Justin Yeager

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Positions Held

Investigador asociado (Associate professor) (2023 - current)

Universidad de las Américas; Quito, Ecuador

Docente Investigator (Research professor) (2018 - 2023)

Universidad de las Américas; Quito, Ecuador

***POST DOCTORAL RESEARCHER* (2016 - 2018)**

University of California, Merced

EDUCATION

***Ph.D.* (2009 - 2015)** Biological Sciences. Department of Ecology and Evolutionary Biology, Tulane University (TU), New Orleans, LA. Advisor: Dr. Corinne Richards-Zawacki
Thesis: "Causes and Consequences of Warning Color Variation in a Polytypic Poison Frog"

***M.Sc.* (2006 - 2009)** Biological Sciences. Department of Biology, East Carolina University (ECU), Greenville, NC. Advisor: Dr. Kyle Summers. Thesis: "The Evolution and Maintenance of Müllerian Mimicry in a Peruvian Poison Frog"

***B.Sc.* (2001-2005)** Wildlife Conservation, Department of Entomology and Applied Ecology, University of Delaware (UD), Newark DE

PUBLICATIONS

In Review / In Revision

McEwen BL*, Kinley I*, Anderson HM*, Pruitt JN, **Yeager J** and Barnett JB. Batesian mimics are more detectable than their model in aerial and terrestrial view in a poison frog complex. *In Revision*: *The American Naturalist*

Yeager J, Scarpetta Gonzalez JM* and Shepack A*. Are sustainable biocommerce products that reproduce an Achilles' heel for sustainable biocommerce, or can hobbyist culture tip the balance? *In Revision*

Ortiz-Prado E, **Yeager J**, Vásconez-González J, Condoy JS, Fernandez-Naranjo R. Are we prepared for potential repercussions of largescale international events after a global pandemic? *Submitted*

Baquero LER., Iturralde G, Mogrovejo AL. and **Yeager J.** An alluring new Masdevallia (Pleurothallidinae: Orchidaceae) from Ecuador. *In Revision*: *Phytotaxa*

Published - Peer Reviewed

Yeager J, Viteri Chancusi PA*, Perez-Castillo Y, Armijos-Jaramillo V, and Tejera E. 2023. Functional redundancy plausible in chemical defenses common in a poison frog radiation against muscarinic receptor targets. *Evolutionary Ecology*

Guevara et al. (authors appear in alphabetical order) including: **Yeager** J. 2023. Neotropical geography as a cradle for adaptive radiations and explosive diversifications. *Cold Spring Harbor Perspectives in Biology*

Kikuchi et al. 2023. (authors appear in alphabetical order minus first/last) including: **Yeager J**. The evolution and ecology of multiple antipredator defenses. *Journal of Evolutionary Biology*

Vásconez-González J, **Yeager J**, Izquierdo-Condoy JS, Fernandez-Naranjo R, López M-B, Gabriela Dávila M, Cordovez S, López-Cortés A and Ortiz-Prado E. 2023. A 10 year epidemiological analysis of schistosomiasis in Ecuador: First report of a neglected and often challenging to identify parasite.

Yeager J and Penacchio O. 2023. Outcomes of multifarious selection on the evolution of visual signals. *Proceedings of the Royal Society B*

Yeager J, Derryberry G, Blum M and Richards-Zawacki. 2023. Selection and admixture in a polytypic poison frog. *The American Naturalist*

Andrade-Guerrero F, Tapia A, Andrade V, Vásconez-González J, Andrade-Guerrero J, Noroña-Calvachi C, Izquierdo-Condoy JS, **Yeager J** and Ortiz-Prado E. 2023. False contraindications for vaccinations result in sub-optimal vaccination coverage in Ecuador. *Vaccines* 11:1:60

Yeager J, Iturralde G, Ocopa L and Baquero LER. 2022. Remarkable new Lepanthes hidden in plain sight.. *Phytotaxa*, *560*(3), 285-294.

Barnett JB, **Yeager J**, McEwen BL*, Kinley I, Anderson HM* & Guevara J. 2022. Size-dependent colouration balances conspicuous aposematism and camouflage. *Journal of Evolutionary Biolo*gy invited special issue

Yeager J and Barnett JB. 2022. Continuous variation in an aposematic pattern affects background contrast, but is not associated with differences in microhabitat use. *Frontiers of Ecology and Evolution* (Special Issue). P150.

Yeager J and Nieto R. 2022. Age class and sex-specific ultraviolet signal enhancement in a sexually dimorphic gecko. *Herpetology Notes.* 15 (2022): 203-205.

Ortiz-Prado E, **Yeager J,** Andrade F, Schiavi-Guzman C, Abedrabbo-Figueroa P, Terán E, Gómez Barreno L, Simbaña-Rivera K and Izquierdo-Condoy JS. 2021. Snake Antivenom production in Ecuador: poor implementation, and an unplanned cessation leads to a call for a renaissance
Toxicon 202, 90-97.

Yeager J and Barnett JB. 2021. The influence of ultraviolet reflectance differs between conspicuous aposematic signals in neotropical butterflies and poison frogs. *Ecology and Evolution. 11*(20), pp.13633-13640.

Chelini MC, Brock K*, **Yeager J**, Edwards DL. 2021. Environmental drivers of sexual dimorphism in a lizard with alternative mating strategies. *Journal of Evolutionary Biology. 34*(8), pp.1241-1255.

Anderson HM*, Fisher DN, McEwen BL*, **Yeager J**, Pruitt JN and Barnett JB. 2021. Episodic correlations in behavioural lateralization differ between a poison frog and its mimic. *Animal Behaviour*, *174*, 207-215.

Yeager J and Barnett JB. 2020. Ultraviolet components offer minimal contrast enhancement to an aposematic signal. *Ecology and Evolution, 10(24), 13576-13582.*

Fisher DN., Pruitt JN. and **Yeager J**. 2020. Orb-weaving spiders show a correlated syndrome of morphology and web structure in the wild. *Biological Journal of the Linnean Society*, *131*(2), pp.449-463.

Barnett JB., Michalis C., Anderson HM.*, McEwen BL.*, **Yeager J**., Pruitt JN., Scott-Samuel NE. and Cuthill IC. 2020. Imperfect transparency and camouflage in glass frogs. *Proceedings of the National Academy of Sciences*, *117*(23), pp.12885-12890.

Baquero LE., Minda, AF. and **Yeager J**., 2020. A new species of Pleurothallidinae (Orchidaceae) from the south-east of Ecuador. *Lankesteriana*, pp.129-136.

Culebras J, Angiolani-Larrea FN*, Tinajero-Romero J, Pellet C and **Yeager.** First record and notable range extension of neotropical *Cochranella granulosa* (Taylor, 1949) glass frog (Anura, Centrolenidae) found in Ecuador. *Herpetology Notes*, 13, pp. 353-355.

Yeager J. and Amorós CB. 2020. Spatial problem solving in a poison frog. *Herpetology Notes*, *13*, pp.349-351.

Armijos-Jaramillo V., **Yeager J**., Muslin C. and Perez-Castillo Y. 2020. SARS-CoV-2, an evolutionary perspective of interaction with human ACE2 reveals undiscovered amino acids necessary for complex stability. *Evolutionary Applications*.

Yeager J, Baquero L, Zarling A*. Mediating ethical considerations in the conservation and sustainable biocommerce of the jewels of the rainforest. Journal for Nature Conservation, 54, 125803.

Fisher DN., Lichtenstein JL., Costa-Pereira R., **Yeager J**. and Pruitt JN. 2020. Assessing the repeatability, robustness to disturbance, and parent–offspring colony resemblance of collective behavior. *Journal of Evolutionary Biology*, *33*(4), pp.410-421.

Dugas M, **Yeager J**, Karkos A*. 2019. Preferences for and use of light microhabitats differ among and within populations of a polytypic poison frog. *Biological Journal of the Linnean Society, 129(2), 379-387*.

Ximena E. Bernal, Bibiana Rojas, María Alejandra Pinto-E, Ángela M. Mendoza- Henao, Adriana Herrera-Montes, Maria Isabel Herrera-Montes, Andrea del Pilar Cáceres Franco, and 254 signatories. (including **J Yeager**). 2019. Empowering Latina Scientists. *Science*. 363: 825-826.

Yeager J, Zarling A*, Rodriguez C*. 2019. Successful multimodal amphibian defence in the neotropical frog Trachycephalus, including handling and recovery costs to would-be predators. *Herpetology Notes*. 12: 279-280.

Crothers L, Saporito R, **Yeager J**, Lynch K, Friesen C and Richards-Zawacki C. 2016. Warning signal brightness co-varies with toxicity but not testosterone or aggregate carotenoids in an exceptionally conspicuous poison frog. *Evolutionary Ecology*. 30: 601-621.

Yeager J. Dendrobatidae and *Bufo coniferus*. 2013. Defense. Herpetological Review. 44(3) pg. 494.

Dugas M, **Yeager J**, and Richards-Zawacki CL. 2013. Carotenoid supplementation enhances reproductive success in captive strawberry poison frogs (*Oophaga pumilio*). *Zoo Biology* 32: 655-658

Richards-Zawacki CL, **Yeager J**, Bart H*. 2013. No evidence for differential survival or predation between sympatric color morphs of an aposematic poison frog. *Evolutionary Ecology*. 27:783-795

Twomey E, **Yeager J**, Brown J, Morales V, Cummings M, and Summers K. 2013. Phenotypic and genetic divergence among poison frog populations in a mimetic radiation. *PLOS ONE* 8(2) e55443

Yeager J, Brown J, Morales V, Cummings M, and Summers K. 2012. Testing for Selection on Color and Pattern in a Mimetic Radiation. *Current Zoology* 58: 668-676

Marek, PE, Papaj, D, **Yeager J**, Moore, W, and S. Molina*. 2011. Experimental evidence for bioluminescence as an aposematic signal in millipedes. *Current Biology* 21(18), 680-681.

Schulte LM, **Yeager J**, Schulte R, Werner P, Beck LA and Lötters S. 2011. Choice of phytotelmata by means of chemical cues in a Peruvian poison frog (Dendrobatineae: *Ranitomeya variabilis*) *Animal Behaviour* 81, 1147-1154.

Yeager J, Wooten C*, Summers K. 2011. A new technique for the production of clay models for field studies. *Herpetological Review* 42: 357-359

* *Indicates student co-authors*

Book Contributions

Yeager, J and Kahn, T. *2015*. *Amereega silverstonei*. Species account in the book: Andean Poison Frogs. Conservation International.

Twomey, EM, Brown JL, **Yeager, J**. *2015*. *Excidobates captivus*. Species account in the book: Andean Poison Frogs. Conservation International.

Non-Peer Reviewed Publications

Yeager, J. The *Oophaga pumilio* of Escudo de Veraguas. 2009. *Leaf Litter Magazine*. Tree Walkers International. Vol. 3.1 pp. 54-58.

Yeager, J. Field Notes on Silverstone's Poison Frog. 2007. Leaf Litter Magazine. Tree Walkers International. Vol. 1.1 pp 1-4.

Yeager, J. *Epipedobates silverstonei*: Rode Rana Peruana van de Cordillera Azul. September, 2006. Dendrobatidae Nederland. Vol 18. Pp 6-10. (Reprint of above article in Dutch, including magazine cover photo)

Press:

Scientists Discover the Reason Behind the Glass Frog's Translucent Skin
Smithsonian Magazine, May 2020

Scientists see-through glass frogs' translucent camouflage
Tech Explorist*, May 2020*

Study on Glass Frog and its Translucent Skin Reveals More than Just its Camouflage Technique
The Science Times*, May 2020*

Why glass frogs have see-through skin becomes clear in study
The Guardian*, May 2020*

Translucent glass frogs use a never before seen novel form of camouflage
ZME Science*, May 2020*

Researchers Reveal How Glass Frogs Use Their Translucent Skin As Camouflage
IFLScience*, May 2020*

El estudio científico ecuatoriano que le encontró el punto débil al coronavirus (*The Ecuadorian study that found the weak point in the Coronavirus***)**
Plan V Magazine*, April 2020*

Investigadores de la UDLA describen nuevos mecanismos para impedir la unión del SARS-CoV-2 a las células humanas (*UDLA researchers describe new mechansims to impede the untion of SARS-CoV2 to human cells***)**
Edición Médica Magazine*, April 2020*

"From the Brink of Extinction, Some Frogs Defy the Odds"
Discover Blog, November 2014

"For the love of the poison frog Ephrata native uses innovative approach to fund research trip to Panama"
The Ephrata Review, May 2012

"Tattoo You: A tattoo with your name on his body is just one of the incentives a scientist from Akron offers in a new online venture to encourage the public to fund his research into poison frogs in Panama."
Lancaster Online, April 2012

Millipede nocturnal aposematism, "Green Glow Helps Repel Nocturnal Predators"
Tulane New Wave, October 2011

Rediscovery of Excidobates captivus, "Peru's Tiny Gems."
***National Geographic Magazine,** April 2007*

Rediscovery of Atelopus varius (Costa Rica), "Young UD scientist finds frog thought to be extinct"
UD Daily (University of Delaware newsletter), July 2005

AWARDS

- UDLA 2022 Convocation for Research Projects $29,774
- UDLA 2020 Convocation for Research Projects $9,998
- One Tree Planted (2020) grant for public outreach for urban amphibian restoration: $1000
- Denver Zoo/Kate Adamson Foundation research funding (2020) $1000
- UDLA 2019 Convocation for Research Projects $30,492.44
- Denver Zoo/Kate Adamson Foundation research funding (2018) $1000
- Environmental Systems, Ecology and Evolution Post Doctoral Fellowship: University of California, Merced (2017): $2000
- Margo F. Souza San Joaquin Valley Mentor of the Year: UC Merced (2017): $1000
- Tulane Graduate Student Teaching Award (2014): $100
- Center for the study of Biodiversity in Amazonia (CEBA, 2014) PI: Brian Counterman, €20,000
- Petridish.org Crowd funding Project (2012): $5,000
- Graduate Student Travel Award (Tulane, 2013): $200
- Graduate Student Travel Award (Tulane, 2012): $250
- European Science Foundation: Frontiers of Speciation Research (2012): €1,500
- Smithsonian Tropical Research Institute (STRI) Short Term Fellowship (2011): $1,000
- Tulane Provost's Office Travel Grant (2010): $500
- Stone Center Field Research Grants (2010): $1,340
- Gerhard W. Kalmus graduate student academic accomplishment and service award (2008): $500

TEACHING EXPERIENCE

Universidad de las Américas (2018 - current): Ciencia, entorno y el Ser Humano (Science, the Environment and the Human Being, taught entirely in Spanish)

Teaching Assistant (2009-2015): Tulane University

Diversity of life (Introductory biology lab, 4 semesters), Tropical Biology (1 semester) and Vertebrate Biology (1 semester).

Teaching Assistant (2006-2009): East Carolina University

Introduction to Biology lab for majors (3 semesters), Field Zoology lab (1 semester), and Ecology lab (4 semesters).

INVITED SEMINARS

"Is intra-population variance in warning signals likely to be meaningful?" Universidad del Valle *Cali, Colombia* (presented in Spanish) 2022

"Is intra-population variance in warning signals likely to be meaningful?" European Society of Evolutionary Biology (ESEB) 2021

"A Colorful look at speciation" Pontifica Universidad Catolica del Ecuador *Quito, Ecuador* (presented in Spanish) 2018

"A Colorful look at speciation" Universidad Central del Ecuador (presented in Spanish) 2018

"The Evolution and Maintenance of Warning Coloration, Müllerian Mimicry and Color Pattern Polymorphism in Poison Frogs" Trier University, *Trier, Germany*. 2010.

"The Tale of a Poison Frog with Many Colors." Smithsonian Tropical Research Institute, *Isla Colon, Panama*. 2010 (presented in English and Spanish).

"Aposematism and Müllerian Mimicry: complex color pattern polymorphisms with a purpose." University of Arizona: *Tucson, Arizona*. 2010.

"Natural Selection pressures on the polymorphic poison frog, *Dendrobates pumilio*. Latin American Studies Department, Tulane University, *New Orleans, Louisiana*. 2010.

"Hope for Frogs in an Era of Mass Extinction." Multispecies Salon, *New Orleans, Louisiana*. 2010.

"Amphibian Conservation: Preventing the Last Croak" University of New Orleans, *New Orleans, Louisiana*. 2011.

"Colorful frogs with a powerful message." Smithsonian Tropical Research Institute, *Isla Colon, Panama*. 2012 (presented in Spanish).

"Habitat conservation and the role of habitat in amphibian communication." Penn State University CHANCES (Connecting Humans and Nature through Conservation Experiences) program, *Isla Colon, Panama*. 2012.

"Multiple anti-predatory strategies in a polymorphic population of poison frog." International Behavioral Ecology Congress (ISBE), *Lund, Sweden*. 2012.

"Investigating anti-predatory strategies of polymorphic poison frogs." University of Jyvaskyla: *Jyvaskyla, Finland*. 2012.

"From crypsis to aposematism: anti-predatory strategies of polymorphic poison frogs." Frogtober Fest keynote speaker: *Turner Falls, Massachusetts*. 2012.

"When Colors Bleed: Measuring the Influence of Selection Pressures on Population Boundaries." University of Mississippi: *Oxford, Mississippi*. 2013.

"The Influence of Natural Selection in Reinforcing Boundaries Between Adjacent Poison Frog Populations." Mississippi State University: *Starkville, Mississippi*. 2013.

SERVICE

• Reviewer: The American Naturalist, Journal of Evolutionary Biology, Journal of Chemical Ecology, Journal of Animal Ecology, Biological Journal of the Linnean Society, Scientific Reports, Naturwissenschaften, Evolutionary Ecology, Behavioural Processes, Journal for Nature Conservation and Zoo Biology.

• Project leader for UDLA / Quito Municipality: Urban amphibian habitat restoration

• INIBICO (World Bank funded) sustainable project in Tarapoto, Peru (2006).

•Tree Walkers International amphibian conservation group: Executive Committee member (2004-2007)

•Created and directed educational conservation documentary "Operation Ecuadorian Atelopus" (2005)

•Taught Panamanian elementary school students on biodiversity, poison frogs, and conservation (2010-2012)
•Science fair judge: North Carolina Regional Science Olympiad (2008), North Carolina Student Academy of Science (2009), Louisiana Regional Science Fair judge (2012)

Educational Outreach:

Film Assistant (2004, 2008, 2018, 2023): British Broadcasting Corporation (BBC)

Filming assistance on: *Life in Cold Blood* (2008), *The Journey of Life* (2004) and *The Amber Time Machine* (2004), *Seven Worlds, One Planet* (2019)

Film Assistant and Interviewed Scientist (2009): Animal Planet

Scientific Consultation for the CITES Amphibian Guide (2006): Environment Canada

SOCIETIES

• Ecuadorian Academy of Sciences (active member)
• Society for the Study of Evolution (SSE)