

# Caroline M. Dong

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Evolutionary Biology  
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## RESEARCH INTERESTS

Speciation, hybridization, phenotype, coloration, genomics, population genetics.

## ACADEMIC POSITIONS

### POST-DOCTORAL FELLOW

OCTOBER 2020 – PRESENT

Tulane University, Louisiana USA

- Investigating local adaptation and speciation in the *Mimulus guttatus* species complex using *M. guttatus* and *M. laciniatus*.
- Advisor: Dr. Kathleen G. Ferris

## EDUCATION

### PHD BIOLOGY

2016 – 2020

The University of Melbourne, Melbourne, Victoria AUS

Dissertation: Speciation and secondary contact in a colourful agamid, *Ctenophorus decresii*

Advisors: Dr. Devi Stuart-Fox, Dr. Adnan Moussalli, Dr. Claire A. McLean

### MSC BIOLOGY

2012 – 2015

The University of Hawaii Manoa, Honolulu, Hawaii USA

Thesis: Origins of softshell turtles in Hawaii with implications for conservation

Advisor: Dr. Robert C. Thomson

### BSC BIOLOGY

2008 – 2012

Saint Louis University, St. Louis, Missouri USA

Senior thesis: Buoyancy control in cold-submerged painted turtles (*Chrysemys picta*)

Advisor: Dr. Daniel E. Warren

## PEER-REVIEWED PUBLICATIONS

Franklin AM, Rankin KJ, Ospina-Rozo L, Medina I, Garcia J, Ng L, **Dong CM**, Wang L-Y, Aulsebrook A, Stuart-Fox D. 2021. Cracks in the mirror hypothesis: high specularity does not reduce detection or predation risk. *Functional Ecology*. 36(1):239-248. doi: 10.1111/1365-2435.13963.

Van Dyke JU, Thompson MB, Burrridge CP, Castelli MA, Clulow S, Dissanayake DSB, **Dong CM**, Doody JS, Edwards DL, Ezaz T, Friesen CR, Gardner MG, Georges A, Higgie M, Hill PL, Holleley C, Hoops D, Hoskin CJ, Merry DL, Riley JL, Wapstra E, While GM, Whiteley SL, Whiting M, Zozaya SM, Whittington CM. 2021. Australian lizards are outstanding models for reproductive biology research. *Australian Journal of Zoology*. 68:168–199. doi: 10.1071/ZO21017.

- Dong CM**, Johnston GR, Stuart-Fox D, Moussalli A, Rankin KJ, McLean CA. 2021. Elevation of divergent color polymorphic and monomorphic lizard lineages (Squamata: Agamidae) to species level. *Ichthyology and Herpetology* (formerly *Copeia*). 109(1):43–54. doi: 10.1643/h2020064
- Dong CM**, Rankin KJ, McLean CA, Stuart-Fox D. 2021. Maternal reproductive output and F1 hybrid fitness may influence contact zone dynamics. *Journal of Evolutionary Biology*. 34(4):680–694. doi: 10.1111/jeb.13772
- Stuart-Fox D, Aulsebrook A, Rankin KJ, **Dong CM**, McLean CA. 2021. Convergence and divergence in lizard colour polymorphisms. *Biological Reviews*. 96(1):289–309. doi: 10.1111/brv.12656
- McLean CA, Bartle RA, **Dong CM**, Rankin KJ, Stuart-Fox D. 2020. Divergent male and female mate preferences do not explain incipient speciation between lizard lineages. *Current Zoology*. 0(0):1–8. doi: 10.1093/cz/zoaa010
- Dong CM**, McLean CA, Moussalli A, Stuart-Fox DM. 2019. Conserved visual sensitivities across divergent lizard lineages that differ in an ultraviolet sexual signal. *Ecology and Evolution*. 9(20):11824–11832. doi: 10.1002/ece3.5686
- Dong CM**, Engstrom TE, Thomson RC. 2016. Origins of softshell turtles in Hawaii with implications for conservation. *Conservation Genetics*. 17(1):207–220. doi: 10.1007/s10592-015-0772-7
- Cantrell EA, **Dong CM**, Hill CA, Warren DE. 2014. Buoyancy control in cold-submerged painted turtles: implications for overwintering physiology and behavior. *Herpetologica*. 70(4): 388–394. doi: 10.1655/herpetologica-d-14-00016

#### MANUSCRIPTS IN PREPARATION

**Dong CM**, McLean CA, Elliott A, Moussalli A, Stuart-Fox D. When polymorphism and monomorphism meet: discordant genomic and phenotypic clines across a lizard contact zone. *bioRxiv*: <https://www.biorxiv.org/content/10.1101/840678v2>

#### GRANTS & AWARDS

(UM = University of Melbourne, UHM = University of Hawaii Manoa)

2022	\$500 USD	Tulane Postdoctoral Fellow Travel Award
2020	\$5,000 AUD	UM Faculty of Science Postgraduate Writing-Up Award
2018	\$1,700 AUD	Holsworth Wildlife Research Endowment
2018	\$1,000 AUD	UM Animal Welfare Excellence Award
2018	\$1,500 AUD	UM Science Abroad Travelling Scholarship
2018	\$1,500 AUD	UM BioSciences Travel Grant
2017	\$6,000 AUD	Holsworth Wildlife Research Endowment
2017	\$886 AUD	UM Drummond Travel Award
2017	\$800 USD	Am. Society of Ichthyologists & Herpetologists, Travel Award
2017	\$500 USD	Society for the Study of Amphibians & Reptiles, Travel Award
2016 – 2019	\$30,000 AUD per annum	Melbourne International Research Fellowship
2015	\$324 USD	UHM Graduate Student Organization Travel Award
2014	\$5,035 USD	UHM Hampton and Meredith Carson Fellowship
2013 – 2015	\$22,257 USD per annum	UHM Teaching Assistantship

2012      \$22,257 USD      UHM Research Assistantship  
per annum

## RESEARCH EXPERIENCE

### RESEARCH ASSISTANT

MARCH – OCTOBER 2020

The University of Melbourne, Victoria AUS

- Collecting genetic, geographic, and morphological data on 176 amphibian species from published literature in order to conduct a meta-analysis to examine patterns of population connectivity.
- Advisors: Dr. Iliana Medina, Dr. Devi Stuart-Fox

### DESERT TORTOISE SURVEY MONITOR

AUGUST – NOVEMBER 2015

The Great Basin Institute, Nevada, USA

- Performed line-distance sampling and mark-recapture protocol to survey for desert tortoises (*Gopherus agassizii*) in the Mojave Desert.

### UNDERGRADUATE FIELD RESEARCH ASSISTANT

JUNE 2011

Southwestern Research Station, Arizona, USA

- Assisted in the collection of soil and vegetation data to assess impacts of cattle grazing.
- Advisor: Dr. Ginger R.H. Allington

### W.S. BARNICKLE INTERNSHIP IN NATURAL SCIENCES

2010 – 2011

Saint Louis University, Missouri, USA

- Collected morphological data from freshwater fish specimens as part of the NSF Cypriniformes Tree of Life project.
- Advisor: Dr. Richard L. Mayden

## TEACHING EXPERIENCE

### GRADUATE TEACHING ASSISTANT, The University of Melbourne

2016 – 2020

- ZOOL 30007: Experimental Animal Behaviour (2 semesters)
- ZOOL 20006: Comparative Animal Physiology (3 semesters)
- ZOOL 20004: Australian Wildlife Biology (1 semester)
- EVSC 20004: Introduction to Marine Environments (2 semesters)
- ECOL 20003: Ecology (3 semesters)
- BIOL 10005: Genetics and the Evolution of Life (4 semesters)
- BIOL 10004: Biology of Cells and Organisms (2 semesters)
- BIOL 10003: Genes and Environment (4 semesters)
- BIOL 10002: Biomolecules and Cells (2 semesters)

## TEACHING ASSOCIATE, Gene Technology Access Centre

2016 – 2020

- Guided high school students through laboratory exercises to teach theory and applications of cell and molecular biology, including extended off-site outreach to rural elementary schools.

## GRADUATE TEACHING ASSISTANT, The University of Hawaii Manoa

2012 – 2015

- ZOOL 480: Evolution (1 semester)
- ZOOL 430: Animal Physiology (1 semester)
- BIOL 275: Cell and Molecular Biology (3 semesters)
- BIOL 265: Ecology and Evolution (1 semester)

## INVITED TALKS

- Seminar. Department of Biology. University of Louisiana at Lafayette. 3 November 2022.
- Guest lecture. EBIO 3080 Processes of Evolution. Species and Speciation. Tulane University. 24 March 2022.
- Seminar. Department of Ecology and Evolutionary Biology. Tulane University. Speciation and hybridization between colourful lizards. 19 Feb 2021.

## SELECTED PRESENTATIONS & POSTERS

**Dong CM**, Ferris KG. June 2022. Effect of gene flow on the genetic architecture of ultraviolet floral coloration in monkeyflowers. *Evolution meeting*. Oral talk. Cleveland, OH USA.

Murchison WA, **Dong CM**, Ferris KG. June 2022. Genetic analysis of UV pattern and red spotting using sympatric species of *Mimulus*. *Evolution meeting*. Poster. Cleveland, OH USA.

Aponte Rolón B, **Dong CM**, Ferris KG, Van Bael S. May 2022. The Influence of host genotype and leaf trait plasticity on foliar fungal endophytes of yellow monkeyflowers in Yosemite National Park, CA. Yosemite Symbiosis Workshop. CA, USA.

**Dong CM**, McLean CA, Elliott A, Moussalli A, Stuart-Fox D. November 2019. When polymorphism and monomorphism meet: secondary contact between divergent lizard lineages. *Australasian Evolution Society*. Oral talk. Sydney, NSW, AUS. \*Honorable mention

**Dong CM**, McLean CA, Moussalli A, Stuart-Fox D. December 2018. Correspondence of genomic and phenotypic lines across a contact zone of the tawny dragon, *Ctenophorus decresii*. *Joint Meeting of ASH and SRARNZ*. Oral talk. Kindilan, QLD AUS.

**Dong CM**, McLean CA, Moussalli A, Stuart-Fox D. July 2018. Genomic and phenotypic patterns across a contact zone of colorful agamids. *Joint Meeting of Ichthyologists and Herpetologists*. Oral talk. Rochester, NY USA.

**Dong CM**, McLean CA, Moussalli A, Stuart-Fox D. July 2017. Asymmetrical introgression of throat coloration across a contact zone of Australian agamids. *Joint Meeting of Ichthyologists and Herpetologists*. Oral talk. Austin, TX USA. \*Honorable mention

**Dong CM**, McLean CA, Moussalli A, Stuart-Fox D. June 2017. Colour vision and opsin expression variation in an agamid, *Ctenophorus decresii*. *Australian Society of Herpetologists*. Oral talk. Fairbridge, WA AUS.

**Dong CM**, Engstrom TE, Thomson RC. July 2015. Origins of softshell turtles in Hawaii with implications for conservation. *Society for the Study of Amphibians and Reptiles*. Oral talk. Lawrence, KS USA.

**Dong CM**, Engstrom TE, Thomson RC. April 2015. Origins of softshell turtles in Hawaii with implications for conservation. *Albert Tester Memorial Symposium*. Oral talk. Honolulu, HI USA.

**Dong CM**, Warren DE. April 2012. The effects of depth and temperature acclimatization on buoyancy control in the painted turtle (*Chrysemys picta*). *Saint Louis University Undergraduate Research Symposium*. Poster. St. Louis, MO USA.

## COMMUNITY ENGAGEMENT

- May 2022 **Yosemite Conservancy Nature Talk**  
Led public on nature walk and art activity to examine functional significance of leaf shape.
- Mar. 2022 **Strawberry DNA extraction, Center for K-12 STEM Education at Tulane**  
Extracted DNA from strawberries with students in grades 5-7.
- Feb. 2022 **Greater New Orleans Science and Engineering Fair Judge**  
Interviewed students and evaluated high school senior science projects in the plant sciences category.
- Jan. 2021 **Unbe-leaf-able program, Center for K-12 STEM Education at Tulane**  
Led students through discussion and art activities to explore leaf shape traits and their function in survival.
- Aug. 2019 **National Science Week, Melbourne Museum**  
Designed and led an interactive table talk on the production, visual perception, and function of coloration for children and families.
- July 2019 **Nocturnal event, Melbourne Museum**  
Designed and led an interactive table talk on the production, visual perception, and function of animal coloration for adults (18+)
- Nov. 2018 **Bioscan surveys, Museums Victoria and Parks Victoria**  
Assisted in the collection of specimen vouchers during herpetology biodiversity field surveys in Anglesea, Victoria.
- June 2018 **Scope TV program, "Reptiles and Amphibians" episode**  
Appeared on a children's science TV show to discuss coloration as a driver of speciation in lizards (Season 4, Episode 52).
- Aug. 2016 **Marian College, Science Projects**  
Assisted students (grade 8) with a science project on river water quality and turbidity.
- Mar. 2015 **Science Alive! festival, Bernice P. Bishop Museum**  
Organized a table with live animals to engage young children about the negative impacts of non-native species.
- April 2015 **Tide Walks event, Mililani-Mauka Elementary School**  
Participated in the annual event which introduced students to the diversity of unique marine life in local tide pools.
- June 2013 **Gene-ius Day program, University of Hawaii Manoa**  
Assisted students (grades 4 – 6) with DNA extractions on strawberries.

## SERVICE

**Journal reviewer:** *Ichthyology and Herpetology* (formerly *Copeia*), *Biological Journal of the Linnean Society*, *Current Zoology*, *Genome Biology and Evolution*, *Behavioral Ecology*, *Animal Behaviour*.