



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.

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## TRAVEL AND PARKING INFORMATION

NOWCAM 2019 will be held at the University of Victoria, Victoria, B.C., Canada. Victoria, capital city of BC, is on the island of Vancouver.

**The conference sessions will be held in the Bob Wright Centre.**

Most NOWCAMpers coming from off-island will use BC Ferries from Tsawwassen (south of the mainland city of Vancouver). You can travel as a walk-on or by driving/riding a vehicle onto the ferry; if you do the latter we recommend purchasing a reservation (and being sure to arrive at least 30 minutes before sailing time). Sailing is about 95 minutes and the route is very beautiful.

General parking at UVic is available close to the conference location in Parking Lot 1 (outside of ring road). The daily rate is \$8.00 on Friday and \$3.00 on Saturday. As well, there is general parking in Parking Lot B (inside ring road). The daily rate is \$15.00 on Friday, and \$3.00 on Saturday.

## INTERNET ACCESS

Visiting members of eduroam supported institutions may securely connect to the EDUROAM wireless network without needing a guest account. Authentication and support of eduroam for visitors is provided by your home institution. Note: 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 about eduroam can be found <http://eduroam.ca>, or <http://eduroam.org> for visitors from outside Canada.

## THURSDAY EVENING SOCIAL

On Thursday, May 9<sup>th</sup>, there will be a no-host reception in downtown Victoria at **The Canoe Club** (450 Swift Street). Join us starting at 6:00 for socializing! This venue is limited to 40 people. If you are unable to join here we recommend checking out Centoe, just steps away at 768 Yates Street (downstairs) or Garrick's Head (66 Bastion Square).

## GALA DINNER

On Friday, May 10<sup>th</sup> a gala dinner will be held at the **Maple Room at the Sticky Wicket** (919 Douglas Street). The restaurant is located in downtown Victoria, about a 20 minute drive from campus. All who purchased a gala ticket are welcome to join us following the keynote address.

**PROGRAM SCHEDULE**

**THURSDAY, MAY 9<sup>TH</sup>**

**6:00 PM**      **Social Event- No Host Reception at The Canoe Club (450 Swift Street)**

**FRIDAY, MAY 10<sup>TH</sup>**

**8:30 – 9:00**      **Registration (Refreshments provided) at the Bob Wright Centre Foyer**

**9:00 - 9:20**      **Opening Remarks in Bob Wright Centre- Room 104**

*Tsartlip Elder, May Sam  
Associate Dean, Michael Masson*

**9:20 – 10:35**      **Paper Session I: Law & Memory**

Session Chair: *Eric Mah*

9:20                  Layperson Beliefs About Forgetting

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

9:35                  Reported Confidence in Memory for Experienced Versus Fabricated Crimes

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

9:50                  Truthiness and Law: Photos Bias Credibility Judgements in Forensic Contexts

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

10:05                Children who Experience Repeated Abuse may be Disadvantaged in Court

*Patricia I. Coburn, Dayna M. Woiwod, Katia Siamer, Lakshmi Nair, Daniel M. Bernstein, A. George Alder & Deborah A. Connolly*

10:20                Recognition Memory and Personality: Some Curious Correlations

*Patrick J. Dubois*

**10:35-10:45**      **Break**

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**10:45 – 11:45 Paper Session II: Attention & Cognitive Control**

Session Chair: *Alison Campbell*

- 10:45 Impulsivity modulates action restraint, but not cancellation, within response inhibition paradigms  
*Marie-Anne Dussault Gomez, Taryn Berman & Dr. Olav Krigolson*
- 11:00 Electrophysiological Basis for the Behavioural Consequences of Contingent Attention Capture  
*Jennifer-Ashley Hoffmeister & Dr. John J. McDonald*
- 11:15 Electrophysiological correlates of visual singleton detection  
*Daniel Tay, Victoria Harms, Steven Hillyard & John McDonald*
- 11:30 Experience sampling reveals a relationship between mental imagery and temporal orientation during mind-wandering  
*Yvette M. Graveline, Ela Bandari & Kalina Christoff*

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**11:45-11:55 Break**

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**11:55 – 12:45 Speed Talk Session I**

Session Chair: *Morgan Teskey*

- 11:55 How does that make you feel?: Exploring the relationship between emotion and the scope of attention  
*Anna Maslany & Peter Graf*
- 12:05 The role of anterior cingulate cortex in regulating effort during goal-directed behavior  
*Sepideh Heydari, Cora-Lynn Bell, Josie Ryan & Clay Holroyd*
- 12:15 Dual-Process Theory: Electrophysiological Evidence of Intuitive and Analytical Decision Making Strategies  
*F. van Oorschot, C. Williams, M.J. Mulder & O.E. Krigolson*
- 12:25 Physical activity and intra-individual variability in attentional processes  
*G. Kyle Gooderham, Simon Ho & Todd C. Handy*
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12:45-2:15 Lunch (Not provided, see pages 12 & 13 for food options)

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2:15-3:45 Poster Session I (Refreshments provided)

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3:45-4:45 **Paper Session III: Learning and Decision-Making**

Session Chair: *Kaitlyn Fallow*

3:45 Predicting Post-Acquisition Performance as a Function of Individual Differences in Rate of Visual Learning

*Michaella Trites, Jose Barrios, Buyun X, Jim Tanaka & Stuart MacDonald*

4:00 Cheating on tests is unrelated to performance predictions about future tests

*Dawn-Leah L. McDonald, Zach Hamzagic, Eric Y. Mah, Monika Undorf, Maryanne Garry & Daniel M. Bernstein*

4:15 Portable EEG Measurement of Clinical Decision Making

*Mathew Hammerstrom Chad C. Williams, Jordan Middleton & Olav E. Krigolson*

4:30 What would you do: Sunk-cost effect in moral dilemmas

*Zach Hamzagic Daniel G. Derksen, Kyle Matsuba, Daniel M. Bernstein*

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4:45-4:55 **Break**

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4:55 **Keynote Speaker: Dr. Ayanna Thomas**

Memory Reconstruction Does not Necessitate Memory Distortion: Learning to Evaluate Our Subjective States

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6:30 – 9:00 Gala Dinner: Maple Room at the Sticky Wicket (919 Douglas Street)

## SATURDAY, MAY 11<sup>TH</sup>

**9:00 – 9:30**     **Registration (Refreshments provided) at the Bob Wright Centre Foyer**

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**9:30-10:30**     **Paper Session IV: Action and Perception**

Session Chair: *Chad Williams*

9:30                Effects of Working Memory Load on Action Planning  
*Emma Ullrich, Michael E. J. Masson & Daniel N. Bub*

9:45                Holistic Perception of Faces in 17 milliseconds: Evidence from 3 experiments  
*Xiaoyi Liu & James W. Tanaka*

10:00              Representations automatically evoked by a depicted hand  
*Morgan Teskey, Daniel, N. Bub & Michael E.J. Masson*

10:15              How spatially specific is the reentrant information in common-onset masking?  
*Bertrand Sager, Vincent Di Lollo & Thomas M. Spalek*

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**10:30-10:40**     **Break**

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**10:40-11:40**     **Paper Session V: Bias**

Session Chair: *Amie Kim*

10:40              Investigating Theory-of-Mind Errors in the Sandbox Task  
*Angela Giesbrecht, Daniel Derksen, Devinder Khera & Daniel M. Bernstein*

10:55              Are IAT Effects an artifact of design? Testing the impact of a rest period before reversing response assignments on the IAT  
*Michael McCarthy, David Hughes & Sven Van de Wetering*

11:10              Hypothesis Generation and Confirmation Bias in Social Interaction  
*Flora Oswald, Mikaela Bates, Kara DeWinter, Jonathan Janzen & Sven van de Wetering*

11:25              "Blind" faith in experts? A systematic review of the effects of expertise and experience on inattentional blindness  
*Hayley Cullen, Helen Paterson & Celine van Golde*

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**11:40-11:50 Break**

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**11:50-12:30 Speed Talk Session II**

Session Chair: *Emma Ullrich*

- 11:50 Exploring the limits of materials-based bias differences in recognition memory  
*Kaitlyn Fallow & D. Stephen Lindsay*
- 12:00 Using frequency-tagging and EEG to isolate responses to personally familiar faces  
*Alison Campbell & James Tanaka*
- 12:10 Memory for Emotional Picture Pairs: Sex Differences in Episodic Memory  
*Nada Alaifan & Peter Graf*
- 12:20 Does the mere presence of a smartphone influence performance on cognitive tasks? It depends.  
*Paris Will, Alessandra DiGiacomo & Alan Kingstone*
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**12:30-12:45 Break**

**12:45-2:15 Poster Session II (Lunch provided)**

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**2:15-3:00 Paper Session VI: Clinical & Developmental**

Session Chair: *Sepideh Heydari*

- 2:15 Using EEG to Assess the Impact of Concussions on N200, P300, and Reward Positivity ERP Waveforms  
*Evan Carey, Cameron Hassal & Olav Krigolson*
- 2:30 Preliminary evidence of P300 responses associated with attention from unresponsive palliative patients  
*Elizabeth Blundon & Lawrence Ward*
- 2:45 Performance-based and parent rating measures of executive function in preschoolers  
*Amie Y. Kim & Ulrich Müller*
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**3:00 Closing Remarks**

## LIST OF POSTERS

### POSTER SESSION I (FRIDAY, 2:15-3:45)

- 1 Differences in brain function in subjective cognitive decline: An investigation using fMRI  
*Ashleigh Parker & Colette Smart*
- 2 Comparing Age-Related fMRI Memory Data  
*Heather Kwan*
- 3 Event Related Potentials in a Line Drawing Task  
*Alyssa Mousseau & Rob Trska*
- 4 Default Mode Network Activity In Prodromal Alzheimer's Disease  
*Nicole Grant, Ashleigh Parker & Jodie Gawryluk*
- 5 Time spent on feedback influences learning and gaze  
*Katerina Dolguikh, Jordan Barnes, Tyrus Tracey, Calvery Woodruff, & Mark Balir*
- 6 A Music Intervention for Improving Cognitive and Neural Function in Persons with Dementia  
*Cole Tamburri, Michaella Trites, Debra Sheets, Andre P. Smith, & Stuart W.S. MacDonald*
- 7 An Implicit Measure of Cognitive Focus: Evidence from an Oddball Paradigm  
*Greg Gill, Thomas Ferguson, Stephen Luehr & Olave Krigolson*
- 8 Turning Old Objects Into New Objects  
*Taylor Cork, Thomas M. Spalek, Vincent Di Lollo & Lisa N. Jefferies*
- 9 The Effect of Encoding Time on the Holistic Face Processing Advantage for Own-Race Faces  
*Xiaoyi Liu, Kaitlyn Thomas, Fiona Lojong & James Tanaka*
- 10 Faded memory: The effect of image contrast on face recognition  
*Kevin McKillop, John Vokey & Javid Sadr*
- 11 Anxiety and its Influence on the Detection of Masked Facial Emotions  
*Graham Sasso & Noah Marvin*
- 12 Does Monetary Incentive Influence Cheating Behaviour?  
*Gurjot Singh Chhina & Evandro Lopes*
- 13 Examining How Children with and without ASD Extract Emotion from Prosody  
*Nichole Scheerer, Fakhri Sharai, Ryan Stevenson & Grace Iarocci*
- 14 Investigating the Relationship between Social Competence, Autism, and Restricted Interests in Children with and without ASD  
*Troy Q. Boucher, Nichole E. Scheerer & Grace Iarocci*
- 15 Social Competence Predicts Autism Bias: Relationship Between Autism Spectrum Disorder Stigma and the MSCS  
*Meaghan Stratford, Troy Q. Boucher, Nichole E. Scheerer & Grace Iarocci*



- 16 Reducing Negative Bias Towards Autistic Adults: Efficacy of an Educational Intervention for High School Students  
*Vivian Ly, Nichole E. Scheerer, Troy Q. Boucher & Grace Iarocci*
- 17 Perceptions of E-Mental Health Services: Barriers and Benefits to Seeking Alternative Mental Health Delivery Interventions  
*Alexandrea Franzius*
- 18 Is Holistic Gist Selective to Faces vs Non face objects?  
*Stefanie Papasoff, Jacqueline Carhoun, James Tanaka, Alison Campbell & Xiaoyi Liu*
- 19 Can talking to myself help me win? The impact of two dimensions of self-talk on video game performance.  
*Brandon J. Justus & Shayna Rusticus*
- 20 Longitudinal Changes in White Matter Microstructure in Healthy Aging  
*Abu-Bakar Sheriff, Lisa Ohlhauser & Jodie Gawryluk*

## POSTER SESSION II (SATURDAY, 12:45-2:15)

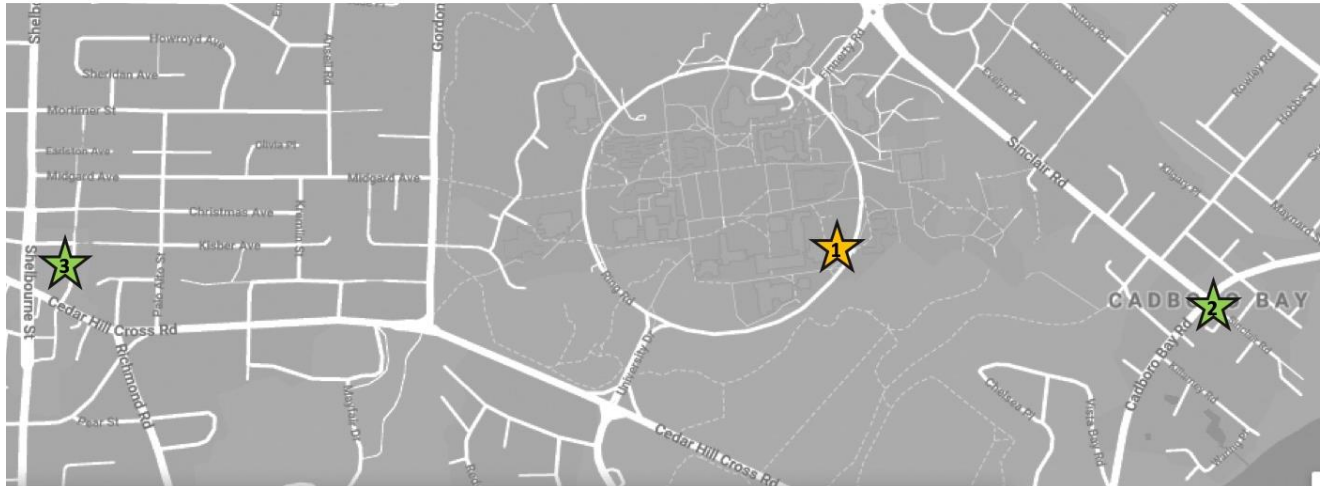
- 1 If Nazi = Red, and Canadian = Red, does Red = Good or Bad? Testing the limits of implicit attitude change using the IAT  
*Michael McCarthy*
- 2 Eye-tracking Areas of Interest in the Movie for the Assessment of Social Cognition  
*Amanda V. Tabert, Kristen Zeller, Kevin Smith, Jon Lau, Jaime Christiaanse, Jim Tanaka & Daniel M. Bernstein*
- 3 Social factors do not affect audiovisual integration in spatial and temporal tasks  
*Jane J. Kim, Basil Wahn, Jill Dosso & Alan Kingstone*
- 4 What makes a pretty poster? Empirically testing conference poster guidelines  
*Natasha Pestonji-Dixon, Thu (Rosie) Tran & Peter Graf*
- 5 Crime Blindness and Eyewitness Suggestibility: The Role of Attention Focus in the Adoption of Misinformation  
*Soha Pourpirali, Rochelle A. Robinson, Danielle Grgetich, Klara Engel, Anthony Barrios & Ira E. Hyman Jr.*
- 6 Understanding language comprehension, manual rotation, and the action sentence compatibility effect.  
*Kris Svendsen & Daniel Bub*
- 7 Athletic Advantage on Executive Functioning Present in Working Memory, but not in Inhibition  
*Amanda M. Webber, Iris Gordon & Mauricio Garcia-Barrera*
- 8 Attitudes towards concussion reporting among adolescent athletes  
*Sané du Plessis & Mauricio Garcia-Barrera*
- 9 Driving While Distracted: The Impact of Inattentional Blindness and Attention Capture in a Traffic Accident Scenario  
*Ellen Carroll, Macey Crooks, Tess Schorn, Klara Engel, Anthony Barrios, Danielle Grgetich, Soha Pourpirali & Ira E. Hyman, Jr.*
- 10 Legal Knowledge Promotes Critical Evaluation of Criminal Evidence  
*Megan E. Giroux, Patricia I. Coburn, Daniel M. Bernstein & Deborah A. Connolly*
- 11 Impacts of judgment strategy on eyewitness false identification rates  
*Haley Hay, Eden Miller, Eric Y. Mah, , Mario J. Baldassari & D. Stephen Lindsay*

- 12 The Impact of Mild Traumatic Brain Injury (mTBI) on Decision-Making Tasks in Healthy Older Adults  
*Devinder S. Khera, Manmeet K. Chhina, Kirandeep K. Dogra, Gurjot S. Chhina & Daniel M. Bernstein*
  
- 13 Effects of Diet on Cognition in Young Adults  
*Caitlin Chevrier, Brenna Han, Jasmeeen Dosanjh, Geoffrey Gooderham & Todd Handy*
  
- 14 The Effect of Imagined Intergroup Contact and Need for Closure on Attitudes Towards Bisexuality  
*Julia Toews*
  
- 15 To Pump a Balloon: How Impulsivity Impacts Context Updating in a Risky Environment  
*Christopher Freitag, Taryn Berman, Clay Holroyd & Olav Krigolson*
  
- 16 Sunk-cost effect from 3 to 97 years of age  
*Zach Hamzagic, Eric Y. Mah, Daniel G. Derksen & Daniel M. Bernstein*
  
- 17 A proposed diagnostic tool for measuring the relationship between autism identity acceptance and optimal brain functioning.  
*Joseph Sheppard*
  
- 18 The Role of Metarepresentation in Preschoolers' Theory of Mind Development  
*Kirsten Quistberg & Ulrich Mueller*
  
- 19 Examining physical activity mode and intensity on cognitive functioning in young adults  
*Jasmeeen Dosanjh, Caitlin Chevrier, G. Kyle Gooderham & Todd C. Handy*
  
- 20 Changes in Neural Responses as a Result of Real-World Familiarization: How the Brain Changes as a Stranger Becomes a Friend  
*Amy VanWell, Lauren Kean, Rebecca Frangos, James Tanaka & Alison Campbell*
  
- 21 Seeing the individual: Rethinking data visualization within electroencephalography studies  
*Mikaela S. Chia, Cameron D. Hassall & Olave E. Krigolson*

**MAPS & FOOD OPTIONS**



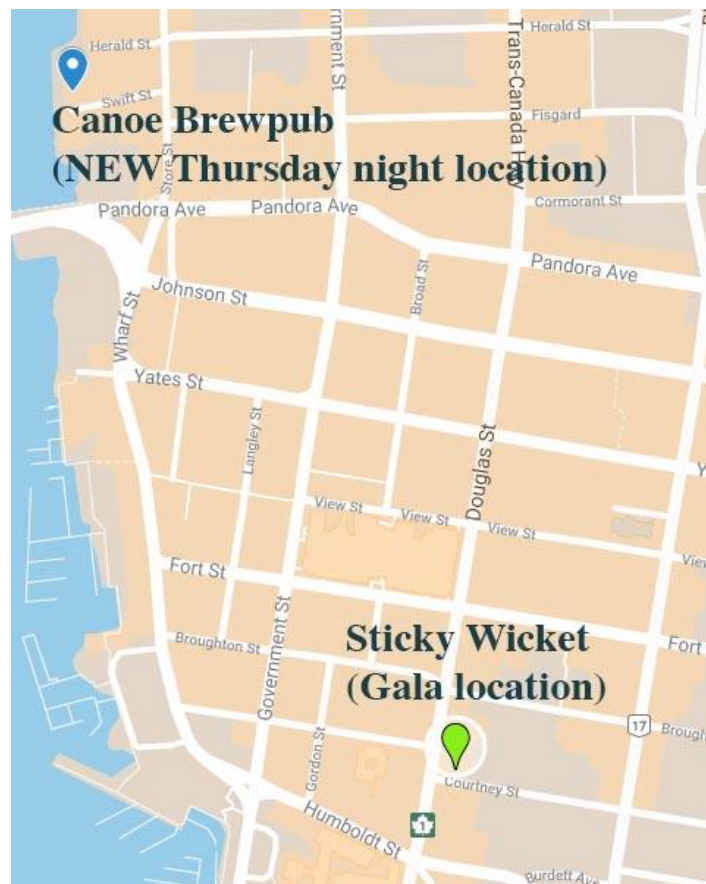
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|--|---|
| <p> <b>Bob Wright Centre</b></p>  | <p> <b>Student Union Building + Felicita's Pub</b></p>   |
| <p> <b>Parking Lots</b></p>   | <p><i>Food options such as wraps, salads, &amp; burgers in the SUB, as well as at the adjacent pub, Felicita's</i></p>  |
| <p> <b>Bibliocafe</b></p> <p><i>Coffee bar with grab-and-go food options (sandwiches, salads, pastries, etc.)</i></p>                                 | <p> <b>Grad House Restaurant</b></p> <p><i>A variety of food and local brews, with an adjacent coffee shop</i></p> |
| <p> <b>Mystic Market</b></p> <p><i>Food court with a variety of options including burgers, pizza, pasta, tacos, sushi, smoothies, &amp; more.</i></p> | <p> <b>Mac's Bistro</b></p> <p><i>A sandwich and salad bar, plus other grab-and-go options</i></p>                 |



**1** Bob Wright Centre

**2** Caddo Bay  
*Thai Lemongrass, Smugglers Cove Pub, Starbucks*

**3** Shelbourne Village  
*Pho-Ever, Noodlebox, Kuma Noodle Japan, Maude Hunter's Pub, 1550's Pub, & more*



## ABSTRACTS

### PAPER SESSION I: LAW & MEMORY (9:20-10:35)

#### **Layperson Beliefs About Forgetting**

Madison B. Harvey (Simon Fraser University), Heather L. Price (Thompson Rivers University), & Deborah A. Connolly (Simon Fraser University)

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If potential jurors misunderstand memory and forgetting mechanisms, they may have unrealistic expectations for witnesses' memory reports. We examined laypersons' forgetting expectations across various situations that differed in to-be-remembered event salience (low, medium, high) and event perspective (self, other). Results demonstrate that lay people believe medium and high salience events will be better remembered, but event perspective taken did not influence forgetting rate predictions. Implications will be discussed.

#### **Reported Confidence in Memory for Experienced Versus Fabricated Crimes**

Shelbie Anderson (Simon Fraser University), Madison B. Harvey (Simon Fraser University), Deborah A. Connolly (Simon Fraser University), & Heather L. Price (Thompson Rivers University)

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

Participants were asked to report both an experienced and fabricated crime and give ratings of confidence. New (less than 2 years) versus old (2 years or more) reports were compared. Reported confidence was higher for new crimes compared to old. Confidence for experienced crimes differed based on the age of the crime; this pattern was not seen with fabricated crimes. Future directions for memory research are discussed.

#### **Truthiness and Law: Photos Bias Credibility Judgements in Forensic Contexts**

Daniel G. Derksen (Simon Fraser University), Megan E. Giroux (Simon Fraser University), Deborah A. Connolly (Simon Fraser University), Eryn J. Newman (Australian National University), & Daniel M. Bernstein (Kwantlen Polytechnic University).

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

Related but non-probative information presented alongside true-or-false statements increases "true" responses—Truthiness. Participants rated the credibility of witnesses claiming to have seen a suspect commit a crime. Credibility ratings were higher for statements accompanied by a related, but non-probative photo even when additional non-probative contextual information was present. This demonstrates the potential for truthiness within legal contexts and adds to the literature on biases in legal decision-making.

#### **Children who Experience Repeated Abuse may be Disadvantaged in Court**

Patricia I. Coburn (Simon Fraser University), Dayna M. Woiwod (Simon Fraser University), Katia Siamer (Simon Fraser University), Lakshmi Nair (Simon Fraser University), Daniel M. Bernstein (Kwantlen Polytechnic University), A. George Alder (Simon Fraser University), & Deborah A. Connolly (Simon Fraser University)

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

Children (N = 220) participated in one (single-event) or five (repeated-event) magic shows. One week later, children were interviewed using best practice techniques. Repeated-event children were less consistent and accurate than single-event children. In Experiment 2,

undergraduates (N = 532) rated the video-taped interviews. Repeated-event children were rated as less credible than single-event children. Results suggest children who experience repeated abuse may be disadvantaged when testifying in court.

### **Recognition Memory and Personality: Some Curious Correlations**

Patrick J. Dubois (University of British Columbia)

[patrick.dubois@psych.ubc.ca](mailto:patrick.dubois@psych.ubc.ca)

In Personality Psychology, overclaiming (knowledge exaggeration) is typically associated with self-enhancement, e.g. narcissism. I explored the influence of recognition memory error and found it to be a better predictor of narcissism than overclaiming. Might memory tests indicate something about personality? Or vice versa?

## **PAPER SESSION II: ATTENTION & COGNITIVE CONTROL (10:45-11:45)**

### **Impulsivity modulates action restraint, but not cancellation, within response inhibition paradigms**

Marie-Anne Dussault Gomez (University of Victoria), Taryn Berman (Theoretical and Applied Neuroscience Laboratory), & Dr. Olav Krigolson (Theoretical and Applied Neuroscience Laboratory)

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

An aspect of impulsivity, response inhibition, was investigated utilizing the Stop Signal Response Task (SSRT) and Go/No-Go task. Specifically, whether impulsivity levels attenuated P300 amplitude and task performance was investigated in low and high impulsivity participants. Impulsivity was associated with the need to exert greater inhibitory control to successfully perform action restraint (i.e. Stop trials in the SSRT), but not action cancellation (i.e. No-Go trials in the Go/No-Go task).

### **Electrophysiological Basis for the Behavioural Consequences of Contingent Attention Capture**

Jennifer-Ashley Hoffmeister (Simon Fraser University) & Dr. John J. McDonald (Simon Fraser University)

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

In studies of contingent attention capture, participants respond to a target faster when it appears at the location of a recent cue (valid trials) than when it appears elsewhere (invalid trials). We recorded ERPs to investigate the underpinnings of this effect. The results demonstrate that participants attend to both the target and a cued nontarget on invalid trials and that processing of the cued nontarget can interfere with target processing.

### **Electrophysiological correlates of visual singleton detection**

Daniel Tay (Simon Fraser University), Victoria Harms (Simon Fraser University), Steven Hillyard (University of California San Diego), & John McDonald (Simon Fraser University)

[daniel\\_tay@sfu.ca](mailto:daniel_tay@sfu.ca)

In studies of contingent attention capture, participants respond to a target faster when it appears at the location of a recent cue (valid trials) than when it appears elsewhere (invalid trials). We recorded ERPs to investigate the underpinnings of this effect. The results demonstrate that participants attend to both the target and a cued nontarget on invalid trials and that processing of the cued nontarget can interfere with target processing.



### **Experience sampling reveals a relationship between mental imagery and temporal orientation during mind-wandering**

Yvette Graveline (University of British Columbia), Ela Bandari (University of British Columbia), & Kalina Christoff (University of British Columbia)

[yvette.graveline@psych.ubc.ca](mailto:yvette.graveline@psych.ubc.ca)

Theoretical work associates mind-wandering with spatially anchored imagery ('scene construction') oriented towards the past and future. Yet the relationship between scene construction and temporal orientation, in the case of mind-wandering, has been unexplored to date. We used experience sampling to collect and analyze self-reports along three dimensions: 1) free movement, 2) mental imagery, and 3) temporal orientation. Multi-level modeling results revealed that compared to self-reports with no mental imagery, reports with scene construction and inner speech had significantly greater degree of free movement ratings. Scene construction and inner speech were also significantly associated with past and future orientation. In contrast, a lack of mental imagery was associated with present orientation. The data show, for the first time, a direct relationship between mind-wandering, mental imagery, and thinking about the past and future.

## **SPEED TALK SESSION I (11:55-12:45)**

### **How does that make you feel?: Exploring the relationship between emotion and the scope of attention**

Anna Maslany (University of British Columbia) & Peter Graf (University of British Columbia)

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

The relationship between emotion and the scope of attention is not well understood. The purpose of our study was to determine if participants' exposure to a series of emotional pictures would impact their performance on a subsequent attentional scope measure (i.e., a letter flanker task). Results suggested that exposure to the emotional pictures impacted participants as expected, but the relationship between emotion and attentional scope was somewhat inconsistent with theory.

### **The role of anterior cingulate cortex in regulating effort during goal-directed behavior**

Sepideh Heydari (University of Victoria), Cora-Lynn Bell (University of Victoria), Josie Ryan (University of Victoria), & Clay Holroyd, (University of Victoria)

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

The anterior cingulate cortex regulates cognitive control when faced with effortful decision-making during goal-directed behavior. Results show that in conditions where pain is used, people demonstrate different behavioral strategies to manage pain relative to the conditions where they should manage monetary loss. We believe that the ACC evaluates the cost and benefit associated with each goal and applies fundamentally different mechanisms to overcome pain and monetary loss.

### **Dual-Process Theory: Electrophysiological Evidence of Intuitive and Analytical Decision Making Strategies**

F. van Oorschot (University of Victoria), C. Williams (University of Victoria), M.J. Mulder (University Utrecht), & O.E. Krigolson (University of Victoria)

[folkertvanoorschot@hotmail.com](mailto:folkertvanoorschot@hotmail.com)

The distinction between intuitive and analytical decision making has been widely investigated in behavioral research, yet neuro-imaging evidence has lagged behind. Therefore, we measured electroencephalography while participants completed base-rate word problems. Whereas analytically derived decisions elicited increased neural oscillations linked to cognitive control and working memory, intuitively derived decisions elicited oscillations reflective of disengaged attention and the reliance of long-term memory.

### **Physical activity and intra-individual variability in attentional processes**

G. Kyle Gooderham (University of British Columbia), Simon Ho (University of British Columbia), & Todd C. Handy (University of British Columbia)

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

Intra-individual variability (IIV) is a measure of cognitive stability that is sensitive to psycho-physiological changes. We examine the effect of physical activity (PA) on IIV in attentional performance. Reaction time was not predicted by PA on any measures. PA was not associated with IIV on two Flanker Tasks nor the SART however, was with the ANT. Stability in cognitive functioning might be an important way in which PA facilitates cognition.

## **POSTER SESSION I (2:15-3:45)**

### **1. Differences in brain function in subjective cognitive decline: An investigation using fMRI**

Ashleigh Parker (University of Victoria), Colette Smart (University of Victoria), & Jodie Gawryluk (University of Victoria)

[ashleighparker94@gmail.com](mailto:ashleighparker94@gmail.com)

The current study used fMRI to examine differences in resting state brain function between individuals with Subjective Cognitive Decline (SCD) and healthy controls (HC). Results revealed significantly greater activity in the DMN including the bilateral precuneus cortex, bilateral thalamus, and right hippocampal regions in individuals with SCD relative to controls. Conversely, healthy controls showed significantly greater activation in the left frontal pole and left paracingulate gyrus compared to individuals with SCD.

### **2. Comparing Age-Related fMRI Memory Data**

Heather Kwan (University of Victoria), Colette Smart (University of Victoria), & Jodie Gawryluk (University of Victoria)

[heatherkwan98@gmail.com](mailto:heatherkwan98@gmail.com)

During healthy aging, individuals experience changes in cognitive functions, including memory. The goal of the project was to review the literature that used functional magnetic resonance imaging to examine activation during memory tasks in older compared to younger adults. Findings revealed inconsistencies, some studies found greater and some studies found reduced fMRI activation during memory tasks in older adults. Possible factors that could explain these discrepant findings will be discussed.

### 3. Event Related Potentials in a Line Drawing Task

Alyssa Mousseau (University of Victoria) & Rob Trska (University of Victoria)

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Learning stems from differences in expected outcomes versus reality. In the present study, we apply reinforcement learning to a motor-specific task, in an expectancy driven fashion. Current literature posits that reward-driven processes are facilitated by mesolimbic dopaminergic signaling. This signal may be indexed through electroencephalography (EEG) via human event-related potentials (ERPs). Predominantly the reward positivity, an ERP, demonstrates this. Here we show a scaling of reward positivity to expectancy in a line-drawing task.

### 4. Default Mode Network Activity In Prodromal Alzheimer's Disease

Nicole Grant (University of Victoria), Jodie Gawryluk (University of Victoria), & Ashleigh Parker (University of Victoria)

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Alzheimer's Disease (AD) is a neurodegenerative disorder that is characterized by a decline in memory. Currently, there is no cure for AD, and disease modifying treatments for AD are minimal. Much recent research has focused on finding biomarkers for the early detection of AD, as intervention at this stage may be most effective. Subjective Cognitive Decline (SCD) and Mild Cognitive Impairment (MCI) have been proposed as stages of prodromal AD where pathological AD brain changes may be detectable before the clinical onset of AD. The default-mode network (DMN) is a brain network that is metabolically active when individuals are awake and engaged in no cognitive task, it shows diffuse graded decay in individuals with AD. Changes in DMN activity may be detectable prior to cortical atrophy, indicating that DMN activity may be an ideal biomarker for the early detection of AD. The current study used resting-state functional MRI data to compare DMN activity in individuals with SCD and MCI to investigate if DMN network activity differed between these populations and if DMN activity could be a viable biomarker for the earlier detection of AD. Data used in the current study was collected by the Alzheimer's Disease Neuroimaging Initiative. It was hypothesized that individuals with early MCI would have decreased DMN activity compared to individuals with SCD. The results of the current study showed no significant differences in DMN activity between these groups, indicating that these groups were at similar stages of disease progression. Future research will include comparisons of the early MCI group to healthy controls, late MCI, and AD.

### 5. Time spent on feedback influences learning and gaze

Katerina Dolguikh (Simon Fraser University), Jordan Barnes (Simon Fraser University), Tyrus Tracey (Simon Fraser University), Calvert Woodruff (Simon Fraser University), & Dr. Mark Blair (Simon Fraser University)

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How people process feedback during category learning is poorly understood. We manipulated feedback duration (1 vs 9 seconds) to test whether temporal factors influenced learning and attention allocation. In two experiments, participants in the 9sec condition learned faster and had longer gaze fixations. More time was spent looking at stimulus features than feedback signals, suggesting that memory for stimuli may have a complex interaction with category feedback in supervised learning.

6. **A Music Intervention for Improving Cognitive and Neural Function in Persons with Dementia**  
 Cole Tamburri (University of Victoria), Michaela Trites (University of Victoria), Debra Sheets (University of Victoria), Andre P. Smith (University of Victoria), & Stuart W.S. MacDonald (University of Victoria)

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Assessing driving behaviour requires objective quantitative measurement. It is often the case that studies interested in driving performance measure only a few variables such as standard deviation of lane position, frequency of steering reversals, or average headway. Here we describe and compare several of those variability measures before discussing them in terms of their real-world relevance.

7. **An Implicit Measure of Cognitive Focus: Evidence from an Oddball Paradigm**  
 Greg Gill (University of Victoria), Thomas Ferguson (University of Victoria), Stephen Luehr (University of Victoria), & Olave Krigolson (University of Victoria)

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Attention is often measured in EEG research using a component known as the P300. This component is generally accepted to reflect stimulus evaluation. Here, we tested participant's subconscious attention to their peripheral environment when they're focused on other tasks. By overlaying an auditory acuity task on top of the two primary tasks, we illustrated that humans are continuously moderating their peripheral environment.

8. **Turning Old Objects Into New Objects**  
 Taylor Cork (Simon Fraser University), Thomas M. Spalek (Simon Fraser University), Vincent Di Lollo (Simon Fraser University), & Lisa N. Jefferies (Griffith University)

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A novel visual phenomenon called rejuvenation effect causes an “old” object that has been on view for some time to acquire the properties of a suddenly-appearing “new” object. In the original demonstration, rejuvenation occurred when a transient stimulus preceded the target by about 100 milliseconds. In the present work we examine the rejuvenation effect as a function of the interval (0-800 ms) between the transient event and the target.

**The Effect of Encoding Time on the Holistic Face Processing Advantage for Own-Race Faces**

9. Xiaoyi Liu (University of Victoria), Kaitlyn Thomas (University of Victoria), Fiona Lojong (University of Victoria), & James Tanaka (University of Victoria)

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We investigated the minimal encoding time for holistic processing of own- and other-race faces, using a parts/whole paradigm where Caucasian and Asian faces were randomly presented for 17, 50, 100, or 250 ms. Face-part recognition was better in the whole face than in isolation, with no own-race effect for either group. Asian participants showed holistic processing for own-race eyes and other-race mouth, while Caucasian participants processed both race faces holistically.

10. **Faded memory: The effect of image contrast on face recognition**  
 Kevin McKillop (University of Lethbridge), John Vokey (University of Lethbridge), & Javid Sadr (University of Lethbridge)

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Vokey & Hockley (2012), using normal versus partially obscured faces, found that two separable factors can independently influence the hit rate and false-alarm rate in a recognition

task. In the current experiment, we assessed recognition performance (old versus new) for face images with reduced contrast, a familiarity-influencing stimulus manipulation. We find that reduction in image contrast increases both recognition hit and false-alarm rates.

**11. Anxiety and its Influence on the Detection of Masked Facial Emotions**

Graham Sasso (University of Victoria) & Noah Marvin (University of Victoria)

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We examined a possible relationship between trait anxiety and the perception of masked facial expressions. We hypothesized that there is a correlation between high trait anxiety and inaccuracy scores at perceiving emotional facial expressions that are masked. We found that high trait anxiety scores did not correlate with low-accuracy scores in detecting masked neutral expressions. Therefore, we examine the theoretical ramifications of this null result.

**12. Dose Monetary Incentive Influence Cheating Behaviour?**

Gurjot Singh Chhina (Kwantlen Polytechnic University) & Dr. Evandro Lopes (Kwantlen Polytechnic University)

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Cheating is a reoccurring, moral issue in academic contexts. Previous research implies that a monetary incentive is likely to incite cheating behaviours. Using a 2 (incentive present or incentive absent) X 2 (answers present or answers absent) factorial design, participants ( $N = 630$ ) completed a trivia test. We predicted receiving answers and the monetary incentive would result in amplified cheating behaviour. Findings revealed no significance between cheating behaviour and incentive.

**13. Examining How Children with and without ASD Extract Emotion from Prosody**

Nichole Scheerer (Simon Fraser University), Fakhri Shafai (University of Western Ontario), Ryan Stevenson (University of Western Ontario), & Grace Iarocci (Simon Fraser University)

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Individuals with Autism Spectrum Disorder (ASD) have difficulty perceiving and expressing emotions. Changes in prosody are used by speakers to convey emotion. An inability to perceive and interpret these prosodic changes may lead to impairments in social communication. This study used non-verbal affect bursts to determine whether children with ASD have difficulty extracting affect from changes in prosody, and whether this may be related to their social competence.

**14. Investigating the Relationship between Social Competence, Autism, and Restricted Interests in Children with and without ASD**

Troy Q. Boucher (Simon Fraser University), Nichole E. Scheerer (Simon Fraser University), & Grace Iarocci (Simon Fraser University)

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Children diagnosed with Autism Spectrum Disorder (ASD) have poorer social competence than children without ASD. These social challenges may be influenced by intense interest in objects, which interferes with opportunities for socialization. The objective is to identify whether the interference of the restricted interest in the child's everyday social environment and their diagnostic status (whether or not they have ASD) can predict social competence in children with and without ASD.

**15. Social Competence Predicts Autism Bias: Relationship Between Autism Spectrum Disorder Stigma and the MSCS**

Meaghan Stratford (Simon Fraser University), Troy Q. Boucher (Simon Fraser University), Nichole E. Scheerer (Simon Fraser University), & Grace Iarocci (Simon Fraser University)

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Research has shown that neurotypical individuals show stigma towards those diagnosed with Autism Spectrum Disorder (ASD), making it more difficult for these individuals to develop friendships in addition to the social difficulties they already face. In this study we measured ASD stigma and social competency to see if there was a relationship between social skills and bias towards individuals with ASD.

**16. Reducing Negative Bias Towards Autistic Adults: Efficacy of an Educational Intervention for High School Students**

Vivian Ly (Simon Fraser University), Nichole E. Scheerer (Simon Fraser University), Troy Q. Boucher (Simon Fraser University), & Grace Iarocci (Simon Fraser University)

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The social challenges faced by autistic people are relational in nature and arise in part from others' perceptions and judgments. Previous research has identified an implicit bias against individuals diagnosed with autism during brief first impressions, which may be influenced by a lack of knowledge and understanding about autism. We developed an educational intervention targeted at reducing negative initial perceptions by increasing knowledge about autism in 118 high school students.

**17. Perceptions of E-Mental Health Services: Barriers and Benefits to Seeking Alternative Mental Health Delivery Interventions**

Alexandrea Franzius (University of the Fraser Valley)

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E-mental health has support in terms of effectiveness, but public perceptions have remained negative. This project uses a mixed methodology approach to explore perceptions of e-mental health interventions by addressing perceptions, likelihood of future use, and perceived effectiveness of services for individuals and for hypothetical others. This study utilizes attitudes, gender and personality theory. Preliminary findings suggest that participants make decisions around e-mental health differently for themselves than for others.

**18. Is Holistic Gist Selective to Faces vs Non face objects?**

Stefanie Papasoff (Visual Cognition Lab), Jacqueline Carhoun (University of Victoria), James Tanaka (University of Victoria), Alison Campbell (University of Victoria), & Xiaoyi Liu (University of Victoria)

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In exposure times of less than 250 ms, faces are better recognized as wholes than as parts, a term referred to as holistic gist. Is holistic gist is selective to faces? In our study, participants were rapidly shown house and face stimuli. Whereas faces were better recognized as wholes than parts, no differences were found between whole and part recognition of houses suggesting that holistic gist is special to faces.

**19. Can talking to myself help me win? The impact of two dimensions of self-talk on video game performance.**

Brandon J. Justus (Kwantlen Polytechnic University) & Shayna Rusticus (Kwantlen Polytechnic University)

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While self-talk has been shown to improve sports performance, no research has examined its impact on sports-related video game performance. Using a sample of 81 students (72% females), we investigated the impact of two dimensions of self-talk – valence (positive/negative) and function (motivational/instructional) on video game performance. A 3 (positive/negative/control) x 2 (motivational/instructional) mixed factorial ANOVA indicated that these self-talk dimensions did not impact performance.

**20. Longitudinal Changes in White Matter Microstructure in Healthy Aging**

Abu-Bakar Sheriff (University of Victoria), Lisa Ohlhauser (University of Victoria), & Dr. Jodie Gawryluk (University of Victoria)

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This current study hoped to develop a trajectory of healthy aging. Using DTI data collected from the ADNI database, white matter microstructure was compared for scans collected at least four years apart for twenty-five cognitively normal participants. This study revealed a significant increase in the body of the corpus callosum, left longitudinal fasciculus, and left corticospinal tract. Further research is necessary to corroborate the findings of this study.

## PAPER SESSION III: LEARNING AND DECISION-MAKING (3:45-4:45)

**Predicting Post-Acquisition Performance as a Function of Individual Differences in Rate of Visual Learning**

Michaela Trites (University of Victoria), Jose Barrios (University of Victoria), Buyun Xu (University of Victoria), Jim Tanaka (University of Victoria), & Stuart MacDonald (University of Victoria)

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Both rate of learning and forgetting vary between individuals. Visual categorization performance can be predicted using individual acquisition slopes (accuracy, motor and decision time) indexed during initial learning. Participants (n=113) learned four species of birds on a mobile application, with post-acquisition sessions completed over three subsequent days. Participants with steeper initial learning slopes for decision time and accuracy were more accurate in post-acquisition trials.

**Cheating on tests is unrelated to performance predictions about future tests**

Dawn-Leah L. McDonald (Kwantlen Polytechnic University), Zach Hamzagic (Kwantlen Polytechnic University), Eric Y. Mah (University of Victoria), Monika Undorf (University of Mannheim), Maryanne Garry (University of Waikato), & Daniel M. Bernstein (Kwantlen Polytechnic University)

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In this study, university students (N = 214) cheated on trivia tests when given the opportunity and incentive. Contrary to prior work, students did not inflate their predicted performance on a subsequent test in which cheating was not possible. Instead, item- and test-level predictions were underconfident or accurate. These results do not support the idea that cheating biases the accuracy of monitoring.



**Portable EEG Measurement of Clinical Decision Making**

Mathew Hammerstrom (University of Victoria), Chad C. Williams (University of Victoria), Jordan Middleton (University of Victoria), Olav E. Krigolson (University of Victoria)  
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Williams and colleagues (2019) found that intuitive decisions increased alpha and decreased theta while the opposite was true for analytical judgments. Here, we sought to determine whether these systems are employed in a medical context and whether portable EEG can be used as an assessment technique. Findings replicated those of the Williams study, indicating that these strategies can be used in clinical decision making and that they can be measured portably.

**What would you do: Sunk-cost effect in moral dilemmas**

Zach Hamzagic (Kwantlen Polytechnic University), Daniel G. Derksen (Simon Fraser University), Kyle Matsuba (Kwantlen Polytechnic University), & Daniel M. Bernstein (Kwantlen Polytechnic University)  
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The sunk-cost effect (SCE) is the tendency to continue an unsuccessful activity after devoting resources to it. We examined the SCE in moral and non-moral dilemmas. People were more likely to continue an activity when sunk-costs were high, and less likely to continue when moral dilemmas were present. Further, participants showed SCE's whether they took their own or another's perspective. We provide further evidence of the robustness of the SCE.

## KEYNOTE ADDRESS

### Memory Reconstruction Does not Necessitate Memory Distortion: Learning to Evaluate Our Subjective States

Dr. Ayanna Thomas (Tufts University)  
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Rather than reproductive, research has consistently demonstrated that episodic memory is reconstructive in nature. Our experience of remembering episodic events seems to contribute to a cohesive and integrated narrative of our past; however, the cohesion is illusory. Recollection involves the recombination of different pieces of our past experiences. These experiences, like puzzle pieces from different boxes, may be recombined correctly or incorrectly. Some pieces may be lost, eroded, or become in some other way, unavailable. Yet, when we recollect the past, we are evaluating this reconstructive process. We may monitor the ease with which information comes to mind. We may monitor the salience of specific attributes of a memory. We may consider how our internal states may have affected the quality of our reconstructed memories. And, ultimately, we decide whether these retrieved memories are accurate or inaccurate. This evaluative process is metacognition, and failures in metacognitive processes contribute to memory reconstruction errors. We may misattribute feelings of familiarity, we may incorrectly evaluate the qualities of memories, or we may fail to exercise control over memory output. Frequently, however, the fallible nature of memory is predictable, and may be minimized, or at least, recognized by the individual. Metacognitive processes are central to understanding memory retrieval successes and failures. What researchers have considered as evidence for the unreliable nature of memory (e.g., memory distortion, misinformation susceptibility, and even false memory creation), may be due to a failing of metacognitive processes. Therefore, metacognitive monitoring and control processes may serve as the foundation for avoiding the pitfalls of the reconstructive process. Memory is reconstructive. However, knowing this tenet gives us some control over retrieval. Reconstruction does not always need to result in distortion.



## PAPER SESSION IV: ACTION & PERCEPTION (9:30–10:30)

### Effects of Working Memory Load on Action Planning

Emma Ullrich (University of Victoria), Dr. Michael E. J. Masson (University of Victoria), & Dr. Daniel N. Bub, University of Victoria

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When judging the orientation (upright or inverted) of a whole object-centered frying pan, participants demonstrate an alignment effect for reach-and-grasp responses, but a reverse alignment effect for keypress responses to the handle. Freeman, Itthipuripat, and Aron (2016) claim there is a relationship between working memory and motor planning, where high working memory load inhibits action planning. We aim to disprove this claim by replicating our results under different memory loads.

### Holistic Perception of Faces in 17 milliseconds: Evidence from 3 experiments

Xiaoyi Liu (Different Minds Lab, University of Victoria) & James W. Tanaka (University of Victoria)

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We investigated the minimal encoding time for holistic face perception. When faces were flashed for 17, 50, 250, 500 ms, recognition of face parts was better in the whole face than in isolation for upright (Experiment 1), but not inverted faces (Experiment 2). In the composite paradigm, brief presentations produced holistic facilitation and interference (Experiment 3). Hence, presentations as brief as 17 ms are sufficient to elicit holistic face perception.

### Representations automatically evoked by a depicted hand

Morgan Teskey (University of Victoria), Daniel N. Bub (University of Victoria), & Michael E. J. Masson (University of Victoria)

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We investigated the nature of representations generated automatically by a depicted hand. Results from a series of Simon-like experiments showed that response times were reduced due to the left/right correspondence between an egocentrically presented task-irrelevant hand prime and the responding hand. This effect persisted even when the spatial location of the response was incongruent with the response hand. This result suggests that hand images generate lateralized, limb-specific, motor codes.

### How spatially specific is the reentrant information in common-onset masking?

Bertrand Sager (Simon Fraser University), Vincent Di Lollo (Simon Fraser University), & Thomas M. Spalek (Simon Fraser University)

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A briefly-displayed target surrounded by 4 dots is identified easily if the dots terminate with the target, but not if the dots persist. This Common-Onset Masking is hypothesized to occur because of a mismatch between a reentrant perceptual hypothesis and ongoing activity in the visual cortex. Does the perceptual hypothesis include the entire display or just the area immediately surrounding the target? We found evidence for the latter.

## PAPER SESSION V: BIAS (10:40-11:40)

### **Investigating Theory-of-Mind Errors in the Sandbox Task**

Angela Giesbrecht (Kwantlen Polytechnic University), Daniel Derksen (Simon Fraser University), Devinder Khara (Kwantlen Polytechnic University), & Daniel M. Bernstein (Kwantlen Polytechnic University)

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Adults understand others' mental states (Theory of Mind), but their private knowledge can hinder this ability. In three experiments (N= 228), participants indicated where a character with a false or true belief about an object's location would search for it. Participants indicated that characters with a false or true belief would search for an object at incorrect response locations. We argue that high cognitive load increases errors in the sandbox task.

### **Are IAT Effects an artifact of design? Testing the impact of a rest period before reversing response assignments on the IAT**

Michael McCarthy (University of the Fraser Valley), David Hughes (University of the Fraser Valley), & Sven Van de Wetering (University of the Fraser Valley)

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Despite its popular use in academia, business, and politics, the Implicit Association Test (IAT; Greenwald et al., 1998) continues to suffer from a number of fundamental issues that give challenge to the test's empirical value. The present research manipulated the difficulty of the IAT by introducing a rest period between the test's congruent and incongruent blocks, in order to identify how the IAT's design influences a test-taker's performance.

### **Hypothesis Generation and Confirmation Bias in Social Interaction**

Flora Oswald (Penn State University), Mikaela Bates (University of the Fraser Valley), Kara DeWinter (University of the Fraser Valley), Jonathan Janzen (University of Victoria), & Sven van de Wetering (University of the Fraser Valley)

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Snyder and Swann (1978) demonstrated that individuals systematically adopt confirmatory strategies and preferentially search for evidence that confirms existing beliefs. We suspect that Snyder and Swann's results are an artifact of their methodology. In the present experiment, we replicated Snyder and Swann's work, but had participants generate their own hypothesis testing questions instead of selecting questions from an existing list. Results did not replicate those of the original study.

### **"Blind" faith in experts? A systematic review of the effects of expertise and experience on inattentional blindness**

Hayley Cullen (University of Sydney), Helen Paterson (University of Sydney), & Celine van Golde (University of Sydney)

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Individuals put faith in experts to notice unexpected events that fall within their area of expertise. However, it is unclear whether experts or those with greater experience will be less susceptible to experiencing inattentional blindness (IB) compared to novice or less experienced counterparts, and the factors that may influence this. A systematic review investigating the effects of expertise and experience on IB will be discussed, along with future research directions.

## SPEED TALK SESSION II (11:50-12:30)

### Exploring the limits of materials-based bias differences in recognition memory

Kaitlyn Fallow (University of Victoria) & D. Stephen Lindsay (University of Victoria)

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Snodgrass and Vanderwart's set of pictures and corresponding verbal labels has been used to study materials-based memory differences for almost 40 years. Although the pictures are better recalled and recognized under a wide range of conditions, it is unclear whether there is any consistent pattern for recognition memory response bias. We explored this question using a procedure that reliably produces materials-based bias differences with other picture and word stimuli.

### Using frequency-tagging and EEG to isolate responses to personally familiar faces

Alison Campbell (University of Victoria) & James Tanaka (University of Victoria)

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It is well established that familiar faces are processed more efficiently than unfamiliar faces. We isolated effects of personal familiarity by recording electrophysiological signals while presenting participants with images of a familiar (friend, own) or unfamiliar (stranger) face at a fixed frequency (0.86Hz). Responses at that exact frequency were stronger for personally familiar compared to unfamiliar faces and in regions beyond the core occipito-temporal face processing areas.

### Memory for Emotional Picture Pairs: Sex Differences in Episodic Memory

Nada Alaifan (University of British Columbia) & Peter Graf (University of British Columbia)

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A study with 142 participants (73 females) investigated the claim that females' memory for emotional events is better than males'. Participants viewed pairs of negative, neutral, or positive pictures. On a subsequent associative recognition test, they decided whether the same two pictures were paired earlier in the experiment (Yes/No). Recognition hits and correct rejections showed sex differences, and performance was lower on the negative pairs than the neutral pairs.

### Does the mere presence of a smartphone influence performance on cognitive tasks? It depends.

Paris Will (University of British Columbia), Alessandra DiGiacomo (University of British Columbia), & Alan Kingstone (University of British Columbia)

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That technology has reshaped our daily lives is undisputed, however, there is uncertainty around how our cognitive abilities may be affected. While there exists a lot of fear around this topic, the empirical evidence is currently lacking. This current study attempts to clarify the relationship of phone presence on cognition, first by replicating previous results, and second by investigating whether amount of technology use may be a moderating factor.

## POSTER SESSION II (12:45-2:15)

### 1. If Nazi = Red, and Canadian = Red, does Red = Good or Bad? Testing the limits of implicit attitude change using the IAT

Michael McCarthy (University of the Fraser Valley)

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The present experiment tested the effects of indirect implicit attitude change on performance on the Implicit Association Test (IAT; Greenwald et al., 1998). The IAT is a subjective, indirect attitude measure widely used for business, research, and political purposes despite its unestablished construct validity and questionable reliability; thus, there is a growing need for research that identifies the cognitive mechanisms underlying IAT performance in order to assess its empirical value.

### 2. Eye-tracking Areas of Interest in the Movie for the Assessment of Social Cognition

Amanda Vella Tabert (Kwantlen Polytechnic University), Kristen Zeller (Kwantlen Polytechnic University), Kevin Smith (University of Ottawa), Jon Lau (Kwantlen Polytechnic University), Jaime Christiaanse (Kwantlen Polytechnic University), Jim Tanaka (University of Victoria), & Daniel M. Bernstein, PhD (Kwantlen Polytechnic University).

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The Movie for the Assessment of Social Cognition (MASC) is a live-action film used to assess theory of mind across a variety of demographics. Using eye-tracking technology, two areas of interest (AOI) were programmed for current and future use: different regions (face, body, background) and facial expressions (positive, negative, neutral). This specific set of programmed AOI will ease data analysis in future MASC-based ToM research.

### 3. Social factors do not affect audiovisual integration in spatial and temporal tasks

Jane J. Kim (University of British Columbia), Basil Wahn (University of British Columbia), Jill Dosso (University of British Columbia), & Alan Kingstone (University of British Columbia)

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Humans constantly receive input from multiple sensory modalities. Through multisensory integration, this input is often combined into a unitary percept. In the present study, we tested whether audiovisual integration is affected by social factors (i.e., performing a task jointly or in the presence of another person) in a motion discrimination task and a temporal order judgement task. We find that audiovisual integration is not affected by social factors.

### 4. What makes a pretty poster? Empirically testing conference poster guidelines

Natasha Pestonji-Dixon (University of British Columbia), Thu (Rosie) Tran (University of British Columbia), & Peter Graf (University of British Columbia)

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Posters are the most common presentation method, yet available guidelines for designing effective posters lack empirical support. To investigate which visual poster dimensions are critical for conference attendees, undergraduate student participants rated posters on a number of dimensions, including colour, text-ratio, and overall appeal. Analyses revealed that posters with complimentary colours and less text were perceived as more appealing and approachable.

- 5. Crime Blindness and Eyewitness Suggestibility: The Role of Attention Focus in the Adoption of Misinformation**  
 Soha Pourpirali (Western Washington University), Rochelle A. Robinson (Western Washington University), Danielle Grgetich (Western Washington University), Klara Engel (Western Washington University), Anthony Barrios (Western Washington University), & Ira E. Hyman Jr. (Western Washington University)

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Eyewitnesses do not constantly watch for crimes. In this study, participants watched a complex theft video in one of three attention conditions. Participants then read a post-event narrative containing true and misleading information. Following a delay, participants completed a culprit identification test and a source monitoring test. We found that attention focus influenced correct culprit identifications and erroneous identifications of an innocent bystander, but not the degree of misinformation adoption.

- 6. Understanding language comprehension, manual rotation, and the action sentence compatibility effect**  
 Kris Svendsen (University of Victoria) & Dr. Daniel Bub (University of Victoria)

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Much of the evidence for the embodied theory of cognition relies on the action sentence compatibility effect (ACE). However, the experiments surrounding the ACE have been plagued with replication failures and conflicting results. This study attempts to rectify the apparently conflicting results of two experiments related to the ACE. Results of both studies were successfully reproduced and an alternative explanation proposed to explain the effects observed in these experiments.

- 7. Athletic Advantage on Executive Functioning Present in Working Memory, but not in Inhibition**

Amanda M. Webber (University of Victoria), Iris Gordon (University of Victoria) & Mauricio Garcia-Barrera (University of Victoria)

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The relationship between motor training and cognitive performance within competitive sports may impact athletes' executive functions. Cognitive tests of inhibition and working memory (WM) were compared between varsity athletes with and without a history of concussions, and sedentary controls. The athletic groups significantly outperformed sedentary controls in a measure of WM (N-Back;  $p < 0.05$ ). Inhibition and WM were not significantly correlated, suggesting that benefits are differential and not unitary.

- 8. Attitudes towards concussion reporting among adolescent athletes**

Sané du Plessis (University of Victoria) & Dr. Mauricio Garcia-Barrera (University of Victoria)

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The current study examined factors that contribute towards concussion reporting behaviours among adolescent soccer players. The Rosenbaum Concussion Attitude and Knowledge Survey was used to measure attitudes towards concussion reporting and knowledge about concussions. Competitiveness levels were also assessed with the Sport Orientation Questionnaire. An interaction between attitudes towards concussions and competitiveness levels in sports was the strongest predictor of intention to report future concussions.

**9. Driving While Distracted: The Impact of Inattentive Blindness and Attention Capture in a Traffic Accident Scenario**

Ellen Carroll (Western Washington University), Macey Crooks (Western Washington University), Tess Schorn (Western Washington University), Klara Engel (Western Washington University), Anthony Barrios (Western Washington University), Danielle Grgetich (Western Washington University), Soha Pourpirali (Western Washington University), & Ira E. Hyman, Jr. (Western Washington University)

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People often experience inattentive blindness, failing to notice obvious events when their attention is focused elsewhere. Although traffic accidents are common, most people are not watching for accidents to occur. Participants watched a video including an accident under one of three different attention conditions. We examined whether participants experienced inattentive blindness or attention capture for the accident. We also investigated their ability to recall accurate details concerning the accident cause.

**10. Legal Knowledge Promotes Critical Evaluation of Criminal Evidence**

Megan E. Giroux (Simon Fraser University), Patricia I. Coburn (Simon Fraser University), Daniel M. Bernstein (Kwantlen Polytechnic University), & Deborah A. Connolly (Simon Fraser University)

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Participants read a criminal case in which the accused was charged with killing his parents. Participants' knowledge of false confessions, confirmation bias, and the Innocence Project was associated with more critical evaluation of evidence in the case, such as the accused's credibility and guilt, and their evaluation of ambiguous fingerprint evidence. This suggests that jurors' knowledge of legal issues may promote critical evaluation of criminal evidence.

**11. Impacts of judgment strategy on eyewitness false identification rates**

Haley Hay (University of Victoria), Eden Miller (University of Victoria), Eric Y. Mah (University of Victoria), Mario J. Baldassari (University of Victoria), & D. Stephen Lindsay (University of Victoria)

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Eyewitnesses judging lineups can adopt a relative strategy (compare among lineup members) or an absolute strategy (compare lineup members only to memory). Relative strategies are thought to lead to higher false identification rates, but there have been no direct tests comparing strategies. Three experiments (N = 501) showed no strategy-based performance differences, but a fourth experiment (N = 207) with a stronger strategy manipulation showed that relative strategy use reduced false identifications.

**12. The Impact of Mild Traumatic Brain Injury (mTBI) on Decision-Making Tasks in Healthy Older Adults**

Devinder S. Khera (Kwantlen Polytechnic University), Manmeet K. Chhina (Kwantlen Polytechnic University), Kirandeep K. Dogra (Kwantlen Polytechnic University), Gurjot S. Chhina (Kwantlen Polytechnic University), & Daniel M. Bernstein (Kwantlen Polytechnic University).

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Healthy older adults with mTBI suffer deficits in their decision-making. Research suggests cognitive load negatively affects decision-making in people with mTBI. Using a 2 (load: high vs low) by 2 (group: mTBI and control) design, we analysed two decision-making tasks – Sunk Cost Fallacy (low) and Cups (high). Findings indicate no differences between older adults (N = 125, ages 56 - 89) with and without mTBI on either low or high-load decision-making.

**13. Effects of Diet on Cognition in Young Adults**

Caitlin Chevrier (University of British Columbia), Brenna Han (Western University), Jasmeen Dosanjh (University of British Columbia), Geoffrey Gooderham (University of British Columbia), & Todd Handy (University of British Columbia)

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The present study examines the relationship between diet, eating patterns, body mass index (BMI) and cognitive performance. We demonstrate that attentional and working memory processes are related to macronutrient consumption prior to cognitive assessment. With protein consumption, in particular, having an affect on orienting times. These results are consistent with prior research on the impact of diet and BMI on cognitive performance.

**14. The Effect of Imagined Intergroup Contact and Need for Closure on Attitudes Towards Bisexuality**

Julia Toews (University of the Fraser Valley)

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Bisexual individuals face more negative mental health outcomes compared to both homosexual and heterosexual populations. However, there is little experimental research concerned with the reduction of binegativity. 134 participants were recruited from the University of the Fraser Valley. Participants read a vignette, completed two questionnaires and a demographic survey. Mean tolerance scores differed significantly ( $p = .039$ ), while mean stability scores did not ( $p = .971$ ). Implications of these results are discussed.

**15. To Pump a Balloon: How Impulsivity Impacts Context Updating in a Risky Environment**

Christopher Freitag (University of Victoria), Taryn Berman (University of Victoria), Clay Holroyd (University of Victoria), & Olav Krigolson (University of Victoria)

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Impulsivity, a personality trait that effects risk valuation and decision-making, influences risky behaviour in gambling and addiction (Adams & Moore, 2007). Here, we examined the impact of impulsivity on high-risk decision-making using the Balloon Analogue Risk Task, while electroencephalography was recorded. We observed P300 amplitude difference between high and low risk losses in the low, but not high, impulsivity group. This suggests a negative association between impulsivity and context updating.

**16. Sunk-cost effect from 3 to 97 years of age**

Zach Hamzagic (Kwantlen Polytechnic University), Eric Y. Mah (University of Victoria), Daniel G. Derksen (Simon Fraser University), & Daniel M. Bernstein (Kwantlen Polytechnic University)

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The sunk-cost effect (SCE) is the tendency to continue an unsuccessful activity after devoting resources to it. In two cross-sectional studies ( $N = 774$ ), we found that the SCE is not present in childhood, emerges in late adolescence and increases into older adulthood. This pattern was consistent across different SCE vignettes and runs counter to prior research showing higher SCE in children and lower SCE in older adults.

**17. A proposed diagnostic tool for measuring the relationship between autism identity acceptance and optimal brain functioning.**

Joseph Sheppard (University of Victoria)

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This research proposes a diagnostic tool to measure the relationship between autism identity acceptance and its impacts on optimal cognitive and metacognitive brain functioning in persons diagnosed with autism. Autism identity acceptance was measured using Multidimensional Scaling (MDS) to compute word-space as a measure of an identity's centrality. Findings were consistent with the view that brain system integration relative to wellbeing is related to how an autism label is connoted.



**18. The Role of Metarepresentation in Preschoolers' Theory of Mind Development**

Kirsten Quistberg (University of Victoria) & Ulrich Mueller (University of Victoria)

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The role of metarepresentation in theory-of-mind development is hotly debated. Some researchers suggest domain-general mechanism in processing of both mental and non-mental representations; whereas, other researchers suggest a domain-specific mechanism. One-hundred and four preschool children participated. Bayesian regression analyses supported the null hypothesis of no effect of alternative naming, false sign, and conflict inhibition in predicting theory-of-mind task performance. Preliminary evidence was found for a domain-specific mechanisms in theory-of-mind.

**19. Examining physical activity mode and intensity on cognitive functioning in young adults** Jasmine Dosanjh (University of British Columbia), Caitlin Chevrier (University of British Columbia), G. Kyle Gooderham (University of British Columbia), & Todd C. Handy (University of British Columbia)

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In this study, we examine the effect of physical activity (PA) on cognitive functioning in young adults while accounting for covariates known to moderate this relationship. We demonstrate that PA modes and intensities differentially effected cognitive processes, such that particular combinations benefitted cognitive processes selectively. Results suggest that PA is predictive of cognitive performance on attentional tasks, but not on working memory in young adults.

**20.Changes in Neural Responses as a Result of Real-World Familiarization: How the Brain Changes as a Stranger Becomes a Friend**

Amy VanWell (University of Victoria), Lauren Kean (University of Victoria), Rebecca Frangos (University of Victoria), James Tanaka (University of Victoria), & Alison Campbell (University of Victoria)

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This experiment studied how neural responses change as a strangers' face becomes personally familiar. Using simultaneous EEG and fast periodic visual stimulation, responses to faces were measured before and after a 10-week familiarization period. In the stimulation sequence, every 7th image (0.86Hz) shown was either partner, own, or stranger identity. This frequency was isolated for identity-specific responses. Overall, there was an increased neural response to partner faces after 10 weeks.

**21.Seeing the individual: Rethinking data visualization within electroencephalography studies**

Mikaela S. Chia (Centre for Biomedical Research, University of Victoria), Cameron D. Hassall (Centre for Biomedical Research, University of Victoria), & Olave E. Krigolson (Centre for Biomedical Research, University of Victoria)

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Traditional neuroimaging focuses on average neural responses, obscuring individual variability and inadvertently masking information. Here, we explored novel methods for visualizing electroencephalography data using probability density estimates and measures of individual variability (e.g., confidence intervals). We tested these techniques using an existing feedback learning data set ( $n > 150$ ). Our results suggest that alternative visualization techniques can highlight or even reveal differences in underlying cognitive processes.



## PAPER SESSION VI: CLINICAL AND DEVELOPMENTAL (2:15-3:00)

### Using EEG to Assess the Impact of Concussions on N200, P300, and Reward Positivity ERP Waveforms

Evan Carey (University of Victoria - Theoretical and Applied Neuroscience Laboratory), Cameron Hassal (University of Victoria - Theoretical and Applied Neuroscience Laboratory), & Olave Krigolson (University of Victoria - Theoretical and Applied Neuroscience Laboratory)

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The purpose of this study was to utilize encephalography (EEG), and more specifically the event related potential technique (ERP) to evaluate the cognitive function of those with a concussion by completion of a passive oddball and reward positivity task. I expected that the N200, P300, and reward positivity (RewP) ERP components would be affected in both decreased amplitude and increased latency.

### Preliminary evidence of exogenous attention orienting from unresponsive palliative patients.

Elizabeth Blundon (University of British Columbia) & Dr. Lawrence Ward (University of British Columbia)

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I will present preliminary electrophysiological evidence of exogenous attention orienting toward highly salient novel stimuli from unresponsive palliative care patients. Eight patients were recorded when they were responsive, five when they were unresponsive. Among responsive patients I found evidence of P3a responses to salient auditory oddballs, and P3b responses to auditory pattern changes. Among unresponsive patients I only found P3a responses to oddballs. Implications for consciousness assessment are discussed.

### Performance-based and parent rating measures of executive function in preschoolers

Amie Y. Kim (University of Victoria) & Ulrich Müller (University of Victoria)

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Executive function (EF) refers to higher-order processes involved in the conscious control of cognition, emotion, and behavior. There are two major types of EF measures: performance-based (PB) and rating measures. The current study examines the differences between PB and rating measures in terms of both inter- and inter-individual differences, as well as whether preschoolers' EF levels, assessed by these two types of measures, change together over time.