# DIRK BERNHARDT-WALTHER

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## POSITIONS

| | |
|---|---|
| 2014 – current | Assistant Professor, Department of Psychology, University of Toronto (St. George) |
| 2012 – 2014 | Associate Director, Center for Cognitive and Brain Sciences, The Ohio State University |
| 2010 – 2014 | Assistant Professor, Department of Psychology, The Ohio State University |
| 2009 – 2010 | Postdoctoral Research Associate, Beckman Institute, University of Illinois at Urbana-Champaign |
| 2006 – 2009 | Beckman Postdoctoral Fellow, Beckman Institute, University of Illinois at Urbana-Champaign |
| 2006 | Postdoctoral Fellow, Centre for Vision Research, York University, Toronto, ON |
| 1999 – 2000 | Research Consultant, Lucent Technologies Bell Laboratories, Murray Hill, NJ |

## EDUCATION

| | |
|---|---|
| 2006 | Ph.D., Computation and Neural Systems, California Institute of Technology<br>Advisors: Dr. Christof Koch, Dr. Pietro Perona |
| 1999 | M.Phil, Physics, Trinity College, University of Cambridge, Cambridge, UK<br>Advisor: Dr. Howard P. Hughes. |
| 1995 – 1998 | Undergraduate studies in Physics and Computer Science, Universität Leipzig, Leipzig, Germany, Vordiplom in Physics (1997) and in Computer Science (1998) |

## ACADEMIC HONORS AND FELLOWSHIPS

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|---|---|
| 2012 | Fred Brown Research Award for best research paper: Department of Psychology, The Ohio State University |
| 2006 – 2009 | Beckman Postdoctoral Fellowship, University of Illinois at Urbana-Champaign |
| 2007 | Conference Travel Award for Computational and Systems Neuroscience (Cosyne) |
| 2007 | Conference Travel Award for Grand Challenges in Neural Computation |
| 2005 – 2006 | Pre-doctoral Fellowship, Sloan-Swartz Center for Theoretical Neuroscience, California Institute of Technology |
| 2005 | Best Poster Presentation Award at the Joint Symposium on Neural Computation, University of California Los Angeles |
| 2004 | Best Poster Presentation Award at the International Conference on Computer Vision and Pattern Recognition, Washington, D.C. |
| 2000 – 2001 | Milton E. Mohr Graduate Fellowship, California Institute of Technology |
| 1996 – 2001 | Fellow of the Studienstiftung des deutschen Volkes (German National Scholarship Foundation) |

## GRANTS

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|---|---|
| 2015 – 2020 | PI, Discovery Grant, Natural Sciences and Engineering Research Council of Canada<br>*Neural mechanisms of perceiving dynamic real-world environments*<br>Research support: CAD 120,000 |
| 2015 – 2017 | PI, Connaught New Researcher Award, Connaught Fund, University of Toronto<br>*Disentangling influences on the perception of real-world scenes in time and space*<br>Research support: CAD 9,944.72 |
| 2015 – 2018 | PI, John R. Evans Leaders Fund<br>*Neural mechanisms of natural scene perception*, Research support:<br>Canadian Foundation for Innovation: CAD 100,000<br>Ontario Research Fund: CAD 100,000<br>University of Toronto: CAD 34,383 |
| 2014 – 2019 | co-PI (PI: Vladimir Sloutsky), National Institute for Child Health and Human Development (HD078545-A1, R01), *The Development of Categorization*<br>Research support: USD 1,925,000.00 |
| 2011 – 2013 | PI, Seed Grant, Center for Cognitive Science, The Ohio State University<br>*Eye movements as an objective measure of categorization performance*<br>Research support: USD 26,838 |
| 2008 – 2013 | co-PI (PI: Fei-Fei Li), National Eye Institute (NIH 1 R01 EY019429),<br>*CRCNS: fMRI Pattern Analysis of Neural Correlates of Natural Scenes Categories*<br>Research support: USD 1,302,157 |
| 2008 – 2010 | co-PI (PI: Mark Hasegawa-Johnson), National Science Foundation (NSF 0803219, RI-medium),<br>*Audio Diarization - Towards Comprehensive Description of Audio Events*<br>Research support: USD 249,864 |
| 2002 – 2003 | PI, Seed Grant, Institute for Neuromorphic Engineering<br>*Detection of visual events in underwater video using a neuromorphic saliency-based attention system,* Research support: USD 5,000 |

## TEACHING EXPERIENCE

Undergraduate: Sensation and Perception; Natural Scene Perception (seminar)
Graduate: Natural Scene Perception; Pattern Recognition in Neuroimaging

## PUBLICATIONS

*Google Scholar Profile: https://scholar.google.ca/citations?user=rnps4mgAAAAJ&hl=en*

Heeyoung Choo and **Dirk B. Walther** (2016) Contour junctions underlie neural representations of scene categories in human visual cortex, *Neuroimage,* in press.

Claudia Damiano and **Dirk B. Walther** (2015) Content, not context, facilitates memory for real-world scenes. *Visual Cognition*, 23(7), 852-855. doi: 10.1080/13506285.2015.1093241

Emanuele Olivetti and **Dirk B. Walther** (2015) A Bayesian Test for Comparing Classifier Errors, *Proceedings of the 5th International Workshop on Pattern Recognition in NeuroImaging*: 69-72, Stanford, CA.

Thomas O'Connell and **Dirk B. Walther** (2015) Dissociation of salience-driven and content-driven spatial attention to scene category with predictive decoding of gaze patterns, *Journal of Vision*, 12(5):20, 1-13, doi:10.1167/15.5.20.

Michael R. Richards, Stephen Rosenstiel, Henry W. Fields, Jr, F. Michael Beck, Allen R. Firestone, **Dirk B. Walther,** and James M. Sackstedger (2015) Contribution of malocclusion and female facial attractiveness to smile esthetics evaluated by eye tracking, *American Journal of Orthodontics and Dentofacial Orthopedics,* 147(4):472-82.

**Dirk B. Walther** and Dandan Shen (2014) Nonaccidental Properties Underlie Human Categorization of Complex Natural Scenes, *Psychological Science*, 25(4): 851-860, doi: 10.1177/0956797613512662

Kyungtae Kim, Kai-Hsiang Lin, **Dirk B. Walther**, Mark A. Hasegawa-Johnson, Thomas S. Huang (2014) Automatic Detection of Auditory Salience with Optimized Linear Filters Derived from Human Annotation, *Pattern Recognition Letters*, 38: 78-85. dx.doi.org/10.1016/ j.patrec.2013.11.010

**Dirk B. Walther** (2013) Using confusion matrices to estimate mutual information between two categorical measurements, *Proceedings of the 3rd International Workshop on Pattern Recognition in NeuroImaging*: 220-224. Philadelphia, PA.

Ana Torralbo, **Dirk B. Walther**, Barry Chai, Eamon Caddigan, Li Fei-Fei, Diane M. Beck (2013) Good Exemplars of Natural Scene Categories Elicit Clearer Patterns than Bad Exemplars but Not Greater BOLD Activity. *PLoS ONE* 8(3): e58594. doi:10.1371/journal.pone.0058594 10.1371/journal.pone.0058594

Samuel Rivera, Catherine Best, Hyungwook Yim, Aleix Martinez, Vladimir Sloutsky, **Dirk B. Walther** (2012). Automatic selection of eye tracking variables in visual categorization for adults and infants. In N. Miyake, D. Peebles, & R. P. Cooper (Eds.), *Proceedings of the 34th Annual Conference of the Cognitive Science Society*: 2240-2245. Austin, TX: Cognitive Science Society.

**Dirk B. Walther**, Barry Chai, Eamon Caddigan, Diane M. Beck, and Li Fei-Fei (2011), Simple line drawings suffice for functional MRI decoding of natural scene categories, *Proceedings of the National Academy of Sciences of the USA* 108 (23): 9661-9666.

Loan T.K. Vo, **Dirk B. Walther**, Arthur F. Kramer, Kirk I. Erickson, Walter R. Boot, Michelle W. Voss, Ruchika S. Prakash, Monica Fabiani, Gabriele Gratton, Daniel J. Simons, and Michelle Y. Wang (2011), Predicting Individuals' Learning Success from Patterns of Pre-learning MRI Activity. *PLoS One* 6(1): e16093. doi: 10.1371/journal.pone.0016093

**Dirk B. Walther**, Eamon Caddigan, Li Fei-Fei, and Diane M. Beck (2009), Natural scene categories revealed in distributed patterns of activity in the human brain, *Journal of Neuroscience*, 29(34):10573–10581.

Bangpeng Yao, **Dirk B. Walther**, Diane M. Beck, and Li Fei-Fei (2009) Hierarchical Mixture of Classification Experts Uncovers Interactions between Brain Regions, *Neural Information Processing Systems:* 2178-2186.

Barry Chai*, **Dirk B. Walther***, Diane M. Beck, and Li Fei-Fei (2009) Exploring Functional Connectivity of the Human Brain using Multivariate Information Analysis, *Neural Information Processing Systems,* 270-278. (* indicates equal contribution)

Huazhong Ning, Tony X. Han, **Dirk B. Walther**, Ming Liu, and Thomas Huang (2009), Hierarchical Space-Time Model Enabling Efficient Search for Human Actions, *IEEE Transactions on Circuits and Systems for Video Technology*, 19(6): 808-820.

**Dirk B. Walther** and Li Fei-Fei (2007) Task-set switching with natural scenes: Measuring the cost of deploying top-down attention. *Journal of Vision*, 7(11):9, 1-12.

**Dirk Walther** and Christof Koch (2006) Modeling attention to salient proto-objects, *Neural Networks,* 19(9)**:** p. 1395-1407*.*

**Dirk Walther***, Ueli Rutishauser*, Christof Koch, and Pietro Perona (2005) Selective visual attention enables learning and recognition of multiple objects in cluttered scenes, *Computer Vision and Image Understanding,* 100: 41-63*.* (* indicates equal contribution)

**Dirk Walther**, Duane R. Edgington, and Christof Koch (2004) Detection and Tracking of Objects in Underwater Video. *IEEE International Conference on Computer Vision and Pattern Recognition,* 1: 544-549.

Ueli Rutishauser*, **Dirk Walther***, Christof Koch, and Pietro Perona (2004) Is bottom-up attention useful for object recognition? *IEEE International Conference on Computer Vision and Pattern Recognition,* 2: 37-44. (* indicates equal contribution)

**Dirk Walther**, Ueli Rutishauser, Christof Koch, and Pietro Perona (2004), On the usefulness of attention for object recognition, *2nd Workshop on Attention and Performance in Computational Vision at the European Conference for Computer Vision,* 96-103.

**Dirk Walther**, Laurent Itti, Maximilian Riesenhuber, Tomaso Poggio, and Christof Koch (2002) Attentional Selection for Object Recognition – a Gentle Way. *Biologically Motivated Computer Vision – Lecture Notes in Computer Science*, Springer 2525: 472-479.

D. Chung, R. Hirata, T. N. Mundhenk, J. Ng, R. J. Peters, E. Pichon, A. Tsui, T. Ventrice, **D. Walther**, P. Williams, and L. Itti (2002) A New Robotics Platform for Neuromorphic Vision: Beobots. *Biologically Motivated Computer Vision – Lecture Notes in Computer Science*, Springer 2525: 558-566.


## PUBLICATIONS IN PROGRESS

Loan T. K. Vo, Hyunkyu Lee, Michelle Y. Wang, Arthur F. Kramer,  Walter R. Boot, Michelle W. Voss, Kirk I. Erickson, and **Dirk B. Walther**, Brain Nonheme Iron Captured in Time-averaged T2* Signal Can Predict Learning Abilities, *under review.*

Heeyoung Choo, Bardia Nikrahei, Jack Nasar, and Dirk B. Walther, Neural decoding of architectural styles from scene-specific brain regions, *submitted.*

Heeyoung Choo and Dirk B. Walther, Local Structure Drives Human Scene Categorization, *in prep.*

Yaelan Jung, Bart Larsen, and **Dirk B. Walther**, Cross-modal representations of visual and auditory in the human brain, *in prep.*

Daniel Berman, Julie Golomb, and Dirk B. Walther, Differential selectivity for spatial frequencies in anterior and posterior PPA, in prep.

Claudia Damiano and **Dirk B. Walther**, Gaze patterns are predictive of scene category across line drawings and photographs *in prep.*

Thomas O'Connell, Per B. Sederberg, and **Dirk B. Walther,** Scene structure preserved in line drawings is sufficient to represent scene category but not scene identity in scene-selective cortex, *in prep.*

Rebecca Trossman and **Dirk B. Walther**, Scene selectivity in the Superior Parietal Lobule, *in prep.*

Ann Sheng and **Dirk B. Walther**, Where to Draw the Line: Effect of Artistic Expertise on Line Drawings of Natural Scenes, *in prep.*

## BOOK CHAPTERS

**Dirk B. Walther**, Diane M. Beck, and Li Fei-Fei (2012) To err is human: correlating fMRI decoding and behavioral errors to probe the neural representation of natural scene categories. in: Nikolaus Kriegeskorte and Gabriel Kreiman (eds.), *Visual population codes – Toward a common multivariate framework for cell recording and functional imaging,* MIT Press, Cambridge, Massachusetts, pp. 391-415.

**Dirk B. Walther** and Christof Koch (2007) Attention in Hierarchical Models of Object Recognition. in Paul Cisek, Trevor Drew, and John F. Kalaska (eds.), *Computational Neuroscience: Theoretical insights into brain function, Progress in Brain Research,* 165: 57-78.

## POPULAR SCIENCE PUBLICATIONS

Nachiket Kapre, **Dirk Walther**, Christof Koch, and André DeHon (2004) Saliency on a chip – a digital approach on an FPGA. *The Neuromorphic Engineer* 2: 9-11.

**Dirk Walther**, and Duane Edgington (2004) The art of seeing jellies. *The Neuromorphic Engineer* 1: 6-6.

## CONFERENCE PRESENTATIONS (LAST 3 YEARS)

**Dirk B. Walther** (2016) Contour junctions underlie neural representations of scene categories in human vision. *Annual Interdisciplinary Conference*, Breckenridge, CO. (oral)

**Dirk B. Walther** and Emanuele Olivetti (2015) A Bayesian Test for Comparing Classifier Errors. *5th NIPS Workshop on Machine Learning and Interpretation in Neuroimaging*, Montreal, QC. (oral)

Claudia Damiano and Dirk B. Walther (2015), Content, not context, facilitates memory for real-world scenes, *23nd Annual Workshop on Object Perception, Attention, and Memory*, Chicago, IL. (oral)

Yaelan Jung, Bart Larsen, and **Dirk B. Walther** (2015), Conceptual representations of scene categories in prefrontal cortex transcend sensory modalities, *Annual Meeting of the Society for Neuroscience*, Chicago, IL. (oral)

Heeyoung Choo and **Dirk B. Walther** (2015), Emergence of scene structure in the human brain: 2d cues to 3d shape are essential for neural representations of scene categories, *Annual Meeting of the Society for Neuroscience*, Chicago, IL. (oral)

Claudia Damiano and **Dirk B. Walther** (2015), Gaze patterns are predictive of scene category across line drawings and photographs, *Annual Meeting of the Vision Sciences Society*, St. Pete Beach, FL.

Heeyoung Choo, Bardia Nikrahei, Jack Nasar, and **Dirk B. Walther** (2015), Neural decoding of architectural styles from scene-specific brain regions, *Annual Meeting of the Vision Sciences Society*, St. Pete Beach, FL.

**Dirk B. Walther** (2015) Which features do people use to categorize natural scene? *Annual Interdisciplinary Conference*, Jackson Hole, WY. (oral)

Daniel Berman, **Dirk B. Walther** (2014) Differential Selectivity for Spatial Frequencies in Anterior and Posterior PPA. *Annual Meeting of the Vision Sciences Society*, St. Pete Beach, FL.

Andrew Serger, Thomas O'Connell, **Dirk B. Walther** (2014) Manual versus automatic segmentation of functional regions of interest: Effects on multi-voxel pattern analysis and repetition suppression, *Annual Meeting of the Vision Sciences Society*, St. Pete Beach, FL.

Heeyoung Choo, Dandan Shen, **Dirk B. Walther** (2014) Local Structure Drives Human Scene Categorization: Converging Evidence from Computational Analysis, Behavior, and Neural Decoding, *Annual Meeting of the Vision Sciences Society*, St. Pete Beach, FL. (oral)

Aleix Martinez, Shichuan Du, **Dirk B. Walther** (2014) Brain Networks for the Categorization of Facial Expressions of Facial Expressions of Emotion, *Annual Meeting of the Vision Sciences Society*, St. Pete Beach, FL.

**Dirk B. Walther** and Bart Larsen (2013) Category-specific neural activation patterns of acoustically and visually presented natural scenes are modulated by cross-modal attention. *Annual Meeting of the Society for Neuroscience*, San Diego, CA.

Thomas P. O'Connell, Per B. Sederberg, and **Dirk B. Walther** (2013) Line drawings and photographs of natural scenes share neural representation of category but not identity. *Annual Meeting of the Society for Neuroscience*, San Diego, CA.

Heeyoung Choo and **Dirk B. Walther** (2013) Contour junctions, not orientations are essential for eliciting scene category-specific neural activation patterns in human ventral cortex. *Annual Meeting of the Society for Neuroscience*, San Diego, CA.

**Dirk B. Walther** (2013) Scene categorization is based on structural, not textural features. *Annual Summer Interdisciplinary Conference*, Cortina d'Ampezzo, Italy. (oral)

**Dirk B. Walther** and Dandan Shen (2013) Structural, not spectral properties underlie human categorization of natural scenes. *Annual Meeting of the Vision Sciences Society*, Naples, FL.

Heeyoung Choo and **Dirk B. Walther** (2013) Human scene categorization relies more on local structures than on global texture of an image. *Annual Meeting of the Vision Sciences Society*, Naples, FL.

Thomas O'Connell and **Dirk B. Walther** (2013) fMRI repetition suppression for scenes depends on identical feature representation. *Annual Meeting of the Vision Sciences Society*, Naples, FL.

Daniel Berman and **Dirk B. Walther** (2013) Increasing efficiency of fMRI retinotopic mapping using Maximum Length Sequences. *Annual Meeting of the Vision Sciences Society*, Naples, FL.

Shichuan Du, **Dirk B. Walther**, and Aleix Martinez (2013) Mostly Categorical but also Continuous Representation of Emotions in the Brain: An fMRI study. *Annual Meeting of the Vision Sciences Society*, Naples, FL.

Samuel Rivera, Aleix Martinez, **Dirk B. Walther**, and Vladimir Sloutsky (2013) The emotion category of expressive faces becomes more influential over development. *Biennial Meeting of the Society for Research in Child Development,* Seattle, WA.

## INVITED TALKS

| | |
|---|---|
| June 2015 | International Conference on Perceptual Organization, Centre for Vision Research York University, Toronto, Canada |
| June 2015 | Google Inc., Mountain View, California, USA |
| June 2015 | Department of Psychology, Stanford University, California, USA |
| May 2015 | University of Toronto/Tel Aviv University Joint Imaging Conference, Toronto, Canada |

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| March 2015 | Department of Computer Science, University of Toronto, Canada |
| Nov. 2014 | Centre for Vision Research, York University, Toronto, Canada |
| Oct. 2014 | Department of Psychology, University of Toronto, Canada |
| July 2013 | Center for Information Technology, Fondazione Bruno Kessler, Trento, Italy |
| June 2013 | University of Pennsylvania, Philadelphia, Pennsylvania, USA |
| Nov. 2012 | Department of Psychology, University of Toronto, Canada |
| May 2011 | Cogfest, Center for Cognitive Science, The Ohio State University, Columbus, Ohio, USA |
| Feb. 2011 | Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands |
| Feb. 2011 | Netherlands Institute for Neuroscience, Amsterdam, Netherlands |
| June 2010 | Max Planck Institute for Biological Cybernetics, Tübingen, Germany |
| Feb. 2010 | Department of Cognitive Science, Johns Hopkins University, Baltimore, Maryland, USA |
| Feb. 2010 | Department of Psychology, The Ohio State University, Columbus, Ohio, USA |
| June 2009 | Leibniz Institute for Neurobiology, University of Magdeburg, Germany |
| Apr. 2008 | Beckman Institute Director's Seminar, University of Illinois, Urbana, Illinois, USA |
| March 2008 | Workshop on "Characterizing and decoding distributed brain representations" at Cosyne, Snowbird, Utah, USA |
| Dec. 2007 | Workshop on "Models and mechanisms of visual attention: a critical appraisal" at NIPS, Whistler, British Columbia, Canada |
| Feb. 2007 | Scene Understanding Symposium at MIT, Cambridge, Massachusetts, USA |
| June 2005 | Workshop on "Attention and Performance in Computational Vision" at CVPR San Diego, California, USA |
| Nov. 2004 | MIT Perceptual Science Laboratory, Cambridge, Massachusetts, USA |
| Aug. 2003 | Monterey Bay Aquarium Research Institute, Moss Landing, California, USA |
| Nov. 2002 | Institute of Neuroinformatics, ETH and University of Zurich, Switzerland |

## SERVICE

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|---|---|
| 2014 – present | Chair, IT Committee, Department of Psychology, University of Toronto |
| 2014 – present | Member, MRI Committee, Department of Psychology, University of Toronto |
| 2012 – 2014 | Member, Committee for the establishment of a graduate minor in Cognitive and Brain Sciences, The Ohio State University |
| 2012 – 2014 | Member, Executive Committee of the Center for Brain and Cognitive Sciences |
| 2012 – 2014 | Member, Management Committee of the Center for Cognitive and Behavioral Brain Imaging, The Ohio State University |
| 2011 – 2014 | Chair, fMRI Technology Committee, Center for Cognitive and Behavioral Brain Imaging, The Ohio State University |

## ACADEMIC ACTIVITIES

June 2016      Program Chair, 6th International Workshop on Pattern Recognition in Neuroimaging, Trento, Italy

June 2015      Member of the Program Committee, 5th International Workshop on Pattern Recognition in NeuroImaging, Stanford, California, USA

June 2015      Ad-hoc member of the Cognition and Perception study section at the National Institutes of Health, Annapolis, Maryland, USA

Since 2014      Action Editor, Neural Networks

June 2014      Member of the Program Committee, 4th International Workshop on Pattern Recognition in NeuroImaging, Tübingen, Germany

June 2013      Member of the Program Committee, 3rd International Workshop on Pattern Recognition in NeuroImaging, Philadelphia, PA, USA

July 2012      Member of the Program Committee, 2nd International Workshop on Pattern Recognition in NeuroImaging, London, UK

March 2008      Organizer, Workshop on "Characterizing and decoding distributed brain representations" at Computational and Systems Neuroscience, Snowbird, Utah

Dec. 2007      Organizer, Workshop on "Models and mechanisms of visual attention: a critical appraisal" at Neural Information Processing Systems, Whistler, British Columbia

2006 – current  Author and maintainer of freely available **SaliencyToolbox** software (http://saliencytoolbox.net)
                More than 11,000 downloads since 2006, cited in more than 900 papers.

July 2002      Organizer, Workshop on "Saliency-based visual attention" at the Neuromorphic Engineering Summer School, Telluride, Colorado

Ad-hoc Reviewing:
                Nature Communications; Journal of Neuroscience; Psychological Review; Cerebral Cortex; Neuroimage; Neuropsychologia; Brain Research; Neural Networks; Journal of Vision; Vision Research; Journal of Experimental Psychology: General; Journal of Experimental Psychology: Human Perception and Performance; Attention, Perception & Psychophysics; Frontiers in Perception Science; PLoS One; IEEE Transactions on Pattern Analysis and Machine Intelligence; International Journal of Computer Vision; Computer Vision and Image Understanding; Biological Cybernetics; IEEE Transactions on Image Processing; IEEE Transactions on Multimedia; Pattern Recognition; Multimedia Systems Journal; Journal of Information Science and Technology.

## MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

        Society for Neuroscience (SfN)
        Vision Sciences Society (VSS)
        Association for Psychological Science (APS)
        Institute of Electrical and Electronics Engineers (IEEE)
        IEEE Computer Society

## MENTORING

**Current trainees**

Yaelan Jung (Ph.D.)

Claudia Damiano (Ph.D.)

Nicole Telidis (M.A.)


**Student theses**

2015    Claudia Damiano: M.A. in Psychology, University of Toronto

2014    Daniel Berman: M.A. in Psychology, The Ohio State University

2013    Thomas O'Connell: Honors in Psychology, The Ohio State University

2012    Dandan Shen: M.Sc. in Electrical and Computer Engineering, The Ohio State University

2011    Loan Vo: Ph.D. in Electrical and Computer Engineering, University of Illinois at Urbana-Champaign


**Student achievements**

2015    Ann Sheng (undergraduate): Undergraduate Summer Research Award, Department of Physiology, University of Toronto

2015    Ann Sheng (undergraduate): Undergraduate Research Fund, University of Toronto

2014    Andrew Serger (undergraduate): 1st prize at the Denman Undergraduate Research Forum

2013    Amanda Kaczmarek (undergraduate): Social and Behavioral Sciences Research Award

2013    Amanda Kaczmarek (undergraduate): Best Proposed Research Award, Undergraduate Research Colloquium in Neuroscience

2013    Thomas O'Connell (honors): 3rd prize at the Denman Undergraduate Research Forum

2012    Dandan Shen (graduate): Best Poster Presentation Award at Cogfest 2012

2012    Thomas O'Connell (honors): Student representative for the Brazil Research Exchange Program to the University of Sao Paulo

2012    Thomas O'Connell (honors): 1st prize at the Denman Undergraduate Research Forum

2012    Thomas O'Connell (honors): Undergraduate Research Opportunity (URO) Summer Fellowship

2011    Thomas O'Connell (honors): Undergraduate Research Scholarship