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 2020–present: Link. Precision Medicine Program Faculty 2024–present: Link.
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. Rokyta.
2007–2011	B.A., Biology, Bethany College, Lindsborg, Kansas. Summa cum laude.

Funding

2024–	USF CREATE initiative entitled "Pushing the frontiers of precision medicine with interdisciplinary high resolution research" in the amount of $500,00 (CoPI with Rays Jiang and other faculty in the Genomics Program).
2023–	National Science Foundation grant (NSF DEB-2324456) entitled "Collaborative Research: Testing the spatio-temporal repeatability of (co)evolution in Tasmanian devils and their transmissible 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).
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$, graduate student in my lab+, undergraduate*, corresponding author†)

Calculated by Google Scholar on 9/13/24: 2,107 citations, h-index=26, ¡10-index=34

47. Clement DT†, Gallinson DG+, Hamede RK, Jones ME, **Margres MJ**, McCallum H, Storfer A†. 2024. Coevolution promotes the coexistence of Tasmanian devils and a fatal, transmissible cancer. *Evolution*. qpae143.

46. Hirst SR†,+, Rautsaw RM, VanHorn CM*, Beer MA, McDonald PG+, Rosales-Garcia RA, Lopez BR, Rincon AR, Franz-Chavez H, Vasquez-Cruz V, Kelly-Hernandez A, Storfer A, Borja M, Castaneda-Gaytan G, Frandsen PB, Parkinson CL, Strickland JL, **Margres MJ**†. 2024. Where the '*ruber*' meets the road: Using the genome of the Red Diamond Rattlesnake to unravel the evolutionary processes driving venom evolution. *Genome Biology and Evolution*. **16**(9):evae198.

45. Strickland K, Jones M, Storfer A, Hamede R, Hohenlohe P, **Margres MJ**, McCallum H, Comte S, Lachish S, Kruuk L†. 2024. Adaptive potential in the face of a transmissible cancer in Tasmanian devil. *Molecular Ecology*. e17531.

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. *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, Burridge 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$^{\$,\dagger,+}$, 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: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

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 harrisii*) 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.

Visiting International (J) Scholars

2024	Gabriel Mochales Riano, Ph.D. student, Institute of Evolutionary Biology, Spain.
2023	Pedro Natchtigall, Postdoctoral associate, Instituto Butantan, Brazil.

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.
2020–2024	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–	Member of the College of Arts and Sciences Core Research Facilities Committee
2024–	Peer Teaching Review, 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	Invited participant to NSF's "LIFE: Leveraging Innovations From Evolution" Workshop
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"
2022	Scientific Committee Member for the Pathogens and Natural Toxins e-Conference (https://sciforum.net/event/PNTEC#)
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	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/

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)

External Examiner

2024	External examiner for Australian PhD thesis at the University of Queensland

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*
- *Nature Communications*
- *PeerJ*
- *PLOS One*
- *Proceedings of the National Academy of Sciences*
- *Proceedings of the Royal Society B*
- *Scientific Reports*
- *Toxicology in Vitro*
- *Toxicon*
- *Toxins*