

EDUCATION

Brown University

9/17 - present

Doctoral student, Department of Ecology and Evolutionary Biology
Graduate Student Affiliate, Institute at Brown for the Environment and Society
Primary Supervisor: Dr. Tyler Kartzinel

Stanford University

9/09 – 1/15

M.Sc., Earth Systems: Conservation Science, Policy, and Communication
B.S., Earth Systems: Biosphere

PUBLICATIONS

Peer-reviewed:

Fang, Z., **Freeman, P. T.**, Field, C. B., & Mach, K. J. (2018). Reduced sea ice protection period increases storm exposure in Kivalina, Alaska. *Arctic Science*, (0), 1-13.
Mach, K.J., **Freeman, P.T.**, Mastrandrea, M.D., Field, C.B. (2016) A multi-stage crucible of revision and approval shapes IPCC policymaker summaries. *Science Advances* 2: e1600421.
Mach, K. J., Mastrandrea, M. D., **Freeman, P. T.**, & Field, C. B. (2017). Unleashing expert judgment in assessment. *Global Environmental Change*, 44, 1-14.

Policy reports:

Hayes, D., Anjarwalla, N., Broner, A., **Freeman, P.**, Hirabayashi, T., Kempner, T., Oni, M., Prasuhn, A., Sullivan, L., Warp, L. (2014) Comments and Recommendations for the Advisory Council on Wildlife Trafficking. Stanford Law School. Link - <https://stanford.io/2y3kWgM>.

Science education and outreach:

Freeman, P. (2016) Canine cleanup: dos and don'ts. Stanford Magazine.
Link: https://alumni.stanford.edu/get/page/magazine/article/?article_id=89685.

RESEARCH EXPERIENCE

Doctoral Student Researcher, Department of Ecology and Evolutionary Biology, Brown University

9/17 - present

Conduct collaborative and independent lab- and field-based research related to large mammal food webs, large mammalian herbivore spatial and movement ecology, African savanna ecology, and molecular ecology including research projects encompassing

- The spatial distribution of woody plant taxonomic and phylogenetic community structure and its relationships with mammalian herbivore community distributions and ecosystem productivity in East African savannas
- The study of seasonal dietary niche partitioning in Yellowstone National Park's migrant ungulate herbivores using DNA metabarcoding
- the spatial foraging patterns of domestic livestock at Mpala Research Centre, Kenya as assessed through animal-borne video units, low-cost GPS loggers, and molecular assessments of diets

Research Assistant, Department of Global Ecology, Carnegie Institution for Science

6/15 – 12/16

Provided research support related to global climate change assessment and communication of scientific findings to policymakers

Assisted in the scoping and execution of peer-reviewed publications, scientific presentations, and conference posters through quantitative data analysis and statistics, design and production of figures and writing for peer-reviewed manuscripts related to science-policy dynamics and expert judgment in climate assessment

Provided research mentoring support to two undergraduate research interns on projects related to the impacts of climate change on coastal erosion in Jamaica and Alaska

Research Intern, Save the Elephants, Samburu National Reserve, Kenya

2/15 – 4/15

Assisted in the collection of long-term behavior and demographic data on resident elephant population; independently summarized 15+ years of male elephant sightings using code written in R and collected information on human footprint features in elephant range areas using Google Earth

Represented organization at an aerial wildlife and livestock census; collated statistics and co-authored report used by Kenya Wildlife Service to assess actions to combat illegal grazing

Supported research staff through the collection of elephant ID photographs, field identification of individuals and herd demographics, and fecal sample collection for hormone and DNA analysis

Produced frequent blogs for organization's website related to research operations, conservation challenges, and elephant behavior and ecology

Wildlife Ecology Research Intern, Transfrontier Africa, Hoedspruit, South Africa

7/13 – 8/13

Performed home range analyses on 2+ years of satellite-collar data from nine black rhinoceros translocated as part of the World Wildlife Fund Black Rhino Range Expansion Program in Quantum GIS software

Used radio transmitters to track individuals and develop sighting density maps for anti-poaching patrols in Quantum GIS and drafted a formal proposal for reserve management outlining the future of rhinoceros research in a private game reserve

Elephant Research Assistant, Etosha National Park, Namibia and Stanford University

9/10 – 6/13

Co-observed and analyzed 100+ hours of male elephant social behavior in the 2011/2012 field seasons in Etosha National Park, Namibia and collected behavioral and social development data from captive elephant calves at San Diego Zoo Safari Park; ongoing work focuses on the assessment of conflict resolution in male elephant social groups

Collected and processed fecal samples for hormone analysis (cortisol and testosterone metabolites) and parasite analysis; assisted in hormone analysis at the San Diego Zoo Conservation Research Institute in August, 2012

Drafted grant proposals that garnered over \$10,000 to fund field research on non-invasive indicators of elephant physiological condition and behavior

Performed photogrammetric measurements of elephant herd demography from hundreds of aerial photographs for Namibian aerial elephant census

TEACHING EXPERIENCE

Graduate Teaching Assistant, Brown University

9/18-5/19

Course: Conservation in the Age of Genomics; Faculty instructor: Dr. Tyler Kartzinel

Prepared molecular laboratory materials, eDNA samples, and DNA metabarcoding analysis pipelines for inquiry-based course for upper level undergraduates and graduate students on the ecological and conservation applications of genomics.

Course: Principles of Ecology; Faculty instructor: Dr. Jon Witman

Coordinated course logistics and led weekly discussion sections on both classical and contemporary primary literature in ecology and co-led field trip course with introduction to ecological survey methods.

Certifications:

Brown University Sheridan Center for Teaching and Learning, Certificate I – Reflective Teaching. Completed December 2018.

Program Associate, Earth Systems Program, Stanford University

10/16 – 6/17

Designed curriculum and coordinated logistics for Stanford's largest interdisciplinary environmental science course: "Introduction to Earth Systems," including the hiring, training, and management of eight-person team of teaching assistants and the scheduling of over 30 guest lectures by Stanford environmental science faculty

Synthesized lecture material from diverse environmental topics through designing and teaching weekly discussion section of 20 students with limited background in environmental science

Provided guidance and feedback on public speaking, science communication, interdisciplinary research, and multimedia projects for over 30 Earth Systems Program senior undergraduates

RELEVANT PROFESSIONAL EXPERIENCE

Research Facilitator, Department of Global Ecology, Carnegie Institution for Science 10/16 – 6/17

Provide logistical and administrative support to all department investigators, students, and postdocs (50% time)

Provide logistical, administrative, and research support to Dr. Gregory Asner and the Carnegie Airborne Observatory on remote sensing projects related to spatial ecology for conservation, most recently in Malaysian Borneo and Belize (50% time)

Coordinate logistics and communications for departmental seminar series and manage departmental social media platforms

Science Content Production Assistant, Worldview Stanford, Stanford University 6/14 – 1/15

Co-developed curriculum for an executive education course entitled “Environmental Risk and Resilience,” with a core focus on climate change as a driving force in Earth’s systems in the 21st century

Interfaced with over 15 of Stanford’s leading environmental science faculty to craft online education material for strategic decision-makers through video and podcast interviews and print pieces

Program Associate, Earth Systems Program, Stanford University 4/13 – 6/14

Designed curriculum and coordinated logistics for Stanford’s largest interdisciplinary environmental science course: “Introduction to Earth Systems,” including the hiring, training, and management of eight-person team of teaching assistants and the scheduling of over 30 guest lectures by Stanford environmental science faculty

Synthesized lecture material from diverse environmental topics through designing and teaching weekly discussion section of 20 students with limited background in environmental science

Provided guidance and feedback on public speaking, science communication, interdisciplinary research, and multimedia projects for over 30 Earth Systems Program seniors

GRANTS

Stanford University Undergraduate Advising and Research Major Grant. Developing a low-cost noninvasive fitness index for free-ranging African elephants (*Loxodonta africana*) 5/12

Stanford University Earth Systems Program Research Grant. Developing a low-cost noninvasive fitness index for free-ranging African elephants (*Loxodonta africana*). *Funding additional to grant listed above.* 5/12

Stanford University School of Earth Sciences Summer Research Grant. Hormonal Fluctuation and Dominance Hierarchies in Bull African Elephants (*Loxodonta africana*) 5/11

Stanford University Earth Systems Program Research Grant. Hormonal Fluctuation and Dominance Hierarchies in Bull African Elephants (*Loxodonta africana*) 5/11

Stanford University Landreth Fund Recipient for summer research on elephant and rhinoceros ecology and behavior. 5/13 & 5/10

HONORS AND AWARDS

Maptia.com Editor’s Pick for two photo essays covering elephant behavior and conservation in Africa. 5/15 & 12/14
Links: <https://maptia.com/patrickfreeman>

Stanford University Earth Systems Program Public Service Scholar for work on elephant conservation outreach 12/14

Stanford University Centennial Teaching Assistant Award for excellence in teaching and mentoring 6/14

Stanford University School of Earth Sciences Dean’s Award for Academic Achievement 6/13

Stanford University Earth Systems Program Award for Outstanding Research 6/13

Stanford University Earth Systems Program Award for Outstanding Service 6/13

DIVERSITY AND ACADEMIC SERVICE

President, Department of Ecology and Evolutionary Biology Graduate Student Association	12/18 - present
Graduate student representative, Diversity and Inclusion Action Plan committee for Institute at Brown for the Environment and Society.	10/18 - present
Co-Founder and Co-President of Brown University chapter of Out in Science, Technology, Engineering, and Mathematics (oSTEM), a student organization devoted to the promotion and support of LGBTQ+ individuals in STEM fields. www.ostematbrown.com	3/18 - present
Graduate student coordinator, Brown University Department of Ecology and Evolutionary Biology internal seminar series.	1/18 – 6/18
Undergraduate student advisor, Stanford University Earth Systems Program.	9/12 – 6/13
Panelist, Safe and Open Spaces at Stanford, an educational discussion series coordinated by the Stanford University LGBTQ Center for fellow students and university departments	9/09 – 6/13

ACADEMIC PRESENTATIONS

Mastrandrea, M.D., Mach, K.J., Freeman, P.T. , Barros, V.R., Field, C.B. <i>Treatment of uncertainties in the IPCC's Fifth Assessment Report: Lessons learned for informing management of climate-related risks.</i> Poster presentation by K.J. Mach at Our Common Future Under Climate Change conference in Paris, France.	7/15
Freeman, P.T. , O'Connell-Rodwell, C.E., <i>Investigating relationships between short-term and long-term indicators of stress in free-ranging male African elephants (<i>Loxodonta africana</i>) in Etosha National Park, Namibia.</i> Poster presentation at Stanford University Symposium of Undergraduate Research and Public Service.	10/13
O'Connell-Rodwell, C.E., Freeman, P.T. , Anderson, E. <i>The Influence of Sex and Maternal Rank on Elephant Calf Sociality.</i> Presentation delivered summarizing research at the San Diego Zoo Conservation Research Institute.	8/12
Freeman, P.T. , O'Connell-Rodwell, C.E., Kennedy, J.A. <i>Investigating the impact of resource availability on behavioral trends in male African elephant (<i>Loxodonta africana</i>) societies.</i> Poster presentation at Stanford University Admit Weekend Symposium of Undergraduate Research and Public Service.	4/12

OUTREACH, EDUCATION, AND PUBLIC SPEAKING

<i>The Story Collider.</i> Speaker for a science storytelling event at North American Congress for Conservation Biology conference. Performance audio link: http://www.storycollider.org/stories/2016/9/30/patrick-freeman-elephant-time .	7/16
<i>The Fundamental Science of Climate Change Impacts.</i> Talk delivered with K.J. Mach to California Talented Youth program in preparation for mock climate negotiations. Stanford University, CA.	7/16 & 8/15
<i>Africa's Giants: The Ecology, Behavior, and Conservation of African Elephants.</i> Public lecture delivered to wildlife park guests. Safari West, Santa Rosa, CA.	4/16
<i>Africa's Giants: The Ecology, Behavior, and Conservation of African Elephants.</i> Course taught as part of Stanford SPLASH, an open-education event for visiting middle and high school students. Courses enrolled nearly 100 students over both sessions offered.	11/15 & 4/14
<i>President's Council on Wildlife Trafficking draws on work of Law School students.</i> Interviewed for news story in The Stanford Daily newspaper. Link http://www.stanforddaily.com/2014/04/15/presidents-council-on-wildlife-trafficking-draws-on-work-of-law-school-students/ .	4/14
Livermore TEDx. Spoken word performance about elephant behavior and the ivory poaching crisis. Livermore, CA. Video link https://www.youtube.com/watch?v=oWIXzRQTF9A .	6/13

WORKSHOPS AND CONFERENCES ATTENDED

AniMove 2019: Animal movement analysis short-course, Yale University, New Haven, CT	6/19
Communicating Science for Conservation Action. North American Congress for Conservation Biology conference. Madison, WI.	7/16
Bay Area Society for Conservation Biology Symposium. Session moderator. Stanford University, Stanford, CA.	5/16
Alan Alda Center for Communicating Science Workshop. Carnegie Institution for Science, Stanford, CA. Attended two sessions – “Distilling Your Message” and “Improvisation for Scientists.”	10/15
Integrating Biology and Paleobiology to Enhance Conservation of Terrestrial Ecosystems on a Rapidly Changing Planet. UC Berkeley, Berkeley, CA.	9/15
Berkeley Chapter of the Society for Conservation Biology Symposium. UC Berkeley, Berkeley, CA.	5/15

PROFESSIONAL SOCIETY MEMBERSHIPS

American Association for the Advancement of Science	7/19 to present
Ecological Society of America	3/19 to present
Society for Conservation Biology, North America Chapter	8/15 to present