Christopher R. Hemingson

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Professional Appointments

The University of Texas at Austin — Port Aransas, Texas, USA
Stengl-Wyer Postdoctoral Scholar — 2023–2026

I am broadly interested with understanding the processes that create and maintain phenoyptic diversity; specifically organismal coloration. I answer these questions using a mix of evolutionary and ecological studies. I am also interested in understanding how ecosystems are changing visually and what impact this has on the intangible goods and services they provide to humans.

Texas A&M University at Galveston — Galveston, Texas, USA
Assistant Professor - Department of Marine Biology — starting 2026

Education

James Cook University — Townsville, Australia
Ph.D. in Marine Science, *cum laude* - awarded to top 5% of theses worldwide — 2017–2021

- Thesis: *The Colours of Coral Reef Fishes*, Advisors: Dr. David R. Bellwood, Dr. Peter F. Cowman

James Cook University — Townsville, Australia
M.Sc in Marine Biology and Ecology, GPA: 6.42/7.00 — 2015–2016

- Thesis: *Coral reef, seagrass and mangrove fish assemblages: functional traits override bigeographic differences in major marine realms*, Advisor: Dr. David R. Bellwood

Texas A&M University — College Station, Texas
B.S. in Wildlife and Fisheries Sciences, *cum laude*, GPA: 3.55/4.00 — 2010–2014

- Thesis: *A photographic atlas to the early development of the Bullhead Minnow (Pimephales vigilax)*, Advisor: Dr. Kevin W. Conway

Grants & Funding

- **The University of Texas at Austin** — 2023 - 2026
  *S*tengl-Wyer Scholars Program **($237,000)**
- **Lizard Island Reef Research Foundation** — 2025 - 2026
  "Understanding the drivers of diverse coloration on coral reefs and their susceptibility to environmental change" ***($12,930)***
- ***University of Texas at Austin Marine Science Institute*** — *2024*
  Travel Award ***($1,000)***
- ***National Science Foundation*** — *2023 - 2024*
  Postgraduate Research Fellowship in Biology ***(awarded - declined) ($130,000)***
- ***James Cook University*** — *2017 - 2021*
  Postgraduate Research Scholarship - PhD ***($170,000)***
- ***James Cook University*** — *2019*
  Competitive Research Training Grant ***($2,300)***
- ***James Cook University*** — *2017*
  Higher Degree by Research Enhancement Scheme ***($385)***

Scientific Publications

Alisa, C., Razak, T., Graham, N., **Hemingson**, **C.**, Mouillot, D., Mouquet, N., Subhan, B., Zamani, N., & Lamont, T. (n.d.). Quantifying the aesthetic value of restored coral reefs [**Note: under review**]. *Scientific Reports*.

Fakan, E., Dubuc, A., McCormick, M., **Hemingson**, **C.**, & Hoey, A. (n.d.). Habitat degradation has species-specific effects on the stress response of coral reef fishes [**Note: under review**]. *JEMBE*.

Hemingson, **C.**, Cipolla, K., Rivera-Higueras, M., Marconi, C., Ortega, R., Souza, P., Rasher, D., Joyce, K., Evans, K., Casey, J., & Brandl, S. (n.d.). Evolutionary adn ecological predictors of vertebrate coloration in Earth's most colorful marine ecosystem [**Note: under review**]. *PNAS*.

Hemingson, **C. R.**, Cowman, P., & Bellwood, D. R. (2024). Analysing biological colour patterns from digital images: an introduction to the current toolbox. *Ecology and Evolution*.

Huertas, V., & **Hemingson**, **C. R.** (2024). The morphology and colouration of rabbitfishes [**Note: in production**]. In *The Biology of Rabbitfishes*.

Matthews, S., Williamson, D., Beeden, R., Emslie, M., Abom, R., Baker, J., Bonin, M., Ceccarelli, D., Fernandes, L., **Hemingson**, **C.**, Kerrigan, B., Lang, B., Pratchett, M., Schultz, D., Tracey, D., Wilmes, J., & Quincey, R. (2024). Protecting Great Barrier Reef resilience through effective management of Crown-of-Thorns Starfish outbreaks. *PLoS One*.

Tebbett, S. B., Schlaefer, J. A., Bowden, C. L., Collins, W. P., **Hemingson**, **C. R.**, Ling, S., Morais, J., Morais, R. A., Siqueira, A., Streit, R., Swan, S., & Bellwood, D. R. (2023). Bio-physical determinants of sediment accumulation on an offshore coral reef: A snapshot study. *Science of the Total Environment*, *895*, 165188.

Hemingson, **C.**, Mihalitsis, M., & Bellwood, D. (2022). Are fish communities on coral reefs becoming less colourful? *Global Change Biology*, *28*(10), 3321–3332.

Schlaefer, J. A., Tebbett, S. B., Bowden, C. L., Collins, W. P., Duce, S., **Hemingson**, **C. R.**, Huertas, V., Mihalitsis, M., Morais, J., Morais, R. A., Siqueira, A., Streit, R., Swan, S., Valenzuela, J., & Bellwood, D. R. (2022). A snapshot of sediment dynamics on an inshore coral reef. *Marine Enviornmental Research*, *181*, 105763.

Bellwood, D., **Hemingson**, **C.**, & Tebbett, S. (2021). Subconscious bias in coral reef fish studies. *Bioscience*, *70*(6), 621–627.

Hemingson, **C.**, Siqueira, A., Cowman, P., & Bellwood, D. (2021). Drivers of eyespot evolution in coral reef fishes. *Evolution*, *75*(4), 903–914.

Hodge, J., Song, Y., Wightman, M., Milkey, A., Tran, B., Stajner, A., Roberts, A., **Hemingson**, **C.**, Wainwright, P., & Price, S. (2021). Constraints on the ecomorphological convergence of zooplanktivorous butterflyfishes. *Integrative Organismal Biology*, *3*(1), obab014.

Mihalitsis, M., **Hemingson**, **C.**, Goatley, C., & Bellwood, D. (2021). The role of fishes as food: A functional perspective on predator-prey interactions. *Functional Ecology*, *35*(5), 1109–1119.

Streit, R., **Hemingson**, **C.**, Cumming, G., & Bellwood, D. (2021). How flexible are habitat specialists? Short-term space use in obligate coral-dwelling damselfishes. *Reviews in Fish Biology and Fisheries*, *31*(2), 381–398.

Hemingson, **C.**, & Bellwood, D. (2020). Greater multihabitat use in Caribbean fishes when compared to their Great Barrier Reef counterparts. *Estuarine, Coastal and Shelf Science*, *239*, 106748.

Hemingson, **C.**, Cowman, P., & Bellwood, D. (2020). Body size determines eyespot size and presence in coral reef fishes. *Ecology and Evolution*, *10*, 8144–8152.

Hemingson, **C.**, Cowman, P., Hodge, J., & Bellwood, D. (2019). "Colour pattern divergence in reef fish species is rapid and driven by both range overlap and range symmetry". *Ecology Letters*, *22*(1), 190–199.

Hemingson, **C.**, & Bellwood, D. (2018). Biogeographic patterns in major marine realms: function not taxonomy unites fish assemblages in reef, seagrass and mangrove systems. *Ecography*, *41*(1), 174–182.

Teaching Experience

University of Texas Marine Science Institute Port Aransas, Texas, USA
Marine Community Ecology: Co-Convener 2025

- co-convene undergraduate/graduate level course covering marine community dynamics
- lecture on topics related to multivariate statistics, community assembly, etc
- assist with the development and teaching of lab practicals based in R
- construct laboratory exercises merging field data, with lab exploration and R analyses

University of Texas Marine Science Institute Port Aransas, Texas, USA
R Hours Instructor 2024

- coordinated weekly meetings aimed at increasing proficiency in R and statistics
- lead attendants through programming exercises while encouraging participation
- introduced various statistics and programming concepts through powerpoint presentations

Texas A&M University, Corpus Christi Corpus Christi, Texas, USA
Guest Lecture 2024

- special topic lecture discussing my research and career path for the course: Science Communications

James Cook University Townsville, Australia
Guest Lecture 2018 - 2021

- special topic lecture covering coloration on coral reefs for the course: The Ecology and Evolution of Reef Fishes

James Cook University Townsville, Australia
Laboratory Teaching Assistant 2016 - 2020

- Assisted with the instruction of three course's laboratory components:
  - *Evolution and Biogeography of Marine Organisms - MB5070*
  - *Evolution and Ecology of Coral Reef Fishes - MB5160*
  - *Biological Oceanography - MB3050*
- lead labs of 50+ students through various exercises ranging from exploring fish morphology to mapping character evolution on phylogenetic trees
- Helped grade various students laboratory assignments and provide feedback
- Met with students to provide one-on-one tutoring as needed to supplement the in-class exercises

Student Mentoring

- **Megan Do - Semester-by-the-Sea, Bachelors of Science (B.S.)** 2023 - 2024
  *T*he University of Texas at Austin - Port Aransas, USA
  Project: *"Investigating the drivers of diversification in sponge-dwelling cryptobenthic reef fish"*
- **Norbert Rapolthy - Masters of Science (M.Sc.)** 2023 - 2024
  *J*ames Cook University - Townsville, Australia
  Thesis: *"Investigating how habitat composition and colour moderate settlement preferences by damselfishes"*
- **Gita Alisa - Masters of Science (M.Sc.)** 2023 - 2024
  *I*PB University - Bogor, Indonesia
  Thesis: *"Quantifying the aesthetic value of restored coral reefs"*
- **Thiago M. J. Fuiza - Masters of Science (M.S.)** 2018 - 2020
  *U*niversidade Federal de Santa Catarina - Florianopolis, Brazil
  Thesis: *"Geographic distribution driving color pattern divergence in reef fishes"*

Professional Experience & Employment

Great Barrier Reef Marine Park Authority Townsville, Queensland, Australia
Science Writer, Reef Interventions Team - Australian Public Servant level 5 2022

- Handle and analyzed large coral cover and culling datasets spanning 40 years.
- Lead the drafting of manuscripts for submission to peer reviewed scientific journals (published in PLoS One)
- Aid in policy and procedure decision making to improve the effectiveness of on-water operations.

INLOC Group Cairns, Queensland, Australia
Team Leader- Crown-of-Thorns Starfish Control Program 2021-2022

- Partake on 10-day voyages which aimed to systematically measure and control Crown-of-Thorns-Starfish (COTS) populations on the Great Barrier Reef.
- Supervised all actions and ensured the safety of a small team (7 people).
- Aided in data curation, processing, entry, and quality control.
- Trained new employees and conducted formal evaluations of employee performance.

James Cook University Townsville, Queensland, Australia
Research Assistant 2017 - 2021

- Processed and organized large amounts of raw data (fish counts, fish images)
- Analyzed, interpreted, and drafted manuscripts for submission to peer-reviewed journals
- Crafted press releases to accompany publications that discuss in layman's terms the research conducted

Scientific Review

- **Reviewer for Scientific Journals**
  - Global Ecology and Biogeography, Methods in Ecology and Evolution, Ecosystems, Proceedings of the Royal Society B, Journal of Biogeography, PLoS One, Ecology and Evolution, Marine Ecology Progress Series, Journal of Fish Biology, Regional Studies in Marine Science.
- **Reviewer for Doctoral Student Research Proposals**
  - Reviewed 2x Doctoral Research Proposals - James Cook University
- **Reviewer for the Australian Society for Fish Biology Michael Hall Innovation Award**
  - Reviewed graduate student applications for research funding up to 3,000

Committees & Services

- **Invited/Hosted a Departmental Seminar Speaker - University of Texas - Austin, TX** 2024
  - Invited and hosted guest departmental seminar speaker Dr. Jonathan Lefcheck
  - Coordinated his visit including scheduling meetings with faculty and students
  - Coordinated a workshop where he presented on Structural Equation Models
- **Special Session Convener - Indo Pacific Fish Conference 2023 - Auckland NZ** 2023
  - Convened a special session on fish traits and functions while ensuring a diverse representation of participants.
  - Introduced and host speakers during concurrent sessions and kept time to ensure the session ran smoothly.
  - Facilitated questions from audience members and final discussion from all speakers after talks.
- **Student Committee Member -ARC Centre of Excellence for Coral Reef Studies** 2019 - 2021
  - Invited speakers to present their experience and skills suitable for career-building
  - Planned team-building events to strengthen the student cohort
  - Coordinated an intensive 2-week stats workshops (valued > $12,500 USD)

Select Invited Talks & Conference Presentations

- *Exploring the Evolutionary and Ecological Drivers of Fish Coloration on Coral Reefs*, Texas A&M University, College Station, Texas, USA. 2024. **invited departmental seminar**
- *Studying ecosystems and communities through a colorful lens*, University of Texas Marine Science Institute, Port Aransas, Texas, USA. 2024. **invited lecture**
- *Dissecting the evolutionary and ecological drivers of coloration in a Carribbean coral reef fish assemblage*, Benthic Ecology Meeting, Charleston, SC, USA. 2024.
- *Dissecting the evolutionary and ecological drivers of reef fish coloration (and a few other things)*, Texas A&M University Corpus Christi, Corpus Christi, Texas, USA. 2024. **invited lecture**
- *Using coloration as a trait to study communities and ecosystems: a case study on coral reef fishes*, Indo-Pacfic Fish Conference, Auckland, New Zealand. 2023. **invited lecture**
- *Are fish communities on coral reefs becoming less colorful? The importance of structural refuge*, New South Wales Government, New South Wales, Australia. 2023. **invited Government talk**
- *What can tiny fishes tell us about the appearance of communities on coral reefs?*, Integrative Biology Population Biology Seminar, University of Texas, Austin, USA. 2023. **invited lecture**
- *Are fish communities on coral reefs becoming less colourful?*, Australian Society for Fish Biology, Gold Coast, Australia. 2022.
- *Evolutionary and ecological relationships of eyespots in coral reef fishes*, Australian Society for Fish Biology, Canberra, Australia. 2019. **Gilbert P. Whitley Award** for outstanding student presentation
- *Biogeographic patterns in major marine realms* Indo-Pacific Fish Conference, Tahiti, French Polynesia. 2017.
- *Biogeographic patterns in major marine realms* Australian Coral Reef Society, Townsville, Australia. 2017. **Outstanding Student Presentation Award**

Media & Outreach

- **The South Jetty Newspaper.** *"Getting "hands on" to help control pests on coral reefs".* Public outreach article about the manual control of pest organisms to maintain ecosystem health. 2024.
- **The South Jetty Newspaper.** *"Collecting small fishes using a unique method: a reef fish easter egg hunt".* Article for the local newspaper explaining my lab groups research for a general audience. 2023.
- **Global Change Biology Paper.** Paper featured in over 35 news articles, in 15 nations. Received an Altmetric score of 365 placing it in the top 0.1% of all papers published for outreach and uptake. 2022.
- **Colours, Patterns, and Coral Reef Fishes.** *"Reef in Review: The Magazine of the Australian Coral Reef Society".* 2019.
- **The Reef Fish Ecology and Evolution Lab.** *"Australian Coral Reef Society Annual Newsletter".* 2018.
- **Pint of Science Festival.** *"A Taste of Fish Tails: Interesting stories about the most diverse group of vertebrates on the planet".* Presenataion to a general audience showcasing the research conducted in my PhD lab group. Townsville Brewery, Townsville, Australia. 2019.
- **WIN News Townsville.** Interviewed for local news company discussing the findings of my 1st PhD chapter. December 2018.

Career Achievements & Awards

- **cum laude** 2022
  awarded to <5% of doctoral these published worldwide that demonstrate exceptional quality
- **Gilbert P. Whitley Award (Senior)** 2019
  for outstanding student presentation at the Australian Society for Fish Fish Biology. Canberra, Australia.
- **People's Choice Award** 2018
  for poster presentation at the Australian Society for Fish Fish Biology. Melbourne, Australia.
- **Outstanding Student Presentation** 2017
  for outstanding student presentation at the Australian Coral Reef Society conference. Townsville, Australia.
- **Deans Letter of Commendation** 2016 - 2017
  Master's of Science - James Cook University. Townsville, Australia.

References

- **Dr. Simon J. Brandl** - Assistant Professor, the University of Texas at Austin (USA)
  - **Email:** simon.brandl@austin.utexas.edu
  - **Phone:** +1 361-251-5232
- **Dr. David R. Bellwood** - Distinguished Professor, James Cook University (Australia)
  - **Email:** david.bellwood@jcu.edu.au
  - **Phone:** +61 0747 814 447
- **Dr. Kevin W. Conway** - Associate Professor and Curator of Fishes, Texas AM University (USA)
  - **Email:** kevin.conway@ag.tamu.edu
  - **Phone:** +1 979-862-5381