

# Genevieve Housman, PhD

Max Planck Institute for Evolutionary Anthropology  
Department of Primate Behavior and Evolution  
Deutscher Platz 6  
04103 Leipzig, Germany

Email: [genevieve\\_housman@eva.mpg.de](mailto:genevieve_housman@eva.mpg.de)  
Phone: +49 (0)341 3550-224  
Website: [Research Group](#) & [Personal](#)  
Twitter: @gahousman

## PROFESSIONAL APPOINTMENTS

---

- 2023-present    **Group Leader in Skeletal Genomics**  
Department of Primate Behavior and Evolution  
Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany
- 2017-2023    **Postdoctoral Researcher in Genetic Medicine**  
University of Chicago, Chicago, IL  
Laboratory of Yoav Gilad, PhD

## EDUCATION

---

- 2013-2017    **Doctor of Philosophy in Evolutionary Anthropology**  
Arizona State University, Tempe, AZ  
Laboratory of Anne C. Stone, PhD
- 2011-2013    **Masters of Arts in Evolutionary Anthropology**  
Arizona State University, Tempe, AZ  
Laboratory of Anne C. Stone, PhD
- 2007-2011    **Bachelor of Arts in Biological Anthropology & Biology**  
Boston University, Boston, MA  
Summa Cum Laude

## RESEARCH EXPERIENCE

---

- 2020-2023    **Postdoctoral Fellow**, Laboratory of Yoav Gilad, PhD  
The University of Chicago, Section of Genetic Medicine, Chicago, IL  
Assayed static and environmentally perturbed single-cell gene regulation patterns in primate iPSC-derived skeletal cell types to identify dynamic eQTLs relevant for osteoarthritis development and evolution.
- 2017-2020    **Postdoctoral Scholar**, Laboratory of Yoav Gilad, PhD  
The University of Chicago, Section of Genetic Medicine, Chicago, IL  
Initiated the characterization of single-cell gene regulation patterns in human and chimpanzee iPSC-derived mesenchymal stem cells, osteogenic cells, and chondrogenic cells to identify evolutionary patterns of conservation and divergence that may impact skeletal phenotypes.
- Spring 2018    **Visiting Postdoctoral Scholar**, Laboratory of Heike E. Daldrup-Link, MD, PhD  
Stanford University, Department of Radiology, Stanford, CA  
Optimized the differentiation of several human and chimpanzee iPSC lines through mesenchymal stem cells and into osteogenic and chondrogenic cells.
- Summer 2017    **Visiting Researcher**, Laboratory of Ellen E. Quillen, PhD  
Texas Biomedical Research Institute, San Antonio, TX  
Collected baboon femora cartilage samples with intermediate stages of knee osteoarthritis and evaluated DNA methylation to identify disease progression related epigenetic changes.

- 2013-2017 **Doctoral Graduate Researcher**, Laboratory of Anne C. Stone, PhD  
Arizona State University, Center for Evolution and Medicine, Tempe, AZ  
 Assayed DNA methylation patterns in primate skeletal tissues and determined how methylation varies inter-specifically, as well as intra-specifically in relation to variation in nonpathological morphologies, the development of knee osteoarthritis, and aging.
- Summer 2014 **Graduate Internship**, Laboratory of Lorena M. Havill, PhD  
Southwest National Primate Research Center, San Antonio, TX  
 Collected healthy and severely osteoarthritic baboon femora bone samples and evaluated DNA methylation to identify disease-related epigenetic changes.
- 2011-2013 **Masters Graduate Researcher**, Laboratory of Anne C. Stone, PhD  
Arizona State University, School of Human Evolution and Social Change, Tempe, AZ  
 Identified tuberculosis and leprosy in ancient human samples and modern primates and armadillos to evaluate the evolution and zoonotic spread of these infectious diseases.
- 2010-2011 **Undergraduate Researcher**, Laboratory of Sibaji Sarkar, PhD  
Boston University School of Medicine, Cancer Center, Boston, MA  
 Examined DNA methylation and gene expression in human cancer cell lines to assess how epigenetic patterns change across cancer development and in response to drug therapies.
- 2010-2011 **Undergraduate Researcher**, Laboratory of Richard Roberts, PhD  
Boston University, Department of Biomedical Engineering, Boston, MA  
 Researched bacterial gene function predictions to assist in developing a data repository.

## **PUBLICATIONS**

---

### Peer-Reviewed Research Articles (16 total)

- Submitted* Ru Y, Ma M, Zhou X, Kriti D, Cohen N, D'Souza S, Schaniel C, Motch Perrine SM, Pinto D, **Housman G**, Wu M, Holmes G, Schadt E, van Bakel H, Zhang B, Jabs EW. Transcriptomic landscape of human iPSC-derived osteogenic differentiation identifies a key regulator, KLF16.
- 2023 Osman A, Mencia-Trinchant N, Saygin C, Moma L, Kim A, **Housman G**, Pozsgai MJ, Sinha E, Chandra P, Hassane DC, Sboner A, Sangani K, DiNardi N, Johnson C, Wallace SS, Jabri B, Luu H, Guzman ML, Desai P, Godley LA. Paired bone marrow and peripheral blood samples demonstrate lack of widespread dissemination of some CH clones. *Blood Advances* 7(9): 1910-1914.
- 2022 **Housman G**, Briscoe E, Gilad Y. Evolutionary insights into primate skeletal gene regulation using a comparative cell culture model. *PLoS Genet* 18(3): e1010073.
- 2022 Hung A, **Housman G**, Briscoe E, Cuevas C, Gilad Y. Characterizing gene expression in an in vitro biomechanical strain model of joint health [version 1; peer review: awaiting peer review]. *F1000Research* 11: 296.
- 2022 Stover DA, **Housman G**, Stone AC, Rosenberg MS, Verrelli BC. Evolutionary genetic signatures of selection on bone-related variation within human and chimpanzee populations. *Genes* 13:183.
- 2021 **Housman G**, Quillen EE, Stone AC. An evolutionary perspective of DNA methylation patterns in skeletal tissues using a nonhuman primate model of osteoarthritis. *Journal of Orthopaedic Research* 39:2260-2269.

- 2020 **Housman G**, Quillen EE, Stone AC. Intraspecific and interspecific investigations of skeletal DNA methylation patterns and femur morphology in nonhuman primates. *American Journal of Physical Anthropology* 173:34-39.
- 2020 Gokhman D, Nissim-Rafinia M, Agranat-Tamir L, **Housman G**, García-Pérez R, Lizano E, Cheronet O, Mallick S, Nieves-Colón MA, Li H, Alpaslan-Roodenberg S, Novak M, Gu H, Osinski JM, Ferrando-Bernal M, Gelabert P, Lipende I, Mjungu D, Kondova I, Bontrop R, Kullmer O, Weber G, Shahar T, Dvir-Ginzberg M, Faerman M, Quillen EE, Meissner A, Lahav Y, Kandel L, Liebergall M, Prada ME, Vidal JM, Gronostajski RM, Stone AC, Yakir B, Lalueza-Fox C, Pinhasi R, Reich D, Marques-Bonet T, Meshorer E, Carmel L. Differential DNA methylation of vocal and facial anatomy genes in modern humans. *Nature Communications* 11:1-21.
- 2019 **Housman G**, Havill LM, Quillen EE, Comuzzie AG, Stone AC. Assessment of DNA Methylation Patterns in the Bone and Cartilage of a Nonhuman Primate Model of Osteoarthritis. *CARTILAGE* 10:335-345.
- 2018 Honap TP, Pfister LA, **Housman G**, Mills S, Tarara RP, Suzuki K, Cuzzo FP, Sauter ML, Rosenberg MS, Stone AC. *Mycobacterium leprae* genomes from naturally infected nonhuman primates. *PLoS Neglected Tropical Diseases* 12(1):e0006190.
- 2016 Lapinska K, **Housman G**, Byler S, Heerboth S, Willbanks A, Oza A, Sarkar A. The effects of histone deacetylase inhibitor and calpain inhibitor combination therapies on ovarian cancer cells. *Anticancer Research* 36:5731-5742.
- 2015 **Housman G**, Malukiewicz J, Boere V, Grativol AD, Pereira LCM, de Oliveira e Silva I, Ruiz-Miranda CR, Truman R, Stone AC. Validation of qPCR methods for the detection of *Mycobacterium* in New World animal reservoirs. *PLoS Neglected Tropical Diseases* 9(11):e0004198.
- 2014 Cabana GS, Lewis CM, Tito RY, Covey RA, Cáceres AM, Pampas CL, De La Cruz AF, Durand D, **Housman G**, Hulsey BI, Iannaccone GC, Lopez PW, Martínez R, Medina A, Ortega Dávila O, Osorio Pinto KP, Polo Santillán SI, Rojas Domínguez P, Rubel M, Smith HF, Smith SE, de Celis VR, Lizárraga B, Stone AC. Population genetic structure of traditional populations in the Peruvian Central Andes and implications for South American population history. *Human Biology* 86(3):147-165.
- 2013 Anton BP, Chang Y, Brown P, Choi H, Faller LL, Guleria J, Hu Z, Klitgord N, Levy-Moonshine A, Maksad A, Mazumdar V, McGettrick M, Osmani L, Pokrzywa R, Rachlin J, Swaminathan R, Allen B, **Housman G**, Monahan C, Rochussen K, Tao K, Bhagwat AS, Brenner SE, Columbus L, de Crécy-Lagard V, Ferguson D, Fomenkov A, Gadda G, Morgan RD, Osterman AL, Rodionov DA, Rodionova IA, Rudd KE, Söll D, Spain J, Xu S, Bateman A, Blumenthal RM, Bollinger JM, Chang W, Ferrer M, Friedberg I, Galperin MY, Gobeill J, Haft D, Hunt J, Karp P, Klimke W, Krebs C, Macelis D, Madupu R, Martin MJ, Miller JH, O'Donovan C, Palsson B, Ruch P, Setterdahl A, Sutton G, Tate J, Yakunin A, Tchigvintsev D, Plata G, Hu J, Greiner R, Horn D, Sjölander K, Salzberg SL, Vitkup D, Letovsky S, Segrè D, DeLisi C, Roberts RJ, Steffen M, Kasif S. The COMBEX Project: Design, methodology, and initial results. *PLoS Biology* 11(8):e1001638.
- 2012 Mataga MA, Rosenthal S, Heerboth S, Devalapalli A, Kokolus S, Evans LR, Longacre M, **Housman G**, Sarkar S. Anti-breast cancer effects of histone deacetylase inhibitors and calpain inhibitor. *Anticancer Research* 32(7):2523-2529.
- 2010 Roberts R, Chang Y, Hu Z, Rachlin J, Anton B, Pokrzywa R, Choi H, Faller L, Guleria J, **Housman G**, Klitgord N, Mazumdar V, McGettrick M, Osmani L, Swaminathan R, Salzberg S, DeLisi C, Steffen M, Kasif S. COMBEX: a project to accelerate the functional annotation of prokaryotic genomes. *Nucleic Acids Research* 39(suppl\_1):D1-D6.

#### Peer-Reviewed Review Articles (7 total)

- 2023 **Housman G**, Tung J. Next-generation primate genomics: new genome assemblies unlock new questions. *Cell* 186(25):5433-5437.
- 2021 Malukiewicz J, Boere V, Borstelmann de Oliveira MA, D'arc M, Ferreira JVA, French J, **Housman G**, Igayara de Souza C, Jerusalinsky L, de Melo FR, Valença-Montenegro MM, Moreira SB, de Oliveira e Silva I, Pacheco FS, Rogers J, Pissinatti A, del Rosario RCH, Ross C, Ruiz-Miranda CR, Pereira LCM, Schiel N, da Silva FFR, Souto A, Slipogor V, Tardif S. An Introduction to the *Callithrix* Genus and Overview of Recent Advances in Marmoset Research. *ILAR Journal* 00:1-29.
- 2020 **Housman G**, Gilad Y. Prime time for primate functional genomics. *Current Opinion in Genetics & Development* 62:1-7.
- 2016 Longacre M, Snyder N, **Housman G**, Leary M, Lapinska K, Heerboth S, Sarkar S. A comparative analysis of genetic and epigenetic events of breast and ovarian cancer related to tumorigenesis. *International Journal of Molecular Sciences* 17:759.
- 2015 Heerboth S, **Housman G**, Leary M, Longacre M, Byler S, Lapinska K, Willbanks A, Sarkar S. EMT and tumor metastasis. *Clinical and Translational Medicine* 4:6.
- 2014 **Housman G**, Byler S, Heerboth S, Lapinska K, Longacre M, Snyder N, Sarkar S. Drug resistance in cancer: An overview. *Cancers* 6(3):1769-1792.
- 2014 Byler S, Goldgar S, Heerboth S, Leary M, **Housman G**, Moulton K, Sarkar S. Genetic and epigenetic aspects of breast cancer progression and therapy. *Anticancer Research* 34:1071-1077.

#### Peer-Reviewed Book Chapters (1 total)

- 2021 **Housman G**. Gene Regulatory Processes in the Development and Evolution of Primate Skeletal Traits. In Pitirri MK and Richtsmeier JT (Eds). *Evolutionary Cell Processes in Primates: Genes, Skin, Energetics, Breathing, and Feeding*. Boca Raton: CRC Press.

#### **GRANTS & FELLOWSHIPS** (Total Amount: \$338,387)

---

##### External Funding (9 total)

- 2020-2023 **NIH/NIAMS Ruth L. Kirschstein National Research Service Award**; F32AR075397  
“eQTL mapping in response to osteoarthritis induction in differentiated skeletal cell types”  
Role: PI with Yoav Gilad, PhD and Tong-Chuan He, MD, PhD as Co-Sponsors  
(Total Award: \$218,274)
- 2016-2017 **Wenner-Gren Foundation Dissertation Fieldwork Grant**; Gr. 9310  
“Assessment of DNA Methylation Patterns in Primate Skeletal Tissues”  
Role: Co-PI with Anne C. Stone, PhD (Total Budget: \$20,000)
- 2016-2017 **James F. Nacey Fellowship** (Nacey Maggioncalda Foundation)  
“Assessment of DNA Methylation Patterns in Primate Skeletal Tissues”  
Role: PI (Total Budget: \$5,000)
- 2016-2017 **P.E.O. Scholar Award**, Role: Fellow (Total Stipend: \$15,000)

- 2016 **Sigma Xi Grant-in-Aid of Research** (national competition); G201510151661408  
 “Assessment of DNA Methylation Patterns in Primate Skeletal Tissues”  
 Role: PI (Total Budget: \$1,000)
- 2015-2017 **Leakey Foundation Research Grant for Doctoral Students**  
 “Assessment of DNA Methylation Patterns in Primate Skeletal Tissues”  
 Role: Co-PI with Anne C. Stone, PhD (Total Budget: \$15,000)
- 2015 **International Primatological Society Research Grant**  
 “Assessment of DNA Methylation Patterns in Primate Skeletal Tissues”  
 Role: PI (Total Budget: \$1,500)
- 2014 **SNPRC Summer Internship Grant** (Texas Biomedical Research Institute)  
 Role: Co-PI with Lorena M. Havill, PhD (Total Budget: \$1,000)
- 2013 **NSF Graduate Research Fellowship Program**, Honorable Mention

Internal Funding (8 total)

- 2016-2017 **Dissertation Completion Award** (SHESC, ASU), Role: Fellow (Total Stipend: \$22,400)
- 2016-2017 **Center for Evolution and Medicine Venture Fund** (ASU)  
 “Assessment of DNA Methylation Patterns in a Non-Human Primate Model of Osteoarthritis”  
 Role: PI (Total Budget: \$35,000)
- 2016 **Graduate Student Research Grant** (SHESC, ASU), Role: PI (Total Budget: \$851)
- 2015 **Graduate Research and Support Program Grant** (GPSA, ASU)  
 “Assessment of DNA Methylation Patterns in Primate Skeletal Tissues”  
 Role: PI (Total Budget: \$2,000)
- 2015; 2014 **Sigma Xi Grant-in-Aid of Research** (ASU Chapter), Role: PI (Total Budget: \$400; \$400)
- 2015 **Jumpstart Research Grant** (GPSA, ASU), Role: PI (Total Budget: \$422)
- 2010 **Funded Research Opportunity Grant** (Research Supplies Grant, Boston University)  
 Role: Co-PI with Sibaji Sarkar, PhD (Total Budget: \$140)

**HONORS & AWARDS** (Total Amount: \$9,586)

---

External Agencies (11 total)

- 2020 Charles J. Epstein Trainee Award for Excellence in Human Genetics Research Finalist, \$1,000
- 2019 ORS Great Lakes/Midwest Regional Symposium Post-Doctoral Student Poster Award, \$100
- 2019 Early Career Seminar Program Finalist (Department of Anthropology, PennState University)
- 2018 Outstanding Postdoctoral Poster Presentation in Anthropological Genetics (AAAG), \$200
- 2017 Society of Molecular Biology and Evolution Registration Award, \$320
- 2017 Travel Fellowship (Baylor College of Medicine’s Advanced Gene Mapping Course), \$1,000
- 2016 William Pollitzer Student Travel Award (AAPA), \$500
- 2014 Outstanding Student Presentation in Anthropological Genetics (AAAG), \$200
- 2013 American Association of Anthropological Genetics Travel Award, \$130
- 2012 William Pollitzer Student Travel Award (AAPA), \$500
- 2012 American Association of Anthropological Genetics Travel Award, \$200

### Internal Agencies (13 total)

2019	BSD Career and Professional Development Travel Award (University of Chicago), \$500
2017	Graduate Excellence Award (CLAS, ASU), \$200
2016	College of Liberal Arts and Sciences Student Leader (CLAS, ASU)
2016	Conference Travel Grant (GPSA, ASU), \$950
2016	Graduate Excellence Award (CLAS, ASU), \$200
2016	Conference Travel Grant (GPSA, ASU), \$861
2015	Conference Travel Grant (GPSA, ASU), \$775
2014	Donald H. Morris Award for Outstanding Doctoral Student in Evol. Anthro. (ASU), \$300
2014	Graduate Excellence Award (CLAS, ASU), \$250
2014	Conference Travel Grant (GPSA, ASU), \$700
2013	Conference Travel Grant (SHESC, ASU), \$250
2012	Conference Travel Grant (SHESC, ASU), \$200
2011	Conference Participation Travel Award (UROP Grant, Boston University), \$250

### **PRESENTATIONS**

---

#### Invited University Seminars (23 total)

Nov 22, 2023	<b>Housman G.</b> Cell culture systems to interrogate primate skeletal functional genomics. Zoological Colloquium, Institute for Animal Cell and System Biology, University of Hamburg, Hamburg, Germany.
Jun 20, 2023	<b>Housman G.</b> Cell culture systems to interrogate primate skeletal functional genomics. Department of Primate Behavior and Evolution, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.
May 24, 2023	<b>Housman G.</b> Primate cell culture systems for functional genomics research. NPRC Consortium Program: New Model Development, Genetics and Genomics, and Pathology Working Group, USA. [Virtual Visit]
May 3, 2022	<b>Housman G.</b> Investigating human and nonhuman primate functional genomics in the skeleton. Department of Primate Behavior and Evolution, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.
Apr 14, 2022	<b>Housman G.</b> Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. Laboratory of Genetics, University of Wisconsin – Madison, Madison, WI.
Mar 30, 2022	<b>Housman G.</b> Investigating human and nonhuman primate functional genomics in the skeleton. Systems Biology Seminars, Boston University, Boston, MA.
Mar 3, 2022	<b>Housman G.</b> Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. Department of Biological Sciences, Boise State University, Boise, ID.
Feb 28, 2022	<b>Housman G.</b> Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. School of Biological, Environmental, and Earth Sciences, University of Southern Mississippi, Hattiesburg, MS.
Feb 8, 2022	<b>Housman G.</b> Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. Department of Biological Sciences, University of Delaware, Newark, DE. [Virtual Visit]

- Jan 31, 2022 **Housman G.** Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. Department of Molecular Biosciences, University of Kansas, Lawrence, KS.
- Jan 19, 2022 **Housman G.** Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. Department of Anthropology & Huck Institutes for the Life Sciences, Pennsylvania State University, State College, PA. [Virtual Visit]
- Dec 1, 2021 **Housman G.** Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. Center for Human Genetics, Clemson University, Greenwood, SC. [Virtual Visit]
- Sep 20, 2021 **Housman G.** Genomic and epigenomic contributions to the evolution, development, and pathology of complex skeletal traits. Center for Molecular Medicine and Genetics, Wayne State University, Detroit, MI. [Virtual Visit]
- Aug 16, 2021 **Housman G.** Genomic and epigenomic changes in the evolution, development, and pathology of complex skeletal traits. Department of Biomedical Sciences & Epigenetics Working Group, University of North Dakota, Grand Forks, ND. [Virtual Visit]
- Mar 15, 2021 **Housman G.** Evolutionary changes in the gene regulation patterns of primate skeletons. Department of Biology, Loyola University Chicago, Chicago, IL. [Virtual Visit]
- Nov 20, 2020 **Housman G.** Evolutionary changes in the gene regulation patterns of primate skeletons. Biological Science Seminar Series, Northern Arizona University, Flagstaff, AZ. [Virtual Visit]
- May 4, 2020 **Housman G.** Identification of evolutionary changes in gene expression using a comparative primate skeletal cell culture model and single-cell genomics methods. JOINT Seminar Series, Department of Cell & Molecular Medicine, Rush University, Chicago, IL. [Virtual Visit]
- Feb 18, 2020 **Housman G.** Evolutionary implications of epigenetic and gene regulation patterns in primate skeletons. Department of Anthropology & Department of Biological Sciences, University of Cincinnati, OH.
- Nov 22, 2019 **Housman G.** Evolutionary implications of gene regulation patterns in primate skeletal tissues. Seminar Series, Department of Anthropology, University of Illinois at Urbana-Champaign, Champaign, IL.
- Jan 29, 2019 **Housman G.** Evolutionary implications of gene regulation patterns in primate skeletal tissues. Seminar Program for Early Career Scholars Finalists, The Department of Anthropology, Pennsylvania State University, State College, PA.
- Nov 2, 2018 **Housman G.** Primate skeletal tissue gene regulation and the evolution of complex traits. Seminar Series, Department of Anthropology, Northwestern University, Chicago IL.
- Mar 15, 2018 **Housman G.** Gene regulation in the cartilage and bone of a primate model of osteoarthritis. Image Review Session, Department of Radiology and Biomedical Imaging, UCSF School of Medicine, San Francisco, CA.
- Nov 9, 2016 **Housman G.** Primate skeletal epigenetics and the evolution of complex traits. Biology Science Speaker Series, Goshen College, Goshen, IN.

### Conference Podium Presentations (14 total)

Mar 2024	<b>Housman G.</b> Examination of gene-by-environment interactions in primate skeletal cells. AABA, Los Angeles, CA.
Jul 2023	<b>Housman G.</b> Cell culture systems to interrogate primate skeletal functional genomics. <u>Invited Speaker</u> . Society for Molecular Biology and Evolution, Ferrara, Italy.
Apr 2023	<b>Housman G</b> , Mohsin E, Gilad Y. A comparative primate organoid system for examining evolutionarily divergent patterns of gene expression during chondrogenesis. AABA, Reno, NV.
Apr 2021	<b>Housman G</b> , Gilad Y. Characterizing evolutionarily divergent patterns of gene expression during osteogenesis using a comparative primate skeletal cell culture model. <u>Invited Session</u> . AABA, Virtual Conference.
Oct 2020	<b>Housman G</b> , Gilad Y. Understanding evolutionarily divergent patterns of gene expression using single-cell analyses in a comparative primate skeletal cell culture model. <u>Plenary Session</u> . ASHG, Virtual Conference. <b>[Epstein Trainee Award Finalist]</b>
Jul 2020	<b>Housman G</b> , Gilad Y. A comparative primate skeletal cell culture model reveals insight into evolutionary changes in gene expression. SBE. [Conference cancelled due to COVID19.]
May 2020	<b>Housman G</b> , Gilad Y. Identification of evolutionary changes in gene expression using a comparative primate skeletal cell culture model. Biology of Genomes, Virtual Conference.
Apr 2020	<b>Housman G</b> , Gilad Y. Understanding evolutionary changes in gene expression through the development of a comparative primate skeletal cell culture model. <u>Invited Session</u> . AAPA. [In-person conference rescheduled for Apr 2021 due to COVID19. Abstract published in <i>American Journal of Physical Anthropology</i> 171(S69):125]
Jul 2019	<b>Housman G</b> , Gilad Y. Development of a comparative primate skeletal cell culture model to study gene expression responses to mechanical strain. PhD /Postdoc Summit for EMBO   EMBL Symposium: Mechanical Forces in Development, Heidelberg, Germany.
Mar 2019	<b>Housman G</b> , Gokhman D, and Carmel L. Recent regulatory changes shaped human vocal and facial anatomy. <u>Invited Session</u> . AAPA, Cleveland, OH.
Apr 2017	<b>Housman G</b> , Quillen E, Stone AC. Assessment of DNA methylation patterns in nonhuman primate skeletal tissue. AAPA, New Orleans, LA.
Nov 2016	<b>Housman G</b> , Quillen E, Stone AC. Primate skeletal epigenetics and the evolution of complex traits. Southwestern Association of Biological Anthropologists, Tempe, AZ.
Nov 2014	<b>Housman G</b> , Havill LM, Stone AC. Differential DNA methylation across baboon skeletal tissues. Southwestern Association of Biological Anthropologists, Tucson, AZ.
Nov 2013	<b>Housman G</b> , Stone AC. Validation of qPCR methods for the detection of <i>Mycobacterium leprae</i> DNA in cheek swabs from armadillos experimentally infected with leprosy. Southwestern Association of Biological Anthropologists, Tempe, AZ.



## Conference Poster Presentations (24 total)

Mar 2022	<b>Housman G</b> , Hung A, Gilad Y. Characterizing gene regulation responses to mechanical stress using in vitro skeletal cell culture models at population- and evolutionary-scales. <u>Invited Session</u> . AAPA, Denver, CO.
Aug 2021	<b>Housman G</b> , Gilad Y. Characterizing evolutionarily divergent patterns of gene expression using a comparative primate skeletal cell culture model. Midwest Population Genetics, Madison, WI.
Feb 2021	<b>Housman G</b> , Gilad Y. Characterization of Evolutionarily Divergent Gene Expression During Osteogenesis Using A Comparative Primate Skeletal Cell Culture Model. ORS, Virtual Conference.
Feb 2021	Wildeman BE, <b>Housman G</b> , Quillen EE. Differential Methylation Indexes Disease Severity In The Cartilage Of A Nonhuman Primate Model Of Osteoarthritis. ORS, Virtual Conference.
Sep 2020	<b>Housman G</b> , Gilad Y. Single-cell analyses in a comparative primate skeletal cell culture model reveal evolutionarily divergent patterns of gene expression. <u>Plenary Session</u> . ASBMR, Virtual Conference.
May 2020	Hung A, <b>Housman G</b> , Briscoe E, Garcia C, Gilad Y. Characterizing gene expression responses to biomechanical stress in an in vitro model of osteoarthritis. Biology of Genomes, Virtual Conference.
Feb 2020	<b>Housman G</b> , Gilad Y. Development of a comparative primate skeletal cell culture model to study single-cell gene expression patterns and transcriptional responses to mechanical strain. ORS, Phoenix, AZ.
Aug 2019	<b>Housman G</b> , Gilad Y. Development of a comparative primate skeletal cell culture model to study gene expression responses to mechanical strain. ORS Great Lakes/Midwest Regional Symposium, Chicago, IL. <b>[ORS Postdoc Prize]</b>
Jul 2019	<b>Housman G</b> , Gilad Y. Development of a comparative primate skeletal cell culture model to study gene expression responses to mechanical strain. EMBO   EMBL Symposium: Mechanical Forces in Development, Heidelberg, Germany.
Oct 2018	<b>Housman G</b> , Pott S, Gilad Y. Comparative developmental study of mesenchymal stem cell differentiation in primates. ASHG, San Diego, CA.
Apr 2018	<b>Housman G</b> , Quillen E, Stone AC. Evolutionary implications of primate skeletal DNA methylation patterns and their relationship to skeletal phenotypes. AAPA, Austin, TX. <b>[AAAG Postdoc Prize]</b>
Oct 2017	<b>Housman G</b> , Quillen E, Stone AC. An evolutionary perspective of DNA methylation associated with age within the primate lineage. ASHG, Orlando, FL.
Jul 2017	<b>Housman G</b> , Havill LM, Quillen E, Stone AC. An evolutionary understanding of DNA methylation patterns in nonhuman primate skeletal tissues. SBE, Austin, TX.
Oct 2016	<b>Housman G</b> , Havill LM, Quillen E, Stone AC. An evolutionary understanding of DNA methylation patterns associated with osteoarthritis. ASHG, Vancouver, Canada.
May 2016	<b>Housman G</b> , Havill LM, Quillen E, Stone AC. Variation in the DNA methylation of skeletal tissues in a population of pedigreed baboons. SBE Satellite Meeting on the Genetics of Admixed Populations, San Antonio, TX.

- Apr 2016 **Housman G**, Havill LM, Quillen E, Stone AC. Associations between skeletal DNA methylation and baboon femur morphology. AAPA, Atlanta, GA.
- Mar 2015 **Housman G**, Havill LM, Stone AC. Genome-wide DNA methylation variation in baboon bone and cartilage. AAPA, St. Louis, MO.
- Mar 2015 Honap TP, **Housman G**, Erkenswick G, Malukiewicz J, Boere V, Pereira LCM, Gravitol AD, Ruiz-Miranda CR, Silva IO, Watsa M, Stone AC. Investigating the presence of mycobacterial pathogens in New World primates. AAPA, St. Louis, MO.
- Apr 2014 **Housman G**, Boere V, Gravitol AD, Malukiewicz J, Pereira LCM, Silva IO, Ruiz-Miranda CC, Stone A. Validation of qPCR methods for the detection of *Mycobacterium* in New World animal reservoirs. Invited Session. AAPA, Calgary, Canada. **[AAAG Student Prize]**
- Apr 2013 **Housman G**, Boere V, Gravitol AD, Malukiewicz J, Pereira LCM, Silva IO, Ruiz-Miranda CC, Stone A. Diagnosing *Mycobacterium* in marmosets. AAPA, Knoxville, TN.
- Apr 2011 **Housman G**, Mataga MA, Devalapalli A, Heerboth S, Evans LR, Sarkar S. Demethylation and re-expression of tumor suppressor genes: A novel approach for cancer therapy. Epigenetics World Congress, Boston, MA.
- Feb 2011 Devalapalli A, Mataga MA, **Housman G**, Heerboth S, Evans LR, Sarkar S. Exploration of a combination therapy on breast cancer cells by HDAC inhibitors and calpain inhibitor. Medical Student Research Symposium, Boston University School of Medicine, Boston, MA.
- Nov 2010 Mataga MA, **Housman G**, Devalapalli A, Evans LR, Sarkar S. Regulation of gene expression by CpG DNA methylation: A study with cancer cells. RECOMB Regulatory Genomics, Systems Biology, and DREAM Conference, Columbia University, NY.
- Oct 2010 Mataga MA, **Housman G**, Devalapalli A, Heerboth S, Sarkar S. Exploration of a combination therapy of breast cancer by HDAC inhibitors and calpain inhibitor. UROP Symposium, Boston University, Boston, MA.

## TEACHING EXPERIENCE

---

### Academic Teaching

- 2023-present **Max Planck Institute for Evolutionary Anthropology**, Leipzig, Germany  
**Lecturer**, IMPRS: The Leipzig School of Human Origins  
 “Primate Genomics” lecture in Evolutionary Anthropology (PhD Course: Nov 23, 2023)  
**Lecturer**, University of Leipzig  
 “Primate Evolution” lecture in Molecular Anthropology (MSc Course: Jul 4, 2023)
- 2012-2016 **Arizona State University**, Tempe, AZ  
**Instructor of Record**, School of Human Evolution and Social Change  
 Disease and Human Evolution (ASM345: Summer 2016)  
**Graduate Teaching Associate**, School of Human Evolution and Social Change  
 Forensic Anthropology (ASM275: Spring 2016)  
 From Cells to Societies (ASB394: Spring 2016)  
 Principles of Human Genetics (ASM446: Spring 2015)  
 Clinical Gross Anatomy (ASM506: Fall 2014, Fall 2015)  
 Bones, Stones, and Human Evolution (ASM104: Fall 2013, Spring 2014)  
**Graduate Teaching Assistant**, School of Human Evolution and Social Change  
 Peopling of the World (ASM301: Spring 2013)  
 Bones, Stones, and Human Evolution (ASM104: Fall 2012)

**Graduate Intern Teaching Assistant**, School of Life Sciences  
Animal Physiology Lab (BIO361: Spring 2012)

Spring 2011 **Boston University**, Boston, MA  
**Undergraduate Assistant**, Biology Department  
Systems Physiology Lab (BI315: Spring 2011)

Academic Workshops

- Mar. 27, 2019 **Instructor**, Integrating Epigenetic Data with Anthropological Research  
Technical and Computational Considerations (AAPA Conference, Cleveland, OH)  
Provided an overview and interactive coding session on the current technologies available for assaying epigenetic regulatory markers, ethical and experimental design considerations, and available computational methods and software packages to graduate students, postdocs, and faculty interested in initiating anthropological epigenetics research.
- Aug. 1-3, 2018 **Instructor**, Application of Genetics to Anthropological Research Bioinformatics Workshop  
Data Visualization (University at Buffalo)  
Provided an overview and interactive coding session on the basics of plotting processed genetic variant data using the R packages ggplot2 and Gviz to anthropological geneticists ranging from graduate students to faculty.
- April 12, 2016 **Instructor** (Arizona State University)  
Institute of Human Evolution Historical Geology Lab  
Provided an overview and interactive lab session with fossil casts of paleoanthropology, the hominin fossil record, and the context of human evolution to early undergraduate students.

Guest Teaching

- Feb. 6, 2020 **Guest Lecturer on Primate Genomics** (University of Illinois at Chicago)  
Introduction to Human Evolution (ANTH105: Spring 2020)  
Presented an introduction to the field of primate genomics, including the types of research questions primate genomics research aims to answer, what primate genetics information is available, and some of the major insights work in primate genomics has provided.
- Oct. 4, 2016 **Guest Instructor** (University of Arizona)  
Clinical Anatomy Block (Fall 2016)  
Directed and assisted students (graduate, physician assistant, physical therapist, and medical) in the dissection of human cadavers and identification of anatomical features, as well as taught anatomical concepts specifically related to the pelvis and perineum.

**MENTORING EXPERIENCE**

---

- 2023-present **Max Planck Institute for Evolutionary Anthropology**, Leipzig, Germany
- Mentored postdoctoral researcher (1) on research optimizing the recovery of gene expression and regulatory pattern data from nonhuman primate skeletal tissues to examine the development and evolution of genotype-phenotype facial expressions.
  - Mentored PhD student (1) on dissertation research which involved bioinformatic analyses to detect gene-by-environment interactions and response eQTLs in human and nonhuman primates using bulk and single-cell RNA-seq data collected during cell culture experimental designs.
  - Mentored graduate student interns (2) on lab projects involving cell culture and genetics/genomics experimental work.

- 2017-2023      **University of Chicago**, Gilad Lab, Chicago, IL
- Mentored MD/PhD student (1) on dissertation research which involved establishing a panel of human iPSC-derived chondrogenic cells, optimizing cell culture strain regimen and cytokine exposure protocols, initiating a response eQTL study using these methods, analyzing collected RNA-seq data, successfully constructing and writing grant applications, as well as writing and summarizing research findings into papers.
  - Mentored rotation graduate students (3) on lab projects optimizing cell culture differentiation protocols and bioinformatic projects analyzing single-cell RNA-seq data.
  - Mentored undergraduate student (1) on a senior thesis project which involved examining gene expression changes during a chondrogenic differentiation time course, analyzing single-cell RNA-seq data, and writing and summarizing research findings into a paper.
  - Trained graduate students (3), undergraduate student (1), and technician (1) in cell culture and genetic methods.
- 2012-2017      **Arizona State University**, Molecular Anthropology Lab, Tempe, AZ
- Mentored undergraduates (2) on lab projects focused on designing primers for the PCR amplification and Sanger sequencing of regular and bisulfite treated DNA (2016-2017).
  - Mentored undergraduates (3) on lab projects focused on detecting mycobacterial DNA fragments in nonhuman primate and armadillo samples using qPCR (2012-2014).
  - Mentored undergraduate (1) on lab-specific project focused on evaluating Y-chromosome STRs in chimpanzees (2013).
  - Trained undergraduate (25) and graduate students (8) in genetics laboratory methods.
- 2013-2014      **Arizona State University**, School of Human Evolution and Social Change, Tempe, AZ
- Mentored incoming anthropology graduate students on navigating graduate school.

## PROFESSIONAL SERVICE

---

- Reviewer:      *Cell* (1), *Nature Communications Biology* (1), *PLOS Genetics* (2), *Molecular Biology and Evolution* (1), *PLOS Neglected Tropical Diseases* (1), *Scientific Reports* (1), *Evolutionary Anthropology* (1), *Journal of Orthopaedic Research* (2)
- Reviewer:      Human Frontier Science Program Grant (1), NSF Research Grant - Biological Anthropology (2), Leakey Foundation Grant (7)
- Reviewer:      AABA conference abstracts (2023), ORS conference abstracts (2022), ASHG conference abstracts for Evolutionary and Population Genetics (2018)
- Reviewer:      SMBE trainee posters (2023), AABA AAAG trainee poster and podium presentations (2023)
- Member:      AAAG Education Committee (2017-2020); AAAG Outreach Committee (2016-2018)
- Organizer:      Epigenetics: Bridging cultural and biological anthropology, Invited Podium Symposium at the 2019 AAPA Conference, Cleveland, OH (March 30, 2019)
- Organizer:      Integrating Epigenetic Data with Anthropological Research, AAAG-Sponsored Workshop at the 2019 AAPA Conference, Cleveland, OH (March 27, 2019)
- Organizer:      Application of Genetics to Anthropological Research Bioinformatics Workshop, University at Buffalo, NY (August 1-3, 2018)
- Consultant:      NIH NHGRI panel on integrating developmental genomics data across species (July 1, 2020)
- Chair:      Genetics and Genomics: Anthropological genetics at AABA 2023 (April 22, 2023)
- Chair:      Genetics and Genomics: Genotype-Phenotype session at AAPA 2021 (April 19, 2021)

## UNIVERSITY SERVICE

---

- Representative: MPI-EVA Scientific Staff in the Human Sciences Section of the Max Planck Society's Scientific Council (2023-2026)
- Member: University of Chicago Department of Human Genetics DEI Committee (2021-2023)
- Established committee charter and code of conduct
  - Developed, distributed, analyzed, and presented the results of community climate survey
  - Organized and ran inaugural town hall meeting
  - Organized and ran a current issues dialogue
- Reviewer: GPSA Graduate Research Grant at ASU (2014-2017); GPSA Travel Grant at ASU (2013-2017); GPSA Jumpstart Grant at ASU (2013-2016)
- Chair: Event Program Sub-Committee for University of Chicago Biological Science Division Postdoctoral Association (UChicago BSD PDA) Symposium Committee (2017-2018)
- President: SHESC Association of All Graduate Students (AAGS) at ASU (2014-2016) [Won the ASU Pitchfork Award for Outstanding Graduate Student Organization, April 2015]
- Secretary: SHESC AAGS at ASU (2013-2014)
- Organizer: Preprints in the Life Sciences, UChicago BSD PDA Ethics Seminar (December 8, 2017); Summer Research and Fieldwork Symposium, SHESC, ASU (September 3, 2016)
- Organizer: Postdoc Group in the Department of Human Genetics and the Section of Genetic Medicine at the University of Chicago (2019-2023)

## COMMUNITY OUTREACH

---

- Online: Developed and Maintain Anthropological Epigenetics Teaching Resources website ([anthroepigenetics.weebly.com](http://anthroepigenetics.weebly.com), first published April 12, 2018)
- Teacher: ASU Prison Biology Education Program (2016-2017)
- Writer: Ask An Anthropologist website at ASU's Institute of Human Origins (2015-2016)
- **Housman G.** Life is Spelled A, T, C, G. [[askananthropologist.asu.edu/life-spelled-a-t-c-g](http://askananthropologist.asu.edu/life-spelled-a-t-c-g)]
  - **Housman G.** Because Your DNA Says So. [[askananthropologist.asu.edu/stories/because-your-dna-says-so](http://askananthropologist.asu.edu/stories/because-your-dna-says-so)]
  - **Housman G.** Controlling the Code. [[askananthropologist.asu.edu/epigenetics](http://askananthropologist.asu.edu/epigenetics)]
- Writer: Ask A Biologist website at ASU's School of Life Sciences (2012-present)
- Presenter: Skype A Scientist Talks
- Riddle Brook School, Bedford, NH (March 10, 2023)
  - Nyack High School, Upper Nyack, NY (November 22, 2022)
  - Wickliffe Progressive Elementary School, Arlington, OH (February 22, 2022)
  - The Future Brighter, Alexandria, VA (January 13 & 14, 2022)
  - 257th Toronto Brownies, Girl Guides of Canada, Toronto Canada (May 31, 2021)
  - Beaumont Middle School, Lexington, KY (December 17, 2020)
  - Holman Middle School in Richmond, VA (May 28, 2019)
- Invited Science Outreach Talks
- Girls Leadership Academy of Arizona in Phoenix, AZ (March 3, 2016)
  - Kyrene Middle School in Tempe, AZ (March 20, 2015)
- Science Outreach Workshop Leader
- Night of the Open Doors at ASU (February 27, 2016)

## PROFESSIONAL AFFILIATIONS

---

AABA	(American Association of Biological Anthropologists, AAPA prior to 2021)
AAPA	(American Association of Physical Anthropologists, AABA as of 2021)
AAAG	(American Association of Anthropological Genetics)
ASBMR	(American Society for Bone and Mineral Research)
ASHG	(American Society of Human Genetics)
ORS	(Orthopedic Research Society)
SMBE	(Society for Molecular Biology and Evolution)

## PROFESSIONAL DEVELOPMENT

---

2021-2022	United States Bone and Joint Initiative Young Investigator Initiative Grant Mentoring Program
2021	Responsible Conduct of Research Training, University of Chicago, Chicago, IL <ul style="list-style-type: none"><li>• Academic Fraud and Research Misconduct</li><li>• Health Equity in Research</li><li>• Community Engaged Research</li><li>• Ethics of Human Experimentation</li><li>• Ethical Treatment of Animals in Research</li><li>• Mentorship and Building Your Research Team</li><li>• Talking Science with The Public</li></ul>
2020	Careers in Academia Seminar Series, Northwest University, Chicago, IL <ul style="list-style-type: none"><li>• Communication in Multicultural Teams</li><li>• Implicit Bias</li></ul>
2018-2019	Mentor Training Workshops, University of Chicago, Chicago, IL <ul style="list-style-type: none"><li>• Maintaining Effective Communication</li><li>• Addressing Equity and Inclusion</li><li>• Articulating Your Mentoring Philosophy</li></ul>
2017-2018	myChoice Mini-Courses, University of Chicago, Chicago, IL <ul style="list-style-type: none"><li>• Team Management Fundamentals</li><li>• Communications Bootcamp</li><li>• The Business of Running a Lab</li></ul>
2017	Advanced Gene Mapping Course, The Rockefeller University, New York, NY
2015-2016	Preparing Future Faculty Program, Arizona State University, Tempe, AZ
2012, 2013, 2014	Application of Genomics to Anthropological Research Workshop, Texas Biomedical Research Institute, San Antonio, TX