Basol et al.**

*Steve Lindsay, Evan Anderson, Juno Brill, Adam Carr, Doug Cawthorne, Tommy Cusano, Maddy Davies, Emily Faris, Zoë Gilson, Laurel Halleran, Calvin Heise, Samantha Hicks, Sofiya Kearney, Daniel Lee, Shahana Mamdani, Hannah Mott, Uzay Oztaylan, Katie Pagdin, Marcel Petruzzelli, Rina Pinsky, Eloisa Roldan, Mahir Shetty, Brittany Skov, Daniel Toneguzzi, Lucy Webber, Kaitlin Wulowka, Megan Graham, & Kaitlyn Fallow*  
[slindsay@uvic.ca](mailto:slindsay@uvic.ca)

Four teams each created a more or less direct replication of an online study by Basol et al. (2020), who tested a procedure designed to reduce susceptibility to fake Tweets. Subjects judged the truth of a set of tweets and then either (a) played a "Bad News Game" intended to teach them about ways devious folks can fool people into believing bogus tweets or (b) played Tetris. Then subjects again rated the truth of the initial tweets. Basol et al. reported that their Bad News Game dramatically reduced belief in bogus tweets. They included only 3 true tweets and did not report data on those items. We included more true tweets and report those data and made some other improvements.

### **10. Thin-slice judgments of autistic and non-autistic children by university students**

*Julia N. Lukacs, Troy Q. Boucher, Nichole E. Scheerer, & Grace Iarocci*  
[julia\\_lukacs@sfu.ca](mailto:julia_lukacs@sfu.ca)

Stigmatization of autism may influence the social experiences of autistic children (Han et al., 2021). Ninety-three university students watched thirty 10-second clips of thirty 7 to 12-year-old autistic and non-autistic children (matched on ethnicity, age, and IQ) speaking about their interests. T-tests for group differences of participant ratings of child traits (e.g., likeability,

perceived intelligence, etc.) and behavioural intentions (e.g., willingness to sit beside, converse with, etc.) towards the child showed significant differences for behavioural intentions ( $t(28) = 2.819, p = .009$ ). Forward stepwise linear regressions showed group membership (autistic vs. non-autistic) was a significant predictor of behavioural intentions ( $p = .009$ ). These results suggest a bias that is dependent on the child's autism diagnosis and provides insight into the mechanisms that may perpetuate autism stigma.

### **11. Exposure and congruency effects in preference and memory for auditory and vibrotactile stimuli**

*Kevin McKillop & Javid Sadr*

[kevin.mckillop@uleth.ca](mailto:kevin.mckillop@uleth.ca)

Processing fluency, the ease of processing incoming stimuli, is a likely cause of the mere exposure effect (MEE) and has been demonstrated uni-modally and cross-modally. It remains to be seen whether audio-vibrotactile congruency facilitates fluency and might thus influence preferences for vibrotactile, auditory, and multi-modal stimulation. Here, we propose a set of experiments to investigate (1) whether subjects have pre-existing preferences for and can discriminate uni-modal auditory and vibrotactile stimulation, (2) whether the MEE can be demonstrated for uni-modal and cross-modal vibrotactile and auditory stimulation, and (3) whether simultaneously-presented congruent (matched frequency) audio-vibrotactile stimulation can elicit a fluency effect. These experiments will be conducted using mobile phones and delivered over the internet.

### **12. Trust but verify: The biasing effects of uncheckable information in workplace investigations**

*Gabrielle S. Miller & Carla L. MacLean*

[gabrielle.miller@email.kpu.ca](mailto:gabrielle.miller@email.kpu.ca)

Research has found that 19-32% of the content of witness statements is opinion. The current research explored the biasing effect of information that is "uncheckable", and can therefore never be a fact about an event (opinions and future projections), as well as the biasing effect of prior knowledge. Participants received either unsafe or control (i) worker history and (ii) uncheckable information in the witness statement. Participants allocated cause for a workplace event, judged the quality of the witness, and categorized the information as checkable or uncheckable. Unsafe, uncheckable information produced higher ratings of witness confidence and biased participants' allocations of cause. Unsafe background information resulted in participants miscategorising uncheckable information as checkable, judging the evidence as more diagnostic, and biased their cause allocations.

### **13. Motivation and the modulatory influence of value prediction errors**

*Patrick Montgomery, Mat Hammerstrom, Olav E. Krigolson*

[pjmontgomery@uvic.ca](mailto:pjmontgomery@uvic.ca)

Motivation has been associated with both frontal asymmetry and anterior cingulate cortex (ACC) functioning (Harmon-Jones & Gable, 2016; Shenhav et al., 2013). The estimated value of control (EVC) model suggests that the ACC estimates response values and accordingly modulates connected brain activity (Shenhav et al., 2013). The current experiment tests this relationship using electroencephalography measures of reward positivity and comparing these with changes in frontal asymmetry in a reward learning task. Reward positivity is included as a measure of prediction errors - assessments of differences between expected and actual value outcomes - and frontal asymmetry as a measure of approach motivation.

---

Based on the EVC model, we hypothesize that value updates resulting from prediction errors should predict changes in measures of motivation.

#### **14. Using EEG to predict fatigue with 86% accuracy?**

*Anya Nazaroff, Zoe Garlinski-Gonsky, Fynn La Boucan, Mathew R. Hammerstrom, Chad C. Williams, & Olav E. Krigolson*

[nazaroffanya@gmail.com](mailto:nazaroffanya@gmail.com)

Fatigue can have detrimental effects in high-risk environments. For example, doctors experiencing fatigue in the ER can pose an increased risk of harm or fatality to their patients. However, the current standard of measuring fatigue consists of unreliable, subjective reports. Here, fatigue was manipulated by having participants complete complex reasoning problems. We then explored the use of electroencephalography (EEG) in a 10-minute pre-and-post assessment as a potential objective measure of fatigue. By considering four neural indicators of cognition, we were able to measure changes in fatigue with 86% accuracy. Thus, we present a highly reliable EEG-based fatigue assessment, which could facilitate assessment in real-world, high-risk environments.

#### **15. The effect of age, sleep, SES, and diabetes on cognitive control in older adults**

*Amie M. Orsetti, Lori M. McCullough, Dawn-Leah L. McDonald, Nathan Cassidy, M. Kyle Matsuba, & Daniel M. Bernstein*

[amie.orsetti@email.kpu.ca](mailto:amie.orsetti@email.kpu.ca)

This study examined the relationship between age, sleep, socio-economic status (SES), and diabetes on older adults' cognitive control as measured by Stroop scores. The higher the Stroop score, the less cognitive control. We predicted that increased age, less sleep and SES (i.e., education), and more serious diabetes would predict higher Stroop scores. Information was collected from 156 adults ranging from 56 to 98 years. Preliminary results ( $n = 48$ ) from our regression analysis showed our model to be significant with education being negatively and age being positively related to Stroop scores. With age and less education, people show declining cognitive control.

#### **16. Is it who you know? Cross-race perception of facial expressions in Black and White groups**

*Allison B. Rolle, Kyla Basbaum, Amy vanWell, & Jim Tanaka*

[allisonuvic@gmail.com](mailto:allisonuvic@gmail.com)

Previous research has found that racial differences in emotional resemblance contribute to White perceivers' recognition of facial expression in Black and Asian individuals (Zebrowitz, 2010). However, limited research has investigated the effects of perceptual experience on the categorization of expression in Black and White groups. The current study investigates expression identification on a cross-race basis utilizing morphed spectrums of black and white models (neutral-happy/neutral-angry). Participants ( $N = 28$ ) from the University of Victoria were asked to complete a two-alternative forced-choice task followed by a racial contact questionnaire (modified from Hancock & Rhodes, 2008). High accuracy was found in expression judgments for both Black and White emotion spectrums. Moreover, results indicate that reaction time decreases linearly with increased expressiveness (99% neutral-90% expressive).

#### **17. Assessing mild cognitive impairment using portable EEG: An investigation of the P300 component**

*Hannah Smith, Robert Trska, Cora Bell, Alex Henri-Bhargava, & Olav E. Krigolson*

[hannahs396@gmail.com](mailto:hannahs396@gmail.com)

Increased prevalence of mild cognitive impairments (MCIs) and dementias are a growing concern as the population ages, producing a need for an objective, accessible, and cost-effective tool to facilitate early detection and intervention. Here, we see if a portable electroencephalography (EEG) system could be an effective measure of MCI, specifically using a visual oddball task to target the P300 memory and attention component. Participants were separated into two groups: individuals with a diagnosed cognitive impairment, and healthy, age-matched controls. Participants completed two pen-and-paper MCI assessments to gather behavioral data, followed by a perceptual EEG task called Oddball. The MCI group demonstrated modulated P300 peak amplitudes during the oddball task when compared to healthy controls, indicating EEG's potential use in identifying biomarkers for MCI.

### **18. The effects of screen time on adolescents' and young adults' social experiences**

*Imran Elysa Tatla, Andrea Hughes, Lesley Jessiman*

[imran.tatla@student.ufv.ca](mailto:imran.tatla@student.ufv.ca)

Increased prevalence of mild cognitive impairments (MCIs) and dementias are a growing concern as the population ages, producing a need for an objective, accessible, and cost-effective tool to facilitate early detection and intervention. Here, we see if a portable electroencephalography (EEG) system could be an effective measure of MCI, specifically using a visual oddball task to target the P300 memory and attention component. Participants were separated into two groups: individuals with a diagnosed cognitive impairment, and healthy, age-matched controls. Participants completed two pen-and-paper MCI assessments to gather behavioral data, followed by a perceptual EEG task called Oddball. The MCI group demonstrated modulated P300 peak amplitudes during the oddball task when compared to healthy controls, indicating EEG's potential use in identifying biomarkers for MCI.

### **19. Sleep deprivation and motor learning: Pasta matrix reaching task and horizontal ladder walking test**

*Stephanie R. U, Milad Hafezi, Arman Virk, Daniel S. Marigold, Dylan F. Cooke, & Brianne A. Kent*

[sru1@sfu.ca](mailto:sru1@sfu.ca)

Sleep is important for learning and memory, however there are gaps in the literature assessing motor learning following sleep deprivation. The goal of our project is to use the pasta matrix reaching task (PMRT) and horizontal ladder walking test (HLWT) in mice to assess performance following acute sleep deprivation. The PMRT assesses reaching behaviour while the HLWT assesses walking, limb placement, and interlimb coordination. We hypothesize that 24 hours of sleep deprivation will result in worse performance on both tasks compared to a group of mice which are allowed to sleep. To our knowledge, no previous studies have assessed performance on the PMRT and HLWT following acute sleep deprivation. We intend to inform future electroencephalography (EEG) sleep deprivation studies to examine sleep architecture.

### **20. Longitudinal relations between expressive language and executive function during the preschool years**

*Meryssa Waite & Ulrich Mueller*

[meryssa\\_waite@sfu.ca](mailto:meryssa_waite@sfu.ca)

This study examined the relations between language and executive function (EF) development in preschool children using a longitudinal study design. Participants were assessed at 3 to 3.5 years old and again 12 months later. Measures of language included

conversational syntactic complexity, conversational vocabulary diversity, expressive vocabulary, and an aggregate language score. Aggregate EF scores were calculated from an EF battery. Concurrent correlations between language and EF scores were significant at both assessment points. Hierarchical regression analyses found that early aggregate language predicted later EF, while early EF did not predict later aggregate language. However, early EF did predict later conversational vocabulary diversity. Overall, these results indicate significant concurrent and predictive relations between language and EF during the preschool years.

### **Paper Session III: Witnesses & Memory (3:15 – 4:30)**

#### **Perceptions of the reason for a delayed report of a crime**

*Madison B. Harvey, Heather L. Price, & Deborah A. Connolly*

[madisonh@sfu.ca](mailto:madisonh@sfu.ca)

Previous literature has consistently found a negative impact of delay on witness' perceived credibility (e.g., Ellison & Munro, 2009; Franiuk et al, 2020). However, previous work has focused on circumstances of delayed disclosures in cases of sexual assault. Our own previous work found no negative impact of a delay on the perceived credibility of a witness when the delay was outside of the witness' control. To further investigate this anomalous finding, we examined laypersons perceptions of a delayed report compared to a timely report, with either no reason provided, a reason as a result of the witness, or a reason as a results of the police. Results demonstrate that the reason for the delay might matter when assessing witness' perceived credibility, but not legal decisions.

#### **Perceived credibility of tele-forensic interviews**

*Nikola R. Klassen, Madison B. Harvey, Heather L. Price, & Deborah A. Connolly*

[nikola\\_klassen@sfu.ca](mailto:nikola_klassen@sfu.ca)

Tele-forensic interviews with children could be beneficial to bring trained forensic interviewers to isolated communities, but it is unclear how this medium of interview may impact the child's credibility. Thus, this proposed study will examine the perceived credibility of a child's recorded in-person interview compared to a recorded tele-forensic interview. We expect that children in the tele-forensic interviews will be perceived as less credible based on the vividness hypothesis. We also expect other variables will affect perceived credibility, for instance, the quality of the recording and impressions of a child when there is no in-person monitoring by the interviewer. Discussion is welcomed on this proposed study idea. The use of tele-forensic interviews with children is increasing so this research is timely and important.

#### **Assessment of eyewitness reliability in Canada: A judicial review**

*Brayden Anderson, Ryan J. Fitzgerald, Kaila C. Bruer*

[brayden\\_anderson@sfu.ca](mailto:brayden_anderson@sfu.ca)

In *R. v. Atfield* (1983), the Supreme Court of Canada set the precedent for assessing and instructing juries on eyewitness identification reliability. In the current research, we reviewed 31 appellate cases that cited *Atfield* and coded the cases on 26 variables. The variables can be put into three general categories. These categories are basic case descriptors, judicial instruction, and crime/ID conditions. Results indicate that adequacy of the trial judge instruction on the eyewitness evidence was highly predictive of case outcomes. Moreover, judges neglected to bring awareness to the conditions for which lineups were conducted (i.e., administration, type, lineup conditions, etc.). These findings have implications for the future of eyewitness research, which has largely neglected the topic of judicial instructions.

**Online co-witness conformity: Validating a virtual procedure and testing the impact of warnings**

*Bennett King-Nyberg & Kelly Grannon, Timothy Friesen, Andy Ballesteros, Madison Mah, Eric Mah & Stephen Lindsay*

[bennett.kingnyberg@gmail.com](mailto:bennett.kingnyberg@gmail.com)

Co-witnesses can influence each other's memory reports (memory conformity). In the MORI paradigm, in-person pairs are led to believe that they witness the same event, but actually witness different versions, discuss the event, then take individual memory tests. Experiment 1 examined memory conformity in online video discussions ( $N = 40$ ). We found memory conformity effects: Lower accuracy for details about which participants were misled or exposed to misinformation, relative to items for which participants were not misled or exposed to misinformation. Pilot Experiment 2 (data collection ongoing) added a post-discussion enlightenment warning that fully explains the study manipulation. We hypothesise that the enlightenment procedure will reduce co-witness conformity effects. We discuss the advantages and challenges of online co-witness experiments, as well as potential future directions.

**The cost of source monitoring in recognition of instances of repeated events**

*Eva Rubínová & Heather L. Price*

[erubinova@tru.ca](mailto:erubinova@tru.ca)

In repeated-event paradigms where participants view and later recall a series of similar events, we typically observe primacy and recency effects: participants remember more accurate details from the first and final instances. Researchers typically assess memory using free recall; therefore, it is possible that recall differences across instances occur at retrieval. We tested potential differences at the level of encoding by examining participants' memory using a recognition task. In Experiment 1 (between-subjects), participants were either asked to decide whether an item was "Old" or "New," or decide whether an item occurred in Instance 1/2/3/4 or was "New". We predicted that reaction times for accurate decisions would be faster for items from Instance 1 compared to Instance 2, and that decisions would be faster in the task not requiring source monitoring (the old/new group). We found support for both preregistered hypotheses and currently collect data for a replication Experiment 2 (within-subjects).

**Keynote Address (4:40-6:00)**

**Mistaken eyewitness identification and convictions of the innocent:  
A four-decade reflection on robust phenomena, safeguards, and frameworks**

Gary L. Wells, Distinguished Professor at Iowa State University

Reflecting on 40+ years of research on eyewitness identification, I will describe what I believe to be the three most reliable, robust, and expository phenomena in eyewitness identification from lineups. These three are the removal-without-replacement effect, differential filler siphoning, and the post-identification feedback effect. These three phenomena, along with the failure to use double-blind eyewitness identification procedures with lineups, can explain almost every proven case of mistaken identification that resulted in convictions of innocent people. In addition, I will describe a third category of variables that is importantly distinct from my original two-category distinction between system and estimator variables, namely reflector variables.

SATURDAY, APRIL 30<sup>TH</sup>, 2022**Paper Session IV: Cognitive Neuroscience (9:30 – 10:30)****Searching for visual singletons without a feature to guide attention***Daniel Tay, David McIntyre, Steven Hillyard, & John McDonald*[daniel\\_tay@sfu.ca](mailto:daniel_tay@sfu.ca)

The ERP marker of attentional selection called the N2pc has been a gold standard in studies of visual search. This marker is thought to reflect the suppression of nontarget items that appear in the vicinity of the target because it was absent in a singleton-detection task that discourages suppression. Recently, a relatively small and late N2pc was observed in such a singleton-detection task. One possibility is that suppression inadvertently occurs when targets are salient, even if doing so impairs performance. We disconfirm this explanation by showing that behavioural impairment did not result from increases in target salience nor larger N2pc amplitude. We conclude that the N2pc reflects processing of the target itself, not the suppression of nearby nontargets.

**Patch it up: Validation of a low electrode density low-cost mobile EEG system***Elsa (Elle) Parsons, Katherine Boere, & Olav E. Krigolson*[elle.parsons99@gmail.com](mailto:elle.parsons99@gmail.com)

Event-related potentials (ERPs) are typically measured using a 32 or 64 EEG system. However, it is clear that low electrode density low-cost mobile EEG (mEEG) technology can also measure ERPs (Krigolson et al., 2017). Here, we evaluated a new two channel mEEG device – the “Patch” – that is stated to deliver research grade EEG data contrasting the reduced data quality associated with mEEG devices. Participants completed an oddball task while EEG was recorded from the Patch. Results demonstrate a clear N200 and P300 ERP response comparable to standard research grade systems. mEEG systems like the Patch are more cost and time effective than traditional EEG systems thus allowing researchers to quickly and reliably conduct data collection with comparable data quality to that of other EEG systems.

**Investigating the neural functional connectivity which underlies conscious versus subliminal processing of auditory oddballs***Kira Dolhan, Eric Hochstein, Adam Krawitz, & Olav E. Krigolson*[kiradolhan@uvic.ca](mailto:kiradolhan@uvic.ca)

Much bewilderment can be seen in the literature when “consciousness” is assumed to be a unified concept (Block, 2002). Thus, we focused on one sub-phenomenon of “consciousness”: informational awareness (Chalmers, 1995). To differentiate conscious versus subliminal processing, we are recording EEG and fNIRS during an auditory oddball backwards masking task. If our delineation is accurate, we expect unconscious trials to evoke a mismatch negativity, and conscious trials a P300 (Bekinschtein et al., 2009). We will then quantify functional connectivity via weighted phase-lag index (Vinck et al., 2011). We hypothesize that, for high-frequency (8-30 Hz) EEG, conscious trials will show strongest frontoparietal connectivity (Braga et al., 2017). The spatiotemporal resolution of combined EEG/fNIRS may provide unique insights into the network dynamics differentiating conscious from subliminal processing.

**The effects of relatedness on reward learning signals**

*Mathew Rocha Hammerstrom & Olav E. Krigolson*

[mathewhammerstrom@live.com](mailto:mathewhammerstrom@live.com)

Humans grant cognitive benefits to stimuli related to them compared to unrelated stimuli. Indeed, when given an imaginary sense of ownership over objects in an experiment, participants exhibit improved memory and enhanced reward learning. However, less is known about how we process stimuli on a scale of relatedness. For example, how might the brain treat monetary decisions that concern someone we know (i.e., a friend)? We sought to determine if participants processed gambling outcomes differently when outcomes benefited either the participant, an individual they know, or a stranger using electroencephalography (EEG). Our results demonstrate a positive relationship between the relatedness of the gambling target and the amplitude of EEG reward signals and provide evidence that gambling behaviours and their neural generators are sensitive to relatedness.

<b>Paper Session V: Cognitive Biases (10:45 – 11:45)</b>
--

**Truthiness doesn't need clarification *for now***

*Daniel G. Derksen, Megan E. Giroux, Deborah A. Connolly, Eryn J. Newman, & Daniel M. Bernstein*

[dgderkse@sfu.ca](mailto:dgderkse@sfu.ca)

Trivia presented with non-probative, related photos is rated true more often than trivia presented alone— *truthiness*. We varied the semantic processing of the photos. Specifically, we hypothesized that encouraging deep processing through identifying a clarifying photo's content would produce a larger truthiness effect than passively viewing a still photo. In Experiment 1, ( $N = 206$ ) participants saw either no photo, a clear, still photo, or a blurry photo that clarified. In still and clarifying trials, participants identified the photo's content. In Experiment 2, ( $N = 217$ ) participants only identified the photo's content in the second half of trials to isolate the effects of clarification and identification. We observed truthiness in both experiments but semantic processing through clarification and/or identification did not increase the effect.

**Metacognitive hindsight bias in children and young adults**

*Liam Ruel, Liam A. Ruel, Rakefet Ackerman, Kirandeep K. Dogra, Calvin Campbell, Iarenjit K. Rai, Megan E. Giroux, & Daniel M. Bernstein*

[liam.ruel@kpu.ca](mailto:liam.ruel@kpu.ca)

Metacognitive Hindsight Bias (MC-HB) is the tendency to be more confident in one's judgments once outcome information is known. The present study examined MC-HB using a visual Hindsight Bias (HB) task in a sample of children (ages 7.5-9.5,  $n = 53$ ; ages 11.5-13.5,  $n = 39$ ) and young adults ( $n = 41$ ). In the baseline phase, participants identified objects that progressively clarified from blurry to clear, rating their confidence after each guess. In the hindsight phase, they saw clear images of the same objects and then recalled their previous guesses and confidence ratings for each level of blur. All age groups showed MC-HB, but the groups did not differ. This suggests that age does not moderate MC-HB.

**Generalizing the materials based bias effect**

*Steve Lindsay, Majd Hawily (presenting), & Kaitlyn Fallow*

[slindsay@uvic.ca](mailto:slindsay@uvic.ca)

In recognition memory tests, subjects may demonstrate liberal, conservative, or no response biases based on the principles of signal detection theory. Across a number of studies, we



found that subjects showed a clear conservative bias when presented with complex images (e.g., paintings, photographs of scenes) as stimuli. When stimuli were English words, bias tended to be liberal or neutral. The reasons for these materials-based differences in response bias remain ambiguous. Here we will discuss our ongoing efforts to better understand response bias variation across materials and individuals. Specifically, we aim to explore whether multilingual participants show differences in response bias for words in their first vs. additional language(s), and to test the generality of the materials based bias effect into other cultures.

### **Should faculty care about multimedia design for learning? The effects of multimedia design in a full-semester course**

*Kayla Garvin, Carmen Itzel Symonds, & Kristie Dukewich*

[kayla.garvin@kpu.ca](mailto:kayla.garvin@kpu.ca)

The multimedia design for learning literature has identified a number of design principles for educational multimedia that aim to improve learning. Meta-analyses of experimental studies of these principles demonstrated huge effect sizes when applied to learning materials. However, the literature is largely based on carefully controlled one-hour laboratory studies. To investigate the impact of multimedia design in full-semester courses, students from five introductory psychology courses across two semesters were recruited to participate. Two modules were selected; students received one typical course module that employed multimedia design for learning, and one module that used more typical slides with bullet points, counterbalanced across courses. Performance on relevant exam questions will be compared to determine whether multimedia design has an impact on students' academic outcomes.

## **Paper Session VI: Face Perception and Eyewitness Identification (12:00 – 1:15)**

### **Eyewitness identification decisions in young and middle-aged adults**

*Emma Kruisselbrink & Ryan J. Fitzgerald*

[emma\\_kruisselbrink@sfu.ca](mailto:emma_kruisselbrink@sfu.ca)

Age-related deficits in adults' eyewitness identification performance are often found when comparing younger and older adults. The aim of the present study was to examine if declines in identification performance frequently found in older adults would be exhibited by middle-aged adults. A secondary analysis of data was undertaken, in which identification performance on target present and target absent identification tasks was compared in young and middle-aged adults. No differences were found between young and middle-aged adults for hits, misses, and false alarms. There was a trend for an age-related decrease in correct rejections, however, it was not significant. Ultimately, the results show that middle-aged adults' identification performance was not hindered compared to younger adults.

### **Accuracy of eyewitness descriptions**

*Crystal Huang & Ryan J. Fitzgerald*

[crystal\\_huang\\_4@sfu.ca](mailto:crystal_huang_4@sfu.ca)

Eyewitnesses are often asked to provide police with descriptions of the person that they saw in the context of a crime. It is important to study whether these descriptions are accurate because they assist police in finding a suspect and may be announced to the public to support the investigation. In this study, witnesses ( $N = 757$ ) viewed videos of staged crimes and described the perpetrators in terms of gender, age, ethnicity, build, hair, and distinctive features. Descriptor

accuracy will be measured by coding the witness descriptions and comparing them to the perpetrators' descriptions of themselves. We plan to compare accuracy across descriptors and predict that gender and hair will be described more accurately than age and ethnicity.

**Confidence lexicon: An evidence-based approach for interpreting eyewitness confidence**

*Pia Pennekamp & Jamal K. Mansour*

[ppennekamp@qmu.ac.uk](mailto:ppennekamp@qmu.ac.uk)

We developed an evidence-based tool for assisting with communication and interpretation of eyewitness confidence. Participants rated how well percentages (0%, 10%...100%) represented each of 13 common verbal confidence statements (e.g., moderately confident) on a scale (0 = Not at all to 100 = Absolutely). From the numeric distributions (membership functions) derived from each phrase's ratings, we identified four phrases with clear boundaries that together spanned the entirety of a 0-100% confidence scale. The tool includes the four phrases and their ranges. Understandings of verbal confidence statements are shared and quantifiable, facilitating common ground for reporting and interpreting eyewitness identification confidence.

**Catching criminals at the border: The impact of low mismatch prevalence on imposter identification and prospective person memory**

*Camryn Yuen, Ryan J. Fitzgerald, & Stefana Juncu*

[camryn\\_yuen@sfu.ca](mailto:camryn_yuen@sfu.ca)

Border control officers must verify that a picture from an identity document matches the person presenting it. Previous identity verification studies have included a much higher frequency of fraudulent passports than what border control officers typically encounter in practice. In this study, we investigated how the prevalence of fraudulent passports impacts identity verification accuracy. We also tested whether participants would notice a wanted fugitive. The procedure consisted of 100 trials of comparing a passport image and an ambient image of the passport holder. Participants were assigned to encounter fraudulent passports in low (3%) or high prevalence conditions (21%). We predicted that reducing the prevalence of fraudulent passports would impair detection of both the fraudulent passports and the wanted fugitive. Data analysis is ongoing.

**Does the face say it all? How face information influences body perception**

*Katelyn Forner, Isabella Schopper, & Jim Tanaka*

[katelynforner@uvic.ca](mailto:katelynforner@uvic.ca)

Previous studies involving face-composite tasks have shown that holistic interference can be disrupted when the top and bottom halves of faces are spatially misaligned. In a previous study, we employed a face-body composite task to test the influence of alignment and congruency on face and body perception, where participants made judgements on faces only. The current study employed a similar composite task, where five different body morphs were created and combined with two different faces to be sequentially presented in groups of two. Participants were instructed to attend to the bodies only and provide "same" or "different" evaluations between each pair of composites. For each trial, accuracy (%) and reaction time (ms) were measured. Analyses showed that participants had greater accuracy for congruent and aligned conditions.

Poster Session II (1:20 – 2:50)
---------------------------------

### 1. The Effect of gender ambiguity on credibility judgements: A study of cognitive fluency (Experiment #1)

*Jeevan S. Bains, Nathan M. Cassidy, Carla L. MacLean, Daniel M. Bernstein, Daniel G. Derksen, Deborah A. Connolly, & Justin Kantner*

[jeevanbains29@gmail.com](mailto:jeevanbains29@gmail.com)

Processing fluency is the subjective ease of processing a stimulus, and it can influence related judgements. The present study investigated whether individuals who experience disfluency when classifying the gender of androgynous faces interpret this disfluency as a cue that these faces are less trustworthy than relatively easy-to-process gendered faces. We recorded reaction times as participants categorized a series of androgynous and gender-typical (male/female) faces either by gender or by race (control condition). Immediately after the categorization task, participants rated the perceived trustworthiness of each face. As predicted, androgynous faces elicited slower responses than gender-typical faces in the gender categorization condition. However, counter to our expectation, slower (disfluent) gender categorization did not trigger social devaluation for the androgynous faces.

### 2. Age and sex effects on affective theory of mind across the lifespan

*Kamaljit Bajwa, Kirandeep K. Dogra, Travis Takarangi, Daniel G. Derksen, Kyle M. Matsuba, & Daniel M. Bernstein*

[kamal-bajwa@hotmail.com](mailto:kamal-bajwa@hotmail.com)

We investigated age and sex effects on The Reading in the Mind Eyes Task (RMET), wherein participants identify emotions portrayed by pictures of eyes. Previous research indicates that children rapidly improve on the RMET in early adolescence, and that younger adults score better on the RMET than older adults. Past work also shows that females outperform males on the RMET. In this study, children ( $n = 229$ , Age Range: 6-17) and adults ( $n = 311$ , Age Range: 18-89) completed the RMET. We found that children improved, but performance then remained flat into older adulthood. We did not observe sex differences. Hence, people's ability to identify emotions in others may remain steady even into late adulthood.

### 3. Take a step outside towards improved brain function

*Katherine Boere, Kelsey Loyd, Olav E. Krigolson, & Gordon Binsted*

[katherineboere@gmail.com](mailto:katherineboere@gmail.com)

It is well known that physical activity can improve cognitive function. However, the environment where exercise is performed may be just as important as the act itself. Exposure to natural outdoor environments contributes to psychological, cognitive and physical benefits. Conversely, the world's growing urbanization and associated indoor distractions can diminish cognitive resources and performance. This study compared the cognitive benefits of exercise in outdoor environments to indoor using electroencephalography and the event-related potential component known as the P300. Participants completed the standard visual oddball task before and after walking inside, then again on a different day walking outside. To investigate the impact of walking location, we conducted a two (location: inside versus outside) by two (time: pre-test versus post-test) fully repeated measures ANOVA on P300 amplitude. Here, we found a main effect of time that revealed an increase in P300 amplitude following 15 minutes of walking. Decomposition of that interaction revealed no change in P300 amplitude following an indoor walk but increased P300 amplitude following an outdoor walk. Importantly, our work highlights that spending time walking outdoors compared to

indoors can restore attentional resources, leading to improved directed cognitive attention in subsequent tasks. Our results emphasize the critical impact of nature on cognition, which may support future infrastructures to incorporate time spent outside in order to combat the attentional load of modern-day society.

#### **4. Participating in CREP as a solution to the replication crisis**

*Fergus Dalton & Zoë Francis*

[fergus.dalton@student.ufv.ca](mailto:fergus.dalton@student.ufv.ca)

As part of the Collaborative Replication and Education Project (CREP), we have attempted to replicate the findings of Stellar et al. (Study 3; 2017). The original publication hypothesized that participants who watch an awe-inducing video would be primed to be more self-critical than controls in a task in which participants listed strengths and weaknesses. This poster will summarize the replication crisis and present CREP's attempt to resolve this by making quality replication studies streamlined and accessible to students. We will also summarize the present replication study as it relates to CREP and share information and resources on how students can run their own replication through CREP.

#### **5. Fatigue enhances reward processing and learning in the brain**

*Zoe Garlinski-Gonsky, Fynn La Boucan, Anya Nazaroff, Mathew R. Hammerstrom, Chad C. Williams, & Olav E. Krigolson*

[zoe.garlinskigonsky@gmail.com](mailto:zoe.garlinskigonsky@gmail.com)

We all like to be praised, but when does praise have the biggest impact on learning? One condition which has been proven to impair cognition is fatigue. Although past research has found that fatigue affects reward processing (e.g., praise), it has never been examined at a neural level. Here, we investigated the effects of fatigue on reward processing by leveraging electroencephalographic (EEG) imaging techniques. We found greater neural activity associated with reward processing while fatigued, relative to rested. As such, fatigue may not be detrimental to learning and may, in fact, facilitate it.

#### **6. Early cognitive development: Exploring the interrelations of executive functions during the preschool period**

*Zoë Gilson, Ulrich Mueller, & Jonathan Rush*

[gilsonzoe@gmail.com](mailto:gilsonzoe@gmail.com)

Higher cognitive control skills, called executive functions (EF), improve quickly during the preschool period. EF can be broken down into the interdependent yet conceptually distinct components of inhibition, updating (working memory), and shifting (flexibility). There is evidence for either inhibition or working memory being more central than the others, potentially predicting the developmental path of EF. We explored the development of these components over a one-year period and tested whether baseline inhibition or working memory function as predictors for the development of the other components. Data was taken from an ongoing longitudinal study ( $N = 72$ , mean age = 40.56 months), where children completed measures of response inhibition, working memory, and flexibility at baseline and were reassessed 6 and 12 months later.

#### **7. Applications of fNIRS to measure age-related differences in cortical activity**

*Keilin Gorman, Mark Rakobowchuk, & Claudia Gonzalez*

[keilingorman@gmail.com](mailto:keilingorman@gmail.com)

It is vital to understand the neural mechanisms underlying healthy ageing and differentiate these from disease trajectories. We aimed to identify neural differences in 10 younger versus

10 older adults and determine best practices of measuring brain activity using functional near-infrared spectroscopy (fNIRS). An fNIRS cap was placed on the bilateral frontal lobes while participants completed a finger-tapping task. Average and peak oxyhemoglobin responses were obtained from 24 channels. Short-channel regression (SCR) was used to examine physiological confounding factors in each group. We report age-related differences in cortical activity and the effects of implementing SCR in examining older adults' brain function. Our results will help assess age-related changes in brain activity and identify the best research and clinical monitoring of brain function in older adults.

### **8. Mind the (empathy) gap: Using moral reframing to increase empathy and COVID-19 vaccination attitudes across the political divide**

*Michelle Grafton & Sven van de Wetering*

[michellemgrafton@gmail.com](mailto:michellemgrafton@gmail.com)

Existing research demonstrates that people's moral values tend to differ with their political orientation. Using a technique called moral reframing, this study framed COVID-19 vaccination messaging using moral values which appeal to conservatives (loyalty) versus liberals (fairness) to determine whether reframing would be effective in increasing participants' COVID-19 vaccination attitudes and/or empathy towards people of differing vaccination status. This online study had ( $n = 1035$ ) participants read morally reframed messages, then complete a survey measuring vaccination attitudes and empathy. Preliminary results indicate that moral reframing resulted in higher pro-vaccination attitudes in conservatives, but not in liberals. Moral reframing was also successful in increasing empathy towards unvaccinated people in liberals, as well as empathy towards vaccinated people in conservatives. Implications of these results are discussed.

### **9. Coming back to campus: The effect of emotion on memory for the first day of classes in UBC students**

*Deea K Dev, Victoria Wardell, Christopher R. Madan, & Daniela J. Palombo*

[deeadev@gmail.com](mailto:deeadev@gmail.com)

A wealth of research suggests that emotion is an important modulator of episodic memory. However, little is known about how different types of emotional experiences affect memory consistency. The COVID-19 pandemic provided us an opportunity to examine this question, as a highly emotional event was the return to in-person classes at UBC. We asked participants to describe their memories of their first day back at school in detail in two separate sessions (S1:  $N = 175$ ; S2:  $N = 127$ ) and administered a battery of questionnaires to collect rich data about the myriad of emotions they encountered. The next step is to use this dataset to address our primary research question, namely, how do the emotions that are experienced on the first day of class shape memory consistency?

### **10. Parallel “direct” replications as class projects: A case study**

*Steve Lindsay, Evan Anderson, Juno Brill, Adam Carr, Doug Cawthorne, Tommy Cusano, Maddy Davies, Emily Faris, Zoë Gilson, Laurel Halleran, Calvin Heise, Samantha Hicks, Sofiya Kearney, Daniel Lee, Shahana Mamdani, Hannah Mott, Uzay Oztaylan, Katie Pagdin, Marcel Petruzzelli, Rina Pinsky, Eloisa Roldan, Mahir Shetty, Brittany Skov, Daniel Toneguzzi, Lucy Webber, Kaitlin Wulowka, Megan Graham, & Kaitlyn Fallow*

[slindsay@uvic.ca](mailto:slindsay@uvic.ca)

Each of four teams of students set out to replicate an experiment by Basol et al. (2021), who reported on an intervention designed to reduce susceptibility to fake Tweets. Teams were loosely coordinated but each team made their own choices as to some details of the

procedure, such that each replication differed from the others in subtle ways. Some aspects of the results were broadly consistent across replications, but other diverged in ways that are intriguing. This poster emphasizes the pedagogical value of parallel “direct” replications as a way of learning about methodological and substantive issues.

### **11. Validating mobile EEG for assessment of cognitive impairment using an n-back task**

*Sierra Hall, Robert Trska, Cora Bell, Alex Henri-Bhargava, Olav E. Krigolson*  
[sierrahall@uvic.ca](mailto:sierrahall@uvic.ca)

Detection of cognitive impairments can improve later quality of life. Assessment of mild cognitive impairments (MCI) is done through behavioural evaluations via specialized administrators. To introduce a neurophysiological measure of assessment, the current study examines mobile electroencephalography (mEEG) to gather quick and reliable brain data to complement behavioural assessments. Participants were separated into two groups: (1) Individuals with a diagnosed cognitive impairment, (2) Age-matched healthy controls. Continuous EEG data were recorded while participants completed an ‘n-back’ task. Results demonstrate increased pre-frontal theta activity in MCI participants relative to controls in the n-back task. Theta activity also correlated with behavioural assessments: the MoCA and RBANS. Results suggest a reliable measure to distinguish neurocognitive activity between individuals with a cognitive impairment and those who do not.

### **12. Do hot and cold executive functions moderate the relationship between age and the sunk-cost effect?**

*Zachariah I. Hamzagic, Daphnnie Robyn Flores, Amanda Dumoulin, M. Kyle Matsuba, & Daniel M. Bernstein*  
[hamz5080@mylaurier.ca](mailto:hamz5080@mylaurier.ca)

The sunk-cost effect (SCE) is the tendency to continue an unsuccessful activity after devoting resources to it. Research suggests that the SCE peaks in early childhood and declines into adolescence. The dual-process theory suggests that the SCE decreases over childhood when executive functions (EFs) develop and facilitate better decision-making strategies. “Cold” abstract information processing EFs improve more in younger childhood, while “hot” motivationally salient EFs improve more in early adolescence. We examined whether two cold and one hot EF tasks moderate the relationship between the SCE and age in 6- to 17-year-olds ( $N = 246$ ). We found a linear increase in the SCE with age; however, no EF measures moderated this relationship. These results do not support the dual-process theory.

### **13. Validation of mobile EEG for cognitive impairment assessment: An investigation of the N200 component**

*Sara Keating, Robert Trska, Cora Bell, Alex Henri-Bhargava, Olav E. Krigolson*  
[sarakeating2@gmail.com](mailto:sarakeating2@gmail.com)

Among a global aging population, early detection of mild cognitive impairments (MCI) remains essential to improve later quality of life. MCI is typically evaluated with pen-and-paper assessments which are often associated with several pitfalls and biases. To introduce a more objective assessment, the present study utilizes mobile electroencephalography to gather quick and reliable neurophysiological data which will complement pen-and-paper assessments. N200 responses were recorded during a response inhibition game (Go-No-Go) to compare brain activity in participants with diagnosed MCI to healthy control subjects. Although no statistical differences were found between MCI and controls for N200 peak

amplitudes, correlations between N200 amplitude and neuropsychological assessments (RBANS and MoCA) demonstrate a relationship between medial-frontal inhibitory brain responses and attentional subdomains in pen and paper assessment.

#### **14. Spontaneous and cued temporal order references among children 9-11 years old**

*Manuela Ceballos Sterling, Nikola Klassen, Heather L. Price, & Angela D. Evans,*  
[manucesterling@hotmail.com](mailto:manucesterling@hotmail.com)

Knowledge of children's ability to provide temporal references and accurately recall the temporal order of events is of great importance in developmental and forensic psychology fields. In this study, children 9 to 11 years old ( $N = 36$ ) completed a 45-min interview through Zoom in which they watched a 10-minute video containing four science experiments. After watching the video, children were asked to recall the video and the temporal order of the experiments in the video with different types of prompts. Children reported more correctly ordered experiments when a specific temporal prompt was provided than when an open-ended prompt was given. However, the level of supportiveness of the temporal prompt had no significant influence on the number reported of correctly ordered experiments.

#### **15. Trustworthy bias in judicial and economic decision-making**

*Jordan McEvoy & Shawn Geniole*  
[jordan.mcevoy@student.ufv.ca](mailto:jordan.mcevoy@student.ufv.ca)

The human face provides abundant information from which people routinely and unconsciously infer personal characteristics that can often have downstream consequences (Zebrowitz et al., 1996; Willis & Todorov, 2006). Those with less (vs more) trustworthy appearing faces, for example, receive lower valuations and payments for providing similar online-based services (Ert et al., 2016), and more consequentially, are more likely to be receive a death sentence during trials of capital offenses (Wilson & Rule, 2015). Previous attempts at reducing this trust bias have been ineffective (Jaeger et al., 2020). However, prior research has shown that informing people of the accepted (injunctive) or common (descriptive) behaviour of those within a peer group can elicit behavioural changes (Cialdini et al., 1990; Thomas et al., 2017; Kormos et al., 2015). Here, we adopted a novel application of this intervention approach in an attempt to reduce this trust bias during both judicial and peer-to-peer economic situations by providing people with either a descriptive, injunctive, or descriptive/injunctive normative statement (independent variables; between subjects). Nevertheless, this normative information (vs control) neither reduced this trustworthiness bias nor did it consistently affect economic and judicial decision-making. These findings raise questions about the generalizability of previous work on trust based biases and norm manipulations.

#### **16. The timing of attention capture and eyewitness memory construction**

*Matthew Papaly, Julia Murray, Sierra Curlott, & Ira E. Hyman Jr.*  
[papalym@wwu.edu](mailto:papalym@wwu.edu)

People do not constantly watch for crimes. In this research, we have investigated how the timing of attention capture affects eyewitness memory. People may become aware of a crime as it starts, become aware later, or may never notice the crime. With three different attention conditions, we showed people a complex video with a theft and asked when they noticed the theft. Participants then described the thief and were asked about the thief's behaviors. The timing of awareness of the thief affected the ability to correctly answer questions. People who became aware of the crime late nonetheless answered questions about aspects that occurred

before awareness, generally giving incorrect responses. In these situations, people construct a more complete but often inaccurate memory.

### **17. Assessing the perceptual characteristics of emotional and non-emotional simulations using natural language processing**

*Omran K. Safi, Oliver Bontkes, & Daniela J. Palombo*

[omranksafi@gmail.com](mailto:omranksafi@gmail.com)

Humans spend a large proportion of time simulating future events. Many such events are imbued with rich emotion. Do emotional simulations differ from neutral ones in event characteristics? Some, albeit not all, prior work in memory suggests that emotional memories (especially negative ones) contain more perceptual detail relative to neutral ones. However, it is unclear if this holds for imagined events as well. In this between-subjects study, we collected data from 572 participants across three conditions (Positive = 194, Neutral = 185, Negative = 193). We will use the Linguistic Inquiry and Word Count (LIWC-22) software, a text analysis tool, to examine whether emotional simulations differ from neutral ones. We hypothesize that negative events will contain more perceptual words relative to positive and neutral events.

### **18. Crime and biased punishment: The biasing effect of pretrial incarceration on judgement**

*Bria M. Schael, Carla L. MacLean, Heather L. Price, & Deborah A. Connolly*

[Bria.schael@email.kpu.ca](mailto:Bria.schael@email.kpu.ca)

The present study examined whether a defendant's treatment prior to trial biases people's perceptions of the defendant's guilt, the perceived severity of the crime, and ratings of the fairness of the legal process. Participants were informed of the defendant's pretrial treatment (at home; incarcerated; no information) and his income (45,000/yr or 110,000/yr). Participants read information about a crime, made judgments, and completed a measure of Belief in a Just World (BJW). When informed that the defendant was incarcerated prior to trial, participants rated the defendant as significantly less likely to be guilty than those who received no information. Incarceration prior to trial was also judged as the least fair of the pre-trial treatment conditions.

### **19. Burnout and resilience among medical professionals during COVID-19**

*Andre Zamani, Kalina Christoff, Steven Reynolds, Alex Rauscher, & David Hodges*

[azamani@psych.ubc.ca](mailto:azamani@psych.ubc.ca)

The neurocognitive correlates and consequences of burnout after prolonged stressful conditions remain relatively unknown. Burnout is of particular concern in the medical field as it is known to cause significant risk for patient and physician health (Brindley, 2017; Brindley et al., 2019). Here we use functional and structural MRI to examine burnout correlates and consequences in a population of intensive care physicians who regularly undergo prolonged week-long clinical duty shifts. We compared neural indices before and after a one-week long clinical shifts. Two scanning sessions per subject were acquired: one session a week prior to a clinical duty shift, and the other on the day immediately following the shift. At each scanning session we collected resting-state fMRI data and several other MRI sequences (T1, T2, T2-FLAIR, DWI, and ASL), as well as self-reported levels of burnout, resilience, and sleep characteristics. Preliminary results indicate changes in resting state functional connectivity (FC) following clinical week-long shifts, including the FC between the subgenual anterior cingulate cortex and a number of cortical and subcortical structures, as well as between the insula and nucleus accumbens. These results add to previously reported relationships



between medical burnout and alterations to insular brain activity (Tei et al., 2014) and locus coeruleus responsivity (Grueschow et al., 2021), as well as to resilience-dependent changes in subgenual anterior cingulate cortex functional connectivity following stress (Shao et al., 2018). Altogether, these preliminary results suggest a tentative link between burnout and alterations in brain systems supporting autonomic, visceral, and motivational processing.

**20. Investigating individual differences in visual word recognition using a lexical decision task and the north american adult reading**

*Jessica Silverman, Olivia Longpre, Ipek Cukurova, Amy vanWell, & Jim Tanaka*  
[olongpre@shaw.ca](mailto:olongpre@shaw.ca)

This study investigated individual performances on a lexical decision task (LDT) correlated with their score on the North American Adult Reading Test (NAART). Participants viewed a single word and made word-nonword decisions using their keyboard. Targets consisted of real words, pronounceable nonwords (CHUUR), and non-pronounceable nonwords (TKTAP). Participants also completed an online version of NAART, a traditionally in-person test used to predict premorbid verbal IQ with cognitive decline. Participants read 61 irregular word stimuli out loud and were recorded via the laptop microphone. This allowed for speech-onset time and pronunciation accuracy measures. We expect that individual scores on the LDT will predict an individual’s performance on NAART. We also aim to explore the utility of remote NAART administration as a tool used by clinical psychologists.

**DRIVING DIRECTIONS AND TRANSIT MAP**

**Driving Directions to Venue:**

SFU Sustainable Energy Engineering  
 10285 University Dr, Surrey, BC V3T 0N1

**From UBC**

Follow SW Marine Dr to Oak St/BC-99 in Vancouver  
 13 min (9.2 km)

Continue on BC-99 S. Take BC-91 and BC-17 to Tannery Rd in Surrey. Take exit 31 from BC-17  
 21 min (27.3 km)

Take 104 Ave to University Dr  
 7 min (3.4 km)

**From Kwantlen Polytechnic University (Surrey)**

Head north on 126 St toward 71 Ave  
 260 m

Turn right onto 72 Ave  
 1.2 km

Turn left onto 132 St  
900 m

Continue onto 132 St  
5.6 km

Turn right onto 104 Ave  
450 m

Turn right onto University Dr

Destination will be on the right

**From US Border**

Get on I-5 N in Blaine from D St  
4 min (1.2 mi)

Take BC-99 N and King George Blvd/BC-99A N to 132 St in Surrey, Canada  
15 min (9.8 mi)

Follow 132 St to University Dr  
19 min (6.2 mi)

SFU Sustainable Energy Engineering  
10285 University Dr, Surrey, BC V3T 0N1

**From the Vancouver Airport**

Vancouver International Airport  
3211 Grant McConachie Way, Richmond, BC V7B 0A4

Get on BC-99 S from Grant McConachie Way E and Sea Island Way  
10 min (5.4 km)

Take BC-91 and BC-17 to Tannery Rd in Surrey. Take exit 31 from BC-17  
19 min (25.0 km)

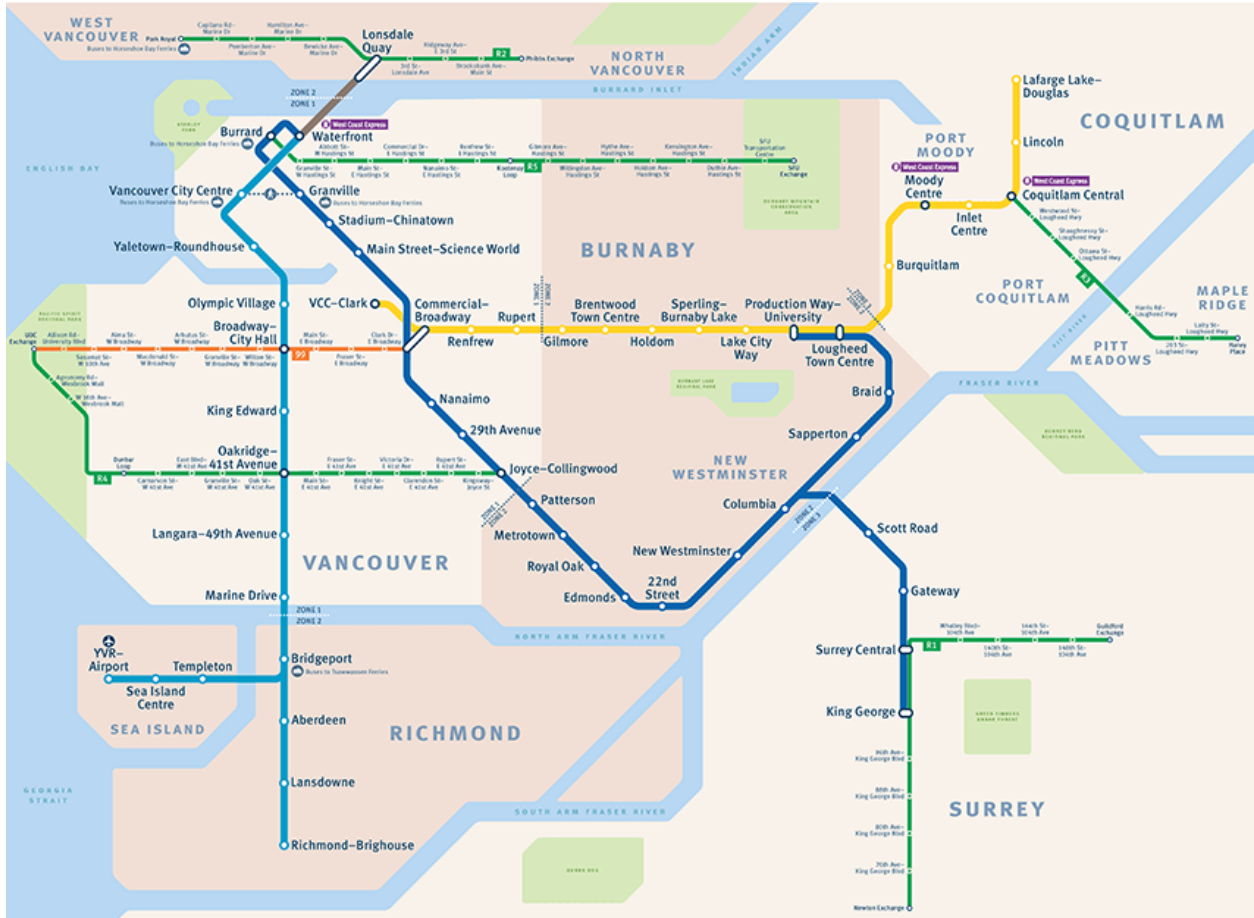
Take 104 Ave to University Dr  
7 min (3.4 km)

**Transit Directions to Surrey Campus**

Current schedules, route maps and fares for bus, SkyTrain, SeaBus, and West Coast Express services are available at [www.translink.bc.ca](http://www.translink.bc.ca)

**By SkyTrain**

The nearest SkyTrain station to SFU Surrey is Surrey Central, on the Expo Line SkyTrain. The venue is within walking distance from the Skytrain station, across the parking lot.



*finito*