**Stephanie Crofts –** scrofts@holycross.edu

Dept. of Biology

College of the Holy Cross

https://croftss.wordpress.com

**Education and Academic Positions:**

09/2020 – present Asst. Prof College of the Holy Cross, Dept of Biology

08/2017 – 08/2020 Post-Doctoral Research Associate UIUC, Dept. of Evolution, Ecology, and Behavior

09/2015 – 07/2017 Post-Doctoral Research Associate NJIT, Fed. Dept. Bio.

**PhD (Biology)**

University of Washington, Seattle (2009- 2015)

**BA (Biology)**

 University of Chicago (2002-2006)

**Publications (\***project includes student-led research):

1. Crofts, S. B., S. M. Smith, and P. S. L. Anderson. "Beyond description: the many facets of dental biomechanics." **Integrative and Comparative Biology** (2020).
2. van Casteren, A. & Crofts,S. B. “The materials of mastication: material science of the humble tooth”  **Integrative and Comparative Biology** (2019) icz129. DOI: 10.1093/icb/icz129
3. Anderson, P. S. L, Crofts, S. B., Kim, J. & Chamorro, L. P. “Taking a stab at quantifying the energetics of biological puncture.” **Integrative and Comparative Biology** (2019) icz078. DOI: 10.1093/icb/icz078
4. Crofts, S.B., Lai, Y., Hu, Y. & Anderson, P. S. L. “How do morphological sharpness measures relate to puncture performance in viperid snake fangs?” **Biology Letters** (2019) 15: 20180905 DOI: 10.1098/rsbl.2018.0905
5. Crofts, S. B., Shehata, R. & Flammang, B. E. “Flexibility of heterocercal tails: what can the functional morphology of shark tails tell us about ichthyosaur swimming?” (2019) **Integrative Organismal Biology** DOI: 10.1093/iob/obz002 \*
6. Crofts, S.B. & Anderson, P. S. L. “The influence of cactus spine surface structure on puncture performance and anchoring ability is tuned for ecology” **Proceedings of the Royal Society B** (2018) 285: 20182280. DOI: 10.1098/rspb.2018.2280

Media coverage by: NOVA, Smithsonian.com, Science News, and Discover

1. Grear, M. E., Motley, M. R., Crofts, S. B., Witt A. E., Summers, A. P. & Ditsche, P. “Mechanical properties of harbor seal skin and blubber - a test of anisotropy” **Zoology** (2017) DOI: 10.1016/j.zool.2017.11.002
2. Crofts, S.B., Neenan, J. M., Scheyer, T. M., & Summers, S. P. “Tooth occlusal morphology in the durophagous marine reptiles, Placodontia (Reptilia, Sauropterygia)” **Paleobiology** (2016) DOI: 10.1017/pab.2016.27
3. Kolmann, M.A, Crofts, S.B., Lovejoy, N.R. & Summers, A.P. “The effect of jaw curvature on crushing performance in durophagous stingrays” **Journal of Experimental Biology** (2015) DOI:10.1242/jeb.127340
4. Sigwart, J. D., Green, P. A. & Crofts, S. B. “Functional morphology in chitons (Mollusca, Polyplacophora): influences of environment and ocean acidification” **Marine Biology** (2015)DOI: 10.1007/s00227-015-2761-2
5. Crofts, S.B. “Finite Element modeling of occlusal variation in durophagous tooth systems” **Journal of Experimental Biology** 218 (2015): 2705-2711
6. Crofts, S.B. & Summers, S. P. “How to best smash a snail – the effect of tooth shape on crushing load” **Journal of the Royal Society Interface** 11 (2014): 20131053

Media coverage by: Der Spiegel

1. Grubich, J.R, Huskey, S., Crofts, S., Orti, G. & Porto, J. “Mega-bites: extreme jaw forces of living and extinct piranhas (Serrisalmidae)” **Scientific Reports** 2 (2012):1009
2. Crofts, S.B. & Summers, A.P. “Swimming in the Sahara” **Nature** 472 (2011):177-178
3. Crofts, A.R., Lhee, S., Crofts, S.B., Cheng, J., Rose, S. “Proton pumping in the bc1 complex: A new gating mechanism that prevents short circuits.” **Biochimica et Biophysica Acta (BBA) - Bioenergetics** 1757.8 (2006): 1019-1034.