

Dr. Erin C. Powell

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EDUCATION

University of Auckland, Auckland, New Zealand

PhD School of Biological Sciences

Drs. Greg Holwell (main supervisor), Chrissie Painting, Tony Hickey, Glauco Machado
Dissertation: "The evolution and ecology of weapon polymorphic New Zealand harvestmen (Arachnida, Opiliones, Neopilionidae)" 2016–2020.

University of Florida, Gainesville, FL, USA

MSc Entomology and Nematology Department

Drs. Lisa Taylor (supervisor), Christine Miller (committee)
Thesis: "Mud dauber wasps and jumping spiders adopt specialized individual foraging strategies" 2014–2016.

University of Florida, Gainesville, FL, USA

BSc Psychology (major), Entomology and Nematology (minor), *cum laude*, 2011–2014.

RELEVANT RESEARCH AND EMPLOYMENT

Research Scientist, Curator of Coccoidea and Aleyrodidae at the Division of Plant Industry, Florida Department of Agriculture and Consumer Services (July 2021 to present)

Post-doctoral Researcher in Dr. Lisa Taylor's spider behavior, ecology, and evolution lab, Entomology and Nematology Department, University of Florida (January 2020–June 2021).

Research Assistant in Dr. Greg Holwell's behavioral ecology lab, University of Auckland, New Zealand (December 2016–December 2019).

Outreach and Education Coordinator for the Department of Entomology and Nematology, University of Florida (January 2015–August 2016).

Research Assistant in Dr. Lisa Taylor's spider behavior, ecology, and evolution lab, University of Florida (August 2014–November 2016).

Writer for National Plant Diagnostic Network (NPDN/USDA) at the University of Florida (2014).

REFEREED PUBLICATIONS

*Indicates undergraduate authors ^ indicates students under my direct supervision

Somjee, U., **Powell, E.**, Harrison, J. Hickey, A., and C. Painting. (2021). Extreme size variation in a single species of armed weevil sheds light on the relationship between body mass and metabolic rate.

Functional Ecology. 35(10), 2282-2293. <https://doi.org/10.1111/1365-2435.13888>

Press Coverage: The New York Times, SciTech Daily, Phys.org

Cook, C.*, **Powell, E.**, McGraw, K., and L. Taylor. (2021). Sexually dimorphic dorsal coloration in a jumping spider: testing a potential case of sex-specific mimicry. *Royal Society Open Science*. 6(8), 210308. doi.org/10.1098/rsos.210308

Press coverage: The Guardian, New York Post, Phys.org, Insider Voice, Sydney News Today, etc.

Powell, E., Wilmott, N.^, Selleck, C.^, Painting, C., Machado, G., Hickey, A., and G. Holwell. (2021). Leg autotomy in a weapon polymorphic New Zealand harvestman (Arachnida, Opiliones). *Animal Behaviour*. 177, 99-106. doi.org/10.1016/j.anbehav.2021.04.015

Powell, E., Painting C., Hickey A., Machado G., and G. Holwell. (2021). Diet, predators, and defensive behaviors of New Zealand harvestmen (Opiliones: Neopilionidae). *Journal of Arachnology*. 49(1), 122-140. doi.org/10.1636/JoA-S-20-002

Powell, E. and L. Taylor. (2020). Individual differences in responses to aposematic prey in a jumping spider (*Phidippus regius*). *Ethology*. 126(12), 1089–1097. doi.org/10.1111/eth.13089

Powell, E., Painting C., Hickey A., and G. Holwell. (2020). Defining male weapon polymorphism in the New Zealand harvestmen *Forsteropsalis pureora* (Opiliones, Neopilionidae) using traditional and geometric morphometrics. *Biological Journal of the Linnean Society*. 130(2), 395–409. doi.org/10.1093/biolinnean/blaa040

O'Brien, D., Boisseau, R., Duell, M., McCullough, E., **Powell, E.**, Somjee, U., Solie, S., Hickey, A., Holwell, G., Painting, C. and D. Emlen. (2019). Muscle mass drives cost in sexually selected arthropod weapons. 286. *Proceedings of the Royal Society B*. doi.org/10.1098/rspb.2019.1063

Powell E., Cook C.*, Coco J.*, Brock M.*, Holian L.*, and L. Taylor. (2019). Prey color aversions in jumping spiders (*Habronattus brunneus*) differ across populations. *Ethology*. 125(6), 351–361. [doi:10.1111/eth.12859](https://doi.org/10.1111/eth.12859)

Taylor, L., **Powell, E.**, and K. McGraw. (2017). Frequent misdirected courtship in a natural community of colorful *Habronattus* jumping spiders. *PLoS ONE*. 12(4): e0173156. [doi:10.1371/journal.pone.0173156](https://doi.org/10.1371/journal.pone.0173156)

Press coverage: National Geographic, ScienceDaily/UF/IFAS, Live Science, Daily Mail

Powell, E. and L. Taylor (2017). Specialists and generalists coexist within a population of spider-hunting mud dauber wasps. *Behavioral Ecology*. 28(3): 890–898. [doi: 10.1093/beheco/axx050](https://doi.org/10.1093/beheco/axx050)

PUBLICATIONS SUBMITTED

Drafts of manuscripts available upon request.

Powell, E., Painting, C., Machado, G., and G. Holwell. Juvenile leg autotomy predicts weapon morph in the New Zealand harvestman *Forsteropsalis pureora*. *Submitted*.

EXTENSION PUBLICATIONS

*Indicates undergraduate authors ^ indicates students under my direct supervision

Stalcup, K.*^, Taylor, L. and **Powell, E.** (2022). Twin-flagged jumping spider (*Anasaitis canosa*), Featured Creatures. *In press*.

Powell, E. and L. Taylor. (2022). An introduction to some common and charismatic spiders of Florida. *EDIS*. *In press*.

Powell, E. and L. Taylor (2016). The black and yellow mud dauber, *Sceliphron caementarium*, Featured Creatures. http://entnemdept.ufl.edu/creatures/MISC/WASPS/Sceliphron_caementarium.htm

PRESS RELEASES AND MISC. PUBLICATIONS

Powell, E. (2020). Through the Loupe: *Pantopsalis phocator*. *The American Entomologist*. Summer Issue. doi: 10.1093/ae/tmaa022

Powell, E. (2016). UF/IFAS uses wasps to monitor exotic Jorō spider [Press release].
Press coverage: UF/IFAS, Phys.org, Newswise

TEACHING EXPERIENCE

University of Florida

- Guest lectures** on Coccoidea identification for Insect Diagnostics (ENY6942) (2021)
- Course lecturer** for Insect Behavior (ENY3451C) (Fall 2020 semester), guest lectures (2021)
- Guest lecture** in Spider Biology (ENY 4905/ZOO 4926) (2020, 2021, 2022)
- Teaching assistant** for Principles of Nematology (NEM 3002/5002) (2016)
- Teaching assistant** for Principles of Entomology (ENY 3005/5005) (2015)
- Guest lecture** in Behavioral Ecology and Systematics of Insects (ENY 4453/ 6454) (2016)
- Guest presentation** in Spider Biology (ENY 4905/ZOO 4926) (2015)

University of Waikato

- Guest lecture** for Animal Behaviour (BIOEB301) (2019)

University of Auckland

- Guest lecture** for Entomology (BIOSCI 320) (2019)
- Lab demonstrator** for The New Zealand Biology course for visiting international students (2018)

Lab demonstrator for Adaptive Form and Function (BIOSCI 207) (2017)

Lab demonstrator for Comparative Animal Biology (BIOSCI 103) (2017)

INVITED SEMINARS, TALKS, AND TRAININGS

Coccoidea identification workshop. Florida Entomological Society Annual Meeting. June 2022.

“Introduction to scale insect biology”. Phantasma scale webinar, UF/IFAS extension. February 2022.

“Phantasma scale in Florida”. Palm pest webinar, Florida First Detector. March 2022.

“Arachnid arsenal: The evolution of weapon polymorphism in New Zealand harvestmen”. University of Florida, Gainesville, FL. Entomology departmental seminar series. January 2022.

“An introduction to scale insects with emphasis on armored scales”. Phantasma scale survey in conjunction with the USDA and UF IFAS, Ft. Pierce, Florida. December 2021.

“Detection of exotic scale insects and whiteflies in Florida”. Division of Plant Industry (FDACS) inspector trainings. September 2021, December 2021, February 2022, October 2022.

“Mechanisms of defense and mimicry in harvestmen”. Curso Aracnología. October 2021.

“Fighters vs. scramblers: the evolution of weapon polymorphism in New Zealand harvestmen”. Universidade de São Paulo virtual seminar. April 2021.

“Arachnid arsenal: Waitomo harvestmen and their weaponry”. Waitomo Museum, Waitomo, New Zealand. December 2019.

“Evolution and maintenance of male weapon polymorphism in an endemic New Zealand harvestmen”. University of Waikato, Hamilton, New Zealand. Biological Sciences departmental seminar series. August 2019.

“The price of sex: Weapon polymorphism and alternative reproductive tactics in endemic NZ harvestmen”. The Auckland Branch of the Entomological Society of New Zealand, June 2019.

“The evolution and maintenance of weapon polymorphism in endemic New Zealand harvestmen”. Presentation, The 21st International Congress of Arachnology (ICA), Christchurch, NZ. February 2019.

RESEARCH PRESENTATIONS

“Juvenile leg autotomy predicts final weapon morph in a New Zealand harvestman”. 2021 Virtual Meeting of the American Arachnological Society (AAS). June 2021.

“Diet, predators, and defensive behaviors of New Zealand harvestmen (Opiliones: Neopilionidae)”. Presentation. Animal Behavior Twitter Conference (ABS). January 2021.

“Let it go: Leg autotomy and weapon polymorphism in New Zealand harvestmen (Arachnida, Opiliones)”. Presentation, The 47th meeting of the Australasian Society for the Study of Animal Behaviour (ASSAB), Waiheke Island, New Zealand. July 2019.

“Let it go: Leg autotomy and weapon polymorphism in New Zealand harvestmen (Arachnida, Opiliones).” The Joint Graduate School Seminar day, Auckland, NZ, June 2019.

“Let it go: Autotomy and weapon polymorphism in New Zealand harvestmen (Arachnida, Opiliones)”. Presentation, The 68th Meeting of the Entomological Society of New Zealand (ESNZ), Hanmer Springs, New Zealand, February 2019. *1st place student presentation awarded

“Physiological costs of bearing weaponry in New Zealand harvestmen (Arachnida, Opiliones)”. Presentation, The 17th International Behavioral Ecology Congress (ISBE), Minneapolis, MN, USA. August 2018.

“Physiological costs of bearing weaponry in New Zealand harvestmen (Arachnida, Opiliones)”. Presentation, The 55th Annual Conference of the Animal Behavior Society (ABS), Milwaukee, WI, USA. August 2018.

“Physiological costs of bearing weaponry in New Zealand harvestmen (Arachnida, Opiliones).” Presentation, The 46th meeting of the Australasian Society for the Study of Animal Behaviour (ASSAB), Brisbane, Queensland, Australia. July 2018. *Student talk honorable mention awarded

“Morphology and physiology of New Zealand harvestmen (Arachnida, Opiliones)”. Presentation, The Joint Graduate School Seminar day, Auckland, NZ, June 2018.

“Morphology and physiology of New Zealand harvestmen (Arachnida, Opiliones)”. Presentation, The 67th meeting of the Entomological Society of New Zealand (ESNZ), Whanganui, New Zealand, April 2018.

“Prey color aversions in jumping spiders differ across populations”. Presentation, 45th meeting of the Australasian Society for the Study of Animal Behaviour (ASSAB). Mooroolbark, Victoria, Australia, July 2017.

“Individual foraging specialization in the spider-hunting mud dauber wasp, *Sceliphron caementarium*”. Presentation, The 66th meeting of the Entomological Society of New Zealand (ESNZ), Wellington, New Zealand, April 2017. *1st place student presentation awarded

“Individual specialization in the black and yellow mud dauber, *Sceliphron caementarium*, and implications for newly introduced spider species”. Presentation, The XXV International Congress of Entomology (ICE), Orlando, FL, USA, September 2016.

Posters

“The price of sex: Investigating the costs of weaponry in New Zealand harvestmen”. Poster, Displayed thrice at departmental “SBS Showcase”, faculty-wide “Faculty of Science Poster competition” *, and university-industry wide “Exposure”, University of Auckland. 2018. *Poster won high distinction and \$200 prize.

“Individual specialization in the black and yellow mud dauber, *Sceliphron caementarium*”. Poster, The 63rd meeting of Entomological Society of America (ESA), Minneapolis, MN, USA, November 2015.

GRANTS AND AWARDS

Student talk, 1st place (ESNZ 2019) \$150 NZD

Postgraduate poster competition, high distinction (UoA Faculty of Science 2018) \$200 NZD

Student talk, honorable mention (ASSAB 2018)

Student travel grant (ISBE 2018) \$1000 USD

Student research grant (ASSAB 2017) \$1000 AUD (+ conference costs)

Student talk, 1st place (ESNZ 2017) \$250 NZD

21st Anniversary research grant (ESNZ 2017) \$1000 NZD

Marsden PhD scholarship in behavioural and evolutionary ecology (2016–2019)

UF ENSO student travel grant (2015) \$500 USD

UF Entomology and Nematology departmental assistantship for MSc (2015–2016)

Florida Academic Scholars award (2011–2014)

PHOTOGRAPHY

1st prize for invertebrate category (ASSAB 2019)

1st prize for invertebrate category (ASSAB 2018)

Photo prints displayed in University of Auckland School of Biological Sciences entrance (2018–present)

Photo published in “Why Is That Lake So Blue?” by Simon Pollard (2018)

Photo published in “Why Is That Spider Dancing?” by Simon Pollard and Phil Servid (2020)

Winning slot in the World of Insects, ESA’s calendar competition (out of 700+ entries) (2021)

Invited photo contribution for “Through the Loupe” in ESA’s *The American Entomologist* (2021)

Photo in Derkarabetian et al. 2021 (*Invertebrate Systematics*)

1st prize for “Arachnids in the Wild” (AAS 2021 Photo and Artwork Contest)

Cover photo of *Florida Entomologist* 104(1) (January 2021)

Photos published in *Spiders of North America* (Princeton Field Guides) by Sarah Rose (2022)

MEDIA

The Project NZ TV3, panel interview segment on spiders, 11 February 2019

TV1 NZ News, on camera interview, 13 February 2019

OUTREACH, EXTENSION, AND SERVICE

Service to discipline

Entomological Society of New Zealand **executive board** (2018-2019) responsible for public engagement, outreach and social media

Session moderator, 47th meetings of the Australasian Society for the Study of Animal Behaviour (2019)

Session moderator, 46th meeting of the Australasian Society for the Study of Animal Behaviour (2018)

Session moderator, 17th International Behavioral Ecology Congress (2018)

Journal peer review and review editing: *Journal of Insect Science*, *Journal of Experimental Zoology*, *Journal of Asia-Pacific Entomology*, *Current Zoology*, *Ecology and Evolution*, *Behavioral Processes*, *Biological Journal of the Linnaean Society*, *The Journal of Arachnology*, *Insecta Mundi*

Service to university

Facilitator at Faculty of Science postgraduate orientation workshop (2019)

Department representative for Faculty of Science well-being survey creation (2018)

Department representative for university-wide Student-Services Strategy workshops (2018)

Invited panel speaker for Women in Science wellbeing workshop (2018)

Co-founder and President of BioGrad, postgraduate organization for the School of Biological Sciences at the University of Auckland (2018-2019)

Fundraising chair for the Entomology and Nematology Student Organization (ENSO) at the University of Florida (2015-2016)

Community service and outreach

It's a Bugs' Lab arthropod station at the Auckland Museum of Transport and Technology annual STEM fair (7 April 2019)

Bugs in the Pub Created, organized, and hosted public science outreach event in conjunction with 67th Entomological Society of New Zealand meeting (12 April 2018)

Wiki workshops Participated in multiple workshops led by NZ Wikimedian-in-residence, Mike Dickison, to improve the Wikipedia entries for various endemic New Zealand arthropod species. (2017–2019)

Youth field camps

- **Director** of 'Bug Camp: The Bug Club' summer camp for middle and high school students (20–24 June 2016)
- **Director** of 'Bug Camp: InStar Wars' summer camp for middle and high school students (22–26 June 2015)
- **Scientist of the day** at 'Bug Camp: MythBUGsters' summer camp for middle and high school students (22 June 2022)

Florida State Insect Collection Competition judge (July 2015 and 2016)

Science Fair judge at Keystone Heights High School (12 January 2016)

BioBlitz

- Arachnid identification for the Learning Gate Community BioBlitz in Lutz, Florida (9 April 2016)

Outreach training for educators

- Teacher workshop for UF's Center for Precollegiate Education and Training (6 June 2016)
- Educators' Open House at the Florida Museum of Natural History (1 October 2015)

Outreach presentations delivered to youth groups

Departmental tours included a combination of classroom presentations and activities, interaction with the live collection, working laboratory visits, and insect hunts (with various collecting techniques) in the nearby Natural Area Teaching laboratory (NATL). Classroom presentations and activities catered to requests from group leaders, targeted class curriculum and learning objectives where possible, and were dynamically modified to fit the age range and size of the group. Where tour is not specified, I visited the group at their school or meeting location with the travelling live collection and other educational materials.

- Girl Scout troop department tour (19 August 2016)
- UF Entomology and Nematology departmental tour (18 July 2016)
- Alachua County 4-H Camp tour (12 July 2016)
- Norton Elementary school (24 May 2016)
- Newberry Elementary school (18 May 2016)
- Wiles Elementary school (13 May 2016)
- Orange Park Elementary school tour (13 May 2016)
- J.J. Finley Elementary school (29 April 2016)
- Homeschool departmental tour (20 April 2016)
- Homeschool departmental tour (15 April 2016)
- Classical Conversations homeschool group tour (25 March 2016)
- Homeschool departmental tour (17 March 2016)
- Talbot Elementary ESE pre-school class (16 March 2016)
- Lake Nona High School departmental tour (12 March 2016)
- Marion Environmental science class tour (3 February 2016)
- Glen Springs Elementary school (7 December 2015)
- YOPP Inc. Science Fridays in collaboration with NRDI (4 December 2015)
- Homeschool departmental tour (30 November 2015)
- Camp Shands Boy Scout camp (21 November 2015)
- Bronson MiddleHigh career day (6 November 2015)
- Irby Elementary (2 November 2015)
- Heart Pine school (14 October 2015)
- Heart Pine Elementary school (14 October 2015)
- Homeschool departmental tour (9 October 2015)
- Homeschool departmental tour (9 October 2015)
- Micah homeschool group departmental tours (18 September 2015)
- United Church of Gainesville summer program (13 August 2015)
- Junior Chinese student departmental tour (27 July 2015)
- Chiles Elementary school (30 June 2015)
- Gainesville Police Department at-risk youth departmental tour (18 June 2015)
- Finley Elementary school (16 June 2015)
- Norton Elementary school (19 May 2015)
- Alachua Elementary career fair (15 May 2015)
- Newberry Elementary education fair (13 May 2015)
- Cornerstone Academy departmental tour (29 April 2015)

- Girl Scouts troop (25 April 2015)
- Queen of Peace Academy (17 April 2015)
- Archer Elementary Carnival (17 April 2015)
- Romeo Elementary afterschool program (13 April 2015)
- High Springs Elementary school (9 April 2015)
- Talbot Elementary school (3 April 2015)
- Micah homeschool group (27 March 2015)
- Homeschool group departmental tour (25 March 2015)
- Ambleside Middle school (23 March 2015)
- Duval Elementary afterschool program (12 March 2015)
- Micanopy Area Cooperative school (11 March 2015)
- Oak Hall High school (10 March 2015)
- Greenhouse homeschool group (27 February 2015)
- Glen Springs Elementary school science night (26 February 2015)
- YOPP Inc. homeschool group (10 February 2015)
- Center for PreCollegiate Education and Training departmental tour (1 February 2016)
- Buc Tuocs Boy Scout camp (24 January 2015)
- Rawlings Elementary school STEM night (22 January 2015)
- Littlewood Elementary school STEM night (13 January 2015)

Outreach presentations delivered to undergraduate students

- UF Majors and Minors Fair (18 February 2015)

Outreach presentations delivered to the general public

- UF Snapchat takeover for Bug Week (25 May 2016)
- Oak Hammock retirement community (21 April 2016)
- Bug Fest Open House (2 April 2016)
- Easter Seals Altrusa House for adults (24 February 2016)
- Florida State Fair (4–15 February 2016)
- Bug Zoo at the UF Stadium for football game (7 November 2015)
- Butterfly Fest (19 September 2015)
- Sweet Dreams Touch-A-Truck Fundraiser (16 May 2015)
- Bug Fest Open House (11 April 2015)
- Florida State Fair (5–16 February 2015)
- Florida State Fair (16 February 2022)

Service outside the discipline

Volunteer at Special Equestrians Inc., Fort Myers, FL 2008–2011 (~6–8 hours per week)

Assisted in providing therapy to children and adults with physical and/or mental disabilities, handled horses during therapy, aided with animal grooming and facility maintenance

Volunteer for Plenty of Pitbulls dog rescue (January 2021–present)

Foster, rehabilitate, and train at-risk dogs from underserved rural shelters
