TANYA M. LAMA
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RESEARCH INTERESTS

My research is focused on the evolutionary and conservation genomics of threatened and endangered species. I integrate laboratory, quantitative, and field approaches to explore the genetic mechanisms underlying unique mammalian adaptations and factors influencing population persistence in natural and human-altered environments.

CURRENT EMPLOYMENT

Postdoctoral Research Fellow in Biology, National Science Foundation 2020 – 2023
Co-PIs: Drs. Liliana Davalos (SUNY Stony Brook) and Emma Teeling (U College Dublin)

IRACDA Fellow, National Institutes of Health 2020 – 2023
Co-PI: Dr. Liliana Davalos (SUNY Stony Brook)

Fulbright Scholar, Spain 2021 – 2022
Co-PI: Dr. Jose Antonio Godoy (Estación Biológica de Doñana)

EDUCATION

Ph.D. Wildlife, *University of Massachusetts Amherst* 2020
"Conservation genomics of threatened Canada lynx *(Lynx canadensis)* populations in the Northern Appalachian-Acadian Ecoregion"

M.S. Wildlife, *University of Massachusetts Amherst* 2015
"Stress-response in working African elephants and analysis of their post-release movements"

B.S. Fisheries, *University of Connecticut* 2013
"Mummichog *(Fundulus heteroclitus)* exposed to a model androgen (5a-dihydrotestosterone) in a standard 21-day reproductive bioassay"

PEER REVIEWED PUBLICATIONS (Abstracts available upon request)

1. Rhie A, **Lama TM**, et al. (2021) Towards complete and error-free genome assemblies of all vertebrate species. bioRxiv, *Accepted* (1/13/21). *Nature*.
2. Moreno Santillan D, **Lama TM**, et al. (2021) Large-scale sampling reveals unique immunity and metabolic adaptations in bats. Authorea, *In Review. Molecular Ecology.*
3. **Lama TM**, Johnson WE, Federigo O, Mountcastle J, Philippy A, Rhie A, Jarvis E (2021) Chromosomal-level assembly of the Canada lynx, *Lynx canadensis* genome. *In Review*. *Gigascience*
4. **Lama TM**, Komoroske LM, Johnson WE, Vashion J, DeStefano SD, Organ JF (2021) Using landscape genomics to inform management of Canada lynx *(Lynx canadensis)* populations in a changing environment. *In Review*. *Ecography.*
5. **Lama T**, Griffin C, Pisacane C, Finn J, Chase M, Jana W (2020) Stress Responses of African elephants *(Loxodonta africana)* to wildlife ecotourism activities. *Accepted. Conservation Physiology.*

6. Organ JF, Decker TA, and **Lama TM** (2016) The North American model and captive cervid facilities: what is the threat? *Wildlife Society Bulletin* 40: 10-13 DOI: 10.1002/wsb.637
7. Glinka CO, Frasca S, Provatas AA, **Lama TM**, DeGuise S and Bosker T (2015) The effects of model androgen 5α-dihydrotestosterone on mummichog *(Fundulus heteroclitus)* reproduction under different salinities. *Aquatic Toxicology*, 165: 266-276.
8. Organ JF, Decker DJ, Stevens SS, **Lama TM** and Doyle-Capitman C (2014) Public Trust Principles and Trust Administration Functions in the North American Model of Wildlife Conservation: Contributions of Human Dimensions Research, *Human Dimensions of Wildlife: An International Journal*, 19(5): 407-416

NON-REFEREED PUBLICATIONS

1. **Lama TM** (2019) "New Genome Powers Canada Lynx Research & Conservation Efforts." Massachusetts Wildlife, 68(4): 22-25. *Print*.

PUBLICATIONS IN PREPARATION

1. Mountcastle J, Winkler S, Bista I, Oliver K, Smith M, Komoroske L, **Lama TM** (n.d.) Benchmarking ultra-High Molecular Weight DNA and Tissue Preservation Protocols for the Vertebrate Genomes Project. *In Preparation.*
2. **Lama T**, Griffin C, Finn J, Chase M (n.d) Post-release movements and survival outcomes of African elephants from the elephant-back safari tourism industry. *In Preparation*.

EXTRAMURAL FUNDING

National Science Foundation Postdoctoral Research Fellowship in Biology **$207,000,** 2020
UMass Amherst Natural History Collection **$3,996** 2018
Maine Department of Inland Fisheries and Wildlife: Lynx Status Investigation **$270,556** 2015

TEACHING

NIH IRACDA Fellow, SUNY Stony Brook 2020 – 2023
Develops teaching skills and pedagogy through workshops and a mentored teaching assignment at a minority-serving partner institution.

Teaching Fellow, University of Massachusetts Amherst College of Natural Sciences, 2018, 2020
Led an undergraduate-level conservation biology course and completed pedagogy training.

ACADEMIC SERVICE

Vertebrate Genomes Project: Genome Assembly, Sample Preparation, Conservation Working Groups
USFWS: Federal Advisory Committee for Post-Delisting Monitoring Plan Development (Canada Lynx)

Ad Hoc Reviewer: *Conservation Physiology, Peer J Life & Environment, Evolutionary Anthropology, Molecular Ecology, J Experimental Biology, Evolutionary Applications*

RESEARCH & RELATED WORK EXPERIENCE

Graduate Research Assistant, Massachusetts Cooperative Fish & Wildlife Research Unit, 2015 - 2020
Released the first complete and annotated assembly of the Canada lynx *(Lynx canadensis)* genome. Assessed connectivity and adaptive potential across Maine and eastern Canada. Primary duties included: chemical immobilization and handling of wildlife, sample collection, analysis of large,

complex environmental and biological datasets including low-coverage whole genomes. Developed and maintained collaborative relationships with State and Federal partners.

Contractor, US State Department 2018

Prepared literature reviews on the environmental impacts of proposed infrastructure projects. Informed a policy framework which improves ecosystem management and attempts to mitigate illegal economic activities (illegal mining, illegal logging, wildlife trafficking) that support transnational criminal organizations.

Contractor, Department of Interior Northeast Climate Science Adaptation Center 2017

Investigated shifting distribution and abundance among red squirrel populations in the White Mountain National Forest in response to biennial mast and climate change.

Public Affairs Specialist, US Fish & Wildlife Service 2015 – 2017

Engaged urban Hispanic audiences with the goal of increasing recreational use of the National Wildlife Refuge system. Co-supervised Hispanic Access Foundation interns at Priority Urban Wildlife Refuges.

Biological Science Technician, Canada Cooperative Banding Unit 2014

Monitored waterfowl population dynamics using band recovery data. Checked portable swim-in traps (Benning II) and identified waterfowl to species, sex, and age based on cloacal characteristics and wing/body plumage.

Biological Science Technician, USFWS Monomoy National Wildlife Refuge 2014

Identified, trapped, banded, and monitored productivity of federally listed shorebirds. Assisted in the capture, handling, and tagging of shorebirds and songbirds using cannon and mist nets.

Biological Science Technician, USFWS Wildlife & Sport Fish Restoration 2013

Participated in grant approval and accomplishment reporting for restoration and monitoring projects. Combined geospatial data, biological information, and landscape modeling to prioritize the protection of species and habitats on a landscape scale.

Research Assistant, Elephants Without Borders & San Diego Zoo Global 2013 – 2015

Evaluated stress-hormone expression among African elephants working in the elephant-back tourism industry. Assisted in the chemical immobilization and handling of African elephants and quantified fecal corticosterone concentration using a tritiated radioimmunoassay. Translated research findings into a policy recommendation to outlaw elephant-back tourism in Botswana in 2016.

Research Assistant, UConn Center for Environmental Science and Engineering 2011 – 2013

Conducted aquatic toxicology research on endocrine disrupting (androgen mimicking) substances. Used enzyme-linked immunosorbent assays to quantify testosterone and estradiol hormone concentrations in fish during a standard 21-day exposure to a model androgen

SELECTED PRESENTATIONS & SEMINARS

1. Lama TM (2021) Assessing genomic vulnerability among Canada lynx *(Lynx canadensis)* populations at the trailing edge. *Platform*. Stanislaus, CA.
2. Lama TM (2021) Using genomics to inform management of Canada lynx *(Lynx canadensis)* populations in a changing environment. *Platform*. Flagstaff, AZ.
3. **Lama TM** (2020) Conservation Genomics of threatened Canada lynx *(Lynx canadensis)* populations in the Northern Appalachian-Acadian Ecoregion. *Platform*. Amherst, MA.
4. **Lama TM** (2019) Conservation Genomics & Wildlife Ecology, Dummerston Conservation Commission Winter Seminar Series. *Platform*. Dummerston, VT.
5. Mountcastle J, Winkler S, Bista I, Oliver K, Smith M, **Lama TM**, Komoroske LM (2019). Benchmarking ultra-high Molecular Weight DNA and Tissue Preservation Protocols for the Vertebrate Genomes Project. Plant and Animal Genomes Conference. *Poster*. San Diego, CA.
6. **Lama TM**, Griffin C, Pisacane C, Finn J, Chase M (2017) Stress in the Workplace: Elephants at Work in Botswana's Safari Industry. School of Earth and Sustainability. *Platform*. Amherst, MA.
7. Organ, J., **Lama, T**. (2014) Conservation Challenges in Chile and Peru. Cummings School of Veterinary Medicine: International Veterinary Medicine and Conservation Medicine Selective. *Platform.* North Grafton, MA.

PROFESSIONAL AFFILIATIONS

Northeast Climate Science Adaptation Center, Genome 10K Community of Scientists, Vertebrate Genomes Project, NIH IRACDA, The Wildlife Society

REFERENCES

Dr. Liliana Davalos
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Dr. John Organ
U. S. Geological Survey
Chief, Cooperative Fish & Wildlife Research Units
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