CURRICULUM VITAE

CONTACT INFORMATION

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EDUCATION

2008	Ph. D. in Biochemistry, Université Laval, Quebec (Qc), Canada
1995	B.Sc. in Biochemistry, Université Laval, Quebec (Qc), Canada

EMPLOYMENT HISTORY

Sept 2011-	Assistant Professor, Department of Biological Sciences, UTEP
Sept 2010-Aug 2011	Research Associate Specialist II for Dr Paul R.Ortiz de Montellano, Department of Pharmaceutical Chemistry, UCSF
Jan 2006-Aug 2010	Postdoctoral scientist for Dr Paul R.Ortiz de Montellano, Department of Pharmaceutical Chemistry, UCSF

MAJOR EXPERTISE

- Major molecular biology techniques (DNA cloning, PCR, RT-PCR, site-directed mutagenesis, gene inactivation by allelic-replacement, Southern, northern and western blotting)
- Expression of recombinant proteins in *E. coli* and *Mycobacterium smegmatis*, purification of proteins using conventional chromatography techniques and FPLC system
- Biology and manipulation of the human pathogen *Mycobacterium tuberculosis* in a Biosafety Level 3 (BSL-3) laboratory environment (culture, gene inactivation and biochemistry of DNA, RNA, proteins and lipids)
- Spectroscopy of hemoproteins (UV-vis absorption, circular dichroism, resonance Raman).
- Laser-photolysis and stopped-flow spectrophotometry in aerobic and strict anaerobic (glovebox) conditions
- Major analytical tools in protein biochemistry (GC-MS, HPLC and LC-MS)

SOCIETY MEMBERSHIP

- 2011-present American Chemical Society
- 2010-present American Society for Microbiology
- 2009-2011 International Society for the Study of Xenobiotics
- 2013-present Sigma Xi

AWARDS and HONORS

2016 Invited speaker at the ASM Rio Grande Branch Annual Meeting, El Paso, Texas.
2016 UTEP Campus Office of Undergraduate Research Initiatives (COURI) Spring Symposium Mentoring Award, El Paso, Texas.
2015 Invited panelist at the ASBMB Grant Writing Workshop for Early Career Faculty, Washington, DC.
2015 UTEP Campus Office of Undergraduate Research Initiatives (COURI) Spring Symposium Mentoring Award, El Paso, Texas.
2014 Invited speaker at the 2nd Annual Infectious Diseases Symposium Texas Tech University Health Science Center, El Paso, Texas.
2014 Invited speaker at the Minority Health and Health Disparities Grantees Conference, National Harbor, MD.
2013 Selected participant at the ASBMB Grant writing workshop for Early Career Faculty, Washington, DC.
2013 Invited speaker at the 3rd Texas Tuberculosis Research Symposium, San Antonio, Texas.
2012 Travel award for 13th RCMI International Symposium on Health Disparities, San Juan, Puerto Rico.
2010 UCSF Postdoc Travel Award.
2010 Invited speaker at the 110th General Meeting of ASM, San Diego, CA.

PUBLICATIONS (**as of June 2016, h-index: 19, 1451 citations, source Google Scholars**)

Book chapter

1. **Ouellet, H**., Chow, E.D., Guan, S., Cox, J.S., Burlingame, A.L. and Ortiz de Montellano, P.R. (2013) Genetic and mass spectrometric tools for elucidating the physiological function(s) of cytochtrome P450 enzymes from *Mycobacterium tuberculosis. **Methods in Molecular Biology***. *987,* 79-94. **Cited by 1.**

Published peer-reviewed articles (**As of June 2016, h-index: 19, 1451 citations**)

1. Zhang, Q., Ouellet, H., Wang, D., Jiang, G., Liu, W,, Deng, Q., Li, X., Wei Qian, W., and Sun, J. (2016) EsxA membrane-permeabilizing activity plays a key role in mycobacterial cytosolic translocation and virulence: effects of a single mutation at glutamine 5**. Manuscript accepted for publication in Scientific Reports.**

2. Acosta, Y., Zhang, Q., Rahaman, A., **Ouellet, H**., Xiao, C., Sun, J., and Li, C. (2014) Imaging cytosolic translocation of mycobacteria with two-photon fluorescence resonance energy transfer microscopy. ***Biomedical Optics Express*** *5*, 3990-4001. **Read 47 times.**
3. Sivaramakrishnan, S., **Ouellet, H**., Matsumura, H., Guan, S., Moenne-Loccoz, P. Burlingame, A.L., Ortiz De Montellana, P.R. Proximal ligand electron donation and reactivity of the cytochrome P450 ferric-peroxo anion**.** ***J Am Chem Soc*** *134*, 6673-6684. **Cited by 20.**
4. Jasaitis, A., **Ouellet, H**., Lambry, J.-C., Martin, J.-L., Vos, Marten. (2011) Ultrafast heme–ligand recombination in truncated hemoglobin HbO from *Mycobacterium tuberculosis*: A ligand cage. *Chemical Physics 396*, 10-16. **Cited by 11.**
5. **Ouellet, H**., Johnston, J.B. and Ortiz de Montellano, P.R. (2011) Cholesterol catabolism as a therapeutic target in *Mycobacterium tuberculosis*. ***Trends Microbiol*** *19*, 530-5399. **Cited by 67.**
6. Sivaramakrishnan, S., **Ouellet, H**., Du, J., McLean, K.J., Medzihradszky, K.F., Dawson, J.H., Munro, A.W. and Ortiz de Montellano, P.R. (2011) A novel intermediate in the reaction of seleno CYP119 with m-chloroperbenzoic acid. ***Biochemistry*** *50*, 3014-3024. **Cited by 8.**
7. **Ouellet, H.,** Kells, P.M., Ortiz de Montellano, P.R. and Podust, L.M. (2011) Reverse type-I inhibitor of *Mycobacterium tuberculosis* CYP125A1. ***Bioorg Med Chem Lett*** *21*, 332-337. **Cited by 16.**
8. **Ouellet, H**.*, Johnston, J.B.* and Ortiz de Montellano, P.R. (2010) Functional redundancy of steroid C26-monooxygenase activity in *Mycobacterium tuberculosis* revealed by biochemical and genetic analyses. ***J Biol Chem*** *285*, 36352-36360. *Authors contributed equally. **Cited by 46.**
9. Johnston, J.B., **Ouellet, H**., Podust, L.P., Ortiz de Montellano, P.R. (2011) Structural control of cytochrome P450-catalyzed ω-hydroxylation. ***Arch Biochem Biophys*** 507, 86-94. **Cited by 27.**
10. Kells, P.M., **Ouellet, H**., Aparicio. J.F. and Podust, L.M. (2010) X-ray structure of cytochrome P450 PimD suggests epoxidation of the polyene macrolide pimaricin occurs via a hydroperoxoferric intermediate. ***Chem Biol*** *17*, 841-851. **Cited by 27.**
11. **Ouellet, H**., Guan, S., Johnston, J.B., Chow, E.D., Kells, P.M., Podust, L.M., Burlingame, A., Cox, J.S., and Ortiz de Montellano, P.R. (2010) *Mycobacterium tuberculosis* CYP125A1 is a steroid C-27 monooxygenase that detoxifies intramolecularly generated cholest-4-en-3-one. ***Mol Microbiol*** *77*, 730-742. **Cited by 66.**
12. **Ouellet, H**, Johnston JB, Ortiz de Montellano PR. (2010). The *Mycobacterium tuberculosis* Cytochrome P450 system. ***Arch Biochem Biophys*** *493*, 82-95. **Cited by 47.**
13. Podust LM, **Ouellet, H**, von Kries JP, Ortiz de Montellano PR. (2009) Interaction of *Mycobacterium tuberculosis* CYP130 with heterocyclic arylamines. ***J Biol Chem*** *284*, 25211-25219. **Cited by 26.**
14. **Ouellet, H**. and Ortiz de Montellano, P.R. (2009) Reactions of *Mycobacterium tuberculosis* cytochrome P450 enzymes with nitric oxide. ***Biochemistry*** *48*, 863-872. **Cited by 32.**

15. Jiang Y, Trnka MJ, Medzihradszky KF, **Ouellet, H**., Wang Y, Ortiz de Montellano PR. (2009) Covalent heme attachment to the protein in human heme oxygenase-1 with selenocysteine replacing the His25 proximal iron ligand. ***J Inorg Biochem*** *103*, 316-325. **Cited by 7.**

16. Li, S., **Ouellet, H**., Sherman, D.H. and Podust, L.M. (2009) Analysis of transient and catalytic desoamine binding pockets in cytochrome P450 PikC from *Sreptomyces venezuelae*. ***J Biol Chem*** *284*, 5723-5730. **Cited by 22.**

17. **Ouellet H**., Podust, L. M., and Ortiz de Montellano, P. R. (2008) *Mycobacterium tuberculosis* CYP130: crystal structure, biophysical characterization, and interactions with antifungal azole drugs, ***J Biol Chem*** *283*, 5069-5080. **Cited by 64.**

18. Podust, L. M., von Kries, J. P., Eddine, A. N., Kim, Y., Yermalitskaya, L. V., Kuehne, R., **Ouellet, H**., Warrier, T., Altekoster, M., Lee, J. S., Rademann, J., Oschkinat, H., Kaufmann, S. H., and Waterman, M. R. (2007) Small-molecule scaffolds for CYP51 inhibitors identified by high-throughput screening and defined by X-ray crystallography. ***Antimicrob Agents Chemother*** *51*, 3915-3923. **Cited by 67.**

19. **Ouellet, H**., Milani, M., LaBarre, M., Bolognesi, M., Couture, M., and Guertin, M. (2007) The roles of Tyr(CD1) and Trp(G8) in *Mycobacterium tuberculosis* truncated hemoglobin O in ligand binding and on the heme distal site architecture. ***Biochemistry*** *46*, 11440-11450. **Cited by 31.**

20. **Ouellet, H**., Ranguelova, K., LaBarre, M., Wittenberg, J. B., Wittenberg, B. A., Magliozzo, R. S., and Guertin, M. (2007) Reaction of *Mycobacterium tuberculosis* truncated hemoglobin O with hydrogen peroxide: evidence for peroxidatic activity and formation of protein-based radicals. ***J Biol Chem*** *282*, 7491-7503. **Cited by 35.**

21. Milani, M., Pesce, A., Nardini, M., **Ouellet, H**., Ouellet, Y., Dewilde, S., Bocedi, A., Ascenzi, P., Guertin, M., Moens, L., Friedman, J. M., Wittenberg, J. B., and Bolognesi, M. (2005) Structural bases for heme binding and diatomic ligand recognition in truncated hemoglobins. ***J Inorg Biochem*** *99*, 97-109. **Cited by 111.**

22. Mukai, M., Ouellet, Y., **Ouellet, H**., Guertin, M., and Yeh, S. R. (2004) NO binding induced conformational changes in a truncated hemoglobin from *Mycobacterium tuberculosis.* ***Biochemistry*** *43*, 2764-2770. **Cited by 32.**

23. Milani, M., Ouellet, Y., **Ouellet, H**., Guertin, M., Boffi, A., Antonini, G., Bocedi, A., Mattu, M., Bolognesi, M., and Ascenzi, P. (2004) Cyanide binding to truncated hemoglobins: a crystallographic and kinetic study. ***Biochemistry*** *43*, 5213-5221. **Cited by 53.**

24. Milani, M., Pesce, A., **Ouellet, H**., Guertin, M., and Bolognesi, M. (2003) Truncated hemoglobins and nitric oxide action. ***IUBMB Life*** *55*, 623-627. **Cited by 33.**

25. Milani, M., Savard, P. Y., **Ouellet, H**., Ascenzi, P., Guertin, M., and Bolognesi, M. (2003) A TyrCD1/TrpG8 hydrogen bond network and a TyrB10TyrCD1 covalent link shape the heme distal site of *Mycobacterium tuberculosis* hemoglobin O. ***PNAS USA*** *100*, 5766-5771. **Cited by 105.**

26. **Ouellet, H**., Juszczak, L., Dantsker, D., Samuni, U., Ouellet, Y. H., Savard, P. Y., Wittenberg, J. B., Wittenberg, B. A., Friedman, J. M., and Guertin, M. (2003) Reactions of

Mycobacterium tuberculosis truncated hemoglobin O with ligands reveal a novel ligand-inclusive hydrogen bond network. ***Biochemistry*** *42*, 5764-5774. **Cited by 99.**

27. **Ouellet, H**., Ouellet, Y., Richard, C., LaBarre, M., Wittenberg, B., Wittenberg, J., and Guertin, M. (2002) Truncated hemoglobin HbN protects *Mycobacterium bovis* from nitric oxide. ***PNAS USA*** *99*, 5902-5907. **Cited by 240. ††This article was selected by the editors of Science magazine in the *Highlights of the Recent Literature*.** Ash, C. (2002) Getting enough air to survive. ***Science*** *296*, 1203.
28. Mukai, M., Savard, P. Y., **Ouellet, H**., Guertin, M., and Yeh, S. R. (2002) Unique ligand-protein interactions in a new truncated hemoglobin from *Mycobacterium tuberculosis*. ***Biochemistry*** *41*, 3897-3905. **Cited by 84.**
29. Richard, C., **Ouellet, H**., and Guertin, M. (2000) Characterization of the LI818 polypeptide from the green unicellular alga *Chlamydomonas reinhardtii*. ***Plant Mol Biol*** *42*, 303-316. **Cited by 68.**

Manuscripts in preparation

1. Arico, C.D., Saini, R., Knölker, H.J., Podust L.M., and **Ouellet, H**. Identification of effector ligands for the *Mycobacterium tuberculosis* repressor KstR. **To be submitted to the Journal of Biological Chemistry by the end of October 2016.**
2. Ellis, C.C., Ortega, A., Escalante V., Abou-Fadel, J.S., Saini, R., Knölker, H.J., and **Ouellet, H.** Deciphering the role of the acyl-CoA dehydrogenases FadE26-FadE27, FadE28-FadE29, and FadE34 of *Mycobacterium tuberculosis* in the catabolism of cholesterol side-chain and fatty acids. **To be submitted to the Journal of Biological Chemistry by December 2016.**
3. Abou-Fadel, J.S., Escalante, V., Cameron, C., Villalba, B., Chavarria, I, Saini, R., Knölker, H.J, and **Ouellet, H.** Redundant acyl-CoA ligases involved in the catabolism of cholesterol and fatty acids in *Mycobacterium smegmatis.* **To be submitted to Environmental Microbiology by January 2017.**
4. Caad, B., Escalante, V., Blevins, I. Vasquez, J., Sebilo, A., Guertin, M., and **Ouellet, H.** Deciphering the •NO-producing activity of *Mycobacterium tuberculosis*. ASM Rio Grande Branch Annual Meeting, El Paso, TX. To be submitted to **Journal of Biological Chemistry by March 2017.**

SELECTED ORAL PRESENTATIONS

2016

1. Ellis, C.C, Abou-Fadel, J.S., Escalante, V., Ortega, A., Villalba, B., and **Ouellet, H.** (2016) Functional redundancy in acyl-CoA ligase and acyl-CoA dehydrogenase activities in cholesterol side-chain catabolism of *Mycobacterium tuberculosis*. ASM Rio Grande Branch Annual Meeting, El Paso, TX. **Oral presentation given by Hugues Ouellet.**
2. Arico, C.D., Saini, R., Knölker, HJ, Podust, L.M., and Ouellet H. (2016) Identification of effector ligands for the *Mycobacterium tuberculosis* repressor KstR. ASM Rio Grande Branch Annual Meeting, El Paso, TX. Oral presentation given by Chenoa D. Arico.

2015

3. Arico, C.D., and **Ouellet, H**., (2015) Identification of ligands of the KstR repressor of the cholesterol regulon of *Mycobacterium tuberculosis*," ASM Tri-Branch Meeting, Durango, CO. Oral presentation given by Chenoa D. Arico.
4. Abou-Fadel, J.S. and **Ouellet, H.** (2015) Steroid-CoA ligases, FadD17 and FadD19: promiscuous roles in cholesterol and fatty acid catabolism in *Mycobacterium tuberculosis*. ASM Tri-Branch Meeting, Durango, CO. Presentation given by Johnathan Abou-Fadel.

2014

5. Abou-Fadel, J.S, Escalante, V., Ortega, A., Collins, L., Arico, C.D., and **Ouellet H.** (2014) side-chain degradome of *Mycobacterium tuberculosis*. Minority Health and Health Disparities Grantees Conference, National Harbor, MD. Cholesterol side-chain degradome of *Mycobacterium tuberculosis*. **Oral presentation given by Hugues Ouellet.**
6. Abou-Fadel, J.S., Arico, C.D., Escalante, V., Ortega, A., Collins, L., Blevins, I, Vasquez, J., and **Ouellet, H**. (2014) Cholesterol Side-Chain Degradome and Nitrogen Metabolism of *Mycobacterium tuberculosis*. 2nd Annual Infectious Diseases Symposium Texas Tech University Health Science Center El Paso, TX. **Oral presentation given by Hugues Ouellet.**

2013

7. Escalante, V., Loya, Y.I., Coronado, S., Abou-Fadel, J.S., Mendoza, R.A., and **Ouellet**, H. (2013) Catabolism of cholesterol as a therapeutic target in *Mycobacterium tuberculosis.* Symposium for Biomedical Research, UTEP. Oral presentation given by Veronica Escalante.
8. Abou-Fadel, J.S., Arico, C.D., Villalba, B., Chavarria, I., Saini, R., Knölker, HJ, Loya, Y.I., Escalante, V., Fattouhi, M., Mendoza, R.A., and **Ouellet, H.** (2013) Role of cholesterol catabolism in *Mycobacterium tuberculosis* pathogenesis. 3rd Texas Tuberculosis Research Symposium, San Antonio, TX.

2011 and before

9. Sivaramakrishnan, S., **Ouellet, H**., and Ortiz de Montellano, P.R. (2011) Control of cytochrome P450 catalysis by the proximal iron ligand. ACS National Meeting & Exposition, Denver, CO, USA. Oral presentation by Prof. Paul R. Ortiz de Montellano.
10. Sivaramakrishnan, S., **Ouellet, H**., and Ortiz de Montellano, P.R. (2011) The proximal iron ligand in cytochrome P450 catalysis and inactivation. 17th International Symposium on Cytochrome P450 Biochemistry, Biophysics and Structure, Manchester, UK. Oral presentation by Paul R. Ortiz de Montellano.
11. **Ouellet, H**. and Ortiz de Montellano, P.R. (2010) Role of *Mycobacterium tuberculosis* cytochrome P450s in the utilization of cholesterol**.** Research in Progress Seminars (R.I.P.S), UCSF. **Oral presentation given by Hugues Ouellet.**
12. **Ouellet**, **H**., Johnston, J.B., Guan, S., Kells, P.M., Burlingame, A.L., Podust, L.M. Ortiz de Montellano, P.R. (2010) *Mycobacterium tuberculosis* cytochrome P450 in cholesterol utilization. 10th International Symposium on Cytochrome P450 Biodiversity and Biotechnology (2010), Woods Hole, MA. Oral presentation by Paul R. Ortiz de Montellano.

13. Kells, P.M., **Ouellet**, **H**., Aparicio, J.F., Sherman, D.H., and Podust, L.M. (2010) Diversity of P450 catalysis in the biosynthesis of natural products. 10th International Symposium on Cytochrome P450 Biodiversity and Biotechnology (2010), Woods Hole, MA. Oral presentation given by Dr Larissa M. Podust.
14. **Ouellet, H.,** Guan, S., Johnston, J.B., Chow, E.D, Kells, P.M., Podust, L.M., Burlingame A.L., Cox J.S., and Ortiz de Montellano, P.R. (2010) *Mycobacterium tuberculosis* CYP125A1 is a steroid C-26 monooxygenase that detoxifies intramolecularly generated cholest-4-en-3-one.110th General Meeting of American Society for Microbiology (2010), San Diego, CA. **Oral presentation given by Hugues Ouellet.**
15. **Ouellet, H.**, Johnston, J.B., Ortiz de Montellano, P.R. (2010) *Mycobacterium tuberculosis* cytochrome P450 system. Research in Progress Seminars (R.I.P.S), UCSF. **Oral presentation given by Hugues Ouellet.**

SELECTED POSTER PRESENTATIONS

2016

1. Ellis, C.C., Escalante, V., Abou-Fadel, J.S., and **Ouellet, H.** (2016) Deciphering the role of the acyl-CoA dehydrogenases FadE26-FadE27 and FadE34 of *Mycobacterium tuberculosis* in the catabolism of cholesterol side-chain and fatty acids. ASM Rio Grande Branch Annual Meeting, El Paso, TX. **Cameron C. Ellis won an award for best poster presentation given by an undergraduate student in biochemistry.**

2. Caad, B., Guertin, M., and **Ouellet, H.** (2016) Deciphering the •NO-producing activity of *Mycobacterium tuberculosis*. ASM Rio Grande Branch Annual Meeting, El Paso, TX. **Bernice Caad won an award for the second best poster presentation given by an undergraduate student.**
3. Abou-Fadel, J.S., Escalante, V., Ellis, C.C., and **Ouellet, H**. (2016) Roles of *Mycobacterium tuberculosis* FadD17 and FadD19 in catabolism of cholesterol side-chain. 4th Texas Tuberculosis Research Symposium, Houston, TX.
4. Ellis, C.C., Escalante, V., Abou-Fadel, J.S., and **Ouellet, H**. (2016) Deciphering the role of the acyl-CoA dehydrogenases of *Mycobacterium tuberculosis* in the catabolism of cholesterol side-chain. *4th Texas Tuberculosis Research Symposium, Houston, TX.*
5. Arico, C.D., Saini, R., Lafer, E., Knölker, HJ, Podust, L.M., and Ouellet, H. (2016) Identification of Effector Ligands for the KstR Cholesterol Regulon of *Mycobacterium tuberculosis.* 4th Texas Tuberculosis Research Symposium, Houston, TX.
6. Ellis, C.C., Escalante, V., Abou-Fadel, J.S., and Ouellet, H. (2016) Elucidating the role of the acyl-CoA dehydrogenases FadE26-FadE27 and FadE34 of *Mycobacterium tuberculosis* in cholesterol side-chain and fatty acid catabolism. COURI Spring 2016 Symposium, UTEP. **Cameron C. Ellis won the award for the best poster presentation in biomedical sciences.**

2015

7. Escalante, V. and **Ouellet, H.** (2015) Genetic Profiling of cholesterol side-Chain degradation in *Mycobacterium tuberculosis*," ASM ABRCMS 2015, Seattle, WA. **Veronica Escalante won a prize for best presentation.**

8. Abou-Fadel, J.S., Ellis, C.C., and **Ouellet, H.** (2015) Roles of *Mycobacterium tuberculosis* FadD17 and FadD19 in co-catabolism of cholesterol and fatty acids during infection. ASM ABRCMS 2015, Seattle, WA.
9. Caad, B., Calderon, V., Arico, C.D, Guertin, M., and **Ouellet, H**., (2015), Deciphering the NO-producing activity of *Mycobacterium tuberculosis.* BBRC Symposium, UTEP.
10. Escalante, V., Abou-Fadel, J.S., Collins, L., Calderon, V., and **Ouellet, H.**, Genetic profiling of cholesterol side-chain degradation in *Mycobacterium tuberculosis*. BBRC Symposium, UTEP.
11. Arico, C.D., and **Ouellet, H.** (2015) Identification of effector ligands of *Mycobacterium tuberculosis* repressor KstR. BBRC Symposium, UTEP.
12. Ortega-Rodriguez, U., Ellis, C.C., Ortega, A., and **Ouellet, H.** (2015) Role of *Mycobacterium tuberculosis* acyl-CoA dehydrogenases in cholesterol catabolism. BBRC Symposium, UTEP.
13. Abou-Fadel, J.S., Escalante, V., Ellis, C.C., and **Ouellet, H.** (2015) Roles of *Mycobacterium tuberculosis* FadD17 and FadD19 in lipid catabolism. BBRC Symposium, UTEP.
14. Blevins, I., Calderon, V., Escalante, V., Guertin, M., and **Ouellet, H**. (2015) The $^{\bullet}$NO-detoxifying truncated hemoglobin trHbN of *Mycobacterium tuberculosis* is expressed under nitrogen-limiting conditions. Bridges End of Summer Research Symposium, UTEP.
15. Caad, B., Arico, C.D., Calderon, V., Guertin, M., and **Ouellet, H**. (2015) Inactivation of *narGI* and *nirBD* could disrupt the endogenous production of $^{\bullet}$NO required for the intracellular survival of *Mycobacterium tuberculosis*," Bridges End of the Summer Research Symposium, UTEP.
16. Ellis, C.C., Abou-Fadel, J.S., and **Ouellet, H**. (2015) Structural study and role of *Mycobacterium tuberculosis* acyl-CoA ligases FadD17 and FadD19 in cholesterol side-chain and fatty acid degradation pathways. COURI Summer 2015 Symposium, UTEP.
17. Arico, C.D., Knölker, HJ, and **Ouellet H**. (2015) Identification of the effector ligand of KstR of *Mycobacterium tuberculosis*. Gordon Conferences Tuberculosis Drug Discovery & Development, Girona, Spain. **Poster presented by Hugues Ouellet.**
18. Ortega, A., Ortega-Rodriguez, U., Villalba, B., and **Ouellet, H**. (2015) Characterization of acyl-CoA dehydrogenases from the cholesterol degradation pathway of *Mycobacterium tuberculosis.* ASM Tri-Branch Meeting, Durango, CO.
19. Escalante, V., Abou-Fadel, J.S., Collins, L., and Ouellet, H. (2015) Genetic Profiling of Cholesterol Side-Chain Degradation in *Mycobacterium tuberculosis*. ASM Tri-Branch Meeting, Durango, CO.
20. Blevins, I., Vasquez, J., Calderon, V., Escalante, V., Guertin, M., and **Ouellet, H**., ASM Tri-Branch Meeting (2015) The $^{\bullet}$NO-detoxifying truncated hemoglobin trHbN of *Mycobacterium tuberculosis* is expressed under nitrogen-limiting conditions. ASM Tri-Branch Meeting, Durango, CO.
21. Ortega, A., Ortega-Rodriguez, U., Villalba, B., and **Ouellet, H**. (2015) Characterization of acyl-CoA dehydrogenases from the cholesterol degradation pathway of *Mycobacterium tuberculosis.* COURI Spring Symposium, UTEP.

22. Escalante, V., Abou-Fadel, J.S., Collins, L., Calderon, V., and **Ouellet, H**. (2015) Genetic profiling of cholesterol side-Chain degradation in *Mycobacterium tuberculosis*. COURI Spring Symposium, UTEP.
23. Blevins, I., Vasquez, J., Calderon, V., Escalante, V., Guertin, M., and **Ouellet, H**. (2015) The •NO-detoxifying truncated hemoglobin trHbN of *Mycobacterium tuberculosis* is expressed under nitrogen-limiting conditions. COURI COURI Spring Symposium, UTEP.

2014

24. Abou-Fadel, J.S., Escalante, V., Ortega, A., Collins, L., Arico, C.D., and *Ouellet, H*. (2014) Cholesterol side-chain degradome of *Mycobacterium tuberculosis*. Minority Health and Health Disparities Grantees Conference, National Harbor, MD.
25. Blevins, I., Vasquez, J., Escalante, V., and **Ouellet, H.** (2014) The •NO-detoxifying truncated hemoglobin trHbN of *Mycobacterium tuberculosis* is expressed under nitrogen-limiting conditions. ABRCMS, San Antonio, TX. **Israel Blevins won a prize for best presentation.**
26. Escalante, V., Abou-Fadel, J.S., Ortega, A., Arico, C.D., Loya, Y.I., Coronado, S., Soto, O., Riuz, J., and **Ouellet, H**. (2014) Cholesterol Side-Chain Degradome of *Mycobacterium tuberculosis.* ASM Rio Grande, El Paso, TX.
27. Vasquez, J. Escalante, V., and **Ouellet, H**. (2014) Role of the 2-on-2 hemoglobin HbN for infectivity and persistence of *Mycobacterium tuberculosis*. COURI Symposium, UTEP.
28. Abou-Fadel, J.S., Escalante, V., Saini, R., Knölker, HJ, and **Ouellet, H.** (2014) Steroid-CoA ligases FadD17 and FadD19: promiscuous roles in cholesterol degradation in *Mycobacterium tuberculosis*. Graduate Expo, UTEP.
29. Arico, C.D. and **Ouellet, H.** (2014) Identification of Ligands for the KstR Cholesterol Regulon of *Mycobacterium tuberculosis.* Graduate Expo, UTEP.
30. Arico, C.D. and **Ouellet, H.** (2014) Characterization of regulation for the cholesterol catabolic pathway in *Mycobacterium tuberculosis.* LSAMPS, UTEP.

2013

31. Escalante, V., Loya, Y.I., Fattouhi, M., Mendoza, R.A., and **Ouellet, H.** (2013). Cholesterol Side-Chain Degrading Enzymes FadD17 and FadD19 of *Mycobacterium tuberculosis.* COURI Summer Symposium, UTEP.
32. Escalante, V., Abou-Fadel, J.S., Fattouhi, M., Villalba, B., Chavarria, I.,Knölker, HJ, and **Ouellet, H.** (2013) . FadD17 and FadD19 are acyl-CoA synthetases that are involved in the catabolism of cholesterol side-chain in mycobacteria. COURI Spring Symposium, UTEP.
33. Loya, Y.I., Mendoza, R.A., and **Ouellet, H.** (2013) Elucidation of the physiological function of the acyl-CoA dehydrogenase FadE27 of *Mycobacterium tuberculosis.* COURI Spring Symposium, UTEP.
34. Arico, C.D., Wright, C., Mendoza, R.A., and **Ouellet, H.** (2013). Regulatory mechanism of cholesterol catabolism in *Mycobacterium tuberculosis*. COURI Spring Symposium, UTEP.
35. Villalba, B. and **Ouellet, H**. (2013) Designing a System to Express *Mycobacterium tuberculosis* Proteins in *Mycobacterium smegmatis*. COURI Symposium, UTEP.

36. Abou-Fadel, J.S., Arico, C.D., Villalba, B., Chavarria, I., Saini, R., Knölker, HJ, and **Ouellet, H.** (2013) FadD17 and FadD19 are steroid-CoA ligases important for cholesterol side-chain degradation in *Mycobacterium tuberculosis*. 3rd Texas Tuberculosis Research Symposium, San Antonio, TX.

37. Loya, Y.I., Escalante, V., Fattouhi, M., Mendoza, R.A., **Ouellet, H.** (2013) Cholesterol side-chain catabolic enzymes of *Mycobacterium tuberculosis* 3rd Texas Tuberculosis Research Symposium, San Antonio, TX.

2012

38. Abou-Fadel, J.S., Loya, Y.I., Villalba, B., Chavarria, I., Arico, C.D., Mendoza, R.A., **Ouellet, H**. (2012) Cholesterol side-chain degradation enzymes of *Mycobacterium tuberculosis*. 13th RCMI International Symposium on Health Disparities, San Juan, Puerto Rico. **Poster presented by Hugues Ouellet.**

2011 and before

39. **Ouellet**, H., Johnston, J.B., Guan, S., Chow, E.D., Kells, P.M., Burlingame, A.L., Cox, J.S., Podust, L.M., Ortiz de Montellano, P.R. (2010) *Mycobacterium tuberculosis* CYP125A1 and CYP142A1 catalyze C26-hydroxylation to initiate steroid side-chain degradation. 10th International Symposium on Cytochrome P450 Biodiversity and Biotechnology.Woods Hole, MA. **Poster presentation given by Hugues Ouellet**.

40. Sivaramakrishnan, S., **Ouellet, H.,** and Ortiz de Montellano, P.R. (2010). Reaction of seleno-CYP119 with peracids. 10th International Symposium on Cytochrome P450 Biodiversity and Biotechnology, Woods Hole, MA. Poster presentation given by Santhosh Sivaramakrishnan.

41. **Ouellet**, H., Podust, L.M., von Kries, J.P., and Ortiz de Montellano, P.R. (2009). Interaction of *Mycobacterium tuberculosis* CYP130 with Heterocyclic Arylamines Compounds. 16th North American Regional Meeting of International Society for the Study of Xenobiotics (2009), Baltimore, MD. **Poster presentation given by Hugues Ouellet**.

42. **Ouellet**, H., Guan, S., Chow, E.D., Johnston, J.B., Burlingame, A.L., Cox, J.S., and Ortiz de Montellano, P.R. (2009) *Mycobacterium tuberculosis* cytochrome-P450 CYP125 is important for host cholesterol degradation and biosynthesis of lipid virulence factors. 57th ASMS Conference on Mass Spectrometry, Philadelphia, PA. Poster presentation given by Shenheng Guan.

RESEARCH SUPPORT

Ongoing Research Support

1 SC1 AI116567-01A1 (NIH/NIAID/NIGMS) 08/01/2014-07/31/2018
$1,403,900.00
Role of Cholesterol metabolism in pathogenesis of *Mycobacterium tuberculosis*
The goal of this project is to better understand how cholesterol catabolism relates to *Mtb* pathogenesis, with a focus towards the discovery of novel therapeutic targets.
Role: PI

Completed Research Support

NIH/BBRC Pilot Research Project 10/01/2015-03/31/16
$25,000.00
Role of the truncated hemoglobin trHbN for persistence of *Mycobacterium tuberculosis*
The major goal of this project is to determine whether nitric oxide detoxification, nitrate respiration and nitrogen assimilation are coupled by the activity of trHbN.
Role: PI

UTEP and BBRC (5G12RR008124) Start-up funds 09/01/2011-12/31/2013
$250,000
Role of cholesterol metabolism for infection and persistence of *Mycobacterium tuberculosis*.
Role: PI

CoS Research Enhancement Grant. 2014 (Chunqiang Li, Jianjun Sun, Hugues Ouellet, German Rosas-Acosta, and Chuan Xiao) 06/01/2014 to 12/31/2014
$20,000
Super-Resolution Two-Photon Fluorescence Resonance Energy Transfer (FRET) Microscopy for Imaging Molecular Interactions in Bacterial and Viral Infections.
Role: Co-PI.

BBRC Pilot 2012. (Jianjun Sun, Hugues Ouellet, and Igor Almeida)
$20,000
Molecular Mechanism of Membrane Interaction Mediated by ESAT-6 of *Mycobacterium tuberculosis*: Effects of Post-Translational Modifications
Role: Co-PI

UTEP URI 2012-2013
$5,000
Cholesterol side-chain degradation enzymes of *Mycobacterium tuberculosis.*
Role: PI

LABORATORY MANAGING EXPERIENCE

08/2008 - 06/2009 (UCSF)
I helped to run the weekly group meetings during the one-year sabbatical of Dr Paul Ortiz de Montellano.

01/2000 – 12/2005 (Université Laval)
As a senior graduate student, I helped my supervisor in maintaining smooth and proper laboratory activities. For instance, I was in charge of ordering material, applying security rules, and supervising my junior labmates.

TEACHING EXPERIENCE

09-2011 – present (Assistant Professor, Department of Biological Sciences, UTEP)

Undergraduate courses taught as a primary instructor:
- Microorganisms and Diseases (MICR2330, lecture)
- General Microbiology (MICR2340, lecture)
- Special Problems (BIOL 4198/4298/4398, research in lab)
- Undergraduate Research (RSRC4033, research in lab)

Undergraduate course taught as a team:
- Advanced Topics in Molecular Biochemistry (CBCH4320, lecture)

Graduate course taught as a primary instructor:
- Structure and Function of Macromolecules (BIOL5340, lecture)
- Independent Research (BIOL6190.6290,6390,6490/6590/6690, research in lab)

Scheduled teaching

Semester	Course	Course name	Students	Credits
Spring 2012	MICR2330	Microorganisms and Diseases	72	3
	CBCH4320	Adv. Topics in Molecular Biochemistry	19	3
	BIOL4398	Special Problems	1	3
	BIOL6390	Independent Research	1	3
Summer 2012	BIOL4398	Special Problems	2	3
	BIOL6390	Independent Research	1	3
Fall 2012	MICR2330	Microorganisms and Diseases	58	3
	BIOL4298	Special Problems	1	2
	BIOL4398	Special Problems	5	3
	BIOL6190	Independent Research	1	1
Spring 2013	MICR2330	Microorganisms and Diseases	64	3
	BIOL4198	Special Problems	1	1
	BIOL4298	Special Problems	3	2
	BIOl4398	Special Problems	4	3
Summer 2013	MICR2330	Microorganisms and Diseases	13	3
	BIOL6390	Independent Research	1	3
Fall 2013	MICR2330	Microorganisms and Diseases	81	3
	BIOL4398	Special Problems	2	3
	BIOL6590	Independent Research	1	5
Spring 2014	BIOL5340	Structure and Function of Macromolecules	15	3
	CBCB4320	Adv. Topics in Molecular Biochemistry	53	3 (team)
	MICR2330	Microorganisms and Diseases	108	3
	BIOL4198	Special Problems	1	1
	BIOL4298	Special Problems	1	2
	BIOL6690	Independent Research	1	6

Summer 2014	MICR2330	Microorganisms and Diseases	24	3
	BIOL6390	Independent Research	2	3
Fall 2014	MICR2330	Microorganisms and Diseases	97	3
	BIOL4298	Special Problems	1	2
	BIOL4398	Special Problems	1	3
	BIOL6390	Independent Research	1	3
	BIOL6690	Independent Research	2	6
Spring 2015	BIOL5340	Structure and Function of Macromolecules	11	3
	CBCB4320		48	3 (team)
	RSRC4033	Adv. Topics in Molecular Biochemistry	1	0
	BIOL4398	Undergraduate Research	1	3
	BIOL6190	Special Problems	1	1
	BIOL6290	Independent Research	2	2
	BIOL6390	Independent Research	1	3
		Special Problems		
Summer 2015	MICR2330	Microorganisms and Diseases	42	3
	BIOL4398	Special Problems	1	3
	BIOL6390	Independent Research	1	3
Fall 2015	MICR2340	General Microbiology	114	3
	RSRC4033	Undergraduate Research	1	0
	BIOL4198	Special Problems	2	1
	BIOL4398	Special Problems	1	3
	BIOL6390	Independent Research	1	3
	BIOL6690	Independent Research	1	6
	BIOL6399	Dissertation	1	3
Spring 2016	BIOL5340	Structure and Function of Macromolecules	20	3
	CBCB4320		45	3 (team)
		Adv. Topics in Molecular Biochemistry		
			Total: 933	

2000 - 2005 (Université Laval)

Teaching Assistant

In summer 2002, I was hired by my department to develop a new class, Laboratory of Nucleic Acids (BCM-3001), for senior undergraduate students. The charge was to set up experiments inspired by my own Ph.D. project, to adapt them for groups of up to 30 students, and to write the laboratory manual. The following quarters I was involved in teaching the basic techniques of molecular biology (DNA cloning, Southern blot, northern blot, site-directed mutagenesis, and PCR, RT-PCR, and DNA methylation). I was also in charge of preparing a syllabus and supervising the graduate student instructors and the technicians.

In 2003, I was hired for one quarter to give weekly lectures on the expression and purification of proteins, as well as general enzymology. I was also voted the best teacher by the senior undergraduate students.

Instructor

During the same period I also worked as a graduate student instructor for the practical class Laboratory of Proteins and Enzymology (BCM-3003) and Laboratory of Nucleic Acids (BCM-3001) taken by senior undergraduate students. I was in charge of teaching the syllabus and supervising the students.

I helped to train the following undergraduate students, graduate students:

- Anne Sebilo, Research assistant
- Pierre-Yves Savard, M.Sc. student
- Marie LaBarre, M.Sc. student
- Frederic Breton, M.Sc. student
- Louis Faille, undergraduate student
- Stephanie Fiola, undergraduate student
- Karine Gamache, undergraduate student
- Marie-Eve Pouliot, undergraduate student
- Dominique Fortin, undergraduate student

RESEARCH MENTORING

Postdoctoral Fellows/Research Staffs

10/2014 - 09/2015: Veronica Calderon, Ph.D. "Role of cholesterol metabolism for the pathogenesis of *Mycobacterium tuberculosis*"

01/2012 – 12/2013: Rhone A. Mendoza, BSc. "Role of cholesterol metabolism for the pathogenesis of *Mycobacterium tuberculosis*"

Thesis and Doctoral Dissertation Directed

01/2012 - present: Johnathan S. Abou-Fadel

08/2013 - present: Chenoa D. Arico

01/2012 – 05/2015: Arturo Ortega (MARC student thesis)

Other graduate students research mentoring

06/2014 -/08/2015: Uriel Rodriguez-Ortega (Rotation) "Biochemical characterization of acyl-CoA dehydrogenases of *Mycobacterium tuberculosis*"

Service on Other Graduate Student Committees

2016- present:	Javier Aguilera, Master student
2016- present:	Alice Hernandez, Ph.D.
2014- 2015:	Yang Li, Ph. D. student
2014-2015:	Felipe Lopes, Ph.D. student
2014-present:	Joachim De Leon, Ph.D. student
2013-present:	Karla Parla, Ph.D. student

Undergraduate Students Directed in Lab Research

01/2016 - present:	Mayra Verde
06/2015 - present:	Bernice Caad
06/2015 – present:	Cameron Ellis (will start Ph.D. in my laboratory in Fall 2016)
06/2014 - 05/2015:	Israel Blevins
01/2014 - 12/2014:	Jonathan Vasquez (graduate)
01/2014 - 08/2014:	Laura Collins
06/2013 - 12/2015:	Veronica Escalante (will start Ph.D. at UC Berkeley in Fall 2016)
09/2012 - 08/2014:	Yolva Loya (graduate)
06/2013 - 08/2014:	Olga Soto (Ph.D. student at UTEP with Dr. Charlotte Vines)
06/2013 - 05/2014:	Juancarlos Ruiz (graduate)
04/2012 – 05/2013:	Brian Villalba (Ph.D. student at UT Austin)
04/2012- 05/2013:	Itzel Chavarria (Ph.D. student at Texas Tech, Lubbock)
04/2012-05/2013:	Marwan Fattouhi (dental school)
06/2012 - 12/2012:	Claire Wright (medical school)
10/2011-05/2015:	Arturo Ortega (Ph.D. student at UC Berkeley)

SERVICE

University service

09/2016 -	Vice-Chair of Institutional Biosafety Committee
09/ 2013 – 08/ 2015:	Committee Member of Faculty Senate
06/2013 – present:	Committee Member of Institutional Biosafety Committee
07/2015:	Judge for COURI Symposium Summer 2015
04/2015:	Judge for COURI Symposium Spring 2015
07/2014:	Judge for COURI Symposium Summer 2014
04/2014:	Judge for COURI Symposium Spring 2014
08/2013:	Judge for COURI Symposium Summer 2013
04/2013:	Judge for COURI Symposium Spring 2013

College service

07/ 2014 -03/2015:	Committee member for BBRC Medicinal Chemist Search

Departmental service

08/2015 – 04/2016:	Faculty recruiter for Molecular Epidemiology Search
01/2015 – present:	Committee Member for Space allocation
05/2015:	Reviewer for Fund Raiser for Keelung Hong fellowship

05/ 2015:	Advocate for Yang Li dissertation defense
03/2015:	Committee Member for Felipe Lopes dissertation defense
11/2014 – 04/2015	Faculty recuiterfor BBRC Search Committee for Research Assistant Professor in Proteomics.
10/ 2014:	Host for BBRC seminar (guest Dr. Janice Endsley)
06/2014 – 11/2014	BSL-3 trainer
05/2014:	Reviewer for Fund Raiser for Keelung Hong fellowship
05/2014:	Advocate for Yang Li, Ph.D proposal defense
02/2014:	Guest Speaker for Mini-Symposium NMSU
01/ 2012 - 04/2012:	Faculty Recruiter for Infectious Disease and Immunology Search Committee

Professional service

11/2015:	Reviewer, Journal Article for PNAS
09/2015:	Abstract reviewer for ABRCMS
06/2015:	Reviewer, Journal Article for BBA-Molecular and Cell Biology of Lipids
09/2011:	Reviewer, Manuscript for Journal of Proteome Research

Public service

02/2015:	Judge for Palm Tree Academy Science Fair
06/2013:	Guest Speaker for RISE Program at EPCC

PROFESSIONAL DEVELOPMENT

12/2015:	NIH Workshop, SCORE Principal Investigators Meeting titled Successes, Challenges, and Opportunities in the Research Environment, Washington, DC..
06/2015:	Panelist at 2015 ASBMB Grant writing workshop for Early Career Faculty, Washington, DC.
10/2013 – 08/2014:	Workshop, "Grantsmanship with Dr. June Kan-Mitchell," UTEP.
09/2013:	Workshop, "Tenure and Promotion," UTEP.
06/2013:	Participant at 2013 ASBMB Grant writing workshop for Early Career Faculty, Washington, DC.