# CURRICULUM VITAE

## JASON P. GALLIVAN

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## Research Focus

In the Memory, Action and Perception Laboratory (MAPlab) at Queen's University, we seek to understand: (1) the neural circuits involved in the selection, planning and control of goal-directed actions, and (2) functional interactions between brain areas, and how these mediate cognition and behaviour. To achieve these aims, we use diverse methods and approaches that span functional and structural brain imaging, brain stimulation, behavioural psychophysics, computational modelling, and robotics and virtual reality systems. The overarching goal of our work is to provide a comprehensive picture of how cognitive and sensorimotor brain systems interact to drive intelligent behaviour.

## Metrics

**Total # of peer-reviewed publications (published or in press):** 65

| **Citation indices**\* | All | Since 2019 |
|---|---|---|
| Citations | 4122 | 2312 |
| h-index | 37 | 29 |
| i10-index | 54 | 52 |

\*Metrics from Google Scholar (compiled February 15 2024)

## Academic Appointments

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| 2022 – current | Associate Professor, Departments of Psychology and Biomedical and Molecular Sciences, Queen's University |
| 2019 – current | Lead, Queen's MRI Facility |
| 2016 – current | Member, Centre for Neuroscience Studies, Queen's University |

| 2016 – 2022 | Assistant Professor (tenure-track), Departments of Psychology and Biomedical and Molecular Sciences, Queen's University |

## Consulting

| 2020 - current | Scientific Advisor, Voxel AI Inc., Kingston, ON |

## Education & Training

| 2011 –2015 | Postdoctoral Fellow, Centre for Neuroscience Studies, Queen's University, Kingston, ON
*Mentor/Supervisor: Dr. Randy Flanagan* |

| 2005 –2011 | M.Sc. & Ph.D., Neuroscience, Brain & Mind Institute, Western University, London, ON
*Mentor/Supervisor: Dr. Jody Culham* |

| 2001 –2005 | B.Sc. (Honours), Biology, Western University, London, ON
*Mentor/Supervisor: Dr. David Cechettto* |

## Research Funding (as Principal Investigator)

| 2023-2025 | MITACs, Accelerate Grant $90,000
*Cerebrovascular mapping using human resting-state functional MRI data*
Co-applicants: Dan Gale & Voxel AI Inc. |

| 2021-2026 | CIHR, Operating Grant $734,400
*Investigating the role of cognitive brain networks in human motor learning*
Co-investigators: Randy Flanagan, Stephen Scott & Dominic Standage |

| 2022-2024 | New Frontiers in Research, Exploration Fund $250,000
*Understanding the neurobiology of social distancing and the impact of staying digitally connected 'online'*
Co-investigators: Anita Tusche (co-PI), Fernanda De Felice, Valerie Kuhlmeier, Andrew Winterborn, Martin Pare & Mark Sabbagh |

| 2022-2023 | The Harry Botterell Foundation $25,000
*Investigating the impact of social environment on the primate brain*
Co-investigators: Susan Boehnke, Andrew Winterborn, Douglas Munoz & Stephen Scott |

| 2021-2023 | Queen's Wicked Ideas $75,000
*Charting the neurobiology of social distancing: Exploring the casual effects of social isolation on the brain*
Co-investigators: Anita Tusche (co-PI), Mark Sabbagh, Valerie Kuhlmeier, Doug Munoz, Susan Boehnke, Fernanda De Felice, Gunnar Blohm, Stephen Scott & Andrew Winterborn |

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| 2017-2023 | NSERC, Discovery Grant | $155,000 |

*Mechanisms underlying the control and generalization of sensorimotor learning*

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| 2020-2021 | The Harry Botterell Foundation | $25,500 |

*Functional neuroimaging-guided enhancement of deep brain stimulation therapy*
Co-investigator: Ron Levy

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| 2020-2021 | NSERC, RTI Grant | $143,825 |

*Human functional neuroimaging stimulus presentation and data collection system for studies of action, perception and decision-making*
Co-investigators: Anita Tusche, Jeffrey Wammes, Monica Castelhano and Randy Flanagan

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| 2016-2020 | CFI, Leaders Fund Award | $150,000 |

*Neural mechanisms underlying cognitive transformations for human goal-directed action*

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| 2016-2020 | Ontario MRI Infrastructure Grant | $150,000 |

*Neural mechanisms underlying cognitive transformations for human goal-directed action*

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| 2019-2020 | NSERC, RTI Grant | $119,332 |

*MRI-compatible data collection and monitoring system for neuroimaging studies in humans and non-human primates*
Co-investigators: Gunnar Blohm, Randy Flanagan, Martin Pare, Jordan Poppenk, Stephen Scott, Patrick Stroman and Anita Tusche

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| 2018-2019 | The Harry Botterell Foundation | $15,000 |

*Neural mechanisms underlying human sensorimotor learning*

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| 2018-2019 | NSERC, RTI Grant | $85,313 |

*Non-human primate head coil for structural and functional neuroimaging studies*
Co-investigators: Martin Pare, Gunnar Blohm, and Stephen Scott

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| 2018 | NVIDIA GPU Equipment Grant | $2,500 |

*Network analyses of human functional neuroimaging data*

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| 2016-2018 | Research Initiation Grant | $60,000 |

*Exploring the neural mechanisms underlying human goal-directed action*

## Research Funding (as Co-Investigator)

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| 2022-2027 | CIHR, Operating Grant | $1,139,850 |

*Multimodal prediction of seizure recurrence after unprovoked first seizure to guide clinical decision-making: A multi-centre study of cognition, mood and brain connectivity as predictors*

Co-investigators: Gavin Winston (Principal Investigator), Antonina Omisade (Co-PI), **Jason Gallivan**, Kristin Ikeda & Matthias, Schmidt

| 2022-2027 | CIHR, Operating Grant | $745,000 |
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*Imaging-based analysis of mechanisms underlying repeated sub-concussive injury assessed in military personnel*
Co-investigators: Douglas Cook (Principal Investigator), **Jason Gallivan**, Duane Cronin & Stephen Scott

| 2021-2024 | PSI Foundation | $249,500 |
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*Neuroimaging biomarkers of cognitive dysfunction in people with epilepsy*
Co-investigators: Gavin Winston (Principal Investigator), Jason Gallivan, Lysa Boisse Lomax, Garima Shukla, Michelle Keiski, Stephen Scott

| 2021-2023 | TIME incubator grant | $25,500 |
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Queen's Internal Grant
*Combining neuroimaging and robot-based behavioural assessment to identify biomarkers of cognitive dysfunction in people with epilepsy*
Co-investigators: Gavin Winston (Principal Investigator), **Jason Gallivan**
Collaborators: Lysa Boisse Lomax, Garima Shukla, Michelle Keiski, Stephen Scott

| 2018-2022 | CIHR, Operating Grant | $753,525 |
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*The role of episodic, declarative, and spatial memory systems in the planning and control of real-world action tasks*
Co-investigators: Randy Flanagan (Principal Investigator) & **Jason Gallivan**

| 2013-2018 | CIHR, Operating Grant | $698,430 |
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*Neural representations underlying the planning and control of object manipulation tasks*
Co-investigators: Randy Flanagan (Principal Investigator), **Jason Gallivan** & Ingrid Johnsrude

| 2017-2018 | NSERC, RTI Grant | $150,000 |
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*Robotic device for studies of human movement perception and control*
Co-investigators: Randy Flanagan (Principal Investigator), **Jason Gallivan**, Gunnar Blohm, Jordan Poppenk and Niko Troje

## Awards & Distinctions

| 2021-2026 | Ontario Early Researcher Award | $150,000 |
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*Functional imaging and enhancement of brain network function through multi-site neurostimulation*

| 2014-2016 | CIHR, Postdoctoral Fellowship | $90,000 |
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*Neural bases of sensorimotor control of object grasping and manipulation*

| 2012-2014 | Banting Postdoctoral Fellowship (NSERC) *Decoding action intentions and sensorimotor predictions from human brain activity* | $140,000 |
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| 2011-2013 | Ontario MRI Postdoctoral Fellowship Decline for year 2013-2013 | $50,000 |
| 2012 | CIHR Brain Star award | $1,500 |
| 2009-2011 | NSERC, Graduate Scholarship *Multi-voxel pattern approaches to decoding movement* | $63,000 |
| 2011 | CIHR Brain Star award | $1,500 |
| 2009 | CIHR Brain Star award | $1,500 |

## Patents

1. Gallivan, J.P. & Murray, C. (pending). Connectivity-based multi-modal normative model. Vox-003US01. Date of File: August 17, 2022.

## Publications
* indicates equal contributions
Underlined indicates trainees

## Articles submitted or under revision for resubmission (2):

1. Rowchan, K., Gale, D.J., Nick, Q., GALLIVAN, J.P. & Wammes, J.D. (submitted). Visual statistical learning is associated with changes in cortical manifold structure.

2. Areshenkoff, C.N., De Brouwer, A., Gale, D.J., Nashed, J.Y., Smallwood, J., Flanagan, J.R. & GALLIVAN, J.P. (submitted). The structural-functional neural architectures of implicit and explicit motor learning.

## Articles in peer-reviewed journals, accepted or in press (65):

65. Zhu, T., GALLIVAN, J.P., Wolpert, D.M. & Flanagan, J.R. (accepted). Interaction between decision-making and motor learning when selecting reach targets in the presence of bias and noise. *Plos Computational Biology*

64. Nick, Q., Gale, D.J., Areshenkoff, C.N., De Brouwer, A.J., Nashed, J.Y., Wammes, J., Flanagan, J.R., Smallwood, J & GALLIVAN, J.P. (accepted). Reconfigurations of cortical manifold structure during reward-based motor learning. *eLIFE*

63. Rens, G., Figley, T.D., GALLIVAN, J.P., Liu, Y. & Culham, J.C. (2023). Grasping with a twist: Dissociating action goals from motor actions in human frontoparietal circuits. *Journal of Neuroscience*. 43 (32): 5831-5847.

62.    Moskowitz, J.B., Fooken, J., Castelhano, M.S., GALLIVAN, J.P. & Flanagan, J.R. (2023). Visual search for reach targets in actionable space is influenced by movement costs imposed by obstacles. *Journal of Vision*. 23 (6): 4. doi: 10.1167/jov.23.6.4.

61.    Moskowitz, J.B., Berger, S.A., Fooken, J., Castelhano, M.S., GALLIVAN, J.P. & Flanagan, J.R. (2023). The influence of movement-related costs when searching to act and acting to search. *The Journal of Neurophysiology*. 129(1): 115-130.

60.    Nashed, J.Y., Shearer, K.T., Wang, J.Z., Chen, Y., Cook, E.E., Champagne, A.A., Coverdale, N.S., Fernandez-Ruiz, J., Striver, S.I., GALLIVAN, J.P & Cook, D.J. (2023). Spontaneous behavioural recovery following stroke relates to the integrity of sensory and association cortices. *Translational Stroke Research*. doi: 10.1007/s12975-022-01115-3

59.    Gale, D.J., Areshenkoff, C.N., Standage, D.I., Nash, J.Y., Markello, R.D., Flanagan, J.R., Smallwood, J. & GALLIVAN, J.P. (2022). Distinct patterns of cortical manifold expansion and contraction underlie human sensorimotor adaptation. *Proceedings of the National Academy of Sciences*.

58.    Standage, D., Areshenkoff, C.N., Gale, D.J., Nashed, J.Y., Flanagan, J.R. & GALLIVAN, J.P. (2023). Whole-brain dynamics of human sensorimotor adaptation. *Cerebral Cortex*. 33 (8): 4761-4778.

57.    Areshenkoff, C.N., Gale, D.J., Nashed, J.Y., Standage, D., Flanagan, J.R. & GALLIVAN, J.P. (2022). Neural excursions from low-dimensional manifold structure explain patterns of human learning and relearning. *eLIFE*.  doi.org/10.7554/eLife.74591

56.    De Brouwer, A.J., Rashid, M.R., Flanagan, J.R., Poppenk, J. & GALLIVAN, J.P. (2022) Human variation in error-based and reinforcement motor learning is associated with entorhinal volume. *Cerebral Cortex*. 32 (16): 3423-3440. doi: 10.1093/cercor/bhab424

55.    Segal, J.P., Phillips, S., Dubois, R.M., Silva, J.R., Haird, C.M., Gale, D. J., Hopman, W.M., GALLIVAN, J.P., Gilron, I., & Ghasemlou, N. (2021) Weight bearing as a measure of disease progression in experimental autoimmune encephalomyelitis. *J. Neuroimmunology*. doi: 10.1016/j.jneuroim.2021.577730

54.    Gale, D.J., Flanagan, J.R. & GALLIVAN, J.P. (2021). Human somatosensory cortex is modulated during motor planning. *Journal of Neuroscience*. 41 (27) 5909-5922.

53.    Wispinksi, N.J., Stone, S.A., Bertrand, J.K., Zuk, A.A., Lavoie, E.B., GALLIVAN, J.P. & Chapman, C.S. (2021) Reaching for known unknowns: Rapid reach decisions accurately reflect the future state of dynamic probabilistic information. *Cortex*. 138, 253-265.

52.    Areshenkoff, C., Standage.D., Nashed, J., Hutchison, R.M., Hutchison, M., Cook, D.J., Menon, R., Everling, S. & GALLIVAN, J.P. (2021) Muting, not fragmentation, of functional brain networks under general anesthesia. *Neuroimage*. 231, 117830

51.    Gale, D.J., Areshenkoff, C.N., Honda, C., Johnsrude, I.S., Flanagan, J.R. & GALLIVAN, J.P. (2021) Motor planning modulates neural activity patterns in early human auditory cortex. *Cerebral Cortex*. 31 (6) 2952-2967.

50. McGarity-Shipley, M., Heald, J., Ingram, J., GALLIVAN, J.P., Wolpert, D.M., & Flanagan, JR. (2020). Motor memories in manipulation tasks are linked to contact goals between objects. *The Journal of Neurophysiology*. 124 (3): 994-1004.

49. Standage.D., Areshenkoff, C., Nashed, J., Hutchison, R.M., Hutchison, M., Heinke, D., Menon, R., Everling, S. & GALLIVAN, J.P. (2020) Dynamic reconfiguration, fragmentation and integration of whole-brain structure across depths of unconsciousness. *Cerebral* Cortex. 30 (10):5229-5241

48. Moskowitz, J., Gale, D.J., GALLIVAN, J.P., Wolpert, D.M. & Flanagan, J.R. (2020) Human decision-making anticipates future performance in motor learning. *PLoS Computational Biology*. 16 (2):e1007632

47. Proud, K., Heald, J., Ingram, J., GALLIVAN, J.P., Wolpert, D.M. & Flanagan, J.R. (2019) Separate motor memories are formed when implicitly controlling different locations on a tool. *The Journal of Neurophysiology*. doi: 10.1152/jn.00526.2018.

46. GALLIVAN, J.P., Chapman, C.S., Gale, D.J., Flanagan, J.R. & Culham, J.C. (2019) Selective modulation of early visual cortical activity by movement intention. *Cerebral Cortex*. doi: 10.1093/cercor/bhy345

45. Wispinski, N.J., GALLIVAN, J.P., & Chapman, C.S. (2018) Models, movements and minds: Unifying dynamic decision-making. *Annals of the New York Academy of Sciences*. [Invited Review].

44. De Brouwer, A.J., GALLIVAN, J.P. & Flanagan, J.R. (2018). Visuomotor feedback gains are modulated by gaze position. *The Journal of Neurophysiology*. 120: 2522-2531.

43. De Brouwer, A.J., Albaghdadi, M., Flanagan, J.R. & GALLIVAN, J.P. (2018). Using gaze behavior to parcellate the explicit and implicit contributions to visuomotor learning. *The Journal of Neurophysiology*. 120(4): 1602-1615.

42. GALLIVAN, J.P., Chapman, C.S., Wolpert, D.M., & Flanagan, J.R. (2018) Decision-making in sensorimotor control. *Nature Reviews Neuroscience*. 19(9): 519-534. [Invited Review].

41. Hutchison, R.M. & GALLIVAN, J.P. (2018) Functional coupling between frontoparietal and occipitotemporal pathways during action and perception. *Cortex*. 98: 8-27. DOI: 10.1016/j.cortex.2016.10.020.

40. Monaco, S., GALLIVAN, J.P., McAdam, T.D., Singhal, A. & Culham, J.C. (2017) Recruitment of foveal retinotopic cortex during haptic exploration of shapes and actions in the dark. *The Journal of Neuroscience*. 37(48): 11572-11591.

39. Nashed, J.Y., Diamond, J., GALLIVAN, J.P., Wolpert, D.M. & Flanagan, J.R. (2017) Grip force when reaching with target uncertainty provides evidence for motor optimization over averaging. *Scientific Reports*. 7(1): 11703. DOI: 10.1038/s41598-017-10996-6.

38. Hernandez-Castillo, C., Nashed, J.Y., Fernandez-Ruiz, J., Wang, J.Z., GALLIVAN, J.P., & Cook, D.J. (2017) Increased functional connectivity after stroke correlates with

behavioral scores in a non-human primate model. *Scientific Reports*. 7(1): 6701. DOI: 10.1038/s41598-017-07175-y.

37.     Lowe, M. X., Rasjic, J., GALLIVAN, J.P., Ferber, S. & Cant, J.S (2017) Neural representation of geometry and surface properties in object and scene perception. *Neuroimage*. 157: 586-597.

36.     De Brouwer, A.J., Jarvis, T., GALLIVAN, J.P., & Flanagan, J.R. (2017) Parallel specification of visuomotor feedback gains during bimanual reaching to independent goals. *eNeuro*. 4(2) e0026-17.2017 1-12.

35.     GALLIVAN, J.P.\*, Stewart, B.\*, Baugh, L.A., Wolpert, D.M. & Flanagan, J.R. (2017) Rapid automatic motor encoding of competing reach options. *Cell Reports* 18: 1619-1626.

34.     GALLIVAN, J.P., Bowman, N., Chapman, C.S., Wolpert, D.M. & Flanagan, J.R. (2016) The sequential encoding of competing action goals involves dynamic restructuring of motor plans in working memory. *The Journal of Neurophysiology*. 115(6): 3113-22.

33.     GALLIVAN, J.P., Logan, L., Wolpert, D.M. & Flanagan, J.R. (2016) Parallel specification of competing sensorimotor control policies for alternative action options. *Nature Neuroscience* 19(2): 320-6.

32.     GALLIVAN, J.P., Johnsrude, I.S. & Flanagan, J.R. (2016) Planning ahead: Object-directed sequential actions decoded from human frontoparietal and occipitotemporal networks. *Cerebral Cortex*. 26(2): 708-30.

31.     Lowe, M.X., GALLIVAN, J.P., Ferber, S., and Cant, J.S. (2016) Feature diagnosticity and task context shape activity in human scene-selective cortex. *Neuroimage*. 125: 681-692.

30.     GALLIVAN, J.P., Barton, K., Chapman, C.S., Wolpert, D.M., & Flanagan, J.R. (2015) Action plan co-optimization reveals the parallel encoding of competing reach movements. *Nature Communications*. 6: 7428. doi: 10.1038/ncomms8428.

29.     Hutchison, R.M., Culham, J.C., Flanagan, J.R., Everling, S., & GALLIVAN, J.P. (2015) Functional subdivisions of medial parieto-occipital cortex in humans and nonhuman primates using resting state fMRI. *Neuroimage*. 116: 10-29.

28.     Chapman, C.S., GALLIVAN, J.P., Wong, J.W., Wispinksi, N.J. & Enns, J. (2015) The snooze of lose: Rapid reaching reveals that losses are processed more slowly than gains. *Journal of Experimental Psychology: General*.

27.     GALLIVAN, J.P. & Culham, J.C. (2015) Neural coding within human brain areas involved in actions. *Current Opinion in Neurobiology*. 33:141-149 [Invited Review]

26.     Chapman, C.S., GALLIVAN, J.P., & Enns, J.T. (2015) Separating value from selection frequency in rapid reaching biases to visual targets. *Visual Cognition*. DOI:10.1080/13506285.2014.976604.

25.     Stewart, B.\*, GALLIVAN, J.P.\*, Baugh, L., & Flanagan, J.R. (2014) Motor, not visual, encoding of potential reach targets. *Current Biology*. 24(19): R953-R954.

24. GALLIVAN, J.P. & Chapman, C.S. (2014) Three-dimensional reach trajectories as a probe of real-time decision-making between multiple competing targets. *Frontiers in Neuroscience.* 8(215): 1-19.

23. GALLIVAN, J.P., Cant, J., Goodale, M.A. & Flanagan, J.R. (2014) Representation of object weight in human ventral visual cortex. *Current Biology* 24(16): 1866-73.
    - Featured in the 'Dispatch' section of *Current Biology* by Kentridge (2014).

22. Hutchison, R.M., Culham, J.C., Everling, S., Flanagan, J.R., & GALLIVAN, J.P. (2014) Distinct and distributed functional connectivity patterns across cortex reflect the domain-specific constraints of object, face, scene, body, and tool category-selective modules in the ventral visual pathway. *Neuroimage* 96:216-236.

21. Chapman, C.S.*, GALLIVAN, J.P.*, Wood, D.K., Milne, J.L., Ansari, D., Culham, J.C., & Goodale, M.A. (2014) Counting on the motor system: Rapid action planning reveals the format- and magnitude-dependent extraction of numerical quantity. *Journal of Vision.* 14(3): 1-19.

20. GALLIVAN, J.P. (2014) A motor-oriented organization of human ventral visual cortex? *Journal of Neuroscience* 34(9): 3119-3121. [Commentary]

19. Stewart, B. M., Baugh, L.A., GALLIVAN, J.P. & Flanagan, J.R. (2013) Simultaneous encoding of the direction and orientation of potential targets during reach planning: evidence of multiple competing reach plans. *Journal of Neurophysiology* 110 (4): 807-816.

18. Milne, J.L., Chapman, C.S., GALLIVAN, J.P., Wood, D.K., Culham, J.C., & Goodale, M.A. (2013) Connecting the Dots: Object connectedness deceives perception but not movement planning. *Psychological Science* 24 (8): 1456-1465.

17. GALLIVAN, J.P., Chapman, C.S., McLean, D.A., Flanagan, J.R., & Culham, J.C. (2013) Activity patterns in category-selective occipitotemporal cortex predict upcoming motor actions. *European Journal of Neuroscience* 38 (3): 2408-2424.

16. GALLIVAN, J.P., McLean, D.A., Valyear, K.F., & Culham, J.C. (2013) Decoding the neural mechanisms of human tool use. *eLife* 2: e00425.
    - Featured in the 'Insight' section of *eLife* by Mahon (2013).

15. GALLIVAN, J.P., McLean, D.A., Flanagan, J.R., & Culham, J.C. (2013) Where one hand meets the other: Limb-specific and action-dependent movement plans decoded from preparatory signals in single human frontoparietal brain areas. *Journal of Neuroscience* 33 (5): 1991-2008.

14. Hutchison, R.M., GALLIVAN, J.P., Culham, J.C., Gati, J.S., Menon, R.S., & Everling, S. (2012) Functional connectivity of the frontal eye fields in humans and macaque monkeys investigated with resting state fMRI. *Journal of Neurophysiology* 107 (9): 2463-2474.

13. Valyear, K.F., GALLIVAN, J.P., McLean, D.A., & Culham, J.C. (2012) fMRI repetition suppression for familiar but not arbitrary actions with tools. *Journal of Neuroscience* 32 (12): 4247-4259.

12.     GALLIVAN, J.P., McLean, D.A., Smith, F.W., & Culham, J.C. (2011) Decoding effector-dependent and effector-independent movement intentions from human parieto-frontal brain activity. *Journal of Neuroscience* 31 (47): 17149-17168.

11.     GALLIVAN, J.P., McLean, D.A., & Culham, J.C. (2011) Neuroimaging reveals enhanced activation in a reach-selective brain area for objects located within participants' typical hand workspace. *Neuropsychologia* 49 (13): 3710-3721.

10.     Wood, D.K., GALLIVAN, J.P., Chapman, C.S., Milne, J.L., Culham, J.C., & Goodale, M.A. (2011) Visual salience dominates early visuomotor competition in reaching behaviour. *Journal of Vision* 11 (10): 16, 1-11.

9.      GALLIVAN, J.P., McLean, D.A., Valyear, K.F., Pettypiece, C., & Culham, J.C. (2011) Decoding action intentions from preparatory brain activity in human parieto-frontal networks. *Journal of Neuroscience*. 31 (26): 9599-9610.
        - Featured in the *Journal of Neuroscience*'s *Journal Club* section by Vesia and Davare (2011)
        - Recommended by the Faculty of 1000 (F1000)

8.      Valyear, K.F., Chapman, C.S., GALLIVAN, J.P., Mark, R.S., & Culham, J.C. (2011) To use or to move: Goal-set modulates priming when grasping real tools. *Experimental Brain Research*. 212/1: 125-142.

7.      Chapman, C.S., GALLIVAN, J.P., Culham, J.C., & Goodale, M.A. (2011) Mental Blocks: fMRI reveals top-down modulation of early visual cortex when obstacles interfere with grasp planning. *Neuropsychologia* 49 (7): 1703-1717.

6.      GALLIVAN, J.P.*, Chapman, C.S.*, Wood, D.K., Milne, J.L., Ansari, D., Culham, J.C., & Goodale, M.A. (2011) One to four, and nothing more: Non-conscious parallel individuation of objects during action planning. *Psychological Science* 22 (6): 803-811.

5.      Chapman, C.S.*, GALLIVAN, J.P.*, Wood, D.K., Milne, J.L., Culham, J.C., & Goodale, M.A. (2010) Short term motor plasticity revealed in a visuomotor decision-making task. *Behavioural Brain Research*, 214 (1): 130-134.

4.      Chapman, C.S.*, GALLIVAN, J.P.*, Wood, D.K., Milne, J.L., Culham, J.C., & Goodale, M.A. (2010) Reaching for the unknown: Multiple target encoding and real-time decision making in a rapid reach task. *Cognition*, 116 (2): 168-176.

3.      Barry, R.L., Williams, J.M., Klassen, L.M., GALLIVAN, J.P., Culham, J.C., & Menon, R.S. (2010) Evaluation of preprocessing steps to compensate for magnetic field distortions due to body movements in BOLD fMRI. *Magnetic Resonance Imaging*, 28 (2): 235-244.

2.      GALLIVAN, J.P. & Wood, D.K. (2009) Simultaneous encoding of potential grasping movements in the anterior intraparietal area. *Journal of Neuroscience*, 29 (39): 12031-12032. [Commentary]

1.      GALLIVAN, J.P., Cavina-Pratesi, C., & Culham, J.C. (2009) Is that within reach? fMRI reveals that the human superior parieto-occipital cortex encodes objects reachable by the hand. *Journal of Neuroscience*, 29 (14), 4381-91.

## Book chapters (2):

2.  GALLIVAN, J.P. & Goodale, M.A. (2018). The dorsal 'action' pathway. In G. Vallar & H. B. Coslett (Eds.), The Parietal lobes. Neurological and neuropsychological deficits. Handbook of clinical neurology, 3rd series. New York: Elsevier.

1.  Culham, J. C., GALLIVAN, J.P., Cavina-Pratesi, C., & Quinlan, D. J. (2008). fMRI investigations of reaching and ego space in human superior parieto-occipital cortex. In R. L. Klatzky, M. Behrmann, & B. MacWhinney (Eds.), Embodiment, Ego-space and Action. New York: Psychology Press. pp. 247-274.

## <u>International and National Conference Presentations (Selected)</u>

## Talks (25):

25. Standage, D., Hori, Y., Menon, R., Everling, S. & GALLIVAN, J.P. (2020) Differential modular dynamics in marmoset cortex during conscious and unconscious states. Neuromatch 3.0 conference.

24. Areshenkoff, C., Standage.D., Nashed, J., Hutchison, R.M., Hutchison, M., Cook, D.J., Menon, R., Everling, S. & GALLIVAN, J.P. (2020) Muting, not fragmentation, of functional brain networks under general anesthesia. Human Brain Mapping.

23. GALLIVAN, J.P. & Hutchison, R.M. (2016) Functional coupling between the frontoparietal and occipitotemporal pathways during action, perception and rest. Society for Neuroscience, San Diego, CA.

22. GALLIVAN, J.P., Chapman, C.S. Flanagan, J.R. & Culham, J.C. (2016) Selective modulation and remapping of representations in early visual cortex by movement intention. Canadian Association for Neuroscience satellite symposium. Toronto, ON.

21. Culham, J.C., Fabbri, S., GALLIVAN, J.P., Freud, E., Snow, J.C. (2016) Human neuroimaging reveals the importance of real and potentially real hand actions upon real objects for the neural coding in the anterior intraparietal sulcus. Society for the Neural Control of Movement, Jamaica.

20. GALLIVAN, J.P., Chapman, C.S. McLean, D.A., Flanagan, J.R. & Culham, J.C. (2015) Movement intention modulates neural responses in visual cortex. Society for Neuroscience Annual Meeting. Chicago, IL.

19. Cant, J.S., Lowe, M.X., Rajsic, J. & GALLIVAN, J.P. (2015) Are scene-shape and scene-texture processing mediated by shared or distinct neuronal mechanisms in the parahippocampal place area? Society for Neuroscience Annual Meeting. Chicago, IL.

18. GALLIVAN, J.P., Wolpert, D.M. & Flanagan, J.R. (2015) Evidence for motor encoding of potential reach targets. Society for the Neural Control of Movement, Charleston, SC.

17. GALLIVAN, J.P. & Flanagan, J.R. (2013) fMRI decoding reveals preparatory signals underlying object manipulation. Society for the Neural Control of Movement, San Juan, Puerto Rico.

16. GALLIVAN, J.P., Snow, J.C., McLean, D.A., Pettypiece, C.E., & Culham, J.C. (2012). Haptic shape decoding in primary visual cortex. Society for Neuroscience, New Orleans, LA.

15. Culham, J. C., Gallivan, J. P., McLean, D. A., & Valyear, K. F. (2012). Is a tool an extension of the body in the brain?: Decoding separate and shared representations for the hand and tool from human brain activity. Society for Neuroscience, New Orleans, LA.

14. Stewart, B.M., Baugh, L.A., GALLIVAN, J.P. & Flanagan, J.R. (2012). Parallel encoding of target locations and orientations when reaching to multiple potential targets. Society for Neuroscience, New Orleans, LA.

13. Hutchison, R.M., GALLIVAN, J.P., Culham, J.C., Gati, J.S., Menon, R.S., & Everling, S. (2012). Homologous functional connectivity architecture of the monkey and human saccade-related networks. Society for Neuroscience, New Orleans, LA.

12. GALLIVAN, J.P., McLean, D.A., Valyear, K.F., & Culham, J.C. (2012). Decoding the neural mechanisms of human tool use. Canadian society for Brain, Behaviour and Cognitive Science (CSBBCS). Kingston, ONT.

11. Chapman, C.S., GALLIVAN, J.P. & Enns, J.T. (2012). Failure is unavoidable: The effects of reward, reward-learning and penalty on rapid reaching. Vision Sciences Society. Naples, FL.

10. Enns, J.T., Chapman, C.S., & GALLIVAN, J.P. (2011). Reaching for the star: Rapid reaching influenced by learned reward and probability. Annual meeting of the Psychonomic Society, Seattle.

9. GALLIVAN, J.P., McLean, D.A., Smith, F.W., & Culham, J.C. (2011). Decoding effector-dependent and effector-independent movement intentions from human parieto-frontal brain activity. Society for Neuroscience, Washington, DC.

8. GALLIVAN, J.P., McLean, A., Smith. F.W., & Culham, J.C. (2011) Decoding effector-dependent and effector-independent movement intentions from human parieto-frontal brain activity. CPS/CAPnet conference, Sainte-Adele, QUE.

7. Culham, J. C. & Gallivan, J. P. (2011). Decoding of human hand actions using functional magnetic resonance imaging. Federation of European Neuroscience Societies – International Brain Research Organization (FENS-IBRO) Hertie Winter School. Obergurgl, Austria.

6. GALLIVAN, J.P., McLean, A., Valyear, K.F., Pettypiece, C., & Culham, J.C. (2010) Decoding movement intentions from preparatory activity in human parietal and premotor cortex. Society for Neuroscience, San Diego, CA.

5. Culham, J.C., Monaco, S, & GALLIVAN, J.P. (2010) Parietal coding of movement components and object properties in reaching and grasping. International Conference on Parietal Lobe Function, Amsterdam, The Netherlands.

4.    GALLIVAN, J.P., D.A. McLean, & Culham, J.C. (2009) fMRI shows that the extent of reachable space encoded within superior parieto-occipital cortex depends on handedness. Society for Neuroscience, Chicago, IL.

3.    Valyear, K.F., Chapman, C.S., GALLIVAN, J.P., & Culham, J.C. (2009) Tool identity can prime grasping, but only when the goal is to use. Society for Neuroscience, Chicago, IL.

2.    Chapman, C.S., GALLIVAN, J.P., Culham, J.C., & Goodale M.A. (2009) Mental blocks: Using fMRI to reveal the encoding of obstacles during reach-to-grasp movements. Society for Neuroscience, Chicago, IL.

1.    GALLIVAN, J.P., Cavina-Pratesi, C., & Culham, J.C. (2007). Is that within reach? The human Superior Parieto-Occipital Cortex (SPOC) shows greater fMRI activation for reachable objects. Society for Neuroscience, San Diego, CA.


## Selected Posters (60):

60.    Gale, D., Nashed, J.Y., Areshenkoff, C.N., Pearce, C., Smallwood, J., Sheeth, P., Kuhlmeier, V., Sabbagh, M., Blohm, G., De Felice, F., Pare, M., Cook, D.J., Scott, S., Munoz, D.P., Tusche, A., Winterborn, A., Boehnke, S & GALLIVAN, J.P. (2023). Changes in social environment alter the brain structure of macaques. Simian Collective conference.

59.    Rowchan, K., Gale, D.J., Nick, Q., GALLIVAN, J.P., & Wammes, J. (2023). Expansions of visual and attention-related regions along a whole-brain manifold underlie visual statistical learning. The organization of Human Brain Mapping.

58.    Nick. Q., Gale, D.J., Areshenkoff, C.N., De Brouwer, A.J., Nashed, J.Y., Wammes, J., Flanagan, J.R., Smallwood, J. & GALLIVAN, J.P. (2023). Reconfigurations of cortical manifold structure during reward-based motor learning. The organization of Human Brain Mapping.

57.    Standage, D., Fooken, J., De Brouwer, A.J., Gale, D.J., Nashed, J.Y., Flanagan, J.R. & GALLIVAN, J.P. (2023). Sensorimotor adaptation and de-adaptation recruit a common strategic process. The organization of Human Brain Mapping.

56.    Zhu, T., GALLIVAN, J.P., Wolpert, D.M., & Flanagan, J.R. (2021). Human reaching movement adapts to environmental noise. Neural Control of Movement. (Online Conference).

55.    Areshenkoff, C.N., Gale, D.J., Nashed, J.Y., Standage, D., Flanagan, J.R. & GALLIVAN, J.P. (2021). Neural excursions from low-dimensional manifold structure in cognitive and sensorimotor brain networks explains intersubject variation in human motor learning. Neural Control of Movement. (Online Conference)

54.    McGarity-Shipley, M.R., Heald, J.B., Ingram, J.N., GALLIVAN, J.P., Wolpert, D.M. & Flanagan, J.R. (2019) Multiple motor memories are formed for different control units linking the controlled point on a manipulated object and the target object. Society for Neuroscience, Chicago.

53. Moskowitz, J.B., Berger, S.A., Castelhano, M.S., GALLIVAN, J.P. & Flanagan, J.R. (2019) Is visual search for target objects that will be acted upon influenced by motor costs?. Society for Neuroscience, Chicago.

52. Areshenkoff, C.N., De Brouwer, A.J., Nashed, J.Y., Gale, D.J. & GALLIVAN, J.P. (2019) Network-level interactions during sensorimotor adaptation learning and generalization. Society for Neuroscience, Chicago.

51. Gale, D.J., Areshenkoff, C., Nashed, J.Y., Standage, D., Flanagan, J.R. & GALLIVAN, J.P. (2019) Network interactions of frontalparietal regions during visuomotor adaptation. Society for Neuroscience, Chicago.

50. Standage.D., Areshenkoff, C., Nashed, J., Hutchison, R.M., Hutchison, M., Menon, R., Everling, S. & GALLIVAN, J.P. (2019) Temporal dynamics across depths of unconsciousness. Computational Cognitive Neuroscience Conference, Berlin, Germany.

49. Gale, D.J., Honda, C.T., Johnsrude, I.S., Flanagan, J.R. & GALLIVAN, J.P. (2019) Movement preparation modulates activity patterns in auditory cortex during command-driven actions. Organization for Human Brain Mapping, Rome, Italy.

48. Nashed, J.Y., GALLIVAN, J.P. & Cook, D.J. (2019) Predicting recovery using dynamic connectivity metrics in a non-human primate model of stroke. Organization for Human Brain Mapping, Rome, Italy.

47. Areshenkoff, C.N., Standage, D., Nashed, J.Y. & GALLIVAN, J.P. (2018) Functional coupling between the basal ganglia and cerebellum during sensorimotor adaptation learning. Society for Neuroscience, San Diego.

46. Standage, D., Nashed, J.Y., Areshenkoff, C.N., Flanagan, J.R. & GALLIVAN, J.P. (2018) Whole-brain modular structure of spontaneous neural activity at rest predicts future sensorimotor learning and relearning. Society for Neuroscience, San Diego.

45. Gale, D.J., Honda, C.T., Johnsrude, I.S., Flanagan, J.R. & GALLIVAN, J.P. (2018) Interactions between auditory and motor networks during command-driven actions. Society for Neuroscience, San Diego.

44. de Brouwer, A.J., Nashed, J.Y., Standage, D., Flanagan, J.R. & GALLIVAN, J.P. (2018) Changes in human white-matter architecture following sensorimotor adaptation. Society for Neuroscience, San Diego.

43. Proud, K., Heald, J.B., Ingram, J.N., GALLIVAN, J.P., Wolpert, D.M. & Flanagan, J.R. (2018). Multiple motor memories are formed when implicitly controlling different locations on a tool. Society for the Neural Control of Movement, Santa Fe, New Mexico.

42. Gale, D., Carter, M.J., Wolpert, D.M., GALLIVAN, J.P. & Flanagan, J.R. (2017). Dynamic motor encoding of targets in multiple object tracking. Society for Neuroscience, Washington, D.C.

41. De Brouwer, A.J., Albaghdadi, M., Flanagan, J.R. & GALLIVAN, J.P. (2017). Gaze patterns provide a read out of strategy use in visuomotor adaptation. Society for Neuroscience, Washington, D.C.

40. Standage, D., Nashed, J.Y., Areshenkoff, C.N., Flanagan, J.R. & GALLIVAN, J.P. (2017). The evolution of whole-brain community structure during sensorimotor adaptation. Society for Neuroscience, Washington, D.C.

39. Nashed, J.Y., Standage, D., Flanagan, J.R. & GALLIVAN, J.P. (2017). Individual differences in adaptation learning are linked to dynamic changes in functional brain states. Society for Neuroscience, Washington, D.C.

38. Nashed, J.Y., Standage, D., Flanagan, J.R. & GALLIVAN, J.P. (2017). Dynamic changes in brain network organization during visuomotor adaptation learning. Neural Control of Movement, Dublin, Ireland.

37. De Brouwer, A.J., Albaghdadi, M., Flanagan, J.R. & GALLIVAN, J.P. (2017). Extracting the explicit contributions to visuomotor adaptation through gaze patterns. Neural Control of Movement, Dublin, Ireland.

36. Carter, M.J., de Brouwer, A.J., Smail, L., GALLIVAN, J.P. & Flanagan, J.R. (2017). Gaze behaviour reveals the specification of competing reach movements. Neural Control of Movement, Dublin, Ireland.

35. De Brouwer, A.J., Jarvis, T., GALLIVAN, J.P., & Flanagan, J.R. (2016) Rapid visuomotor corrections in reaching are modulated by gaze position. Society for Neuroscience, San Diego, CA.

34. Xu, S., Jeyachandra, J., GALLIVAN, J.P. & Blohm, G. (2016) Differential effects of hd-tDCS on mIPS and PMd in reach planning. Society for Neuroscience, San Diego, CA.

33. Jeyachandra, J., Xu, S., GALLIVAN, J.P. & Blohm, G. (2016) Hd-tDCS moudulated EEG correlations during reaching. Society for Neuroscience, San Diego, CA.

32. Nashed, J.Y., GALLIVAN, J.P., Cook, D.J. & LeClerc (2016) Exploring functional outcomes and cortical plasticity following middle cerebral artery occlusion in a non-human primate. Society for Neuroscience, San Diego, CA.

31. De Brouwer, A.J., Jarvis, T., GALLIVAN, J.P., & Flanagan, J.R. (2016) Rapid visuomotor corrections in reaching are modulated by gaze position. Decision-making conference. University of Montreal, Montreal, QC.

30. Moskowitz, J.B., Gale, D.J., Wolpert, D.M., GALLIVAN, J.P. & Flanagan, J.R. (2015) Decision making during motor learning: investment in learning and reward optimization. Society for Neuroscience Annual Meeting. Chicago, IL.

29. Trewartha, K., GALLIVAN, J.P., & Flanagan, J.R. (2015) The role of dorsolateral prefrontal cortex in motor learning during force-field adaptation: A continuous theta-burst stimulation study. Society for Neuroscience Annual Meeting. Chicago, IL.

28. Xu, S., GALLIVAN, J.P., & Blohm, G. (2015) Investigating the role of mIPS in movement planning using HD-tDCS. Society for Neuroscience Annual Meeting. Chicago, IL.

27. Nashed, J.Y., Wang, J.Z., Hernandez-Castillo, C., GALLIVAN, J.P., Fernandez-Ruiz, J. & Cook, D.J. (2015) Presevation of parietal area 5 is associated with improved motor recovery and functional connectivity following MCA stroke in non-human primates. Society for Neuroscience Annual Meeting. Chicago, IL.

26. Chapman, C.S., GALLIVAN, J.P., Wispinksi, N. & Enns, J.T. (2015) Separating value from selection frequency in rapid reaching biases to visual targets. Reinforcement Learning and Decision-making conference, Edmonton, AB.

25. GALLIVAN, J.P., Johnsrude, I.S. & Flanagan, J.R. (2014) Object-directed action sequences decoded from human frontoparietal and occipitotemporal networks. Society for Neuroscience, Washington, DC.

24. Chapman, C.S., GALLIVAN, J.P., & Enns, J.T. (2014) Action success, not reward value, governs trial-by-trial biases during rapid reach planning. Society for Neuroscience, Washington, DC.

23. Gultepe, E., GALLIVAN, J.P., Hutchison, R.M., Everling, S., Johnsrude, I.S. (2014) Supervised parcellation of resting-state fMRI data in macaque monkeys recovers cytoarchitectonic cortical regions. Society for Neuroscience, Washington, DC.

22. Barton, K., GALLIVAN, J.P., Chapman, C.S., Wolpert, D.M. & Flanagan, J.R. (2014) Co-optimization of multiple competing action plans. Society for Neuroscience, Washington, DC.

21. Gultepe, E., GALLIVAN, J.P., Hutchison, R.M., Everling, S., Johnsrude, I.S. (2013) Supervised parcellation of the macaque auditory cortex using resting-state fMRI. International conference on Auditory Cortex. Magdeburg, Germany.

20. GALLIVAN, J.P., Cant, J.S., Goodale, M.A. & Flanagan, J.R. (2013) Decoding reveals planning-related signals underlying object grasping and manipulation. Society for Neuroscience, San Diego, CA.

19. Wood, D.K., Chapman, C.S., GALLIVAN, J.P., Milne, J.L., Culham, J.C., & Goodale, M.A. (2012) The influence of bottom-up visual salience decays linearly in a compelled reaching paradigm. Society for Neuroscience, San Diego, CA.

18. Wang, D., Miao, D.Q., Coe, B., GALLIVAN, J.P., & Blohm, G. (2012) Visual-tactile integration in the human brain: A combined EEG-fMRI study. Society for Neuroscience, San Diego, CA.

17. Wood, D.K., Chapman, C.S., GALLIVAN, J.P., Milne, J.L. & Goodale, M. A. (2012). Characterizing the arrival of task-relevance: Parametric delays in a rapid reaching task reveal the transition from salience-based to task-based performance. Canadian Association for Neuroscience, Toronto, ON.

16. McAdam, T.D., GALLIVAN, J.P., McLean, D.A. & Culham, J.C. (2012). Grasping with a twist: Decoding action intentions in the human brain using fMRI. Society for Neuroscience, New Orleans, LA.

15. Wood, D.K., Chapman, C.S., GALLIVAN, J.P., Milne, J.L., Culham, J.C. & Goodale, M.A. (2012). A reaching task reveals the rapid extraction of probability information from arbitrary colour cues. European Conference on Visual Perception. Alghero, Italy.

14. Hutchison, R.M., GALLIVAN, J.P., Culham, J.C., Gati, J.S., Menon, R.S., & Everling, S. (2012). Functional connectivity of the frontal eye fields in humans and macaque monkeys investigated with resting-state fMRI. Biennial Conference on Resting State Brain Connectivity. Magdeburg, Germany.

13. Valyear, K.F., GALLIVAN, J.P., McLean, D.A., and Culham, J.C. (2012). fMRI repetition suppression for familiar but not arbitrary actions with tools. 6th annual workshop on Concepts, Actions, and Objects: Functional and Neural Perspectives, Rovereto, Italy.

12. Stewart, B.M., Flanagan, J.R., GALLIVAN, J.P., Khan, A.Z., & Baugh, L (2012). Encoding target location and orientation in a reaching task. Canadian society for Brain, Behaviour and Cognitive Science (CSBBCS). Kingston, ONT.

11. Wood, D.K., Milne, J.L., Chapman, C.S., GALLIVAN, J.P., Culham, J.C., & Goodale, M.A. (2012). A reaching task reveals the rapid extraction of probability information form arbitrary colour cues. Canadian society for Brain, Behaviour and Cognitive Science (CSBBCS). Kingston, ONT.

10. McAdam, T.D., McLean, D.A., GALLIVAN, J.P. & Culham, J.C. (2012). Grasping with a twist: fMRI decoding of object orientation and intended hand actions. Canadian society for Brain, Behaviour and Cognitive Science (CSBBCS). Kingston, ONT.

9. Hutchison, R.M., GALLIVAN, J.P., Culham, J.C., Gati, J.S., Menon, R.S., & Everling, S. (2012). Homologous functional connectivity architecture of the monkey and human saccade-related networks. Society for Neuroscience, Washingston, D.C.

8. Chapman, C.S., GALLIVAN, J.P., Wood, D.K., Milne, J.L., Culham, J.C., & Goodale, M.A. (2010) Rapid reaching task 'points' toward different representations of number. Society for Neuroscience, San Diego, CA.

7. Wood, D.K., GALLIVAN, J.P., Chapman, C.S., Milne, J.L., Culham, J.C., & Goodale, M.A. (2010) Visual salience of potential targets overrides spatial probabilities in a rapid visuomotor task. Society for Neuroscience, San Diego, CA.

6. Valyear, K. F., GALLIVAN, J.P., McLean, A., Chapman, C.S., & Culham, J.C. (2010) Neural priming of tool use. Society for Neuroscience, San Diego, CA.

5. GALLIVAN, J.P., Chapman C.S., Wood D.K., Milne J., Culham J.C., & Goodale M.A. (2009) Stuck in the middle: Kinematic evidence for optimal reaching in the presence of multiple potential reach targets. Vision Sciences Society meeting in Naples, FL.

4. Chapman C.S., GALLIVAN, J.P., Wood D.K., Milne J., Culham J.C., & Goodale M.A. (2009) Dynamic Target Acquisition: Rapid reach responses in the presence of multiple potential reach targets. Canadian Neuroscience Meeting, Vancouver, BC.

3. GALLIVAN, J.P., Chapman, C.S., & Culham, J.C. (2008). Do objects within reach prime the visuomotor system for action? Canadian Neuroscience Meeting, Montreal, QUE

2.    GALLIVAN, J.P., Cavina-Pratesi, C., & Culham, J.C. (2007). The effects of reachability and tool use on fMRI activation for brain regions involved in hand actions. Canadian Neuroscience Meeting, Toronto, ONT.

1.    GALLIVAN, J.P., Cavina-Pratesi, C., & Culham, J. C. (2006). Do objects within reach activate human brain regions involved in hand actions?: An fMRI study. Society for Neuroscience, Atlanta, GA.

## **Invited Talks**

21.    GALLIVAN, J.P. (2023). Learning-dependent changes in cortical manifold structure. May 12, 2023. York University.

20.    GALLIVAN, J.P. (2021). What would it take to do 'mind-reading' with fMRI? Is it possible? April 22. A Neurotech Future: Ethical, Legal and Policy Issues. Queen's University.

19.    GALLIVAN, J.P. (2021). Motor planning under certainty and uncertainty. Vrije University, Amsterdam. April 14.

18.    GALLIVAN, J.P. (2019). The cognitive bases of good learning. Western University. March 15.

17.    GALLIVAN, J.P. (2019). The importance of being promiscuous: How brain network affiliation drives learning. Lower Ontario Visionary Establishment Conference, Niagara Falls, Ontario. February 6th.

16.    GALLIVAN, J.P. (2017). Neural representations for action in human occipitotemporal cortex. Society for the Neural Control of Movement, Satellite Symposium, Dublin, Ireland. May 1st.

15.    GALLIVAN, J.P. (2016). Neural coding of action plans across human cortex. Haskins Laboratories, New Haven, CT. Sept. 29th.

14.    GALLIVAN, J.P. (2016). Neural representations of action in frontoparietal and occipitotemporal circuits. Umea University, Umea, Sweden. June 15th.

13.    GALLIVAN, J.P. (2015). Representation of action-related information in visual cortical areas. Queen's University, Kingston, ON, Nov. 3rd. Seminar in the Canadian-German International Research Training Group series.

12.    GALLIVAN, J.P. (2015) Decoding intentions from human brain activity. Queen's University, Kingston, ON. August 6th.

11.    GALLIVAN, J.P. (2015) Deciphering intentions from brain activity. University of Western Ontario, London, ON. July 3rd.

10.    GALLIVAN, J.P. (2015) Decoding intentions from human brain activity. Montreal Neurological Institute, McGill University, Montreal, QC. May 21st.

9.  GALLIVAN, J.P. (2015) Reading action intentions from human fMRI activity patterns. University of Toronto, Mississauga campus, ONT. January 19th.

8.  GALLIVAN, J.P. (2015) Decoding action intentions from patterns of human brain activity. Dartmouth College, Hanover, NH. January 12th.

7.  GALLIVAN, J.P. (2014) Deciphering intentions from human brain activity. Univeristy of Ottawa, Brain and Mind Research Institute, Ottawa, ONT. December 8th.

6.  GALLIVAN, J.P. (2014) Action plan decoding from human frontoparietal circuits. Society for Neuroscience, Washington, DC. November 17th.

5.  GALLIVAN, J.P. (2013) Predicting object-oriented behaviour from fMRI response patterns in human visual cortex. Queen's University, Department of Psychology, Kingston, ONT. December 4th.

4.  GALLIVAN, J.P. (2013) Decoding intentions from human brain activity. University of Toronto, Department of Psychology, Toronto, ONT. November 25th.

3.  GALLIVAN, J.P. (2013) Decoding action intentions from human brain activity patterns. CIHR Brain Star talk delivered at the Canadian Association for Neuroscience (CAN-ACN) Annual Meeting. Toronto ONT, May 23rd.

2.  GALLIVAN, J.P. (2013) Neural representations underlying object manipulation. Southern Ontario Neuroscience Association (SONA) Annual Meeting. Laurier University, Kitchener ONT, May 13th 2013.

1.  GALLIVAN, J.P. (2012) Decoding action intentions from fMRI activity in the ventral and dorsal visual streams. Psychology Distinguished Lecturer Series, Queen's University, Kingston, ONT. November 23rd.

## Supervision of Trainees and Personnel

### CURRENT:

### Research Associate (1):
- Dan Gale (2022-present)

### Postdoctoral Supervisor (1):
- Dominic Standage (2021-present)

### Graduate Supervisor (5):
- Ali Rezaei (2023-present; PhD Canddiate)
- Tianyao Zhu (2021-present; PhD Candidate; Co-supervised)
- Michael McGarity-Shipley (2017-present; PhD Candidate; Co-supervised)
- Colleen Pearce (2022-present; MSc Candidate)
- Keanna Bamdad-Rowchan (2022-present; MSc Candidate)

### Staff Supervisor (1):
- Martin York, Programmer (2016-present, full-time, Co-supervised)

**Honours Students and Research Project Students (2)**
- Danielle Bukovsky, Honours Psychology Thesis (2022-present)
- Julie McGregor, Honours Life Sciences Thesis (co-supervised; 2022-present)

**PAST:**

*Postdoctoral Fellows*
- Josh Nashed (2016-2019; co-supervision)
  - Current Position: MD program at Queen's
- Anouk de Brouwer (2017-2018; co-supervision)
  - Current Position: Postdoc at University of British Columbia
- Michael Carter (2016-2017; co-supervision)
  - Current Position: Faculty at McMaster University

*Graduate Students*
- Corson Areshenkoff (2017-2023; PhD)
- Qasem Niksefat (2021-2023; MSc)
- Dan Gale (2016-2018 for MSc and 2018-2022 for PhD)
- Michael McGarity-Shipley (2017-2019; MSc)

*Staff*
- Adam McLean, Software Engineer (2016-2017, part-time)

*Undergraduate Honour's Thesis Advisor*
- Colleen Pearce, Honours Psychology Thesis (2021-2022)
- Jordan Pepper, Honours Life Sciences Thesis (co-supervised; 2021-2022)
- Hannah Sly, Honours Life Sciences Thesis (co-supervised; 2021-2022)
- Angela Choudhury, Honours Psychology Thesis (2020-2021)
- Jesse Fu, Honours Life Sciences Thesis (co-supervised; 2020-2021)
- Tiana Wong, Honours Life Sciences Thesis (co-supervised; 2020-2021)
- Ian Goodall-Halliwell, Honours Life Sciences Thesis (co-supervised; 2020-2021)
- Olivia Scoten, Honours Psychology Thesis (2019-2020)
- Rachel Rumas, Honours Psychology Thesis (2018-2019)
- Jameson Rokeby, Honours Life Sciences Thesis (2018-2019)
- Zoe Frank, Directed Lab Student in Life Science (2018-2019)
- Claire Honda, Honours Psychology Thesis (2017-2018)
  - Winner of a Canadian Psychological Association Certificate of Excellence Award for her thesis work.
- Gregory Brooks, Honours Life Sciences Thesis (2017-2018)
- Mohammed Albaghdadi, Honours Psychology Thesis (2016-2017)


*NSERC Summer Students*
- Jameson Rokeby (3rd year student in Life Science) (2018)

**Teaching Experience**

2020-present          Instructor/Lecturer

*Psychology 801, Statistics & Research Design, Graduate-level*

| | |
|---|---|
| *2018-present* | Instructor/Lecturer |
| | *Psychology 917, fMRI Design and Analysis, Graduate-level* |

| | |
|---|---|
| *2017-present* | Instructor/Lecturer |
| | *Psychology 376, Functional Neuroimaging of Human Cognitive Brain Function, Undergraduate-level* |

| | |
|---|---|
| *2018-2019* | Thesis Coordinator, Neuroscience Program |
| | *Neuroscience 499, Honour's thesis project course, Undergraduate-level* |

## Administrative duties

### CURRENT:
- Co-Lead, Connected Minds Facilities and Infrastructure committee (2023-present)
- Lead, Queen's MRI Facility, Centre for Neuroscience Studies (2019 – present)
- Member of MRI Management Committee, Centre for Neuroscience Studies (2019 – present)
- Member of Centre for Neuroscience Studies Executive Committee, Queen's University (2017 - present)

### PAST:
- Coordinator for the Distinguished Lecturer Series in Psychology (2022 - 2023)
- Board Member, General Research Ethics Board (GREB), Queen's (2021 – 2022)
- Psychology Computer Officer at Queen's University (2016 – 2020)
- Undergraduate Chair, Neuroscience Program, Faculty Health Science (2019 - 2021)
- Renewal, Tenure and Promotion Committee in Psychology (2019 - 2020)
- Advisory Committee member at Queen's University for 2 job Psychology searches in Cognitive Neuroscience (2018 – 2018)
- Search Committee member at Queen's University for Neuroeconcomics Queen's National Scholar position (2017 - 2018)
- Stauffer Library Advisory Committee at Queen's University, Arts & Science Representative (2016-2019)
- Interim Director of the MRI Facility at Queen's University (2016-2017)
- Member of MRI Facility Management committee at Queen's University (2014-2017)

## Contributions
- Invited Panelist on 'Hot topics in neuroscience'. Neugeneration conference (2019)
- Internal reviewer for Queen's MSc and PhD Ontario Graduate Scholarship applications
- Member of the *eLife* Early Careers advisory group (2014-2018)
- Invited Panelist on the 'How to write a proposal workshop'. Inaugural Centre for Neuroscience Studies' NeuroRetreat (2016)
- Organizer of the *Nanosymposium* talk session entitled "Neurophysiology: Planning and Execution" presented at the 45th annual meeting of the Society for Neuroscience. Chicago, IL (2015).
- Organizer of the *Team Presentation* talk session entitled "Neural bases of the sensorimotor control of object grasping and manipulation" presented at the 23rd annual meeting of the Society for the Neural Control of Movement. San Juan, Puerto Rico (2013).

Ad Hoc Reviewer of Submitted Manuscripts for the following journals:

Cerebral Cortex, Cognition, Cognitive Neuropsychology, Cortex, Current Biology, European Journal of Neuroscience, eLife, eNEURO, Experimental Brain Research, Frontiers, Human Brain Mapping, Journal of Cognitive Neuroscience, Journal of Experimental Psychology: General, Journal of Neuroscience, Journal of Neurophysiology, Multisensory Research, Nature Neuroscience, Neuroimage, Neuropsychologia, Neuron, Perception, Proceedings of the National Academy of Sciences.

Ad Hoc Reviewer of Research Award and Grant Applications:
NSERC Discovery Grant competition (2017)
CIHR Brain Star Awards (2017, 2018) competition
KU Leuven C2 Funding (Research Council and IOF Council; 2017)
German-Israeli Foundation (GIF) for Scientific Research and Development (2016)
Youth Outreach and Community Service
Brain Awareness Day at Queen's University (2012, 2013, 2016 - 2018)

## Professional Affiliations

Member of the Society for Neuroscience (2006 – Present)
Member of the Canadian Association for Neuroscience (2013 – Present)
Member of the Society for the Neural Control of Movement (2012 - Present)

## Media Interviews and Press (selected)

- Print, Science Daily. When choosing your next move, your brain is always ready for plan B. February 15 2017.
- Print Interview, Second Opinion (CBC). February 17, 2017.
- Radio Interview, Naked Scientists Podcast. February 14, 2017.
- Print, Daily Mail. At a crossroads? Your brain conjures up all the possible actions you could take before you make a decision. February 14, 2017.
- Print, Science Daily. Decision making in action. January 11, 2016.
- Print, Headlines and Global News. Human brain plans multiple potential courses of action during decision making, study says. January 12, 2016.
- Print, Daily Mail. Decisions, decisions! Our brain plan multiple courses of action simultaneously before deciding the best movement to make. January 12, 2016.
- Print Interview, Queen's University News Centre. A weighty discovery. July 24, 2014.
- Print Interview, Queen's University News Centre. Research advances understanding of the human brain. March 1, 2013.
- Print Interview, Reader's Digest. 12 medical breakthroughs of the year. September 28, 2011 (published January, 2012).
- Radio Interview, CBC Radio One (Ontario Morning). July 5, 2011.
- Print Interview, Metro News. Brain activity making waves. July 4, 2011.
- Print Interview, CBC News. Scientists read minds to predict hand actions. July 1, 2011.
- Radio Interview, Fanshawe Radio. June 30, 2011.
- TV Interview, A-Channel News (Health and Home). June 29, 2011.
- Print, The Times of India. Brain waves can foretell future actions. July 1, 2011.
- Print, The Register. Brainscan breakthrough: Working robot limbs come closer. June 30, 2011.
- Print, TG Daily. Scientists move closer to mind reading. June 30, 2011.
- Print, neurosciencenews.com. Researchers can predict future actions from brain activity. June 29th, 2011.

- Print, thehealthline.ca. <u>Western researchers can predict future actions from brain activity</u>. June, 29<sup>th</sup>, 2011.
- Print, Daily Mail. <u>Mind-reading scientists predict what a person is going to do before they do it</u>. July 1, 2011.