

CURRICULUM VITAE

ALEXANDRA C. NAHM KINGSTON

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PROFESSIONAL POSITIONS

- 09/2015 – present **University of South Carolina** Columbia, SC
Postdoctoral Fellow
Advisor: Dr. Daniel I. Speiser
Project Title: Evolutionary origins of chiton shell-eyes: Integrating structure, function, and gene expression within a phylogenetic context
- 04-09/2017 **Belle W. Baruch Institute for Marine & Coastal Sciences**
Georgetown, SC
Visiting Scientist

EDUCATION

- 08/2008 – 09/2015 **University of Maryland, Baltimore County** Baltimore, MD
Doctor of Philosophy: Biological Sciences
Advisor: Dr. Thomas W. Cronin
Thesis Title: A comparative molecular characterization of extraocular photoreceptors
- 08/2004 – 05/2008 **Arizona State University** Tempe, AZ
Bachelor of Science; Major: Biology, *Cum laude*
Undergraduate Research Advisor: Dr. Ronald L. Rutowski

PUBLICATIONS

- Kingston, A.C.N.**, J.D. Sigwart, D.R. Chappell, & D.I. Speiser. (*In revision*) Monster or multiplacophoran: A teratological specimen of the chiton *Acanthopleura granulata* with a valve split into independent and symmetrical halves. *Acta Zoologica*.
- Kingston, A.C.N.**, D.R. Chappell, & D.I. Speiser. (2018) Evidence for spatial vision in *Chiton tuberculatus*, a chiton with eyespots. *Journal of Experimental Biology*. doi:10.1242/jeb.183632.
- Kingston, A.C.N.**, D.R. Chappell, H.V. Miller, S.J. Lee, and D.I. Speiser (2017). Expression of G-proteins in the eyes and parietovisceral ganglion of the bay scallop *Argopecten irradians*. *The Biological Bulletin*: doi:10.1086/694448.
- Kingston, A.C.N.** and T.W. Cronin (2016). Diverse distributions of extraocular opsins in crustaceans, cephalopods and fish. *Integrative and Comparative Biology*. doi:10.1093/icb/icw022.

- Kingston, A.C.N.** and T.W. Cronin (2015). Short- and long-wavelength-sensitive opsins are involved in photoreception both in the retina and throughout the central nervous system of crayfish. *Journal of Comparative Physiology A*: doi: 10.1007/s00359-015-1043-2.
- Kingston, A.C.N.**, T.J. Wardill, R.T. Hanlon, and T.W. Cronin (2015b). An unexpected diversity of extraocular photoreceptor classes in the longfin squid, *Doryteuthis pealeii*. *PLOS ONE*: doi: 10.1371/journal.pone.0135381.
- Kingston, A.C.N.**, A.M. Kuzirian, R.T. Hanlon, and T.W. Cronin (2015a). Visual phototransduction components in cephalopod chromatophores suggest dermal photoreception. *Journal of Experimental Biology*: doi:10.1242/jeb.117945.
- Porter, M.L., **A.C.N. Kingston**, R. McReady, E.G. Cameron, C. Hoffman, L. Suarez, G. Olsen, P.R. Robinson, & T.W. Cronin (2014). Visual pigments, oil droplets, lens and cornea characterization in the endangered whooping crane *Grus americana*. *Journal of Experimental Biology* 217: 3883-3890.
- Pegram, K.V., **A.C. Nahm**, & R.L. Rutowski (2013). Warning color changes in response to food deprivation in the pipevine swallowtail butterfly, *Battus philenor*. *Journal of Insect Science* 13:1-16.
- Rayjyaguru P.K., K.V. Pegram, **A.C.N. Kingston** & R.L. Rutowski (2013). Male wing color properties predict the size of nuptial gifts given during mating in the Pipevine Swallowtail butterfly (*Battus philenor*). *Naturwissenschaften* 100: 507-513.
- Rutowski, R.L., **A.C. Nahm**, & J.M. Macedonia (2010). Iridescent hindwing patches in the Pipevine Swallowtail: differences in dorsal and ventral surfaces relate to signal function and context. *Functional Ecology*: doi:10.1111/j.1365-2435.2010.01693.x

AWARDS AND HONORS

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| 2018 | Best Postdoctoral Poster , Discover UofSC, University of South Carolina |
| 2016 | Wolf Dissertation Award , University of Maryland, Baltimore County |
| 2015 | Best Student Oral Paper , Division of Neurobiology, Society for Integrative and Comparative Biology (SICB) |
| 2014 | Best Student Oral Paper , Division of Neurobiology, Society for Integrative and Comparative Biology (SICB) |
| 2013 | Best Poster , Graduate Association of Biological Sciences Symposium, UMBC |
| 2012 | Invited Graduate Student Presenter , Graduate Association of Biological Sciences, UMBC |
| 2007- | SOLUR (School of Life Sciences Undergraduate Research Program) |
| 2008 | Undergraduate Researcher , Arizona State University (supported by HHMI) |

GRANT PROPOSALS FUNDED

- 2017 Visiting Scientist Award, Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina, Baruch Marine Field Laboratory: \$3000
- UofSC Advanced Support Program for Innovative Research Excellence-I (ASPIRE-1, Track IIB for Postdoctoral Scholars): "Co-evolution of complex traits associated with a key innovation: Weaponry, armor, vision, and predator avoidance in the snapping shrimp, *Alpheus heterochaelis*": \$5000

GRANT PROPOSALS SUBMITTED

NSF IOS Neural Systems: Activation: “IOS Preliminary Proposal: Co-evolution of complex traits associated with a key innovation: Weaponry, armor, vision, and predator avoidance in snapping shrimp (Decapoda: Alpheidae)”

Position on grant proposal: I am the Co-PI on this grant.

Contributions to grant proposal: I conceptualized and wrote the majority of this grant.

Rated: HIGH PRIORITY

UofSC Advanced Support Program for Innovative Research Excellence-I (ASPIRE-1, Track IIB for Postdoctoral Scholars): “Co-evolution of complex traits associated with a key innovation: Weaponry, armor, vision, and predator avoidance in the snapping shrimp, *Alpheus heterochaelis*”

L’Oréal USA For Women in Science Fellowship: “Co-evolution of complex traits associated with a key innovation: A comparative comparative study of weaponry, armor, vision, and predator avoidance in snapping shrimp (Decapoda: Alpheidae).

2017 Visiting Scientist Award, Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina, Baruch Marine Field Laboratory

INVITED SEMINARS/SYMPOSIUM PRESENTATIONS

Kingston, A.C.N. (2018) Structure, function, and evolution of sensory systems in marine invertebrates. University of Hawai’i at Mānoa, Honolulu, HI.

Kingston, A.C.N. (2017) Using visual systems in marine invertebrates to ask how and why complex traits evolve. Marine Sciences Seminar Series. University of South Carolina, Columbia, SC.

Kingston, A.C.N., D.R. Chappell, and D.I. Speiser (2017) How and why eyes evolved in chitons. PopBio Seminar Series, Duke University, Durham, NC.

Kingston, A.C.N. (2017) Co-evolution of complex traits associated with a key innovation: Weaponry, armor, vision, and predator avoidance in the snapping shrimp, *Alpheus heterochaelis*. Belle W. Baruch Institute for Marine and Coastal Sciences: Visiting Scientist Lecture. Georgetown, SC.

Kingston, A.C.N. & T.W. Cronin (2016) Dermal and central nervous system opsins in crustaceans, cephalopods, and fish. Society for Integrative and Comparative Biology Annual Meeting, Portland, OR.

Kingston, A.C.N., R.T. Hanlon, and T.W. Cronin (2013) Characterizing light sensors in the skin of squid. National Zoological Park, Smithsonian Institution, Washington DC.

Kingston, A., and T.W. Cronin (2012) Photoreception on the surface: Dermal opsins in cuttlefish, squid and flounder. GABS symposium, UMBC, Baltimore, MD.

SELECTED PRESENTATIONS (2015-present)

Kingston, A.C.N., D.R. Chappell, and D.I. Speiser. (2018) Structural, molecular, and functional complexities of the distributed visual systems of chitons. International Congress for Neuroethology, Brisbane, Australia.

Kingston, A.C.N., L.T. Havens, & D.I. Speiser (2018) Co-evolution of complex traits associated with a key innovation: Weaponry, armor, and vision in the snapping shrimp, *Alpheus heterochaelis*. Discover UofSC, Columbia, SC. (Poster)

Kingston, A.C.N. & D.I. Speiser (2018) Molecular, structural, and functional complexity

of the sensory organs of chitons. Society for Integrative and Comparative Biology Annual Meeting, San Francisco, CA.

- Kingston, A.C.N.** & D.I. Speiser (2017) Decreasing molecular complexity in increasingly complex sensory structures of chitons. Evolution, Portland, OR.
- Kingston, A.C.N.** & D.I. Speiser (2017) Diverse sensory structures in the shell plates of chitons express the molecular components of rhabdomeric phototransduction. Society for Integrative and Comparative Biology Annual Meeting, New Orleans, LA.
- Kingston, A.C.N.** & D.I. Speiser (2016) The eyespots of Genus Chiton are not associated with spatial vision. Society for Integrative and Comparative Biology Southeast Regional Meeting, Durham, NC.
- Kingston, A.C.N.** & T.W. Cronin (2015) Identical opsins in the retina and central nervous system of crayfish, *Procambarus clarkii*. Society for Integrative and Comparative Biology Annual Meeting, West Palm Beach, FL.

TEACHING EXPERIENCE

- 09-11/2018 Guest Lecturer, UofSC, BIOL270: Introduction to Environmental Biology, 3 lectures: Geological Processes, Geological Processes, Environmental Economics, Animal Behavior, Climate Change
- 09/2017 Guest Lecturer, UofSC, BIOL 543: Comparative Physiology: Metabolism and Thermogenesis
- 10/2016 Guest Lecturer, UofSC, BIOL 543: Comparative Physiology: Non-visual Photoreceptors
- 04/2015 Guest Lecturer, UMBC, BIOL 454: Vision Science: Non-visual Photoreceptors
- 01-05/2011 Teaching Assistant, UMBC, Foundations of Biology: Ecology and Evolution
- 08-12/2010 Teaching Assistant, UMBC: Cell Biology Lab
- 01-05/2010 Teaching Assistant, UMBC: Plant Biology Lab
- 08-12/2009 Teaching Assistant, UMBC: Cell Biology Lab

PROFESSIONAL SERVICE

- 01/2016-present** Society for Integrative and Comparative Biology Student and Postdoc Affairs Committee
- 01/2016-present** Society for Integrative and Comparative Biology Division of Neurobiology, Neuroethology, and Sensory Biology Postdoc Representative
- 06/2017- 06/2018** University of South Carolina Postdoctoral Association (PDA) Treasurer

Reviewer: *Tissue and Cell, Integrative and Comparative Biology, Journal of Experimental Marine Biology and Ecology, Journal of Visualized Experiments*

PROFESSIONAL DEVELOPMENT

- Attendee of Aurion/Electron Microscopy Sciences Immunogold Silver Staining workshop (October, 2016)
- Participant in NextProf:Science hosted by the University of Michigan (May, 2016)