

CURRICULUM VITAE

a) NAME:

Campbell-Valois, François-Xavier, Assistant Professor, Employee #: 100246034
Member of the Faculty of Graduate and Postdoctoral Studies: yes

b) DEGREES:

Ph.D. Molecular Biology, Université de Montréal, Qc, Canada, 2006 (Supervisor: Prof. Stephen W. Michnick, Department of Biochemistry)

B.sc., Biochemistry, Université de Montréal, Qc, Canada, 1997

c) EMPLOYMENT HISTORY:

2015- Assistant Professor, Department of Chemistry and Biomolecular Sciences, University of Ottawa, Ottawa, Canada

2009-15 Postdoctoral fellow, Laboratoire de Pathogénie Microbienne Moléculaire (Directeur: Philippe Sansonetti) Department of Cell Biology and Infection, Institut Pasteur, Paris, France

2006-09 Postdoctoral fellow, Laboratoire de Biogénèse du Phagosome (Directeur: Michel Desjardins), Département de Pathologie et Biologie Cellulaire, Université de Montréal, Montréal, Canada

d) ACADEMIC HONOURS:

- Thesis scored “Excellent” (within top 5%), 2006
- Thesis redaction prize, Université de Montréal, 2003 (3000 \$)
- J.A. de Sève prize, Faculté des études supérieures, Université de Montréal, 2003 (6000 \$)
- Simon-Pierre Noël prize for the best scientific oral communication, Biochemistry Department, Université de Montréal, 2000 (1000 \$)
- Travelling award of the American Society for Biochemistry and Molecular Biology (ASBMB), 1999, 2000 and 2002 (3x450 \$)
- Veterinary school prize for a poster presentation, Molecular Biology Department, Université de Montréal, 1999, (250 \$)

e) SCHOLARLY AND PROFESSIONAL ACADEMIC ACTIVITIES:

- Member of the Editorial board of Bio-protocol, 042016-
- Supervised laboratory internships of 6 undergraduate students from 1998-2009, including 3 in the obligatory internships in the B.Sc. in Biochemistry and one in the B.Sc. in Biomedical Sciences
- Teaching Assistant in the course BCM3532 from the B.Sc. in Biochemistry, 2005
- Laboratory Assistant in the practical laboratory course BCM1521 of the B.Sc. specialized in Biochemistry, 2000.

f) UNDERGRADUATE SUPERVISIONS:

Honours project:

- Ashley Weeks (2015-16)

Others:

- Agnes Cadieux, UROP fellow (2015-16)
- Endrei Marcantonio, summer internship, (2015-16)
- Jade Choo-Foo (NSERC USRA award), summer internship, (2015-16)
- Lorrie Boisvert, summer internship, (2015-16)
- Shirley Wan, summer internship, (2015-16)

g) GRADUATE SUPERVISIONS:

- Ashwag Alzahrani, Msc student, 012016-
- Laurie Pinaud, PhD student, 102013- (see papers in preparation).

h) GRADUATE COURSES:

N/A

i) EXTERNAL RESEARCH FUNDING:

- NSERC Discovery grant (29k \$/year), 042016-032022, *Deciphering the Regulation and Functional Mechanisms of the Type Three Secretion Apparatus*, operating grant
- Canada Foundation for Innovation John R. Evans Leader Funds (582k \$), 112015-062018, *Deciphering molecular events leading to bacterial pathogens sensing and adaptation to their environment*, grant equipment
- Fondation pour la Recherche Médicale fellowship (55k €/year), 2011-2013
- Marie-Curie International Reintegration Grant (65k € for benchfee), 2011-2013
- European Molecular Biology Organization (EMBO) long-term fellowship (38k €/year), 2009-2011
- Canadian Institutes of Health Research (CIHR) research fellowship (40k \$/year), 2008-2010
- CIHR PhD fellowship (20k \$/year), 2000-2003
- PhD training fellowship du Fonds Québécois pour la Recherche et les Nouvelles Technologies (FQRNT) 1999-2000 (12k \$/year)

j) INTERNAL RESEARCH FUNDING:

- Startup budget (08012015-07312018): 200,000\$

k) PUBLICATIONS:

1) Life-time summary (count) according to the following categories:

- Books authored.....	1
- Books edited.....	0
- Refereed Chapters in books.....	1
- Non-refereed Chapters in books.....	0
- Papers in refereed journal.....	16
- Papers in refereed conference proceedings.....	3
- Major invited contributions and/or technical reports.....	2
- Abstracts and/or papers read.....	0
- Others (workshops presented).....	0

2) Details for past nine (9) years same categories as above:

Books authored:

1. Campbell-Valois F-X, Folding of the Polypeptide Sequence of Small Proteins (French), 2014, Presses Académiques Francophones, ISBN 978-3-8381-4746-8.

Papers in refereed Journals:

1. **Campbell-Valois F-X***, Pontier SM, Implications of Spatiotemporal Regulation of *Shigella flexneri* Type three Secretion Activity on Effector Functions: think globally, act locally, *Frontiers in Cellular Infection and Microbiology*, Accepted.
**Corresponding author*
2. Vonaesch P, **Campbell-Valois F-X**, Dufour, A Sansonetti PJ and Schnupf, P. *Shigella flexneri* blocks stress granule formation in epithelial cells, *Cellular Microbiology*, accepted January 14 2016.
3. Arena ET[†], **Campbell-Valois F-X[†]**, Tinevez J-Y[†], Nigro G[†], Marteyn B, Nothelfer K, Sansonetti PJ. Bioimage analysis of *Shigella* infection reveals targeting of colonic crypts, *Proc Natl Acad Sci USA*. 2015, accepted.
[†] equal contributions
4. **Campbell-Valois F-X***, Sachse M, Sansonetti PJ, Parsot C. Escape of Actively Secreting *Shigella flexneri* from ATG8/LC3-positive vacuoles is facilitated by IcsB and VirA, *MBio*, 2015, *MBio*, 2015, May 26; 6(3). pii: e02567-14.
**Corresponding author*
5. **Campbell-Valois F-X**, Sansonetti PJ, Tracking Bacterial Pathogen infection with genetically-encoded reporters, *FEBS Letters*, 2014 Aug 1;588(15):2428-36.
6. Grishin AM, Condos TEC, Barber KR, **Campbell-Valois F-X**, Parsot C, Shaw GS, Cygler M. Structural basis for the inhibition of host protein ubiquitination by Shigella effector kinase OspG, *Structure*, 2014 Jun 10;22(6):878-88.
7. **Campbell-Valois F-X***, Schnupf P, Nigro G, Sachse M, Sansonetti P, Parsot C. A fluorescent reporter reveals on/off regulation of the Shigella Type III Secretion Apparatus during entry and cell-to-cell spread, *Cell Host & Microbe*. 2014 Feb; 15(2): 177-189.
**Corresponding author*
8. **Campbell-Valois F-X^{*,†}**, Trost M^{*,†}, Chemali M, Dill BD, Laplante A, Duclos S, Sadeghi S, Rondeau C, Morrow IC, Bell C, Gagnon E, Hatsuzawa K, Thibault P, Desjardins M^{*}. Quantitative proteomics reveals that only a subset of the endoplasmic reticulum contributes to the phagosome. *Mol Cell Proteomics*. 2012 Jul; 11(7): M111.016378.
**Corresponding authors; † equal contribution*

9. Remy I, **Campbell-Valois F-X**, Michnick SW. Detection of protein-protein interactions using a simple survival protein-fragment complementation assay based on the enzyme dihydrofolate reductase. *Nat Protoc.* 2007; 2(9): 2120-5.
10. **Campbell-Valois F-X**, Michnick SW. Protein engineering on Raf-Ras binding domain reveals a polarized distribution of residues with high ϕ -values, but energetically diffuse transition state. *J Mol Biol.* 2007; 365(5): 1559-77.
11. **Campbell-Valois F-X**, Michnick SW. Synthesis of degenerated libraries of the Ras-binding domain of Raf and rapid selection of fast-folding and stable clones with the dihydrofolate reductase protein fragment complementation assay. *Methods Mol Biol.* 2007; 352: 249-74.

In preparation:

1. **Campbell-Valois F-X**^{*}, Romero, S^{*}. Protein biochemistry and cell biology in a nanotechnology and engineering perspective, Bionanocomposites, Wiley, in revision.
**Corresponding authors*
2. Pinaud L, Friedman RC, Parsot C, Sansonetti PJ, Phalipon A^{*}, **Campbell-Valois F-X**^{*}. In-depth analyses of the Type Three Secretion System Secretome of *Shigella flexneri*, in preparation
**Corresponding authors*
3. Pinaud L, **Campbell-Valois F-X**, Sansonetti PJ, Phalipon A. Optimized beta-lactamase translocation assay reveal cell types targeted by *Shigella flexneri* in Human colonic tissues, in preparation.

Major invited contributions and/or technical reports

1. **Campbell-Valois F-X**^{*}, Schnupf, P, Sansonetti PJ. Design of a Transcription-based Secretion Activity Reporter (TSAR) for the Type III secretion apparatus of *S. flexneri* and uses thereof, <http://www.bio-protocol.org>, 2014, Oct 20; vol. 4 issue 20.
**Corresponding author*
2. **Campbell-Valois F-X**^{*}, Schnupf, P, Sansonetti PJ. Detection of the secreted and cytoplasmic fractions of IpaB, IpaC and IpaD by lysozyme permeabilization, <http://www.bio-protocol.org>, 2014, Oct 20; vol. 4 issue 20.
**Corresponding author*

Others

Seminars

- 1) Seeing Type Three Secretion activity in *Shigella flexneri*: think globally act locally, University of Oxford, United Kingdom, March 11th 2015.
- 2) Seeing Type Three Secretion activity in *Shigella flexneri*: think globally act locally, Microbiology and Immunology Department, Dalhousie University, Halifax, Nova Scotia, Canada, February 24th 2015.
- 3) Biochemistry of host-pathogens interactions: sensing modifying and why location matters that much?, Chemistry Department, University of Ottawa, Ottawa, Ontario, Canada, January 29th 2015.
- 4) Seeing Type Three Secretion activity in *Shigella flexneri*: think globally act locally, Microbiology and Immunology Department, University of Ottawa, Ottawa, Ontario, Canada, July 16th 2014.

- 5) Seeing Type Three Secretion activity in *Shigella flexneri*, Microbiology and Immunology Department, Université de Montréal, Montréal, Québec, Canada, April 12th 2014.
- 6) Seeing Type Three Secretion activity in *Shigella flexneri*, Microbiology Department, McGill University, Montréal, Québec, Canada, September 27th 2013.
- 7) Seeing Type Three Secretion activity in *Shigella flexneri*, Université de Sherbrooke, Sherbrooke, Québec, Canada, September 26th 2013.
- 8) Seeing Type Three Secretion activity in *Shigella flexneri*, INRS-Institut Armand-Frappier, Laval, Québec, Canada, September 24th 2013.
- 9) Seeing Type Three Secretion activity in *Shigella flexneri*, Département de biochimie, Université de Montréal, Montréal, Québec, Canada, September 23rd 2013.
- 10) Fluorescent Reporters for tracking mxiE dependent expression in infection, Cell biology and Infection departmental retreat, Vichy, France, September 26-28th 2011.

Posters

- 1) **Campbell-Valois F-X**, Schnupf P, Nigro G, Sachse M, Sansonetti P, Parsot C, Seeing the Type Three Secretion activity in *Shigella flexneri*, 10th meeting of the French Society of Microbiology, Institut Pasteur, Paris, France, March 31st-April 1st 2014.
- 2) **Campbell-Valois F-X**, Schnupf P, Nigro G, Sachse M, Sansonetti P, Parsot C, Seeing the Type Three Secretion activity in *Shigella flexneri*, Microbial Pathogenesis and Host response, Cold Spring Harbor Laboratory, NY, USA, September 17th-21st 2013.
- 3) Trost M, **Campbell-Valois F-X**, Dill BD, Thibault P, Desjardins M, Quantitative proteomics reveal that only a subset of the endoplasmic reticulum contribute to the phagosome. UEPA Proteomics meeting, Glasgow, Scotland, July 9th-12th 2012.
- 4) **Campbell-Valois F-X**, Schnupf P, Parsot C, Sansonetti P, Study of the temporal expression of MxiE-regulated virulence factors in *Shigella* infection, EIMID annual meeting, Sienna, Italy, October 12-14th 2011.
- 5) **Campbell-Valois F-X**, Trost M, Laplante A, Shadegi S, Rondeau C, Duclos S, Morrow I, Hatsuzawa K, Thibault P, Desjardins M, Quantitative proteomics reveal that only a subset of the endoplasmic reticulum contribute to the phagosome. Emerging Themes in Infection Biology, Nice, France, June 1-4th 2010.
- 6) **Campbell-Valois F-X**, Trost M, Jutras I, Laplante A, Rondeau C, Duclos S, Morrow I, Thibault P, Desjardins M, Quantification of the endoplasmic reticulum contribution to phagosome biogenesis, 7th Conférence Louis Pasteur « Comprendre et contrôler les Maladies Infectieuses : un programme pour le XXI^{ème} siècle », Institut Pasteur, Paris, France, November 11-13th 2008.