

CURRICULUM VITAE  
**IAN Z.W. CHAN**  
Ph.D. B.Sc.



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**CONTACT INFORMATION**

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**EDUCATION**

**Ph.D.** 2018. Sensory & Behavioural Ecology. National University of Singapore, Singapore (NUS).

- Thesis: “*Defining and quantifying animal colour patterns*?”. Formulated a definition for colour patterns; wrote and implemented software for measuring animal colour patterns (see: [ianzwchan.com/my-research/pat-geom/](http://ianzwchan.com/my-research/pat-geom/)).
- Marine Ecology: experienced in SCUBA-based and rocky shore experiments on fish behaviour, coral-macroalgal interactions and seawall biodiversity.

**B.Sc.** 2014. Double Major in Life Sciences (Environmental Biology) & Business Management. NUS.

- Honours Thesis: “*Morphological Patterns in Animals: Definition, Measurement and a Novel Application of the Mantel Test*”.
- 1<sup>st</sup> Class Honours, F&N Book Prize, Dean’s List (twice).

**Dip.** 2006. Biotechnology (Biomolecular Sciences). Temasek Polytechnic, Singapore.

- Merit Award, Bronze Medal, CASE Prize, Honours List (all years).

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**RESEARCH POSITIONS**

**Since 2019: Research Fellow cum Grant Manager.** Evolutionary Development Lab, NUS.

- Phylogenetic analysis: ancestral character reconstruction of butterfly colours.
- Microstructure analysis: butterfly scale analysis using SEM and Raman spectroscopy.
- Gene function analysis: gene knockouts using CRISPR-Cas9.
- Grant management: coordinating 4 labs from NUS and SUTD on a multi-million-dollar NRF grant.

**2018–2019: Research Fellow.** Experimental Marine Ecology Lab, NUS.

- Animal behavioural studies: crab signalling.

**2005–2006: Research Intern.** University of Auckland, New Zealand.

- Cell biology: characterised bacterial growth properties to improve the activated sludge process.

**2004–2005: Research Intern.** Temasek Polytechnic, Singapore.

- Microbiology: protein extraction, purification and binding assays for a bacterial diagnostic kit.

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**TEACHING & MENTORING**

**2020–2021: Research Supervisor,** Science Research Programme, NUS. Supervised four Junior College students.

**2020: Research Supervisor.** Supervised an intern from Republic Polytechnic.

**2020: Guest Lecturer.** Directed Studies in Behavioural Ecology (BL5218), NUS.

**2019: Guest Lecturer.** Light & Vision in Animal Communication (LSM4267), NUS.

**2019–2020: Research Supervisor.** Supervised an intern who is now pursuing a Ph.D. at the University of Arkansas.

**2018: Research Mentor.** Aquatic Ecology Research (SP3203), NUS. Mentored four undergraduates.

**2017–2018: Research Mentor.** Mentored an Honours student who moved on to pursue a Ph.D.

**2015: Research Mentor.** Mentored an intern who is now a staff scientist at the German Center for Marine Biodiversity Research.

**2015: Teaching Assistant.** Ecology of Aquatic Environments (LSM3254), NUS. Mentored 17 undergraduates on field trips, guided tours and lab-based research.

- Positive student appraisals (effectiveness score of 4.39/5) and feedback, e.g.: ‘*clear instructions and help [...] while facilitating the thinking ability of students*’ and ‘*gives very good feedback*’.

**2014–2015: Teaching Assistant.** Biodiversity (LSM1103), NUS (2 semesters). Taught 250 undergraduates in classes and led 50 undergraduates in guided trips, including lessons on plant biodiversity.

- Positive student appraisals (scores of 4.72/5 and 4.60/5) and feedback, e.g.: ‘*simplifies complicated concepts*’, ‘*engaging and encouraging*’, and ‘*very approachable [...], making every tutorial very enjoyable and exciting*’.

**2014: Teaching Assistant.** Field Studies in Biodiversity (LSM4263), NUS. Mentored a group of eight international students conducting field work in Tioman, Malaysia.

**2013: Teacher.** Change Community Services. Designed curriculum and taught secondary school-level science.

**2011–2014: Coach.** Whizz Kidz Pte. Ltd. Conducted science lessons and camps for children of ages 7 to 13.

## PUBLICATIONS

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### Published

- (6) **Chan I.Z.W.**, Wang W.Y. & Todd P.A. (2020). Facial band colour in the mangrove crab *Parasesarma peninsulare* Shahdadi, Ng & Schubart, 2018 plays a role in mate recognition. **Estuarine, Coastal and Shelf Science**, 248: 106721.
- (5) **Chan I.Z.W.**<sup>1</sup>, Rafi F.Z.<sup>1</sup> & Monteiro A. (2019). Interacting effects of eyespot number and ultraviolet reflectivity on predation risk in *Bicyclus anynana* (Lepidoptera: Nymphalidae). **Journal of Insect Science**, 19(6): 19.
- (4) Lim A.Y.H.<sup>1</sup>, **Chan I.Z.W.**<sup>1</sup>, Carrasco L.R. & Todd P.A. (2019). Aposematism in pink warty sea cucumbers: independent effects of chromatic and achromatic cues. **Marine Ecology Progress Series**, 631: 157–164.
- (3) **Chan I.Z.W.**, Stevens M. & Todd P.A. (2019). PAT-GEOM: a software package for the analysis of animal colour pattern. **Methods in Ecology and Evolution**, 10(4): 591–600.
- (2) **Chan I.Z.W.**, Chang J.J.M, Huang D. & Todd P.A. (2018). Colour pattern measurements successfully differentiate two Onchidiidae Rafinesque, 1815 species. **Marine Biodiversity**, 49(4): 1743–1750.
- (1) **Chan I.Z.W.**, Stevens M. & Todd P.A. (2016). Quantifying shell pattern and colour polymorphism in the button snail *Umbonium vestiarium* (Mollusca: Gastropoda: Trochacea) and comparing morph frequencies between two populations using the Mantel test. **Raffles Bulletin of Zoology**, Supplement No. 32: 22–32.

### Submitted

- (1) **Chan I.Z.W.**<sup>1</sup>, Ngan Z.C.<sup>1</sup>, Naing L., Lee Y., V Gowri & Monteiro A. (in review). Predation explains asymmetric eyespot distribution across wings of nymphalid butterflies. Minor Revisions with **Proceedings of the Royal Society: B**.
- (2) Bauman A., Dunshea G., Fong J., **Chan I.Z.W.**, Todd P.A & Hoey A. (in review). Predator avoidance influences herbivore foraging behaviour. Minor Revisions with **Functional Ecology**.
- (3) Todd P.A.<sup>1</sup>, **Chan I.Z.W.**<sup>1</sup>, Wang W.Y., Boh Z., Soh H.S. & Huang H. (in review). Nature's headlamps: a unique light-focusing structure in *Parasesarma* de Man, 1895 mangrove crabs. Submitted to **Current Biology**.

<sup>1</sup>Co-first authors

## FUNDING

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### Awarded

**2020: Science Research Programme**, Singapore Ministry of Education. PI of project. Awarded S\$1,000.

**2015–2018: Academic Research Fund Tier 1 Grant**, Singapore Ministry of Education (PI: Prof Peter A. Todd). Co-writer of grant proposal. Awarded S\$128,800.

**2014–2018: President's Graduate Fellow**, NUS. Awarded S\$168,000.

### Submitted

**2021: Teaching Enhancement Grant**, Centre for Development of Teaching and Learning, NUS (application submitted and awaiting decision). Co-PI; initiator and author of grant proposal. Requesting for S\$11,000.

## SELECTED AWARDS & COMMUNITY INVOLVEMENT

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**2018: Best Oral Presentation**, 23<sup>rd</sup> Biological Sciences Graduate Congress, Thailand.

**2017: Chairman of Organising Committee**, 22<sup>nd</sup> Biological Sciences Graduate Congress, NUS.

**2016–2017: President**, Department of Biological Sciences Graduate Students' Society, NUS.

**Since 2015: Volunteer**, Bioensemble singing group. Performed pro bono at various community events, such as scholarship dinners and Lee Kong Chian Natural History Museum funfairs.

**2014: Best Oral Presentation**, 19<sup>th</sup> Biological Sciences Graduate Congress, Singapore.

**Since 2010: Volunteer**, Singapore Women's Association. Assistant in ad-hoc fund-raising events.

**Since 2008: Volunteer**, SEED Ministries Ltd. Organise disaster relief and other aid for orphanages, schools and churches in countries such as India, Nepal, China and Myanmar.

## OTHER SKILLS

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**Languages:** English (native), Mandarin & French (good), Malay & Cantonese (conversational).

**Emergency First Response:** Certification in First Aid, CPR, and AED use.

**SCUBA Diving:** PADI Rescue Diver with over 70 dives and 56 underwater hours.

**Swimming:** Bronze, Survival and Long Distance certifications.

**Kayaking:** One-star certification with experience in overnight sea-kayaking expeditions.