

Katerina Zorina-Lichtenwalter

- CONTACT INFORMATION Integrated Program in Neuroscience
McGill University *Phone: +1-514-998-9501*
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Montreal, Quebec, H3A 0G1 *WWW: www.hpgl.ca*
- RESEARCH INTERESTS Pain genetics, pain response-mediating ion channels, migraine, enzyme kinetics, analytical chemistry.
- EDUCATION **McGill University**, Montreal, QC, Canada
Ph.D., Neuroscience, May 2017 (expected)
 - Thesis Topic: *Pain and inflammation: neuroimmune interactions explored through single nucleotide polymorphisms in P2RX7 and MC1R*
 - Adviser: Luda Diatchenko**Catholic University of America**, Washington, D.C., USA
M.A., Musicology, May 2009
 - Thesis Topic: *Elgar's unintentional modernism: the aesthetics of captivity in the Cello Concerto*
 - Adviser: Andrew Weaver**The University of Notre Dame**, Notre Dame, Indiana, USA
Independent Coursework, January 2011-May 2012
 - Organic Chemistry I (CHEM 10172) and II (CHEM 20273)
 - Molecular Biology I (BIOS 60531)
 - Principles of Biochemistry, (CHEM 60520)M.A., French Language and Literature, May 2006
B.A., French, May 2005
 - *cum Laude*B.A., Music, May 2005
 - Specialization: *Clarinet Performance*
 - *cum Laude*
- REFEREED JOURNAL PUBLICATIONS **Zorina-Lichtenwalter, K.**, Meloto, C.B., Khoury, S. Genetic predictors of human chronic pain conditions. In: *Neuroscience*, 2016.
Spink, E., Ding, D., Peng, Z., Boudreau, M.A., Leemans, E., Lastochkin, E., Song, W., **Lichtenwalter, K.**, O'Daniel, P.I., Testero, S.A., Hualiang, P., Schroeder, V.A., Wolter, W.R., Antunes, N.T., Suckow, M.A., Vakulenko, S., Chang, M., and Mobashery, S. Structure-activity relationship for the oxadiazole class of antibiotics. In: *Journal of Medicinal Chemistry*, 2015.
O'Daniel, P.I., Peng, Z., Pi, H., Testero, S.A., Ding, D., Spink, E., Leemans, E., Boudreau, M.A., Yamaguchi, T., Schroeder, V.A., Wolter, W.R., Llarrull, L.I., Song, W., Lastochkin, E., Kumarasiri, M., Antunes, N.T., Espahbodi, M., **Lichtenwalter, K.**, Suckow, M.A., Vakulenko, S., Mobashery, S., and Chang, M. Discovery of a new class of non- β -lactam inhibitors of penicillin-binding proteins with Gram-positive antibacterial activity. In: *Journal of the American Chemical Society*, 2014.

- Ding, D., **Lichtenwalter, K.**, Pi, H., Mobashery, S., and Chang, M. Characterization of a selective inhibitor for matrix metalloproteinase-8 (MMP-8). In: *Med. Chem. Commun.*, 2014.
- Gooyit, M., Song, W., Mahasenan, K.V., **Lichtenwalter, K.**, Suckow, M.A., Schroeder, V.A., Wolter, W.R. Mobashery, S., and Chang, M. *O*-Phenyl carbamate and phenyl urea thiiranes as selective matrix metalloproteinase-2 inhibitors that cross the blood-brain barrier. In: *Journal of Medicinal Chemistry*, 2013.
- Lichtenwalter, R.N., **Lichtenwalter, K.**, and Chawla, N.V. A Machine-learning approach to autonomous music composition. In: *Journal of Intelligent Systems*, 2010.
- CONFERENCE PUBLICATIONS Lichtenwalter, R.N. and **Lichtenwalter, K.** and Chawla, N.V. Applying learning algorithms to music generation. In: *Proceedings of the Indian International Conference on Artificial Intelligence*, December 2009.
- INVITED TALKS **Lichtenwalter, K.**, Lichtenwalter, R.N., Ase, A.R., Niu, M., Komarova, S., Seguela, P., Slade, G.D., Dubner, R., Fillingim, R.B., Greenspan, J.D., Ohrbach, R., Knott, C., Maixner, W., and Diatchenko, L.B. Genetic predisposition to chronic pain and inflammation? Exploring neuroimmune interactions through gain- and loss-of-function polymorphisms in *P2RX7*. Presented at the Philip R. Bromage Anesthesia Research Day in Montreal, Canada. May 2015.
- POSTER PRESENTATIONS **Lichtenwalter, K.**, Lichtenwalter, R.N., Slade, G.D., Dubner, R., Fillingim, R.B., Greenspan, J.D., Ohrbach, R., Knott, C., Maixner, W., and Diatchenko, L.B. Deciphering the role of melanocortin 1 receptor in pain through single nucleotide polymorphisms. To be presented at the Canadian Pain Society scientific meeting in Vancouver, Canada. May 2016.
- Lichtenwalter, K.**, Lichtenwalter, R.N., Ase, A.R., Niu, M., Komarova, S., Seguela, P., Slade, G.D., Dubner, R., Fillingim, R.B., Greenspan, J.D., Ohrbach, R., Knott, C., Maixner, W., and Diatchenko, L.B. *P2RX7* genetics at the crossroads of neuroimmune interactions. To be presented at the European Federation of IASP Chapters scientific meeting in Vienna, Austria. September 2015.
- Lichtenwalter, K.**, Lichtenwalter, R.N., Ase, A.R., Niu, M., Komarova, S., Seguela, P., Slade, G.D., Dubner, R., Fillingim, R.B., Greenspan, J.D., Ohrbach, R., Knott, C., Maixner, W., and Diatchenko, L.B. The fine line between gain and loss: a genetic characterization of *P2RX7*. Presented at the Canadian Pain Society Scientific Meeting in Charlottetown, Canada. May 2015.
- Lichtenwalter, K.**, Lichtenwalter, R.N., Ase, A.R., Niu, M., Komarova, S., Seguela, P., Slade, G.D., Dubner, R., Fillingim, R.B., Greenspan, J.D., Ohrbach, R., Knott, C., Maixner, W., and Diatchenko, L.B. The foul in fair and the fair in foul: gaining and losing pain with SNPs in *P2RX7*. Presented at the McGill Pain Day in Montreal, Canada. January 2015.
- Lichtenwalter, K.**, Lichtenwalter, R.N., Ase, A.R., Niu, M., Komarova, S., Seguela, P., Slade, G.D., Dubner, R., Fillingim, R.B., Greenspan, J.D., Ohrbach, R., Knott, C., Maixner, W., and Diatchenko, L.B. The role of *P2RX7* genetic variants in pain processing examined through an annotated catalogue of non-synonymous SNPs. Presented at the International Association for the Study of Pain Conference in Buenos Aires, Argentina. October 2014.
- Manahasenan, K., Ding, D., Pi, H., **Lichtenwalter, K.**, Chang, M.; and Mobashery S. In search of an MMP-14 inhibitor. Annual Chemistry, Biology and Biochemistry Interface Program (CBBi) Symposium, Notre Dame, IN, USA. May 2013.

O'Daniel, P.I., Ikejiri, M., Testero, S., Peng, Z., Antunes, N., Kumarasiri, M., Boudreau, M., Spink, E., Leemans, E., Llarrull, L. I., Ding, D., Xiao, Q., Song, W., Pi, H., Espahbodi, M., **Lichtenwalter, K.**, Schroeder, V. A., Wolter, W. R., Suckow, M. A., Vakulenko, S. B., Mobashery, S., Chang, M. Discovery of the oxadiazole class of antibacterial agents. Presented at the Gordon Research Conference, New Antibacterial Discovery and Development, Lucca, Italy. April 2012.

Lichtenwalter, K. *Lieder eines fahrenden Gesellen*: an aesthetic dichotomy. Paper presented at the American Musicological Society Midwest Chapter Conference in Chicago, IL, USA. October 2009.

Lichtenwalter, K. Elgar's unintentional modernism: the aesthetics of captivity in the Cello Concerto. Paper presented at the American Musicological Society Capital Chapter Conference in Washington DC, USA. April 2009.

PROFESSIONAL
EXPERIENCE

University of Notre Dame, Notre Dame, Indiana USA

Research Associate

June 2012 to July 2013

- Laboratory of Mayland Chang, Department of Chemistry and Biochemistry
- Conducted enzyme kinetics (fluorometric) assays to establish inhibition profiles for compounds with the potential to inhibit matrix metalloproteinases (MMPs) involved in diabetic wound healing, idiopathic pulmonary fibrosis, sepsis and cancer
- Conducted *in vitro* and *in vivo* studies to establish pharmacokinetic parameters for MMP inhibitors; developed LC-MS, LC-MRM, and LC-MS/MS methods for compound quantification and metabolite identification
- Conducted assays with potential antibiotic compounds (oxadiazoles): hemolysis and analysis by UV spectroscopy
- Performed protein purification: bacterial lytic transglycosylases

University of Notre Dame, Notre Dame, Indiana USA

Lab Assistant

November 2011 to June 2012

- Laboratory of Mayland Chang, Department of Chemistry and Biochemistry
- Conducted assays with potential antibiotic compounds (oxadiazoles): hemolysis and analysis by UV spectroscopy; protein-binding and analysis by LC-MS/MS
- Conducted assays with compounds shown to be effective in Alzheimer's Disease treatment: compound stability in S9 rat liver microsomes and human plasma, analyzed by mass spectrometry, and metabolite identification by LC-MS/MS

TEACHING
EXPERIENCE

Ivy Tech Community College, South Bend, Indiana, USA

Adjunct Professor of French

August 2012 to December 2012

Catholic University of America, Washington, D.C., USA

Lecturer of French

August 2007 to December 2008

Montgomery College, Rockville, Maryland, USA

Adjunct Professor of French

August 2006 to December 2008