

# Michel G. Arsenault

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## Languages

French and English (Fluent)

## Education

- 2012 – 2016      **Doctorate of Philosophy in Biomedical Science**  
University of Prince Edward Island, PE (CANADA)  
Supervisors: Dr. Sunny Hartwig and Dr. Glenda M Wright  
Project Title: The role of Sox4 in kidney development  
GPA: 4.25/4.30
- 2006 – 2008      **Master of Science in Experimental Medicine**  
McGill University, QC (CANADA)  
Supervisor: Dr. Jean Vacher  
Project Title: The role of the tumor suppressor PTEN in bone homeostasis  
GPA: 3.75/4.00
- 2001 – 2005      **Bachelor of Science with honors in Biology, *Cum Laude***  
University of Ottawa, ON (CANADA)  
Honours Project Supervisor: Dr. Micheline Paulin-Levasseur  
Honours Project Title: Characterization of a stable P19 transfectant  
overexpressing the LEM domain  
GPA: 7.0/10.0

## Awards & Distinctions

- September 2015      G. Murray and Hazel Hagerman Scholarship based on academic standing in the  
Doctoral program (\$3 820 CAD)
- June 2015              SDB Travel Award to attend the 74<sup>th</sup> Annual Meeting of the Society for  
Developmental Biology (\$600 USD)
- June 2015              UPEI Student Union Graduate Student Funding to attend 13<sup>th</sup> International  
Workshop on Developmental Nephrology (\$250 CAD)
- May 2015              Silver Prize – Best Paper Presentation. AVC Graduate Studies and Research  
Days, UPEI
- June 2014              Award of Excellence, Silver – CIHR National Student Research Poster  
Competition at the Canadian Student Health Research Forum, Winnipeg MB

- May 2014 CIHR Travel Award to attend the CIHR National Student Research Poster Competition (\$833 CAD)
- May 2014 Gold Prize – Best Paper Presentation. AVC Graduate Studies and Research Days, UPEI
- April 2014 Nominated by the office of Vice-President Research and Graduate Studies UPEI as being within the top 5% of doctoral students, for participation in the CIHR National Research Poster Presentation.
- May 2013 Silver Prize – Best Paper Presentation. AVC Graduate Studies and Research Days, UPEI
- April 2007 CIHR Strategic Training Program in Skeletal Health Research Scholarship (\$18 000 CAD)
- September 2001 Admissions Scholarship to the University of Ottawa (\$6 000 CAD)
- September 2001 Bourse des leaders de la francophonie canadienne (Francophone Leader scholarship) (\$2 000 CAD)

## **Research & Lab Experience**

- November 2016 – Present **Postdoctoral Research Fellow**  
*Dept. of Applied Human Sciences, University of Prince Edward Island, PE*  
Investigation of skeletal muscle health and adaptation using animal models
- 2012 – 2016 **PhD Research Project**  
*Dept. of Biomedical Sciences, University of Prince Edward Island, PE*  
Characterization of conditional knockout mouse models targeted to kidney cells using various cellular and molecular techniques. Adapted a method for accurate quantification of nephrons.
- 2008 – 2009 **Research Assistant / Lab Technician**  
*Dept. of Physics, University of Prince Edward Island, PE*  
Surface thermal laser lesions on tissues. Optoacoustic data acquisition and analysis. Animal use protocol preparation.
- 2006 – 2008 **Masters Research Project**  
*McGill University, QC*  
In vivo characterization of conditional knockout mouse models targeted to bones cells. In vitro analysis of bone cell differentiation and function.

- Summer 2005      **10 Week Internship - Laboratory of Dr. Andreas Schedl**  
*INSERM U636 , University of Nice Sophia Antipolice, Nice (FRANCE)*  
 Histological analysis of embryonic mouse tissues.
- Winter 2005      **Teaching Assistant, 3<sup>rd</sup> Year Cell Biology Lab**  
*Dept. of Biology, University of Ottawa, ON*  
 Assisted and directed lab sessions of 10 students.
- 2004-2005      **Bachelor Honor's Research Project**  
*University of Ottawa, ON*  
 In vitro characterization of stably transfected P19 cell lines and their differentiation into cardiomyocytes.

### **Publications in Refereed Journals**

- 2017      Zhao L, Arsenault M, Ng ET, Longmuss E, Chau TCY, Hartwig S and Koopman P. SOX4 regulates gonad morphogenesis and promotes male germ cell differentiation in mice. *Developmental Biology*. In Press, January 2017
- 2014      **Arsenault MG**, Miao Y, Jones K, Sims D, Spears J, Wright GM and Hartwig S. Estimation of total glomerular number using an integrated disector method in embryonic and postnatal kidneys. *Canadian Journal of Kidney Health and Disease*. 1:12 (17 June 2014)  
 - BioMed Central “Highly Accessed” designation
- 2013      Huang J\*, **Arsenault M\***, Kann M, Lopez-Mendez C, Saleh M, Wadowska D, Taglienti M, Ho J, Miao Y, Sims D, Spears J, Lopez A, Wright G, and Hartwig S. The Transcription Factor Sry-Related HMG Box-4 (SOX4) is Required for Normal Renal Development in vivo. *Dev Dyn*. 242:790-799.  
 \*Co-first authors
- 2011      Ferron M, Boudiffa M, **Arsenault M**, Rached M, Pata M, Giroux S, Elfassihi L, Kisseleva M, Majerus PW, Rousseau F and Vacher J. Inositol Polyphosphate 4-Phosphatase B as a Regulator of Bone Mass in Mice and Humans. *Cell Metab*. 14:466-477.

### **Conference Proceedings**

- 2010      Patterson MP, **Arsenault MG**, Riley C, Kolios M and Whelan WM. Optoacoustic imaging of an animal model of prostate cancer. *Proc. of SPIE* Vol. 7564, 75641B.

2009 **Arsenault MG**, Kolios MC and Whelan WM. Optoacoustic detection of thermal lesions. Proc. of SPIE, Vol. 7177, 71771V,

## **Presentations**

- August 2016 Gavhale S\*, **Arsenault MG**, Esparza Gonzalez BP, Patriquen A, Jones K, McCarcill A, O'Hara R, Wright GM, Martinson S, and Hartwig S. "Combined Sry-Related HMG Box-4 (SOX)4 and SOX11 signaling is required for renal development in vivo". Presented at the Society for Developmental Biology 75th Annual Meeting. Boston, USA (Poster). \*Presenting author.
- July 2015 **Arsenault MG**, Esparza Gonzalez BP, Gavhale S, Wright GM and Hartwig S. "The role of Sox4 in kidney development". Presented at the 13<sup>th</sup> International Workshop on Developmental Nephrology. Utah, USA (Poster)
- July 2015 **Arsenault MG**, Esparza Gonzalez BP, Gavhale S, Wright GM and Hartwig S. "The role of Sox4 in urogenital development". Presented at the Society for Developmental Biology 74th Annual Meeting. Utah, USA (Poster)
- May 2015 **Arsenault MG**, Patriquen A, Esparza BP, Spears J, Wright GM and Hartwig S. "The Role of Sox4 in Kidney Development". Presented at AVC Graduate Studies & Research Days. Charlottetown, Canada (Presentation)
- September 2014 **Arsenault MG**, Patriquen A, Esparza BP, Wright GM and Hartwig S. "Defining Sox4/11 function during mammalian kidney development" presented at the 4th International SOX Research Conference. Cleveland, USA (Presentation, shared with S. Hartwig)
- June 2014 **Arsenault M**, Miao Y, Jones K, Sims D, Spears J, Wright G and Hartwig S. "Accurate assessment of nephron endowment on a graduate student's budget." presented at UPEI Graduate Research Recognition Day. Charlottetown, Canada (Poster)
- June 2014 **Arsenault MG**, Patriquen A, Esparza BP, Wright GM and Hartwig S. "The Transcription Factor Sry-Related HMG Box-4 (Sox4) is Critical for Nephron Endowment and Renal Development in Vivo." presented at the Canadian Student Health Research Forum, Winnipeg, Canada (Poster)
- May 2014 **Arsenault MG**, Patriquen A, Esparza BP, Spears J, Wright GM and Hartwig S. "The Role of Sox4 in Kidney Development". Presented at AVC Graduate Studies & Research Days. Charlottetown, Canada (Presentation)

- March 2014 **Arsenault M**, Patriquen A\*, Esparza BP\*, Leggo V and Hartwig S. "Defining Sox11 and combined Sox4/Sox11 function in the kidney in vivo" presented at the 7th Canadian Developmental Biology Conference, Mt-Tremblant, Canada (Poster). \*Presenting authors.
- March 2014 **Arsenault MG**, Patriquen A, Esparza BP, Wright GM and Hartwig S. "Reduced nephron endowment in the absence of Sox4" presented at the 7th Canadian Developmental Biology Conference. Mt-Tremblant, Canada (Poster)
- April 2013 **Arsenault M**, Huang J, Saleh MC, Miao Y, Kann M, Lopez C, Spears J, Lopez A, Wright GM and Hartwig S. "The transcription factor Sry-Related HMG Box-4 (SOX4) is required for normal renal development in vivo" presented at the Canadian Society of Nephrology Annual Meeting, Montreal, Canada (Poster)
- April 2013 **Arsenault M**, Miao Y, Spears J, Sims D, Wright G and Hartwig S. "A rapid, cost-effective and accurate method for quantitation of total glomerular number in embryonic mouse kidneys." Presented at the Canadian Society of Nephrology Annual Meeting. Montreal, Canada (Poster)
- May 2013 **Arsenault MG**, Huang J, Miao Y, Jones K, Lopez C, Spears J, Lopez A, Wright GM and Hartwig S "The Role of Sox4 in Urogenital Development." Presented at AVC Graduate Studies & Research Days. Charlottetown, Canada (Presentation)
- June 2013 **Arsenault M**, Miao Y, Spears J, Sims D, Wright G and Hartwig S. "A rapid, cost-effective and accurate method for quantitation of total glomerular number in embryonic mouse kidneys" presented at UPEI Graduate Research Recognition Day. Charlottetown, Canada (Poster)
- June 2012 **Arsenault MG**, Huang J, Lopez-Mendez C, Spears J, Lopez A, Wright G and Hartwig S. "The role of Sox4 in urogenital development." presented at UPEI Graduate Research Recognition Day. Charlottetown, Canada. (Poster)
- November 2011 Whelan W\*, **Arsenault M**, Kolios M, and Patterson M. "Photoacoustic detection of laser heated tissues *ex vivo*" presented at Asia Communications and Photonics Conference. Shanghai, China. \*Presenting author.
- June 2011 Whelan WM\*, **Arsenault MG**, and Patterson MP. "Optoacoustic detection and imaging of photothermal damage in *ex vivo* bovine liver" presented at the Canadian Association of Physicists Annual Congress. St. John's, Canada \*Presenting author.

- June 2010 Patterson MP\*, **Arsenault MG**, Riley C, Kolios M and Whelan WM. "Optoacoustic imaging of an animal model of prostate cancer" presented at SPIE, Photons Plus Ultrasound: Imaging and Sensing, BiOS. San Francisco, USA. \*Presenting author.
- July 2009 **Arsenault M**, MacPhee M and Whelan WM. "Listening to Lasers: exploring the use of optoacoustics for monitoring of interstitial laser thermotherapy" presented at UPEI. Charlottetown, Canada. (Presentation)
- July 2009 **Arsenault M**, MacPhee M, Kolios M, and Whelan W. "Optoacoustic detection of tissue thermal damage" presented at the Annual Conference of the Canadian Organization of Medical Physicists. Victoria, Canada. (Poster presented by W Whelan. Runner-up, Best poster competition)
- January 2009 **Arsenault MG**, Kolios MC and Whelan WM. "Optoacoustic detection of thermal lesions." presented at BiOS, SPIE Photonics West. San Jose, USA (Presentation)
- March 2008 **Arsenault M**, Rached M, Ferron M, Pata M and Vacher J. "Negative regulation of osteoclast differentiation by the inositol phosphatase Inpp4b" presented at the Great Lakes Mammalian Development Meeting. Toronto, Canada. (Poster)
- June 2007 **Arsenault M**, Ferron M and Vacher J. "Critical implication of the PI3 Kinase pathway in osteoclast cytoskeletal remodeling" presented at the 17th Scientific Meeting of the International Bone and Mineral Society (IBMS). Montreal, Canada (Poster)
- June 2006 **Arsenault M**, Ferron M and Vacher J. "Role of the PI3K pathway in osteoclast cytoskeletal remodelling" presented at the International Meeting on Cytoskeletal Dynamics. Montreal, Canada (Poster)
- April 2005 **Arsenault M** and Paulin-Levasseur M. "Characterization of a stable P19 transfectant overexpressing the LEM domain" presented at Biology Honours Research Poster Day, University of Ottawa. Ottawa, Canada (Poster)

### **Media/ Public Awareness**

- March 2015 Article in UPEI Magazine, Winter 2015 relating to the Silver Award of Excellence from the CIHR National Student Research Poster Competition. <http://issuu.com/upei/docs/issuu/8>

- July 9, 2014 Interview on “Le Reveil” RadioCanada relating to the Silver Award of Excellence from the CIHR National Student Research Poster Competition as well as my PhD research in kidney development.
- July 2, 2014 News story on CBC “Compass” relating to the Silver Award of Excellence from the CIHR National Student Research Poster Competition as well as my PhD research in kidney development.
- June 23, 2014 UPEI press release relating to the Silver Award of Excellence from the CIHR National Student Research Poster Competition.
- June 10, 2013 Presented overview of research and graduate student perspective to 20 participants of the 2013 Vet Global Health Conference
- August 2009 Talk titled ““Listening to Lasers: exploring the use of optoacoustics for monitoring of interstitial laser thermotherapy” presented at UPEI July 2009 was rebroadcast on PodiumTV, Eastlink TV

### **Selected Volunteer Experience**

- May 2015 Moderator, AVC Graduate Studies and Research Days
- April 2012 – April 2015 President, Men’s Service Organization
- March 2013 – June 2014 Student Representative, University of Prince Edward Island’s Animal Care Committee
- May 2013 Moderator, AVC Graduate Studies and Research Days
- May 2012 Judge and volunteer, Canada Wide Science Faire
- June 2012 – June 2013 Student Representative, AVC Graduate Studies and Research Committee
- June 2012 – June 2013 AVC Representative, Graduate Student Association
- Dec 2012 – March 2013 Department of Biomedical Sciences Graduate Student Representative on the AVC Department Structure Review Committee

- September 2012 Organizer and participant, Food drive for the Charlottetown Food Bank
- August 2012 –  
October 2012 Initiated and facilitated “Daily Dose Learning Systems” conversational English program.
- August 2011 –  
June 2012 Teacher, weekday early-morning scripture study class for high school students
- 2009 – 2011 Volunteer Church Representative, Louisiana, USA  
Selected to supervise 120 fellow representatives
- August 2009 Canada Games Volunteer
- April 2009 Judge, Prince Edward Island Provincial Science Fair held at UPEI