

# Taurus P. Vilgalys

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## Education & Training

<b>Postdoc</b>	2020-present	Medical Genetics, University of Chicago
<b>Ph.D.</b>	2019	Evolutionary Anthropology, Duke University
<b>B.S.</b>	2014	Biology, Loyola Marymount University

## Professional Experience

2012-14 **Undergraduate Research Fellow** – Loyola Marymount University  
2013 **Howard Turner Research Fellow** – University of Denver/Loyola Marymount University  
2012 **NSF REU Intern** – Mote Marine Laboratory  
2011-12 **RAINS Research Fellow** – Department of Biology, Loyola Marymount University

## Publications

\* indicates co-first author. ^ indicates co-corresponding author.

*In review* Klunk J\*, **Vilgalys TP\***, Demeure CE, Shiratori M, Madej J, Beau R, Elli D, Redfern R, DeWitte SN, Gable J, Carmichael A, Varlik N, Eaton K, Grenier J-C, Golding B, Devault A, Rouillard J-M, Yotova V, Sindeaux R, Dumaine A, Brinkworth JF, Missiakas D, Rouleau G, Pizarro-Cerdá J, Poinar H^, Barreiro LB^. Black Death shaped the evolution of immune genes. *In review at Nature*.

2021 **Vilgalys TP\***, Fogel AS\*, Anderson JA, Mututua RF, Warutere JK, Kim SY, Voyles TN, Robinson JA, Wall JD, Archie EA, Alberts SC, Tung J. Selection against admixture and gene regulatory divergence in a long-term primate field study. *bioRxiv*: doi.org/10.1101/2021.08.19.456711. *Accepted at Science*.

2020 Batra SS, Levy-Sakin L, Robinson J, Guillory J, Durinck S, **Vilgalys TP**, Kwok PY, Cox LA, Seshagiri S, Song YS, Wall JD. Accurate assembly of the olive baboon (*Papio anubis*) genome using long-read and Hi-C data. *GigaScience* 9(12):giaa134.

2020 Anderson JAA, **Vilgalys TP**, Tung J. Diversifying primate genomics: new insights into the ecology and evolution of primate gene regulation. *Current Opinions in Genetics and Development* 62:16-22.

2019 Fan Y, **Vilgalys TP**, Sun S, Peng Q, Tung J, Zhou X. IMAGE: high-powered detection of genetic effects on DNA methylation using integrated methylation QTL mapping and allele-specific analysis. *Genome Biology* 20:1-18.

2019 **Vilgalys TP**, Rogers J, Jolly C, Mukherjee S, Baboon Genome Analysis Consortium, Tung J. Evolution of DNA methylation in *Papio* baboons. *Molecular Biology & Evolution* 36(3): 527-540.

2019 Rogers J, et al., Baboon Genome Analysis Consortium (including **Vilgalys TP**). The comparative genomics and complex population history of *Papio* baboons. *Science Advances* 5(1): eaau6947.

2019 Watts HE, Jiminez D, Pacheco V, **Vilgalys TP**. Effects of temperature on the timing of breeding and molt transitions in house finches. *Journal of Experimental Biology* 221: 185058.

2018 Watts HE, Jiminez D, Pacheco V, **Vilgalys TP**. Temperature-correlated shifts in the timing of egg laying in house finches *Haemorrhous mexicanus*. *International Journal of Avian Science*: doi.org/10.1111/ibi.12676.

- 2017 Lea AJ, **Vilgalys TP**, Durst PAP, Tung J. Maximizing ecological and evolutionary insight from bisulfite sequencing data sets. *Nature Ecology & Evolution* 1(8): 1074.
- 2014 **Vilgalys TP**, Sears R, Hand E, Morlege-Hampton S, Carmona-Galindo V. Exploration of climate influences on the abundance of galls on red willows (*Salix laevitigata*) across two riparian communities in Southern California. *Journal of Ecology and the Natural Environment* 5(5): 164-169.

## Grants

- 2022 Emory Primate Research Center Pilot Research Program: *Genetic variation in the response to yellow fever in non-human primates*. May 2022-April 2023, \$69,980.
- 2020 Ruth B Kirschstein NRSA Fellowship, NIH F32: *Characterizing variation and adaptation in the immune response to plague (Y. pestis) through single-cell sequencing and ancient genomics*. February 2021 – February 2024, \$210,000.
- 2018 Leakey Foundation Research Grant: *Natural selection on gene regulation following admixture in wild baboons*. June 2018 – Dec 2019, \$14,136.
- 2018 National Science Foundation: Doctoral Dissertation Research Improvement Grant, *Leveraging natural hybridization to understand the evolution of primate gene regulation*. March 2018 – February 2020, \$19,995.

## Awards and Honors

- 2017 Society for Molecular Biology and Evolution Young Investigator Travel Award
- 2017 Duke University Summer Research Fellowship
- 2016 NSF Graduate Research Fellowship Program Honorable Mention
- 2014 James B. Duke Fellowship, Duke University
- 2014 Carl G. Kadner Award, Loyola Marymount University
- 2013 Towner Scholarship, Loyola Marymount University
- 2012 William McLaughlin Memorial Scholarship, Loyola Marymount University

## Scientific Presentations

### Talks

- 2022 **Vilgalys TP**, Klunk J, DeMeure C, Shiratori M, Redfern R, Gamble J, DeWitte S, Dumaine A, Brinkworth J, Rouleau G, Pizarro-Cerdá J, Poinar H, Barreiro LB. Natural selection on immune genes during the Black Death. Biology of Genomes, Cold Spring Harbor Laboratory, NY, USA.
- 2020 **Vilgalys TP**, Fogel AS, Voyles T, Kim SY, Akinyi M, Wall JD, Alberts SC, Tung J. Selection against gene regulatory divergence shapes genome-wide introgression in wild baboons. Biology of Genomes, Cold Spring Harbor Laboratory, NY, USA (virtual).
- 2019 **Vilgalys TP**. The evolution of gene regulation in *Papio* baboons. Dissertation Seminar, Duke University.
- 2019 **Vilgalys TP**. Effects of local genetic ancestry on gene regulation in Amboseli baboons. Short-format Evolutionary Anthropology Talk Series, Duke University
- 2016 **Vilgalys TP**. Contributions of DNA methylation to variation and evolution. Evolutionary Anthropology Talk Series, Duke University

### Poster

- 2021 **Vilgalys TP**, Klunk J, Cobb M, Redfern R, Gable J, Boldsen JL, DeWitte S, Dumaine A, Demure C, Pizarro-Cerdá J, Rouleau G, Poinar H, Barreiro LB. Ancient genomics reveal positive selection on immune genes during the Black Plague. Society for Molecular Biology and Evolution (virtual).

- 2019 **Vilgalys TP**, Fogel AS, Anderson JAA, Lea AJ, Voyles T, Akinyi M, Alberts SC, Tung J. Local ancestry influences gene regulation in naturally hybridizing wild baboons. Society for Molecular Biology and Evolution, Manchester, UK.
- 2017 **Vilgalys TP**, Jolly CJ, Rogers J, Tung J. The evolution of DNA methylation among baboon species. Society for Molecular Biology and Evolution, Austin, TX, USA.

#### **Published conference abstracts**

- 2020 Tung J, **Vilgalys TP**, Fogel AS, Alberts SC. When populations are porous: admixture dynamics in a wild baboon hybrid zone. Annual meeting of the American Association of Physical Anthropologists.
- 2020 Fogel AS, **Vilgalys TP**, Kim SY, Altmann J, Alberts SC, Tung J. Mapping putative genetic barriers to gene flow in hybrid baboons. Annual meeting of the American Association of Physical Anthropologists.
- 2019 Tung J, **Vilgalys TP**, Snyder-Mackler N, Sanz J, Lea AJ, Alberts SC, Barreiro LB, Jolly CJ, Rogers J, Wilson ME. Socioecological correlates of epigenetic variation in nonhuman primates. Annual meeting of the American Association of Physical Anthropologists.

#### **Undergraduate research presentations**

- 2014 West Coast Biological Undergraduate Research Conference (*poster*)
- 2014 This is Honors, Loyola Marymount University Honors Program (*poster*)
- 2014 Undergraduate Research Symposia, Loyola Marymount University (*poster*)
- 2014 Socio-Economic Analyses of Coastal Ecosystem Resilience Symposia (*poster*)
- 2013 Summer Research Conference, Loyola Marymount University (*short talk*)
- 2013 Undergraduate Research Symposia, Loyola Marymount University (*short talk*)
- 2012 West Coast Biological Undergraduate Research Conference (*short talk*)
- 2012 Southern California Conference for Undergraduate Research (*poster*)
- 2012 Undergraduate Research Symposia, Loyola Marymount University (*short talk*)
- 2012 REU Research Symposium, Mote Marine Laboratory (*poster*)
- 2011 Southern California Conference for Undergraduate Research (*poster*)
- 2011 Undergraduate Research Symposia, Loyola Marymount University (*poster*)

## **Teaching & Mentorship**

### **Graduate Students Mentored**

Alexandra Soto, 2021 EEB Mentor Match

Tania Guerrero, University Program in Genetics and Genomics, Duke University

### **Teaching Assistant, Duke University**

Evolutionary Medicine and Global Health (Fall 2014, Fall 2016, Fall 2017)

Primate Field Biology (Spring 2017, Spring 2018, Fall 2018)

Intro to Evolutionary Anthropology (Spring 2014, Fall 2015, Spring 2019)

### **Teaching Assistant, Loyola Marymount University**

General Biology 1 Lab (Fall 2012, Fall 2013)

General Biology 2 Lab (Spring 2013)

Hormones and Behavior (Spring 2014)

## **Academic Service**

### **University of Chicago**

Diversity, Equity, and Inclusivity Committee, Department of Human Genetics (2020-Present)

### **Duke University**

Evolutionary Anthropology representative on the Graduate and Professional Student Council (2015-2016)

**Loyola Marymount University**

Academic Chair, Tri-Beta Biological Honors Society (2012-2013)

Student Honors Advisory Council (2010-2014)

Executive Board, Alpha Sigma Nu (Jesuit Honors Society) (2013-2014)

**Other service**

Reviewer service for *Molecular Biology and Evolution*, *Proceedings of the National Academy of Sciences*, *Nature Communications*, and *Plant Physiology and Biochemistry*

Public outreach, including guest lectures for high school classes and free-to-the-public events at the North Carolina Museum of Natural Sciences

Development of teaching materials for high school biology classes, particularly lesson plans about the structure and function of DNA and the genetic basis of complex traits