
Curriculum Vitae

Mark J. Margres

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Education and Experience

- 2020– Assistant Professor, Department of Integrative Biology, University of South Florida.
USF Genomics Program Faculty: health.usf.edu/publichealth/ghidr/genomics.
- 2019–2020 Sarah and Daniel Hrdy Visiting Fellow in Conservation Biology, Department of Organismic
and Evolutionary Biology, Harvard University. Sponsor: Michael Desai.
- 2018–2019 Postdoctoral associate with Chris Parkinson, Clemson University.
- 2017–2018 Postdoctoral associate with Andrew Storfer, Washington State University.
- 2011–2016 Ph.D., Biology, Florida State University. Summa cum laude. Advisor: Darin R. Rokytka.
- 2007–2011 B.A., Biology, Bethany College, Lindsborg, Kansas. Summa cum laude.

Funding

- 2023– National Science Foundation grant (NSF DEB-2324456) entitled “Collaborative Research:
Testing the spatio-temporal repeatability of (co)evolution in Tasmanian devils and their trans-
missible cancer” in the amount of \$616,108 (\$1,500,000 total across all CoPIs; other CoPIs:
Andrew Storfer, Washington State University; Rodrigo Hamede, University of Tasmania).
- 2024 USF CREATE initiative entitled “Pushing the frontiers of precision medicine with interdis-
ciplinary high resolution research” in the amount of \$500,00 (CoPI with Rays Jiang and other
faculty in the Genomics Program).
- 2023 Holmes Development Fund (internal Florida Gulf Coast University award) entitled “Analysis
of Eastern Diamondback Rattlesnake (*Crotalus adamanteus*) venom for anti-cancer activity in
human breast cancer cell lines” in the amount of \$1,261.50 (\$9,915.79 total across all CoPIs;
other coPIs: Lyndsay Rhodes, Andrew Durso, and Matt Metcalf at FGCU).
- 2020–2023 National Science Foundation: Bridging Ecology and Evolution grant (NSF DEB-2027446)
entitled “Eco-evolutionary dynamics of disease-induced apex predator decline” in the amount
of \$207,738 (\$1,500,000 total across all CoPIs; other CoPIs: Andrew Storfer, Washington State
University; Menna Jones, University of Tasmania; Hamish McCallum, Griffith University).
- 2021 University of South Florida Genomics Program Jump Start Faculty Grant in the amount of
\$5,000.
- 2021 National Geographic COVID-19 Grant Support (NGS-91224R-21) in the amount of \$2,700.

- 2019–2022 National Geographic Exploration Grant (NGS-61140R-19) entitled “Venomous archipelagos: Integrating adaptability and island biogeography theory to assess persistence in the Anthropocene” in the amount of \$29,360.
- 2019–2020 Sarah and Daniel Hrdy Visiting Fellowship in Conservation Biology, Department of Organismic and Evolutionary Biology, Harvard University entitled “The genetic basis of transmission and virulence in an infectious cancer” in the amount of \$90,000.
- 2019 Theodore Roosevelt Memorial Grant, American Museum of Natural History entitled “Does island biogeography theory predict venom complexity in island rattlesnakes?” in the amount of \$3,500.
- 2014 The Graduate Student Research and Creativity Award at Florida State University entitled “The genetics of adaptation of island rattlesnakes” in the amount of \$675.
- 2013 The J. Larry Landers Student Research Award from the Gopher Tortoise Council entitled “Conservation genetics of the eastern diamondback rattlesnake” in the amount of \$500.
- 2013 The Robert B. Short Zoology Scholarship from the Department of Biological Science at Florida State University entitled “Local adaptation in rattlesnake venoms” in the amount of \$1,000.
- 2013 Dissertation Research Grant from Florida State University entitled “The genetics of adaptation of insular rattlesnake populations” in the amount of \$750.

Publications (Contributed equally[§], corresponding author[†], undergraduate*)

Calculated by Google Scholar (<https://scholar.google.com/citations?hl=en&user=HyuvK6AAAAAJ>) on 7/2/24: 2,024 citations, h-index=25, i10-index=34

44. Musick S, Mann N, **Margres MJ**, Solis SS*, Parkinson CL. 2024. Fab antivenom reversal of neurotoxicity caused by a juvenile *Crotalus horridus* lacking canebrake toxin. 2024. *Wilderness & Environmental Medicine*. <https://doi.org/10.1177/10806032241253823>.
43. Gallinson DG[†], Kozakiewicz CP, Rautsaw RM, Beer MA, Ruiz-Aravena M, Comte S, Hamilton DG, Kerlin DH, McCallum H, Hamede R, Jones ME, Storfer A, McMinds R, **Margres MJ**[†]. 2024. Intergenomic signatures of coevolution between Tasmanian devils and an infectious cancer. *PNAS*. **121**(12):e2307780121.
42. Hogan MP, Holding ML, Nystrom GS, Colston TJ, Bartlett DA, Mason AJ, Ellsworth SA, Rautsaw RM, Lawrence KC, Strickland JL, He B, Fraser P, **Margres MJ**, Gilbert DM, Gibbs HL, Parkinson CL, Rokyta DR[†]. 2024. The genetic regulatory architecture and epigenomic basis for age-related changes in rattlesnake venom. *PNAS*. **121**(16):e2313440121.
41. Beer MA, Proft KM, Veillet A, Kozakiewicz CP, Hamilton DG, Hamede R, McCallum H, Hohenlohe PA, Burrige CP, **Margres MJ**, Jones ME, Storfer A[†]. 2024. Disease-driven top predator decline affects mesopredator population genomic structure. *Nature Ecology and Evolution*. <https://doi.org/10.1038/s41559-023-02265-9>.
40. Hirst SR^{§,†}, Vásquez-Cruz V[§], Kelly-Hernández A, Franz-Chavez H, Rincon AR, Amézquita SAS, Grunwald C, Borja M, Castañeda-Gaytán G, Strickland JL, **Margres MJ**. 2023. Hunchback of Isla Piojo: First Record of Putative Kyphosis in the Spiny Chuckwalla (*Sauromalus hispidus*). *Bulletin of the Chicago Herpetological Society*. **58**(11):177–178.
39. Franz-Chavez H, Ramirez-Chaparro R, Perez-Fiol T, Lopez-Martinez DE, Rautsaw RM, Hirst SR, Rodriguez-Lopez B, Borja M, Castaneda-Gaytan G, Strickland JL, Parkinson CL, Reyes-Velasco J[†], **Margres MJ**. 2023. Mexican Geographical Distribution Notes 6: New Herpetological Records for Islands in the Gulf of California. *Bulletin of the Chicago Herpetological Society*. **58**(8):129–130.

38. Harrison CM[†], Colbert J, Richter CJ, McDonald PJ, Trumbull LM*, Ellsworth SA, Hogan MP, Rokyta DR, **Margres MJ**[†]. 2022. Using morphological, genetic, and venom analyses to present current and historic evidence of *Crotalus horridus* × *adamanteus* hybridization on Jekyll Island, Georgia. *Southeastern Naturalist*. **21**(2):158–174.
37. **Margres MJ**[†], Wray KP, Sanader D, McDonald PJ, Trumbull LM*, Patton AH, Rokyta DR. 2021. Varying intensities of introgression obscure incipient venom-associated speciation in the Timber Rattlesnake (*Crotalus horridus*). Special Issue on “Using genomics to understand venom evolution” in *Toxins*. **13**:782. Editor’s Choice Highlighted Article.
36. Kozakiewicz C[†], Fraik A, Patton A, Ruiz-Aravena M, Hamilton D, Hamede R, McCallum H, Hohenlohe P, **Margres MJ**, Jones M, Storfer A. 2021. Spatial variation in gene expression of Tasmanian devil facial tumors despite minimal host transcriptomic response to infection. *BMC Genomics*. **22**:698.
35. Stahlke A, Epstein B, Barbosa S, **Margres MJ**, Patton A, Hendricks SA, Veillet A, Fraik AK, Schonfeld B, McCallum H, Hamede R, Jones ME, Storfer A, Hohenlohe P[†]. 2021. Contemporary and historical selection in Tasmanian Devils (*Sarcophilus harrisii*) support novel, polygenic response to transmissible cancer. *Proceedings of the Royal Society B: Biological Sciences*. **288**:1951, 20210577.
34. Holding ML, Strickland JL, Rautsaw RM, Hofmann EP, Mason AJ, Hogan MP, Nystrom GS, Ellsworth SA, Colston TJ, Borja M, Castaneda-Gaytan G, Grunwald CI, Jones JM, Freitas-de-Sousa L, Viala VL, **Margres MJ**, Grazziotin FG, Junqueira-da-Azevedo ILM, Moura-da-Silva AM, Hingst-Zaher E, Gibbs HL, Rokyta, DR, Parkinson C[†]. 2021. Phylogenetically diverse diets favor more complex venoms in North American pitvipers. *PNAS*. **118**:17, e2015579118.
33. **Margres MJ**[†], Rautsaw RM, Strickland JL, Mason AJ, Schramer TD, Hofmann EP, Stiers E, Ellsworth SA, Nystrom GS, Hogan MP, Bartlett DA, Colston TJ, Gilbert DM, Rokyta DR, Parkinson C[†]. 2021. The Tiger Rattlesnake genome reveals a complex genotype underlying a simple venom phenotype. *PNAS*. **118**:4, e2014634118.
32. Rautsaw R, Schramer T, Acuna R, Arick L, DiMeo M, Hickson J, Mercier K, Schrum M, Mason A, **Margres MJ**, Strickland J, Parkinson C[†]. 2021. Genomic adaptations to salinity resist gene flow in the evolution of Floridian Watersnakes. *Molecular Biology and Evolution*. **38**:3, 745–760. Cover Article.
31. Patton A, Lawrance M, **Margres MJ**, Kozakiewicz C, Hamede R, Ruiz-Aravena M, Hamilton DG, Comte S, Ricci L, Taylor R, Stadler T, Leachè, McCallum H, Jones M, Hohenlohe P, Storfer A[†]. 2020. Phylodynamics of Tasmanian devil transmissible cancer reveals a shift from emergence to endemism. *Science*. **370**, eabb9772.
30. Huff E*, Schonour R*, Holding M, Claunch N, Ellsworth S, Hogan M, Wray K, McGivern J, **Margres MJ**, Colston T, Rokyta DR[†]. 2020. Gradual and discrete ontogenetic shifts in rattlesnake venom composition and assessment of hormonal and ecological correlates. *Toxins*. **12**:10, 659.
29. **Margres MJ**[†], Ruiz-Aravena M, Hamede R, Chawla K, Patton A, Lawrance MF, Fraik AK, Stahlke A, Davis BW, Ostrander EA, Jones ME, McCallum H, Paddison PJ, Hohenlohe PA, Hockenbery, Storfer A. 2020. Spontaneous tumor regression in Tasmanian devils associated with *RASL11A* activation. *Genetics*. **215**:4, 1143–1152. Highlighted article.
28. Kozakiewicz C^{§†}, Ricci R[§], Patton A, Stahlke A, Hendricks S, **Margres MJ**, Ruiz-Aravena M, Hamilton D, Hamede R, McCallum H, Jones M, Hohenlohe PA, Storfer A[†]. 2020. Comparative landscape genetics reveals differential effects of environment on host and pathogen genetic structure in Tasmanian devils (*Sarcophilus harrisii*) and their transmissible tumor. *Molecular Ecology*. **29**:17, 3217–33.
27. Fraik A, **Margres MJ**, Epstein B, Jones M, Hendricks S, Schonfeld B, Stahlke A, Hamede R, McCallum H, Lopez-Contreas E*, Kallinen SJ*, Lazenby B, Hawkins C, Fox S, Lachish S, Huxtable

- S, Kelley JL, Hohenlohe P, and Storfer A[†]. 2020. Disease-driven selection swamps local adaptation to abiotic factors in Tasmanian devil (*Sarcophilus harrisii*) populations. *Evolution*. **74**:7, 1392–1408. Cover Article.
26. Patton A[†], **Margres MJ**, Epstein E, Eastman J, Harmon L, and Storfer A. 2020. Hybridizing salamanders experience accelerated diversification. *Scientific Reports*. **10**, 6566. <https://doi.org/10.1038/s41598-020-63378-w>.
25. Mason AJ, **Margres MJ**, Strickland JL, Rokyta DR, Sasa M, and Parkinson, CL[†]. 2020. Trait differentiation and modular toxin expression in Palm-Pitvipers. *BMC Genomics*. **21**:1, 1–20.
24. **Margres MJ**[†], Patton A, Wray KP, Hassinger ATB, Ward MJ, Lemmon EM, Lemmon AR, Rokyta DR. 2019. Tipping the scales: the migration-selection balance leans toward selection in snake venoms. *Molecular Biology and Evolution*. **36**:2, 271–282; <https://doi.org/10.1093/molbev/msy207>.
23. Patton A, **Margres MJ**, Stahlke A, Lewallen K, Hamede R, McCallum H, Jones M, Hohenlohe P, and Storfer A[†]. 2019. Contemporary demographic reconstruction methods are robust to genome assembly quality: a case study in Tasmanian devils. *Molecular Biology and Evolution*. msz191, <https://doi.org/10.1093/molbev/msz191>.
22. Fraik A, Quackenbush C, **Margres MJ**, Comte S, Hamilton D, Kozakiewicz C, Jones M, Hamede R, Hohenlohe PA, Storfer A, Kelley JL. Transcriptomics of Tasmanian devil (*Sarcophilus harrisii*) ear tissue reveals homogeneous gene expression patterns across a heterogeneous landscape. *Genes*. **10**:801, <https://doi.org/10.3390/genes10100801>.
21. Rautsaw R, Hofmann E, **Margres MJ**, Holding M, Strickland J, Mason A, Rokyta DR, and Parkinson, C[†]. 2019. Intraspecific sequence and gene expression variation contribute little to venom diversity in Sidewinder Rattlesnakes (*Crotalus cerastes*). *Proceedings of the Royal Society B: Biological Sciences*. **286**, 20190810. <https://doi.org/10.1098/rspb.2019.0810>; Cover Article.
20. **Margres MJ**, Ruiz-Aravena M, Hamede R, Jones ME, Lawrance MF, Hendricks SA, Patton A, Davis BW, Ostrander EA, McCallum H, Hohenlohe PA, Storfer A[†]. 2018. The genomic basis of tumor regression in Tasmanian devils (*Sarcophilus harrisii*). *Genome Biology and Evolution*. **10**:11, 3012–3025.
19. **Margres MJ**[§], Jones M[§], Epstein B[§], Comte S, Fox S, Fraik AK, Hendricks SA, Huxtible S, Lachish S, Lazenby B, O'Rourke SM, Stahlke AR, Wiench CG*, Hamede R, Schonfeld B, McCallum H, Miller MR, Hohenlohe PA[†], Storfer A[†]. 2018. Large-effect loci affect survival in Tasmanian devils infected with a transmissible cancer. *Molecular Ecology*. **27**:4189–4199; doi:10.1111/mec.14853.
18. Holding M[†], **Margres MJ**, Rokyta DR, Gibbs HL. 2018. Local community composition and genetic distance predict venom divergence among populations of the Northern Pacific rattlesnake (*Crotalus oreganus*). *BMC Evolutionary Biology*. doi:10.1111/jeb.13347.
17. Holding M, **Margres MJ**, Mason A, Parkinson CL, Rokyta DR[†]. 2018. Evaluating the performance of *de novo* assembly methods for venom-gland transcriptomics. *Toxins* **10**:6, 249; doi:10.3390/toxins10060249. Invited article.
16. Storfer A[†], Hohenlohe PA, **Margres MJ**, McCallum H, Patton AH, Fraik AK, Lawrance M, Stahlke A, Jones ME, Ricci L. 2018. The devil is in the details: genomics of transmissible cancers in Tasmanian Devils. *PLOS Pathogens*. **14**:8, e1007098. Invited article.
15. **Margres MJ**[†], Wray KP, Hassinger ATB*, Ward MJ, McGivern JJ, Lemmon EM, Lemmon AR, Rokyta DR. 2017. Quantity, not quality: rapid adaptation in a polygenic trait proceeded exclusively through expression differentiation. *Molecular Biology and Evolution* **34**:12, 3099–3110.
14. **Margres MJ**, Bigelow AB*, Lemmon EM, Lemmon AR, Rokyta DR[†]. 2017. Selection to increase expression, not sequence diversity, precedes gene family origin and expansion in rattlesnake venom. *Genetics* **206**:3, 1569–1580.

13. Rokyta DR[†], **Margres MJ**, Ward MJ, Sanchez EE. 2017. The genetics of venom ontogeny in the eastern diamondback rattlesnake (*Crotalus adamanteus*). *PeerJ* **5**:e3249.
12. **Margres MJ**, Wray KP, Seavy M, McGivern JJ, Herrera NH, Rokyta DR[†]. 2016. Expression differentiation is constrained to low-expression proteins over ecological timescales. *Genetics* **202**:1, 273–283.
11. **Margres MJ**, Walls R, Suntravat M, Lucena S, Sanchez EE, Rokyta DR[†]. 2016. Functional characterizations of venom phenotypes in the eastern diamondback rattlesnake (*Crotalus adamanteus*) and evidence for expression-driven divergence in toxic activities among populations. *Toxicon* **119**:28–38.
10. **Margres MJ**, McGivern JJ, Seavy M, Wray KP, Facente J, Rokyta DR[†]. 2015. Contrasting modes and tempos of venom expression evolution in two snake species. *Genetics* **199**:1, 165–176. Highlighted article.
9. **Margres MJ**, Wray KP, McGivern JJ, Seavy M, Sanader D*, Rokyta DR[†]. 2015. Phenotypic integration in the feeding system of the eastern diamondback rattlesnake (*Crotalus adamanteus*). *Molecular Ecology* **24**:13, 3405–3420.
8. Rokyta DR[†], **Margres MJ**, Calvin, K. 2015. Post-transcriptional mechanisms contribute little to phenotypic variation in snake venoms. *G3: Genes, Genomes, Genetics* g3-115.
7. Wray KP, **Margres MJ**, Seavy M, Rokyta DR[†]. 2015. Early significant ontogenetic changes in snake venoms. *Toxicon* **96**:74–81.
6. Rokyta DR[†], Wray KP, McGivern JJ, **Margres MJ**. 2015. The transcriptomic and proteomic basis for the evolution of a novel venom phenotype within the Timber Rattlesnake (*Crotalus horridus*). *Toxicon* **98**:34–48.
5. **Margres MJ**, McGivern JJ, Wray KP, Seavy M, Calvin K, Rokyta DR[†]. 2014. Linking the transcriptome and proteome to characterize the venom of the eastern diamondback rattlesnake (*Crotalus adamanteus*). *Journal of Proteomics* **96**:145–158.
4. McGivern JJ, Wray KP, **Margres MJ**, Couch ME*, Mackessy SP, Rokyta DR[†]. 2014. RNA-seq and high-definition mass spectrometry reveal the complex and divergent venoms of two rear-fanged colubrid snakes. *BMC Genomics* **15**:1061.
3. **Margres MJ**, Aronow K*, Loyacano J*, Rokyta DR[†]. 2013. The venom-gland transcriptome of the eastern coral snake (*Micrurus fulvius*) reveals high venom complexity in the intragenomic evolution of venoms. *BMC Genomics* **14**:531. Highly accessed.
2. Rokyta DR[†], Wray KP, **Margres MJ**. 2013. The genesis of an exceptionally deadly venom in the timber rattlesnake (*Crotalus horridus*) revealed through comparative venom-gland transcriptomics. *BMC Genomics* **14**:394. Highly accessed.
1. Rokyta DR[†], Lemmon AR, **Margres MJ**, Aronow K*. 2012. The venom-gland transcriptome of the eastern diamondback rattlesnake (*Crotalus adamanteus*). *BMC Genomics* **13**:312.

Invited talks

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| 2022 | USF Biology Club Speaker Series: Rattlesnake venoms and transmissible cancers: a look into the world of genomics |
| 2022 | European Venom Network Seminar Series (Virtual): The Life-Dinner Principle Paradox Among Rattlesnakes and Their Local Prey |
| 2022 | West Virginia University Biology Department Colloquium (Virtual): Mechanisms of adaptive evolution in snake venom and infectious cancers |

- 2022 University of South Florida Genomics Seminar (Virtual): Mechanisms of adaptive evolution in snake venom and infectious cancers
- 2020 Harvard Museum of Natural History Public Lecture (Cambridge, Massachusetts): Infectious cancers in Tasmanian devils; <https://www.youtube.com/watch?v=ksqnEU-xs8g>
- 2020 University of South Florida (Tampa, Florida): Complex disruptions: genetic mechanisms underlying coevolutionary dynamics
- 2020 Arkansas State University (Jonesboro, Arkansas): Patterns, processes, and mechanisms of adaptive evolution
- 2020 Oklahoma State University (Stillwater, Oklahoma): Patterns, processes, and mechanisms of adaptive evolution
- 2019 Auburn University (Auburn, Alabama): Devil cancer, viper venom, and adaptive coevolution
- 2018 University of South Carolina (Columbia, South Carolina): Genetics of adaptation in complex traits
- 2018 Fred Hutchinson Cancer Research Center (Seattle, Washington): Comparative genomics of tumor regression in Tasmanian devils
- 2018 University of Memphis (Memphis, Tennessee): Genetics of adaptation in complex traits
- 2017 University of Tulsa (Tulsa, Oklahoma): Genetics of adaptation in complex traits
- 2016 International Symposium on Coral Snakes (Goiania, GO, Brazil): The relationship between complexity, variability, and toxicity in North American coralsnakes
- 2016 University of Utah (Salt Lake City, Utah): Quantity, not quality: rapid adaptation to local prey proceeds through venom-gene expression changes in rattlesnakes
- 2015 Apalachicola National Estuarine Research Reserve (Eastpoint, Florida): Population venomics of the eastern diamondback rattlesnake (*Crotalus adamanteus*) identifies selection-driven incipient speciation
- 2014 Catalysis meeting at the National Evolutionary Synthesis Center (Durham, North Carolina): Integrating Organismal and Applied Perspectives on Animal Venom Diversity
- 2013 36th Annual Herpetology Conference (Gainesville, Florida): Genotype-phenotype mapping in the eastern diamondback rattlesnake (*Crotalus adamanteus*): quantifying differential gene expression in toxin genes
- 2013 Tall Timbers Research Station and Land Conservancy (Tallahassee, Florida): Venoms: Ties to Ecology, Evolution, and Conservation

Presentations

- 2022 American Society of Mammalogists Annual Meeting (Tucson, Arizona): Coevolutionary interactions between Tasmanian devils (*Sarcophilus harrisi*) and a species-specific transmissible cancer (Talk)
- 2019 Harvard Museum of Comparative Zoology Seminar Series (Cambridge, Massachusetts): Population venomics in island rattlesnakes (Talk)
- 2018 Genetics Symposium, Clemson University (Clemson, South Carolina): Genetics of adaptation in complex traits (Talk)
- 2018 Department of Biological Sciences Seminar Series, Clemson University (Clemson, South Carolina): A mechanism for tumor regression in a transmissible cancer (Talk)
- 2018 Washington State University Alumni Association Research Presentation (Pullman, Washington): The devil's cancer (Talk)
- 2018 EVO-WIBO (Port Townsend, Washington): A mechanism for tumor regression in a transmissible cancer (Talk)
- 2017 Evolution (Portland, Oregon): Variants of large-effect underlie sex-specific resistance to a transmissible cancer (Talk)
- 2017 Palouse Ecology, Evolution and Systematics Seminar (Pullman, Washington): Quantity, not quality: rapid adaptation in a complex, polygenic trait proceeded exclusively through expression differentiation (Talk)
- 2016 Evolution (Austin, Texas): Quantity, not quality: rapid adaptation to local prey proceeds through venom-gene expression changes in rattlesnakes (Talk)

- 2016 Ecology and Evolution Seminar Series, Florida State University (Tallahassee, Florida): Quantity, not quality: rapid adaptation to local prey proceeds through venom-gene expression changes in rattlesnakes (Talk)
- 2014 Evolution (Raleigh, North Carolina): Expression evolution in island snake venoms (Talk)
- 2014 Biology of the Pitvipers 2 (Tulsa, Oklahoma): The evolution of island venoms (Talk)
- 2013 35th Annual Gopher Tortoise Council Meeting (Ponte Vedra, Florida): Protein expression variation contributes to the evolution of the venom of the eastern diamondback rattlesnake (Talk)
- 2013 Southeast Partners in Amphibian and Reptile Conservation (SEPARC) Annual Meeting (Hickory Knob State Park, South Carolina): Population genomics and ecological diversification in North American venomous snakes (Talk)
- 2012 34th Annual Gopher Tortoise Council Meeting (Bainbridge, Georgia): Population and ecological diversification in North American venomous snakes (Talk)
- 2012 17th World Congress of the International Society on Toxinology and Venom Week (Honolulu, Hawaii): The venom-gland transcriptome of the eastern coral snake (*Micrurus fulvius*) reveals cryptic venom complexity in the intragenomic evolution of venoms (Poster)

Teaching

- 2024 Fall BSC 2011: Bio II - Biological Diversity, University of South Florida
- 2024 Spring MCB 4276: Disease Biology, University of South Florida
- 2023 Spring MCB 4276: Disease Biology, University of South Florida
- 2022 Fall BSC 4933/6932: Herpetology, University of South Florida
- 2022 Spring BSC 4933: Disease Biology, University of South Florida
- 2021 Fall BSC 4933/6932: Herpetology, University of South Florida
- 2021 Spring BSC 4933: Disease Biology, University of South Florida
- 2020 Spring ESPP90e: Conservation Biology, Harvard University
- 2016 Fall ZOO4343C: Herpetology (Co-instructor of record), Florida State University

Postdoctoral Supervision

- 2022–2023 Rhett Rautsaw Tasmanian devil-DFTD coevolution. Co-advised with Andrew Storfer at WSU.

Graduate Students

- 2023– Ella Guedouar, Ph.D. track, Department of Integrative Biology, USF.
- 2022– Dylan Gallinson, Ph.D. track, Department of Integrative Biology, USF.
- 2021– Preston McDonald, Ph.D. track, Department of Integrative Biology, USF.
- 2021– Samuel Hirst, Ph.D. track, Department of Integrative Biology, USF.
- 2021–2022 Dylan Gallinson, M.S., College of Public Health, USF. Co-advised with Ryan McMinds.

Graduate Advisory Committees

- 2024– Elise Samuelson, Ph.D. Department of Integrative Biology, USF.
- 2023– Bethany Burns, Ph.D. Department of Integrative Biology, USF.
- 2022– Shivam Shukla, M.S. Department of Integrative Biology, USF.
- 2020– Jeanette Calarco, Ph.D. Department of Integrative Biology, USF.
- 2023–2024 Eleanor Brodrick, M.S. Department of Integrative Biology, USF.
- 2020–2024 Eva Muir, Ph.D. Department of Integrative Biology, USF.
- 2022–2023 Kailey McCain, M.S.P.H. College of Public Health, USF.

Undergraduate Research

2022– Shantal Stephany Solis Solis
 2021–2024 Cameron Vanhorn
 2021–2023 Lauren Trumbull

Service at the University of South Florida

2024– Peer Review of Teaching Reviewer, Department of Integrative Biology
 2023– Selmon Mentoring Institute Mentor to student-athletes
 2022– Scientist, Institutional Animal Care and Use Committee
 2020– Graduate Admission & Policy Committee, Department of Integrative Biology

General Service

2023 – Editorial Board for *Toxins*
 2021 – Research Committee, The Rattlesnake Conservancy, www.savethebuzztails.org
 2023 Scientific expert for U.S. Fish and Wildlife Services for the Species Status Assessment of the Eastern Diamondback Rattlesnake (*Crotalus adamanteus*)
 2023 Guest on weekly radio show “Sustainable Living” WMNF Tampa 88.5 entitled “Rattlesnake venoms and transmissible cancers: a look into the world of genomics”
 2023 Invited participant to NSF’s “LIFE: Leveraging Innovations From Evolution” Virtual Workshop
 2022 Scientific Committee Member for the Pathogens and Natural Toxins e-Conference (<https://sciforum.net/event/PNTEC#>)
 2020–2022 Guest Editor for Special Issue on “Using genomics to understand venom evolution” in *Toxins*. https://www.mdpi.com/journal/toxins/special_issues/genomics_venom
 2019–2023 Participant in National Geographic’s Explorer Classroom outreach program that connects classrooms around the world with National Geographic Explorers.
 2019 BIOSCIence Expo, Clemson University: “Snakes of South Carolina.” Educational exhibit following the Annual Biology Merit Exam for middle and high school students in SC.
 2018 “Ask Dr. Universe”: What is venom?
<https://askdruniverse.wsu.edu/2018/10/26/what-is-venom/>
 2013–2015 Trainer of seven high school students through the Young Scholars Program at FSU.
 2015 Guest speaker at the Venom Adventures Summer Camp at the Tallahassee Museum.
 2014–2015 Instructor for Saturday-at-the-Sea, an outreach program through the Office of Science Teaching Activities and the Florida State University Coastal and Marine Laboratory.
 2014–2015 Guide for Boy Scouts of America Troop 115 for the Reptile Amphibian Merit Badge.

Grant Review

2024 External reviewer for the American Philosophical Society Lewis and Clark Fund for Exploration and Field Research
 2023 External review for the German Research Foundation
 2023 NSF Panelist
 2021 External review for the European Research Council
 2021 External review for the Swiss National Science Foundation
 2021 External review for the French National Research Agency (ANR)

Manuscript Review

- *BMC Biology*
- *BMC Evolutionary Biology*
- *BMC Genomics*
- *Cellular & Molecular Life Sciences*
- *Chemical Research in Toxicology*
- *Conservation Genetics*
- *Current Biology*
- *Current Medicinal Chemistry*
- *eLife*
- *Evolutionary Applications*
- *Genes*
- *Genome Biology & Evolution*
- *GigaScience*
- *International Journal of Environmental Research & Public Health*
- *iScience*
- *Journal of Evolutionary Biology*
- *Journal of Heredity*
- *Journal of Molecular Evolution*
- *Journal of Proteomics*
- *Marine Drugs*
- *Molecular Biology & Evolution*
- *Molecular Ecology*
- *Molecular Phylogenetics & Evolution*
- *Molecules*
- *PeerJ*
- *PLOS One*
- *Proceedings of the National Academy of Sciences*
- *Proceedings of the Royal Society B*
- *Scientific Reports*
- *Toxicology in Vitro*
- *Toxicon*
- *Toxins*