

## CURRICULUM VITAE

# EDWARD LEO STANLEY

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## EDUCATION

- 2009-2013 **Richard Gilder Graduate School**, American Museum of Natural History, NY  
Ph.D. Comparative Biology. *Systematics and morphological diversification of the Cordylidae (Squamata)*
- 2007-2009 **Villanova University**, Villanova, PA  
M.S. Biology. *Evolutionary relationships within the family Cordylidae (Squamata)*
- 2001-2005 **University of St Andrews**, St. Andrews, Scotland  
B.Sc Hons. (2.1) Zoology

## PROFESSIONAL PREPARATION

Florida Museum, Gainesville, FL

2017–present **Associate Scientist** and Director of the 3D Laboratory

2017–present **CT Specialist**, Nanoscale Research Facility

2015–2017 **Postdoctoral researcher**, Division of Herpetology

California Academy of Sciences, San Francisco, CA.

2015–present **Research Associate**, Section of Herpetology, Department on Vertebrate Zoology and Anthropology

2013–2015 **Postdoctoral researcher**, Section of Herpetology, Department on Vertebrate Zoology and Anthropology

American Museum of Natural History, New York, NY

2013–present **Research Associate**, Department of Herpetology.

2009–2013 **Research Fellow**, Richard Gilder Graduate School

## RESEARCH INTERESTS

- New applications of Computed Tomography data for research and education
- 3D data production and dissemination techniques
- Phylogenetics of Sub-Saharan African lizards and frogs
- Phenotypic adaptation and diversification of defensive structures
- African biogeography
- Squamate and amphibian Paleontology
- The effect of taxonomic biases on macroevolutionary studies

## PUBLICATIONS

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- Čerňanský, A., **Stanley, E.L.**, Daza, J.D., Bolet, A., Arias, J.S., Bauer, A.M., Vidal-García, M., Bevitt, J.J., Peretti, A.M., Aung, N.N. and Evans, S.E. 2022. A New Early Cretaceous lizard in Myanmar Amber with Exceptionally Preserved Integument. *Scientific Reports* 12, 1660
- Paluh, D.J., Dillard, W.A., **Stanley, E.L.**, Fraser, G.J. and Blackburn, D.C., 2021. Re-evaluating the morphological evidence for the re-evolution of lost mandibular teeth in frogs. *Evolution*.
- Pinheiro, P.D., Blotto, B.L., Ron, S.R., **Stanley, E.L.**, Garcia, P.C., Haddad, C.F., Grant, T. and Faivovich, J., 2021. Prepollex diversity and evolution in Cophomantini (Anura: Hylidae: Hylinae). *Zoological Journal of the Linnean Society*.
- Bell, C. J., Daza, J. D., **Stanley, E. L.**, and Laver, R. J. (2021). Unveiling the elusive: X-rays bring scolecophidian snakes out of the dark. *The Anatomical Record*, 304(10):2110-2117
- Laver, R.J., Daza, J.D., Ellis, R.J., **Stanley, E.L.** and Bauer, A.M., 2021. Underground Down Under: Skull anatomy of the southern blind snake *Anilius australis* Gray, 1845 (Typhlopidae: Serpentes: Squamata). *The Anatomical Record*. 304(10):2215-2242
- Bolet, A., **Stanley, E. L.**, Daza, J. D., Salvador Arias, J., Čerňanský, A., Vidal-García, M., Bevitt, J. J., Peretti, A., Evans, S. E. (2021). "Unusual morphology in the mid-Cretaceous lizard *Oculudentavis*". *Current Biology*, 31, 1–12.
- Paluh, D.J., Riddell, K., Early, C.M., Hantak, M.M., Jongsma, G.F., Keeffe, R.M., Silva, F.M., Nielsen, S.V., Vallejo-Pareja, M.C., **Stanley, E.L.** and Blackburn, D.C., 2021. Rampant tooth loss across 200 million years of frog evolution. *Elife*, 10, p.e66926.
- Bardua, C., Fabre, A.C., Clavel, J., Bon, M., Das, K., **Stanley, E.L.**, Blackburn, D.C. and Goswami, A., (2021) Size, microhabitat, and loss of larval feeding drive cranial diversification in frogs. *Nature Communications*, 12(1), pp.1–13.
- Goodman, C.M., Jongsma, G.F.M., Hill, J.E., **Stanley, E.L.**, Tuckett, Q.M., Blackburn, D.C. and Romagosa, C.M. (2021) A case of mistaken identity: genetic and anatomical evidence reveal the cryptic invasion of *Xenopus tropicalis* in central Florida. *Journal of Herpetology* 55.1 : 62-69.
- Wagner, P., **Stanley, E.L.**, Daza, J.D., Bauer, A.M. (2021) A new agamid lizard in mid Cretaceous amber from northern Myanmar. *Cretaceous Research*
- Feiner, N., Jackson, I.S.C., **Stanley, E.L.**, and Tobias Uller, T., 2021 Evolution of the locomotor skeleton in *Anolis* lizards reflects the interplay between ecological opportunity and phylogenetic inertia. *Nature Communications* 12, 1525
- Daza J.D., **Stanley, E.L.**, Bolet, A., Bauer, A.M., Salvadore Arisa, J.m Cernasky, A., Bevitt, J., Wagner, P., and Evans, S.E. (2020) Enigmatic amphibians in mid-Cretaceous amber were chameleon-like and had ballistic feeding. *Science*. 370(6517): 687–691.
- Nielsen, S.V., Conradie W., Ceriaco, L.M.P., Bauer, A.M., Heinicke, M.P., **Stanley, E.L.** and Blackburn, D.C. 2020. A new species of Rain Frog (Brevicipitidae, *Breviceps*) endemic to Angola. *ZooKeys* 979: 133–160

- Blackburn, D.C., Nielsen, S.V., Barej, M.F., Hirschfeld, J.D.M., Kouamé N.G., Lawson D., Loader, S., Ofori-Boateng, C., **Stanley, E.L.** and Rödel MO. 2020. Evolution of the African slippery frogs (Anura: *Conraua*), including the world's largest living frog. *Zoologica Scripta*. 2020, 00: 1–13.
- Heinicke M.P., Titus-McQuillan, J.E., Daza, J.D., Kull, E.M., **Stanley, E.L.** and Bauer, A.M. 2020. Phylogeny and evolution of unique skull morphologies in dietary specialist African shovel-snouted snakes (Lamprophiidae: *Prosymna*), *Biological Journal of the Linnean Society*, blaa076.
- Fabre, A.C., C. Bardua, M. Bon, J. Clavel, R.N. Felice, J.W. Streicher, J. Bonnel, **Stanley, E.L.**, D.C. Blackburn and A. Goswami. 2020. Metamorphosis and the evolution of morphological diversity in salamanders. *Nature Ecology and Evolution*.
- Bardua, C., Fabre, A.-C., Bon, M., Das, K., **Stanley, E.L.**, Blackburn, D. and Goswami, A. 2020, Evolutionary integration of the frog cranium. *Evolution*.
- Paluh, D.P., **Stanley, E.L.** and Blackburn, D.C., 2020 Evolution of hyperossification expands skull diversity in frogs. *Proceedings of the National Academy of Sciences*. 2020 Apr 14;117(15):8554-8562.
- Bates, M.F. and **Stanley, E.L.** 2020 A taxonomic revision of the south-eastern dragon lizards of the *Smaug warreni* (Boulenger) species complex in southern Africa, with the description of a new species (Squamata: Cordylidae). *PeerJ* 8:e8526
- Singer, R. A., Moore, J. A., and **Stanley, E. L.** 2020. Novel life history strategy in a deep sea fish challenges assumptions about reproduction in extreme environments. *Scientific Reports*, 10(1), 1–7.
- Blackburn, D.C., L. Roberts, M.C. Vallejo-Pareja, and **Stanley, E.L.**. 2019. First record of the anuran family Rhinophrynidae from the Oligocene of eastern North America. *Journal of Herpetology*. Vol. 53, No. 4, pp. 316–323.
- Blackburn, D. C., Giribet, G., Soltis, D. E., and **Stanley, E. L.** 2019. Predicting the Impact of Describing New Species on Phylogenetic Patterns. *Integrative Organismal Biology*, 1(1), obz028.
- Černanský A., **Stanley E.L.** 2019. The atlas–axis complex in Dibamidae (Reptilia: Squamata) and their potential relatives: The effect of a fossorial lifestyle on the morphology of this skeletal bridge. *Journal of Morphology*. 2019;1–21.
- Marques, M., Ceriaco, L.M.P., **Stanley, E.L.**, Bandeira, S.A., Agarwal, I. and Bauer A.M., 2019. A new species of Girdled Lizard (Squamata: Cordylidae) from the Serra da Neve Inselberg, Namibe Province, southwestern Angola. *Zootaxa* 4668(4)
- Evans B.J., Gansauge, M-T., **Stanley, E.L.**, Furman, B.L.S., Caroline M. S. Cauret, C.M.S., Ofori-Boateng, C., Gvoždík, V., Streicher, J.W., Greenbaum, E., Tinsley, R.C., Meyer, M. and Blackburn D.C. 2019. *Xenopus fraseri*: Mr. Fraser, where did your frog come from? *PLoS ONE* 14(9): e0220892.
- Holovacs, N.T., Daza, J.D., Guerra, C., **Stanley, E.L.** and Montero, R., 2019. You can't run, but you can hide: the skeleton of the sand-swimmer lizard *Calyptommatus leiolepis* (Squamata: Gymnophthalmidae). *The Anatomical Record*.

- Griffing, A. H., Sanger, T. J., Daza, J. D., Nielsen, S. V., Pinto, B. J., **Stanley, E. L.**, and Gamble, T. 2019. Embryonic development of a parthenogenetic vertebrate, the mourning gecko (*Lepidodactylus lugubris*). *Developmental Dynamics*, 248(11), 1070–1090.
- Camaiti, M. , Villa, A. , Wencker, L. C., Bauer, A. M., **Stanley, E. L.** and Delfino, M. 2019. Descriptive osteology and patterns of limb loss of the European limbless skink *Ophiomorus punctatissimus* (Squamata, Scincidae). *Journal of Anatomy*
- Blackburn D.C., Paluh, D.J., Krone, I., Roberts, E.M., **Stanley, E.L.** and Stevens, N.J. 2019. The Earliest Fossil of the African Clawed Frog (Genus *Xenopus*) from Sub-Saharan Africa," *Journal of Herpetology*, 53(2), 125–130.
- Portillo F., **Stanley E.L.**, Branch W.R., Conradie W.R., Rödel M.O., Penner J., Barej M., Kusamba, C., Muninga W.M., Aristote M.M., Bauer A.M., Trape J.F., Nagy Z.T., Carlino P., Pauwels O.S.G., Menegon M., Ineich I., Burger M., Mazuch T., Jackson K., Hughes D.F., Behangana M and Greenbaum E. 2019. Evolutionary history of burrowing asps (Atractaspidinae) (Squamata: Lamprophiidae) with emphasis on fang evolution and prey selection *PLoS One* 14 (4)
- Vijayakumar SP, Pyron, A., Dinesh KP, Torsekar, V., Srikanthan A., Swamy P., **Stanley E. L.**, Blackburn, D.C. and Shanker, K. 2019. A new ancient lineage of frog (Anura: Nyctibatrachidae: Astrobatrachinae subfam. nov.) endemic to the Western Ghats of Peninsular India. *PeerJ* 7:e6457
- Daza J. D., Bauer A. M., **Stanley E. L.**, Bolet A., Dickson B., and Losos J. B. 2018. An Enigmatic Miniaturized and Attenuate Whole Lizard from the Mid-Cretaceous Amber of Myanmar. *Breviora* 563 (1), 1–18
- Li, Y., Ruan, Y., Kasson, M.P., **Stanley E. L.**, Gillett, C.P.D.T., Johnson, A.J., Zhang, M., and Hulcr, J. 2018. Structure of the Ambrosia Beetle (Coleoptera: Curculionidae) Mycangia Revealed Through Micro-Computed Tomography. *Journal of Insect Science* 18 (5): 1–8
- Ceríaco, L.M.P., Marques, M.P., Bandeira, S., Agarwal, I., **Stanley E. L.**, Bauer, A.M., Heinicke, M.P., Blackburn, D.C. 2018. A new earless species of *Poyntonophrynus* (Anura, Bufonidae) from the Serra da Neve Inselberg, Namibe Province, Angola. *ZooKeys* 780: 109–136
- Xing, L., **Stanley E. L.**, Bai, M. and Blackburn, D.C. 2018. The earliest direct evidence of frogs in wet tropical forests from Cretaceous Burmese amber. *Scientific Reports* 8, Article number: 8770
- Hill R.L., Martin, K.G., **Stanley, E.L.** and Mendelson, J.R. 2018. A taxonomic review of the genus *Hemiphractus* (Anura: Hemiphractidae) in Panama: Description of Two New Species, Resurrection of *Hemiphractus panamensis* (Stejneger, 1917), and Discussion of *Hemiphractus fasciatus* Peters. 1862 *Zootaxa* 4429 (3): 495–512
- Li, Y., Ruan, Y., **Stanley E. L.**, Skelton, J. and Hulcr, J. 2018. Plasticity of mycangia in *Xylosandrus ambrosia* beetles. *Insect Science*. 00, 0–11.
- Kim, B.G., Kim, Y.H., **Stanley E. L.**, Garrido-Martin, E.M. and Lee, Y.J., Oh, S.P. 2017. CXCL12-CXCR4 signaling plays an essential role in proper patterning of aortic arch and pulmonary arteries, *Cardiovascular Research*, cvx188,

- Ribeiro, L. F., Blackburn, D. C., **Stanley E. L.**, Pie, M. R., and Bornschein, M. R. 2017. Two new species of the *Brachycephalus pernix* group (Anura: Brachycephalidae) from the state of Paraná, southern Brazil. *PeerJ*, 5, e3603.
- Blackburn D.C., Paluh, D.J. and **Stanley, E.L.** 2017. *Phrynobatrachus krefftii* (Krefft's Puddle Frog). *Anurophagy. Herpetological Review* 48: 413–414.
- Bateman, C., Yin-Tse Huang, Simmons, D.R., Kasson, M.T., **Stanley E. L.**, and Hulcr, J. 2017. Ambrosia beetle *Premnobius cavipennis* (Scolytinae: Ipini) carries highly divergent ascomycotan ambrosia fungus, *Afroraffaelea ambrosiae* gen. nov. sp. nov. (Ophiostomatales). *Fungal Ecology*, 25: 41–49
- Bornschein, M.R., Ribeiro, L.F., Blackburn, D.C., **Stanley, E.L.** and Pie, M.R. 2016. A new species of *Brachycephalus* (Anura: Brachycephalidae) from Santa Catarina, southern Brazil. *PeerJ* 4, e2529
- Blackburn, D.C., Boix C., Greenbaum, E., Fabrezi, M., Meirte, D., Plumptre, A.J. and **Stanley, E.L.** 2016. The distribution of the Bururi Long-fingered Frog (*Cardioglossa cyaneospila*, family Arthroleptidae), a poorly known Albertine Rift endemic. *Zootaxa* 4170: 355–364.
- Ceríaco, L.M.P., de Sá, S.C., Bandeira, S., Valério, H., **Stanley E. L.**, Kuhn, A.L., Marques, M., Vindum, J.V., Blackburn D.C., and Bauer, A.M. 2016. Herpetological survey of Iona National Park and Namibe Regional Natural Park, with a Synoptic list of the Amphibians and Reptiles of Namibe Province, Southwestern Angola. *Proceedings of the California Academy of Sciences* 63 (2):
- Daza, J.D., **Stanley E. L.**, Wagner, P., Bauer, A.M. and Grimaldi, D.A. 2016. Mid-Cretaceous amber fossils illuminate the past diversity of tropical lizards. *Science Advances* 2(3): 1–8
- Stanley E. L.**, Ceríaco, L.M.P., Bandeira, S. Valerio, H., Bates, M.F., and Branch, W.R. 2016. A review of *Cordylus machadoi* (Squamata: Cordylidae) in southwestern Angola, with the description of a new species from the Pro-Namib desert. *Zootaxa* 4061(3): 201–226
- Evans BJ, Carter TF, Greenbaum E, Gvoždík V, Kelley, D.B., McLaughlin, P.J., Pauwels, O.S.G., Portik, D.M., **Stanley E. L.**, Tinsley, R.C., Tobias, M.L., and Blackburn, D.C. 2015. Genetics, Morphology, Advertisement Calls, and Historical Records Distinguish Six New Polyploid Species of African Clawed Frog (*Xenopus*, Pipidae) from West and Central Africa. *PLoS ONE* 10(12): e0142823.
- Stanley, E.L.** and Bates, M.F. 2014. Here be Dragons: A phylogenetic and biogeographic study of the *Smaug warreni* species complex (Squamata: Cordylidae) in southern Africa. *Zoological Journal of the Linnean Society* 172: 892–909
- de Sá R.O., Grant, T.A., Camargo, A., Heyer, W.R., Ponssa, M.L. and **Stanley E.L.** 2014. Systematics of the Neotropical Genus *Leptodactylus* Fitzinger, 1826 (Anura: Leptodactylidae): Phylogeny, the Relevance of Non-molecular Evidence, and Species Accounts. *South American Journal of Herpetology* 9:S1–100
- Stanley, E.L.** Cordylid systematics and evolution. 2014. *In* Girdled Lizards and their relatives. Natural history, captive care and breeding. Reissig, J. Edition Chimaira London p.249.
- Mouton, P.F.N., Fleming, A. and **Stanley E. L.**, 2012 Synchronised versus asynchronised

breeding in the lizard family Cordylidae: An evolutionary perspective. *Journal of Zoology* 288:191–198

Greenbaum, E.B., **Stanley E. L.**, Kusamba, C., Moninga W.M., Goldberg, S.R., and Bursey, C.R. 2012. A new species of *Cordylus* (Squamata: Cordylidae) from the Marungu Plateau of southeastern Democratic Republic of the Congo. *African Journal of Herpetology*. 61:14-39

Portik D, Wood P, Grismer J, **Stanley E.L.**, and Jackman T. 2012. Identification of 104 rapidly-evolving nuclear protein-coding markers for amplification across scaled reptiles using genomic resources. *Conservation Genetics Resources* 4: 1-10

**Stanley E. L.**, Bauer, A. M., Jackman, T. R., Mouton, P. L. N. and Branch, W. R. 2011. Between a rock and a hard polytomy: rapid radiation in the rupicolous girdled lizards (Cordylidae: Squamata). *Molecular Phylogenetics and Evolution* 58: 53-70

**Stanley E. L.**, Kendal, R. L., Kendal, J. R., Grounds S., and Laland K. N. 2008. The effects of group size, rate of turnover and disruption to demonstration on the stability of foraging traditions in fish. *Animal Behaviour* 75: 565-572

## **NOTES AND SHORT COMMUNICATIONS**

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Blackburn, D.C., Hernández-Morales, C., Paluh, D.J., **Stanley, EL.** 2021 Predation on a gymnophthalmid lizard by the Brazilian Dumpy Frog, *Stereocyclops incrassatus* (Microhylidae, Gastrophryinae. *Herpetology Notes*, volume 14: 847-849

Paluh, D.J., Stanley, E.L. and Blackburn, D.C., 2019. First dietary record of *Gastrotheca guentheri* (Boulenger, 1882), the lone anuran with true mandibular teeth. *Herpetology Notes*, 12, pp.699-700.

Blackburn, D.C., J. Brecko, J. **Stanley E.L.** and Meirte, D. 2017. Observations on the reproductive biology of *Laurentophryne parkeri* (Laurent, 1950) based on the holotype. *Herpetology Notes* 10: 681–683

## **TEACHING AND TRAINING**

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**Acquiring, analyzing, and disseminating CTdata.** Workshop, the American Mammalogists society meetings June 2021. *Developed and ran a workshop that introduced attendees to specimen-based CT datasets and the software used to analyze them.*

**CT for Biologists: ZOO6927.** Lecturer, University of Florida, Gainesville, FL. Fall Semester 2018–2021. *Developed and taught graduate-level course on the fundamentals and practical applications of high-resolution x-ray Computed Tomography*

**Museum Collections Management: ARH 6895.** Guest lecturer, University of Florida, Gainesville, FL. November 2020. *Taught one class on museum digitization methodologies.*

**Herpetology: ZOO4926.** Guest lecturer, University of Florida, Gainesville, FL. April 2017. *Taught classes on squamate diversity.*

**Careers in Science Internship.** Mentor. California Academy of Sciences, San Francisco, CA. January–August 2015. *Training High-School and Undergraduate students in CT reconstruction techniques and anuran / squamate anatomy.*

**Geographic Information Systems.** Invited lecturer. Villanova University, Villanova PA. March 2013. *Designed and taught a two-day workshop on GIS theory and MaxEnt-based analyses*

**Comparative Anatomy BIO3010.** Adjunct lecturer. Baruch College, New York, NY August–December 2011. *Lectured and taught the lab-portion of a comparative anatomy class involving detailed dissections of dogfish and rabbits.*

**CT Scanning: Seminar and Research Practicum.** Lecturer. American Museum of Natural History, New York, NY. June–July 2011. *Designed and taught six-week workshop for the “research experience for undergraduates” program, teaching the fundamentals of X-ray, Computed Tomography, reconstruction and segmentation techniques and analysis of CT data.*

**Evolution BIO4305.** Teaching Assistant. Villanova University, Villanova PA. January–May 2008. *Taught and supervised molecular sequencing components and lead paper discussions.*

**General Biology 1 BIO2015.** Teaching Assistant. Villanova University, Villanova PA. September–December 2007. *Taught lab component, focussing on the chemistry of life, the cell, the gene, and mechanisms of evolution.*

## **HONORS, AWARDS AND FELLOWSHIPS (PI/COPI GRANT TOTAL \$2,993,895)**

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**National Science Foundation DMR#2017977**, \$1,202,863. MRI: Acquisition of Nano-resolution Zeiss Xradia 620 Versa X-ray Computed Tomography with Phase Contrast and Lab Diffraction Contrast Tomography, *Co-Principal Investigator*, July 2020

**National Science Foundation ICB#1929448**, \$763,978. CSBR: Curating the Early Anthropocene Record of circum-Caribbean Animal Biodiversity in the Florida Museum of Natural History, *Co-Principal Investigator*, September 2019

**National Science Foundation SBS #1924759**, \$104,252. Collaborative Research: Repeated

Adaptive Radiation in the Coevolutionary History of Birds and Feather Lice, *Principal Investigator*, September 2019.

**University of Florida Technology Fee Grant**, \$90,027. Expanding Capacity for 3D Data Analysis Expanding Capacity for 3D Data Analysis. *Co-Principal Investigator*, August 2019,

**Florida Museum of Natural History seed grant**, \$9,980. Developing a stable framework for the Florida Museum of Natural History's Digital collections, *Principal Investigator*, November 2018

**National Science Foundation DBI #1701714**, \$808,235. Digitization TCN: Collaborative Research: oVert: Open Exploration of Vertebrate Diversity in 3D, *Co-Principal Investigator*, September 2017

**National Science Foundation DEB #1556559**. \$884,855. Collaborative Research: Survey and Analysis of the Angolan Herpetofauna. *Senior personnel*, June 2016

**National Science Foundation DEB #1210478**. \$13,910. Doctoral Dissertation Improvement Grant: A synthetic analysis of evolutionary patterns in the Squamate family Cordylidae. *Co-Principal Investigator*, March 2012

**Exploration Fund grant**, the Explorers Club. \$1050 for the project "Phylogenetic relationships of the Cape cliff lizards." May 2011

**Full-year Research Fellowship**, Villanova University, Villanova, PA, Sept 2008 to May 2009. Awarded to a second-year Teaching Assistant on the basis of research proposal, academic record and research experience.

**Summer Research Fellowship**, Villanova University, Villanova, PA, June to July 2008. Financial assistance awarded for research carried over the summer.

**Best Student paper**. 11th conference of the Herpetological Association of Africa. March 2013

**Tracy Storer award**, Joint meeting of Ichthyologists and Herpetologists, Providence, RI, July 2010. The Storer Awards of the American Society of Ichthyologists and Herpetologists recognize the best student poster presentation in herpetology and ichthyology.

**Nesmith Dickinson Research Award**, University of Richmond, Richmond, VA 2004. Awarded to a student majoring in biology at the University of Richmond to aid research projects during the recipient's senior year.

## **SELECTED PRESENTATIONS**

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How snakes lost their legs but won the race. National Association of Biology Teachers Annual meetings. Invited lecture. Atlanta GA. November 2021

3D imaging and the future of Natural History collections. Invited Seminar. Everglades National Park seminar series. Virtual event. July 2020.

The Inside Story: How 3D imaging is revolutionizing Natural History Museums in the 21<sup>st</sup> Century. Invited Seminar. September 2020. Bruce Museum, Greenwich, Connecticut.



3D imaging advances and Natural History Museums. Invited Departmental Seminar. September 2020. Villanova University, Villanova, Pennsylvania.

CT data and the digital revolution of Natural History Museum collections. Invited Departmental Seminar. February 2020. Auburn University, Auburn, Alabama.

Hard and Soft Tissue: Exploring the utility of contrast-enhanced CT scanning. July 2017. Natural History and Morphology – Engines of Inspiration: Workshop at the Joint Meeting of Ichthyologists and herpetologists, Austen, Texas.

The Inside Story: How Computed Tomography is revolutionizing Natural History Museums in the 21<sup>st</sup> Century. April 2017. Seminar, Universidad de los Andes, Bogota, Colombia.

Getting Under the Skin: How CT Technology is Unlocking the Full Potential of Natural History Museum Collections. Invited talk. November 2016. GE Science workshop, Pune, India.

Maximising the scientific and educational utility of natural history collections through computed tomography. Oral Presentation September 2016. ToScA (Tomography for Scientific Advancement). Bath, UK.

Building a 3D/4D interactive museum of life. Session co-chair. July 2016. Science Foo. Googleplex, Mountain View, California.

Phylogenetic and ecological diversity within the widespread melanistic species *Hemicordylus capensis*. Oral presentation. July 2016. Joint Meetings of Ichthyology and Herpetology. New Orleans, Louisiana.

Contrast-enhanced CT provides insight into Amphibian lingual Morphology. Oral presentation July 2016, International Congress of Vertebrate Morphology Meetings, Washington DC.

Arms and armor: The morphological radiation of girdled lizards. Invited seminar. October 2015. Ohio University Biology departmental seminar, Athens, Ohio.

Can we predict the effect of species discovery on macroevolutionary inferences? Oral presentation. August 2015. SSAR meetings, Lawrence, Kansas.

Phylogenetics and biogeography of the northern *Cordylus*. Oral presentation. November 2014. Herpetological Association of Africa. Gobabeb, Namibia.

Systematics and morphological diversification of the Cordylidae (Squamata). Departmental seminar 2014. California Academy of Sciences, San Francisco, USA.

Arms and armour: Osteodermal variation in African Girdled lizards. Oral presentation. February 2013. 11th conference of the Herpetological Association of Africa, Pretoria, South Africa.

The evolution of defensive systems in African girdled lizards. September 2012. Invited Seminar for the Summer Science Institute's Evolution class. The American Museum of Natural History, New York, USA.

Evolutionary patterns of ecology and biogeography in the Cordylidae. August 2012. Invited symposium talk: Advances in the Biogeography of African Amphibians and Reptiles. World Congress of Herpetology. Vancouver, Canada.

## **SELECT PUBLIC ENGAGEMENT AND OUTREACH:**

Fantastic Fossils! Exhibit at the Florida Museum of natural History

Under the skin: the Art of anatomy exhibit at the Bruce Museum, Greenwich CT. 2020–2021

<https://www.undertheskinexhibition.com/>

Rare, Beautiful & Fascinating: 100 Years @FloridaMuseum, Gainesville FL. 2017–2018

<https://www.floridamuseum.ufl.edu/100years/tuatara/>

Science today, featured video California Academy of Sciences 2014

<http://www.calacademy.org/explore-science/armored-lizards>

Howard Hughes Medical Institute: Image of the week 2014

<https://www.hhmi.org/biointeractive/your-armored-reptile>

“Skulls” temporary exhibit, California Academy of Sciences 2014

<http://www.calacademy.org/skulls-exhibit/>

The California Academy of Sciences’ Night Life program: Herpetology bench: 2013 – 2014

<http://www.calacademy.org/events/nightlife/>

Behind the scenes members tours, American Museum of Natural History 2011 – 2013

<http://www.amnh.org/explore/news-blogs/from-the-collections-posts/special-tours-take-members-behind-the-scenes>

“Picturing Science” temporary exhibit, American Museum of Natural History 2011 – present

<http://www.amnh.org/exhibitions/current-exhibitions/picturing-science>

“The critter people” New York Times article, 2011

[http://www.nytimes.com/2011/07/24/education/edlife/edl-24naturalhistory-t.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2011/07/24/education/edlife/edl-24naturalhistory-t.html?pagewanted=all&_r=0)

## **FIELDWORK:**

June 2017, Serra Martin Garcia, Dominican Republic.

September–October 2015, Cangandala National Park, Malanje province, Angola

May 2015, Desert National Wildlife Refuge, Nevada USA

August 2014, Desert National Wildlife Refuge, Nevada USA

November–December 2013, Iona National Park, Namibe province, Angola.

January–March 2011, Western Cape, South Africa. Lesotho.

October–November 2008, Swaziland. Limpopo, Mpumalanga, Gautang, South Africa.

July 2008 Western Cape, South Africa.

July 2004 Atlantic Rainforest, Brazil.

## **PROFESSIONAL SERVICE:**

2013–Present: Associate Editor: African Journal of Herpetology.

2018–Present: Board Member, ToScA North America.

March 6<sup>th</sup> – 8<sup>th</sup> 2019: Local Host for ToScA conference 2019