



Dr Catherine Boisvert

Dr Catherine Boisvert is a Human Frontiers Science Program research fellow. This prestigious fellowship program aims to help early-career researchers to train in a different field than their specialty, hence improving multidisciplinary research. Dr Boisvert is a palaeontologist studying the morphological transformations and evolution of innovations in the first jawed vertebrates and in tetrapods, the first land vertebrates. She is particularly interested in how their morphology changed and the developmental mechanisms underlying these transformations.

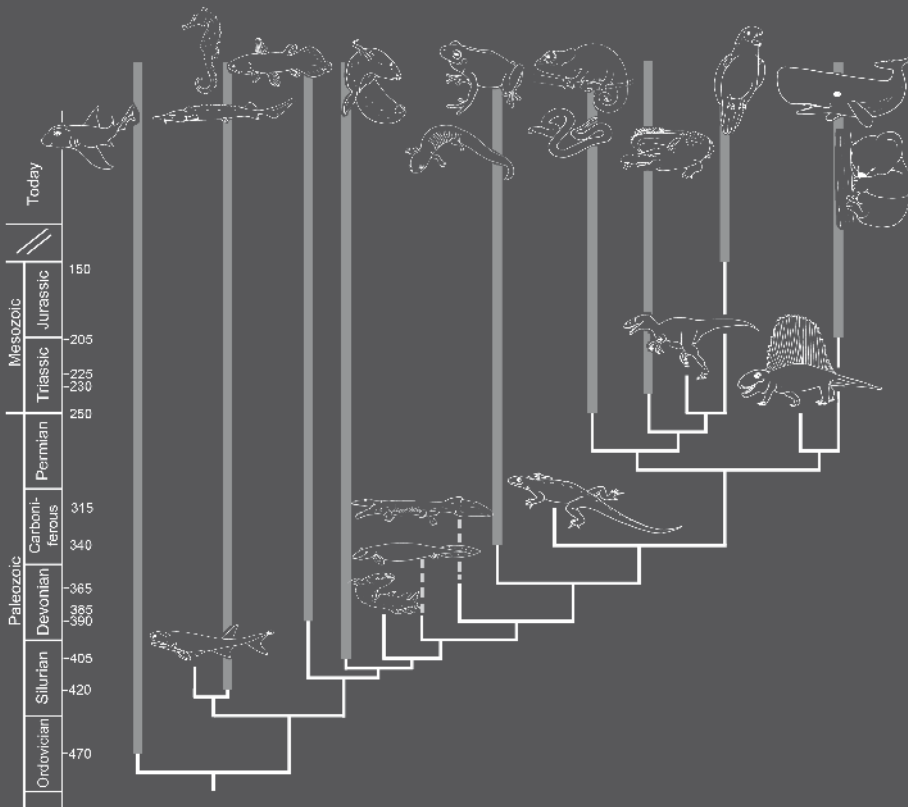
As part of the ARMI staff, she will study the development and gene expression in zebrafish, sharks, salamanders and lungfish in order to complement our understanding of major evolutionary events. She is at the forefront of EvoDevo research, an



exciting field of research only just starting to train researchers in both evolution and development.

Research interests

- Palaeontology
- Comparative anatomy and development
- 3D imaging (Computer tomography, micro-CT, Optical Tomography, Synchrotron)
- Evolution of morphological transitions during the fish tetrapod transition
- Evolution of morphological novelties at the gnathostome stem
- Development and genetic mechanisms for the formation of the girdles.



“No matter which new area I want to integrate to my research, there is always someone at ARMI who can help me to reach my goals.”

Career snapshot

- Dr Boisvert completed her Bachelor of Sciences in Biology and prehistoric archaeology at McGill University in Canada.
- She then studied vertebral development of all families of extant salamanders as her Master of Sciences project at the Redpath Museum, McGill University under the supervision of Prof Robert Carroll, an eminent palaeontologist.
- Dr Boisvert joined Prof Ahlberg’s new evolutionary organismal biology group at Uppsala University in 2004 where she studied the evolution of morphological novelties during the fish-tetrapod transition.
- During her time in Sweden, she built Prof Ahlberg’s developmental lab and established that section of his research program. She also organised the very successful 11th international symposium on early vertebrates in Uppsala in 2007.
- She received her PhD from Uppsala University in April 2009 and joined ARMI staff in June of the same year.

Key publications

- Boisvert CA. 2009 The humerus of *Panderichthys* in three-dimensions and its significance in the context of

the fish-tetrapod transition. In: Ahlberg PE, Blom H, Boisvert CA editors. Forty Years of Early Vertebrates: papers from the 11th International Symposium on Early and Lower Vertebrates. Uppsala: Blackwell. Acta Zoologica special issue, supplement to Vol. 90.

- Boisvert, C A. 2009 Vertebral development of modern salamanders provides insights into a unique event of their evolutionary history. *Journal of experimental zoology Part B (Mol Dev Evol)* 312(1): 1–29.
- Boisvert, CA, Mark-Kurik, E, Ahlberg, P E. 2008. The pectoral fin of *Panderichthys* and the origin of digits. *Nature* 456(7222):636–8
- Johanson, Z.; Joss, J.; Boisvert, C, Ericsson, R.; Sutija, M.; Ahlberg, P. E. 2007. Fish fingers: Digit homologues in sarcopterygian fish fins. *Journal of experimental zoology Part B (Mol Dev Evol)* 308B (6): 757–768
- Boisvert, C A. 2005. The pelvic fin and girdle of *Panderichthys* and the origin of tetrapod locomotion. *Nature*. 438(7071):1145–1147

Awards

- Human Frontiers Science Program fellowship
- ARC discovery grant
- John Bolt award (palaeontology)

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