Centre for Gambling Research at UBC - Progress Report, June 2021

Centre for Gambling Research core personnel:

Dr Luke Clark, Director, Professor

Gabriel Brooks, Graduate Student (PhD5, 2016 - present)

Mario Ferrari, Graduate Student (PhD4, 2015 - present)

Xiaolei Deng, Graduate Student (PhD4, 2018 - present)

Ke Zhang, Graduate Student (PhD3, 2016 - present)

Fiza Arshad, Graduate Student (with C Winstanley, PhD2, 2019 - present)

Lucas Palmer, Graduate Student (MA1, 2020 - present)

Alumni:

Stephanie Chu, Masters student (2014-2016). Current position: MA in Occupational Therapy, U Toronto.

Caylee-Britt Goshko, Research Assistant (2015). Current position: BA in Medicine, U Sydney.

Kent Macdonald, Research Assistant (2017). Current position: Data Management Engineer, Visier Inc, Vancouver.

Dr Tilman Lesch, visiting post-doctoral fellow (2015). Current position: Data Scientist, Deloitte Berlin.

Dawn Kennedy, Research Assistant (2015 – 2018). Current position: graduate student, UBC Department of Education.

Stephanie Finkenwirth, Research Assistant (2019 - 2020). Current position: Data Scientist, Visier Inc, Vancouver.

Dr. Spencer Murch, Graduate Student (2014-2020). Current position: Post-doctoral Researcher at Concordia U.

Dr. Eve Limbrick-Oldfield, Post-doctoral Research Associate (2015 – 2021). Current position Research Scientist at RainCity Analytics, Vancouver.

Dr Mariya Cherkasova (2015 – 2020), now Assistant Professor at West Virginia University & Rockefeller Neuroscience Institute.

Visiting Researchers and Undergraduate Assistants:

Eliscia Sinclair, Quinn Research Assistantship Award recipient, 'Understanding 'breaking even' in gambling behaviour', May 2021 - present.

Dimitrios Avramidis, UBC Directed Studies student, 'Preliminary characterization of slot machine streaming on Twitch', May 2021 - present.

Andrew Li, UBC volunteer research assistant, 'Neighborhood socioeconomic status and rollover effects in the Ontario lottery', Jan 2020 - present.

Osa Hawthorne, UBC Directed Studies student, 'Disordered gambling and its relationship to financial traders: an online survey', Jan 2020 - present.

Kaycee Realina, UBC Psychology Honours project, 'Transfer Effects in Humans: The Replicability of Pavlovian-to-Instrumental Transfer Procedures Using Aversive Stimuli', Sept 2020 – April 2021.

Dong Wook (Andy) Kim, NSERC University Summer Research Award (USRA) recipient, 'The use of pupillometry to assess reward value in slot machine gambling', May 2020 - present.

Sophie Harvey, Research Assistant (Reed College), 'Mental accounting and risk taking: effects of a trial-by-trial balance information', Jan 2019 to present.

Ryan Picardo, UBC Cogs 402 project student, 'Predatory practices and design in the video gaming industry', April – August 2020.

Benjamin Sidloski, UBC Directed Studies student, 'Do Video Gamers Misclassify Loot-Boxes as Gambling?: Exploring the Association Between Loot Boxes and Problem Gambling', Sept – December 2020.

Nomin Purevjav, UBC Cogs 402 project student, 'Slot Machines with and without Progressive Jackpots: Differences in Online Gambling Behavior on the Playnow.com Platform', Jan - April 2020.

Gabi Lardner, UBC Cogs 402 project student, 'Detection of physiological arousal during slot machine gambling', Jan - April 2020.

Alex Lenardon, UBC Directed Studies Student, 'Sensory Feedback and Immersion in Electronic Gaming Machines', Sept 2019 – April 2020.

Kiyan Abhari, UBC Cogs 402 project student, 'Assessing gender difference in immersion on Electronic Gaming Machines',

- July December 2019.
- Braedon Ballance UBC Psychology Honours project, 'Examining the Interactive Effects of Impulsivity and Stress on Slot-machine Betting Behaviour', Sept 2019 April 2020.
- Subah Sehgal, UBC Psychology Honours project, 'Gambling behaviours and creativity in Bipolar Disorder', Sept 2019 Apr 2020.
- lan Chen, UBC Cogs 402 project student, 'Bipolar Traits and Effort Discounting', May August 2019.
- Jasper Wang, UBC Directed Studies Student, 'The effect of balance feedback on risky decision-making', Jan August 2019.
- Balreet Dhatt, UBC Cogs 402 project student, 'Sensory Feedback and Immersion in Electronic Gaming Machines', May August 2019.
- Samara Al-Omaishi, UBC volunteer research assistant, 'Sensory Feedback and Immersion in Electronic Gaming Machines', May to August 2019.
- Rahul Singh, UBC Cogs 402 project student, 'Measuring habit formation in slot machine gambling', May 2018 to [month] 2019.
- Alex Kuo, UBC Cogs 402 project student, 'A study of creativity and decision making in bipolar disorder', May August 2018.
- Mohammed Ali, UBC Cogs 402 project student, 'Measuring state activation of gambling related cognitive distortions', January 2019 April 2020.
- Zoha Janjua, UBC Directed Studies student, 'Measuring habit formation in slot machine gambling', Sept Dec 2018.
- Eli Otis, UBC Directed Studies student, 'Investigating ambition during effort discounting as a potential mechanism for creativity in bipolar disorder', Jan December 2018.
- Candy Chua, UBC Directed Studies student, 'Windfall gains in slot machine gambling', Jan May 2018.
- Natalie Cringle, UBC Directed Studies student and NSERC University Summer Research Award (USRA) recipient: 'Financial biases and attitudes in relation to problem gambling in regular gamblers', Jan September 2018.
- Lauren Abramson, UBC Cogs 402 project student, 'Measuring cognitive distortions during slot machine gambling', Jan May 2018.
- Jade Adelbart, UBC undergraduate program, volunteer research assistant, 'Development of a new procedure to measure sensitivity to social rank', September 2017 April 2018.
- Josie Horn, UBC volunteer research assistant, 'Measuring state activation of gambling related cognitive distortions', May December 2017.
- Siddharth Sanjay, UBC Cogs 402 project student, 'Physiological effects of vicarious wins in social slot machine play' May September 2017.
- Jessica Cho, UBC Cogs 402 project student, 'Loss aversion and the effects of outcome feedback', May December 2017. Michele Carpentieri, visiting PhD student from University of Naples, Italy, April Sept 2017.
- Juliette Tobias-Webb, visiting PhD student from University of Cambridge, 'Gambling, alcohol, and gambling-related cognitive distortions', Jan Sep 2015 (completed PhD: March 2017).
- Rebecca Griggs, visiting PhD student from University of Bristol, U.K., Aug 2015 Jan 2016.
- Keni Ng, UBC Directed Studies student 'Cultural differences in gambling cognitions between Asian Canadian and Euro-Canadian students' (Sept 2016 April 2017).
- Cindy Chang, UBC Psyc 366 project student 'Humanizing the slot machine: Trait anthropomorphism and gambling persistence' (Sept 2016 April 2017).
- Candy Chua, UBC Psychology Honours project 'Testing the 'pain of paying' hypothesis in slot machine gambling' (June 2016 April 2017).
- Kent Macdonald, University of Victoria undergraduate program, summer project 'Testing the 'pain of paying' hypothesis in slot machine gambling' (June August 2016).
- Michelle Beckett, UBC volunteer research assistant 'Dice throwing behaviour in a simulated craps game' (June Dec 2016).
- Amit Chandna, UBC volunteer research assistant, 'Hormonal reactivity to winning and losing outcomes in slot machine play' (April July 2016).
- Cameron Drury, UBC volunteer research assistant, 'Effects of Game Experience on Slot Machine Immersion' (Jan June 2016).

- Chris de Groot, UBC volunteer research assistant, 'Hormonal reactivity to winning and losing outcomes in slot machine play' (Jan April 2016).
- Nataly Kaufman, UBC volunteer research assistant, 'Effects of slot machine play on alcohol consumption' (Jan Aug 2016).
- Brooke MacDonald, UBC Directed Studies student, 'Physiological and subjective effects of social vs isolated slot machine play' (Aug 2015 Aug 2016).
- Michelle Wong, UBC volunteer research assistant, 'Effects of Skill Instructions and Learned Helplessness on the Illusion of Control' (Apr Aug 2015).
- Brianna Chau, UBC volunteer research assistant, 'Effects of Skill Instructions and Learned Helplessness on the Illusion of Control' (Apr Aug 2015).
- Hanson Do, UBC volunteer research assistant, 'Effects of Skill Instructions and Learned Helplessness on the Illusion of Control' (Apr Aug 2015).
- Angela Choi, UBC volunteer research assistant, 'Investigating the Stopper Device in Modern Slot Machines' (Jan Apr 2015).
- Stephanie Ye, UBC volunteer research assistant, 'Investigating the Stopper Device in Modern Slot Machines' (Jan Apr 2015).

Awards & Funding:

- April 2021: Luke Clark awarded UBC Killam Research Award
- April 2021: Eliscia Sinclair awarded Quinn Undergraduate Student Research Award, 'Understanding 'breaking even' in gambling behaviour', supervised by Luke Clark (summer 2021, \$6,000)
- July 2020: Spencer Murch awarded the Annual Research Award from the National Council on Problem Gambling (USA), for 'Zoned in or zoned out? Investigating immersion in slot machine gambling using mobile eye-tracking' (Addiction 2020).
- April 2020: Dong Wook (Andy) Kim awarded NSERC Undergraduate Student Research Award, 'The use of pupillometry to assess reward value in slot machine gambling', supervised by Luke Clark (summer 2020, \$4,500)
- April 2020: Luke Clark co-investigator on Djavad Mowafaghian Centre for Brain Health Innovation Fund 'kickstarter' grant, 'Translational investigation of neurophysiological substrates of active and inhibitory avoidance in healthy and depressed populations' (2020-2021, PI: B Todd, \$30,000)
- March 2019: Announcement of the core funding renewal of the Centre for Gambling Research at UBC by the Province of BC and the BC Lottery Corporation, \$1.365m over 5 years (2018-2022).
- April 2018: Natalie Cringle awarded NSERC Undergraduate Student Research Award, 'Manipulating the value of money in slot machine gambling', supervised by Luke Clark (summer 2018, \$4,500)
- Jan 2018: Luke Clark co-investigator on Canadian Institutes of Health Research (CIHR) Project Grant, 'The effects of reward cues on risky decision making: the role of dopamine and relevance to addiction' (2018-2021, PI: C Winstanley, \$612,000.
- July 2017: Luke Clark co-investigator on Canada Foundation for Innovation (CFI) and BCKDF equipment grant, 'Hybrid PET/MRI for an integrated approach to the investigation of brain function in health, populations at risk, and disease' (2017, PI: V Sossi, \$8,692,500)
- May 2017: Spencer Murch awarded the UBC Department of Psychology Stanley Coren Prize for Best MA thesis (with Canadian Psychological Association certificate of excellence, MA level).
- April 2017: Centre for Gambling Research awarded a consultancy contract by British Columbia Lottery Corporation for re-design of internal training program (\$40,000).
- April 2017: Luke Clark awarded a Discovery Grant from the Natural Sciences and Engineering Research Council (NSERC) 'The neural and cognitive representation of money in decision making (2017-2022; \$39,000 pa)
- April 2017: Eve Limbrick-Oldfield awarded Travel Grant from National Center for Responsible Gaming for attendance at the International Society for Research on Impulsivity (InSRI) and Society of Biological Psychiatry annual conferences.
- February 2017: Dawn Kennedy awarded the poster prize at the New Horizons in Responsible Gambling annual meeting for her poster 'Feeling the beat? Arousal and interoceptive awareness in problem gamblers' (Kennndy D, Murch S, Goshko CB, Limbrick-Oldfield E, Clark L)

- February 2017: Luke Clark co-investigator on Sean Costello Foundation Research Grant 'Do ambitious and exploratory behaviours drive creativity in bipolar disorder? The quest for a mechanism' awarded to Sheri Johnson (UC Berkeley) and Erin Michalak (UBC Psychiatry) (2017-2019, US\$9,995).
- December 2016: Mariya Cherkasova, Catharine Winstanley and Luke Clark awarded a seed grant from the National Center for Responsible Gaming 'The effects of sensory reward cues on decision making under risk in healthy volunteers and problem gamblers' (2017-2018; US\$34,500).
- April 2016: Luke Clark and Tilman Lesch awarded a research grant from BC Ministry of Finance (Gaming Policy & Enforcement Branch) 'Behavioural analysis in detection of disordered gambling in large online data' (2016-2018; \$175,000)
- February 2016: Spencer Murch awarded the poster prize at the New Horizons in Responsible Gambling annual meeting for his poster 'The cost of getting lost: Measuring the slot machine 'zone' with attentional tasks' (Murch S, Chu S, Clark L)
- September 2015: Luke Clark awarded the 2015 Scientific Achievement Award from the National Center for Responsible Gaming.
- March 2015: Juliette Tobias-Webb awarded poster prize at the Alberta Gambling Research Institute annual meeting for her poster 'The influence of acute alcohol intoxication on the gambler's fallacy' (Tobias-Webb J, Limbrick-Oldfield E, Clark L).
- February 2015: Juliette Tobias-Webb awarded runner-up poster prize at New Horizons in Responsible Gambling annual meeting for her poster 'Hard and soft illusions of control in a novel laboratory task' (Tobias-Webb J, Aitken MRF, Clark L).

Graduate Scholarships:

September 2020: Ke Zhang awarded Department of Psychology Graduate Scholarship for PhD3 year.

September 2020: Lucas Palmer awarded Department of Psychology Graduate Fellowship for MA1 year.

September 2019: Ke Zhang awarded Department of Psychology Graduate Scholarship for PhD2 year.

September 2018: Ke Zhang awarded Faculty of Arts Graduate Scholarship for her PhD1 year.

September 2018: Mario Ferrari awarded 3yr NSERC Graduate Fellowship for the PhD program.

September 2017: Ke Zhang awarded Faculty of Arts Graduate Scholarship for her Masters MA2 year.

September 2017: Mario Ferrari awarded the Dr. William Arthur Paskins Memorial Fellowship for the PhD1 year.

September 2016: Xiaolei Deng awarded UBC 4yr doctoral fellowship for the Clinical PhD program.

April 2017: Spencer Murch awarded 3yr NSERC Graduate Fellowship for the PhD program.

September 2016: Mario Ferrari awarded Faculty of Arts Graduate Scholarship for Masters MA2 year.

September 2016: Spencer Murch awarded UBC Department of Psychology Graduate Scholarship for PhD1.

September 2016: Gabriel Brooks awarded UBC 4yr doctoral fellowship for the Clinical PhD program.

September 2015: Mario Ferrari awarded CIHR graduate scholarship to support Masters MA1 year.

July 2015: Stephanie Chu and Spencer Murch both awarded UBC Psychology Graduate Scholarships for continuing research.

Professional Honours and Scholarly Committees:

Jan 2021: Luke Clark invited to join the Advisory Board for the BC Adolescent Health Survey (McCreary Consulting)

Jan 2020: Luke Clark co-editor (with Joel Billieux & David Ledgerwood) of a Special Issue of International Gambling Studies commemorating 20 years of the 'Pathways Model of Problem Gambling', to be published 2022.

March 2020: Luke Clark invited to give evidence (via Skype) to the House of Lords Select Committee on Social and Economic Impact of Gambling, March 2020. This was a 50 minute interview on the psychology and neuroscience of gambling and problem gambling with a focus on the future regulation of gambling product design features. It was streamed live on UK Parliamentary TV

https://www.parliamentlive.tv/Event/Index/52e8f081-d846-4360-a93b-28cb224b4f47 and the final report of the Select Committee (HL Report 79) is available at https://committees.parliament.uk/work/10/social-and-economic-impact-of-the-gambling-industry/publications/

July 2019: Luke Clark invited to join the Expert Reference Group for Public Health England, evidence review of gambling-related harms, 2019 - 2021.

- February 2019: Luke Clark appointed Senior Editor (from Assistant Editor) at Addiction (Wiley).
- December 2018: Luke Clark appointed Scientific Officer for Canadian Institutes of Health Research fall project grant competition.
- Sept 2018: Luke Clark and Eve Limbrick-Oldfield were invited participants and facilitators in the BC Behavioural Insights Group 'BIG Difference BC' conferences
- August 2018: Luke Clark co-editor (with Anna Goudriaan) of special issue of *International Gambling Studies* on 'Neuroscience and Neuropsychology of Gambling'.
- January 2018: Luke Clark invited contributor to the Gambling Research Exchange Ontario 'Conceptual Framework of Harmful Gambling' version 3 revision (released Nov 2018) http://greo.ca/knowledge-transfer/conceptual-framework
- September 2017: Luke Clark invited to join Editorial Board for Addictive Behaviors (Elsevier).
- July 2017: Luke Clark invited member of CREST.BD (Collaborative Research Team to Study Psychosocial Issues in Bipolar Disorder), PI: Erin Michalak, UBC Department of Psychiatry.
- June 2017 present: Luke Clark invited to join the Canadian Institutes of Health Research 'College of Reviewers' (2017-2020).
- April 2017, December 2017, May 2018: Luke Clark invited member of review panel for Canadian Institutes of Health Research project grant competitions (Final Assessment Stage in Ottawa)
- March 2017: Luke Clark and Eve Limbrick-Oldfield invited to join Anglophone Committee for the 4th International Multidisciplinary Symposium on Gambling Addiction (Fribourg, Switzerland, June 2018).
- September 2016: Luke Clark invited to join Editorial Board for *Psychology of Addictive Behaviors* (American Psychological Association) in 2017.
- June 2016 present: Luke Clark invited to join Research Committee for the National Council on Problem Gambling.
- April 2016: Luke Clark joins Academic Council for the UNLV International Center for Gaming Regulation (director: Andre Wilsenach).
- January 2016: Luke Clark joins academic committee for the Asia Pacific Association for Gambling Studies (director: Samuel Huang)
- January 2016: Luke Clark invited to become Regional Assistant Editor for *International Gambling Studies* (Taylor-Francis), one of the leading specialist journals in the field.
- December 2015: Luke Clark invited to serve on the review panel for the Ontario Ministry of Health Long Term Care target call on Gambling.
- January 2015: Luke Clark invited contributor to the Gambling Research Exchange Ontario 'Conceptual Framework of Harmful Gambling' version 2 revisions (released October 2015) http://greo.ca/knowledge-transfer/conceptual-framework

Consultancy and Reports:

- Abbott M, Binde P, **Clark L**, Hodgins D, Johnson MR, Manitowabi D, Quilty L, Spangberg J, Volberg R, Walker D, Williams R. Conceptual Framework of Harmful Gambling: Third Edition. *Gambling Research Exchange Ontario (GREO)*, *Guelph, Ontario, Canada*. Nov 2018. https://doi.org/10.33684/CFHG3.en
- Macdonald K, Lesch T, Clark L. Using machine learning to predict self-exclusion status in online gamblers on the PlayNow.com platform in British Columbia. Report prepared for the BC Government, Gaming Policy and Enforcement Branch (GPEB), May 2018.
- Clark, consultant on information guide by BC Government (Gaming Policy and Enforcement Branch) for municipal governments: 'Hosting a Gambling Facility: A Local Government Information Package on the Public Health Risks of Gambling' https://www2.gov.bc.ca/gov/content/sports-culture/gambling-fundraising/news-updates/2018-02-14 (released Feb 2018)
- **Lesch T, Clark L**. Online Gambling in British Columbia: a Descriptive Report of Gambling Participation on the PlayNow.com platform. Report prepared for the BC Government, Gaming Policy and Enforcement Branch (GPEB), 2017.
- Abbott M, Binde P, **Clark L,** Hodgins D, Korn D, Pereira A, Quilty L, Thomas A, Volberg R, Walker D, Williams R. Conceptual Framework of Harmful Gambling: An International Collaboration Revised Edition. *Gambling Research Exchange Ontario (GREO), Guelph, Ontario, Canada.* Fall 2015.

Teaching:

Luke Clark Psyc 335 'Gambling and Decision Making', Sept-Dec 2020, 155 students.

Luke Clark Psyc 101 'Introduction to Cognitive and Biological Psychology', Jan-April 2020, 345 students.

Luke Clark Psyc 335 'Gambling and Decision Making', Sept-Dec 2019, 162 students.

Luke Clark Psyc 101 'Introduction to Cognitive and Biological Psychology', Jan-April 2019, 289 students.

Eve Limbrick-Oldfield Psychology', Sept-Dec 2018, 70 students.

Spencer Murch Cogs 402 guest lecture on 'Zoning in or zoning out: investigating slot machine immersion with

mobile eye tracking' Oct 2018

Luke Clark Psyc 335 'Gambling and Decision Making', Sept-Dec 2018, 170 students.

Ke Zhang Psyc 309 guest lecture on 'Irrational decision-making', Mar 2018.

Luke Clark Psyc 101 'Introduction to Cognitive and Biological Psychology', Jan-April 2018, 383 students. Eve Limbrick-Oldfield Psyc 101 'Introduction to Cognitive and Biological Psychology', Sept-Dec 2017, 70 students.

Luke Clark Psyc 335 'Gambling and Decision Making', Sept-Dec 2017, 150 students.

Spencer Murch Psyc 309 guest lecture on 'Physiological measures of cognition', Oct 2017

Luke Clark Psyc 101 'Introduction to Cognitive and Biological Psychology', Jan-April 2017, 324 students.

Luke Clark Psyc 335 'Gambling and Decision Making', Sept-Dec 2016, 155 students.

Luke Clark Psyc 101 'Introduction to Cognitive and Biological Psychology', Jan-April 2016, 368 students.

Luke Clark Psyc 335 'Gambling and Decision Making', Sept-Dec 2015, 152 students.

Luke Clark Psyc 101 'Introduction to Cognitive and Biological Psychology', Jan-April 2015, 386 students.

Public Outreach:

Luke Clark UBC Psychology Student Association (PSA) 'Prof talks' series (online event, Nov 2020)

Spencer Murch Invited Q&A on 'How the brain works' at Emily Carr Elementary School, Vancouver, Jan 2019. Luke Clark Invited talk on 'Health, addictions, and the brain' at Carisbrooke Elementary School, North

Vancouver, Jan 2019.

Eve Limbrick-Oldfield UBC Science 101 class on 'Psychology of Gambling'. This is a barrier-free course to residents of

the Downtown Eastside, Jul 2018

Eve Limbrick-Oldfield 'Girls and STEAM' symposium and showcase event at Vancouver Science World, Nov 2018.

Presentations and Talks:

Clark: 'Testing the effects of monetary format on gambling behaviour: the need for convergent research'. Invited conference talk at *Alberta Gambling Research Institute* annual conference (held online, April 2021)

Clark: Online webinar 'Cashless payments in gambling venues: what do we know and what do we need to know?'
University of Sydney, Technology Risk-taking & Gambling series, 30 March 2021
https://www.youtube.com/watch?v=2pul8p6L6s8

Clark: 'Interacting effects of personal vulnerabilities and product features in gambling addiction'. Department of Psychology, University of Exeter, UK. Invited talk to cognitive area (March 2021).

Clark: 'Interacting effects of personal vulnerabilities and product features in gambling addiction'. Department of Psychology, University of Hamburg, Germany. Invited talk (January 2021).

Chaired and organized datablitz-style symposium (invited), in lieu of a poster session, featuring 6 talks by CGR trainees. 'Beyond the laboratory – gambling research during a global pandemic' (Gabriel Brooks, Osa Hawthorne, Fiza Arshad, Mario Ferrari, Ke Zhang, Xiaolei Deng). *New Horizons in Responsible Gambling* annual conference (virtual conference, March 2021)

Limbrick-Oldfield: Invited panel discussant 'Cashless Casinos' at the *New Horizons in Responsible Gambling* (virtual conference, March 2021)

Murch: Online symposium "What is Slot Machine Immersion: How does it affect our experiences and behaviours?" Safer Gambling Forum, eGaming Review (UK, Nov 2020). https://www.safergamblingforum.com/agenda/session/436150

Clark: 'Interacting effects of personal vulnerabilities and product features in gambling addiction'. *International Society for Addiction Medicine / Canadian Society for Addiction Medicine* joint meeting (Victoria, Nov 2020, now

- scheduled as virtual talk) (audience: international)
- Clark: 'How slot machine design features harness brain systems for risk and reward'. *Society for Psychophysiological Research* (Vancouver, Oct 2020, now scheduled as virtual talk) (audience: international).
- Symposium proposal and chair 'Risky business: using psychophysiology to understand risk and reward in health and illness' at *Society for Psychophysiological Research* annual meeting (Vancouver, Oct 2020, now scheduled as virtual session) (audience: international).
- Murch: Online webinar 'Immersion and dissociative experiences in gambling'. University of Sydney 'Technology Risk and Gambling' webinar series, June 2020. Available at https://www.youtube.com/watch?v=aIFR5iYthGU
- Clark: 'In the Zone? Eye Tracking of Slot Machine Gambling and Immersive Experience'. *Association for Psychological Science* (Chicago, May 2020 symposium accepted but later cancelled due to COVID-19)
- Zhang: Symposium talk 'Counter-intuitive RG strategy: exogenously imposed cash-out increase loss-chasing during gambling'. *Responsible Gambling Council (RGC) 'Discovery' Conference* (Toronto, April 2020) (Invited talk that was cancelled due to COVID-19) (audience: international)
- Clark: Panel Discussant in two panels 'What Exactly are we Trying to Prevent? A Constructive Conversation on Definition and Measurement of Risk' and 'The Balancing Act: How Should We Look At Product Risk vs. Entertainment'. *New Horizons in Responsible Gambling* annual conference (Vancouver, Mar 2020) (audience: international).
- Clark: 'Online gambling on the BC PlayNow platform: understanding high-risk involvement'. Invited talk to the Canadian Responsible Gambling Association satellite meeting at New Horizons in Responsible Gambling, March 2020. (audience: national)
- Clark: "I shouldn't have taken that bet!": Counterfactual thinking in gambling disorder' *Lisbon Addictions 2019* (Lisbon, Portugal, Oct 2019) (audience: international)
- Clark: 'Operant Influences in Realistic Slot Machine Gambling' *Pavlovian Society* annual conference (Vancouver, Sept 2019) (audience: international)
- Clark: Invited talk 'In the Zone? Psychological Markers of Disordered Slot Machine Gambling'. Canadian Gambling Regulators Association annual conference (Victoria, BC, Sept 2019)
- Clark: Invited talk 'A primer on the neuroscience of gambling addiction' (via skype) to the staff of the NHS North of England Gambling Service (Leeds, UK, Sept 2019).
- Clark: Invited talk 'In the Zone? Psychological Markers of Disordered Slot Machine Gambling'. Department of Psychology, University of Amsterdam (Amsterdam, NL, July 2019)
- Limbrick-Oldfield: Symposium talk 'Impulsivity as a marker of vulnerability to gambling disorder: a study of unaffected siblings' *International Conference on Behavioural Addictions* annual conference (Yokohama, Japan, June 2019). (audience: international)
- Clark: Symposium talk 'Predicting self-exclusion status in online gambling data via machine learning algorithms' 17th

 International Conference on Gambling and Risk Taking (Las Vegas, May 2019)
- Murch: Symposium talk 'Zoned in or zoned out: Investigating slot machine immersion with mobile eye tracking' 17th

 International Conference on Gambling and Risk Taking (Las Vegas, May 2019)
- Clark: Invited talk 'Applying Data Science to Behavioural Analysis of Online Gambling' at Alberta Gambling Research Institute annual conference (Banff, AB, March 2019)
- Brooks: Invited talk 'The gamblification of video games: An overview of 'Loot Boxes' and their links with disordered gambling' at the New Horizons in Responsible Gambling (Vancouver, March 2019)
- Clark: Invited talk 'Deconstructing the modern slot machine: game features and gambling addiction' in the St Joseph's Hospital & McMaster University Mental Health and Addictions Program (MHAP) Grand Rounds (Hamilton ON, Dec 2018)
- Clark: Symposium talk 'Neuroimaging of the opiate system in gambling disorder', *British Association for Psychopharmacology* annual conference (London, UK, July 2018).
- Limbrick-Oldfield: Symposium talk 'Impulsivity and altered reward processing as vulnerabilities for gambling disorder: A study in unaffected siblings' at the 4th International Multidisciplinary Symposium on Gambling Addiction (Fribourg, Switzerland, June 2018).
- Cherkasova: Symposium talk 'The effects of reward cues on risky choice in healthy volunteers and problem gamblers:

 The role of individual differences in cue sensitivity' at the 4th International Multidisciplinary Symposium on Gambling Addiction (Fribourg, Switzerland, June 2018).

- Clark: guest lecture 'The neuroscience of the 'player product' interaction in disordered gambling', Monash University Master in Addictive Behaviours program (May 2018).
- Clark: Invited public lecture 'Deconstructing the modern slot machine: gambling, game features and addiction'.

 Canadian Neuroscience Meeting (Canadian Association of Neuroscience) (Vancouver Science World, May 2018).
- Murch: Lightning talk 'Your attention please: eye-tracking slot machine play to inform gambling policy.' *BC Science and Policy Conference*, Vancouver, May 2018.
- Clark: Invited talk 'Gambling distortions as a paradigm for decision neuroscience'. Simon Fraser University workshop on *Neuroeconomics and the Evolution of Economic Behaviour* (Vancouver, May 2018).
- Clark: Research seminar 'Deconstructing the slot machine: people, products, environments'. *UBC Marketing and Behavioural Science Seminar Series*, Sauder School of Business (UBC Vancouver, April 2018).
- Clark: Keynote talk 'Gambling Disorder: Personal Vulnerabilities and Product Features'. *International Conference on Behavioural Addictions* annual meeting (Cologne, Germany, April 2018)
- Limbrick-Oldfield: Keynote talk 'The Gambling Brain'. *Massachusetts Council on Compulsive Gambling* annual conference, Boston, March 2018.
- Clark: Symposium talk 'Skill-based EGMs: Evaluating the Risks to Players'. *New Horizons in Responsible Gambling* annual conference (Vancouver, Feb 2018).
- Murch: Symposium talk 'Eyes on the Prize: Predicting Player Immersion using a Mobile Eye Tracker during Slot Machine Play'. New Horizons in Responsible Gambling annual conference (Vancouver, Feb 2018)
- Clark: Keynote talk 'The neuroscience of gambling games and gambling addiction: a focus on emerging technologies'.

 National Association for Gambling Studies annual conference (Melbourne, Australia, November 2017)
- Clark: Workshop presentation 'The Straight Dop(amin)e: a Primer on the Neuroscience of Gambling Addiction'. National Association for Gambling Studies (Australia), annual conference (Melbourne, Nov 2017).
- Clark: Panellist in the Michael Walker Memorial Panel Discussion 'Social media, big data and technology in gambling', National Association for Gambling Studies (Australia), annual conference (Melbourne, Nov 2017).
- Clark: Invited Discussant 'Warning Messages on Gaming Machines: Do They Work?'. National Center for Responsible Gaming annual conference (Las Vegas NV, September 2017)
- Clark: Symposium talk 'Behavioural markers of disordered online gambling'. National Council for Problem Gambling annual conference (Portland OR, July 2017).
- Limbrick-Oldfield: Symposium talk 'fMRI investigations of impulsivity and cognitive distortions in gambling disorder'. International Society for Research on Impulsivity (InSRI) annual conference (San Diego CA, May 2017)
- Clark: Invited talk 'Problem gambling and the 'player-product' interaction'. BC Neuropsychiatry Rounds (Vancouver, May 2017)
- Clark: Invited talk 'Gambling Disorder and the interplay between personal vulnerability and game features'. University of California San Francisco, Alcohol and Addiction Research Group seminar series (San Francisco, May 2017)
- Clark: Symposium talk 'The role of counterfactual thinking in the response to gambling near-misses'. *International Convention of Psychological Science* biennial meeting (Vienna, March 2017).
- Clark, Murch, Limbrick-Oldfield, Ferrari: 'Gambling on the Brain (Clark lab)', Centre for Brain Health 'Pizza Social' series: (UBC, March 2017)
- Clark: Keynote presentation, New Horizons in Responsible Gambling annual conference, "Deconstructing the Modern Slot Machine: Psychological Ingredients and Personal Vulnerabilities" (Vancouver, February 2017).
- Lesch: Symposium presentation, New Horizons in Responsible Gambling annual conference, "The Quality of Quantity: Behavioural Indicators of Risky Online Gambling" (Vancouver, February 2017).
- Limbrick-Oldfield. Conference talk. Society for Neuroeconomics annual meeting "Behavioural and neural correlates of the gambler's fallacy in Gambling Disorder" (Berlin, August 2016).
- Murch: Conference talk. UNLV International Conference on Gambling and Risk-Taking, "The Cost of Getting Lost: Measuring the Slot Machine 'Zone' with Attentional Dual Tasks" (Las Vegas, June 2016)
- Limbrick-Oldfield: Conference talk. UNLV International Conference on Gambling and Risk-Taking, "Neural Substrates of Cue Reactivity and Craving in Gambling Disorder" (Las Vegas, June 2016)
- Clark: Public talk. UBC Neurotalks 'the Straight Dopamine'. April 2016.
- Lesch: Invited talk. Canadian Consortium on Gambling Research (CCGR) Pre-Conference Workshop to the Alberta Gambling Research Institute annual conference "Digital Engagement: How the Web Changes Recruitment, Data

- Collection, and User Feedback" (Banff, April 2016).
- Clark, Limbrick-Oldfield: Symposium organizer, chair and panel discussant: 'The UBC Session: Cognitive Distortions and Responsible Gambling Messaging'. New Horizons in Responsible Gambling annual conference, Vancouver, February 2016.
- Clark: Invited talk, UBC Centre for Brain Health, Mood Disorders Centre Research Rounds, 'Gambling addiction, decision-making and mood disorders', December 2015.
- Clark: Opening Plenary, Svenska Spel (state-owned gambling provider for Sweden) annual research conference (Stockholm, October 2015)
- Clark: Western Canada Addictions Forum (Invited Talk, Vernon BC, May 2015)
- Clark: International Consortium for Addictive Diseases (Invited Lecture, Nantes, France, April 2015)
- Clark: Alberta Gambling Research Institute annual conference (Invited Lecture, Banff, March 2015)
- Clark: New Horizons in Responsible Gambling annual conference (Invited Chair 'the UBC session', January 2015)
- Clark: Centre for Addictions Research of BC (Invited Public Lecture, Victoria BC, December 2014)
- Clark: BC Youth Concurrent Disorders Network (Invited Talk, Vancouver General Hospital, November 2014)
- Clark: Canadian Mental Health Association, BC Division (Keynote at Annual General Meeting, Vancouver, November 2014)
- Clark: Catholic Health Association of BC annual conference (Invited Talk, Coquitlam, BC, October 2014)
- Clark: Victorian Responsible Gambling Foundation annual conference (Invited lecture, Melbourne, October 2014)
- Clark: UBC Summer Institute on Addiction: 'Gambling on the Brain' (Vancouver, July 2014)

Refereed journal papers:

The following papers specify the Centre for Gambling Research at UBC as the main affiliation and funding source. Members of the Centre are highlighted in **bold**.

- **Deng X, Lesch T, Clark L**. Pareto distributions in online casino gambling: sensitivity to timeframe and associations with self exclusion, *Addictive Behaviors*, 2021, 120: 106968.
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- **Tobias-Webb J**, **Limbrick-Oldfield EH**, Vearncombe S, Duka T, **Clark L**. The effects of alcohol on sequential decision-making biases during gambling. *Psychopharmacology*, 2020, 237, 395–407. doi: 10.1007/s00213-019-05376-z.
- **Limbrick-Oldfield E**, Cocks R, Mick I, Bowden-Jones H, Lingford-Hughes A, **Clark L**. Impulsive choice and reward processing in the vulnerability to gambling disorder: a study of affected siblings. *Neuropsychopharmacology*, 2020, 45: 292–300; https://doi.org/10.1038/s41386-019-0534-1.
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All Bets Are Off gambling podcast (UK), discussing online slot machine gambling and 'slot streams' (Season 3 Episode 1) 28 Jan 2021: https://open.spotify.com/episode/0hENhEuJY1ePdHmF62ajp5

Spencer Murch discussed his PhD research 'Total immersion: the psychology of slot machines' on The Jeff Does Vegas podcast, episode 84, 15 Feb 2021: https://www.jeffdoesvegas.com/e/total-immersion-the-psychology-of-slot-machines/

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Globe and Mail coverage of BC problem gambling treatment program evaluating video gamers, 20 Dec 2019: https://www.theglobeandmail.com/canada/british-columbia/article-bc-completes-year-long-assessment-of-video-gamers-to-assess-possible/

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CFAX radio interview, Adam Stirling's morning show (15 minutes), 13 Nov 2019: https://omny.fm/shows/cfax-

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