CURRICULUM VITAE: John Rohde, PhD

Assistant Professor
Department of Microbiology and Immunology
Dalhousie University
5850 College Street
Halifax, NS, Canada B3H 1X5

Tel: (902) 494-7819 (office)
E-mail: john.rohde@dal.ca

Education and Training:

1994-2000	Ph.D. Biochemistry	University of British Columbia (lab of Ivan Sadowski)
1991-1993	M.Sc. Bacteriology	University of Idaho (lab of Scott Minnich)
1991-1995	B.Sc. Bacteriology	University of Idaho

2007-2009 Post-Doctoral training
Characterization of IpaH family members and identification of novel therapeutics for bacterial infection. Laboratory of Mike Tyers
Samuel Lunenfeld Research Institute, Toronto

2003-2007 Post-Doctoral training (Anne Cox-Chambers Pasteur Foundation Fellow)
Elucidation of function of virulence proteins produced by *Shigella*
Laboratory of Philippe Sansonetti
Institut Pasteur, Paris

2000-2003 Post-Doctoral training
Elucidation of mechanisms of TOR signaling in yeast *Saccharomyces cerevisiae*.
Laboratory of Joe Heitman and Maria Cardenas,
Duke University Medical Center, Durham, NC

Awards and Scholarships:

2003-2006	Pasteur Post-Doctoral Fellow Grant, Pasteur Foundation, $180,000 USD
2001	Osborne W. Lee, Jr. Fellowship for Cancer Research, Duke University, $5000 USD
1987-1989	Undergraduate fellowship, Department of Animal Science, University of Idaho

Committees:

2009-	Director, Users group for Enhanced Gene Analysis and Discovery CORES Facility, Faculty of Medicine, Dalhousie University
2009-2011	Member, Executive Committee, Dept. of Microbiology and Immunology, Dalhousie University
2012-	Member, Graduate Committee, Dept. of Microbiology and Immunology, Dalhousie University

Graduate Student Thesis Supervisory Committees:

(5 over last 2.5 years, and 5 as external examiner – active committees shown)

2010-	Baddi Queresque, Microbiology and Immunology – supervisor: Rafael Garduno
2010-	Lauren Davey, Microbiology and Immunology – supervisor: Song Lee
2012-	Ben Johnston, Microbiology and Immunology – supervisor: Craig McCormick

Scientific Mentoring (last 5 years):

2012- Jeremy Benjamin, Postdoctoral Fellow

2011- Dooroo Kim, 4th year Microbiology and Immunology Honours Student (co-supervised with Brent Johnston)

2011- Amit Mishra, 4th year Microbiology and Immunology Honours Student

2009- Angela Daurie, 4th year Microbiology and Immunology Honours Student Angela was also did 2 coop terms in my laboratory and was a summer student.

2011- Adrian Rogers, 4th year Biology Student.

2011- Haila Kottwitz, 3rd year Microbiology and Immunology Student. Haila was an NSERC summer student and is now an honors student.

2010- Saima Sidik, Graduate Student. Saima was funded through NSERC for her first year of her studies. She has received numerous awards including the award for best poster this year at the Canadian Society of Microbiology

2010-2011 Matt Gaetz, 4th year Biochemistry Honours Student (co-supervised with Lois Murray)

Teaching:

2010-2012 MICI 3119 – Microbial Physiology. This 3rd year course is required for all microbiology majors. Dr. Song Lee is the course coordinator. I teach 12 lectures on the topic of microbial genetics and my material forms the bulk of the exam for the last third of the course. My course evaluations have been good for both the 2010 and 2011 years.

2011-2012 MICI 4303 – Advanced Microbial Genetics. I am course coordinator for this course and I am assisted by Dr. Chris Barnes. The course is designed to introduce students to the primary literature in the area of gene regulation in microbes. MICI4033 received excellent reviews in its first year.

Peer Review Committees (Grants):

I have reviewed PhD and MSc studentships for CIHR in 2011 and again in 2012. In 2011 I served as a reviewer for French National Research Agency.

Peer Review Committees (Articles):

I review about six articles a year for journals in the field of bacterial pathogenesis and chemical biology. Since my arrival at Dalhousie I have reviewed articles for the following journals:

Infection and Immunity
Canadian Journal of Microbiology
FEMS Microbiology
Science
Nature Reviews Microbiology
Nature Immunology, BMC Genomics
PLoS Pathogens (where I served as a guest editor)

Seminar and conferences:

Since my arrival to Dalhousie I have been invited to give seminars on my research to Canadian and American universities. These include:

University of Idaho	2009
McGill University	2011
St. Francis Xavier University	2011
University of Virginia	2012
University of Victoria	2012
University of Washington	2012

In addition, I attend national and international conferences to present the research of my laboratory.

Current Research Operating Funds:

Agency: CIHR (Operating Grant)
Title: Secreted Effectors from *Shigella flexneri* that Target the Ubiquitin Proteasome System (ranked 5th on panel).
Term: 5 years (1/10-3/15)
Role: Principal Applicant
Amount: $142,678 p.a., renewable (total: $713,390)

Agency: NSERC Discovery Grant
Title: Understanding ubiquitin transfer for a novel class of E3 ubiquitin ligases
Term: 2011-2015
Role: Principle Applicant
Amount: $27,000 p.a., renewable. I was allocated an additional $5,000 for 2011-2012 as a New Investigator. (total: $140,000)

Previous Research Operating Funds:

Agency: Canada Foundation for Innovation (CFI)
Title: The Facility for Functional Genomic Analysis of Bacterial Pathogens
Term: 1 years (7/10-7/11)
Role: Principal Applicant
Amount: $294,841

Agency: CIHR (Catalyst Grant)
Title: Study of Virulence in *Shigella* using a bar-coded collection of mutants (ranked 2nd on panel).
Term: 1 years (3/10-3/11)
Role: Principal Applicant
Amount: $94,527

Operating Funds for Dalhousie Research Community

Agency: NSHRF REDI Program (Catalyst Award)
Title: Increasing genome-wide screening capacity in Atlantic Canada
Term: 1 year (9/12-9/13)
Role: Principal Applicant
Amount: $20,000

Agency: NSERC Research Tools and Innovation
Title: Benchtop ultracentrifuge for molecular cell biology
Term: 2012
Role: Co-applicant
Amount: $106,100

Publication philosophy:

I seek novel research questions and disseminate my findings in high quality journals. As an independent researcher I have every intention of maintaining this high standard.

Manuscipts in preparation (my trainees are underlined):

S. Sidik, J. Benjamin, J. Ryu, A. Jarrar, J. Rohde. "Identification of *Shigella flexneri* glucosyl transferase that alters host immune response using an ordered array of mutants." To be submitted to *Infection and Immunity.*
I will be corresponding author

S. Sidik, M. Gaetz, C. LeBel, F. Sicheri, M. Tyers, J. Rohde "Genome-wide screening in yeast provides insights to NEL-domain E3 ubiquitin ligases interaction with their cognate E2 ubiquitin conjugating enzymes." To be submitted to *Journal of Biological Chemistry.*
I will be corresponding author

Publications while at Dalhousie University (my trainees are underlined):

Onodera NT, Ryu J, Durbic T, Nislow C, Archibald JM, **Rohde JR**. 2012. Genome Sequence of *Shigella flexneri* Serotype 5a Strain M90T Sm. *J Bacteriol*. 194(11):3022.
I am corresponding author, impact factor 3.8

Chou YC, Keszei AF, **Rohde JR**, Tyers M, Sicheri F. 2012 Conserved structural mechanisms for auto-inhibition in IpaH ubiquitin ligases. *J Biol Chem.* 287(1):268-75.
Ongoing collaboration, impact factor 4.7

Rohde JR, 2011 *Listeria* unwinds host DNA. *Science*. 331(6022):1271-2.
Invited submission, impact factor 31

Publications Previous to Dalhousie:

Original articles:

Singer AU , **Rohde JR**, Lam R, Skarina T, Kagan O, DiLeo R, Chirgadze NY, Tyers M, Sansonetti PJ, Parsot C, and A. Savchenko. Structure of the Shigella type III secretion effector IpaH defines a novel class of E3 ubiquitin ligases. *Nat Struct Mol Biol.* 15(12):1293-301. (co-first author, impact factor 12.7, citations 36)

Rohde JR, A. Breitkreutz, A. Chenal, PJ Sansonetti, and C. Parsot, 2007. Type III secretion effectors of the IpaH family are E3 ubiquitin ligases. *Cell Host and Microbe* 1 (1):77-83. (impact factor 14, citations 83, *Faculty of 1000* Feature)

These two articles listed above define a new class of enzymes, the IpaH family of E3 ubiquitin ligases. *Cell Host and Microbe* is the leading journal in the field of microbial pathogenesis, *Nature Structural and Molecular Biology* is a leading structure-function journal. These publications establish me as a leader in this new area of research.

Rohde JR, S Campbell, S Zurita-Martinez, NS Cutler, M Ashe, and ME Cardenas. 2004. TOR controls transcriptional and translational programs via Sap-Sit4 protein phosphatase signaling effectors. *Mol. Cell Biol*. 24(19): 8332-8341.

Rohde JR and ME Cardenas, 2003. The Tor pathway regulates gene expression by linking nutrient sensing to histone acetylation. *Mol. Cell Biol*. 23(2): 629-35.

Rohde JR, J Trinh, I Sadowski, 2000. Multiple signals regulate *GAL* transcription in yeast. *Mol Cell Biol.* 20(11):3880-6.

Rohde JR, XS Luan, H Rohde, JM Fox, SA Minnich, 1999. The *Yersinia enterocolitica* pYV virulence plasmid contains multiple intrinsic DNA bends which melt at 37ºC. *J Bacteriol.* 181(14):4198-204.

Rohde JR, JM Fox, SA Minnich, 1994. Thermoregulation in *Yersinia enterocolitica* is coincident with changes in DNA supercoiling. *Mol Microbiol*. 12(2):187-99.

Reviews and Book Chapters:

Curak J, **Rohde JR**, and I. Stagljar. 2009. Yeast as a tool to study bacterial effectors. *Curr Opin Microbiol.* 12(1):18-23. Review.

Rohde JR, Bastidas R, Puria R, and ME Cardenas. 2008. Nutritional control via Tor signaling in *Saccharomyces cerevisiae. Curr Opin Microbiol*. 11(2):153-60. Review.

Rohde, JR, Zurita-Martinez, S.A., and M.E. Cardenas. 2007. Yeast as a model to study the immunosuppressive and chemotherapeutic drug rapamycin. Yeast as a tool in cancer research. J. Nitiss., and J. Heitman, Eds. Springer, pp. 347-374.

Rohde JR and ME Cardenas, 2004. Nutrient signaling through Tor kinases controls gene expression and differentiation in fungi. In M. Hall, D. Sabatini, and G. Thomas (Eds.) Current Topics in Microbiology and Immunology; 279:53-72. Review.

Rohde JR, J Heitman, ME Cardenas, 2001. The TOR kinases link nutrient sensing to cell growth. *J Biol Chem*. 276(13):9583-6. Review.
We were notified by *J. Biol Chem* that this article was a "highly cited article"

Presentations at Conferences (my trainees are underlined):

S Sidik, J Benjamin, RJ Ryu, A Jarrar, C Nislow and **JR Rohde**. Deletion Collection of pWR100 from *Shigella flexneri* strain M90T. 2012. ASM General Meeting, San Fansisco, CA.

S Sidik, RJ Ryu, A Jarrar, C Nislow and **JR Rohde**. 2011. Identifying Targets of E3 Ubiquitin Ligases from *Shigella*. ID Research Day/Canadian Center for Vaccinology Annual Symposium (April, 2011) **Best poster presentation.**

S Sidik, RJ Ryu, A Jarrar, C Nislow and **JR Rohde**. 2011. Identifying Targets of E3 Ubiquitin Ligases from *Shigella*. Integrated Health Research Training Partnership Graduate Student Research Day (May, 2011). **First place poster presentation award**

S Sidik, RJ Ryu, A Jarrar, C Nislow and **JR Rohde**. 2011. Identifying Targets of E3 Ubiquitin Ligases from *Shigella*. Canadian Society for Microbiology. St Johns Newfoundland. **Best Poster Presentation.**

Saima Sidik, Matt Gaetz, Yang Chieh Chou, Catherine LeBel, Lois Murray, Frank Sicheri, Mike Tyers, **JR Rohde.** 2011. Expression of IpaH-family E3 ubiquitin ligases in yeast reveals insight to mechanisms of autoregulation and ubiquitin transfer. The Ubiquitin Family. Cold Spring Harbor, NY.

Catherine LeBel, Julie Ryu, Mike Tyers, and **JR Rohde** 2009. IpaH Family of Proteins: A novel Class of E3 Ubiquitin Ligases from Bacteria. The Ubiquitin Family. Cold Spring Harbor, NY.

Catherine LeBel, Julie Ryu, Mike Tyers, and **JR Rohde** 2010. IpaH Family of Proteins: A novel Class of E3 Ubiquitin Ligases from Bacteria. American Society for Microbiology Annual Meeting, San Diego, CA

Rohde JR, A. Breitkreutz, A. Chenal, P. Sansonetti, C. Parsot, M. Tyers. 2007. The *Shigella* effector IpaH9.8 is an E3 ubiquitin ligase. American Society for Microbiology Annual Meeting, Toronto, ON.

Rohde JR, PJ Sansonetti, and C. Parsot, 2005. *Saccharomyces cerevisiae* as a model to study the effectors of *Shigella sp*. International Conference on Yeast Genetics and Molecular Biology. Bratislava, Slovak Republic.

Rohde JR, PJ Sansonetti, and C. Parsot, 2004. *Saccharomyces cerevisiae* as a model to study the effectors of *Shigella sp*. European Molecular Infectious Disease (EMID) Conference, Berlin, Germany.

Rohde JR and ME Cardenas, 2003. TOR signaling through Sap-Sit4 protein phosphatase effectors. Yeast Genetics and Flyfishing Meeting, Chilko Lake, BC.

Rohde JR and ME Cardenas, 2002. Mechanism of ribosomal protein gene expression by the TOR pathway. Yeast Genetics and Molecular Biology Meeting, Madison, WI.

Sadowski IJ, JR. **Rohde**, MJ Hirst, NR Kuriakose, J Trinh, 1998. Gal4 is regulated by an RNA polymerase II holoenzyme-mediated phosphorylation. Yeast Genetics and Molecular Biology Meeting, College Park, MD.

Rohde, JR and IJ Sadowski, 1997. Multiple signals regulate Gal4 activity. Yeast Genetics and Human Flyfishing Meeting, Merrit BC.