

Tyler M. Barrett

Department of Evolutionary Anthropology, Duke University

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Summary of Professional Experience

I am a Ph.D. Candidate in the Department of Evolutionary Anthropology at Duke University. In my dissertation research, I use network analysis to study disease ecology in rural Madagascar as well as computational tools like agent-based models to study disease diffusion. My dissertation research investigates how ongoing market integration in northeast Madagascar affects regional movement patterns and infectious disease transmission. I also have a broad research background in population health and have conducted projects on non-communicable diseases, aging, and inequalities in kidney transplantation. In this work, I have performed statistical analyses using large datasets from the World Health Organization's Study on Global AGEing and Adult Health (SAGE) as well as the Cebu Longitudinal Health and Nutrition Survey (CLHNS). My professional background includes project management and scientific communication roles at both academic and non-academic organizations.

Education

Ph.D. Evolutionary Anthropology, Duke University	Expected 2026
M.A. Anthropology, Northwestern University	2017
B.S. Anthropology and Communication, University of Oregon	2015

Professional Experience

Graduate Research Assistant in Pandemic Lifecycle Modeling Triangle Center for Evolutionary Medicine & Duke Network Analysis Center	2023 – Present
Medical Writer RTI Health Solutions	2020 – 2021
Research Associate Division of General Internal Medicine Duke University School of Medicine	2018 – 2020

Technical Skills

Programming Languages: R (expert) and Python (beginner)

Version Control Systems: Git (GitHub)

GIS Systems: QGIS

Statistical Skills: network analysis, spatial analysis, generalized linear models, multilevel models, and multi-model inference using model comparison and averaging

Office Platforms: Microsoft Office and Google Suite

Research Grants

Doctoral Dissertation Research: Human mobility and infectious disease in the context of market integration, NSF 2341234, USD \$40,250 2024 – 2026

Duke Population Research Institute, Center for Population Health and Aging Pilot Award: Quantifying the gradient of market integration in relation to health across the lifecourse in northeast Madagascar, NIA Center Grant P30 AG034424, USD \$34,614 (P.I. Charles Nunn) 2022 – 2024

Publications

In Preparation

Barrett TM, Soarimalala V, Kramer RA, Nunn CL. Climate change perceptions and adaptive behavior among smallholder farmers in northeast Madagascar.

Barrett TM, Titcomb GC, Janko MM, Pender M, Kauffman K, Solis A, Randriamoria TM, Young HS, Mucha PJ, Moody J, Kramer RA, Soarimalala V, Nunn CL. Disentangling social, environmental, and zoonotic transmission pathways of a gastrointestinal protozoan (*Blastocystis* spp.) in northeast Madagascar.

Under Review

Kolinsky L, **Barrett TM**, Kramer RA, Nunn CL. Market integration and infectious disease: a disease ecology perspective.

Spence Beaulieu M, **Barrett TM**, Kauffman K, Creighton MJA, Supple R, Werner CS, Solis A, Farmer CM, Nunn CL. Toward an integration of ecology and evolution with One Health.

Peer Reviewed Publications

Barrett TM, Liebert MA, Eick GN, Ridgeway-Diaz JG, Madimenos FC, Blackwell AD, Urlacher SS, Sugiyama LS, Snodgrass JJ. (2022). Age-related patterns of cytomegalovirus antibodies accompanying Epstein-Barr virus co-infection. *American Journal of Human Biology* 34(11), e23713.

Mohottige D, Davenport C, Lee H, Ephraim P, DePasquale N, Cabacungan A, **Barrett TM**, McElroy L, Pendergast J, Diamantidis CJ, Boulware LE. (2022). Receipt and sharing of information to improve knowledge about living donor kidney transplant among transplant candidates with advanced chronic kidney disease. *Progress in Transplantation* 32(3):241-247.

- Barrett TM**, Davenport CA, Ephraim PL, Peskoe S, Mohottige D, DePasquale N, McElroy L, Boulware LE. (2022). Disparities in discussions about kidney replacement therapy in CKD care. *Kidney360* 3(1):158-163.
- Barrett TM**, Tsui CKM. (2021). Emerging fungal pathogen: *Candida auris*. *Evolution, Medicine, and Public Health* 9(1):246-247.
- Barrett TM**, Green JA, Greer RC, Ephraim PL, Peskoe S, Pendergast JF, Hauer CL, Strigo TS, Norfolk E, Bucaloiu ID, Diamantidis CJ, Hill-Briggs F, Browne T, Jackson GL, Boulware LE. (2021). Preferences for and experiences of shared and informed decision making among patients choosing kidney replacement therapies in nephrology care. *Kidney Medicine* 3(6):905-915.
- Boulware LE, Sudan DL, Strigo TS, Ephraim PL, Davenport CA, Pendergast JF, Pounds I, Riley JA, Falkovic M, Alkon A, Hill-Briggs F, Cabacungan AN, **Barrett TM**, Mohottige D, McElroy L, Diamantidis CJ, Ellis MJ. (2021). Transplant social worker and donor financial assistance to increase living donor kidney transplants among African Americans: the TALKS study, a randomized comparative effectiveness trial. *American Journal of Transplantation* 21(6):2175-2187.
- Barrett TM**, Green JA, Greer RC, Ephraim PL, Peskoe S, Pendergast JF, Hauer CL, Strigo TS, Norfolk E, Bucaloiu ID, Diamantidis CJ, Hill-Briggs FF, Browne T, Jackson GL, Boulware LE. (2020). Advanced CKD care and decision making: which health care professionals do patients rely on for CKD treatment and advice? *Kidney Medicine* 2(5):532-542.
- McDade TW, Borja JB, Lee NR, Aquino CT, **Barrett TM**, Adair LS, Kuzawa CW. (2020). C-reactive protein response to influenza vaccination predicts cardiovascular disease risk in the Philippines. *Biodemography and Social Biology* 65(1):88-96.
- Kuzawa CW, **Barrett TM**, Borja JB, Lee NR, Aquino CT, Adair LS, McDade TW. (2019). Ankle brachial index (ABI) in a cohort of older women in the Philippines: prevalence of peripheral artery disease and predictors of ABI. *American Journal of Human Biology* 31(3):e23237.
- Eick GN, Kowal P, **Barrett TM**, Thiele EA, Snodgrass JJ. (2017). Enzyme-linked immunoassay-based quantitative measurement of Apolipoprotein B (ApoB) in dried blood spots, a biomarker of cardiovascular disease risk. *Biodemography and Social Biology* 63:116-130.
- Arokiasamy P, Kowal P, Capistrant BD, Gildner TE, Thiele E, Biritwum RB, Yawson AE, Mensah G, Maximova T, Wu F, Guo Y, Zheng Y, Zimba Kalula S, Salinas Rodríguez A, Manrique Espinoza B, Liebert MA, Eick G, Sterner KN, **Barrett TM**, Duedu K, Gonzales E, Ng N, Negin J, Jiang Y, Byles J, Lorna Madurai S, Minicuci N, Snodgrass JJ, Naidoo N, Chatterji S. (2017). Chronic noncommunicable diseases in 6 low- and middle-income countries: findings from Wave 1 of the World Health Organization's Study on global AGEing and adult health (SAGE). *American Journal of Epidemiology* 185:414-428.
- Snodgrass JJ, Liebert MA, Cepon-Robins TJ, **Barrett TM**, Mathur A, Chatterji S, Kowal P. (2016). Accelerometer-measured physical activity among older adults in urban India: results of a Study on global AGEing and adult health substudy. *American Journal of Human Biology* 28(3):412-420.

Barrett TM, Liebert MA, Schrock JM, Cepon-Robins TJ, Mathur A, Agarwal H, Kowal P, Snodgrass JJ. (2016). Physical function and activity among older adults in Jodhpur, India. *Annals of Human Biology* 43(5):488-491.

Gildner TE, **Barrett TM**, Liebert MA, Kowal P, and Snodgrass JJ. (2015). Does BMI generated by self-reported height and weight measure up in older adults from middle-income countries? results from the Study on global AGEing and adult health (SAGE). *BMC Obesity* 2(44):1-13.

Book Reviews

Barrett TM. (2016). *Body by Darwin: How Evolution Shapes our Health and Transforms Medicine* by Jeremy Taylor 304 pp. Chicago: University of Chicago Press. 2015. \$30.00 (cloth), \$18.00 (e-book). Book Review. *American Journal of Human Biology* 28:952–953.

Invited Talks

Social networks and the transmission of *Blastocystis* spp. in rural Madagascar. Department of Zoology and Animal Biology, University of Antananarivo. May 26, 2023.

Conference Presentations

Presenting Author

Barrett TM, Titcomb GC, Pender M, Kramer RA, Soarimalala V, Moody J, Nunn CL. (2024). Application of regular equivalence blockmodeling to identify epidemiological roles associated with hookworm infection in rural Madagascar. American Association of Biological Anthropologists. Los Angeles, CA. Podium Presentation.

Barrett TM, Liebert MA, Eick GN, Ridgeway-Diaz JG, Madimenos FC, Blackwell AD, Cepon-Robins TJ, Urlacher SS, Sugiyama LS, Snodgrass JJ. (2024). Demographic predictors of circulating Epstein-Barr virus antibody levels in Amazonian Ecuador. Human Biology Association. Los Angeles, CA. Poster Presentation.

Barrett TM, Janko MM, Titcomb GC, Pender M, Kauffman K, Soarimalala V, Kramer RA, Young HS, Nunn CL. (2023). Zoonotic infectious disease and spatially dynamic human-domesticated animal interaction networks in rural Madagascar. International Network for Social Network Analysis Sunbelt Conference. Portland, OR. Podium Presentation.

Barrett TM, Titcomb GC, Pender M, Rabezara JY, Soarimalala V, Kramer RA, Young HS, Nunn CL. (2023). Social transmission of *Blastocystis* spp. in rural Madagascar: disentangling the effect of household, friendship, and close contact networks. American Association of Biological Anthropologists. Reno, NV. Podium Presentation.

Barrett TM, Ephraim PL, Green JA, Peskoe S, Pendergast JF, Hauer C, Strigo TS, Hill-Briggs F, Browne T, Jackson G, Greer RC, Diamantidis CJ, Boulware LE. (2019). Patients' reliance on non-nephrologists for chronic kidney disease treatment and advice. American Society of Nephrology. Washington, DC. Poster Presentation.

- Barrett TM**, Ellis M, Sudan D, Strigo TS, Davenport CA, Zhang X, Riley J, Alkon A, Ephraim PL, Cabacungan AN, Mohottige D, Boulware LE. (2019). Does this patient still want a kidney transplant? changing treatment preferences among African Americans on the kidney transplant waiting list. American Society of Nephrology. Washington, DC. Poster Presentation.
- Barrett TM**, Green JA, Ephraim PL, Peskoe S, Pendergast JF, Strigo TS, Hauer C, Hill-Briggs F, Browne T, Jackson G, Greer RC, Diamantidis CJ, Boulware LE. (2019). Are patients' needs for shared and informed decision making about kidney replacement therapy being addressed? American Society of Nephrology. Washington, DC. Poster Presentation.
- Barrett TM**, Kuzawa CW, Borja JB, and McDade TW. (2017). Inflammatory response to influenza vaccination predicts cardiovascular health among middle-aged women in the Philippines. Human Biology Association. New Orleans, LA. Poster Presentation.
- Barrett TM**, Liebert MA, Eick G, Ridgeway-Diaz JG, Madimenos FC, Blackwell AD, Sugiyama LS, and Snodgrass JJ. (2016). The interrelationship of cytomegalovirus and Epstein-Barr virus antibodies among Shuar of Amazonian Ecuador. American Association of Physical Anthropologists. Atlanta, GA. Poster Presentation.
- Barrett TM**, Liebert MA, Thiele E, Kowal P. (2015). Happy and in control: links among measures of perceived control, happiness, and blood pressure in the Study on Global AGEing and adult health (SAGE). Population Association of America. San Diego, CA. Podium Presentation.
- Barrett TM**, Liebert MA, Leonard WR, Tarskaia LA, Klimova TM, Fedorova VI, Baltakhinova ME, Krivoschapkin VG, Snodgrass JJ. (2015). Television viewing, lifestyle, and cardiovascular health among the Yakut (Sakha) of northeastern Siberia. University of Oregon Undergraduate Research Symposium. Eugene, OR. Podium Presentation.
- Gildner TE, **Barrett TM**, and Snodgrass JJ. (2015). Does BMI generated by self-reported height and weight measure up in older adults? Associations between self-report and measurement in six middle-income countries from the Study on global AGEing and adult health (SAGE). Population Association of America. San Diego, CA. Poster Presentation.
- Barrett TM**, Liebert MA, Kowal P, and Snodgrass JJ. (2015). Perceived control, happiness, and blood pressure among older adults in six middle-income countries: results from the Study on global AGEing and adult health (SAGE). Western Regional International Health Conference. Eugene, OR. Poster Presentation.
- Barrett TM**, Liebert MA, Leonard WR, Tarskaia LA, Klimova TM, Fedorova VI, Baltakhinova ME, Krivoschapkin VG, and Snodgrass JJ. (2015). Associations among television viewing, lifestyle, and cardiovascular health in an indigenous Siberian population. American Association of Physical Anthropologists. St. Louis, MO. Poster Presentation.
- Barrett TM**, Liebert MA, Kowal P, and Snodgrass JJ. (2015). Study on global AGEing and adult health (SAGE): links among measures of perceived control, happiness, and blood pressure. Human Biology Association. St. Louis, MO. Poster Presentation.

Barrett TM, Liebert MA, Cepon-Robins TJ, Mathur A, Kowal P, and Snodgrass JJ. (2014). Physical activity, functional abilities, and health: Results of a WHO SAGE sub-study among older adults in an urban setting in India. Society for Epidemiologic Research. Seattle, WA. Poster Presentation.

Barrett TM, Liebert MA, Cepon-Robins TJ, Mathur A, Kowal P, and Snodgrass JJ. (2014). Physical activity, functional abilities, and health: Results of a WHO SAGE sub-study among older adults in an urban setting in India. University of Oregon Undergraduate Research Symposium. Eugene, OR. Poster Presentation.

Collaborator

Kolinski L, **Barrett TM**, Kauffman K, Solis A, Soarimalala V, Pender M, Kramer RA, Nunn CL. (2024). Knowledge of zoonotic disease transmission is associated with greater market integration in northeast Madagascar. Southeastern Biological Anthropology Interest Group. Chapel Hill, NC. Poster Presentation.

Cantrell, HN, Hallett E, Liebert M, **Barrett TM**, Cepon-Robins TJ, Gildner TE, Urlacher SS, Madimenos FC, Sugiyama LS, Snodgrass JJ. (2024). Examining multimorbidities of poor kidney function in the Amazonian Shuar of Ecuador. Human Biology Association. Los Angeles, CA. Poster Presentation.

Titcomb GC, Kauffmann KM, Rabezara JY, Soarimalala V, **Barrett TM**, Solis A, Randriamoria T, Pender M, Mucha P, Kramer RA, Nunn CL. (2023). Linking movement and gastrointestinal parasite infections in humans and animals in rural Madagascar. Ecological Society of America. Portland, OR. Poster Presentation.

Spence Beaulieu M, **Barrett TM**, Farmer C, Kauffman K, Rush C, Sandberg E, Solis A, Supple R, Werner C, Nunn C. (2022). Toward an integration of Ecology and Evolution with One Health. International Society for Evolution, Medicine, and Public Health. Lisbon, Portugal. Podium Presentation.

Titcomb, GC, Anaeme A, **Barrett TM**, Janko M, Kauffman K, Kramer R, Pender M, Rabezara JY, Soarimalala V, Solis A, Young H, Nunn C. (2022). Exploring gastrointestinal parasitism in humans using movement networks and demography. Ecology and Evolution of Infectious Diseases. Atlanta, GA. Poster Presentation.

Mohottige D, Ellis MJ, Sudan D, Davenport CA, Zhang X, Strigo TS, **Barrett TM**, Cabacungan AN, Boulware LE. (2019). Willingness to consider increased risk PHS organs among waitlisted African Americans. American Society of Nephrology. Washington, DC. Poster Presentation.

Cepon-Robins TJ, Kuteesa M, **Barrett TM**, Mugisha J, Hallett E, Schrock J, Geddes L, Mabazi P, Kowal P, Seeley J, and Snodgrass JJ. (2017). The effects of lifestyle factors and social support on physical activity patterns among older adults from Uganda: preliminary analyses from WHO's SAGE-PA Uganda sub-study. American Association of Physical Anthropologists. New Orleans, LA. Poster Presentation.

Hallett E, Eick G, **Barrett TM**, Liebert M, Cepon-Robins TJ, Gildner TE, Urlacher SS, Madimenos FC, Sugiyama LS, and Snodgrass JJ. (2017). The Shuar Health and Life History Project: chronic helminth infection is associated with kidney function in an indigenous Ecuadorian forager-horticulturalist population. Human Biology Association. New Orleans, LA. Poster Presentation.

Hallett E, Schrock J, Cepon-Robins TJ, **Barrett TM**, Kowal P, Snodgrass J. (2016). Activity energy expenditure, age, and socioeconomic factors in an older Ugandan population: preliminary analyses from a Study on global AGEing and adult health (SAGE) sub-study. University of Oregon Undergraduate Research Symposium. Eugene, OR. Poster Presentation.

Teaching Experience

Instructor, Evolutionary Medicine Summer Institute Triangle Center for Evolutionary Medicine	Summer 2024
Graduate Teaching Assistant, Evolutionary Medicine and Global Health Department of Evolutionary Anthropology, Duke University	Fall 2022
Graduate Teaching Assistant, Introduction to Evolutionary Anthropology Department of Evolutionary Anthropology, Duke University	Fall 2021
Graduate Teaching Assistant, Evolutionary Medicine Department of Anthropology, Northwestern University	Spring 2017

Fellowships and Awards

Steve Meshnick Travel Award, Triangle Center for Evolutionary Medicine	2024
Duke University Summer Research Fellowship	2022 – 2024
Duke University Conference Travel Award	2023 – 2024
LeCron Foster and Friends of Anthropology Summer Research Award	2016
Society, Biology, and Health Fellowship, Northwestern University	2016
Phi Beta Kappa, Alpha of Oregon Chapter	2015
Department of Anthropology Undergraduate Research Travel Award, University of Oregon	2015
Department of Anthropology Williams Award for Undergraduate Research, University of Oregon	2014

Service to the Department, University, and Discipline

Organizer, Trainee Journal Club NIH/NSF Ecology and Evolution of Infectious Disease Research Group	2023 – Present
Graduate Student Mentor, Committee on Diversity Undergraduate Research Symposium American Association of Biological Anthropologists	2023 – 2024
Weekly Speaker Series Co-Organizer Department of Evolutionary Anthropology, Duke University	2022 – 2023

Presenting Scientist for Darwin Day Roadshow Triangle Center for Evolutionary Medicine	2022
Lead Author for Graduate Student Consensus Report (External Review) Department of Evolutionary Anthropology, Duke University	2022
Book Review Editorial Assistant <i>American Journal of Human Biology</i>	2014 – 2016

Society Memberships

Human Biology Association
American Association of Biological Anthropologists
International Society for Evolution, Medicine, and Public Health
International Network for Social Network Analysis