Updated: January 2022

Noah Snyder-Mackler
Email: nsnyderm@asu.edu
Web: http://smack-lab.com

Arizona State University
Center for Evolution and Medicine
Phone: +1 (480) 965-0693

ACADEMIC APPOINTMENTS

2020-	Assistant Professor, Center for Evolution and Medicine, Arizona State University.
2020-	Assistant Professor, School of Life Sciences, Arizona State University.
2020-	Adjunct Faculty, School of Human Evolution and Social Change, Arizona State University
2017-2019	Assistant Professor, Department of Psychology, University of Washington.
2019-2019	Adjunct Assistant Professor, Department of Biology, University of Washington.
2017-2019	Research Affiliate, Center for Studies in Demography & Ecology, University of Washington.
2017-2019	Research Affiliate, Washington National Primate Research Center, University of Washington.
2012-2017	Postdoctoral Fellow and Senior Research Scientist, Department of Evolutionary Anthropology, Duke University Population Research Institute, Duke Center for Aging. (mentor: Dr. Jenny Tung)

EDUCATION

2012	Ph.D., Psychology, University of Pennsylvania (mentor: Dr. Robert Seyfarth)
2008	M.A., Psychology, University of Pennsylvania
2007	B.A., Psychology, University of Pennsylvania

AWARDS, FELLOWSHIPS, & GRANTS

Current

- **NIH** “Effects of a major natural disaster on the pace of aging in a nonhuman primate model” (R56AG071023). Role: co-PI. $839,120
- **NIH** “Single cell transcriptional and epigenomic atlas of the macaque brain across the lifespan” (U01MH121260). Role: co-PI. $5,774,650
- **NIH** “Social Modifiers of the Pace of Aging” (R01AG060931). Role: co-PI. $3,546,164.
- **NSF** “Functional genomics of high-altitude adaptation in a nonhuman primate model” (SBE-2010309). Role: PI. $394,352.
- **NIH** “Neurogenomics of Vulnerability and Resilience” (R01MH118203). Role: co-I. $1,029,410
- **NIH** “The Dog Aging Project: Genetic and Environmental Determinants of Healthy Aging in Companion Dogs” (U19AG057377). Role: co-I. $429,309
- **NIH** “Gene regulatory analysis of social integration and resilience during aging” (R00AG051764). Role: PI. $747,000; 2017-2021

Past

- **NSF** “Collaborative Research: Physiological signatures of weaning in a wild primate” (SBE-1723228). Role: PI. $129,444; 2017-2021
- **UW Royal Research Fund**, Role: PI. $37,916; 2018-2019
- **UW Student Technology Fee** resource grant, Role: PI. $137,296
- **NIH** Pathway to Independence Award (K99AG051764), $236,450 direct; 2016-2017
- **NIA** Butler-Williams Scholar, 2016
- **NIH** Postdoctoral Fellowship Duke Center for Study of Aging (T32AG000029); 2015
- **NSF** Office of Multidisciplinary Studies Postdoctoral Fellowship (SMA-1306134), $199,449 direct costs; 2013-2015
- **NIH** NRSA Postdoctoral Fellowship (F32) – 7th percentile – declined for NSF fellowship; 2013
- **NIH** Postdoctoral Fellowship, Duke University Population Research Institute (T32);

2012-2013

- Animal Behavior Society Allee Competition, best dissertation, Runner-up, 2012
- **NSF** Graduate Research Fellowship; 2008-2012
- **NSF** Doctoral Dissertation Improvement Grant in Physical Anthropology, $19,500 (BCS-0962118); 2010
- **L.S.B. Leakey** Foundation General Grant, $11,024; 2010

PUBLICATIONS
(Snyder-Mackler lab members in bold; * equal contributions, ** corresponding)

54. **Watowich MM, Chiou KL**, Montague MJ, Cayo Biobank Research Unit, Simons ND, Horvath JE, Ruiz-Lambides A, Martinez MI, Higham JP, Brent LJN, Platt ML, **Snyder-Mackler N**** (2022). "Sociality predicts individual variation in the immunity of free-ranging rhesus macaques." *Proceedings of the National Academy of Sciences*.
53. **Snyder-Mackler N****, Snyder-Mackler L (2021). "Holistic Rehabilitation: Biological Embedding of Social Adversity and its Health Implications." Physical Therapy Journal, pzab245, doi: 10.1093/ptj/pzab245
52. Ruple A, MacLean E, **Snyder-Mackler N**, Creevy KE, Promislow D (2021). "Dog Models of Aging" *Annual Reviews of Animal Biosciences*, 2022:10, doi: 10.1146/annurev-animal-051021-080937
51. **Schneider-Crease I**, Blackwell AD, Kraft TS, Thompson ME, Suarez IM, Cummings DK, Stieglitz J, **Snyder-Mackler N**, Gurven M, Kaplan H, Trumble BC (2021). "Helminth infection is associated with dampened cytokine responses to viral and bacterial stimulations in Tsimane hunger-horticulturalists" *Evolutionary Medicine and Public Health* accepted (preprint doi: 10.1101/2021.09.29.462428).
50. Pavez-Fox MA, Negron-Del Valle JE, Thompson IJ, Walker CS, Bauman SE, Gonzalez O, Compo N, Ruiz-Lambides A, Martinez MI, Platt ML, Montague MJ, Higham JP, **Snyder-Mackler N**, Brent LJN (2021). "Sociality predicts individual variation in the immunity of free-ranging rhesus macaques." *Physiology and Behavior* 241:113560. doi:10.1016/j.physbeh.2021.113560.
49. **Johnson CSC**, Shively CA, Michalson KT, Lea AJ, DeBo RJ, Howard TD, Hawkins GA, Appt SE, Liu Y, McCall CE, Herrington D, Register TC**, **Snyder-Mackler N**** (2021). "Divergent effects of Western and Mediterranean diets on behavior and monocyte polarization." *eLife*, 10:e68293 doi: 10.7554/eLife.68293.
48. Miller CM, **Snyder-Mackler N**, Nguyen N, Fashing PJ, Tung J, Wroblewski EE, Gustison ML, Wilson ML (2021). "Extragroup paternity in gelada monkeys, *Theropithecus gelada*, at Guassa, Ethiopia and a comparison with other primates." *Animal Behaviour*, doi: 10.1016/j.anbehav.2021.05.008.
47. Tinsley Johnson E*, Feder JA*, Bergman TJ, Lu A, **Snyder-Mackler N****, Beehner JC** (2018). "The Goldilocks Effect: Female geladas in mid-sized groups have higher fitness." *Proceedings of the Royal Society B*, in press. preprint: doi: 10.1101/348383.
46. Testard C, Larson SM, **Watowich MM**, Kaplinsky CH, Bernau A, Faulder M, Marshall HH, Lehmann J, Ruiz-Lambides A, Higham JP, Montague MJ, **Snyder-Mackler N**, Platt ML, Brent LJN, "Rhesus macaques build new social connections after a natural disaster." *Current Biology.* (2021). doi: 10.1016/j.cub.2021.03.029
45. **Baniel A**, Amato KR, Beehner JC, Bergman TJ, **Mercer A**, Perlman RF, Petrullo L, Reitsema L, **Sams SN**, Lu A, **Snyder-Mackler N****. "Seasonal shifts in the gut microbiome indicate plastic responses to diet in wild geladas." Microbiome, (2021) 9:26. doi: 10.1186/s40168-020-00977-9.
44. Shively CA, Appt SE, Chen H, Day SM, Shaltout HA, Silverstein-Meltzer MG, **Snyder-Mackler N**, Uberseder B, Vitolins MZ, Register TC (2020). "Mediterranean diet, stress resilience, and aging in a nonhuman primate." Neurobiology of Stress, doi: 10.1016/j.ynstr.2020.100254
43. Lu A, Feder JA, **Snyder-Mackler N**, Bergman TJ, Beehner JC (2020). "Male-mediated

maturation in a wild primate." Current Biology, in press. doi: 10.1016/j.cub.2020.10.003 preprint: 10.1101/2020.05.25.114934

42. **Chiou KL**, Montague MJ, Goldman EA, **Watowich MM, Sams SN**, Song J, Horvath JE, Sterner KN, Ruiz-Lambides AV, Martinez MI, Higham JP, Brent LJN, Platt ML, **Snyder-Mackler N**** (2020). "Rhesus macaques as a tractable physiological model of human ageing." Philosophical Transactions of the Royal Society B, 367:11. doi: 10.1098/rstb.2019.0612 preprint: 10.1101/2020.06.10.143669v1
41. Emery Thompson M, Rosati AG, **Snyder-Mackler N** (2020). "Insights from evolutionarily relevant models of human ageing." Philosophical Transactions of the Royal Society B, 367:11. doi: 10.1098/rstb.2019.0605
40. Gnanadesikan GE, Hare B, **Snyder-Mackler N**, MacLean EL (2020). "Estimating the heritability of cognitive traits across dog breeds reveals highly heritable inhibitory control and communication factors." *Animal Cognition*, doi: 10.1007/s10071-020-01400-4
39. Gnanadesikan GE, Hare B, **Snyder-Mackler N**, Call J, Kaminski J, Miklosi A, MacLean EL (2020). "Breed differences in dog cognition associated with brain-expressed genes and neurological functions." *Integrative & Comparative Biology*, doi: 10.1093/icb/icaa112
38. **Snyder-Mackler N,** Burger JR, Gaydosh L, Belsky D, Noppert GA, Campos FA, Bartolomucci A, Yang YC, Aiello AE, O'Rand A, Mullan Harris K, Shively CA, Albert SC, Tung J (2020). "Social determinants of health and survival in humans and other animals." *Science*, doi: 10.1126/science.aax9553
37. **Schneider-Crease I**, Beehner JC, Bergman T, Gomery M, Koklic L, Lu A, **Snyder-Mackler N** (2020). "Ecology eclipses phylogeny as a major driver of nematode parasite community structure in an graminivorous primate." *Functional Ecology*, doi: 10.1111/1365-2435.13603.
36. **Watowich MM**, MacLean EL, Hare B, Call J, Kaminski J, Miklósi A, **Snyder-Mackler N**** (2020). "Age influences domestic dog cognitive performance independent of average breed lifespan." *Animal Cognition*, doi: 10.1007/s10071-020-01400-4.
35. Amato KR, Kuthyar S, Ekanayake-Weber M, Salmi R, **Snyder-Mackler N**, Wijayathunga L, Vandercone R, Lu A (2020). "Gut Microbiome, Diet, and Conservation of Endangered Langurs in Sri Lanka." *Biotropica*, doi: 10.1111/btp.12805..
34. Ellis S, **Snyder-Mackler N**, Ruiz-Lambides A, Platt ML, Brent LJN (2019). "Deconstructing sociality: the types of social connections that predict longevity in a group-living primate." *Proceedings of the Royal Society B: Biological Sciences,* doi: 10.1098/rspb.2019.1991
33. Fisher J, Higham JP, Alberts SC, Barrett L, Beehner JC, Bergman TJ, Carter AJ, Collins A, Elton S, Fagot J, Ferreira da Silva MJ, Hammerschmidt K, Henzi P, Jolly CJ, Knauf S, Kopp GH, Dogers J, Roos C, Ross C, Seyfarth RM, Silk J, **Snyder-Mackler N**, Staedele V, Swedell L, Wilson ML, Zinner D (2019). "Insights into the evolution of social systems and species from baboon studies." eLife, 8:e50989. doi: 10.7554/eLife.50989
32. **Schneider-Crease I, Chiou KL**, **Snyder-Mackler N,** Bergman TJ, Beehner JC, Lu A (2019). "Beyond infant death: the hidden costs of male immigration in geladas." *Animal Behaviour,* doi:10.1016/j.anbehav.2019.11.010.
31. Sanz J, Maurizio PL, **Snyder-Mackler N,** Simons ND, Voyles TP, Kohn JN, Michopoulos V, Wilson ME, Tung J*, Barreiro LB* (2019). "Social history and exposure to pathogen signals modulate social status effects on gene regulation in rhesus macaques." *Proceedings of the National Academy of Sciences,* doi:10.1073/pnas.1820846116.
30. MacLean E*, **Snyder-Mackler N***, vonHoldt B, Serpell J (2019). "Highly heritable and functionally relevant breed differences in dog behavior." *Proceedings of the Royal Society B: Biological Sciences,* doi: 10.1098/rspb.2019.0716.
29. Lu A, Petrullo L, Carrera S, Feder J, **Schneider-Crease I, Snyder-Mackler N** (2019). "Developmental Responses to Early-Life Adversity: Evolutionary and Mechanistic Perspectives." *Evolutionary Anthropology,* doi:10.1002/evan.21791

28. Petrullo L, Jorgensen MJ, **Snyder-Mackler N,** Lu A (2019). “Composition and stability of the vervet monkey milk microbiome.” *American Journal of Primatology*. e22982. (doi: 10.1002/ajp.22982).
27. Debray R*, **Snyder-Mackler N*,** Kohn JN, Wilson ME, Barreiro LB, Tung J (2019). “Social affiliation predicts mitochondrial DNA copy number in rhesus macaques.” *Biology Letters*.15, 1. (doi: 10.1098/rsbl.2018.0643).
26. **Snyder-Mackler N,** Sanz J, Kohn JN, Voyles TN, Pique-Regi R, Wilson ME, Barreiro LB, Tung J (2019). “Social status alters chromatin accessibility and the gene regulatory response to glucocorticoid stimulation in rhesus macaques.” *Proceedings of the National Academy of Sciences*. 10.1073/pnas.1811758115
25. **Snyder-Mackler N*** & Lea AJ* (2018). “Functional genomic insights into the environmental determinants of mammalian fitness.” *Current Opinion in Genetics & Development.* doi:10.1016/j.gde.2018.08.001
24. Ramos-Fernandez G, King AJ, Beehner JC, Bergman TJ, Crofoot MC, Di Fiore A, Lehmann J, Schaffner CM, **Snyder-Mackler N**, Zuberbühler K, Aureli F, Boye D (2018). “Quantifying uncertainty due to fission–fusion dynamics as a component of social complexity.”Proceedings of the Royal Society B: Biological Sciences. 285; doi: 10.1098/rspb.2018.0532
23. Madlon-Kay S, Montague MJ, Brent LJN, Ellis S, Zhong B, **Snyder-Mackler N**, Horvath JE, Skene JHP, Platt ML (2018). Weak effects of common genetic variation in oxytocin and vasopressin receptor genes on rhesus macaque social behavior. *American Journal of Primatology*. doi:10.1002/ajp.22873
22. Tinsley Johnson E, **Snyder-Mackler N**, Lu A, Bergman TJ, Beehner JC (2018). Social and ecological drivers of reproductive seasonality in geladas. *Behavioral Ecology.* 29:3, 574–588. doi: 10.1093/beheco/ary008
21. Belsky D and **Snyder-Mackler N** (2017). Invited Commentary: Integrating Genomics and Social Epidemiology—Analysis of Late-Life Low Socioeconomic Status and the Conserved Transcriptional Response to Adversity. *American Journal of Epidemiology*, doi: 10.1093/aje/kwx145
20. **Snyder-Mackler N** and Tung J (2017) “Vasopressin and the neurogenetics of parental care” Neuron, 94:1, 9–11, doi: 10.1016/j.neuron.2017.06.027
19. Schneider-Crease I, Griffin RG, Gomery MA, Dorny P, Noh JC, Handali S, Chastain HM, Wilkins PP, Nunn CL, **Snyder-Mackler N**, Beehner JC, Bergman TJ (2017) “Identifying wildlife reservoirs of neglected taeniid tapeworms: Non-invasive diagnosis of endemic *Taenia serialis* infection in a wild primate population” *PLoS Neglected Tropical Diseases,* doi: 10.1371/journal.pntd.0005709.
18. **Snyder-Mackler N***, Sanz J*, Kohn JN, Brinkworth JF, Morrow S, Shaver AO, Grenier J-C, Pique-Regi R, Johnson ZP, Wilson ME, Barreiro LB, Tung J. (2016) “Social status alters immune regulation and response to infection in macaques” *Science*, 354:6315, 1041-1045, doi: 10.1126/science.aah3580.
17. Kohn JN, **Snyder-Mackler N**, Barreiro LB, Johnson ZP, Tung J, Wilson ME (2016) “Dominance rank causally affects personality and glucocorticoid regulation in female rhesus macaques” *Psychoneuroendocrinology,* 74, 179-188, doi: 10.1016/j.psyneuen.2016.09.005
16. Wall JD, Schlebusch SA, Alberts SC, Cox L, **Snyder-Mackler N**, Nevonen K, Carbone L, Tung J (2016) “Genome-wide ancestry and divergence patterns from low-coverage sequencing data reveal a complex history of admixture in wild baboons” *Molecular Ecology*, 25:14, 3469-3483, doi: 10.1111/mec.13684.
15. **Snyder-Mackler N**, Majoros B, Yuan ML, Shaver AO, Gordon JB, Kopp GH, Schlebusch SA, Wall JD, Alberts SC, Mukherjee S, Zhou S, Tung J (2016) “Efficient genome-wide sequencing and low coverage pedigree analysis from non-invasively collected samples.” *Genetics*, 203:2, 699-714, doi: 10.1534/genetics.116.187492.

14. Charruau P, Johnston R, Stahler DR, Lea AJ, **Snyder-Mackler N**, Smith DW, vonHoldt BM, Cole SW, Tung J, Wayne RK (2016) "Pervasive effects of aging on gene expression in wild wolves" *Molecular Biology and Evolution*, 33:8, 1967-1978, doi: 10.1093/molbev/msw072.
13. **Snyder-Mackler N,** Kohn JN, Barreiro LB, Johnson ZP, Wilson ME & Tung J (2016) "Social status drives social relationships in groups of unrelated female rhesus macaques" *Animal Behaviour*, 111, 307-317, doi: 10.1016/j.anbehav.2015.10.033.
12. **Snyder-Mackler N**, Alberts, SC & Bergman TJ (2014) "The socio-genetics of a complex society: Female gelada monkey relatedness patterns mirror association patterns in a multi-level society" *Molecular Ecology,* 23:24, 6179-6191, doi: 10.1111/mec.12987.
11. **Snyder-Mackler N**, Somel M & Tung J (2014) – "Shared signatures of social stress and aging in PBMC gene expression profiles." *Aging Cell*, 13:5, 954-957*,* doi: 10.1111/acel.12239.
10. Tinsley Johnson E*, **Snyder-Mackler N***, Beehner JC & Bergman TJ (2014) "Kinship and dominance rank influence the strength of social bonds in female geladas" *International Journal of Primatology,* 35:1, 288-304, doi: 10.1007/s10764-013-9733-5.
9. Scheider-Crease I*, **Snyder-Mackler N***, Jarvey JC & Bergman TJ (2013) "Molecular identification of Taenia serialis coenurosis in a wild Ethiopian gelada (Theropithecus gelada)" *Veterinary Parasitology*, 198:1-2, 240-243, doi: 10.1016/j.vetpar.2013.08.015.
8. Le Roux A, **Snyder-Mackler N**, Roberts EK, Beehner JC & Bergman TJ (2013) "Evidence for tactical concealment in a wild primate" *Nature Communications,* 4:1462, doi: 10.1038/ncomms2468. PMID: 23403563
7. **Snyder-Mackler N**, Alberts SC & Bergman TJ (2012) "Concessions of an alpha male: Cooperative reproductive transactions in a polygynous primate" *Proceedings of the Royal Society B: Biological Sciences,* 279:1743, 3788-3795. doi: 10.1098/rspb.2012.0842. PMID: 22764162
6. Pappano DJ*, **Snyder-Mackler N***, Bergman TJ & Beehner JC (2012) "Social predators within a multi-level society" *Animal Behaviour,* 84:3, 653-658, doi: 10.1016/j.anbehav.2012.06.021.
5. **Snyder-Mackler N**, Beehner JC & Bergman TJ (2012) "Defining higher levels in the multilevel societies of geladas (*Theropithecus gelada*)" *International Journal of Primatology* – 33:5, 1054:1068. doi: 10.1007/s10764-012-9584-5
4. Gersick AS, **Snyder-Mackler N** & White DJ (2012) "Ontogeny of social skills: social complexity improves mating and competitive strategies in male brown-headed cowbirds" *Animal Behaviour*, 83:5, 1171–1177. doi: 10.1016/j.anbehav.2012.02.005.
3. White DJ, Gersick AS & **Snyder-Mackler N** (2012) "Social networks and the development of social skills in cowbirds." *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, 367:1597, 1892-1900. doi: 10.1098/rstb.2011.0223. PMID: 22641827
2. **Snyder-Mackler N** & White DJ (2011). **"**The developmental ecology of acoustic sensitivities: reactions to song playbacks by male cowbirds change across their first year of life." *Behaviour*, 148:7, 747-764. doi: 10.1163/000579511X575951
1. White DJ, Gersick AS, Freed-Brown SG & **Snyder-Mackler N** (2010). "The ontogeny of social skills: experimental increases in social complexity enhance reproductive success in adult cowbirds." *Animal Behavior*, 79:2, 385-390. doi: 10.1016/j.anbehav.2009.11.014

PREPRINTS

Petrullo L, **Baniel A**, Jorgensen MJ, **Sams S**, **Snyder-Mackler N,** Lu A (2021). "Early life gut microbiome dynamics mediate maternal effects on infant growth in vervet monkeys." American Journal of Primatology. *bioRxiv* doi: 10.1101/2021.05.11.443657

Chiou KL, Janiak MC, **Schneider-Crease I**, Sen S, Ayele Ferehiwot, Chuma IS, Knauf S, Lemma A, Signore AV, D'Ippolito AM, Abebe B, Haile AA, Kebede F, Fashing PJ, Nguyen N, McCann C, Houck ML, Wall JD, Burrell AS, Bergey CM, Rogers J, Phillips-Conroy JE, Jolly CJ, Melin AD, Storz JF, Lu A, Beehner JC, Bergman TJ, **Snyder-Mackler N**** (2021). "High-

altitude adaptation and incipient speciation in geladas." *bioRxiv* doi: 10.1101/2021.09.01.458582

Google Scholar Profile
NCBI My Bibliography

MENTORING

Postdoctoral Researchers

- Kenny Chiou – NIH T32 fellow in the Shock Center for the Biology of Aging
- India Schneider-Crease – NSF SBE postdoctoral fellow.
- Trisha Zintel
- Alice Baniel (co-mentored with Dr. Amy Lu at Stony Brook University)

PhD Students

- Corbin Johnson (University of Washington; in progress)
- Marina Watowich (University of Washington; in progress)
- Bri McCoy (Arizona State University; in progress)
- Mitchell Sanchez Rosado (U Puerto Rico; in progress)

Graduate Committees (University, degree, graduation year)

- Elisabeth Goldman (U Oregon, PhD; in progress)
- Kelly Jin (University of Washington, PhD, 2020)
- Lauren Petrullo (Stony Brook University, PhD, 2020)
- Sharmi Sen (University of Michigan, PhD, in progress)
- Joey Orton (Arizona State University, PhD, in progress)
- Mollie Peters (Arizona State University, PhD, in progress)
- Alexandra DeCasien (New York University, PhD, 2021)
- Laura Newman (New York University, PhD, in progress)

Undergraduate students (University, years in lab)

- Spencer Green (Arizona State University, 2020-)
- Jalen Nix (Arizona State University, 2021-)
- Isabella Moya (Arizona State University, 2021-)
- Aliya Kammerer (Arizona State University, 2021-)
- Yasmine Salehi (Arizona State University, 2021-)
- Faiyaj Murshed (Arizona State University, 2021-)
- Garett Maag (Arizona State University, 2020-2021)
- Layla Brassington (Arizona State University, 2020-)
- Emma Offenberg (Stanford University, 2020-)
- Matthew Harrington (University of Washington, 2017-2018)
- Abigail Lam (University of Washington, 2018)
- Lia Koklic (University of Washington, 2018-2019)
- Grace De Castro (University of Washington, 2018-2019)

NSF Research Experience for Undergraduates (2021-)

My lab runs a 10-week NSF-funded Research Experience for Undergraduates (REU). We recruit, train, and pay students from underrepresented backgrounds in the sciences (URM, disabled, LBGTQ+) to gain research experience in genomics and bioinformatics.

- 2021 cohort: Jazmine Harvey (Sacramento State University); Taliana Tudryn (Durham Community College/ NC State); Brain Graves (UC Davis); Nat Finnegan (UC Davis); Gabi Dugan (Virginia Tech)

TEACHING

Arizona State University

- Data Analysis and Visualization in R (BIO-494/591). Spring 2021
- General Genetics (BIO-340). Fall 2020
- Discussion General Genetics Honors Seminar (BIO-394). Fall 2020
- Evolution & Medicine Speaker Seminar (BIO-394). Fall 2020

University of Washington

- Core Concepts in Genetics and Behavior (PSYCH-503A). Spring 2018
- Practical Data Analysis and Visualization (PSYCH-530). Spring 2019

Duke University, Durham, NC, USA

- Guest Lecturer, Evolutionary Anthropology Graduate Student Tutorial Prof. Jenny Tung- 2014, 2016
- Guest Lecturer, Primate Evolutionary Genetics – Prof. Jenny Tung – 2013 & 2014

University of Delaware, Newark, DE, USA

- Guest Lecturer, Topics in Evolutionary Anthropology - Prof. Karen Rosenberg - 2012

University of Pennsylvania, Philadelphia, PA, USA

- Teaching Assistant, Animal Behavior - Prof. David White - 2007 & 2008
- Teaching Assistant, Physiology of Motivated Behavior – Prof. Harvey Grill – 2008

INVITED TALKS (since 2017)

2022	Divergent effects of Western and Mediterranean diets on behavior and immune cell gene regulation. Johns Hopkins University School of Medicine, One Medicine Seminar Series
2021	Environmental impacts on the aging brain. Behavioral Neuroscience Seminar, ASU.
2021	Dietary and environmental modifiers of immunity and aging. Center for Evolution and Medicine Seminar Series, ASU.
2021	Exposures to adversity accelerate aging in the immune and central nervous systems. Columbia University Aging Center
2021	Genomics high altitude adaptations of the gelada monkey, New York Consortium in Evolutionary Primatology, New York University
2021	Immunogenomic consequences of human Western and Mediterranean diets. Evolutionary Mismatch in the Genomics Era Workshop, Princeton, NJ
2021	Genomic insights into the environmental determinants of health and aging. Biomedical Engineering Seminar, Arizona State University
2020	Genomic insights into the environmental determinants of health. MCB/Neuroscience joint colloquium, Arizona State University
2020	Social determinants of health and survival. Club EvMed. Triangle Center for Evolutionary Medicine, North Carolina.
2020	Genomics of gelada monkeys. Zoology Department Seminar. Addis Ababa University, Ethiopia.
2019	Single-cell transcriptional and epigenomic atlas of the rhesus macaque brain. Brain Initiative Cell Census Network semi-annual meeting. Chicago, IL.
2019	Social environmental effects on immune function in rhesus macaques. Ecology Evolutionary Biology and Behavior Program Seminar. Michigan State University.
2019	High altitude adaptations in gelada monkeys. Biological Anthropology Seminar Series. University of Washington. Seattle, WA.
2019	Diet, behavior, and aging. Social Determinants of Health Working Group. Duke University. Durham, NC.
2019	Demographic and population history of gelada monkeys. Pop Bio Seminar. Genome Sciences, University of Washington.
2018	Environmental determinants of health and immune function. Connectome research workshop. Mexico City, Mexico.

2018 High altitude genetic adaptations of the gelada monkey. Biology department seminar. University of Washington.

2018 Social stress and your aging genome: insights from a nonhuman primate model. Nathan Shock Center for the Biology of Aging Seminar. University of Washington.

2018 Social environmental effects on immune function in rhesus macaques. Center for Evolution and Medicine Seminar. Arizona State University.

2018 Unique adaptations of a grazing, high-altitude primate. Fred Hutchinson Cancer Research Center Annual Retreat (plenary speaker). Seattle, WA.

CONFERENCE PRESENTATIONS (since Sept 2017; lab members in bold)

2020 **Snyder-Mackler, N., Chiou, K.L.,** Janiak, M.C., Melin, A.D., Beehner, J.C., Bergman, T.J., Lu, A. High altitude adaptations in gelada monkeys (Theropithecus gelada). Annual meeting of the American Association of Physical Anthropologists. Los Angeles, California.

2020 Goldman, E.A., **Chiou, K.L.,** Montague, M.J., Mercer, A., **Sams, S.,** Martinez, M.I., Horvath, J.E., Brent, L.J.N., Platt, M.L., Sterner, K.N., **Snyder-Mackler, N.** Investigating age-related variation in the methylome of rhesus macaques. Annual meeting of the American Association of Physical Anthropologists. Los Angeles, California.

2020 DeCasien, A.R., **Chiou, K.L.**, Montague, M.J., Sherwood, C.C., Platt, M.L., Martinez, M.I., Bauman, S.E., González, O., **Snyder-Mackler, N.,** Higham, J.P. Sex-biased gene expression in the rhesus macaque brain. Annual meeting of the American Association of Physical Anthropologists. Los Angeles, California.

2020 **Chiou, K.L.,** DeCasien, A.R., Montague, M.J., Bauman, S.E., Compo, N.R., González, O., Pliner, H.A., Spurrell, C.H., Starita, L.M., Brent, L.J.N., Higham, J.P., Martinez, M.I., Shendure, J., Platt, M.L., **Snyder-Mackler, N.** The rhesus macaque brain cell census reveals heterogeneity in aging across cell types. Annual meeting of the American Association of Physical Anthropologists. Los Angeles, California.

2020 **Johnson CDC**, Register TC, Michalson KT, DeBo RJ, Howard TD, Appt SE, Shively CA, **Snyder-Mackler N**. Diet and behavior induce inflammatory polarization of monocytes in nonhuman primates. UW/Fred Hutch Trainee Virtual Seminar, Seattle, WA

2020 **Watowich MM, Chiou KL**, Montague MJ, Ruiz-Lambides AV, Martínez MI, Horvath JE, Higham JP, Brent LJN, Platt ML, **Snyder-Mackler N**. Impacts of a natural disaster on the pace of aging. Animal Behavior Society Conference (virtual)

2020 **Watowich MM, Chiou KL**, Montague MJ, Ruiz-Lambides AV, Martínez MI, Horvath JE, Higham JP, Brent LJN, Platt ML, **Snyder-Mackler N**. Experiencing a natural disaster accelerates aging of the immune system. Cold Spring Harbor Laboratory Mechanisms of Aging (virtual).

2020 **Sanchez-Rosado MR**, Brent LJN, Higham JP, Kimock C, **Watowich M**, Pavez-Fox M, Pantoja-Maldonado P, Sariol C, **Snyder-Mackler N**. Social adversity impacts on the rhesus macaque immune system resemble those of aging. Gerontological Society of America Conference (virtual).

2019 **Chiou, K.L.,** Janiak, M.C., Melin, A.D., Beehner, J.C., Bergman, T.J., Lu, A., **Snyder-Mackler, N.** Adaptations to high altitude in the gelada monkey genome. Non-human primates – novel insights into evolution and medicine meeting, Arizona State University, Tempe, Arizona.

2019 Janiak, M.C., **Chiou, K.L**., Lu, A., Bergman, T.J., Beehner, J.C., **Snyder-Mackler, N.,** Melin, A. Digestive and sensory adaptations for the grass-eating

niche: insights from the gelada (Theropithecus gelada) genome. American Journal of Physical Anthropology, 168(Suppl. 68), 113.

2019 Goldman, E.A., **Chiou, K.L.,** Brent, L.J.N., Montague, M.J., Platt, M.L., Horvath, J.E., Sams, S., Sterner, K.N., **Snyder-Mackler, N.** An epigenetic measure of biological aging in rhesus macaques. American Journal of Physical Anthropology, 168(Suppl. 68), 88.

2019 **Johnson CDC**, Register TC, Michalson KT, DeBo RJ, Howard TD, Appt SE, Shively CA, **Snyder-Mackler N**. Diet and behavior induce inflammatory polarization of monocytes in nonhuman primates. Behaviour (Joint ABS, IEC), Chicago, IL

2019 **Watowich MM**, MacLean E, Hare B, **Snyder-Mackler N**. Age Influences Domestic Dog (*Canis familiaris*) Cognition Independent of Breed Lifespan. Behaviour (Joint ABS, IEC), Chicago, IL

2019 **Chiou, K.L.,** DeCasien, A.R., Montague, M.J., Sherwood, C.C., Platt, M.L., Higham, J.P., **Snyder-Mackler, N**. Transcriptional signatures of the aging nonhuman primate brain. American Journal of Physical Anthropology, 168(Suppl. 68), 41.

2018 **Chiou, K.L**., DeCasien, A.R., Martinez, M., Ruiz-Lambides, A., Montague, M.J., Sherwood, C.C., Platt, M.L., Brent, L.J.N., Higham, J.P., **Snyder-Mackler, N.** Social environmental influences on the aging brain and immune system in rhesus macaques on Cayo Santiago. Annual meeting of the Latin American Association of Biological Anthropology (La Asociación Latinoamericana de Antropología Biológica). Mayagüez, Puerto Rico.

2018 **Snyder-Mackler, N., Chiou, K.L**. Genomic signatures of high-altitude adaptation in gelada monkeys (Theropithecus gelada). Annual meeting of the Society for Molecular Biology and Evolution. Yokohama, Japan.

2018 **Chiou, K.L.,** DeCasien, A.R., Montague, M.J., Sherwood, C.C., Platt, M.L., **Snyder-Mackler, N.** Single-cell transcriptional signatures of the aging nonhuman primate brain. Annual meeting of the Society for Molecular Biology and Evolution. Yokohama, Japan.

PROFESSIONAL SERVICE, TRAINING, AND SCIENCE COMMUNICATION

A. *Journal reviewer: Nature Communications, Molecular Biology & Evolution, Scientific Reports, Aging Cell, Proceedings of the National Academy of Sciences, Journal of Animal Ecology, Animal Behaviour, Philosophical Transactions of the Royal Society B: Biological Sciences, Proceedings of the Royal Society B: Biological Sciences, Behavioral Ecology and Sociobiology, Journal of Human Evolution, American Journal of Primatology, Primate Biology, International Journal of Primatology, Zoo Biology, Functional Ecology, Cognitive Science, Molecular Ecology, Molecular Ecology Resources, Behavioral Ecology, Behaviour, Animal Cognition*.

B. Journal Editor

2020 *Philosophical Transactions of the Royal Society of London B: Biological Sciences,* Special issue: “Evolution of the primate ageing process”, Guest Editor.

C. Grant review panels & Workshops:

2021 NIH, BRAIN Initiative, Tissue Quality and Pipeline for the Human Brain Census workshop invited speaker

2020 NIH, ZRG1 BBBP-Y (50) Special Emphasis Panel, Reviewer

2020 NSF, Rules of Life, AdHoc Reviewer

2017	NIH Biobehavioral Regulation, Learning, and Ethology, AdHoc Reviewer
2017	NSF SBE Postdoctoral Research Fellowship, Panel Reviewer
2014-present	The Leakey Foundation, AdHoc Reviewer
2019-present	Animal Behavior Society Student Grant, AdHoc Reviewer

D. Popular science writing:

"The Molecular Ecologist" https://www.molecularecologist.com/ (2012-2014)

The New York Times' https://scientistatwork.blogs.nytimes.com/author/noah-snyder-mackler/ "Scientist at Work" column (2010)

BBC Wildlife: "King of the Mountains" https://geladaresearch.org/wp-content/uploads/2018/04/BBC-Wildlife-October-2016-geladas.pdf

E. Society Membership: *Society for Molecular and Biology and Evolution, American Society of Naturalists, Animal Behavior Society, International Primatological Society, American Association of Physical Anthropologists*

F. Yale Ciencia Academy (YCA) Advisor Academy (2021-2022)

ASU DEPARTMENTAL AND UNIVERSITY SERVICE

2021-present	Molecular and Cellular Biology Executive Committee member
2021	NDRC/SOLS Assistant Professor search committee
2021	SOLS Postdoctoral researcher search committee (Wilson lab)
2021	CEM/SOLS Lecturer search committee
2020	Molecular and Cellular Biology graduate admissions committee
2020	School of Life Sciences faculty search committee
2020-present	SOLS JEDI founding member and advisory board member

OUTREACH

A. Board member and co-founder of the Save the Simiens foundation (https://savethesimiens.org/), a 501(c3) aimed at conserving the Simien Mountains National Park and empowering and assisting the local communities.

B. Public presentation on the effects of social relationships on health. Given at the Horizon House in Seattle, WA

C. Presentation and tour of lab to students from Villa Academy, Seattle, WA.

D. Public outreach presentations and visits to multiple K-8 students in Delaware (Newark Charter School, Newark Center for Creative Learning), Pennsylvania (Thomas Fitzwater Elementary School, Paul V. Fly Elementary School), New Jersey (Cedar Grove Elementary School), and North Carolina (Southern Middle School).

E. Animal Behavior Outreach Fair, Princeton, NJ, 08/07/2014