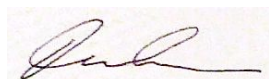


Curriculum Vitae



Tamara J. O'Connor, PhD Date: 08/22/2013

DEMOGRAPHIC AND PERSONAL INFORMATION

Professional Appointment

Assistant Professor
Department of Biological Chemistry
Johns Hopkins School of Medicine

Personal Data

Address: Department of Biological Chemistry
Physiology 510
725 N. Wolfe St.,
Baltimore, MD, 21205

Phone: 410-955-7134
Fax: 410-955-5759
Email: toconno7@jhmi.edu

Education and Training

	<u>Year</u>	<u>Degree/Institution</u>	<u>Discipline</u>
Undergraduate	1998	B.Sc., McMaster University	Biochemistry
Doctorate	2005	Ph.D., McMaster University	Biochemistry/Microbiology
Postdoctorate	2013	Tufts University School of Medicine	Microbial Pathogenesis

Professional Experience

- 1997-1998 Undergraduate Thesis
Laboratory of Dr. Gerry D. Wright, Department of Biochemistry, McMaster University
Thesis: Enzymatic characterization of an aminoglycoside antibiotic modifying enzyme.
- 1998-2005 Doctoral Thesis
Laboratory of Dr. Justin R. Nodwell, Department of Biochemistry, McMaster University
Thesis: Establishing cell fate in the multicellular bacterium *Streptomyces coelicolor*
- 2005-2013 Postdoctoral Fellowship
Laboratory of Dr. Ralph R. Isberg, Department of Molecular Biology and Microbiology,
Tufts University School of Medicine
Research: Elucidating the molecular basis of *Legionella pneumophila* pathogenesis and the
role of environmental hosts in the evolution of virulence strategies

RESEARCH ACTIVITIES

Publications: Peer-Reviewed Original Science Research

1. **O'Connor TJ**, Kanellis P, Nodwell J. (2002) The *ramC* gene is required for morphogenesis in *Streptomyces coelicolor* and expressed in a cell type-specific manner under the direct control of RamR. *Mol Microbiol* 45: 45-57.
2. **O'Connor TJ** and Nodwell J. (2005) Pivotal roles for the receiver domain in the mechanism of action of the response regulator RamR of *Streptomyces coelicolor*. *J Mol Biol* 351:1030-1047.
3. VanRheenen S, Luo ZQ, **O'Connor TJ**, Isberg RR. (2006) Members of a *Legionella pneumophila* family of proteins with ExoU/phospholipase A active sites are translocated to target cells. *Infect Immun* 74:3597-3606.
4. Isberg RR, **O'Connor TJ**, Heidtman H (2009) *The Legionella pneumophila* replication vacuole: making a cosy niche inside host cells. *Nature Reviews Microbiology* 7:13-24.
5. Huang L, Boyd D, Amyot WM, Hempstead AD, Luo ZQ, **O'Connor TJ**, Chen C, Machner M, Montminy T, Isberg RR. (2011) The E Block motif is associated with *Legionella pneumophila* translocated substrates. *Cell Microbiol* 13:227-245.
6. **O'Connor TJ**, Adepoju Y, Boyd D, Isberg RR (2011) Minimization of the *Legionella pneumophila* genome reveals chromosomal regions involved in host range expansion. *Proc Natl Acad Sci* 108:14733-14740.
7. Choy A, Dancourt J, Mugo B, **O'Connor TJ**, Isberg RR, Melia T, Roy CR (2012) Autophagy inhibition by irreversible deconjugation of Atg8 proteins from membranes. *Science* 338:1072-1076.
8. **O'Connor TJ**, Boyd D, Dorer M, Isberg RR (2012) Analysis of aggravating genetic interactions allows a solution to redundancy in a bacterial pathogen. *Science* 338:1440-1444.
Highlighted In:
Faculty of 1000 Prime. Recommendation for Special Significance by Heidi Goodwich-Blair and Ángel Casanova-Torres, May, 2013.
American Society for Microbiology, Small things considered (<http://schaechter.asmblog.org>).
Putting redundancy to work by Katrina Nguyen, April, 2013.
BioTechniques. What a Pathogen Needs by Racheal Moeller Gorman, December, 2012.
9. De Jesus DA, **O'Connor TJ**, Isberg RR (2013) Analysis of *Legionella* infection using RNA interference in *Drosophila* cells. *Methods Mol Biol* 954:251-264.
10. **O'Connor TJ**, Isberg RR (2013) iMAD: a genetic screening strategy to dissect complex interaction in biological systems. *Nature Protocols*. Accepted and under revision.

Inventions, Patents, Copyrights

Not applicable

Extramural Funding

- 2009-2011 Title: Identifying effector proteins required for *Legionella pneumophila* pathogenesis
Sponsor: Natalie V. Zucker Research Center for Women Scholars
Total indirect costs: \$5,000
Principal Investigator: Ralph R. Isberg
Research: Tamara J. O'Connor, percent effort: 100%
- 2003-2004 Title: Dissecting the mechanism of RamR, a two-component response regulator, in mediating differentiation of *Streptomyces coelicolor*
Sponsor: Ontario Graduate Scholarship
Total indirect costs: \$15,000
Principal Investigator: Justin R. Nodwell
Research: Tamara J. O'Connor, percent effort: 100%
- 2002-2003 Title: Mapping the regulatory network governing morphological differentiation in the multicellular bacterium *Streptomyces coelicolor*
Sponsor: The Bank of Montreal Ontario Graduate Scholarship in Science and Technology
Total indirect costs: \$15,000
Principal Investigator: Justin R. Nodwell
Research: Tamara J. O'Connor, percent effort 100%

Research Program Building / Leadership

Not applicable

EDUCATIONAL ACTIVITIES

Educational Publications

Book Chapters

1. **O'Connor TJ**, Heidtman M, Isberg RR. (2008) *Legionella*: Molecular Biology. Chapter 10: Mechanisms of Intracellular Survival and Replication of *Legionella pneumophila*. Caister Academic Press, Norfolk, UK.
2. De Jesus DA, **O'Connor TJ**, Isberg RR (2011) *Legionella*: Methods and Protocols. Chapter: Analysis of *Legionella* infection using RNA interference in *Drosophila* cells. Humana Press, New York, NY.

Teaching

Classroom Instruction

- 1998-1999 Let's Talk Science, Instructor
Department of Biochemistry, McMaster University
Designed and performed biochemistry-based experiments for students at a local high school to foster scientific interest and provide a forum for questions pertaining to basic principles and career opportunities in science.
- 1998-2000 Biochemistry Laboratory I, Teaching Assistant
Department of Biochemistry, McMaster University
- 2000-2002 Nucleic Acid Structure and Function, Teaching Assistant
Department of Biochemistry, McMaster University

Classroom instruction continued

- 2002-2003 Protein Structure and Function, Teaching Assistant
Department of Biochemistry, McMaster University
- 2003-2004 Cellular Biochemistry, Teaching Assistant
Department of Biochemistry, McMaster University
- 2013-2014 Infectious Disease Intersession: Antimicrobial Resistance, Instructor
Johns Hopkins University School of Medicine

Clinical Instruction

Not applicable

CME Instruction

Not applicable

Workshops/Seminars

- 2013 Panel, Postdoctoral Fellow Job Search Discussion Group
Johns Hopkins University School of Medicine

Mentoring

Advisees

Supervised research projects

- 1999-2000 Pam Kanellis, Undergraduate thesis student
Project: Transcriptional expression of the developmental gene, *ramC*
Current position: Program Officer, Grand Challenges Canada
- 2001-2002 Randy Singh, Undergraduate thesis student
Project: Studying the expression of *S. coelicolor* developmental genes
Current position: Postdoctoral Fellow, Massachusetts General Hospital
- 2003-2004 Tetyana Bodnaruk, Undergraduate thesis student
Project: Constructing a *lux* reporter system for *S. coelicolor*
Current position: Graduate Student, The Hospital for Sick Kids, University of Toronto
- 2007-2009 Yewande Adepoju, Preparatory student
Project: Construction of a *Legionella* mini-genome
Current position: Medical Student, University of New England
- 2007-2008 Kelly Benabou, Graduate rotation student
Project: Validating host-specific requirements of *L. pneumophila* effectors
Current position: Graduate student, Tufts University School of Medicine
- 2009-2011 Allie Kovner, Laboratory Technician
Project: Constructing a *L. pneumophila* genomic library
Current position: Teacher, Newton South High School
- 2011 Alex Kumamoto, Student summer research internship
Project: Construction of *L. pneumophila* gene deletion mutants
Current position: Senior, Carlmont High School, San Carlos, CA

Mentoring continued

- 2011-2012 Brandon Anjuwon-Fisher, Preparatory student
Project: Identifying macrophage-specific virulence genes
Current position: Graduate Student, University of North Carolina, Chapel Hill
- 2012 Asya Yukhananov, Student summer research internship
Project: Identifying Dot/Icm substrates targeted by the host TRC complex
Current position: Undergraduate, Goucher College

Thesis Committees

Not applicable

Qualification Exam committees

- 2013-2014 Kousik Sundararajan, Mock qualification examination

Training Grant Participation

Not applicable

Educational Program Building / Leadership

Not applicable

Educational Extramural Funding

Not applicable

CLINICAL ACTIVITIES

Not applicable

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

Not applicable

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

Not applicable

Editorial Activities

Not applicable

Advisory Committees, Review Groups/Study Sections

- 2000-2001 Seminar Series Review Committee Member, McMaster University
Presided on a panel of professors and senior graduate students who provide constructive advice to graduate student seminar presenters.
- 2013-2014 Graduate Student Admissions Committee, Department of Biological Chemistry,
Johns Hopkins University School of Medicine

Professional Societies

- 2007-present American Society for Microbiology

Conference Organizer, Session Chair

Not applicable

Consultantships

Not applicable

RECOGNITION

Awards and Honors

1994-1995	N. Desborough Award for Outstanding Performance in Mathematics Ingersoll District Collegiate Institute
1994-1995	McDonald's Restaurants Inc. Scholarship University Entrance Scholarship
1994-1995	University of Western Ontario Scholarship University Entrance Scholarship (declined)
1994-1998	Graduation with Distinction, Honors for high academic achievement Department of Biochemistry, McMaster University
2000-2001	Karl Freeman Award for Outstanding Seminar Department of Biochemistry, McMaster University
2003-2004	McMaster University Research Travel Award Department of Biochemistry, McMaster University

Invited Seminars, Panels

Conferences and Symposiums

1. The role of the response regulator RamR in mediating morphological differentiation in *Streptomyces coelicolor*. McMaster University: University of Toronto Bug Fest Seminar Series, McMaster University, Hamilton, Ontario, May, 2003.
2. The functional role of the developmental regulator RamR in the multicellular bacterium *Streptomyces coelicolor*. Molecular Genetics of Bacteria and Phages. University of Wisconsin, Madison, Wisconsin, August, 2003.
3. RamR: a regulator of morphological differentiation in the multicellular bacterium *Streptomyces coelicolor*. McMaster University: University of Toronto Bug Fest Seminar Series, Sunnybrook Hospital, Toronto, Ontario, June, 2004.
4. Solving functional redundancy amongst Dot/Icm translocated substrates of *Legionella pneumophila*. *Legionella 2009*. Pasteur Institute, Paris, France, October, 2009.
5. Solving functional redundancy amongst effectors of the bacterial pathogen, *Legionella pneumophila*. Microbial Pathogenesis and Host Response. Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, September, 2009.
6. Solving redundancy in a bacterial pathogen using iMAD, a novel strategy for dissecting complex interaction. In vitro Biology Meeting. Providence, Rhode Island, June, 2013.

Departmental Seminar Series

1. Understanding how the evolution of a bacterial pathogen in its natural environment contributes to its ability to cause disease in humans. University of Texas, Southwestern, Department of Microbiology Seminar Series, Dallas, TX, December, 2011.
2. Bridging the gap between the ecology of a bacterial pathogen and disease. University of Toronto, Department of Molecular Genetics Seminar Series, Toronto, ON, December, 2011.
3. Understanding how the evolution of a bacterial pathogen in its natural environment contributes to its ability to cause disease in humans. University of Maryland, Baltimore County, Department of Biological Sciences Seminar Series, Baltimore, MD, January, 2012.
4. How the evolution of a bacterial pathogen in its natural environment contributes to disease in humans. University of Arkansas, Department of Biological Sciences Seminar Series, Fayetteville, AR, February, 2012.
5. Understanding how the evolution of a bacterial pathogen in its natural environment contributes to its ability to cause disease in humans. Pennsylvania State University, Department of Molecular Genetics Seminar Series, College Park, PA, February, 2012.
6. Understanding how the evolution of a bacterial pathogen in its natural environment contributes to its ability to cause disease in humans. University of Texas A&M, Department of Microbial and Molecular Pathogenesis Seminar Series, Bryant, TX, April, 2012.
7. The role of environmental hosts in the evolution of a bacterial pathogen. Kansas State University, Division of Biology Seminar Series, Manhattan, KS, December, 2012.
8. The role of environmental hosts in the evolution of a bacterial pathogen. University of Kentucky School of Medicine, Department of Microbiology, Immunology and Molecular Genetics Seminar Series, Lexington, KY, January, 2013.
9. Mapping the network of molecular events that define the host-pathogen interaction. University of California, San Francisco School of Medicine, Department of Microbiology and Immunology Seminar Series, San Francisco, CA, January, 2013.
10. The role of protozoa in the evolution of a bacterial pathogen. Boston College, Biology Department Seminar Series, Boston, MA, January, 2013.
11. The role of protozoa in the evolution of a bacterial pathogen. Johns Hopkins University School of Medicine, Department of Biological Chemistry Seminar Series, Baltimore, MD, February, 2013.
12. The role of environmental hosts in the evolution of a bacterial pathogen. University of Pittsburgh, Department of Biological Sciences Seminar Series, Pittsburgh, PA, February, 2013.
13. The role of protozoa in the evolution of a bacterial pathogen. Washington University School of Medicine, Department of Molecular Microbiology Seminar Series, St. Louis, MI, February, 2013.
14. The role of protozoa in the evolution of a bacterial pathogen. Vanderbilt University Medical Center, Department of Pathology, Microbiology and Immunology Seminar Series, Nashville, TN, February, 2013.
15. The role of environmental hosts in the evolution of a bacterial pathogen. Georgetown University, Department of Biology Seminar Series, Washington, DC, February, 2013.
16. The role of protozoa in the evolution of a bacterial pathogen. New York University, Center for Genomics and Systems Biology, Department of Biology Seminar Series, New York, NY, February, 2013.

Invited Seminars, Departmental Seminars continued

17. The role of protozoa in the evolution of a bacterial pathogen. Washington University, Department of Biology Seminar Series, St. Louis, MI, February, 2013.
18. The role of protozoa in the evolution of a bacterial pathogen. Cornell University, Weill Institute for Cell and Molecular Biology, Department of Microbiology Seminar Series, Ithaca, NY, March, 2013.
19. The role of protozoa in the evolution of a bacterial pathogen. Stanford University, Department of Microbiology and Immunology Seminar Series, Stanford, CA, March, 2013.
20. The role of protozoa in the evolution of a bacterial pathogen. University of Maryland School of Medicine, Department of Microbiology and Immunology, Baltimore, MD, October, 2013.
21. The evolution of bacterial pathogens in environmental reservoirs. Johns Hopkins University School of Medicine, Department of Cell Biology Seminar Series, Baltimore, MD, November, 2013.
22. The evolution of bacterial pathogens in environmental reservoirs. National Institute of Health, Lambda Lecture Series, Bethesda, MD, December, 2013.

Meeting Abstracts

1. **O'Connor, TJ**, Adepoju, Y, Boyd, D and Isberg, RR. Genome minimization of the *Legionella pneumophila* genome reveals genomic islands involved in host range expansion. Microbial Pathogenesis and Host Response. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. September, 2011.
2. **O'Connor, TJ**, Adepoju, Y, Boyd, D and Isberg, RR. Identifying sources of functional redundancy amongst Type IV secreted substrates of the bacterial pathogen *Legionella pneumophila*. Gordon Conference: Microbial Pathogenesis. Waterville Valley Resort, Waterville Valley, NH. July, 2010.
3. **O'Connor, TJ**, Adepoju, Y, Boyd, D and Isberg, RR. Identifying Sources of Functional redundancy amongst secreted effector proteins employed by the bacterial pathogen *Legionella pneumophila* during infection. American Society for Microbiology 108th General Meeting. The Boston Convention and Exhibition Center, Boston, Massachusetts, June, 2008.
4. **O'Connor, TJ** and Nodwell, J. Establishing cell fate in the multicellular bacterium *Streptomyces coelicolor*. American Society for Microbiology Conference on Cell-Cell Communication in Bacteria. The Banff Center, Banff, Alberta, July, 2004.
5. **O'Connor, TJ** and Nodwell, J. Establishing cell fate in the multicellular bacterium *Streptomyces coelicolor*. Antimicrobial Research Centre Symposium. Sheraton on the Falls, Niagara Falls, Ontario, April, 2004.
6. **O'Connor, TJ** and Nodwell, J. A signaling mechanism that establishes cell type specific gene expression in *Streptomyces coelicolor*. Molecular Genetics of Bacteria and Phages. University of Wisconsin, Madison, Wisconsin, August, 2003.
7. **O'Connor, TJ**, Kanellis, P and Nodwell, J. The *ramC* gene is required for morphological development in *Streptomyces coelicolor* and expressed in a cell type specific manner under the direct control of RamR. Antimicrobial Research Centre Symposium. McMaster University, Hamilton, Ontario, April, 2002.

OTHER PROFESSIONAL ACCOMPLISHMENTS

- 1998-1999 Events Committee Member, McMaster University
Organized monthly departmental events to promote interaction and communication between students and faculty members.
- 1999-2004 Departmental Research Report Seminar Series, Participant, McMaster University
A weekly meeting of the Department of Biochemistry and Biomedical Sciences to present and discuss individual's research (presentations: annually 1999-2004).
- 2005-2013 Departmental Research Seminar Series, Participant, Tufts University School of Medicine
A bi-weekly meeting of the Department of Molecular Biology and Microbiology to present and discuss individual's research (presentations: annually 2006-2013).
- 2005-2013 Postdoctoral Seminar Series, Participant, Tufts University School of Medicine
Monthly meeting of postdoctoral fellows and departmental staff to discuss scientific research and foster communication and collaboration amongst departmental members (presentations: 2006, 2007, 2009, 2010, 2011).