

John Abramyan Ph.D.

Life Sciences Institute
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Education

Ph.D. The University of Queensland - Institute for Molecular Bioscience 2010
“Sex determination and development in the cane toad (*Bufo marinus*)” P.Koopman, adv.
B. Sc. University of California, Davis (Evolution and Ecology) B. Shaffer, adv. 2003

Research Interests

Developmental biology and evolution; genome evolution; comparative genomics:
primarily focusing on non-model organisms

Academic and Professional Positions

2011-present NIH-Postdoctoral Fellow, Department of Oral Health Sciences,
Faculty of Dentistry, University of British Columbia, Canada
2010-2011 Postdoctoral researcher, Institute for Integrative Genome Biology,
University of California, Riverside
2002-2006 Post graduate researcher and Laboratory Manager. Department of
Evolution and Ecology, University of California, Davis

Awards Fellowships and Grants

2012 NIH- F32-Ruth L. Kirschstein National Research Service Awards (NRSA)
Individual Postdoctoral Fellowship (3yrs)
2009 Institute for Molecular Biosciences PhD research scholarship - \$12,000
2007 Institute for Molecular Biosciences Postgraduate Award - \$18,837 p.a. (3yrs)
2006 Invasive Animal Cooperative Research Center PhD Scholarship - \$25,000 p.a.
(4 yrs)

Publications

Abramyan, J. and J.M. Richman. Recent insights into the morphological diversity in the
amniote primary and secondary palates. *Dev. Dyn. In Press*

Abramyan, J. (2015) Lineage-specific loss of FGF17 within the avian orders
Galliformes and Passeriformes. *Gene*. 563 (2): 180-9.

Abramyan, J., B. Thivichon-Prince, and J.M. Richman (2015). Diversity in primary palate ontogeny of amniotes revealed with 3D imaging. *J Anat.* 226 (5): 420-433.

R.Q. Liu, W. Wang, A. Legg, **J. Abramyan**, T.P. O'Connor (2014). Semaphorin 5B is a repellent cue for sensory afferents projecting into the developing spinal cord. *Development* 141(9):1940-9

Abramyan, J., K. J. Leung, J.M. Richman (2014). Divergent palate morphology in turtles and birds correlates with differences in proliferation and BMP2 expression during embryonic development. *J Exp Zool B Mol Dev Evol.* 322(2):73-85.

Shaffer, H. B. et al. (including **J. Abramyan** – 7th author)(2013). The Painted turtle genome: extreme physiological adaptations in a slowly evolving lineage. *Genome Biol.* 14 (3), R28

Richman, J.M., J.A. Whitlock, **J. Abramyan** (2013). *Regeneration of reptile teeth*. In: Huang, G.T.-J. and I. Thesleff, eds. Stem cells in craniofacial development, regeneration and repair. Hoboken: Wiley-Blackwell.

Abramyan, J. and J. Stajich (2012). Species-Specific Chitin-Binding Module 18 Expansion in the Amphibian Pathogen *Batrachochytrium dendrobatidis*. *MBio.* 2012 Jun 19;3(3):e00150-12*

* Featured as a Research Highlight article: Molloy, S. (2012). “Fungal evolution: Amphibious selection”. *Nature Reviews Microbiology* 10, 520-521

Abramyan, J., Wilhelm, D, Koopman, P. (2010) Molecular characterization of the Bidder’s organ in the cane toad (*Bufo marinus*). *J Exp Zool B Mol Dev Evol.* 314 (6): 503-13

Abramyan, J., Ezaz T, Graves JM, Koopman P. (2009) Z and W sex chromosomes in the cane toad (*Bufo marinus*). *Chromosome Res.* 17 (8):1015-1024

Abramyan, J., Feng, CW, and Koopman, P. (2009) Cloning and expression of candidate sexual development genes in the cane toad (*Bufo marinus*). *Dev. Dynam.* 238(9): 2430-2441

Outreach Activities

2012-present Vancouver District Science Fair judge

2012-present Greater Vancouver Regional Science Fair judge

2013 Invited Speaker. Cell and Developmental Biology program seminar series. UBC.

2013 Expert, UBC News press release (regarding publication of the first turtle genome of *Chrysemys picta* [Shaffer et al., 2013])

2013 UBC-SMaRT (Scientific Methods and Research Training) Program: Coordinator for undergraduate science presentation and teaching methods.

- 2009 Contributing Expert, **SCOPE**: Educational television show targeting young adults interested in science. CSIRO, Australia
(<http://tenplay.com.au/channel-ten/scope>)
- 2010 University of Queensland promotional video for international undergraduate student
- 2008 Integrative Biology Seminar on Biology of Amphibians and Reptiles. UC Berkeley. 2008 “Sex determination, genes and chromosomes in cane toads”
- 2007 Invited Speaker. Institute for Molecular Biosciences Developmental Biology Division Seminar. Univ. of Queensland “Sex chromosomes in the cane toad (*Bufo marinus*)”
- 2007 Invited Speaker. Comparative Genomics Group. Australian National University “ZZ/ZW sex chromosomes in *Bufo marinus*”
- 2006-2010 Contributing Expert. Undergraduate student projects pertaining to cane toad control and eradication in Australia.

Reviewer for Scientific Journals

Fish Physiology and Biochemistry, Family Biochemical Genetics, Journal of Experimental Zoology Part A: Ecological Genetics and Physiology, Journal of Morphology, Reproduction, American Journal of Undergraduate Research, Biochemical Systematics and Ecology, Gene, Zoology

Undergraduate Students Supervised

UC Riverside

- 2010 Annie Nguyen: *Coprinus*, *Neurospora* transposon and introns
- 2011 Carlos Rojas UCR **CAMP**: *Batrachochytrium dendrobatidis* CBM18 gene family.
- 2010 Jessica DeAnda MARC U* program: *Neurospora* natural population variation

UBC

2013 - Joy Cheng (B.Sc.): Proliferation patterns of the avian nasal cavity

Teaching Experience

2012 - University of British Columbia, Department of Cellular and Physiological Sciences: Fundamentals of Body Design: Principles in Human Anatomy (ANAT 511)

2012 -2014 University of British Columbia, Department of Oral Health Sciences: Craniofacial Growth and Development (DENT 524)

Conference Presentations (*indicates speaker)

- **Abramyan, J.*** and J.M. Richman. 2014. “Distinct Pattern of Primary Palate and Nasal Cavity Ontogeny in Reptile Embryos” to the Society For Developmental Biology 73rd Annual Meeting at the University of Washington. Seattle, WA
- **Abramyan, J.*** and J.M. Richman. 2014. “Comparative Studies on the ontogeny of the Nasal Cavity in Reptiles and Mammals”. Gordon Research Conference: Craniofacial morphogenesis and Tissue Regeneration in Lucca (Barga), Italy

- **Abramyán, J.*** and J.M. Richman. 2014. “Distinct Pattern of Nasal Cavity Ontogeny in Reptile Embryos” at the Northwest Developmental Biology conference in Friday Harbor, WA
- **Abramyán, J.*** and J.M. Richman. 2014. “Nasal Cavity Ontogeny in Avian and Mammalian Embryos”. Presented at the annual meeting of The Society for Integrative and Comparative Biology (SICB) in Austin, TX.
- **Abramyán, J.*** and J.M. Richman. 2013. “Nasal Cavity Ontogeny in Avian and Mammalian Embryos”. Presented at the 10th International Congress of Vertebrate morphology. Barcelona, Spain.
- **Abramyán, J.*** and J.M. Richman. 2013. “Divergent Palate Formation in Turtles and Birds” Presented at the 10th International Congress of Vertebrate morphology. Barcelona, Spain.
- **Abramyán, J.;** K.J. Leung, J.M. Richman 2013. “Craniofacial ontogeny in turtles: putative role of bone morphogenetic protein in the lack of palatal shelves” Presented at the 72nd Annual/17th International Congress of Developmental Biology. Cancun, Mexico.
- **Abramyán, J.*;** K.J. Leung, H. Merchant-Larios, J.M. Richman 2013. “Craniofacial ontogeny in turtles: the role of bone morphogenetic protein in the loss of palatal shelves”. Presented at the annual meeting of The Society for Integrative and Comparative Biology (SICB) in San Francisco, CA.
- Stajich, J.E.* , S. Joneson, **J. Abramyán**, S. Ahrendt, R. Ramamurthy, D. Sain, S.H. Shiu, E.B. Rosenblum 2013. “Tools and pipelines for comparative genomics with application to evolution in Fungi”. Presented at the annual meeting of The Society for Integrative and Comparative Biology (SICB). San Francisco, CA.
- Shaffer, H.B.* , **J. Abramyán**, P. Minx, R. Thomson. 2013 “The First Turtle Genome”. Presented at the Joint Meeting of Ichthyologists and Herpetologists. Albuquerque, NM.
- **Abramyán, J.**, Divya Sain, Jason Stajich. 2010 “Bioinformatic analysis of species-specific gene family changes in the amphibian pathogen *Batrachochytrium dendrobatidis*”. Presented at the annual meeting of the Society for the Study of Evolution. Portland, OR.
- **Abramyán, J.***. and P. Koopman. 2008. “Cane Toads: So common, yet so unique”. Presented at the 2nd Australian Sex Determination Summit. Flowerdale, Australia.

- **Abramyan, J.**, T. Ezaz, P. Koopman, 2007. “Cytogenetic analysis and identification of the Z and W sex chromosomes in the cane toad”. Presented at the Australian Society of Herpetologists Annual Meeting. Albany, Australia.
- **Abramyan, J.** and P. Koopman. 2006. “Sex determination in *Bufo marinus*: paving the way for the daughterless toad”. Presented at the Sex Determination Satellite Meeting. Brisbane, Australia.
- **Abramyan, J.** H. Brad Shaffer, David E. Starkey, Arthur Georges. 2006 “Species boundaries and lineage identification in the genus *Emydura*”. Presented at the annual meeting Australian Society of Herpetologists, Healesville, Australia.
- **Abramyan, J.** and H. Brad Shaffer. 2005. “Speciation observed in mid-stride: A multi-gene analysis of the California Tiger Salamander” American Society of Ichthyologists and Herpetologists Meeting. Tampa, FL.

Professional Affiliations

Society for Integrative and Comparative Biology, Society for Developmental Biology, International Society of Vertebrate Morphology, Society for Molecular Biology and Evolution