

Stephanie Crofts – scrofts@holycross.edu
Department of Biology
College of the Holy Cross
1 College Street
Worcester, MA 01610
<https://croftss.wordpress.com>

Education and Academic Positions:

08-2020 – Present Assistant Professor
08/2017 – 08/2020
 BA (Biology)

University of ChB6.696 0 TJ0 Tc 0 Tw -26.761 -1.152 Td(10.)-10.9 (1093/)-4.6 (i)17.2 (o)21.7 (b/)-4.6 (o)2

10. Crofts, S.B., Neenan, J. M., Scheyer, T. M., and Summers, S. P. “Tooth occlusal morphology in the durophagous marine reptiles, Placodontia (Reptilia, Sauropterygia)” **Paleobiology** (2016) DOI: 10.1017/pab.2016.27
11. 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 *
12. 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 *
13. Crofts, S.B. “Finite Element modeling of occlusal variation in durophagous tooth systems” **Journal of Experimental Biology** 218 (2015): 2705-2711
14. 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: Der Spiegel
15. 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
Media Coverage: National Geographic, Huffington Post, Science News, and Discover
16. Crofts, S.B. & Summers, A.P. “Swimming in the Sahara” **Nature** 472 (2011):177-178
17. 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.

Presentations (most recent 5 of 38; *presenting author, † talk, ‡ poster, ** includes student led research):

1. “What is the point of defensive spines?” *† Physical mechanisms of behavior Symposium SICB 2021 (virtual)
2. “Comparing apples to oranges: Tooth performance of frugivorous piranhas and pacus

Teaching Experience:

Instructor

College of the Holy Cross:

Bio 162 (Fall 2020, Sp 2021) – online; (Fall 2021) – in person

Biomechanics (Fall 2021)

Comparative Vertebrate Anatomy (Sp 2021) – class online, lab in person

Bio 114 Biological Principals: The history of life on Earth (Fall 2020) – online

Other:

COSMOS Marine Biology (2009)

Teaching Assistant

Upper level courses: Comparative Anatomy (NJIT; 2016); Functional Morphology and Ecology of Fishes (FHL; 2014); Marine Invertebrate Zoology (FHL; 2012); Invertebrate Paleontology (UW; 2012); Ichthyology (FHL; 2011 - 2014); Invertebrate Zoology (UW; 2010 - 2015); Limnology and Fresh Water Ecology (UCI; 2008); Vertebrate Structure and Function (UChicago; 2007); Dinosaur Science (UChicago; 2006 - 2007)

Introductory courses: Foundations in Evolution and Systematics (UW; 2011); Bio 180 (UW; 2009 - 2010, 2015); Bio 100 LW (UCI; 2007 - 2008); Bio 94 (UCI; 2008 - 2009)

Mentoring

College of the Holy Cross 2021: Brian Saville: Bending mechanics of sea urchin spines; awarded funds from the Weiss Summer Research Program and Ignite Fund

FHL 2021: Research Experience for Undergraduates project for Ayomikun Akinrinade: Puncture mechanics of sea urchin spines

UIUC 2018-2019: Natalie Przybylo awarded the Spyros Kavouras Memorial Undergraduate Summer Research Award for 2019. Unable to accept award due to conflicting summer plans.

UIUC Fall 2018: IB 299 research project for Sarah Hassan, Grace Lewis, Natalie Przybylo, and Valarie Silvano: Effects of ecotype on the functional morphology of three-spined stickleback (*Gasterosteus aculeatus*) spines.

NJIT 2015-2016: Senior Thesis for Rola Shehata: “Flexibility of Shark Tails: *Carcharhinus obscurus*, *Lamna nasus*”

FHL 2014: Blinks-Research Experience for Undergraduates research project for JJ Lomax: “How tooth arrangement affects crushing ability,” manuscript in prep.

FHL 2012-2013: Co-advised (with Martha Groom; UW, Bothell) independent research Project, Jasleena Grewal: “An ecological lens: How does climate change affect predator-prey relationships?”

Funding & Awards:

Marie Skłodowska-Curie Individual Fellowship 2014 (applied), 2016 (Seal of Excellence, Reserve List)

SVP Jackson School of Geosciences Student Member Travel Grant 2014 (funded)

