
MRINALINI (MINI) ERKENSWICK WATSA

PROFILE: Conservation and wildlife biologist, with experience in using genetics and genomics approaches for wildlife monitoring, biodiversity screening, and population genetics. Program manager for a conservation, education and research-based nonprofit working on science literacy, outreach, and conservation applications.

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Current Affiliations

Research Fellow, San Diego Zoo Global

Postdoctoral Research Fellow, University of Missouri, St. Louis

Research Scientist, Biological Anthropology, Washington University in St. Louis

Senior Scientist, Field Projects International

Languages

English (native)

Spanish, Kannada (proficient)

EXPERIENCE

Professional Appointments

Bud Heller Fellow, Researcher, Institute for Conservation Research, San Diego Zoo Global, San Diego, USA – December, 2019-present

Low-cost, reliable, field genomics solutions to assessing population counts and stability in wild Sumatran tigers (*Panthera tigris sumatrae*)

Molecular Genetics Consultant, Inkaterra Association, Peru – 2017-2019

Designed and installed the first molecular genetics field laboratory in the Amazon rainforest at the Inkaterra Guides Field Station. Included fundraising, vendor solicitation (Promega, New England Biolabs, MiniOne), international export/import of equipment and chemicals, and installation in a field setting. Pilot projects included double digest RAD sequencing, 16S and 18S metagenomics, and DNA barcoding. Present advising on local research collaborations, lab maintenance, ongoing investigations (including eDNA screens), and fundraising.

Molecular Genetics Consultant, San Diego Zoo Institute for Conservation Research and Wildlife SOS, Agra, India – 2018-2019

Installation of a veterinary diagnostic field laboratory at a wildlife rehabilitation center in Agra. Included international collaborations, logistics, equipment sourcing and installation, and guiding of pilot projects by local researchers. The focus here is on sloth bear and Indian leopard conservation via field-based portable genomics technology.

Postdoctoral Research Associate, Joint appointments at University of Missouri-St. Louis and Washington University in Saint Louis – 2013-present

Projects include the long-term (10y) monitoring of three primate species in Peru for disease ecology, reproductive biology, sensory communication and ecology, and space use studies.

Founder/President of Field Projects International – 2013-present

Responsible for drafting mission statement and acquiring 501c(3) status, annual fundraisers, tax and liability insurance filings, volunteer recruitment and training, and social media management. Oversight of research programs in India and Peru, and the development of field courses in tropical biology across four continents. Served on the thesis committees of doctoral and masters students working at our research sites. Responsible with other directors for international research permit compliance.

Laboratory

DNA extraction, PCR, gel electrophoresis, DNA purifications, DNA quantitation, library preparation and next generation sequencing.

Project Management Skills

Personnel recruitment, hire, review, management;

Project design, mapping, budgeting, logistics, execution and review/ reports;

Collaboration and networking with fundraisers, partners (scientific and policy), multi-cultural sensitivity, negotiation/mediation, conflict resolution, international joint ventures

Interests

Science writing and communication, rally driving, wildlife rescue/rehab, wilderness, communicating with children on science and nature

Independent Contract Science Writer for mongabay.org — 2013-2016

Investigative journalism on topics including new scientific discoveries, gold mining in the Amazon, Global Forest Watch, and a multi-article series on wildlife trafficking.

Recognized twice internally for articles ([here](#) and [here](#)); full list available [here](#).

Education

Washington University in St. Louis — Ph.D. Biological Anthropology, 2013

Dissertation: Growing up Tamarin: Morphology, reproduction, and population demography of sympatric free-ranging *Saguinus fuscicollis* and *S. imperator*

Washington University in St. Louis — M.A. Biological Anthropology, 2018

Grinnell College — B.A. Biology (honors), 2005

Publications

Watsa M., Erkenwick G., Pomerantz A., Prost S. (In Press). Portable sequencing as a teaching tool in conservation and biodiversity research. PLOS Bio Community Pages.

Sacco, A., Mayhew, J. A., **Watsa, M.**, Erkenwick, G.A., and Binder, A. K. (In Press). Validation of the detection of neopterin in the urine of New World monkeys using a commercial ELISA kit. BMC Zoology.

Watsa M., Erkenwick G., Pomerantz A., Prost S. (2019). Genomics in the Jungle: Using portable sequencing as a teaching tool in field courses. Biodiversity and Conservation. bioRxiv <https://bit.ly/2LEbicO>

Souza-Alves JP, **Watsa, M**, 62 other authors & Barnett AA. (2019) Terrestrial behavior in titi monkeys (*Callicebus*, *Cheracebus* and *Plecturocebus*): Potential correlates, patterns and differences between genera. International Journal of Primatology. pp1-20. <https://doi.org/10.1007/s10764-019-00105-x>

Erkenwick G., **Watsa M**, Gozalo A.S., A.S., Dudaie, S., Bailey, L., Muranda, K.S., Kuziez, A. and Parker, P.G. (2019). A multiyear survey of helminths from wild saddleback (*Leontocebus weddelli*) and emperor (*Saguinus imperator*) tamarins. Amer. J. Primatol. DOI: 10.1002/ajp.23063

Robakis, E., **Watsa, M.**, and Erkenwick, G. (2018). Classification of producer characteristics in primate long calls using neural networks. The Journal of the Acoustical Society of America, 144 (1), 344-353

Watsa, M., Erkenwick, G.A., and Robakis, E. (2017). Modeling developmental class provides insights into individual contributions to infant survival in callitrichids. International Journal of Primatology, 38(6): 1032-1057

Data Analytics

Statistics: R

Bioinformatics: ANGSD,
NGSTools, MinKNOW,
bash, python, biopython,
IQtree, ITOL

Financial: Aplos, Quicken

Business: Quip, 17hats

Social Media: Sprout
Social, IG/Twitter/Fbook

Web: Wordpress, HTML

Erkenswick, G.A., **Watsa, M.**, Pacheco, M.A., Escalante, A.A. and Parker, P.G., (2017). Chronic *Plasmodium brasilianum* infections in wild Peruvian tamarins. *PLoS one*, 12(9), p.e0184504.

Adams, D. B., Rehg, J., and **Watsa, M.** (2017). Observations of termitarium geophagy by Rylands' bald-faced saki monkeys (*Pithecia rylandsi*) in Madre de Dios, Peru. *Primates* 58 (3): 449-459

Erkenswick, G. A., **Watsa, M.**, Dmytryk, N., Gozalo, A. S., & Parker, P. (2017). Temporal and demographic blood parasite dynamics in two free-ranging neotropical primates. *International Journal for Parasitology: Wildlife and Diseases* 6 (2): 59-68.

Watsa, M., Erkenswick, G. A., Halloran, D., Kane, E. E., Poirier, A., Klonoski, K., Cassalet, S., Maciag, E., Mangalea, M. R., Dinsmore, M. P., McCready, H., Boughan, B. K., Parker, C., Hickmott, A., Nole, I. E., & Zuñiga, A. (2015). A field protocol for the capture and release of callitrichids. *Neotropical Primates* 22 (2): 59-68

Watsa, M., Erkenswick, G., Rehg, J. Leite Pitman, R. (2012). Distribution and new sightings of Goeldi's monkey (*Callimico goeldii*) in Amazonian Perú. *International Journal of Primatology* 33(6): 1477-1502

Publications in Review and in Prep

Robakis, E., **Watsa, M.**, and Erkenswick, G.A. (In review). Transmission of and attendance to breeding status in the vocalizations of cooperative breeders. *International Journal of Primatology*. bioRxiv preprint at <https://bit.ly/2Y9Q5Pk>

Watsa, M., Erkenswick, G., Pomerantz, A., Chen, J., Khadpekar, Y., Pilfold, N.W., Clinton, S. L., Viña, A., Rudin, D., McElroy, M., Schmitt, A., Paz, M., Brack, J., Dainko, D., Park, D. J., Cave, S., Prost, S. (In prep). In situ population genetics: A primer on Peruvian tamarins via ddRADSeq on a MinION sequencer. For submission to *Conservation Biology*.

Erkenswick, G., **Watsa, M.**, Pomerantz, A., Park, D. J., Cave, S., Schmitt, A., Rudin, D., Viña, A., Paz, M., Chen, J., Khadpekar, Y., Pilfold, N.W., Clinton, S. L., McElroy, M., Brack, J., Dainko, D., Prost, S. (In prep). Parasite and microbiome comparisons between captive and wild primates in the Peruvian Amazon. For submission to *PLOS One*.

Poirier, A., Watsa, M., Erkenswick, G., Melin, A. (In prep) On the trail of primate scent signals: first field analysis of tamarin scent-gland semiochemistry by portable gas chromatography-mass spectrometry. For submission to the *American Journal of Physical Anthropology*.
