

## APRIL DELAURIER

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Canada, USA

<b>Education</b>	<b>1999-2003</b>	<b>Ph.D. (Biochemistry) University College London, London, UK (awarded April 2003).</b> Thesis title: <i>"The etiopathogenesis of feline osteoclastic resorptive lesions"</i> Bone and Mineral Centre, Rayne Institute, Dept. of Medicine Supervisors: Dr. JS Price, Prof. MA Horton
	<b>1996-1998</b>	<b>M.A. (Bioarchaeology) University of Western Ontario, London, Ontario, Canada</b> Thesis title: <i>"The effects of biomechanical stress, trauma, and pathology on the development and age-related degeneration of the male pubic symphysis"</i> Dept. of Anthropology Supervisor: Prof. A Nelson
	<b>1992-1996</b>	<b>B.A. (Archaeology) University of Toronto, Toronto, Ontario, Canada</b> 4 <sup>th</sup> year thesis project: <i>"Investigating the relationship between osteoarthritis and hand assymetry in the Grant collection"</i> Dept. of Anthropology Supervisor: Prof. P Stuart-Macadam
<b>Employment experience</b>	<b>2013-current</b>	<b>University of South Carolina Aiken, Department of Biology and Geology</b> Position: Assistant Professor <ul style="list-style-type: none"><li>• Research into understanding the genetic and cellular mechanisms underlying skeletal development in zebrafish.</li><li>• Teaching BIOL 121 (Biological Science I), Comparative Anatomy, and Developmental Biology.</li></ul>

- 2012-2013 University of Oregon, Department of Biology**  
Position: Adjunct Lecturer
- Bi355: Vertebrate Evolution and Development
    - Origin of vertebrate body plan and diversification, cladistics, evolution of regulatory gene activity underlying development of novel structures.
  - Bi480: Evolution of Development
    - Exploration of the mechanisms by which organisms evolve new developmental pathways; techniques used to discover the evolutionary history of these innovations.
- 2007-2012 Institute of Neuroscience, University of Oregon**  
Supervisor: Prof. Charles B. Kimmel  
Position: Post-doctoral Research Scientist
- Research projects:
    - 4D analysis of skull development in zebrafish
    - Role of *mef2c* in jaw development
    - Role of *hdac4* in palatogenesis
    - Generation of *osx-gfp* transgenic zebrafish and stickleback fish to study bone
- 2003-2007 National Institute for Medical Research, Division of Developmental Biology, London, UK**  
Supervisor: Dr. Malcolm P.O. Logan  
Position: Post-doctoral Research Scientist
- Research projects:
    - Morphological and molecular analysis of the effects of misexpression of hindlimb-restricted *Pitx1* and downstream target *Hoxc10* in the mouse forelimb.
    - Generation of the Embryonic Mouse Limb Atlas: an interactive, free, 3D anatomical atlas of developing mouse limb muscle, tendon, and bones
- Teaching and supervisory experience**
- 2012-2013 University of Oregon, Department of Biology**  
Position: Adjunct Lecturer
- 2009-2012 University of Oregon: Institute of Neuroscience**  
Position: Designing and supervising undergraduate independent research projects (Srdjan Kamenko, Vishesh Khanna, Nathan Johnson)
- 2009 University of Oregon: Department of Computer Science**  
Position: Group leader for "Introduction to Parallel Processing" course, supervising 3 graduate students on project "Tracking cell movement in 4D space"
- 2009-2011 University of Oregon: Department of Biology: BI355 Vertebrate Evolution and Development.**  
Position: Guest Lecturer

<b>Summer 2008-2010</b>	<b>University of Oregon: Summer Program for Undergraduate Research (SPUR)</b> Position: Designing and supervising an undergraduate research projects (Diana Gliga, Vishesh Khanna)
<b>2004-2005</b>	<b>National Institute for Medical Research: Division of Developmental Biology</b> Position: Supervising an undergraduate research project (Ana Diaz)
<b>2003-2005</b>	<b>Royal Veterinary College, London, UK</b> Position: Assisting in supervising a Ph.D. student (Nicola Benneti)
<b>1996-1998</b>	<b>University of Western Ontario, London, Ontario, Canada</b> Position: Teaching assistant and laboratory instructor for undergraduate courses in physical anthropology, human osteology
<b>Grants, Scholar-ships, and Fellowships</b>	<b>2013-2014</b> Magellan Mini-Grant for undergraduate research, University of South Carolina (awarded to S. Mehdi and A. DeLaurier)
	<b>2009-2011</b> NIH Challenge Grant (ARRA), Topic: 06-DE-102 Structural and Molecular Atlases of Craniofacial Development (awarded to CB Kimmel and A DeLaurier)
	<b>2008-2011</b> Ruth L. Kirschstein National Research Service Award, National Institute of Health, National Institute of Dental and Craniofacial Research
	<b>2007</b> Post-doctoral Investigator Scientist Fellowship, Medical Research Council, UK
	<b>2003-2006</b> Post-doctoral Research Scientist Fellowship, Medical Research Council, UK
	<b>1999-2002</b> University College London Departmental Research Studentship (WALTHAM Centre for Pet Nutrition) to support Ph.D. research
	<b>1997</b> University of Western Ontario Dept. of Anthropology research grant
	<b>1996-1998</b> University of Western Ontario tuition scholarship
	<b>1995</b> Victoria College Regent's In-course Award for academic achievement, University of Toronto
	<b>1992</b> Entrance Award, Victoria College, University of Toronto

<b>Awards</b>	<b>2006</b>	Travel award from British Society of Developmental Biology (BSDB) to attend BSDB meeting in York, March 2006
	<b>2004</b>	Travel award from organisers to attend "3D imaging in anthropological research: acquisition, analysis, and dissemination" meeting, October 2004, London, Ontario, October 2004
	<b>2004</b>	Wellcome Trust Image award, British Society for Developmental Biology Annual meeting, Warwick, UK, March 2004
	<b>2004</b>	Travel award from Marine Biological Association to attend "Optical Techniques in Cell Physiology and Developmental Biology" workshop, Marine Biological Association, Plymouth, UK, March-April 2004

**Membership in professional organizations** 2007-current Association for Women in Science (AWIS)

2006-current Society for Developmental Biology (SDB)

2004-2008 British Society for Developmental Biology (BSDB)

2002-2003 International Association for Dental Research (IADR)

1999-2003 Bone and Tooth Society, U.K. (BATS)

1999-2000 American Society for Bone and Mineral Research (ASBMR)

1997-1998 Canadian Association of Physical Anthropology (CAPA)

<b>Courses and workshops</b>	<b>2012</b>	R01 Grantsmanship Workshop (NIH), University of Oregon, Feb. 6 <sup>th</sup> , 2012.
	<b>2011</b>	“Communicating Science to the Public and Policy Makers” Workshop with Prof. Brendan Bohannon, University of Oregon, Feb 22 <sup>nd</sup> , Mar 1 <sup>st</sup> , Mar 8 <sup>th</sup> , 2011.
	<b>2009</b>	Scientific Programming Course (MATLAB and Octave programming), University of Oregon Computer Science Dept., April 25 <sup>th</sup> -May 9 <sup>th</sup> , 2009
	<b>2009</b>	University of Oregon Summer Program for Undergraduate (SPUR) Mentoring workshop, May 2009
	<b>2005</b>	Writing Grant Proposals workshop, NIMR, November 2005
	<b>2004</b>	Optical Techniques in Cell Physiology and Developmental Biology, Marine Biological Association, Plymouth, UK, March 23 – April 3, 2004.
	<b>2003</b>	Course for Licensees and Intending Licensees Under the Animal (Scientific Procedures) Act 1996 (UK Home Office), Modules 1-4, Royal Veterinary College, UK, April 2003

#### **Publications in peer-reviewed journals**

DeLaurier A\*, Huycke TR\*, Nichols JT, Larsen A, Walker C, Dowd J, Pan L, Moens CB, and Kimmel CB (2013). Role of *mef2ca* in developmental buffering of the zebrafish larval hyoid dermal skeleton, *Developmental Biology* (Epub ahead of print)

\* joint authors

Eames BF, DeLaurier A, Ullmann B, Huycke T, Nichols JT, Dowd J, McFadden M, Sasaki MM, and Kimmel CB (2013). FishFace: Interactive atlas of zebrafish craniofacial development at cellular resolution. *BMC Developmental Biology*, 13:23.

Jemielita M, Taormina MJ, DeLaurier A, Kimmel CB, and Parthasarathy R. (2012) Comparing phototoxicity during the development of a zebrafish craniofacial bone using confocal and light sheet fluorescence microscopies. *Journal of Biophotonics*, 1-9.

DeLaurier A, Nakamura Y, Braasch I, Khanna V, Kato H, Wakitani S, Postlethwait JH, Kimmel CB. (2012) *hdac4* is required during early cranial neural crest development for generation of the zebrafish palatal skeleton. *BMC Developmental Biology*, 12:16.

Talbot JC, Walker MB, Carney TJ, Huycke TR, Yan Y, BreMiller RA, DeLaurier A, Postlethwait JH, Hammerschmidt M, and Kimmel CB. (2012) *fras1* shapes endodermal pouch one, and stabilizes zebrafish pharyngeal skeletal development. *Development*, 139 2804-2813.

Valasek P, Theis S, DeLaurier A, Hintis Y, Luke G, Otto A, Minchin J, He L, Christ B, Brooks G, Sang H, Evans D, Logan M, Huang R, Patel K (2011) Cellular and molecular investigations into the development of the pectoral girdle. *Developmental Biology*, 357(1):108-116.

He X, Yan YL, DeLaurier A, Postlethwait JH (2011) Observation of miRNA gene expression in zebrafish embryos by in situ hybridization to microRNA primary transcripts. *Zebrafish*, 8(1):1-8.

DeLaurier A, Eames BF, Blanco-Sánchez B, Peng G, He X, Swartz ME, Ullmann B, Westerfield M, Kimmel CB (2010) Zebrafish sp7:EGFP: a transgenic for studying otic vesicle formation, skeletogenesis, and bone regeneration. *Genesis*, 48(8):505-11.

Hasson P, DeLaurier A, Bennett M, Grigorieva E, Naiche LA, Papaioannou VE, Mohun TJ, Logan MP (2010) *Tbx4* and *tbx5* acting in connective tissue are required for limb muscle and tendon patterning. *Developmental Cell*, 18(1):148-56.

Kimmel CB, DeLaurier A, Ullmann B, Dowd J, McFadden M (2010) Modes of developmental outgrowth and shaping of a craniofacial bone in zebrafish. *PLoS One*, 5(3):e9475.

DeLaurier A, Boyde A, Jackson B, Horton MA, Price JS. (2009) Identifying early osteoclastic resorptive lesions in feline teeth: a model for understanding the origin of multiple idiopathic root resorption. *Journal of Periodontal Research*, 44:248-257.

DeLaurier A, Burton N, Feng G, Baldock R, Davidson D, Mohun T, Logan MPO (2008) The Mouse Limb Anatomy Atlas: an interactive 3D tool for studying embryonic limb patterning. *BMC Developmental Biology*, 8:83.

DeLaurier A, Schweitzer R, Logan MPO (2006) *Pitx1* determines the morphology of muscle, tendon, and bones of the hindlimb. *Developmental Biology*, 299(1):22-34.

DeLaurier A, Boyde A, Horton MA, Price JS. (2006) Understanding the role of structure and mineralisation in the initiation and progression of tooth resorption by odontoclasts in cats. *Journal of Anatomy*, 209(5):655-69.

DeLaurier A, Boyde A, Horton MA, Price JS. (2005) A scanning electron microscopy study of idiopathic external tooth resorption in the cat. *Journal of Periodontology*, 76(7):1106-12.

DeLaurier A, Jackson B, Pfeiffer D, Ingham K, Horton MA, Price JS (2004) A Comparison of methods for measuring serum and urinary markers of bone metabolism in cats. *Research in Veterinary Science* 77(1):29-39.

DeLaurier A, Allen S, deFlandre C, Horton MA, and Price JS (2002) Cytokine expression in feline osteoclastic resorptive lesions. *Journal of Comparative Pathology* 127(2-3):169-177.

DeLaurier A, Jackson B., Ingham K, Pfeiffer D, Horton MA, and Price JS (2002) Biochemical markers of bone turnover in the domestic cat: Relationships with age and feline osteoclastic resorptive lesions. *Journal of Nutrition* 132(6 Suppl 2):1742S-1744S.

### **Peer-reviewed book chapters**

DeLaurier A and MW Spence (2003) Cranial Genetic Markers: Implications for Postmarital Residence Patterns. In *Bones of the Ancestors: The Archaeology and Osteobiography of the Moatfield Site* (RF Williamson and S Pfeiffer, eds), pp. 263-294, Archaeological Survey of Canada Mercury Series Paper 163. Canadian Museum of Civilization, Gatineau, Quebec.

### **Oral presentations at meetings**

2012 DeLaurier A "FishFace: An anatomical atlas of zebrafish craniofacial development at cellular resolution", *Zebrafish Development and Genetics*, 10<sup>th</sup> International Conference, Zebrafish Atlas Workshop, Madison, Wisconsin.

- 2011 DeLaurier A, Huycke T, Parthasarathy R, Kimmel CB “Different modes of cell behavior generate diverse shapes in the craniofacial skeleton” 7<sup>th</sup> European Zebrafish Meeting, Edinburgh, Scotland.
- 2010 DeLaurier A. “Understanding the generation and regeneration of bone shape in zebrafish”. Northwest Regional Society for Developmental Biology (NWSDB) Annual Meeting, Friday Harbor Laboratories, San Juan Island, WA, USA.
- 2009 DeLaurier A. “Using Optical Projection Tomography to Build a 3D Organ Atlas”. Optical Projection Tomography (OPT) Users Workshop, 16<sup>th</sup> International Society of Developmental Biologists (ISDB) Congress, Edinburgh, UK.
- 2006 DeLaurier A, and Logan MPO “*Pitx1* determines the morphology of muscles, tendons, and bones of the hindlimb” University College London Department of Anatomy Retreat, University of Surrey, UK.
- 2000 DeLaurier, A., deFlandre, C., Allen, S., Ingham, K., Horton, M.A., and Price, J.S. “Osteoclastic resorptive lesions of cat teeth are associated with changes in the expression of genes that regulate osteoclast formation” 9<sup>th</sup> Annual European Veterinary Dental Congress, Copenhagen, Denmark.
- 1997 DeLaurier, A. “An analysis of inter- and intra-site mortuary variability among the classic lowland Maya” 25<sup>th</sup> Annual meeting of the Canadian association for Physical Anthropology, London, Ontario, Canada.

#### **Invited Talks and Lectures**

- 2009 “The origin of limb-type identity: genetic regulators of limb patterning in the mouse” Oregon Health and Science University, March 13.
- 2008 “The origin of limb-type identity: genetic regulators of limb patterning in the mouse” Neuroscience Seminar Series, Institute of Neuroscience, University of Oregon, October 9.
- 2006 “External tooth root resorption in cats”, Royal Veterinary College, London, April 24.
- 2005 “Developing 3D imaging methods to characterise limb morphology: an analysis of the mechanisms controlling forelimb and hindlimb patterning”, Department of Zoology, Trinity College Dublin, November 23.
- 2004 “Developing 3D imaging methods to characterise limb morphology”, 3D Imaging in Physical Anthropology: acquisition, analysis, dissemination, University of Western Ontario, October 27.
- 2003 “The role of *Tbx4* and *Pitx1* in controlling limb-type specific morphology in the mouse”, Royal Veterinary College, London, December 2.

## References

### Research:

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### Teaching:

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