

SOLOMON TIN CHI CHAK, PH.D.

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EDUCATION

2011 – 2016 Ph.D. Virginia Institute of Marine Science (VIMS), College of William and Mary
2005 – 2007 M.S. University of Wyoming, Zoology and Physiology
2002 – 2005 B.S. Iowa State University, Biology, with distinction

POSITIONS

2020 – Assistant Professor
SUNY College at Old Westbury, Biological Sciences Department
2021 – Research Associate
Smithsonian Institution, Smithsonian Environmental Research Center
2019 – 2020 Postdoctoral Research Associate
New Jersey Institute of Technology, Department of Biological Sciences
2016 – 2019 Postdoctoral Fellow
Columbia University, Department of Ecology, Evolution, and Environmental Biology

TEACHING

2021 BS2410 Basic Bio Sciences II, BS2411 Basic Bio Sciences II Lab, SUNY Old Westbury
2020 BS3530 Comparative Genomics Lecture & Lab, SUNY Old Westbury

FELLOWSHIP & GRANTS

2021 – 2013 **National Science Foundation**, Computer and Information Science and Engineering Minority-Serving Institutions Research Expansion Program (CISE-MSI). Co-PI with R. Balyan, M Khalefa, K Poon, S Rayana. Title: StEM: Stimulate, Engage and Motivate student research by enhancing the research capacity (Award #: 2131052, \$299,498)
2016 – 2019 **Life Sciences Research Foundation (LSRF)** Fellowship (\$180,000)
2014 – 2015 VIMS Student Research Grant, Virginia Institute of Marine Science (\$1,500)
2013 – 2014 Lerner Gray Memorial Fund, American Museum of Natural History (\$1,000)
2013 – 2014 STRI Short-term Fellowship, Smithsonian Tropical Research Institute (\$1,500)
2013 – 2014 VIMS GSA Mini-Grant, VIMS Graduate Student Association (\$1,000)
2012 – 2013 Grants-in-Aid of Research, Sigma Xi (\$600)
2012 – 2013 Lerner Gray Memorial Fund, American Museum of Natural History (\$2,000)
2012 – 2013 PADI Foundation Grant, PADI Foundation (\$3,000)
2012 – 2013 VIMS Student Research Grant, Virginia Institute of Marine Science (\$3,200)

MENTORING

2021 Amina Sher, Ariba Islam, Austin Yong, Joel Philip, Nichola Applewhaite, and Nicole Vasquez, SUNY Old Westbury
2020 Aaron Abizadeh, Inayah Burton, and Shanzay Khan, SUNY Old Westbury
2019 Andre Pugliese, New Jersey Institute of Technology
2016 Zhaleh Mahootian, Bronx High School of Science & Columbia University
2016 David Hugo, VA Governor's School Marine Science Apprenticeship Program, VIMS
2013 Sally Bornbusch, Mary Chang, and Danielle Hall, College of William and Mary & VIMS

HONORS & AWARDS

2017	Virginia Institute of Marine Science (VIMS) best student PhD paper
2016	VIMS GK-12 Short Trust Fellowship
2015	International Student Opportunity Scholarship, College of William and Mary
2015, 2014	Dean's Fellowship, School of Marine Science, VIMS
2014	VIMS Three Minute Thesis (3MT) Competition, Runner-up
2013	H. Brooker Andrews, Jr. Fellowship, VIMS
2011	VIMS Council Fellowship
2005	Phi Beta Kappa, Iowa State University (ISU)
2004	Dean's List for the College of Liberal Arts and Sciences, ISU
2004	Highest 2% Liberal Arts and Sciences Sophomore, ISU

PROFESSIONAL DEVELOPMENT

2021	Lumen Circles: Evidence-based Teaching, Repeat Explorer Workshop, GEP Alumni Workshop, CourseSource Writing Studio
2020	GEP New Faculty Workshop, Pathway Project Training

CONFERENCES

2021	CSHL: The Biology of Genomes, The American Society of Naturalists Virtual Asilomar, SMBE
2018	International Crustacean Congress
2017	Evolution at Columbia & Benthic Ecology Meeting
2016	Evolution Conference
2015	Ecological Society of America Annual Meeting & Benthic Ecology Meeting
2014	2nd International Symposium on Sponge Microbiology & Evolution Conference
2013	Benthic Ecology Meeting

REFeree WORK

Journals: Animal Biology, Biological Bulletin, BMC Ecology and Evolution, Chinese Journal of Oceanology and Limnology, Communications Biology, International Journal of Genomics, Journal of Chemical Ecology, Journal of Crustacean Biology, Journal of Ethology, Journal of Experimental Marine Biology and Ecology, Journal of the Marine Biological Association of the United Kingdom, Marine Biology Research, PLOS ONE, Regional Studies in Marine Science, Zoology

Grants: Research Grants Council, Hong Kong (2018)

INVITED LECTURES

2020	Kennesaw State University, SUNY College at Purchase
2018	Hofstra University
2017	American Museum of Natural History (Metropolitan Society of Natural Historians)
2016	Seattle University, Columbia University (Center for Integrative Animal Behavior)
2015	University of Hong Kong (Swire Institute of Marine Science)

PUBLIC OUTREACH

2017	SciTechNow interview: aired in PBS markets around the U.S.
2016	Virginia Scientists and Educators Alliance Project (high school lesson plan)
2016	VIMS GK-12 Program

PUBLICATIONS - <https://scholar.google.com/citations?user=LIJ73bMAAAAJ&hl=en>

22. Hultgren KM, **Chak STC**, Bjelajac J, Macdonald KS (2021). Correlated evolution of larval development, egg size and genome size across two genera of snapping shrimp. *Journal of Evolutionary Biology* 00:1– 13.
21. **Chak STC**, Harris SE, Hultgren KM, Jeffery NW, Rubenstein DR. (2021) Eusociality in snapping shrimps is associated with larger genomes and an accumulation of transposable elements. **Proceedings of the National Academy of Sciences** 118(24):e2025051118.
20. Ennis CC, Haeffner NN, Keyser CD, Leonard ST, Macdonald-Shedd AC, Savoie AM, Cronin TJ, Veldsman WP, Barden P, **Chak STC**, Baeza JA. (2021) Comparative mitochondrial genomics of sponge-dwelling snapping shrimps in the genus *Synalpheus*: exploring differences between eusocial and non-eusocial species and insights into phylogenetic relationships in caridean shrimps. **Gene**:145624
19. **Chak STC**, Baeza JA, Barden P. (2020) Eusociality shapes convergent patterns of molecular evolution across mitochondrial genomes of snapping shrimps. **Molecular Biology and Evolution** 38:1372–1383
18. **Chak STC**, Harris SE, Duffy JE, Hultgren KM, Rubenstein DR. (2020) Demographic inference provides insights into the extirpation and ecological dominance of eusocial snapping shrimps. *bioRxiv*, 2020.2009.2007.283994
17. **Chak STC**, Barden P, Baeza JA. (2020) The complete mitochondrial genome of the eusocial sponge-dwelling snapping shrimp *Synalpheus microneptunus*. **Scientific Reports** 10: 7744
16. **Chak STC**, Rubenstein DR. (2019) TERAD: Extraction of transposable element composition from RADseq data. **Molecular Ecology Resources** 19: 1681-1688
15. **Chak STC**, Rubenstein DR. (2019) Social transitions in sponge-dwelling snapping shrimp. **Current Opinion in Insect Science** 34: 33-39
14. **Chak STC**, Duffy JE (2019). Crustacean Social Evolution. In: Choe JC (eds) **Encyclopedia of Animal Behavior**, pp 461-650.
13. **Chak STC**, Duffy JE, Hultgren K, Rubenstein DR. (2017). Evolutionary transitions towards eusociality in snapping shrimps. **Nature Ecology & Evolution** 1: 0096.
12. **Chak STC**, Duffy JE. (2017). Crustacean social evolution. In: **Reference Module in Life Sciences**. Elsevier. doi.org/10.1016/B978-0-12-809633-8.01028-1.
11. Jeffery NW, Hultgren K, **Chak STC**, Gregory TR, Rubenstein DR. (2016). Patterns of genome size variation in snapping shrimps. **Genome** 59: 393-402.
10. **Chak STC**, Dumont CP, Kdzis KAA, Yewdall, K (2016). Effectiveness of the removal of coral-eating predator *Acanthaster planci* in Pulau Tioman Marine Park, Malaysia. **Journal of the Marine Biological Association UK** 1-7.
9. **Chak STC**, Rubenstein DR, Duffy JE (2015b). Queen-mediated reproductive suppression in the eusocial shrimp *Synalpheus elizabethae*. **The American Naturalist** 186: 660-668.
8. **Chak STC**, Rubenstein DR, Duffy JE (2015a). Reproductive skew drives patterns of sexual dimorphism in sponge-dwelling snapping shrimps. **Proceedings of the Royal Society B: Biological Sciences** 282: 20150342.
7. **Chak STC**, Bauer R, Thiel M (2015). Social behaviour and recognition in decapod shrimps, with emphasis on the Caridea. In: Laura Aquiloni L, Tricarico E (eds) **Social recognition in invertebrates**. Springer International Publishing, pp 57-84.

6. Lefcheck JS, Buchheister A, Laumann KM, Stratton MA, Sobocinski KL, **Chak STC**, Clardy TR, Reynolds PL, Latour RJ, Duffy JE (2014). Dimensions of biodiversity in Chesapeake Bay demersal fishes: patterns and drivers through space and time. **Ecosphere** 5: art14.
5. Duffy JE, Macdonald III KS, Hultgren KM, **Chak STC** (2013) Decline and local extinction of Caribbean eusocial shrimp. **PloS One** 8: e54637.
4. Dumont CP, Lau DCC, Astudillo JC, Fong KF, **Chak STC**, Qiu JW (2013) Coral bioerosion by the sea urchin *Diadema setosum* in Hong Kong: Susceptibility of different coral species. **Journal of Experimental Marine Biology and Ecology** 441:71-79.
3. Thiel M, **Chak STC**, Dumont CP (2010) Mating behavior of the dancing shrimp *Rhynchocinetes brucei* (DECAPODA: CARIDEA). **Journal of Crustacean Biology** 30: 580-588.
2. Ng W, Leung FCC, **Chak STC**, Slingby G, Williams GA (2010) Temporal genetic variation in populations of the limpet *Cellana grata* from Hong Kong shores. **Marine Biology** 157: 325-337.
1. Andree K, **Chak STC**, et al. (2010) Permanent Genetic Resources added to Molecular Ecology Resources Database 1 April 2010 – 31 May 2010. **Molecular Ecology Resources** 10:1098-1105.