

# CURRICULUM VITAE

## Robert J. Huber, Ph.D.

### PERSONAL INFORMATION

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**Full name:** Robert Joseph Huber  
**Citizenship:** Canadian  
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Trent University  
Department of Biology  
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2140 East Bank Drive  
Peterborough, Ontario, Canada K9L 1Z8  
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### CURRENT POSITION

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2016-present     **Assistant Professor (tenure-track), Trent University**, Department of Biology and Environmental and Life Sciences Graduate Program, Peterborough, Ontario, Canada

### POSTDOCTORAL TRAINING

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2015-2016     **Postdoctoral Fellow, University of Ottawa**, Department of Biology, Ottawa, Ontario, Canada

2012-2015     **Research Fellow, Massachusetts General Hospital**, Center for Human Genetic Research and Department of Neurology, Boston, Massachusetts, USA  
Mentors: Dr. Susan L. Cotman and Dr. James F. Gusella

2012-2015     **Research Fellow, Harvard Medical School**, Boston, Massachusetts, USA

### EDUCATION

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2007-2012     **Doctor of Philosophy (Ph.D.), University of Toronto**  
Department of Cell & Systems Biology, Toronto, Ontario, Canada  
Thesis title: Modulation of cell motility by EGF-like repeats in *Dictyostelium discoideum*  
Thesis supervisor: Dr. Danton H. O'Day, Professor Emeritus  
Helen Sawyer Hogg Graduate Admission Award (2007, \$5000)

2003-2007     **Honours Bachelor of Science (H.B.Sc.), University of Toronto Mississauga**  
Mississauga, Ontario, Canada  
Molecular Biology Specialist; Geography (Arts) Minor  
Undergraduate thesis title: EGF increases the rate of *Dictyostelium* development possibly through an EGFR-like protein  
Graduate with High Distinction  
Golden Key International Honour Society (2004-present), Dean's Honour List (2003-2007), Mathematics Honour Roll (2004), Ontario Scholar (2003)  
Queen Elizabeth II Aiming for the Top Scholarship (2003-2007, \$14000), Chancellor's Entrance Scholarship (2003, \$3000)

## PUBLICATIONS

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22. **Huber RJ**, Mathavarajah S. (2018). Cln5 is secreted and functions as a glycoside hydrolase in *Dictyostelium*. *Cellular Signalling* 42, 236-248 plus supplementary data. doi:10.1016/j.cellsig.2017.11.001
21. Mathavarajah S, Flores A, **Huber RJ**. (2017). *Dictyostelium discoideum*: A model system for cell and developmental biology. *Current Protocols Essential Laboratory Techniques* 15, 14.1.1-14.1.19. doi:10.1002/cpet.15
20. **Huber RJ**, Myre MA, Cotman SL. (2017). Aberrant adhesion impacts early development in a *Dictyostelium* model for juvenile neuronal ceroid lipofuscinosis. *Cell Adhesion & Migration* 11(4), 399-418. doi:10.1080/19336918.2016.1236179
19. **Huber RJ**. (2017). Loss of Cln3 impacts protein secretion in the social amoeba *Dictyostelium*. *Cellular Signalling* 35, 61-72 plus supplementary data. doi:10.1016/j.cellsig.2017.03.022
18. **Huber RJ**, O'Day DH. (2017). Extracellular matrix dynamics and functions in the social amoeba *Dictyostelium*: A critical review. *Biochimica et Biophysica Acta (BBA) - General Subjects* 1861(1), 2971-2980. doi:10.1016/j.bbagen.2016.09
17. **Huber RJ**. (2016). Using the social amoeba *Dictyostelium* to study the functions of proteins linked to neuronal ceroid lipofuscinosis. *Journal of Biomedical Science* 23(1), 83. doi:10.1186/s12929-016-0301-0
16. **Huber RJ**, O'Day DH. (2015). Proteomic profiling of the extracellular matrix (slime sheath) of *Dictyostelium discoideum*. *Proteomics* 15(19), 3315-3319 plus supplementary data. doi:10.1002/pmic.201500143
15. **Huber RJ**, Myre MA, Cotman SL. (2014). Loss of Cln3 function in the social amoeba *Dictyostelium discoideum* causes pleiotropic effects that are rescued by human CLN3. *PLoS One* 9(10), e110544 plus supplementary data. doi:10.1371/journal.pone.0110544
14. Kovacs-Bogdan E, Sancak Y, Kamer KJ, Plovanich M, Jambhekar A, **Huber RJ**, Myre MA, Blower MD, Mootha VK. (2014). Reconstitution of the mitochondrial calcium uniporter in yeast. *Proceedings of the National Academy of Sciences of the United States of America* 111(24), 8985-8990 plus supplementary data. doi:10.1073/pnas.1400514111
13. **Huber RJ**. (2014). The cyclin-dependent kinase family in the social amoebozoan *Dictyostelium discoideum*. *Cellular and Molecular Life Sciences* 71(4), 629-639. doi:10.1007/s00018-013-1449-3
12. O'Day DH, **Huber RJ**. (2013). Matricellular signal transduction involving calmodulin in the social amoebozoan *Dictyostelium*. *Genes* 4(1), 33-45. doi:10.3390/genes4010033
11. **Huber RJ**, Catalano A, O'Day DH. (2013). Cyclin-dependent kinase 5 is a calmodulin-binding protein that associates with puromycin-sensitive aminopeptidase in the nucleus of *Dictyostelium*. *Biochimica et Biophysica Acta (BBA) - Molecular Cell Research* 1833(1), 11-20. doi:10.1016/j.bbamcr.2012.10.005
10. **Huber RJ**, O'Day DH. (2012). A matricellular protein and EGF-like repeat signalling in the social amoebozoan *Dictyostelium discoideum*. *Cellular and Molecular Life Sciences* 69(23), 3989-3997. doi:10.1007/s00018-012-1068-4

9. O'Day DH, **Huber RJ**, Suarez A. (2012). Extracellular calmodulin regulates growth and cAMP-mediated chemotaxis in *Dictyostelium discoideum*. *Biochemical and Biophysical Research Communications* 425(4), 750-754. doi:10.1016/j.bbrc.2012.07.147
8. **Huber RJ**, O'Day DH. (2012). EGF-like peptide-enhanced cell movement in *Dictyostelium* is mediated by protein kinases and the activity of several cytoskeletal proteins. *Cellular Signalling* 24(9), 1770–1780 plus supplementary data. doi:10.1016/j.cellsig.2012.05.004
7. **Huber RJ**, Suarez A, O'Day DH. (2012). CyrA, a matricellular protein that modulates cell motility in *Dictyostelium discoideum*. *Matrix Biology* 31(4), 271-280. doi:10.1016/j.matbio.2012.02.003
6. **Huber RJ**, O'Day DH. (2012). The cyclin-dependent kinase inhibitor roscovitine inhibits kinase activity, cell proliferation, multicellular development, and Cdk5 nuclear translocation in *Dictyostelium discoideum*. *Journal of Cellular Biochemistry* 113(3), 868-876 plus supplementary data. doi:10.1002/jcb.23417
5. Nikolaeva I, **Huber RJ**, O'Day DH. (2012). EGF-like peptide of *Dictyostelium discoideum* is not a chemoattractant but it does restore folate-mediated chemotaxis in the presence of signal transduction inhibitors. *Peptides* 34(1), 145-149. doi:10.1016/j.peptides.2011.12.014
4. **Huber RJ**, O'Day DH. (2011). Nucleocytoplasmic transfer of cyclin dependent kinase 5 and its binding to puromycin-sensitive aminopeptidase in *Dictyostelium discoideum*. *Histochemistry and Cell Biology* 136(2), 177-189. doi:10.1007/s00418-011-0839-6
3. Suarez A, **Huber RJ**, Myre MA, O'Day DH. (2011). An extracellular matrix, calmodulin-binding protein from *Dictyostelium* with EGF-like repeats that enhance cell motility. *Cellular Signalling* 23(7), 1197-1206. doi:10.1016/j.cellsig.2011.03.008
2. **Huber R**, O'Day DH. (2011). EGF-like peptide-enhanced cell motility in *Dictyostelium* functions independently of the cAMP-mediated pathway and requires active Ca<sup>2+</sup>/calmodulin signaling. *Cellular Signalling* 23(4), 731-738. doi:10.1016/j.cellsig.2010.12.007
1. **Huber R**, O'Day DH. (2009). An EGF-like peptide sequence from *Dictyostelium* enhances cell motility and chemotaxis. *Biochemical and Biophysical Research Communications* 379(2), 470–475 plus supplementary data. doi:10.1016/j.bbrc.2008.12.081

## BOOK CHAPTERS

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2. Myre MA\*, **Huber RJ**\*, O'Day DH\*. (In press). Chapter 21: Functional Analysis of Proteins Involved in Neurodegeneration Using the Model Organism *Dictyostelium*: Alzheimer's, Huntington's and Batten Disease. In: *Molecular-Genetic and Statistical Techniques for Behavioral and Neural Research*, Second Edition, Crusio WE, Gerlai RT (Editors), Elsevier. (Invited). \*All authors contributed equally to this work.
1. O'Day DH, **Huber RJ**, Suarez A. (2012). Calmodulin Signaling Inside-Out: Intracellular and Extracellular Calmodulin and its Interaction with a Matricellular, Cysteine-Rich Calmodulin-Binding Protein. Chapter 4, In: *Calcium Signaling*, Yamaguchi M (Editor), Nova Science Publishers Incorporated, Hauppauge, NY, pp. 105-118. ISBN:978-1-61324-313-8 (Invited)

## ABSTRACTS PRESENTED AT NATIONAL AND INTERNATIONAL MEETINGS

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Presenting author; \*Invited speaker; #Equal contribution

23. Aoki M, **Huber RJ**, Brunetti CR, Emery RJN. Cytokinins beyond plants: Understanding the evolution of the inter-kingdom signalling molecules through *Dictyostelium discoideum*. International Symposium on Auxins and Cytokinins in Plant Development, ACPD 2018, Prague, Czech Republic, July 1-6, 2018. Poster
22. Kim WK, Shafer ABA, Prater C, Wagner NW, **Huber RJ**, Frost PC. Patterns of gene expression in *Daphnia* experiencing calcium and dietary phosphorus stress. International Association for Great Lakes Research Annual Conference 2018, Scarborough, Ontario, Canada, June 18-22, 2018. Poster
21. Minor C, **Huber RJ**, Brunetti CR. *Dictyostelium discoideum* as a model system to study LITAF function. 16<sup>th</sup> Annual Crossroads Interdisciplinary Health Research Conference, Halifax, Nova Scotia, Canada, March 9-10, 2018. Poster
20. **Huber RJ**, Mathavarajah S. The social amoeba *Dictyostelium discoideum*: A model system for studying neuronal ceroid lipofuscinosis (Batten disease). 60th Annual Conference of the Canadian Society for Molecular Biosciences, Ottawa, Ontario, Canada, May 16-20, 2017. Poster
19. Mathavarajah S, **Huber RJ**. Cln5 localization and function in the model organism *Dictyostelium discoideum*. 60th Annual Conference of the Canadian Society for Molecular Biosciences, Ottawa, Ontario, Canada, May 16-20, 2017. Poster
18. **Huber RJ\***, Myre MA, Cotman SL. Aberrant adhesion impacts early development in a *Dictyostelium* model for juvenile neuronal ceroid lipofuscinosis. NCL 2016: 15<sup>th</sup> International Conference on Neuronal Ceroid Lipofuscinosis (Batten Disease), Boston, Massachusetts, USA, October 5-8, 2016. Talk
17. **Huber RJ**, Myre MA, Cotman SL. The neuronal ceroid lipofuscinosis protein Cln3 is required for an optimal response to starvation in *Dictyostelium discoideum*. Gordon Research Conference: Lysosomal Diseases - Defining Pathogenesis and Therapeutic Strategies for Lysosomal Diseases, Galveston, Texas, USA, March 15-20, 2015. Poster
16. Kovacs-Bogdan E, Sancak Y, Kamer KJ, Plovanich M, Jambhekar A, **Huber RJ**, Myre MA, Blower MD, Mootha VK. In vivo reconstitution of the mitochondrial uniporter. 59<sup>th</sup> Annual Meeting of the Biophysical Society, Baltimore, Maryland, USA, February 7-11, 2015. Poster
  - Kovacs-Bogdan, E., Sancak, Y., Kamer, K.J., Plovanich, M., Jambhekar, A., **Huber, R.J.**, Myre, M.A., Blower, M.D. and Mootha, V.K. (2015). In vivo reconstitution of the mitochondrial uniporter. *Biophysical Journal* 108(2), Supplement 1, 177a-178a.
15. **Huber RJ\***, Myre MA, Cotman SL. Loss of Cln3 function in the social amoeba *Dictyostelium discoideum* causes pleiotropic effects that are rescued by human CLN3. NCL 2014: 14<sup>th</sup> International Conference on Neuronal Ceroid Lipofuscinoses (Batten Disease) & Patient Organization Meeting, Cordoba, Argentina, October 22-26, 2014. Talk
14. **Huber RJ**, Cotman SL, Myre MA. The Batten disease protein Cln3 negatively regulates proliferation and development in *Dictyostelium discoideum*. 57<sup>th</sup> Annual Meeting and Conference of the Canadian

Society for Molecular Biosciences: Membrane Proteins in Health and Disease, Banff, Alberta, Canada, April 9-13, 2014. Poster

- **Huber RJ**, Cotman SL, Myre MA. (2014). The Batten disease protein CLN3 negatively regulates proliferation and development in *Dictyostelium discoideum*. *Biochemistry and Cell Biology - Biochimie et Biologie Cellulaire* 92(6), 594-594.
13. **Huber RJ**, Lumsden A, Gusella JF, Myre MA. Huntingtin: Required for contractile vacuole biogenesis in *Dictyostelium discoideum*. 57<sup>th</sup> Annual Meeting and Conference of the Canadian Society for Molecular Biosciences: Membrane Proteins in Health and Disease, Banff, Alberta, Canada, April 9-13, 2014. Poster
    - **Huber RJ**, Lumsden A, Gusella JF, Myre MA. (2014). Huntingtin: required for contractile vacuole biogenesis in *Dictyostelium discoideum*. *Biochemistry and Cell Biology - Biochimie et Biologie Cellulaire* 92(6), 594-594.
  12. **Huber RJ**, Gusella JF, Cotman SL, Myre MA. Characterization of a homologue of the Batten disease protein CLN3 in the model eukaryote *Dictyostelium discoideum*. 63<sup>rd</sup> American Society of Human Genetics Annual Meeting, Boston, Massachusetts, USA, October 22-26, 2013. Poster
  11. **Huber RJ**, Cotman SL, Myre MA. Characterization of the Batten disease protein Cln3 in the model eukaryote *Dictyostelium*. International *Dictyostelium* Conference 2013, Asheville, North Carolina, USA, August 4-8, 2013. Poster
  10. **Huber RJ\***, O'Day DH. The matricellular protein CyrA modulates cell motility in *Dictyostelium*. Federation of American Societies for Experimental Biology Science Research Conference: Matricellular Proteins in Development, Health, and Disease, Saxtons River, Vermont, USA, July 28–August 2, 2013. Talk
  9. **Huber RJ**, O'Day DH. Investigating the involvement of vinculin B in DdEGFL1-enhanced cell movement in *Dictyostelium discoideum*. International *Dictyostelium* Conference 2011, Baltimore, Maryland, USA, August 14-18, 2011. Poster
  8. Nikolaeva I, **Huber RJ**, O'Day DH. EGF-like repeat function in regular and inhibited folic acid-mediated chemotaxis in *D. discoideum*. International *Dictyostelium* Conference 2011, Baltimore, Maryland, USA, August 14-18, 2011. Poster
  7. **Huber RJ**, O'Day DH. *Dictyostelium discoideum* as a model system for studying Cdk5 function. International Annual Conference on Models of Human Diseases 2011, Toronto, Ontario, Canada, June 28, 2011. Poster
  6. **Huber R\***, O'Day DH. DdEGFL1-enhanced cell motility in *Dictyostelium* functions via calcium signaling independently of the cAMP-mediated signaling pathways. International *Dictyostelium* Conference 2010, Cardiff, Wales, UK, August 1-6, 2010. Talk
  5. **Huber R**, Suarez A, O'Day DH. Extracellular calmodulin regulates growth and cAMP-mediated chemotaxis in *Dictyostelium discoideum*. International *Dictyostelium* Conference 2010, Cardiff, Wales, UK, August 1-6, 2010. Poster
  4. **Huber R**, Suarez A, O'Day DH. Using *Dictyostelium* as a model system for studying the mechanism that mediates EGF-like peptide-enhanced cell movement. International Annual Conference on Models of Human Diseases 2010, Toronto, Ontario, Canada, June 29, 2010. Poster

3. Suarez A<sup>#</sup>, **Huber R<sup>#</sup>**, O'Day DH. Extracellular calmodulin in *Dictyostelium discoideum*: A new way to study an old protein. International Annual Conference on Models of Human Diseases 2010, Toronto, Ontario, Canada, June 29, 2010. Poster
2. **Huber R**, O'Day DH. Investigating the mechanisms that control EGF-like peptide-enhanced cell movement in *Dictyostelium discoideum*. International *Dictyostelium* Conference 2009, Estes Park, Colorado, USA, August 23-28, 2009. Poster
1. **Huber R**, O'Day DH. The function of EGF-like peptides and the identification of an EGFR-like protein in *Dictyostelium*. 48<sup>th</sup> Annual Canadian Society of Zoologists Meeting, Toronto, Ontario, Canada, May 12-16, 2009. Poster

## **INVITED TALKS**

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8. A novel approach to studying the functions of proteins linked to neurological disorders. Children's Hospital of Eastern Ontario, CHEO Research Institute, Ottawa, Ontario, Canada, April 20, 2016.
7. The social amoeba *Dictyostelium discoideum* as a model for human disease. Trent University, Department of Biology, Peterborough, Ontario, Canada, January 27, 2016.
6. Understanding fundamental biological processes and human disease using the social amoeba *Dictyostelium*. Carleton University, Department of Biology and Institute of Biochemistry, Ottawa, Ontario, Canada, January 12, 2016.
5. *Dictyostelium discoideum*: A model for biomedical research. Central Michigan University, Department of Biology, Mount Pleasant, Michigan, USA, December 2, 2015.
4. A novel approach to studying the function of proteins linked to neuronal ceroid lipofuscinosis (Batten disease). University of Ottawa Brain & Mind Research Institute and Ottawa Hospital Research Institute Neuroscience Seminar Series, University of Ottawa, Ottawa, Ontario, Canada, November 2, 2015.
3. *Dictyostelium discoideum*: A model system for studying the functions of proteins linked to human disease. University of Prince Edward Island, Department of Biology, Charlottetown, Prince Edward Island, Canada, September 18, 2015.
2. Using *Dictyostelium discoideum* as a model system for studying the function of proteins linked to human disease. University of British Columbia Okanagan, Department of Biology, Kelowna, British Columbia, Canada, February 3, 2015.
1. Modulation of cell motility by EGF-like repeats in *Dictyostelium discoideum*. Massachusetts General Hospital, Center for Human Genetic Research, Boston, Massachusetts, USA, June 1, 2012.

## **ABSTRACTS PRESENTED AT INSTITUTIONAL, LOCAL, AND REGIONAL MEETINGS**

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13. Mathavarajah S, McLaren M, **Huber RJ**. Aberrant autophagy in a Cln5-deficient *Dictyostelium* disease model. 31<sup>st</sup> Annual Ontario Biology Day Student Conference, Waterloo, Ontario, Canada, March 24-25, 2018. Poster

12. Mathavarajah S, McLaren M, **Huber RJ**. Aberrant autophagy in a Cln5-deficient *Dictyostelium* disease model. 46<sup>th</sup> Southern Ontario Undergraduate Student Chemistry Conference, Waterloo, Ontario, Canada, March 24, 2018. Poster
11. **Huber, RJ**. Using a soil microbe to study neurodegeneration. Biology Seminar Series, Trent University, Department of Biology, Peterborough, Ontario, Canada. March 21, 2018. Talk
10. **Huber RJ**, Staropoli JF, Chandrachud U, Myre MA, Cotman SL. Cln3 is required for an optimal response to starvation during the early stages of *Dictyostelium* development. Center for Human Genetic Research Annual Retreat 2015, American Academy of Arts and Sciences, Cambridge, Massachusetts, USA, April 29, 2015. \*Poster Award (3<sup>rd</sup> place). Poster
9. **Huber RJ**, Staropoli JF, Chandrachud U, Myre MA, Cotman SL. Cln3 is required for an optimal response to starvation during the early stages of *Dictyostelium* development. 68<sup>th</sup> Annual Meeting of the Massachusetts General Hospital Scientific Advisory Committee, Massachusetts General Hospital, Boston, Massachusetts, USA, April 1, 2015. Poster
8. **Huber RJ**, Myre MA, Cotman SL. The Batten disease protein Cln3 negatively regulates proliferation and development in *Dictyostelium discoideum*. 8<sup>th</sup> Annual Massachusetts General Hospital Office for Research Career Development Research Fellows Poster Celebration, Massachusetts General Hospital, Boston, USA, May 28, 2014. Poster
7. **Huber RJ**, Myre MA, Cotman SL. The Batten disease protein Cln3 negatively regulates proliferation and development in *Dictyostelium discoideum*. Center for Human Genetic Research Annual Retreat 2014, American Academy of Arts and Sciences, Cambridge, Massachusetts, USA, April 29, 2014. Poster
6. **Huber RJ**, Myre MA, Cotman SL. Using *Dictyostelium* as a model system for studying the function of Batten disease proteins. 67<sup>th</sup> Annual Meeting of the Massachusetts General Hospital Scientific Advisory Committee, Massachusetts General Hospital, Boston, Massachusetts, USA, April 2, 2014. Poster
5. **Huber RJ**. Investigating the function of Batten disease proteins using model eukaryote *Dictyostelium discoideum*. Center for Human Genetic Research Seminar Series, Massachusetts General Hospital, Boston, Massachusetts, USA, November 20, 2013. Talk
4. **Huber RJ**, Cotman SL, Myre MA. Identification and characterization of a homologue of the Batten disease protein CLN3 in the model eukaryote *Dictyostelium*. Center for Human Genetic Research Annual Retreat 2013, The Broad Institute, Cambridge, Massachusetts, USA, January 30, 2013. Poster
3. **Huber RJ**, O'Day DH. Using *Dictyostelium* as a model system for studying EGF-like repeat-enhanced cell movement. University of Toronto Mississauga Research and Excellence Celebration 2011, Mississauga, Ontario, Canada, March 30, 2011. Poster
2. **Huber RJ**, O'Day DH. The discovery of a cAMP-independent pathway regulating EGF-like peptide-enhanced cell movement in *Dictyostelium discoideum*. University of Toronto Mississauga Research and Excellence Celebration 2010, Mississauga, Ontario, Canada, March 22, 2010. Poster
1. **Huber RJ**. Investigating the function of EGF-like peptides in *Dictyostelium discoideum*. Department of Cell & Systems Biology Graduate Student Seminar Series, University of Toronto, Toronto, Ontario, Canada, January 28, 2010. Talk

## MEDIA COVERAGE

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**“Trent Prof Takes Biomedical Program to Ottawa”**. Trent University News. Published on November 15, 2017. <http://www.trentu.ca/newsevents/newsDetail.php?newsId=19815>

**“New Research at Trent Provides Insight into Batten Disease”**. Trent University News. Published on November 10, 2017. <http://www.trentu.ca/newsevents/newsDetail.php?newsId=19807>

**“Federal Funding for Research Projects on Epilepsy, Batten disease, Marine Ecosystems at Trent University in Peterborough”** by Joelle Kovach. The Peterborough Examiner. <http://www.thepeterboroughexaminer.com/2017/03/02/federal-funding-for-research-projects-on-epilepsy-batten-disease-marine-ecosystems-at-trent-university-in-peterborough>. Published on March 2, 2017.

**“Federal Funds Boost Trent Innovative Research Projects”** by Greg Davis. CHEX-TV Peterborough. <http://www.chextv.com/2017/03/02/federal-funds-boost-trent-innovative-research-projects/>. Published on March 2, 2017.

**“Innovative Research Projects at Trent Receive Close to \$200,000 in Federal Funding”**. Trent University News. <http://www.trentu.ca/newsevents/newsDetail.php?newsId=17765>. Published on March 2, 2017.

**“His Lab is Their Lab: Collaboration with Students Anchors New Faculty Member's Research”**. Trent University News. <https://www.trentu.ca/newsevents/newsDetail.php?newsId=16991>. Published on November 28, 2016.

## RESEARCH SUPPORT

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### EXTERNAL (Awarded)

2017-2018	<b>Canada Foundation for Innovation, John R. Evans Leaders Fund The Ministry of Research and Innovation, Ontario Research Fund</b> Project title: A novel approach to studying neurodegeneration	\$125,000
2017	<b>Canadian Institutes of Health Research Observer Program for Early Career Investigators</b> Project Grant: Fall 2017 competition (Cell Physiology)	N/A
2013-2016	<b>Canadian Institutes of Health Research Postdoctoral Fellowship</b> Project title: A novel approach towards understanding the functional biology of the neuronal ceroid lipofuscinosis (NCL) protein CLN3	\$150,000
2010-2013	<b>Natural Sciences and Engineering Research Council of Canada Alexander Graham Bell Canada Graduate Scholarship Doctoral</b> Project title: EGF-like peptide function and the characterization of an EGFR-like protein in <i>Dictyostelium discoideum</i>	\$105,000
2010-2011	<b>Ontario Graduate Scholarship</b> Government of Ontario, Canada Declined scholarship to accept an NSERC CGS D for 2010-2013	\$15,000

Project title: EGF-like peptide function and the characterization of an EGFR-like protein in *Dictyostelium discoideum*

2009-2010	<b>Mitacs Accelerate Internship Program</b> Sponsor: Advanced Syntech Corporation, Mississauga, Ontario, Canada Project title: Investigating the mechanisms that regulate EGF-like peptide-enhanced cell movement	\$15,000
2009-2010	<b>Ontario Graduate Scholarship</b> Government of Ontario, Canada Project title: Investigating the motility-modulating effects of EGF-like repeats in <i>Dictyostelium</i>	\$15,000
2008-2009	<b>Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship Masters</b> Project title: Investigating the function of an EGFR-like protein in <i>Dictyostelium</i> and the role of EGF-like repeats in its regulation	\$17,300
2007-2008	<b>Pharmacia Graduate Scholarship in Science and Technology</b> Government of Ontario, Canada Project title: Assaying the effects of EGF-like peptides on <i>Dictyostelium</i> growth and development	\$15,000
2007	<b>Natural Sciences and Engineering Research Council of Canada Undergraduate Student Research Award</b> Project title: Assaying the effects of human EGF on <i>Dictyostelium</i> growth and development	\$6,000

#### INTERNAL (Awarded)

2017-2018	<b>University Research Grants Program</b> Trent University, Office of Research and Innovation	\$20,000
2016-2018	<b>Start-Up Funds</b> Trent University, Office of the Dean of Arts and Science	\$35,000
2015-2016	<b>Research Grant</b> University of Ottawa, Faculty of Science	\$20,000

#### INSTITUTIONAL AWARDS AND GRANTS

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2015	<b>Poster Award (3<sup>rd</sup> Place)</b> Center for Human Genetic Research Annual Retreat Massachusetts General Hospital, Harvard Medical School	\$50
2012	<b>Graduate Student Research Award</b> University of Toronto Mississauga Awarded annually to the top-ranked graduate student	\$500
2011	<b>School of Graduate Studies Conference Grant</b>	\$919

	University of Toronto	
2009-2011	<b>Department of Biology Student Travel Grant</b> University of Toronto Mississauga	\$900
2009-2011	<b>Department of Cell &amp; Systems Biology Student Travel Grant</b> University of Toronto	\$1400
2009-2011	<b>Research and Graduate Office Graduate Student Travel Grant</b> University of Toronto Mississauga	\$1200
2010	<b>Department of Cell &amp; Systems Biology Top-Up Award</b> University of Toronto Awarded to NSERC CGS D recipients	\$1,000
2009-2010	<b>University of Toronto Fellowship</b>	\$2,902
2009	<b>Department of Cell &amp; Systems Biology Top-Up Award</b> University of Toronto Awarded to OGS recipients	\$1,500
2008-2009	<b>University of Toronto Research Assistantship</b>	\$564
2008	<b>Department of Cell &amp; Systems Biology Top-Up Award</b> University of Toronto Awarded to NSERC PGS M recipients	\$2,500
2007-2008	<b>University of Toronto Research Assistantship</b>	\$2,648

## **UNIVERSITY SERVICE**

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### **COMMITTEES**

2017-present	<b>Director</b> , Imaging Suite, Department of Biology, Trent University, Peterborough, Ontario, Canada
2016-present	<b>Space and Equipment Committee</b> , Department of Biology, Trent University, Peterborough, Ontario, Canada
2017	<b>Ad-Hoc Tenure-Track Committee</b> , Department of Biology, Trent University, Peterborough, Ontario, Canada

### **VOLUNTEER**

2018	<b>Volunteer, Trent University Fall Open House, March 16, 2018</b>
2017	<b>Volunteer, Trent University Fall Open House, November 3, 2017</b>
2017	<b>Volunteer, Trent University Spring Open House, March 16, 2017</b>

## PROFESSIONAL SERVICE

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- Ongoing      **Ad-Hoc Manuscript Reviewer**  
Canadian Journal of Microbiology, Canadian Science Publishing  
Differentiation, Elsevier  
Disease Models & Mechanisms, The Company of Biologists Limited (4)  
Frontiers in Microbiology  
Genes, Multidisciplinary Digital Publishing Institute (MDPI)  
Journal of Biotechnology, Elsevier  
Parasitology International, Elsevier  
Peptides, Elsevier  
PLoS One, Public Library of Science  
Proteins: Structure, Function, and Bioinformatics, John Wiley & Sons Incorporated
- 2017          **Ad-Hoc Grant Reviewer**, Canada Foundation for Innovation
- 2016          **Ad-Hoc Abstract Reviewer**, NCL 2016: 15<sup>th</sup> International Conference on Neuronal Ceroid Lipofuscinosis (Batten Disease), Boston, Massachusetts, USA. Conference held October 5-8, 2016. (40 abstracts)

## SOCIETAL AFFILIATIONS

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- 2015-present      **Rare Diseases: Models & Mechanisms Network**  
2010-present      **Canadian Society for Molecular Biosciences**  
2012-2015        **Harvard NeuroDiscovery Center**  
2013-2014        **American Society of Human Genetics**  
2009-2010        **Canadian Society of Zoologists**

## TEACHING EXPERIENCE

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### INSTRUCTOR

- 2017-present      BIOL4130H Current Topics in Human Cell Biology  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Total enrollment: 50 students
- 2017-present      BIOL2070H Cell Biology  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Total enrollment: 250 students
- 2016-present      BIOL3080H Molecular Biology  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Total enrollment: 200 students
- 2017-2018        BIOL4900Y Reading Course  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Student: Sabateeshan Mathavarajah  
Title: Using *Dictyostelium* to study Batten disease
- 2011-2012        BIO315H Human Cell Biology (2 semesters)

Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada  
Total enrollment: 144 students

## SECOND READER

- 2017-2018      BIOL4020D Biology Research Thesis  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Student: Zuzana Magdolen (PI: Dr. Carolyn Kapron)  
Title: Oxidative stress and embryotoxicity in zebrafish
- 2017-2018      BIOL4020D Biology Research Thesis  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Student: Maimoona Altaf (PI: Dr. Neil Fournier)  
Title: Neurobiological changes associated with safety learning in rats
- 2017-2018      BIOL4900Y Reading Course  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Student: William Kim (PI: Dr. Paul Frost)  
Title: Calcium regulation in *Daphnia*
- 2017-2018      FRSC4020D Research Thesis  
Department of Forensic Science, Trent University, Peterborough, Ontario, Canada  
Student: April Kennedy (PI: Dr. Barry Saville)  
Title: Transcription cascades in *Ustilago maydis* pathogenesis
- 2017-2018      BIOL4020D Research Thesis  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Student: Shamone Fine (PI: Dr. Barry Saville)  
Title: Promoter region assay development in *Ustilago maydis*
- 2016            BIOL4901H Reading Course  
Department of Biology, Trent University, Peterborough, Ontario, Canada  
Student: Phung Ta (PI: Dr. Carolyn Kapron)  
Title: CRISPR/Cas9 as a Cancer Treatment

## TEACHING ASSISTANT

- 2009-2012      **Teaching Assistant (Laboratory Demonstrator)**, Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada  
BIO215H Laboratory in Molecular Biology and Genetics (4 semesters)  
Total enrollment per laboratory section: 24 students.
- 2007-2012      **Teaching Assistant (Tutorial Leader)**, Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada  
BIO315H Advanced Cell Biology / Human Cell Biology (6 semesters)  
BIO380H Developmental Biology / Human Development (3 semesters)  
Total enrollment per tutorial section: 48 students.
- 2008-2010      **Guest Lecturer**, Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada

BIO315H Advanced Cell Biology / Human Cell Biology

Lectures: The Structure and Function of EGF-like repeats (2008), EGF-like Peptide Function in *Dictyostelium discoideum* (2009), Epidermal Growth Factor Signal Transduction and Breast Cancer (2009), The Cell Biology of Cancer (2010), EGFR Signaling and Breast Cancer (2010).

- 2010 **Teaching Fundamentals Certificate**, Teaching Assistants Training Program  
Office of Teaching Advancement, University of Toronto, Toronto, Ontario, Canada  
Completed six 2-hour interactive workshops that taught effective teaching strategies and techniques aimed at understanding of how undergraduate students learn.
- 2006-2007 **Academic Tutor**, Academy for Mathematics and Science, Mississauga, Ontario, Canada  
Science, mathematics, and English tutor and mentor for elementary and secondary school students.

## **SUPERVISION AND MENTORSHIP EXPERIENCE**

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### **GRADUATE**

- 2017-present **Meagan McLaren**, M.Sc. student, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada  
Role: Primary Supervisor  
Project title: Determining the function of Cln3 in the contractile vacuole system in *Dictyostelium*
- 2017-present **Megan Arnoldussen**, M.Sc. student, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada  
Role: Co-Supervisor (Dr. Neil Emery)  
Project title: Investigating the role of cytokinins in *Dictyostelium* growth and development
- 2016- present **Calli Minor**, Ph.D. student, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada  
Role: Co-Supervisor (Dr. Craig Brunetti)  
Project title: Characterization of LITAF and its frog virus 3 homolog 75L in host-virus interactions and establishment of *Dictyostelium discoideum* as a model for LITAF function

### **UNDERGRADUATE**

- 2017-2018 **Sabateeshan Mathavarajah**, CHEM4040D Project Course in Biochemistry, Department of Biology, Trent University, Peterborough, Ontario, Canada  
Role: Primary Supervisor  
Project title: Accurate phenotyping of a Cln5-deficient *Dictyostelium* cell line
- 2017-2018 **Amy Mikhailitchenko**, BIOL4020D Biology Research Thesis, Department of Biology, Trent University, Peterborough, Ontario, Canada  
Role: Primary Supervisor  
Project title: Assessing the localization of Cln5 and Mfsd8/CLn7 in *Dictyostelium* using custom antibodies
- 2017-2018 **Audrey Shakespeare**, BIOL4020D Biology Research Thesis, Trent University,

- Peterborough, Ontario, Canada  
 Role: Co-Supervisor  
 Project title: Binding partners of frog virus 3 ORF 97R in *Dictyostelium discoideum*
- 2017-2018     **William Kim**, Research Assistant, Department of Biology, Trent University, Peterborough, Ontario, Canada  
 Role: Co-Supervisor  
 Project title: Calcium homeostasis in the water flea *Daphnia*  
 NSERC USRA recipient, Frost Lab (Summer 2017)
- 2016-2017     **Sabateeshan Mathavarajah**, Research Assistant, Department of Biology, Trent University, Peterborough, Ontario, Canada  
 Role: Primary Supervisor  
 Project title: Using *Dictyostelium* as a model system for studying the localization and function of CLN5  
 NSERC USRA recipient
- 2016-2017     **Ana Flores**, CHEM4040D Project Course in Biochemistry, Department of Biology, Trent University, Peterborough, Ontario, Canada  
 Role: Co-Supervisor  
 Project title: Assessing the localization and function of LITAF in the social amoeba *Dictyostelium*
- 2015            **Martin Davis**, Eckerd College Summer Internship Program (Funded by the National Institutes of Health), Center for Human Genetic Research, Massachusetts General Hospital, Boston, Massachusetts, USA  
 Role: Co-Supervisor  
 Project title: Solubilization and immunoprecipitation of CLN3, the protein involved in juvenile-onset neuronal ceroid lipofuscinosis
- 2015            **Madeleine Klein**, Research Assistant, Center for Human Genetic Research, Massachusetts General Hospital, Boston, Massachusetts, USA  
 Role: Co-Supervisor  
 Project title: Sequence and protein analysis of AFG3L2, an AAA+ protease linked to neuronal ceroid lipofuscinosis
- 2014            **Ashlin Niedzwiecki**, Eckerd College Summer Internship Program (Funded by the National Institutes of Health), Center for Human Genetic Research, Massachusetts General Hospital, Boston, Massachusetts, USA  
 Role: Co-Supervisor  
 Project title: Cln3 is required for optimal feeding in *Dictyostelium discoideum*
- 2010-2011     **Ina Nikolaeva**, BIO481Y Biology Research Course, Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada  
 Role: Co-Supervisor  
 Project title: EGF-like repeats in *D. discoideum* folic acid-mediated chemotaxis, potential chemoattractive properties, and the localization of a putative receptor  
 \*The results of this work were published in Nikolaeva et al. (2012) Peptides 34(1), 145-149.
- 2009-2010     **Alexander Keszei**, BIO481Y Biology Research Course, Department of Biology, University

of Toronto Mississauga, Mississauga, Ontario, Canada

Role: Mentor

Project title: Cell fusion and protein expression in *Dictyostelium* sexual development

- 2009-2010     **Charles Ishak**, BIO481Y Biology Research Course, Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada  
Role: Mentor  
Project title: Exploring the role of calcium in the regulation of nuclear number in *Dictyostelium discoideum*

## **GRADUATE STUDENT COMMITTEE SERVICE**

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- 2018-present     **Nicholas Erwin**, M.Sc. Candidate, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada. Dr. Carolyn Kapron lab.  
Role: Member of supervisory committee
- 2017-present     **Kaitlyn Mowat**, M.Sc. Candidate, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada. Dr. Janet Yee lab.  
Role: Member of supervisory committee
- 2016-present     **Gordon Batoff**, M.Sc. Candidate, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada. Dr. Janet Yee lab.  
Role: Member of supervisory committee

## **GRADUATE STUDENT EXAMINATION SERVICE**

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- 2017             **Kristi Goulet**, M.Sc. Examination, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada. Dr. Barry Saville lab.  
Role: Member of examination committee  
Thesis title: Functional investigation of a *Ustilago maydis* xylose metabolism gene and its antisense transcripts
- 2017             **Guillem Dayer**, Ph.D. Examination, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada. Dr. Janet Yee lab.  
Role: Member of examination committee  
Thesis title: Interactome study of *Giardia intestinalis* cytochromes b5
- 2016             **Colleen Doyle**, Ph.D. Examination, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada. Dr. Barry Saville lab.  
Role: Member of examination committee  
Thesis title: Transcript feature annotation and Unh1 control of teliospore formation and meiosis in *Ustilago maydis*
- 2016             **Amanda Seto**, Ph.D. Candidacy Examination, Environmental and Life Sciences Graduate Program, Trent University, Peterborough, Ontario, Canada. Dr. Barry Saville lab.  
Role: Member of examination committee  
Project title: Transcriptome modulation in smut teliospores

## **RELEVANT EMPLOYMENT EXPERIENCE**

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- 2010-2012 **Course Coordinator/Administrator**, Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada  
BIO315H Human Cell Biology (2 semesters)  
BIO380H Human Development (2 semesters)  
Administered course content and structure; Organized and maintained a record of student grades; Compiled, duplicated, and graded examinations; Met with students during office hours; Email correspondence with students. Total enrollment per course: 150-200 students.
- 2007-2012 **Chief Presiding Officer**, Office of the Registrar, University of Toronto Mississauga, Mississauga, Ontario, Canada  
Administered and supervised undergraduate final exams
- 2009-2010 **Research and Development Intern**, Advanced Syntech Corporation, Mississauga, Ontario, Canada  
Mitacs Accelerate Internship Program  
Supervisors: Dr. Yali Wang and Dr. Danton H. O'Day  
Project title: Investigating the mechanisms that regulate EGF-like peptide enhanced cell movement
- 2007 **Research Assistant**, Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada  
NSERC USRA recipient  
Supervisor: Dr. Danton H. O'Day  
Project title: Investigating EGF-like peptide function in *Dictyostelium discoideum*