

**HEATHER JAMNICZKY, PhD**  
**3M National Teaching Fellow**

Curriculum Vitae

1 July 2020

Department of Cell Biology & Anatomy  
Cumming School of Medicine  
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**EDUCATION**

- 2006 PhD  
Department of Biological Sciences, University of Calgary, Canada
- 2001 BSc (First Class Honours)  
Department of Biological Sciences, University of Calgary, Canada

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**PROFESSIONAL APPOINTMENTS**

- 2020 – present Academic Lead, Teaching and Learning Research  
Taylor Institute for Teaching and Learning, University of Calgary, Canada
- 2017 – present Associate Professor with Tenure  
Department of Cell Biology & Anatomy, University of Calgary, Canada
- 2011 – 2017 Assistant Professor  
Department of Cell Biology & Anatomy, University of Calgary, Canada
- 2010 – 2011 Senior Research Associate  
Department of Cell Biology & Anatomy, University of Calgary, Canada
- 2010 Instructor  
Department of Cell Biology & Anatomy, University of Calgary, Canada
- 2009 Sessional Instructor  
Department of Biological Sciences, University of Calgary, Canada
- 2007 – 2010 Postdoctoral Scholar  
Department of Cell Biology & Anatomy, University of Calgary, Canada

**PUBLICATIONS** (Underline indicates trainee)

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**Peer-reviewed Articles**

- 2020 56. Bels VL, **Jamniczky HA**, Montuelle S, Pallandre JP, Kardong KV, Russell AP. 2020. Mechanics and kinematics of fluid uptake and intraoral transport in the Leopard gecko (Gekkota: Eublepharidae: *Eublepharis macularius*). *Journal of Zoology* doi: 10.1111/jzo.12763
55. Tinius A, Russell AP, **Jamniczky HA**, Anderson JS. Ecomorphological associations of scapulocoracoid form in Greater Antillean Anolis lizards. 2020. *Annals of Anatomy* doi: 10.1016/j.aanat.2020.151527
- 2019 54. Anderson SJ, **Jamniczky HA**, Krigolson OE, Coderre SP, Hecker KG. 2019. Quantifying two-dimensional and three-dimensional stereoscopic learning in anatomy using electroencephalography. *npj Science of Learning* 4:10.
53. Duclos KK, Hendrikse JL, **Jamniczky HA**. 2019. Investigating the evolution and development of biological complexity under the framework of epigenetics. *Evolution & Development* 21(5): 247-264.
52. Pistore AE, Barry TN, Vanderzwan SL, Schutz H, Rogers SM, **Jamniczky HA**. 2019. Ontogeny and allometry of habitat-specific phenotypic variation in complex phenotypes in the Threespine Stickleback (*Gasterosteus aculeatus* L.). *Evolutionary Ecology Research* 20: 27-50.
- 2018 51. **Jamniczky HA**, Le A, Barry TN, Rogers SM. 2018. Freshwater influence is associated with differences in bone mineral density and armour configuration in threespine stickleback (*Gasterosteus aculeatus*). *FACETS* 3(1): 665-681.
50. Anderson SJ, Hecker KA, Krigolson O, **Jamniczky HA**. 2018. A reinforcement-based learning paradigm increases anatomical learning and retention - a neuroeducation study. *Frontiers in Human Neurosciences* 12:38.
49. Morris MRJ, Bowles E, Allen B, **Jamniczky HA**, Rogers SM. 2018. Contemporary ancestor? Standing genetic variation, population genetic structure, and natural selection in Pacific marine threespine stickleback and its consequences for adaptive divergence. *BMC Evolutionary Biology* 18(1): 113.
48. Tinius A, Russell AP, **Jamniczky HA**, Anderson JS. 2018. What is bred in the bone: ecomorphological associations of pelvic girdle form in Greater Antillean *Anolis* lizards. *Journal of Morphology* 279(8): 1016-1030.

47. Zurowski C, **Jamniczky HA**, Graf D, Theodor J. 2018. Deletion/loss of BMP7 changes tooth morphology and function in *Mus musculus*: implications for dental evolution in mammals. Royal Society Open Science 5:170761.
46. Larson JR, Manyama MF, Cole JB, Liberton DK, Ferrara T, Riccardi S, Kimwaga EA, Mathayo J, Gonzalez PN, Spitzmacher JA, Percival CJ, Rolian C, **Jamniczky HA**, Weinberg S, Roseman CC, Klein O, Lukowiak K, Spritz R, Hallgrímsson B. 2018. Body size and allometric variation in facial shape in children. American Journal of Physical Anthropology 165(2): 327-342.
- 2017 45. Higham TE, **Jamniczky HA**, Jagnandan K, Smith SJ, Barry TN, Rogers SM. 2017. Comparative dynamics of suction feeding in marine and freshwater three-spined stickleback, *Gasterosteus aculeatus*: kinematics and geometric morphometrics. Biological Journal of the Linnean Society 122(2): 400-410
44. Powell GL, Russell AP, **Jamniczky HA**, Hallgrímsson B. 2017. Ontogeny and modularity in the expression of dermatocranial shape in the Greater Short-Horned Lizard *Phrynosoma hernandesi* (Reptilia: Squamata: Phrynosomatidae). Evolutionary Biology 44:240-260.
43. Morris MRJ, Petrovich E, Bowles E, **Jamniczky HA**, Rogers SM. 2017. Exploring Jordan's Rule in coastal threespine stickleback *Gasterosteus aculeatus*. Journal of Fish Biology 91(2): 645-663
- 2016 42. Pavličev M, Mitteroecker P, Gonzalez PN, Rolian C, **Jamniczky HA**, Villena, FPM, Marcucio R, Spritz R, Hallgrímsson B. 2016. Development shapes a consistent inbreeding effect in mouse crania of different line crosses. Journal of Experimental Zoology 326: 474-488.
41. Higham TE, Rogers SM, **Jamniczky HA**, Reznick DN, Lauder GV, Stewart WJ, Langerhans RB, Martin CH. 2016. Speciation through the lens of biomechanics: locomotion, prey capture and reproductive isolation. Proceedings of the Royal Society B 283: 20161294.
40. **Jamniczky HA**, Cotton, D, Paget M, Ramji Q, Lenz R, McLaughlin K, Coderre S, Ma IWY. 2016. Cognitive load imposed by ultrasound-facilitated teaching does not adversely affect gross anatomy learning outcomes. Anatomical Sciences Education 10(2): 144-151
39. Santos R, Kawauchi S, Jacobs RE, Lopez-Burks ME, Choi H, Wikenheiser J, Hallgrímsson B, **Jamniczky HA**, Lander AD, Calof AL. 2016. Conditional creation and rescue of *Nipbl*-deficiency in mice reveals multiple determinants of risk for congenital heart defects. PLoS Biology 14(9): e2000197.
38. Pistore A, Barry TN, Bowles E, Sharma R, Vanderzwan SL, Rogers SM, **Jamniczky HA**. 2016. Characterizing adaptive divergence in four populations of threespine stickleback (*Gasterosteus aculeatus*) in Katmai National Park and Preserve, Alaska. Canadian Journal of Zoology 94: 463-472.
37. Anderson SJ, Krigolson OE, **Jamniczky HA**, Hecker KG. 2016. Learning anatomical structures: a reinforcement based learning approach. Medical Science Educator 26: 123-128.

- 2015 36. Xu Q, Green RM, **Jamniczky HA**, Marcucio RS, Hallgrímsson B, Mio W. 2015. Correlations between the morphology of sonic hedgehog expression domains and embryonic craniofacial shape. *Evolutionary Biology* 42: 379-386.
35. **Jamniczky HA**, Barry TN, Rogers SM. 2015. Eco-evo-devo in the study of adaptive divergence: examples from Threespine Stickleback (*Gasterosteus aculeatus*). *Integrative and Comparative Biology* 55: 166-178.
34. Hu D, Young NM, Xu Q, **Jamniczky HA**, Green RM, Mio W, Marcucio RS, Hallgrímsson B. 2015. Signals from the brain induce variation in avian facial shape. *Developmental Dynamics* 244: 1133-1143
33. **Jamniczky HA**, Campeau S, Barry TN, Skelton J, Rogers SM. 2015. Three-dimensional morphometrics for quantitative trait locus analysis: tackling complex questions with complex phenotypes. *Evolutionary Biology* 42: 260-271
32. Parsons TE, Downey CM, Jirik FR, Hallgrímsson B, **Jamniczky HA**. 2015. Mind the gap: genetic manipulation of basicranial growth within synchondroses modulates calvarial and facial shape in mice through epigenetic interactions. *PLoS ONE* 10(2): e0118355.
31. Andrews SHJ, Rattner JB, **Jamniczky HA**, Shrive NG, Adesida AB. 2015. The structural and compositional transition of the meniscal roots into the fibrocartilage of the menisci. *Journal of Anatomy* 226: 169-174.
30. Green RM, Feng W, Fish J, Marcucio RS, **Jamniczky HA**, Hallgrímsson B, Williams TJ. 2015. *Tfap2a*-dependent changes in facial morphology result in clefting that can be ameliorated by a reduction in *Fgf8* gene dosage. *Disease Models and Mechanisms* 8:31-43.
- 2014 29. Schutz H, **Jamniczky HA**, Hallgrímsson B, Garland Jr T. 2014. Shape-shift: semicircular canal morphology responds to selective breeding for increased locomotor activity. *Evolution* 68: 3184-3198.
28. **Jamniczky HA**, McLaughlin K, Kaminska, ME, Somayaji R, Wright B, Ma IWY. 2014. Cognitive load imposed by knobology may adversely affect learners' perception of utility in using ultrasonography to learn physical examination skills, but not anatomy. *Anatomical Sciences Education* 8: 197-204.
27. Rogers SM, **Jamniczky HA**. 2014. The shape of things to come in the study of the origin of species. *Molecular Ecology* 23: 1650-1652.
26. **Jamniczky HA**, Harper EE, Garner R, Cresko WA, Wainwright PC, Hallgrímsson B, Kimmel CB. 2014. Integration structure facilitates evolutionary and functional change in the opercular four-bar apparatus of the threespine stickleback. *Biological Journal of the Linnean Society* 111: 375-390.
- 2013 25. Andrews SHJ, Ronsky JL, Rattner JB, Shrive NG, **Jamniczky HA**. 2013. An evaluation of meniscal collagenous structure using optical projection tomography. *BMC Medical Imaging* 13:21.

24. Smith F, Hu D, Young NM, Lainoff A, **Jamniczky HA**, Maltepe E, Hallgrímsson B, Marcucio RS. 2013. The effect of hypoxia on facial shape variation and disease phenotypes including holoprosencephaly. *Disease Models and Mechanisms* 6:915-924.
23. Tworek JK, **Jamniczky HA**, Jacob C, Hallgrímsson B, Wright B. 2013. The LINDSAY Virtual Human Project: an immersive approach to anatomy and physiology. *Anatomical Sciences Education* 6:19-28.
- 2012 22. Hallgrímsson B, **Jamniczky HA**, Young NM, Rolian C, Schmidt-Ott U, Marcucio RS. 2012. The generation of variation and the developmental basis of evolutionary novelty. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution* 318:501-517.
- 2011 21. Parsons TE, Schmidt EJ, Boughner JC, **Jamniczky HA**, Marcucio RS, Hallgrímsson B. 2011. Epigenetic integration of the developing brain and face. *Developmental Dynamics* 240:2233–2244
20. Meruvia-Pastor OE, Soh J, Schmidt EJ, Boughner JC, Xiao M, **Jamniczky HA**, Hallgrímsson B, Sensen CW. 2011. Estimating cell count and distribution in labeled histological samples using incremental cell search. *International Journal of Biomedical Imaging* 2011:ID 874702, 16pp
19. **Jamniczky HA**, Hallgrímsson B. 2011. Modularity in the skull and cranial vasculature of laboratory mice: implications for the evolution of complex phenotypes. *Evolution and Development* 13:28–37
- 2010 18. **Jamniczky HA**, Boughner JC, Rolian C, Gonzalez PN, Powell CD, Schmidt EJ, Parsons TE, Bookstein FL, Hallgrímsson B. 2010. Rediscovering Waddington in the post-genomic age: operationalizing Waddington's epigenetics reveals new ways to investigate the generation and modulation of phenotypic variation. *BioEssays* 32:553–558
17. Schmidt EJ, Parsons TE, **Jamniczky HA**, Gitelman J, Trpkov C, Boughner JC, Logan CC, Sensen CW Hallgrímsson B. 2010. Micro-computed tomography-based phenotypic approaches in embryology: procedural artifacts in assessments of embryonic craniofacial growth and development. *BMC Developmental Biology* 10:18
- 2009 16. Hallgrímsson B, **Jamniczky HA**, Young NM, Rolian C, Parsons TE, Boughner JC, Marcucio RS. 2009. Deciphering the palimpsest: studying the relationship between morphological integration and phenotypic covariation. *Evolutionary Biology* 36:355-376
15. **Jamniczky HA**, Russell AP, Johnson MK, Montuelle SJ, Bels VL. 2009. Morphology and histology of the tongue and oral chamber of *Eublepharis macularius* (Squamata: Gekkonidae), with special reference to the foretongue and its role in fluid uptake and transport. *Evolutionary Biology* 36:397-406
14. **Jamniczky HA**, Hallgrímsson B. 2009. A comparison of covariance structure in wild and laboratory murid crania. *Evolution* 63:1540-1556

- 2008 13. Brinkman DB, Aquillón-Martínez MC, de Leon Dávila CA, **Jamniczky HA**, Eberth DA, Colbert MW. 2008. *Euclastes coahuilaensis* sp nov, a primitive cheloniid turtle from the Late Campanian Cerro del Pueblo Formation of Coahuila State, Mexico. *PaleoBios* 28:76-88
12. **Jamniczky HA**. 2008. Phenotypic integration patterns support an account of homology as a manifestation of evolvability. *Evolutionary Biology* 35:312-316
11. Lieberman DE, Hallgrímsson B, Liu W, Parsons TE, **Jamniczky HA**. 2008. Spatial packing, cranial base angulation, and craniofacial shape variation in the mammalian skull: testing a new model using mice. *Journal of Anatomy* 212:720-735
10. **Jamniczky HA**, Russell AP. 2008. Carotid circulatory development in turtles: seeking critical developmental stages to localize establishment of clade-specific pattern. *Amphibia-Reptilia* 29:270-277
9. **Jamniczky HA**. 2008. Turtle carotid circulation: a character analysis case study. *Biological Journal of the Linnaean Society* 93:239-256
- 2007 8. **Jamniczky HA**, Russell AP. 2007. Re-appraisal of patterns of turtle carotid circulation: evidence from osteological correlates and soft tissues. *Journal of Morphology* 268(7):571-587
- 2006 7. Brinkman D, Hart M, **Jamniczky HA**, Colbert M. 2006. *Nichollsemys baireri* gen et sp nov, a primitive chelonioid turtle from the Late Campanian of North America. *Paludicola* 5(4):111-124
6. Lipka T, Therrien F, Weishampel DB, **Jamniczky HA**, Joyce WG, Colbert MW Brinkman DB. 2006. A new turtle from the Arundel Clays (Potomac Formation, Early Cretaceous) of Maryland, USA. *Journal of Vertebrate Paleontology* 26(2):300-307
5. **Jamniczky HA**, Brinkman DB, Russell AP. 2006. Phylogenetic implications of turtle cranial circulation: a review. In Danilov IG Parham JF (eds) *Fossil Turtle Research, Vol 1*, Russian Journal of Herpetology 13(Suppl):84-92
- 2005 4. **Jamniczky HA**. 2005. Biological pluralism and homology. *Philosophy of Science* 72:687-698
- 2004 3. **Jamniczky HA**, Russell AP. 2004. Cranial arterial foramen diameter in turtles: quantitative assessment of size-independent phylogenetic signal. *Animal Biology* 54(4):417-436
2. **Jamniczky HA**, Russell AP. 2004. A geometric morphometric analysis of the batagurine process in testudinoid turtles. *Amphibia-Reptilia* 25(4):369-379
- 2003 1. **Jamniczky HA**, Brinkman DB, Russell AP. 2003. Vertebrate microsite sampling: how much is enough? *Journal of Vertebrate Paleontology* 23(4):725-734

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### Books, Chapters

- 2015 Bininda-Emonds ORP, Powell GL, **Jamniczky HA**, Bauer AM, Theodor JM (eds). 2015. All Animals are Interesting: a Festschrift Celebrating the Career of Anthony P. Russell. BIS Verlag, Oldenburg, Germany.

- 2012 von Mammen S, Philips D, Davison T, **Jamniczky HA**, Hallgrímsson B, Jacob C. 2012. Swarm-based computational development. In: Doursat R, Sayama H, Michel O (eds) Morphogenetic Engineering: Toward Programmable Complex Systems. Heidelberg: Springer Verlag, pp 473-499.
- Jacob C, von Mammen S, Davison T, Sarraf-Shirazi A, Sarpe V, Esmaeili A, Phillips D, Yazdanbod I, Novakowski S, Steil S, Gingras C, **Jamniczky H**, Hallgrímsson B, Wright B. 2012. LINDSAY Virtual Human: Multi-scale, Agent-based, and Interactive. In: Kolodziej J, Khan SU, Burczynski T (eds) Advances in Intelligent Modeling and Simulation: Artificial Intelligence-based Models and Techniques in Scalable Computing. Heidelberg: Springer Verlag, pp 327-349
- 2010 **Jamniczky HA**. 2010. The Burgess Shale and the Cambrian Explosion: Evolution in the Rear-view Mirror. In Hewitt S, Gillies S (eds) Biology on the Cutting Edge: Concepts, Issues, and Canadian Research Around the Globe Toronto: Pearson Canada, pp 45-49
- 2008 **Jamniczky HA**, Brinkman DB, Russell, AP. 2008. A repeatable efficient sampling protocol for vertebrate microsites. In Sankey JT, Baszio S (eds) Vertebrate Microfossil Assemblages: Their Role in Paleocology and Paleobiogeography Bloomington: Indiana University Press, pp 9-16

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**AWARDS AND HONOURS (bold indicates national and international recognition)**

- 2020 **3M National Teaching Fellowship, Society for Teaching and Learning in Higher Education**  
Calgary Medical Students' Association–Limpkins (Class of 2021) Gold Star Award
- 2019 University of Calgary GREATsupervisors Award  
University of Calgary Bachelor of Health Sciences Teaching Award  
Calgary Medical Students' Association–Boops (Class of 2020) Gold Star Award  
McCaig-Killam Teaching Award (nominated)
- 2018 Calgary Medical Students' Association–Dholes (Class of 2019) Gold Star and Jersey Awards  
McCaig-Killam Teaching Award (nominated)
- 2017 **American Association of Anatomists Basmajian Award**  
Calgary Medical Students' Association–Goats (Class of 2018) Gold Star Award  
McCaig-Killam Teaching Award (nominated)
- 2016 University of Calgary Graduate Students' Association Supervisory Excellence Award, Honourable Mention  
University of Calgary Teaching Award  
**Association of Faculties of Medicine of Canada Young Educator Award**  
Calgary Medical Students' Association–Humus (Class of 2017) Jersey Award  
McCaig-Killam Teaching Award (nominated)  
**American Association of Anatomists Basmajian Award (nominated)**
- 2015 University of Calgary Cumming School of Medicine McLeod Award for Distinguished Contributions to Teaching  
Avenue Magazine Calgary Top 40 Under 40

Calgary Medical Students' Association–Narwhals (Class of 2016) Gold Star and Jersey Awards  
**American Association of Anatomists Basmajian Award (nominated)**

- 2014 University of Calgary Bachelor of Health Sciences Teaching Award  
Calgary Medical Students' Association–Cows (Class of 2015) Honour Roll  
University of Calgary Students' Union Teaching Excellence Awards, Honourable Mention
- 2013 Calgary Medical Students' Association–Hellbenders (Class of 2014) Honour Roll

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## RESEARCH SUPPORT

- 2019 – 2024 Natural Sciences and Engineering Research Council of Canada Discovery Grant: \$140,000  
Ecologically-informed evolutionary developmental biology in Threespine Stickleback  
(Principal Investigator)
- 2019 – 2021 Office of Health and Medical Education Research: \$10,000  
Using EEG and eye tracking to create a core competency expertise profile in diagnostic  
pathology (Principal Applicant)
- 2012 – 2019 Natural Sciences and Engineering Research Council of Canada Discovery Grant: \$150,000  
The role of epigenetics in the generation of evolutionarily important variation (Principal  
Investigator)
- 2015 – 2018 Taylor Institute for Teaching and Learning: \$29,882  
Use Your Head! Quantifying Effectiveness of Just-in-Time Teaching in the Anatomical  
Sciences (Principal Applicant)
- 2014 – 2016 Data and Technology in Veterinary Medicine, University of Calgary: \$15,000  
Measuring the neurophysiological correlates of spatial, procedural, and decision-making  
learning processes (Co-Applicant)
- 2014 Canada Foundation for Innovation Leaders' Opportunity Fund: \$590,768  
Multi-modal high-throughput 3D biomedical imaging laboratory (Principal Applicant)
- 2014 – 2015 University Research Grants Committee: \$15,000  
Quantification of neural activity while discriminating between two- and three-  
dimensional anatomical objects: implications for spatial learning within health  
professional education (Principal Applicant)

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## INVITED CONTRIBUTIONS

### *WORKING GROUPS*

- 2019 National Science Foundation Working Group: Reciprocal illumination of ecology and  
biomechanics: evolution, integration, and constraint. Portland, OR, 17-19 Mar 2019.

## ADDRESSES

- 2019 Jamniczky HA. 2019. Ontogenetic trajectories of skeletal variation in Threespine Stickleback. Invited symposium presentation, Canadian Society of Zoologists Annual Meeting, Windsor, ON, 16 May 2019.
- 2018 Jamniczky HA. 2018. Considering the WHOLE phenotype: emerging approaches to 3D quantitative morphology in eco-evo-devo. Invited Lecture, University of Massachusetts, Amherst, 2 Feb 2018.
- 2016 Jamniczky HA. 2016. The devil is in the details: quantitative morphology reveals new insights into evolutionary history of threespine stickleback. Invited Lecture, Bamfield Marine Sciences Centre, British Columbia, 9 June 2016.
- 2015 Jamniczky HA. 2015. Considering the WHOLE phenotype: emerging approaches to 3D quantitative morphology in eco-evo-devo. Invited Lecture, Bamfield Marine Sciences Centre, British Columbia, 20 June 2015.
- 2015 Jamniczky HA. 2015. Geometric Morphometrics: An Introduction. Invited Workshop, Bamfield Marine Sciences Centre, 20 June 2015.
- Jamniczky HA. 2015. Considering the WHOLE phenotype: emerging approaches to 3D quantitative morphology in eco-evo-devo. Student Satellite Symposium Keynote Address, Canadian Society of Zoologists' Annual Meeting, 27 May 2015.
- Jamniczky HA, Rogers SM. 2015. Integrating approaches to biomechanics: developmental phenogenomics of stickleback evolution. Invited symposium presentation, Society for Integrative and Comparative Biology, West Palm Beach, FL, 7 January 2015.
- 2013 Rogers, SM, Jamniczky HA. 2013. Adaptive evolution in stickleback: the gene proposes and the environment disposes. Bamfield Marine Sciences Centre, British Columbia, 12 June 2013.
- Jamniczky HA. 2013. Opening the black box: epigenetics and phenotypic variation. University of Oregon, 28 May 2013.
- 2011 Jamniczky HA. 2011. Quantification of irregular morphology in three dimensions. Florida State University, 9 December 2011.
- Jamniczky HA. 2011. Quantifying unusual biological shapes in three dimensions. Oral presentation at the Statistics and Applied Mathematical Sciences Institute Analysis of Object Data Meets Evolutionary Biology Workshop, Raleigh, NC, 30 April – 2 May 2011

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**SELECTED CONFERENCE PARTICIPATION (LAST FIVE YEARS) (Underline indicates trainee)**

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**Published Abstracts**

- 2017 Jamniczky HA, Le A, Barry TN, Rogers SM. 2017. Variation in a suite of armour phenotype traits reveals a complex response to selective pressure in threespine stickleback (*Gasterosteus aculeatus*). Integrative and Comparative Biology 57(Suppl. 1): E302
- Higham TE, Jagnandan K, Smith S, Jamniczky HA, Rogers SM. 2017. The dynamics of suction feeding among marine and freshwater populations of threespine stickleback, *Gasterosteus aculeatus*: linking kinematics and geometric morphometrics. Integrative and Comparative Biology 57(Suppl. 1): E292
- Zhuang MV, Russell AP, Jamniczky HA, Higham TE. 2017. The evolution of the gecko ankle in relation to the acquisition of frictional adhesion: A geometric morphometric analysis of the mesotarsal joint. Integrative and Comparative Biology 57(Suppl. 1): E455
- 2016 Jamniczky HA, Le A, Barry TN, Rogers SM. 2016. Armour plate bone mineral density varies with habitat in Threespine Stickleback. Canadian Society of Zoologists Bulletin 47(2): 81.
- Schutz H, Braaten-Fierros K, Higginbotham C, Jamniczky HA, Donovan ER, Garland Jr, T. 2016. Variation in sexual dimorphism of mouse os coxae shape, volume, and bone mineral density in response to selection for high voluntary wheel running. FASEB Journal 30:368.4
- 2015 Barry TN, Rogers SM, Jamniczky HA. 2015. Phenotypic heterogeneity in marine Threespine Stickleback from Madeira Park, BC. Canadian Society of Zoologists Bulletin 46(2): 16.
- Morris M, Petrovich E, Jamniczky HA, Rogers SM. 2015. Exploring Jordan's Rule in coastal threespine stickleback. Canadian Society of Zoologists Bulletin 46(2): 16.
- Barry TN, Rogers SM, Jamniczky HA. 2015. Microcomputed Tomography as a tool for fine-tuned phenotypic analysis. Canadian Society of Zoologists Bulletin 46(2): 33.
- 2014 Jamniczky HA. 2014. Quantifying adaptive evolution: three-dimensional phenotypes provide new insight into mechanisms of rapid evolutionary change in threespine stickleback. FASEB Journal 28 (1 Suppl.):918.28
- Jamniczky HA, Pavlicev M, Young NM, Marcucio RS, Hallgrímsson B. 2014. The generation of continuous variation in skeletal morphology. American Journal of Physical Anthropology 153:151.
- Green R, Feng W, Jamniczky HA, Hallgrímsson B, Williams TJ. 2014. Facial shape related cleft lip/palate in a novel mouse model. American Journal of Medical Genetics Part A 164 (8):1880.

- 2013 Jamniczky HA, Mio W, Young NM, Marcucio RS, Hallgrímsson B. 2013. The mechanistic basis for phenotypic variation: an emerging frontier in evolutionary developmental biology. *American Journal of Physical Anthropology* 150:158-159.

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## Presentations

- 2019 Duclos KK, Cloutier R, Angers B, Jamniczky HA. 2019. Variation in patterns of craniofacial integration and modularity across a Teleostean species complex. Oral presentation at the 12th International Congress on Vertebrate Morphology, Prague, 21-25 July 2019.
- 2018 Jamniczky HA, Schutz H, Barry TN, Frampton, R, Warwick E, Atilés-Rios B. 2018. Sexual dimorphism and habitat interact to structure phenotypic variation in Threespine Stickleback (*Gasterosteus aculeatus*). Oral presentation at the Stickleback 2018 Meeting, Kyoto, Japan, 3-7 July 2018.
- Barry TN, Jamniczky HA, Rogers SM. 2018. Location, location, location: the influence of local environments and genetic differentiation on phenotypic variation in *Gasterosteus aculeatus*. Oral presentation at the Stickleback 2018 Meeting, Kyoto, Japan, 3-7 July 2018.
- Jamniczky HA, Schutz H, Barry TN, Warwick E, Atilés-Rios B. 2018. Sexual dimorphism and habitat interact to structure phenotypic variation in Threespine Stickleback (*Gasterosteus aculeatus*). Oral presentation at the Canadian Society of Zoologists Annual Meeting, St. Johns, NL, 6-11 May 2018.
- 2017 Duclos KK, Cloutier R, Angers B, Jamniczky HA. 2017. Altered covariance structure reveals relaxation of developmental constraints in an asexual hybrid vertebrate. Oral presentation at the Canadian Society of Zoologists Annual Meeting, Winnipeg MB, 15-19 May 2017.
- Barry TN, Pistore A, Jamniczky HA, Rogers SM. 2017. Lab v. wild: phenotypic covariation in the threespine stickleback. Oral presentation at the Canadian Society for Ecology and Evolution Annual Meeting, Victoria BC, 8-11 May 2017.
- 2016 Anderson SJ, Jamniczky HA, Krigolson OE, Hecker KG. 2016. Quantitative measurement of learning using electroencephalography (EEG) in anatomy education. Poster presentation at the EARLI SIG22 Neuroscience and Education Meeting, Amsterdam, Netherlands, 23 – 25 June 2016.
- Powell GL, Russell AP, Jamniczky HA, Hallgrímsson B. 2016. Ontogenetic integration and modularity in the dermatocranium of the Greater Short-horned lizard, *Phrynosoma hernandesi*. Poster presentation at the 11th International Congress on Vertebrate Morphology, Washington DC, June 29 – July 3 2016.
- Schutz H, Jamniczky HA, Asplund CL, Braaten-Fierros K, Higginbotham C, Donovan ER, Garland Jr, T. 2016. Morphological responses of the scapula and os coxae to selection for high voluntary locomotor activity. Oral presentation at the 11th International Congress on Vertebrate Morphology, Washington DC, June 29 – July 3 2016.

- Anderson SJ, Hecker KG, Krigolson OE, Jamniczky HA. Anatomy 2.0: Just-in-time teaching modules for the digital age. Oral presentation at the University of Calgary Conference on Postsecondary Learning and Teaching, Calgary AB, May 10-11, 2016.
- Anderson SJ, Jamniczky HA, Krigolson O, Hecker KG. 2016. Use your head! Quantifying the effectiveness of Just-in-Time Teaching in the anatomical sciences. Oral presentation at the Health and Medical Education Scholarship Symposium, Calgary, AB, 17 February 2016.
- 2015 Anderson SJ, Jamniczky HA, Krigolson OE, Hecker KG. 2015. Understanding 2D anatomy learning: a reinforcement-based approach. Poster presentation at the Association for Medical Education in Europe Annual Meeting, Glasgow, Scotland, 5 – 10 September 2015.
- Anderson SJ, Hecker KG, Krigolson O, Jamniczky HA. 2015. A neuroeducational approach to understanding 2D anatomy learning- task optimization for measurement of neural processes. Poster presentation at the Health and Medical Education Scholarship Symposium, Calgary, AB, 17 February 2015.
- 2014 Jamniczky HA, McLaughlin K, Taylor M, Sharp L, Martin K, Paget M, Raman M, Somayaji R, Wright B, Ma I. 2014. Reported cognitive load associated with using ultrasound may inform curriculum development for teaching anatomy and physical examination skills. Oral presentation at the Third Annual World Congress on Ultrasound in Medical Education, Portland OR, 10 – 12 October 2014.
- Jamniczky HA, McLaughlin K, Taylor M, Sharp L, Martin K, Paget M, Raman M, Somayaji R, Wright B, Ma I. 2014. Cognitive load imposed by knobology may adversely affect learners' ability to learn physical examination skills using ultrasonography. Oral presentation at the 2014 Canadian Conference on Medical Education, Ottawa ON, 26 - 30 April 2014
- Green R, Feng W, Fish J, Marcucio R, Jamniczky HA, Hallgrímsson B, Williams T. 2014. Morphometric analysis of facial shape changes that enable decreased Fgf8 gene dosage to reduce the penetrance of bilateral cleft lip/palate caused by AP-2 $\alpha$  mutation. Presentation at the Gordon Craniofacial Research Conference.
- Smith F, Young NM, Percival C, Green R, Fish JL, Jamniczky HA, Marcucio RS, Hallgrímsson B. 2014. Comparative analysis of craniofacial morphogenesis in mouse mutants. Oral presentation at the American Association of Anthropologists Annual Meeting, Calgary, AB, 9 - 12 April 2014
- 2013 Powell GL, Russell AP, Jamniczky HA, Hallgrímsson B. 2013. The nature of shape variation in the skull and horns of the Tapaja clade of horned lizards (*Phrynosoma*), based upon cranial geometric morphometrics of the Greater Short-horned lizard (*P. hernandesii*). Oral presentation at the Tenth International Congress of Vertebrate Morphology, Barcelona, Spain, 8 – 12 July 2013
- Jamniczky HA, Paget M, Mitha A, Bhuiyan S, Wintersinger J, Novakowski S, Jacob C, Wright B. 2013. Mobile anatomy lab: 1:1 cadaver eBooks in undergraduate medical education. Oral presentation at the 2013 Canadian Conference on Medical Education, Quebec City, PQ, 20 - 23 April 2013

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## TEACHING EXPERIENCE

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### Undergraduate

#### Undergraduate Courses Taught (note as of July 1 2020, secondment to the Taylor Institute replaces undergraduate classroom teaching)

Bachelor of Health Sciences, Cumming School of Medicine:

MDSC 521 Human Anatomy (2011 – present)  
MDSC 402 Organismal Biology (2010 – present)  
MDSC 507 Directed Studies: Anatomical Illustration (2018)

Undergraduate Medical Education, Cumming School of Medicine:

\*MDCN 300 and MDCN 400 (NEW; begins July 1 2020, see dossier for details)

Human Gross Anatomy Components of:

MDCN 350 Introduction to Medicine/Blood/Gastrointestinal System (2011 – present)  
MDCN 360 Musculoskeletal System/Dermatology (2009 – present)  
MDCN 370 Cardiovascular/Respiratory System (2012 – present)  
MDCN 410 Renal, Endocrine and Obesity (2012 – present)  
MDCN 450 Neurosciences, Ageing and Special Senses (2012 – present)  
MDCN 460 Child and Maternal Health (2012 – present)

Faculty of Science:

ZOOL 377 Comparative Anatomy of Vertebrates (2009)

### Undergraduate Supervision

23 undergraduate summer, honours and assistant researchers (2011 – present)

Supervisor and Mentor, Academic Exchange Program, National Autonomous University of Nicaragua (2015 – 2019)

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### Graduate and Postgraduate

#### Graduate Courses Taught

MDSC 755 Directed Studies: Morphometrics (2015, 2016, 2019)  
MDSC 755 Directed Studies: Biomechanics and Morphology (2017, 2018)  
MDSC 755 Directed Studies: Guided Dissection and Photogrammetry (2015, 2016)  
MDSC 703 Human Anatomy (2012-2015)

## **Graduate Supervision**

- PhD J. McLeod (completion 2020)  
K. Duclos (completion 2021)  
E. Frampton (completion 2023)  
T. Barry (2019, Instructor, University of Lethbridge)  
S. Anderson (2018, Instructor, University of Calgary)  
J. Larson (2017, clinical research coordination)  
T. Parsons (2012, university administration)
- MSc A. Kozak (completion 2020)  
A. Pistore (2018, MD/MSc, medical resident)  
C. Zurowski (2016, DVM student)

## **Graduate Committees**

Supervisory committee: 8 current, 5 graduated  
Candidacy/thesis examining committee: 12

## **Postgraduate Medical Education Courses Taught**

Neurosurgery Residents' Training Program (2017 – 2018)  
Pathology Residents' Training Program (2012 – 2015)

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## **PROFESSIONAL MENTORSHIP**

2018	Facilitator, International Institute for Medical Education Leadership, University of Calgary
2017 – Present	Mentor, Taylor Institute for Teaching and Learning, University of Calgary
2014	Asian Academic Partnership, University of Calgary Office of Global Health, Vientiane, Laos
2013 – 2016	Contributing Instructor, Teaching Scholars in Medicine Program, Office of Faculty Development, University of Calgary

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## **PROFESSIONAL SERVICE**

### **Professional Society Leadership**

2020 – 2024	Executive Leadership Team, Canadian Society of Zoologists (currently 2 <sup>nd</sup> Vice President, President 2022-2023)
2018 – Present	Secretary General, Comparative Morphology and Development Section, Canadian Society of Zoologists
2017 – 2018	Chair, Comparative Morphology and Development Section, Canadian Society of Zoologists  Symposium Organizer, Comparative Morphology and Development Section, Canadian Society of Zoologists
2016 – 2017	Vice Chair, Comparative Morphology and Development Section, Canadian Society of Zoologists
2017	Scientific Committee and Local Organizing Committee Member, Annual Meeting of the Pan-American Society for Evolutionary Developmental Biology

### **Editorial Boards**

2015 – Present	FACETS
2017 – Present	Anatomical Sciences Education

### **Manuscript Review**

American Museum Novitates, South American Journal of Earth Sciences, Biology Letters, Biological Reviews, Evolutionary Biology, Evolutionary Ecology Research, Journal of Vertebrate Paleontology, Journal of Morphology, Journal of Anatomy, Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, Nature Communications, Functional Ecology, Open Fish Science Journal, PLoS ONE, Proceedings B, BMC Evolutionary Biology, Evolution

### **Grant review**

National Science Foundation (USA), Natural Sciences and Engineering Research Council of Canada, New Frontiers in Research Fund

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## **UNIVERSITY SERVICE**

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### **Department, Institute, Program**

Headship Review Committee, Department of Cell Biology & Anatomy (2019)

User Committee, Bamfield Marine Sciences Centre (2017 – present)

Anatomy Search and Selection Committee, Department of Cell Biology & Anatomy (2017)

Education and Training Committee, McCaig Institute for Bone and Joint Health (2016 – 2019)

Art History Search and Selection Committee, Department of Art (2016)

Pre-Clerkship Committee, Undergraduate Medical Education (2015 – present)

Course I Committee, Undergraduate Medical Education (2012 – present)

Course II Committee, Undergraduate Medical Education (2012 – present)

Course III Committee, Undergraduate Medical Education (2012 – present)

Course IV Committee, Undergraduate Medical Education (2012 – present)

Course V Committee, Undergraduate Medical Education (2012 – present)

Course VI Committee, Undergraduate Medical Education (2012 – present)

Headship Search and Selection Committee, Department of Cell Biology & Anatomy (2014)

PURE Application Review Committee, Bachelor of Health Sciences (2013 – present)

Supplementary Application Review Committee, Bachelor of Health Sciences (2013 – present)

Safety Improvement Team (Chair, 2011 – 2013)

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## **Faculty**

Academic Director, Advanced Technologies and Surgical Skills Laboratory (ATSSL) and Special Procedures Laboratory/Body Donation Program (2017 – 2019)

ATSSL Executive Steering Committee (2017 – 2019)

ATSSL Education Sub-committee (2017 – present)

Center for Advanced Technologies Committee (2017 – 2019)

Accreditation Process Committee (2015 – 2016)

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## **University**

SUPPORT Research Infrastructure Committee (2016 – 2019)

Faculty of Graduate Studies Scholarship Committee (2017 – 2018)

Teaching Academy Leadership Committee, Taylor Institute for Teaching and Learning (2016 – present)

Academic Advisory Group, Taylor Institute for Teaching and Learning (2013 – 2014)

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**LANGUAGES**

English: Native

French: Fluent

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**PROFESSIONAL MEMBERSHIPS**

2017 – present Pan-American Society for Evolutionary Developmental Biology

2014 – present American Association of Anatomists

2003 – present Canadian Society of Zoologists

2003 – present Society for Integrative and Comparative Biology