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EDUCATION

2024–Present | PhD in Geology - Paleontology | University of Florida
Dissertation in progress (expected completion 2027 December): Macroevolutionary Transitions in Neogene Fossil Horses (Family Equidae) in North America Using Phenomics and Machine Learning
Advisors: Drs. Bruce J. MacFadden and Arthur Porto

2023 | MS in Geology - Paleontology | University of Florida
Thesis: Geochemistry of Fossil Shark Teeth as Age Proxies for Neogene Sites of Florida
Advisor: Dr. Bruce J. MacFadden

2021 | Graduate Certificate – Nonprofit Leadership | University of Florida

1995–1997 | Graduate Coursework in Microbiology (Degree Not Completed) | University of Kansas

1995 | BA in Human Biology (Cum laude) | University of Kansas

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PROFESSIONAL EXPERIENCE

2019–Present | K-12 Education and Outreach Coordinator (SEFS)
University of Florida, Thompson Earth Systems Institute - Florida Museum of Natural History

2013–2019 | Certified 6-12 Biology Teacher State of Florida
Science Department Chair and Science Night Coordinator
Palm Beach County School District

2001–2013 | Orthopedic/Neurologic Clinical Specialist and Sales
Dynasplint Systems Inc. and Depuy Johnson and Johnson

PEER REVIEWED PUBLICATIONS

** Denotes scientific research ** Denotes education research and Broader Impacts*

2026

1. Ivory III, A. A., Ville-Veikko, Killingsworth, S., & Donovan, V. M. Integrating Scientific Tools into K-12 Education: Activities, Technologies, and Partnerships. *EDIS*, Gainesville, Florida. In Press.**

2. Wusylko, C., Still, R., Antonenko, P. D., Abramowitz, B., Perez, V., Waisome, J., **Killingsworth, S.**, & MacFadden, B. Exploring Bias and Building AI Models: Data Science for Middle Schoolers. *Science Scope.* https://doi.org/10.1080/08872376.2026.2632617 **

2025

3. MacFadden, B. J., Barberis, C., Vallejo-Pareja, M. C., Zbinden, S. P., Perez, V. J., **Killingsworth, S. R.**, Marks, K., Hall, D., & Porto, A. AI and paleontology: Effects of vertebrate fossils sample size on machine learning image classification. *



4. **Killingsworth, S.**, MacFadden, B., Moran, S. M., Perez, V. J., Pirlo, J., & Ziegler, M. Marine strontium isotopes preserved in fossil shark teeth calibrate Neogene land mammal evolution. *Palaeogeography, Palaeoclimatology, Palaeoecology.* https://doi.org/10.1016/j.palaeo.2024.112698 *



5. Wusylko, C., Antonenko, P., Abramowitz, B., Waisome, J., Perez, V., **Killingsworth, S.**, & MacFadden, B. Supporting teachers to integrate AI and computer science through SharkAI: a middle school computer science and paleontology curriculum. *Journal of Technology and Teacher Education*. https://doi.org/10.70725/161207qresyx **



2024

6. MacFadden, B. J., Bohaska, D., Cone, L., **Killingsworth, S. R.**, Zbinden, S. P., Moran, S. M., & Perez, V. J. Early Miocene land mammals and chronology of the Belgrade Formation, eastern North Carolina. *Journal of Paleontology.* https://doi.org/10.1017/jpa.2024.68 *



7. Abramowitz, B., Ennes, M., Antonenko, P., & **Killingsworth, S.** A Narrative Inquiry into Teacher Efficacy for Teaching Climate Science with Technology in a Scientist-Teacher Partnership Program. *The Journal of Environmental Education*. https://doi.org/10.1007/s10956-024-10169-x **

2023

8. **Killingsworth, S.**, MacFadden, B. Species Occurrences of Late Miocene Horses (Equidae) from Florida: Sampling, Ecology, or Both? *Paleobiology.* https://doi.org/10.1017/pab.2023.35 *



2021

9. Abramowitz, B., Ennes, M., **Killingsworth, S.**, Antonenko, P., MacFadden, B., & Ivory, A. Science in School: Transforming K-12 Outreach through Scientist Teacher Partnerships. *Journal of STEM Outreach*. https://doi.org/10.15695/jstem/v4i1.14 **



2020

10. MacFadden, B. J., Pirlo, J., Abramowitz, B., **Killingsworth, S.**, & Ziegler, M. Authentic field experiences for STEM teachers: Collecting Florida fossils. *Florida Association of Science Teachers*. https://doi.org/10.1101/2020.07.02.184077 **



POPULAR ARTICLES

1. Killingsworth, S., MacFadden, B., 2025. Fossil shark teeth are abundant and can date the past in a unique way. *The Conversation*. https://doi.org/10.64628/aai.sysf9ypn6



2. **Killingsworth, S.,** MacFadden, B., 2024. Horses lived in the Americas for millions of years – new research helps paleontologists understand the fossils we've found and those that are missing from the record**.** *The Conversation*. https://doi.org/10.64628/aai.w4vhe6cwp



FIELD AND TECHNICAL EXPERIENCE

Field Collecting

- Florida
- New Mexico
- Nebraska
- North Carolina
- California
- Panama

Museum Collections Vertebrate Paleontology

- Florida Museum of Natural History
- American Museum of Natural History
- Natural History Museum of Los Angeles County

- Panhandle Plains Historic Museum
- Smithsonian National Museum of Natural History
- Berkeley Museum of Natural History

Technical Computer Experience

- Microsoft Suite, Google Suite, Video Conferencing Platforms, Sharepoint, Canvas, Qualtrics, Adobe Illustrator, WordPress, MailChimp, Slack, Discord, SciWheel
- R/RStudio, Python, Rev, HTML, GitHub, RevBayes, ArcGISPro, 3DSlicer, PBDB, GBIF, iDigBio, Specify, HiperGator Supercomputer Cluster

Technical Lab Experience

- Hood and bench practice and safety, analytical balances, media preparation, aseptic techniques, tissue culture, centrifuge, autoclave, incubation, microscopy, microtome, PCR, gel electrophoresis
- Column chemistry, ICP-MS, REEs, isotope analysis (Sr), micro-CT

CONFERENCES & SPEAKING ENGAGEMENTS

1. **Killingsworth, S.**, 2026. From Pixels to Morphospace: Interpretable Deep Learning Reveals Paleopopulation Structure and Evolutionary Variation in Neogene Horses (Family Equidae). SVP, Cleveland, Ohio. *Romer Prize Session*
2. Broo, J., & Neilson, A., Wuslyko, C., & **Killingsworth, S.**, 2026. Using machine learning models to assess variation in fossilized horse teeth for species classification in education. SVP, Cleveland, Ohio.
3. **Killingsworth, S.,** 2026. Museums as Resources for Rural Education. Southwest Regional Community Engagement Consortium Convening. *Invited Panelist* El Paso, Texas.
4. **Killingsworth, S.,** 2025. Detecting Macroevolutionary Transitions in Neogene Fossil Horses. *Invited Lightning Talk* at the Florida Museum of Natural History.
5. **Killingsworth, S.,** 2025. A Trail Ride Through Time: Epic Adventures and Neogene Horse Evolution. *Invited to Talk* at University of California, Berkeley.
6. Haire, G., Antonenko, P., Wusylko, C., **Killingsworth, S.**, Abramowitz, B., Waisome, J., Jones, D., MacFadden, B., & Perez, V., 2025. Exploring Student Self-Efficacy in AI Through Model Building Artifacts. American Society of Engineering Education.
7. Wusylko, C., Still, R., Antonenko, P., Abramowitz, B., Perez, V., Waisome, J, **Killingsworth, S.**, & MacFadden, B., 2025. One Teacher's Experience Adapting and Innovative, Flexible Computer Vision Curriculum in a Science Classroom. American Society of Engineering Education.
8. Opoku, R., Jones, T., Haire, G., Wusylko, C., Lin, C. H., Adhami, N., MacFadden, B., Waisome, J., Perez, V., Abramowitz, B., **Killingsworth, S.**, King, N., & Antonenko, P.,

2025. Black Middle Schoolers' Artificial Intelligence Self-Efficacy and Outcome Expectations in a Summer STEM Camp. AERA Annual Meeting. Denver, Colorado.

9. Jones, T., Opoku, R., Haire, G., Wusylko, C., Lin, C. H., Adhami, N., MacFadden, B., Waisome, J., Perez, V., Abramowitz, B., **Killingsworth, S.**, & Antonenko, P., 2025. Exploring Black Girls' Sources of Self-Efficacy for Artificial Intelligence During an Informal Learning Experience. AERA Annual Meeting. Denver, Colorado.
10. Haire, G., Jones, T., Opoku, R., Wusylko, C., Lin, C. H., Adhami, N., MacFadden, B., Waisome, J., Perez, V., Abramowitz, B., **Killingsworth, S.**, & Antonenko, P., 2025. Secondary Students' Outcome Expectations for AI: A Social Cognitive Career Theory Perspective. AERA Annual Meeting. Denver, Colorado.
11. **Killingsworth, S**., 2024. Harnessing Machine Learning to Detect Macroevolutionary Transitions in Neogene Fossil Horses (Family Equidae) in North America. SVP Conference. Minneapolis, Minnesota.
12. Perez, V., MacFadden, B. J., Antonenko, P., Waisome, J., Abramowitz, B., **Killingsworth, S.**, & Vallejo-Pareja, M., 2024. The Shark AI Project: Utilizing Paleontology to Catalyze Learning About Artificial Intelligence. GSA Conference. Anaheim, California.
13. Wusylko, C., Antonenko, P., Abramowitz, B., Waisome, J., Perez, V., **Killingsworth, S**., & MacFadden, B., 2024. Supporting Teachers to Integrate AI and Computer Science Through SharkAI: A Middle School Computer Science and Paleontology Curriculum. SITE Interactive. Online.
14. **Killingsworth, S**., 2023. Geochemistry of Fossil Shark Teeth as Age Proxies for Neogene Sites of Florida. GSA Conference. Pittsburgh, Pennsylvania
15. **Killingsworth, S**., & MacFadden B., 2023. Species Occurrences of Late Miocene Horses (Equidae) from Florida: Sampling, Ecology, or Both? SVP Conference. Cincinnati, Ohio.
16. MacFadden, B., Antonenko, P., Perez, V., Abramowitz, B., **Killingsworth, S.**, & Parnell, D., 2023. Fossil Shark Teeth Activate Engagement and Learning About AI (Artificial Intelligence) in Florida Public Middle Schools. SVP Conference. Cincinnati, Ohio.
17. Sharma, D., **Killingsworth, S.**, Bokor J., Pirlo J., Abramowitz, B. & MacFadden, B., 2023. Chewing on Change: Training the Next Generation of Science Communicators. SVP Conference. Cincinnati, Ohio.
18. **Killingsworth, S**., Abramowitz, B., MacFadden B., Carter, K., & Pirlo, J., 2022. Bringing Florida Museum of Natural History 3D Collections into K-12 Schools to Teach About Adaptations, Evolution, and Climate Change. SPNHC Conference. Edinburgh, Scotland.
19. MacFadden, B., Antonenko, P., Magruder, J., Perez, V., Abramowitz, B., & **Killingsworth, S.,** 2022. Integrating AI Machine Learning into the Teaching of Paleontology Using Fossil Shark Teeth in Middle Schools. Poster presentation at AI in Education Mini-Symposium. Gainesville, Florida.

20. Abramowitz, B.**,** & **Killingsworth, S**., 2021. Implementing Machine Learning and AI to Advance Science Curriculum. Presentation at Florida Association of Science Teachers. St. Augustine, Florida.
21. Ivory, A., Abramowitz, B., & **Killingsworth, S.**, 2021. The Water that Connects Us. Presentation at Florida Association of Science Teachers. St. Augustine, Florida.
22. Abramowitz, B., Ennes, M., **Killingsworth, S.**, Antonenko, P., MacFadden, B., & Ivory, A., 2021. Engaging scientists in outreach to support Florida teachers. Presentation at the Southeast Association of Science Teacher Education. Tampa, Florida.
23. MacFadden, B. & **Killingsworth, S.**, 2021. Program Updates from the Scientist in Every Florida School at Florida Association of Science Supervisors. Miami, Florida.
24. Abramowitz, B., MacFadden, B. J., Pirlo, J., **Killingsworth, S.**, & Ziegler, M., 2021. Structuring and Authentic Teacher Professional Development Experience. Poster presented at UF College of Education Research Symposium, Gainesville, Florida.
25. **Killingsworth, S.**, Abramowitz, B., Valle-Levinson, A., 2020. Exploring air, water, land and life with Scientist in every Florida school. Virtual presentation at Florida Association of Science Teachers. Virtual
26. MacFadden, B., Abramowitz, B., & **Killingsworth, S.**, 2020. TESI and Scientist in Every Florida School. Invited Presentation for the Fall 2020 Geology Seminar Series. University of Florida. Gainesville, FL.
27. **Killingsworth, S.**, **&** Abramowitz, B., 2019. K-12 Outreach, Moonshot Project. Invited Presentation for the Fall 2020 Broader Impacts of Science on Society graduate course. University of Florida. Gainesville, Florida.
28. MacFadden, B. & **Killingsworth, S.,** 2018. Scientist in Every Florida School and Teacher Experiences at Florida Association of Science Supervisors.
29. **Killingsworth, S.** & Bokor, J., 2016. Summer Science Institute at CPET in Gainesville at the Palm Beach County STEM Initiative Learning Showcase. West Palm Beach, Florida.
30. **Killingsworth, S.**, 2016. Experimental Science and Engineering and Design Lab/Project at the Creativity Fest. West Palm Beach, Florida.
31. **Killingsworth, S.**, 2015. Translating the GABI-RET Experience into the Middle School Classroom at the 2015 PCP PIRE/GABI RET/FOSSIL Collaborative Field Conference. Gainesville, Florida.

GRANT COLLABORATIONS AND FUNDS RECEIVED

$5,000	NAS Inspire Award | ECR Fellows to Connect with K-12 Students in the Gulf Region |2025

$25,918	Bureau of Land Management Subaward |Your Public Lands at Risk– Archaeological Exploration of the Jupiter Inlet and Lighthouse | 2025–2027
$21,000	Dickinson Fund | Florida Museum of Natural History Vertebrate Paleontology | 2024
$48,128	Senior Personnel Subaward | NSF CAREER #AWD16116: An Integrated Trustworthy AI Research and Education Framework for Modeling Human Behavior in Climate Disasters | Grant Total: $501,181 | P.I. Zhao, X. | UF Engineering School of Sustainable Infrastructure and Environment | 2024
$118,170	Senior Personnel Subaward | NSF#DBI-2320251: BII: Polyploidy: Integration Across Scales and Biological Systems | Grant Total: $12,667,073 | P.I. Soltis, P. & others | UF Department of Natural History | 2023
$13,214	Senior Personnel Subaward | NSF#AWD12799: Research Infrastructure: Moving and Improving the Florida Museum Fish Collection | Grant Total: $695,318 | P.I. Page, L., UF Department of Natural History-Ichthyology | 2022
$152,830	Senior Personnel Subaward | NSF #2147625: Innovative Technology Experiences for Students and Teachers (ITEST). DTI: Teaching Middle School Students Machine Learning Concepts and Applications in Science with Fossil Shark Teeth | Grant Total: $1,275,109 | P.I. MacFadden, B. & Others | UF Department of Natural History | 2022
$5,500	Paleontological Society and Alachua School District | Chewing on Change: Bringing Fossil Horses into Title I Schools to Learn About Macroevolution | 2022
$80,132	Senior Personnel Subaward | NSF#2114833: Intramembrane Proteolysis in Regulation of the Rice Receptor Kinase XA21 |Grant Total: $945,996 |P.I. Song, W. Y. | 2021
$15,000	Surface 71 | Palm Beach Philanthropy Tank | 2018

AWARDS AND NOMINATIONS

National Awards

$2000 – Winifred Goldring Award- Assoc. for Woman Geoscientists & Paleo. Society (2023)
NSF Presidential Awards for Excellence in Mathematics & Science Teaching Finalist (2019)
$10,000 – National Life Group Life Changer of the Year (2017-2018)

University of Florida (Campus-wide HR Awards)
$300 – University of Florida Division III Superior Achievement Award (2026)

Research and Travel Awards
$400 – University of Florida CLAS Travel Grant (2026)
$1000 – Department of Geological Sciences (UF) Research (2025)
$1750 – Theodore Roosevelt Memorial Fund (AMNH) Grant (2025)
$500 – Department of Geological Sciences (UF) Research (2024)
$1000 – Florida Museum of Natural History Spring Travel Award (2023)
$500 – Jackson School of Geosciences Student Member Travel Grant (SVP) (2023)
$350 – Department of Geological Sciences (UF) Travel to GSA (2023)
$500 – Graig D. Shaak Staff Enrichment Award- Florida Museum of Natural History (2023)
$300 – Nichol Award- University of Florida Department of Geological Sciences (2023)
$1000 – Mitchell Hope Award- Southwest Florida Fossil Society (2023)
$500 – Travel Award for Society for the Preservation of Natural History Collections (2022)

Teaching Awards
$6000 – Florida's Best and Brightest Recipient-Highly Effective Rating (2016-2019)
$1500 – Great American Biotic Interchange Research Experience for Teachers (2014-2019)
$1000 – Dwyer Teacher of the Year Runner Up (2018)

Distinctions
Romer Prize Session SVP (2026)
Western Kentucky National STEM Scholar (2019)
Dwyer Teacher of the Year (2018, 2019)
National Geographic Grosvenor Fellow Nominee (2018, 2019)
Macy's Teacher of the Year (2016)

LEADERSHIP

PROFESSIONAL DEVELOPMENT K-12 PROGRAM INITIATIVES

Killingsworth, S., Zhao, X., 2026-2027. *Modeling Human Behavior in Climate Disasters Using Artificial Intelligence*

Killingsworth, S., Musgrave, P., 2026-2027. *Experimental Design Using Robotic Fish*

Killingsworth, S., Neilson, A., 2026-2027. *Archaeological Exploration of the Jupiter Inlet*

Killingsworth, S., Neilsen, A., & Wusylko, C., 2026. *Chewing on Change - Using Machine Learning Models to Assess Variation in Fossilized Horse Teeth for Species Classification*

Killingsworth, S., Xue, B., & Leibold, M., 2025. *Ecological Competition Between Invasive and Native Species*

Killingsworth, S., Soltis, P., & Soltis, D., 2025-2028. *BII: Polyploidy: Integration Across Scales and Biological Systems*

Killingsworth, S., & Ennes, M., 2023-2024. *Research Infrastructure: Moving and Improving the Florida Museum Fish Collection*

Killingsworth, S., Abramowitz B., Bokor, J., Pirlo, J., & MacFadden, B., 2022. *Chewing on Change: Bringing Fossil Horses into Title I Schools to Learn About Macroevolution*

Killingsworth, S. & Abramowitz B., MacFadden, B., Antonenko, P, Waisome, J., 2022-2025. *SEFS Cohort I-IV: AI Learning in K-12 with Fossil Sharks*

Killingsworth, S., Song, W. Y., 2022-2025. SEFS Cohorts I-IV: *Plant Pathology Professional Development for High School Teachers*

Killingsworth, S., Abramowitz B., Pirlo, J., & MacFadden, B., 2022. *SEFS Paleo PD*

Killingsworth, S., Abramowitz B., Carter K., & MacFadden, B., 2022. *Adaptations, Evolution, and Climate Change Miami-Dade Teacher Professional Development*

Killingsworth, S. & Abramowitz B., 2021. *The Hydrosphere Summer Professional Development for Teachers*

Killingsworth, S., Abramowitz B., Pirlo, J., & MacFadden, B., 2021. *SEFS Paleo PD*

Killingsworth, S. & Abramowitz B., 2020. *The Nature of Science Summer Professional Development for Teachers*

Killingsworth, S., Abramowitz B., & MacFadden, B., 2020. *World Wetlands January Summit Teacher Professional Development*

Killingsworth, S. 2019. Florida Association of Science Teachers Conference. *The Case of Coral*

Killingsworth, S., Abramowitz B., Pirlo, J., & MacFadden, B., 2019. *Connections to the Biosphere Summer Professional Development*

Killingsworth, S., Abramowitz B., Pirlo, J., & MacFadden, B., 2019. *SEFS Montbrook Dig Experience Professional Development*

OUTREACH & SERVICE

2025-Present	Non-Profit Big Dog Ranch Rescue volunteer
2019-Present	Scientist Outreach – Scientist in Every Florida School

MUSEUM MENTORSHIP/LEADERSHIP

2025	Mentoring and supervising graduate student: Alexa Neilson
2023	Mentoring undergraduate student: Sam Zbinden
2023	Selection Committee Member for VP Assistant Curator for the FLMNH

EDUCATION MENTORSHIP/LEADERSHIP

2020-2022	Presidential Award of Excellence in Math & Science Teaching Judge
2019-2022	Florida Association of Science Teachers (FAST) Area 10 Director
2019-2022	National Association of Geoscience Teachers (NAGT) SE Representative

JOURNAL REVIEWS

2026	Manuscript Reviewer *Springer PalZ journal*
2025	Manuscript Reviewer *Paleobiology*
2023	Manuscript Reviewer *Journal of Paleontology*

PROFESSIONAL MEMBERSHIP

Paleontological Society
Society for Vertebrate Paleontology
American Women in Geosciences (Northern Florida Chapter)
Geological Society of America
American Alliance of Museums