

Curriculum Vitae

Name: **Marieke Mur**

Current position: **Assistant Professor**
Department of Psychology
Department of Computer Science
Brain and Mind Institute
Western University

Contact information: Western Interdisciplinary Research Building
Western University
London ON N6A 5B7
Canada
Email: mmur@uwo.ca
Website: <https://murlab.org/>

Academic positions

2019 – to date **Assistant Professor**, Western University, Canada

2015 – 2018 **Research Fellow**, Darwin College, University of Cambridge, UK

2011 – 2018 **Postdoctoral Research Fellow**, Medical Research Council Cognition and Brain Sciences Unit (MRC CBU), University of Cambridge, UK
Advisors: N Kriegeskorte, J Duncan
Supported by British Academy and Rubicon Postdoctoral Fellowships

Education

2006 – 2011 **PhD in Cognitive Neuroscience**, Maastricht University, Netherlands
“High-level visual object representations in inferior temporal cortex”
Advisors: P de Weerd, R Goebel

2006 – 2008 Pre-doc visiting fellow, Section of Functional Imaging Methods at the National Institutes of Health (NIH), Graduate Partnerships Program (GPP), Bethesda MD, USA
Advisors: N Kriegeskorte, P Bandettini

2004 – 2006 **MSc in Cognitive Neuroscience**, Maastricht University, Netherlands

2001 – 2004 **BSc in Psychology**, Maastricht University, Netherlands

Awards and scholarships

2020	CFREF BrainsCAN Accelerator Stimulus Grant (\$ 92,847)
2020	Western Strategic Support for CIHR Success Seed Grant (\$ 23,330)
2019	NSERC Discovery Grant (\$ 190,000)
2019	NSERC Discovery Early Career Researcher Launch Supplement (\$ 12,500)
2017	MRC Special Award Scheme (£ 1,600)
2016	MRC S-zone Salary Bonus Award (£ 2,000/p.a.)
2015	Schlumberger Research Fellow, Darwin College, University of Cambridge
2015	British Academy Postdoctoral Fellowship (£ 185,772)
2011	NWO Rubicon Postdoctoral Fellowship (€ 147,697)
2011	Universiteitsfonds Limburg/SWOL Research & Education grant (€ 2,000)
2009	Vision Sciences Society Student Travel Award (\$ 500)
2007	NIH GPP Travel Award (\$ 1,000)
2006	NIH Intramural Research Training Award (\$ 66,748)
2006	MSc Thesis Award, Maastricht University (€ 500)
2006	MSc awarded cum laude, Maastricht University

Teaching and mentoring

2020 – to date	Instructor of graduate course on neural networks (PSY 9221B), Western University
2019 – to date	Academic advisor on MSc (1) and PhD (4) committees, Western University
2015 – to date	Thesis examiner for BSc (4), MSc (4), and PhD (4; listed below) students <ul style="list-style-type: none">◦ Daniella Ladowski, Western University, 2019◦ Juan Eloy Arco, University of Granada, 2019◦ Thomas Emmerling, Maastricht University, 2016◦ Rosanne Rademaker, Maastricht University, 2015
2012 – to date	Supervision of bachelor, master, and PhD students in the fields of cognitive and computational neuroscience Supervised students (* indicates primary supervisor): <ul style="list-style-type: none">◦ Reebal Rafeh, PhD, Western University, 2020-◦ Cassie Bacher, MSc, Western University, 2020-◦ *Jinkang Xiang, MSc, Western University, 2020-◦ *Geetika Gupta, MSc, Western University, 2019-◦ *Ehsan Tousi, MSc, Western University, 2019-◦ Kamila Jozwik, PhD, University of Cambridge, 2014-2016◦ *Johannes Mehrer, MSc, Maastricht University, 2015◦ *Stephan Brüggemann, MSc, Maastricht University, 2012-2013◦ Judith Borowski, BSc, Technical University of Munich, 2015-2016
2017	Chair of session on multivariate pattern analysis techniques, CBU Methods Day
2015 – 2017	Undergraduate workshops on functional magnetic resonance imaging (fMRI), University of Cambridge
2014 – 2017	Graduate workshops on fMRI multivariate pattern analysis techniques , University of Cambridge
2014	Workshop on fMRI multivariate pattern analysis techniques, University of Granada
2009 – 2011	Lectures on object perception and neuroimaging methods , Maastricht University
2003 – 2011	Tutor and mentor of undergraduate students of psychology, including the following subjects: perception, memory, cognition, statistics, computer programming, scientific writing, philosophy of science, Maastricht University

Academic activities

2020 – to date	Member of Neuroscience Graduate Program Committee, Western University
2020 – to date	Member of Psychology Research Methods & Statistics Curriculum Revision task force
2020 – to date	Co-chair of BrainsCAN HQP Committee, Western University
2019 – to date	Member of BrainsCAN Computational Core Committee, Western University
2017 – to date	Expert grant reviewer for Research Foundation Flanders, NSERC
2009 – to date	Expert reviewer for Science, PNAS, eLife, Journal of Neuroscience, Neuroimage, Cerebral Cortex, Human Brain Mapping, Social Cognitive and Affective Neuroscience, Language Cognition and Neuroscience, PLoS One, Biological Psychology, Cognitive Computational Neuroscience Proceedings
2006 – to date	Member of Society for Neuroscience, Vision Sciences Society, Organization for Human Brain Mapping, Cognitive Neuroscience Society
2019	Co-organiser of Western Brainhack
2016 – 2018	Member of Imaging Management Committee, CBU, University of Cambridge
2014	Co-organiser of the Cambridge Pint of Science event (public engagement)
2011	Organiser and chair of international mini symposium “Imaging of high-level object representations in the primate brain”, Maastricht University
2009 – 2011	Academic staff member of the University Council , Maastricht University
2006 – 2008	Member of several committees of the Graduate Student Council of the GPP, including the academic committee and the annual symposium-organising committee
2004	Chair of the Student Council , Faculty of Psychology and Neuroscience, Maastricht University

Publications

Author order reflects relative contribution. Senior author appears last. * indicates trainee

Journal articles

1. **Mur M**, Mitchell DJ, *Brüggemann S, Duncan J (in revision). Stimulus effects dwarf task effects in human visual cortex. *J Neurosci*
2. Rafah R, Gupta G (2020). Information-limiting correlations in neural populations: The devil is in the details. *J Neurosci* 40: 7782-7784
3. Diedrichsen J, Berlot E, **Mur M**, Schutt HH, Kriegeskorte N (2020). Comparing representational geometries using the unbiased distance correlation. arXiv: 2007.02789
4. Basti A, **Mur M**, Kriegeskorte N, Pizella V, Marzetti L, Hauk O (2019). Analysing linear multivariate pattern transformations in neuroimaging data. *PLoS ONE*
5. Henriksson L, **Mur M**, Kriegeskorte N (2019). Rapid invariant encoding of scene layout in human OPA. *Neuron* doi: <https://doi.org/10.1016/j.neuron.2019.04.014>
6. Schmitz TW, **Mur M**, Aghourian M, Bédard M-A, Spreng RN (2018). Longitudinal Alzheimer’s degeneration reflects the spatial topography of cholinergic basal forebrain projections. *Cell Reports* 24: 38-46.

7. Guo Y, Schmitz TW, **Mur** M, Ferreira CS, Anderson MC (2018). A supramodal role of the basal ganglia in memory and motor inhibition: Meta-analytic evidence. *Neuropsychologia* 108: 117-134.
8. *Jozwik K, Kriegeskorte N, Storrs K, **Mur** M (2017). Deep convolutional neural networks outperform feature-based but not categorical models in explaining object similarity judgments. *Frontiers in Psychology* doi: 10.3389/fpsyg.2017.01726
9. Pelekanos V, **Mur** M, Storrs KR (2016). Extracting object identity: Ventral or dorsal visual stream? *The Journal of Neuroscience* 36: 6368-6370.
10. *Jozwik K, Kriegeskorte N, **Mur** M (2016). Visual features as stepping stones toward semantics: Explaining object similarity in IT and perception with non-negative least squares. *Neuropsychologia* 15: 30199-30208.
11. Henriksson L, **Mur** M, Kriegeskorte N (2015). Faciotopy – a face-feature map with face-like topology in the human occipital face area. *Cortex* 72: 156-167.
12. **Mur** M, Kriegeskorte N (2014). What's there, distinctly, when and where? *Nature Neuroscience* 17: 332-333, commentary.
13. **Mur** M (2014). What's the difference between a tiger and a cat? From visual object to semantic concept via the perirhinal cortex. *The Journal of Neuroscience* 34: 10462-10464, commentary.
14. **Mur** M, Meys M, Bodurka J, Goebel R, Bandettini PA, Kriegeskorte N (2013). Human object-similarity judgments reflect and transcend the primate-IT object representation. *Frontiers in Psychology* doi: 10.3389/fpsyg.2013.00128
15. Liu N, Kriegeskorte N, **Mur** M, Hadj-Bouziane F, Luh WM, Tootell RBH, Ungerleider L (2013). Intrinsic structure of visual exemplar and category representations in the macaque brain. *The Journal of Neuroscience* 33: 11346-11360.
16. Goffaux V, Schiltz C, **Mur** M, Goebel R (2013). Local discriminability determines the strength of holistic processing for faces in the fusiform face area. *Frontiers in Psychology* doi: 10.3389/fpsyg.2012.00604
17. **Mur** M, Ruff DA, Bodurka J, De Weerd P, Bandettini PA, Kriegeskorte N (2012). Categorical, yet graded – single-image activation profiles of human category-selective cortical regions. *The Journal of Neuroscience* 32: 8649-8662.
18. Kriegeskorte N, **Mur** M (2012). Inverse MDS: Inferring dissimilarity structure from multiple item arrangements. *Frontiers in Psychology* doi: 10.3389/fpsyg.2012.00245
19. **Mur** M, Ruff DA, Bodurka J, Bandettini PA, Kriegeskorte N (2010). Face-identity change activation outside the face system: “Release from adaptation” may not always indicate neuronal selectivity. *Cerebral Cortex* 20:2027-2042.
20. **Mur** M, Bandettini PA, Kriegeskorte N (2009). Revealing representational content with pattern-information fMRI – an introductory guide. *Social Cognitive and Affective Neuroscience* doi:10.1093/scan/nsn044

21. Kriegeskorte N, **Mur** M, Ruff DA, Kiani R, Bodurka J, Esteky H, Tanaka K, Bandettini PA (2008). Matching categorical object representations in inferior temporal cortex of man and monkey. *Neuron* 60:1126-1141.
22. Kriegeskorte N, **Mur** M, Bandettini P (2008). Representational similarity analysis – a general framework for relating computational theory and modalities of brain-activity measurement. *Frontiers in Systems Neuroscience* doi:10.3389/neuro.06.004.2008

Book chapters

1. **Mur** M, Kriegeskorte N (2012). Tutorial on pattern classification in functional imaging. In: Kriegeskorte N, Kreiman G (eds.) *Visual population codes: toward a common multivariate framework for cell recording and functional imaging*: 539-564. The MIT Press, Cambridge MA, United States
2. Kriegeskorte N, **Mur** M (2012). Representational similarity analysis of object population codes in humans, monkeys, and models. In: Kriegeskort N, Kreiman G (eds.) *Visual population codes: toward a common multivariate framework for cell recording and functional imaging*: 307-334. The MIT Press, Cambridge MA, United States
3. **Mur** M (2011) High-level visual object representations in inferior temporal cortex. *PhD thesis*, ISBN 9789461590985. Universitaire Pers Maastricht, Maastricht, Netherlands

Conference publications

1. *Jozwik K, Kriegeskorte N, Cichy RM, **Mur** M (2018). Deep convolutional neural networks, features, and categories perform similarly at explaining primate high-level visual representations. *Cognitive Computational Neuroscience Conference Proceedings*
Paper, refereed
2. **Mur** M, *Borowski J, Kriegeskorte N (2017). Functional readout analysis reveals nonlinear representational transformation from early visual to category-selective regions. *Journal of Vision*
Abstract, non-refereed
3. **Mur** M, Bell A, Malecek NJ, Morin EL, Duncan J, Kriegeskorte N (2016). Representational dynamics: the temporal evolution of neural population coding in nonhuman primate inferior temporal cortex. *Journal of Vision*
Abstract, non-refereed
4. Walther A, Diedrichsen J, **Mur** M, Khaligh-Razavi SM, Kriegeskorte N (2016). Sudden emergence of categoricity at the lateral-occipitalstage of ventral visual processing. *Journal of Vision*
Abstract, non-refereed
5. *Jozwik KM, Kriegeskorte N, Cichy RM, **Mur** M (2016). Visual features versus categories: explaining Object representations in primate IT and deep neural networks with weighted representational modeling. *Journal of Vision*
Abstract, non-refereed
6. Kriegeskorte N, **Mur** M, Henriksson L (2013). Faciotopy - a face-feature map with face-like topology in the occipital face area. *Journal of Vision*
Abstract, non-refereed

7. Liu N, Kriegeskorte N, **Mur** M, Hadj-Bouziane F, Luh WM, Tootell R, Ungerleider L (2013). Intrinsic structure of visual exemplars and category representations in macaque brain. *Journal of Vision* Abstract, non-refereed
8. **Mur** M, Meys M, Bodurka J, Bandettini P, Kriegeskorte (2009). Relating neural object representations to perceptual judgments with representational similarity analysis. *Journal of Vision* Abstract, non-refereed
9. **Mur** M, Ruff D, Bodurka J, Bandettini P, Kriegeskorte N (2008). Ranking 96 object images by their activation of FFA. *Journal of Vision* Abstract, non-refereed
10. Kriegeskorte N, **Mur** M, Ruff D, Kiani R, Bodurka J, Bandettini P (2007). Exploring visual object representations with similarity-matrix analysis. *Journal of Vision* Abstract, non-refereed
11. Kriegeskorte N, **Mur** M, Ruff D, Bodurka J, Bandettini P (2006). Recognizing a person by face: Dissociating brain regions involved in perceptual and conceptual components of person identification. *Journal of Vision* Abstract, non-refereed
12. Broers NJ, **Mur** MC, Bude L (2005). Directed self-explanation in the study of statistics. *International Association for Statistical Education Roundtable Conference Proceedings* Paper, refereed

Presentations

Author order reflects relative contribution. Senior author appears last (* indicates co-senior author).
First author presented.

Conference presentations

1. Tousi E, **Mur** M (2020). Unsupervised learning yields human-like object representations. *Annual Bernstein Conference* (virtual)
Poster presentation
2. Torun C, Chung J, **Mur** M (2020). A generative model of object-object occlusion stimuli. *Annual Bernstein Conference* (virtual)
Poster presentation
3. Gupta G, Khan AR, **Mur** M (2020). Individually unique functional organization in human frontoparietal cortex. *Organization for Human Brain Mapping Annual Meeting* (Montreal QC, Canada)
Poster presentation
4. Rafeh R, Kay K, Khan AR, ***Mur** M, *Schmitz TW (2020). Attentional effects on correlated neuronal noise and visual population coding. *Neuroscience Research Day* (London ON, Canada)
Poster presentation
5. **Mur** M, Kay K, Schmitz T (2019). Tracking noise correlations with human fMRI. *Society for Neuroscience Annual Meeting* (Chicago IL, United States)
Talk

6. Lin B, **Mur M**, Kietzmann T, Kriegeskorte N (2019). Visualizing representational dynamics with multidimensional scaling alignment. *Cognitive Computational Neuroscience Annual Meeting* (Berlin, Germany)
Poster
7. Berlot E, **Mur M**, Diedrichsen J (2019). Representational connectivity: comparing the sensitivity of connectivity metrics to noise. *Organization for Human Brain Mapping Annual Meeting* (Rome, Italy)
Poster presentation
8. **Mur M**, Bell A, Malecek NJ, Morin EL, Duncan J, Kriegeskorte N (2019). Do responses in nonhuman primate inferior temporal cortex reflect external variables or internal dynamics? *Vision Sciences Society Annual Meeting* (St Pete Beach FL, United States)
Poster presentation
9. **Mur M**, Bell A, Malecek NJ, Morin EL, Duncan J, Kriegeskorte N (2017). Representational dynamics: the temporal evolution of neural population coding in nonhuman primate inferior temporal cortex. *Cognitive Computational Neuroscience Annual Meeting* (New York NY, United States)
Poster presentation
10. **Mur M**, Mitchell DJ, *Brüggemann S, Duncan J (2017). Stimulus effects dwarf task effects in visual regions. *Society for Neuroscience Annual Meeting* (Washington DC, United States)
Talk
11. Henriksson L, **Mur M**, Kriegeskorte N (2017). Spatiotemporal representations of visual-scene boundaries in the human brain. *European Conference on Visual Perception Annual Meeting* (Berlin, Germany)
Talk
12. **Mur M**, Duncan J (2016). Task context transforms object representations in inferior temporal cortex but not V1. *Society for Neuroscience Annual Meeting* (San Diego CA, United States)
Talk
13. *Jozwik KM, Kriegeskorte N, Cichy RM, **Mur M** (2016). Representation of visual features and categories across space and time in human, monkey, and convolutional neural networks. *Society for Neuroscience Annual Meeting* (San Diego CA, United States)
Talk
14. *Jozwik KM, Kriegeskorte N, **Mur M** (2016). Explaining high-level object representations with weighted representational modelling. *Organization for Human Brain Mapping Annual Meeting* (Geneva, Switzerland)
Talk
15. *Jozwik KM, Kriegeskorte N, **Mur M** (2016). Visual features versus categories: explaining object representations in primate IT and deep neural networks with weighted representational modelling. *Concepts, Actions, and Objects Annual Meeting* (Rovereto, Italy)
Talk
16. **Mur M**, Bell A, Malecek NJ, Morin EL, Duncan J, Kriegeskorte N (2015). Representational dynamics: neural population coding of objects in nonhuman primate inferior temporal cortex. *Society for Neuroscience Annual Meeting* (Chicago IL, United States)

Talk

17. *Jozwik KM, Kriegeskorte N, **Mur** M (2015). Object representations in human inferior temporal cortex: categorical or feature-based? *Society for Neuroscience Annual Meeting* (Chicago IL, United States)
Talk
18. **Mur** M, *Brüggemann S, Duncan J (2013). Flexible coding of visual objects in human visual and multiple-demand cortex. *Society for Neuroscience Annual Meeting* (San Diego CA, United States)
Poster presentation
19. Henriksson L, **Mur** M, Kriegeskorte N (2012). Distributed representations of face features in the human visual cortex. *Society for Neuroscience Annual Meeting* (New Orleans LA, United States)
Talk
20. **Mur** M, Meys M, Bodurka J, Bandettini P, Kriegeskorte N (2011). Relating neural object representations to perceptual judgments with representational similarity analysis. *Dartmouth Neural Computation Workshop* (Hanover NH, USA)
Poster presentation
21. Liu N, Kriegeskorte N, **Mur** M, Hadj-Bouziane F, Tootell RBH, Ungerleider LG (2010). Patterns of fMRI response elicited by individual faces in macaque cerebral cortex. *Society for Neuroscience Annual Meeting* (San Diego CA, USA)
Poster presentation
22. **Mur** M, Meys M, Bodurka J, Bandettini P, Kriegeskorte N (2009). Relating neural object representations to perceptual judgments with representational similarity analysis. *Cognitive Neuroscience Society Annual Meeting* (San Francisco CA, USA)
Poster presentation
23. Kriegeskorte N, **Mur** M, Ruff D, Kiani R, Bodurka J, Bandettini P (2007). Matching categorical object representations in inferotemporal cortex of man and monkey. *Organization for Human Brain Mapping Annual Meeting* (Chicago IL, USA)
Poster presentation
24. **Mur** M, Ruff D, Bodurka J, Bandettini P, Kriegeskorte N (2006). Recognizing a person by face: dissociating brain regions involved in perceptual and conceptual components of person identification. *Organization for Human Brain Mapping Annual Meeting* (Florence, Italy)
Poster presentation

Invited talks

1. (2021). High-level vision: from category selectivity to representational geometry. *Vision Science Society Annual Meeting* (St. Pete Beach FL, USA)
2. (2020). From image to meaning: modeling representational transformations in the visual system. *L.O.V.E. Annual Conference* (Niagara Falls ON, Canada)
3. (2019). Representational models of brain information processing: challenges and contributions. *Stanford University* (Stanford CA, USA)

4. (2019). Analysing representational connectivity between brain regions. *Kavli Summer Institute in Cognitive Neuroscience* (Santa Barbara CA, USA)
5. (2019). Balancing stability and flexibility: effects of task context on object representations across the cortical hierarchy. *Canadian Society for Brain, Behaviour and Cognitive Science Annual Meeting* (Waterloo ON, Canada)
6. (2019). From vision to flexible cognition: population coding across the cortical hierarchy. *University of Granada* (Granada, Spain)
7. (2019). Modelling representational dynamics in nonhuman primate high-level visual cortex. *Computational and Systems Neuroscience Annual Meeting* (Lisbon, Portugal)
8. (2018). From vision to adaptive behaviour: population coding across the cortical hierarchy. *Brain and Mind Institute, Western University* (London ON, Canada)
9. (2017). Modelling high-level object representations in brain and behaviour. *Donders Institute for Brain, Cognition and Behaviour, Radboud University* (Nijmegen, Netherlands)
10. (2017). Visualising representational dynamics. *University of Cambridge* (Cambridge, UK)
11. (2017). From image to meaning: modelling high-level visual brain representations. *University of Birmingham* (Birmingham, UK)
12. (2015). Visual features as stepping stones toward semantics. *Maastricht University* (Maastricht, Netherlands)
13. (2015). Weighted representational modelling. *University of Cambridge* (Cambridge, UK)
14. (2015). Representational dynamics: neural population coding of objects in monkey inferior temporal cortex. *University of Cambridge* (Cambridge, UK)
15. (2014). Can IT response patterns predict the subjective experience of visual objects? *Katholieke Universiteit Leuven* (Leuven, Belgium)
16. (2014). Representational similarity analysis: applications in fMRI and MEG. *Johann Wolfgang Goethe Universität* (Frankfurt, Germany)
17. (2013). Flexible coding of object images and words in visual and multiple-demand cortex. *University of Cambridge* (Cambridge, UK)
18. (2012). High-level visual object representations in inferior temporal cortex. *Center for Magnetic Resonance Research, University of Minnesota* (Minneapolis MN, USA)
19. (2011). High-level visual object representations in inferior temporal cortex. *Leiden Institute for Brain and Cognition, Leiden University* (Leiden, Netherlands)