

# Carl Michael Galang, PhD

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## Employment

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### **POST-DOCTORAL RESEARCH FELLOW (Oct. 1<sup>st</sup>, 2021 – Current)**

*Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellow (Oct. 1<sup>st</sup>, 2023)*

Social Intelligence Lab  
Institute for Psychology | Berlin School of Mind and Brain  
Humboldt University of Berlin  
Supervisor: Marcel Brass

### **POST-DOCTORAL RESEARCH FELLOW (Oct. 1<sup>st</sup>, 2020 – Sept. 30<sup>th</sup>, 2021)**

Social Brain, Body and Action Lab  
Department of Psychology, Neuroscience and Behaviour  
McMaster University  
Co-supervisors: Sukhvinder Obhi (McMaster University) & Marcel Brass (Humboldt University of Berlin)

## Education

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### **MCMASTER UNIVERSITY (2015-2020)**

#### **Department of Psychology, Neuroscience & Behaviour**

PhD in Psychology (Social Cognitive Neuroscience)

Supervisor: Sukhvinder Obhi

Committee Members: Laurel Trainor, Bruce Milliken, & David Feinberg

External Examiner: Claus Lamm (University of Vienna)

Thesis Title: *Pain Observation, Empathy, and the Sensorimotor System: Behavioural and Neurophysiological Explorations*

### **UNIVERSITY OF TORONTO (2009-2014)**

#### **University College, St. George Campus**

Honours B.A. (with distinction)

Double Major: Cognitive Science & Philosophy

Minor: Psychology

## Publications

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Shum, Y.H., **Galang, C.M.**, & Brass, M. (In Pres). Using a Veto Paradigm to Investigate the Decision Models in Explaining Libet-style Experiments. *Consciousness and Cognition*.

- Galang, C.M.**, Cracco, E., & Brass, M. (2024). Anticipated imitation of multiple agents. *Cognition*, 249, 105831.
- Quesque, F., Apperly, I., Baillargeon, R., [...], **Galang, C.M.**, [...], & Brass, M. (2024). Defining key concepts for mental state attribution. *Communications Psychology*, 2(29), 1-5.
- Galang, C.M.** & Obhi, S.S. (2022). Empathic pain observation does not influence automatic imitation in an online setting. *Experimental Brain Research*, 241, 263-276.
- Malik, R., **Galang, C.M.**, & Finger, E. (2022). The Sense of Agency for Brain Disorders: A Comprehensive Review and Proposed Framework. *Neuroscience and Biobehavioral Reviews*, 139, 104759.
- Mekik, S.C. & **Galang, C.M.** (2022). Cognitive Science in a Nutshell. *Cognitive Science*, 46, e13179.
- Galang, C.M.**, Ku, M., & Obhi, S.S. (2021). Blatant Dehumanization is Not Influenced by Dual Identity Labels: Evidence from the Canadian Context. *International Journal of Psychological Studies*, 13(4), 62-74.
- Galang, C.M.**, Malik, R., Kinley, I., & Obhi, S.S. (2021). Studying Sense of Agency Online: Testing the robustness of the intentional binding effect using an online sample. *Consciousness and Cognition*, 95, 103217.
- Galang, C.M.**, Jenkins, M., Fahim, G., & Obhi, S.S. (2021). Exploring the relationship between social power and the ERP components of empathy for pain. *Social Neuroscience*, 16, 174-188.
- Galang, C.M.**, Pichtikova, M., Sanders, T., & Obhi, S.S. (2021). Investigating the effects of pain observation on approach and withdrawal actions. *Experimental Brain Research*, 239, 847-856.
- Galang, C.M.** & Obhi, S.S. (2021). To Move or Not to Move: Cortico-spinal activity is enhanced during pain observation regardless of motor preparation state. *Journal of Neurophysiology*, 125, 599-605.
- Galang, C.M.**, Johnson, D., & Obhi, S.S. (2021). Exploring the Relationship Between Empathy, Self-Construal Style, and Self-Reported Social Distancing Tendencies During the COVID-19 Pandemic. *Frontiers in Psychology*, 12, 588934.
- Galang, C.M.** & Obhi, S.S. (2020). Automatic imitation does not predict levels of generosity during a modified dictator game. *Acta Psychologica*, 204, 103022.
- Galang, C.M.**, Jenkins, M., & Obhi, S.S. (2020). Exploring the Effects of Visual Perspective on the ERP Components of Empathy for Pain. *Social Neuroscience*, 15(2), 186-198.
- Galang, C.M.** & Obhi, S.S. (2020). Please Empathize! Instructions to empathize strengthen response facilitation after pain observation. *Cognition and Emotion*, 34(2), 316-328.

- Galang, C.M.** & Obhi, S.S. (2019). Social Power and Frontal Alpha Asymmetry. *Cognitive Neuroscience*, 10(1), 44-56.
- Civile, C., Elchlepp, H., McLaren, R., **Galang, C.M.**, Lavric, A., & McLaren, I.P.L. (2018). The effect of scrambling upright and inverted faces on the N170. *Quarterly Journal of Experimental Psychology*, 71(11), 2464-2476.
- Galang, C.M.**, Naish, K.R., Arbabi, K., & Obhi, S.S. (2017). Observing painful events in others leads to temporally extended general response facilitation in the self. *Experimental Brain Research*, 235(11), 3469-3477.
- Naish, K.R., Rajagopal, A., **Galang, C.M.**, Sartori, L., & Obhi, S.S. (2017). Effects of intentional movement preparation on response times to symbolic and imitative cues. *Experimental Brain Research*, 235(3), 753-761.
- Galang, C.M.** & Mekik, C. (2015). Existence versus Primacy: A Critical Overview of Phenomenal Intentionality. *Noesis: Undergraduate Journal of Philosophy at the University of Toronto*, 16, 23-40.

## Preprints

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- Azevedo, F., Parsons, S., Micheli, L., Strand, J., Rinke, E., ..., **Galang, C.M.**, ... & FORRT (In Prep.). Introducing a Framework for Open and Reproducible Research Training (FORRT). <https://osf.io/bnh7p>.

## In Preparation

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- Galang, C.M.**, Cracco, E., Chirkov, V., Obhi, S.S., & Brass, M. (In Prep.). Explicit Sense of Agency and Group Control: Feelings of control increases with number of followers, especially when commanding human-like social agents.
- Galang, C.M.**, Akan, A., Pfister, R., & Brass, M. (In Prep.). Sense of Agency, Temporal Binding, and Rule Breaking.
- Shum, Y.H., **Galang, C.M.**, & Brass, M. (In Prep.). Stimulating Your Voluntariness: What Can Brain Stimulation Studies Tell Us about Intention and Voluntary Behaviors?
- Galang, C.M.**, Jenkins, M., Sanders, T., Vijn, R., & Obhi, S.S. (In Prep.). Motor preparation during pain observation does not influence event-related Mu/Beta desynchronization.

## Scholarships, Bursaries & Awards

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### HUMBOLDT UNIVERSITY OF BERLIN

Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowship (2023-2025)  
Value: €173 847

### MCMASTER UNIVERSITY

NSERC Post-Graduate Scholarship – Doctoral (2018-2020)

Value: \$42 000  
Society for the Improvement of Psychological Science (SIPS) Travel Award (2018)  
Value: \$400  
Department of Psychology, Neuroscience and Behaviour Travel Award (2018)  
Value: \$400  
Joyce Ontario Graduate Scholarship in Science (2017-2018)  
Value: \$15 000  
SPICES Grant (2017)  
Value: \$2200 (funding for Open McMaster – an advocacy group on campus for Open Access issues)  
LiveLab Research Grant (2016)  
Value: 3 days of facility use and 21 hours of technical support from LiveLab staff.  
OpenCon Travel Scholarship (2016)  
Value: \$1500  
Ontario Graduate Fellowship (2016-2017)  
Value: \$12 000  
SSHRC Canada Graduate Scholarship – Master’s Level (2015-2016)  
Value: \$17 500  
Ontario Graduate Scholarship (2015-2016, Declined for SSHRC Award)  
Value: \$15 000

## **UNIVERSITY OF TORONTO**

Gordon Cressy Leadership Award (2014)  
Value: Highest student leadership award given by the University of Toronto at large  
University College Merit Award (2014)  
Value: Highest student leadership award given by University College  
C.L. Burton Open Scholarship (2013-2014)  
Value: \$500  
Student Life Bursary (2012-2014)  
Value: \$3100  
Sunflower Scholarship (2012-2013)  
Value: \$200  
Dura Burke Leadership Award (2011-2012)  
Value: \$500

## **Presentations**

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### **Conference Presentations**

**Galang, C.M. & Obhi, S.S. (2019).** *Motor excitability during pain observation does not match behavioural response times after pain observation: A pre-registered study.* Poster presented at the 29<sup>th</sup> annual meeting of the Canadian Society for Brain, Behaviour and Cognitive Science (CSBBCS). Waterloo, Canada.

**Galang, C.M. & Obhi, S.S. (2018).** *Observed Pain Intensity and Instructions to Empathize Modulate Response Facilitation.* Poster presented at the Joint Meeting of the Canadian Society for Brain, Behaviour, and Cognitive Sciences (CSBBCS) and the Experimental Psychology Society (EPS). St. Johns, Canada.

Jenkins, M., **Galang, C.M.**, & Obhi, S.S. (2018). *Visual Perspective Taking in Pain Observation: Evidence from Event-Related Potentials*. Poster presented at the Joint Meeting of the Canadian Society for Brain, Behaviour, and Cognitive Sciences (CSBBCS) and the Experimental Psychology Society (EPS). St. Johns, Canada.

**Galang, C.M.**, Kragness, H., & Obhi, S.S. (2017). *Effects of social power on spontaneous synchronization*. Poster presented at the 13<sup>th</sup> annual NeuroMusic Conference. Hamilton, Canada.

**Galang, C.M.** & Obhi, S.S. (2017). *Feeling powerless decrease frontal left-hemisphere activity*. Poster presented at the 8<sup>th</sup> annual meeting of the Society for Social Neuroscience (S4SN). Washington D.C., USA.

**Galang, C.M.**, Naish, K., Rajagopal, A., & Obhi, S.S. (2016). *Cross-Cultural Differences in Empathic Sensorimotor Resonance*. Poster presented at the 26<sup>th</sup> annual meeting of the Canadian Society for Brain, Behaviour and Cognitive Science (CSBBCS). Ottawa, Canada.

### **Within Department Presentations**

**Galang, C.M.** (2020). *The Replication Crisis*. Guest lecture presented for PSYCH 2C03 – Social Psychology. Hamilton, Canada.

**Galang, C.M.** (2019). *Self-Other Control and Prosocial Behaviours: Automatic imitation does not predict levels of generosity during a modified dictator game*. Cognition and Perception Seminar Series. Hamilton, Canada.

**Galang, C.M.** (2019). *The Social Cognitive Neuroscience of Empathy*. Guest lecture presented for PNB2XF3 – Perspectives in Psychology, Neuroscience and Behaviour. Hamilton, Canada.

**Galang, C.M.** (2018). *The Replication Crisis: What's the big deal?* Guest lecture presented for PNB3RM3 – Perspectives in Psychology, Neuroscience and Behaviour. Hamilton, Canada.

**Galang, C.M.** (2018). *Empathy for Pain*. Presented at the Department of Psychology, Neuroscience and Behaviour Seminar Series. Hamilton, Ontario.

Rushton, E., **Galang, C.M.**, & Obhi, S.S. (2018). *Caucasian Participants Show Opposite Racial Bias Effect When Observing Others in Pain*. Presented at the Department of Psychology, Neuroscience and Behaviour Thesis Poster Session. Hamilton, Ontario.

MacGrath, S., **Galang, C.M.**, & Obhi, S.S. (2017). *Oops... I did it again: Sense of Agency for failed stopping*. Presented at the Department of Psychology, Neuroscience and Behaviour Thesis Poster Session. Hamilton, Ontario.

**Galang, C.M.** (2017). *The Replication Crisis: What's the big deal?*. Guest lecture presented for PNB 3RM3 – Research Methods. Hamilton, Ontario.

**Galang, C.M.** (2017). *An Introduction to the Social Neuroscience of Intergroup Relations*. Guest lecture presented for PSYCH3CD3 – Intergroup Relations. Hamilton, Ontario.

Ku, M., **Galang, C.M.**, & Obhi, S. S. (2016). *The Effects of Power on Empathic Response to Pain (A Pilot Study)*. Presented at the NSERC USRA Poster Session, Hamilton, Ontario.

**Galang, C.M.** (2016). *The Social Cognitive Neuroscience of Empathy*. Guest lecture presented for PNB2XF3 – Perspectives in Psychology, Neuroscience and Behaviour. Hamilton, Canada.

**Galang, C.M.** & Berry, M. (2016). *Introduction to Data Management & Processing*. Guest lecture presented for PNB2XF3 – Perspectives in Psychology, Neuroscience and Behaviour. Hamilton, Canada.

## Research Skills & Experience

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### **PRIMARY (through research)**

Electroencephalography (EEG – Time, Frequency, and Time-Frequency Domains)

Single Pulse Transcranial Magnetic Stimulation (sTMS)

Electromyography (EMG)

Behavioural Methods (e.g. Reaction Time Paradigms & Self-Report Inventories)

### **SECONDARY (through course work and lab training)**

Transcranial Direct Current Stimulation (tDCS)

Electrodermal Activity (EDA)

Motion Capture Tools

Eye Tracking Tools

**PROGRAMMING:** Python, MATLAB, R, JavaScript, C# and Unity

**REVIEWED FOR:** Biological Psychology; Psychonomic Bulletin & Review; Social Cognitive and Affective Neuroscience; Experimental Brain Research; Social Neuroscience; Acta Psychologica

## Teaching Experience

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### **HUMBOLDT UNIVERSITY OF BERLIN**

#### **COURSE INSTRUCTOR**

Sense of Agency Seminar (Winter 2023-2024)

Empirical Research Training – MIND Track (Summer 2024)

Empirical Research Training – MIND Track (Summer 2023)

Empirical Research Training – MIND Track (Summer 2022)

### **MCMASTER UNIVERSITY**

#### **FELLOWSHIPS**

McCall MacBain Postdoctoral Fellows Teaching & Leadership Program: Oct. 2020 – April 2021

#### **COURSE INSTRUCTOR**

Perspectives in Psychology, Neuroscience and Behaviour (PNB 2XF3): Winter 2020

## **TEACHING ASSISTANTSHIPS**

The Psychology of Aging (PSYCH 3AG3): Winter 2020  
Science Communication (PNB 4SC6): Fall 2019  
Social Cognitive Neuroscience (PNB 4E03): Winter 2019  
Perspectives in Psychology, Neuroscience and Behaviour (PNB 2XF3): Winter 2019  
Research Methods (PNB 3RM3): Fall 2018  
Descriptive Statistics (PNB 2XE3): Winter 2018  
Research Methods (PNB 3RM3): Fall 2017  
Intergroup Relations (PSYCH 3CD3): Winter 2017  
Perspectives in Psychology, Neuroscience and Behaviour (PNB 2XF3): Fall 2016  
Integrated Psychology, Neuroscience and Behaviour (PNB 2XD3): Winter 2016  
Social Psychology (PSYCH 2C03): Fall 2015

## **Administrative and Extra-Curricular Activities**

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### **MCMASTER UNIVERSITY**

Co-Founder and Co-Chair of ReproducibiliTea McMaster (2019-2021)  
Departmental Colloquium Committee Co-Chair (2018-2020)  
Graduate Student Conference Organizer (2017-2020)  
NeuroTechX Hamilton Member (2017-Current)  
Open McMaster Co-Founder (2017-2018)  
OOOCanada (Open access, education, & data) Research Network Member (2016-2017)  
Let's Talk Science Outreach Program Workshop Facilitator (2015-2017)  
Departmental Colloquium Committee Member (2016-2017)  
Department First-Year Graduate Student Representative (2016-2017)  
McMaster Children & Youth University Workshop Facilitator (2015-2017)

### **UNIVERSITY OF TORONTO**

University of Toronto Interdisciplinary Symposium on the Mind Committee Member (2013-2014)  
Cognitive Science & Artificial Intelligence Students Association Volunteer (2013-2014)  
University College Student Government President (2012-2013)  
University College Student Government Academic Affairs Commissioner (2011-2012)  
University College Student Government First-Year Representative (2009-2010)  
University of Toronto/University College Orientation Week Leader & Executive (2010-2012)