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Education

2002 University of Southern California, Ph.D. in Anthropology

1994 University of Southern California, B.A. in Anthropology (*Summa Cum Laude*)

Research Interests

Behavioral ecology, Reproductive ecology, Endocrinology, Primate models in human evolution

Academic Positions

2021- University of New Mexico, Department of Anthropology
Professor

2011- 2021 University of New Mexico, Department of Anthropology
Associate Professor

2007-2011 University of New Mexico, Department of Anthropology
Assistant Professor

2004-2007 Boston University, Department of Anthropology
Assistant Professor

2004 Harvard University, Department of Anthropology
Postdoctoral Fellow

2003 University of Michigan, Department of Anthropology
Visiting Research Investigator

1999-2002 Harvard University, Department of Anthropology
Postdoctoral Fellow

Professional Service

2018- Editorial Board Member, *American Journal of Physical Anthropology*

2013- Scientific Executive Committee, The Leakey Foundation

2010- Consulting Editor, *Human Nature*

Awards and Fellowships

1998 Haynes Foundation Dissertation Fellowship

1994 University of Southern California, All-University Pre-Doctoral Merit Fellowship

1994 Phi Beta Kappa

1990 University of Southern California, Dean's Scholarship

Active Research Grants

2019 National Science Foundation. The evolutionary origins of leadership in chimpanzees: from individual minds to collective action. PIs: Alexandra Rosati (UM), Zarin Machanda (Tufts), Melissa Emery Thompson (UNM), and Martin Muller (UNM)

Completed Research Grants

2015 National Institutes of Aging (PI: Melissa Emery Thompson). Biodemography of Aging in Wild Chimpanzees. (5-year grant) Co-Investigator.

2014 National Science Foundation. Developmental integration and the ecology of life histories in phylogenetic perspective. MN Muller (PI), SV Nelson, M Emery Thompson & RW Wrangham (3-year grant: \$221,004)

2012 Leakey Foundation. Coalitions and alliances in wild chimpanzees. MN Muller & RW Wrangham (\$22,000)

2010 Leakey Foundation. Stress and the costs of reproduction in wild female chimpanzees. M Emery Thompson, MN Muller & RW Wrangham (\$21,700)

2009 National Science Foundation. Stress, energetics and the costs of reproduction in wild chimpanzees. MN Muller, M Emery Thompson & RW Wrangham (\$150,000)

2004 National Science Foundation: Long Term Research in Environmental Biology (5-year grant with RW Wrangham and I Gilby). Ecology and endocrinology of aggression in chimpanzees. (\$298,821)

2004 National Institutes of Health (PI: Beatrice Hahn). Molecular epidemiology and natural history of SIVcpz. (Muller subcontract: \$333,931)

2002 Leakey Foundation. Testosterone and paternal care in Hadza foragers, northern Tanzania. (\$7,440)

2002 Arthur Green Fund, Harvard University. Testosterone and paternal care in Hadza foragers, northern Tanzania. (\$3,500)

1998 National Science Foundation (with RW Wrangham and PT Ellison). Endocrine aspects of aggression and dominance in chimpanzees. (\$212,982)

1997 National Science Foundation (dissertation improvement grant) Testosterone, aggression and dominance in wild chimpanzees. (\$10,000)

1997 Leakey Foundation. Endocrine aspects of aggression and dominance in chimpanzees of the Kibale Forest, Uganda. (\$5,985)

Laboratory Experience

- 2019- Associate Director: Comparative Human and Primate Physiology Center, University of New Mexico
- 2007-2018 Co-Director: Hominoid Reproductive Ecology Laboratory, University of New Mexico
- 2004-2007 Director: Reproductive Ecology Laboratory, Boston University
- 1999-2004 Reproductive Ecology Laboratory, Harvard University. Measuring steroid hormone concentrations in saliva and urine by radioimmunoassay and enzyme assay. Validating steroid assays and field collection methods for chimpanzee urine samples.

Field Research

Chimpanzees

2004-present: Co-Director, Kibale Chimpanzee Project.

Observing wild chimpanzees in Tanzania and Uganda:

2021 (October)	Kibale National Park, Uganda
2019 (June-July)	Kibale National Park, Uganda
2018 (January, June-July)	Kibale National Park, Uganda
2017 (January, June-July)	Kibale National Park, Uganda
2016 (June-July)	Kibale National Park, Uganda
2015 (June-July)	Kibale National Park, Uganda
2014 (January, June-July)	Kibale National Park, Uganda
2013 (July-August)	Kibale National Park, Uganda
2012 (January, June-July)	Kibale National Park, Uganda
2011 (January)	Kibale National Park, Uganda
2010 (January, July)	Kibale National Park, Uganda
2009 (July)	Kibale National Park, Uganda
2008 (June)	Kibale National Park, Uganda
2007 (June)	Kibale National Park, Uganda
2006 (January, June-July)	Kibale National Park, Uganda
2005 (August-September)	Kibale National Park, Uganda
2004 (July-August, November)	Kibale National Park, Uganda
2002 (July-August)	Kibale National Park, Uganda
2001 (June)	Gombe National Park, Tanzania
2000 (July)	Gombe National Park, Tanzania
1999 (July-August)	Kibale National Park, Uganda
1997-1998 (11/97 to 12/98)	Kibale National Park, Uganda (Field Manager: Kibale Chimpanzee Project)
1997 (July)	Kibale National Park, Uganda
1996 (January-August)	Ngogo, Kibale National Park, Uganda (Field Manager: Ngogo Chimpanzee Project)
1994 (September-December)	Gombe National Park, Tanzania

Humans

2003 (June-August)

Reproductive ecology of Hadza foragers and Datoga pastoralists in northern Tanzania

Publications

Books

- 2017 **Muller MN**, RW Wrangham & DR Pilbeam (editors). *Chimpanzees and Human Evolution*. Cambridge: Harvard University Press.
- 2009 **Muller MN** & RW Wrangham (editors). *Sexual Coercion in Primates: An Evolutionary Perspective on Male Aggression Against Females*. Cambridge: Harvard University Press.

Journal Articles and Book Chapters

- In prep **Muller MN**, KH Sabbi, M Emery Thompson, DK Enigk, ZP Machanda, A Menante, E Otali & RW Wrangham. Coalitions and age-related reproductive effort in male chimpanzees.
- In press Negrey JD, M Emery Thompson, C Dunn, E Otali, RW Wrangham, JC Mitani, ZP Machanda, **MN Muller**, KE Langergraber, TL Goldberg. Female reproduction and viral infection in a long-lived mammal. *Journal of Animal Ecology*.
- In press Mine JG, KE Slocombe, EP Willems, IC Gilby, M Yu, M Emery Thompson, **MN Muller**, RW Wrangham, SW Townsend, ZP Machanda. Vocal signals facilitate cooperative hunting by wild chimpanzees. *Science Advances*.
- In press Fox S, **MN Muller**, N Thompson González, DK Enigk, ZP Machanda, E Otali, R Wrangham, M Emery Thompson. Weak ties support coalition formation among wild female chimpanzees. *Philosophical Transactions of the Royal Society, B*.
- 2022 Negrey JD, JC Mitani, RW Wrangham, E Otali, RB Reddy, TE Pappas, KA Grindle, JE Gern, ZP Machanda, **MN Muller**, KE Langergraber, M Emery Thompson, TL Goldberg. Viruses associated with ill health in wild chimpanzees. *American Journal of Primatology*. e23358.
- 2021 Thompson González N, Z Machanda, E Otali, **MN Muller**, DK Enigk, R Wrangham, M Emery Thompson. Age-related change in adult chimpanzee social network integration. *Evolution, Medicine, and Public Health* 9: 448–459.
- 2021 Kavanagh E, SE Street, FO Angwela, TJ Bergman, MB Blaszczyk, LM Bolt, M Briseño-Jaramillo, M Brown, C Chen-Kraus, Z Clay, C Coye, M Emery Thompson, A Estrada, C Fichtel, B Fruth, M Gamba, C Giacoma, KE Graham, S Green, CC Grueter, S Gupta, ML Gustison, L Hagberg, D Hedwig, KM Jack, PM Kappeler, G King-Bailey, B Kuběňová, A Lemasson, DM Inglis, Z Machanda, A MacIntosh, B Majolo, S Marshall, S Mercier, J Micheletta, **M Muller**, H Notman, K Ouattara, J Ostner, MSM Pavelka, LR Peckre, M Petersdorf, F Quintero, G Ramos-Fernández, MM Robbins, R Salmi, I Schamberg, O Schülke, S Semple, VAM Schoof, JB Silk, JR Sosa-López, V Torti, D Valente, R Ventura, E van de Waal, AH Weyher, C Wilke, R Wrangham, C Young, A Zanolli, K Zuberbühler, AR Lameira & K Slocombe. Dominance style is a key predictor of vocal use and evolution across nonhuman primates. *Royal Society Open Science*. 8: 210873.
- 2021 Enigk DK, M Emery Thompson, ZP Machanda, RW Wrangham & **MN Muller**. Female-directed aggression by adolescent male chimpanzees constitutes dominance striving, not sexual coercion. *American Journal of Physical Anthropology*. 176: 66–79.

- 2021 Colchero F, JM Aburto, EA Archie, C Boesch, T Breuer, FA Campos, A Collins, DA Conde, M Cords, C Crockford, M Emery Thompson, LM Fedigan, C Fichtel, M Groenenberg, C Hobaiter, PM Kappeler, RR Lawler, RJ Lewis, Z Machanda, ML Manguette, **MN Muller**, C Packer, RJ Parnell, S Perry, AE Pusey, MM Robbins, R Seyfarth, JB Silk, J Staerk, TS Stoinski, EJ Stokes, KB Strier, SC Strum, J Tung, F Villavicencio, RM Wittig, RW Wrangham, K Zuberbühler, JW Vaupel & SC Alberts. The long lives of primates and the 'invariant rate of ageing' hypothesis. *Nature Communications*. 12: 3666.
- 2021 **Muller MN**, DK Enigk, SA Fox, J Lucore, ZP Machanda, RW Wrangham & M Emery Thompson. Aggression, glucocorticoids, and the chronic costs of status competition in wild male chimpanzees. *Hormones and Behavior*. 130: 104965.
- 2021 Sabbi KH, M Emery Thompson, ZP Machanda, E Otali, RW Wrangham & **MN Muller**. Early aggressive experience corresponds with sex differences in aggression among wild chimpanzees. *PNAS*. 118: e2017144118.
- 2021 Reese AT, S Phillips-Garcia, LA Owens, EM Venable, ZP Machanda, KE Langergraber, JC Mitani, DP Watts, **MN Muller**, RW Wrangham, TL Goldberg, M Emery Thompson & RN Carmody. Age patterning in wild chimpanzee gut microbiota reveals differences from humans in early life. *Current Biology*. 31: 1-8.
- 2020 Emery Thompson M, **MN Muller**, ZP Machanda, E Otali & RW Wrangham. The Kibale Chimpanzee Project: Over thirty years of research, conservation, and change. *Biological Conservation*. 252: 108857.
- 2020 Rosati AG, DK Enigk, L Hagberg, E Otali, M Emery Thompson, **MN Muller**, RW Wrangham & ZP Machanda. Social selectivity in aging wild chimpanzees. *Science*. 370: 473-476.
- 2020 Negrey JD, M Emery Thompson, KE Langergraber, ZP Machanda, JC Mitani, **MN Muller**, E Otali, LA Owens, RW Wrangham & TL Goldberg. Demography, life history trade-offs, and the gastrointestinal virome of wild chimpanzees. *Philosophical Transactions of the Royal Society, B*. 375: 20190613.
- 2020 Phillips SR, TL Goldberg, **MN Muller**, ZP Machanda, E Otali, S Friant, J Carag, KE Langergraber, JC Mitani, EE Wroblewski, RW Wrangham & M Emery Thompson. Faecal parasites increase with age but not reproductive effort in wild female chimpanzees. *Philosophical Transactions of the Royal Society, B*. 375: 20190614.
- 2020 Emery Thompson M, ZP Machanda, SA Fox, KH Sabbi, E Otali, NA Thompson, **MN Muller** & RW Wrangham. Evaluating the impact of physical frailty during ageing in wild chimpanzees (*Pan troglodytes schweinfurthii*). *Philosophical Transactions of the Royal Society, B*. 375: 20190607.
- 2020 Thompson González NA, E Otali, ZP Machanda, **MN Muller**, RW Wrangham & M Emery Thompson. Urinary markers of oxidative stress respond to infection and late-life in wild chimpanzees. *PLOS One*. 15: e0238066.
- 2020 Enigk DK, M Emery Thompson, ZP Machanda, RW Wrangham & **MN Muller**. Competitive

ability determines coalition participation and partner selection during maturation in wild male chimpanzees (*Pan troglodytes schweinfurthii*). *Behavioral Ecology and Sociobiology* 74: 89.

- 2020 Emery Thompson M, SA Fox, A Berghänel, K Sabbi, S Phillips-Garcia, D Enigk, E Otali, ZP Machanda, RW Wrangham & **MN Muller**. Wild chimpanzees exhibit humanlike aging of glucocorticoid regulation. *PNAS*. 117: 8424-8430.
- 2020 **Muller MN**, NG Blurton Jones, F Colchero, M Emery Thompson, DK Enigk, JT Feldblum, BH Hahn, KE Langergraber, EJ Scully, L Vigilant, KK Walker, RW Wrangham, EE Wroblewski & AE Pusey. Sexual dimorphism in chimpanzee (*Pan troglodytes schweinfurthii*) and human age-specific fertility. *Journal of Human Evolution*. 144: 102795.
- 2020 Sabbi KH, **MN Muller**, SA Fox, ZP Machanda, E Otali, RW Wrangham & M Emery Thompson. Human-like adrenal development in wild chimpanzees: A longitudinal study of cortisol and dehydroepiandrosterone-sulfate. *American Journal of Primatology*. 82: e23064.
- 2019 Alvarado LC, C Vallengia, PT Ellison, CL Lewarch & **MN Muller**. A comparison of men's life history, aging, and testosterone levels among Datoga pastoralists, Hadza foragers, and Qom transitional foragers. *Adaptive Human Behavior and Physiology*. 5: 251-273.
- 2019 Surbeck M, C Boesch, M Emery Thompson, T Furuichi, B Fruth, G Hohmann, S Ishizuka, Z Machanda, **MN Muller**, A Pusey, T Sakamaki, N Tokuyama, K Walker, R Wrangham, E Wroblewski, K Zuberbühler, L Vigilant and K Langergraber. Males with a mother living in their group have higher paternity success in bonobos but not chimpanzees. *Current Biology*. 29: R341–R357.
- 2019 Bibollet-Ruche F, RM Russell, W Liu, GBE Stewart-Jones, S Sherrill-Mix, Y Li, GH Learn, AG Smith, MVP Gondim, LJ Plenderleith, JM Decker, JL Easlick, KS Wetzel, RG Collman, S Ding, A Finzi, A Ayoub, M Peeters, FH Leendertz, J van Schijndel, A Goedmakers, E Ton, C Boesch, H Kuehl, M Arandjelovic, P Dieguez, M Murai, C Colin, K Koops, S Speede, MK Gonder, AV Georgiev, **MN Muller**, V Sommer, CM Sanz, DB Morgan, R Atencia, D Cox, AK Piel, FA Stewart, JBN Ndjongo, D Mjungu, EV Lonsdorf, AE Pusey, P Bertolani, JA Hart, TB Hart, PD Kwong, PM Sharp, GM Shaw and BH Hahn. CD4 receptor diversity in chimpanzees protects against SIV infection. *PNAS*. 116: 3229-3238.
- 2019 Negrey JD, RB Reddy, EJ Scully, S Phillips-Garcia, L Owens, KE Langergraber, J Mitani, M Emery Thompson, RW Wrangham, **MN Muller**, E Otali, Z Machanda, D Hyeroba, KA Grindle, TE Pappas, AC Palmenberg, JE Gern & TL Goldberg. Simultaneous outbreaks of respiratory disease in wild chimpanzees caused by distinct viruses of human origin. *Emerging Microbes and Infections*. 8: 139-149.
- 2018 Emery Thompson M, ZP Machanda, EJ Scully, D Enigk, E Otali, **MN Muller**, TL Goldberg, C Chapman, RW Wrangham. Risk factors for respiratory illness in a community of wild chimpanzees (*Pan troglodytes schweinfurthii*). *Royal Society Open Science*. 5: 180840.
- 2018 Alvarado LC, **MN Muller**, MA Eaton, M Emery Thompson. Steroid hormone reactivity in fathers watching their children compete. *Human Nature*. 29: 268-282.

- 2018 Sherrill-Mix S, K McCormick, A Lauder, A Bailey, L Zimmerman, Y Li, J-B Django, P Bertolani, C Colin, J Hart, T Hart, A Georgiev, C Sanz, D Morgan, R Atencia, D Cox, **M Muller**, V Sommer, A Piel, F Stewart, S Speede, J Roman, GD Wu, J Taylor, R Bohm, H Rose, J Carlson, D Mjungu, P Schmidt, C Gaughan, J Bushman, E Schmidt, K Bittinger, R Collman, B Hahn & F Bushman. Allometry and ecology of the bilaterian gut microbiome. *mBio* 9:e00319-18.
- 2018 Scully EJ, S Basnet, RW Wrangham, **MN Muller**, E Otali, D Hyeroba, KA Grindle, TE Pappas, M Emery Thompson, Z Machanda, KE Watters, AC Palmenberg, JE. Gern and TL Goldberg. Lethal respiratory epidemic in wild chimpanzees associated with human rhinovirus C. *Emerging Infectious Diseases*. 24: 267-274.
- 2018 Bray J, M Emery Thompson, **MN Muller**, RW Wrangham & ZP Machanda. The development of feeding behavior in wild chimpanzees (*Pan troglodytes schweinfurthii*). *American Journal of Physical Anthropology*. 165: 34-46.
- 2017 **Muller MN**. Testosterone and reproductive effort in male primates. *Hormones and Behavior*. 91: 36-51.
- 2017 Gilby IC, ZP Machanda, RC O'Malley, CM Murray, EV Lonsdorf, K Walker, DC Mjungu, E Otali, **MN Muller**, M Emery Thompson, AE Pusey & RW Wrangham. Predation by female chimpanzees: toward an understanding of sex differences in meat acquisition in the last common ancestor of *Pan* and *Homo*. *Journal of Human Evolution*. 110: 82-94.
- 2017 Wrangham RW, S Worthington, AB Bernard, K Koops, ZP Machanda, **MN Muller**. Response to: Chimpanzee culture extends beyond matrilineal family units. *Current Biology*. 27: R590-R591.
- 2017 **Muller MN**. Introduction: Chimpanzees and human evolution. In MN Muller, RW Wrangham & DR Pilbeam (editors). *Chimpanzees and Human Evolution*. Cambridge: Harvard University Press.
- 2017 **Muller MN**. Introduction: Chimpanzees and human uniqueness. In MN Muller, RW Wrangham & DR Pilbeam (editors). *Chimpanzees and Human Evolution*. Cambridge: Harvard University Press.
- 2017 **Muller MN**. Sexual coercion in chimpanzees and humans. In MN Muller, RW Wrangham & DR Pilbeam (editors). *Chimpanzees and Human Evolution*. Cambridge: Harvard University Press.
- 2017 **Muller MN** & DR Pilbeam. Evolution of the human mating system. In MN Muller, RW Wrangham & DR Pilbeam (editors). *Chimpanzees and Human Evolution*. Cambridge: Harvard University Press.
- 2016 Wrangham RW, K Koops, ZP Machanda, S Worthington, AB Bernard, NF Brazeau, R Donovan, J Rosen, C Wilke, E Otali, **MN Muller**. Distribution of a chimpanzee social custom is explained by matrilineal relationship rather than conformity. *Current Biology*. 22: 3033-3037.
- 2016 Moeller AH, A Caro-Quintero, D Mjungu, A Georgiev, EV Lonsdorf, **MN Muller**, AE Pusey,

- M Peeters, BH Hahn & H Ochman. Cospeciation of gut microbiota with hominids. *Science*. 353: 380-382.
- 2016 Emery Thompson M, **MN Muller**, K Sabbi, ZP Machanda, E Otali & RW Wrangham. Faster reproductive rates trade off against offspring growth in wild chimpanzees. *PNAS*. 113: 7780-7785.
- 2016 Ahuka-Mundeke S, O Lunguya-Metila, V Mbenzo-Abokome, C Butel, B-I Inogwabini, V Omasombo, J-J Muyembe-Tamfum, E Delaporte, AV Georgiev, **MN Muller**, J-BN Ndjango, Y Li, BH Hahn, M Peeters, A Ayoub. Genetic diversity of STLV-2 and interspecies transmission of STLV-3 in wild-living bonobos. *Virus Evolution*. 2, vew011.
- 2016 Fedurek P, KE Slocumbe, DK Enigk, M Emery Thompson, RW Wrangham & **MN Muller**. The relationship between testosterone and long-distance calling in wild male chimpanzees. *Behavioral Ecology and Sociobiology*. 70: 659-672.
- 2016 Emery Thompson M & **MN Muller**. Comparative perspectives on human reproductive behavior. *Current Opinion in Psychology*. 7: 61–66.
- 2015 Gilby IC, ZP Machanda, DC Mjunga, J Rosen, **MN Muller**, AE Pusey, RW Wrangham. Impact hunters catalyze cooperative hunting in two wild chimpanzee communities. *Philosophical Transactions of the Royal Society B*. 370: 20150005.
- 2015 Rushmore J, AB Allison, EE Edwards, U Bagal, S Altizer, MR Cranfield, TC Glenn, H Liu, A Mudakikwa, L Mugisha, **MN Muller**, RM Stumpf, ME Thompson, RW Wrangham & MJ Yabsley. Screening great apes for putative sexually transmitted diseases: evidence of Trichomonadidae infections in wild chimpanzees (*Pan troglodytes*). *American Journal of Primatology*. 77: 1075-1085.
- 2015 Alvarado LC, **MN Muller**, M Emery Thompson, M Klimek, I Nenko & G Jasienska. The Paternal Provisioning Hypothesis: Effects of workload and testosterone production on men's musculature. *American Journal of Physical Anthropology*. 158: 19-35.
- 2014 Liu W, Y Li, KS Shaw, GH Learn, L Plenderleith, JA Malenke, SA Sundararaman, MA Ramirez, PA Crystal, AG Smith, F Bibollet-Ruche, A Ayoub, S Locatelli, A Esteban, F Mouacha, E Guichet, C Butel, S Ahuka- Mundeke, B-I Inogwabini, J-BN Ndjango, S Speed, CM Sanz, DB Morgan, MK Gonder, PJ Kranzusch, PD Walsh, AV Georgiev, **MN Muller**, AK Piel, FA Stewart, ML Wilson, AE Pusey, L Cui, Z WanG, A Färnert, CJ Sutherland, D Nolder, JA Hart, TB Hart, P Bertolani, A Gillis, M LeBreton, B Tafon, J Kiyang, CF Djoko, BS Schneider, ND Wolfe, E Mpoudi-Ngole, E Delaporte, R Carter, RL Culleton, GM Shaw, JC Rayner, M Peeters, BH Hahn & PM Sharp. African origin of the malaria parasite *Plasmodium vivax*. *Nature Communications*. 5:3346 doi:10.1038/ncomms4346
- 2014 Emery Thompson M, **MN Muller** & RW Wrangham. Male chimpanzees compromise the foraging success of their mates in Kibale National Park, Uganda. *Behavioral Ecology and Sociobiology*. 68: 1973-1983.
- 2014 Wilson ML, C Boesch, T Furuichi, IC Gilby, C Hashimoto, CL Hobaiter, G Hohmann, N Itoh,

- K Koops, JN Lloyd, T Matsuzawa, JC Mitani, DC Mjungu, D Morgan, R Mundry, **MN Muller**, M Nakamura, J Pruetz, AE Pusey, J Riedel, C Sanz, AM Schel, N Simmons, M Waller, DP Watts, F White, R Wittig, K Zuberbühler & RW Wrangham. Lethal aggression in *Pan* is best explained by adaptive strategies, rather than human impacts. *Nature*. 513: 414-417.
- 2014 Georgiev AV, AF Russell, E Otali, M Emery Thompson, **MN Muller** & RW Wrangham. The foraging costs of male mating effort in chimpanzees (*Pan troglodytes schweinfurthii*). *International Journal of Primatology*. 35: 725-745.
- 2014 **Muller MN** & RW Wrangham. Mortality rates in Kanyawara chimpanzees. *Journal of Human Evolution*. 66: 107-114.
- 2013 Smith TM, Z Machanda, AB Bernard, RM Donovan, AM Papakyrikos, **MN Muller** & Richard Wrangham. First molar eruption, weaning, and life history in living wild chimpanzees. *PNAS*. 110: 2787-2791.
- 2012 Emery Thompson M, **MN Muller** & RW Wrangham. Technical note: Variation in muscle mass in wild chimpanzees: Application of a modified urinary creatinine method. *American Journal of Physical Anthropology*. 149: 622-627.
- 2012 Li Y, J-B Ndjanga, GH Learn, M Ramirez, BF Keele, F Bibollet-Ruche, W Liu, JL Easlick, JM Decker, RS Rudicell, B-I Inogwabini, S Ahuka-Mundeke, FH Leendertz, V Reynolds, **MN Muller**, RL Chancellor, AS Rundus, N Simmons, M Worobey, GM Shaw, M Peeters, PM Sharp & BH Hahn. Eastern chimpanzees, but not bonobos, represent a simian immunodeficiency virus reservoir. *Journal of Virology*. 86: 10776-10791.
- 2012 Langergraber KE, K Prüfer, C Rowney, C Boesch, C Crockford, K Fawcett, E Inoue, M Inoue-Muruyama, J Mitani, **MN Muller**, MM Robbins, G Schubert, T Stoinski, D Watts, RM Wittig, RW Wrangham, K Zuberbühler, S Pääbo & L Vigilant. Generation times in wild chimpanzees and gorillas suggest earlier divergence times in great ape and human evolution. *PNAS* 109: 15716-15721.
- 2012 Emery Thompson M, **MN Muller** & RW Wrangham. The energetics of lactation and the return to fecundity in wild chimpanzees. *Behavioral Ecology* 23: 1234-1241.
- 2012 **Muller MN** & M Emery Thompson. Mating, parenting and male reproductive strategies. In JC Mitani, J Call, PM Kappeler, RA Palombit & JB Silk (editors). *Evolution of Primate Societies*. Chicago: University of Chicago Press.
- 2011 Gruber T, **MN Muller**, V Reynolds, R Wrangham & K Zuberbühler. Community-specific evaluation of tool affordances in wild chimpanzees. *Scientific Reports* 1, 128; DOI:10.1038/srep00128.
- 2011 **Muller MN**, M Emery Thompson, S Kahlenberg & RW Wrangham. Sexual coercion by male chimpanzees shows that female choice may be more apparent than real. *Behavioral Ecology and Sociobiology*. 65: 921-933.
- 2010 Carlson KJ, RW Wrangham, **MN Muller**, DR Sumner, ME Morbeck, T Nishida, A

- Yamanaka & C Boesch. Comparisons of limb structural properties in free-ranging chimpanzees from Kibale, Gombe, Mahale and Tai communities. In K D'Août & EE Vereecke (editors). *Primate Locomotion: Linking Field and Laboratory Research*. New York: Springer.
- 2010 Liu W, Y Li, GH Learn, RS Rudicell, JD Robertson, JBN Ndjongo, CM Sanz, DB Morgan, S Locatelli, MK Gonder, PJ Kranzusch, PD Walsh, E Delaporte, E Mpoudi-Ngolle, AV Georgiev, **MN Muller**, GM Shaw, M Peeters, PM Sharp, JC Rayner & BH Hahn. Origin of the human malaria parasite *Plasmodium falciparum* in gorillas. *Nature*. 467: 420-425.
- 2010 Emery Thompson M, **MN Muller**, S Kahlenberg & RW Wrangham. Dynamics of social and energetic stress in wild female chimpanzees. *Hormones and Behavior*. 58: 440-449.
- 2010 Linlin L, A Kapoor, B Slikas, OB Soji, C Wang, S Shaukat, MM Alam, M Wilson, J-B Ndjongo, M Peeters, N Gross-Camp, **MN Muller**, BH Hahn, N Wolfe, H Triki, J Bartkus, SZ Zaidi & E Delwart. Highly diverse circoviruses are prevalent in human and chimpanzee stool and infect multiple farm animal species. *Journal of Virology*. 84: 1674-1682.
- 2009 Gruber T, **MN Muller**, P Strimling, RW Wrangham, K Zuberbühler. Wild chimpanzees rely on cultural knowledge to solve an experimental honey acquisition task. *Current Biology*. 19: 1-5.
- 2009 Kuzawa CW, L Gettler, **MN Muller**, TW McDade & AB Feranil. Fatherhood, pairbonding and testosterone in the Philippines. *Hormones and Behavior*. 56: 429-435.
- 2009 **Muller MN**, F Marlowe, R Bugumba & PT Ellison. Testosterone and paternal care in East African foragers and pastoralists. *Proceedings of the Royal Society B: Biological Sciences*. 276: 347-354.
- 2009 Emery Thompson M, **MN Muller**, RW Wrangham, JS Lwanga & KB Potts. Urinary C-peptide tracks seasonal and individual variation in energy balance in wild chimpanzees. *Hormones and Behavior*. 55: 299-305.
- 2009 **Muller MN**, S Kahlenberg & RW Wrangham. Male aggression and sexual coercion of females in primates. In MN Muller & RW Wrangham (editors). *Sexual Coercion in Primates: An Evolutionary Perspective on Male Aggression Against Females*. Cambridge: Harvard University Press.
- 2009 **Muller MN**, S Kahlenberg & RW Wrangham. Male aggression against females in chimpanzees. In MN Muller & RW Wrangham (editors). *Sexual Coercion in Primates: An Evolutionary Perspective on Male Aggression Against Females*. Cambridge: Harvard University Press.
- 2009 Wrangham RW & **MN Muller**. Sexual coercion in humans and other primates: the road ahead. In MN Muller & RW Wrangham (editors). *Sexual Coercion in Primates: An Evolutionary Perspective on Male Aggression Against Females*. Cambridge: Harvard University Press.
- 2009 Stumpf R, M Emery Thompson, **MN Muller** & RW Wrangham. The context of female

dispersal in wild chimpanzees. *Behaviour*. 146: 629-656.

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- 2008 Emery Thompson M, G Gobbo, ML Wilson, **MN Muller** & AE Pusey. Hyperprogesteronemia in response to *Vitex fischeri* consumption in wild chimpanzees (*Pan troglodytes schweinfurthii*). *American Journal of Primatology*. 70: 1064-1071.
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- 2007 **Muller MN**, S Kahlenberg, M Emery Thompson & RW Wrangham. Male coercion and the costs of promiscuous mating for female chimpanzees. *Proceedings of the Royal Society B: Biological Sciences*. 274: 1009-1014.
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- 2005 **Muller MN** & JC Mitani. Conflict and cooperation in wild chimpanzees. *Advances in the Study of Behavior*. 35: 275-331.
- 2005 **Muller MN** & RW Wrangham. Testosterone and energetics in wild chimpanzees. *American Journal of Primatology*. 66: 119-130.
- 2004 **Muller MN** & RW Wrangham. Dominance, cortisol and stress in wild chimpanzees (*Pan troglodytes schweinfurthii*). *Behavioral Ecology and Sociobiology*. 55: 332-340.
- 2004 **Muller MN** & RW Wrangham. Dominance, testosterone and aggression in wild chimpanzees: A test of the challenge hypothesis. *Animal Behaviour*. 67: 113-123.
- 2003 Santiago ML, F Bibollet-Ruche, E Bailes, S Kamenya, **MN Muller**, M Lukasik, AE Pusey, DA Collins, RW Wrangham, J Goodall, GM Shaw, PM Sharp & BH Hahn. Amplification of a complete simian immunodeficiency virus genome from fecal RNA of a wild chimpanzee. *Journal of Virology*. 77: 2233-2242.
- 2003 **Muller MN** & SF Lipson. Diurnal patterns of urinary steroid excretion in wild chimpanzees. *American Journal of Primatology*. 60: 161-166.
- 2003 Santiago ML, M Lukasik, S Kamenya, Y Li, F Bibollet-Ruche, E Bailes, **MN Muller**, M

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- 2002 Mitani JC, DP Watts & **MN Muller**. Recent developments in the study of wild chimpanzee behavior. *Evolutionary Anthropology*. 11: 9-25.
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- 2002 **Muller MN**. Endocrine Aspects of Aggression and Dominance in Chimpanzees of the Kibale Forest. Ph.D. thesis. University of Southern California. Los Angeles, CA
- 2001 **Muller MN** & RW Wrangham. The reproductive ecology of male hominoids. Pages 397-427 in PT Ellison (ed.) *Reproductive Ecology and Human Evolution*. New York: Aldine.
- 2000 **Muller MN**. The knuckle-walking wounded. *Natural History*. 109(8): 44-48.
- 1995 **Muller MN**, E Mpongo, CB Stanford & C Boehm. A note on scavenging by wild chimpanzees. *Folia Primatologica*. 65: 43-47.

Book Reviews

- 2015 **Muller MN**. Review of *Galileo's Middle Finger: Heretics, Activists, and the Search for Justice in Science*, by A. Dreger. (Penguin Press, 2015) *Human Nature*. 26: 346-350.
- 2010 **Muller MN**. Review of *Sexual Selection and the Origin of Human Mating Systems*, by A. Dixon. (Oxford University Press, 2009) *Journal of Anthropological Research*. 66: 532-534.
- 2010 **Muller MN**. Review of *The Real Chimpanzee: Sex Strategies in the Forest*, by C. Boesch. (Cambridge University Press, 2009) *International Journal of Primatology*. 32: 524-529.
- 2007 **Muller MN**. Review of *Man the Hunted: Primates, Predators, and Human Evolution*, by D

Hart & RW Sussman. (Westview Press, 2005) *American Journal of Physical Anthropology*. 132: 484-486.

2006 **Muller MN**. Review of *Sexual Selection in Primates*. P Kappeler & C van Schaik, editors. (Cambridge University Press, 2004). *American Journal of Physical Anthropology*. 130: 279-281.

2002 **Muller MN**. Review of *What it Means to be 98% Chimpanzee*, by J Marks (UC Berkeley Press, 2002). *Quarterly Review of Biology*. 77: 454-455.

Conference Papers and Invited Talks

2019 (May) Max Planck Institute for Evolutionary Anthropology: Leipzig, Germany. Symposium: 40 Years of Research at the Tai Chimpanzee Project. "The Kibale Chimpanzee Project at 32"

2019 (April) American Association of Physical Anthropologists, Annual Meeting. Cleveland. "Aggression, coalition formation, and aging in wild chimpanzees" (Abstract: *Am J Phys Anth*)

2018 (April) American Association of Physical Anthropologists, Annual Meeting. Austin. "Male mating competition and sexual dimorphism in the duration of effective breeding in wild chimpanzees" (Abstract: *Am J Phys Anth* S66: 184)

2016 (Oct) Max Planck Institute for Evolutionary Anthropology: Leipzig, Germany. Institute Seminar Series. "Testosterone, chimpanzees, and the evolution of the human mating system."

2016 (Aug) International Primatological Society/American Society of Primatologists, Joint Meeting. Chicago. "Age specific fertility rates in male chimpanzees (*Pan troglodytes*)."

2016 (April) American Association of Physical Anthropologists, Annual Meeting. Atlanta. "Testosterone, musculature, and development in Kanyawara chimpanzees and Tsimane forager-horticulturalists." (Abstract: *Am J Phys Anth* S62: 236)

2014 (April) American Association of Physical Anthropologists, Annual Meeting. Calgary. "Male sexual coercion and female mating preferences in wild chimpanzees." (Abstract: *Am J Phys Anth* S58: 191)

2013 (April) American Association of Physical Anthropologists, Annual Meeting. Knoxville, TN. "Intergroup aggression and within-group cohesion in wild chimpanzees." (Abstract: *Am J Phys Anth* S 56:202-203)

2013 (Feb) Arizona State University. School of Human Evolution and Social Change. "Male sexual coercion and female choice in wild chimpanzees."

2012 (April) University of California, Los Angeles. Center for Behavior, Evolution and Culture. "Behavioral ecology and socioendocrinology of reproduction in male chimpanzees."

- 2012 (April) American Association of Physical Anthropologists, Annual Meeting. Portland, Oregon. "Testosterone, development and aging in wild chimpanzees." (Abstract: *Am J Phys Anth S* 54:220)
- 2012 (Jan) University of New Mexico. Maxwell Museum of Anthropology. "Ancestors" Lecture. "Redefining man': How chimpanzees have shaped our view of human nature."
- 2010 (Nov) University of Chicago. Department of Comparative Human Development, Comparative Behavioral Biology Workshop. "Male coercion and female choice in wild chimpanzees."
- 2010 (Oct) University of Nevada Las Vegas. Department of Anthropology Colloquium Series. "Male sexual coercion and female choice in wild chimpanzees."
- 2010 (April) Southern California Primate Research Forum. CSU Fullerton. "Male sexual coercion and female choice in wild chimpanzees."
- 2010 (April) American Association of Physical Anthropologists, Annual Meeting. Albuquerque, New Mexico. "Reproduction and resistance to stress in wild chimpanzees." (Abstract: *Am J Phys Anth S* 50:174)
- 2009 (April) American Association of Physical Anthropologists, Annual Meeting. Chicago, Illinois. "Male coercion and female choice in wild chimpanzees." (Abstract: *Am J Phys Anth S* 48:196)
- 2009 (Feb) University of New Mexico. Program in Interdisciplinary Biological and Biomedical Sciences: Symposium on the Legacy of Charles Darwin. "Chimpanzees as models for the last common ancestor of apes and humans"
- 2008 (Oct) German Primate Center: Göttingen, Germany. European Primate Network seminar on "Stress and its Implications for Primate Welfare." "Stress in the wild."
- 2008 (May) University of California, Davis. Ecology and Evolution Seminar Series. "Male coercion and female choice in wild chimpanzees."
- 2008 (March) University of New Mexico, Department of Psychology Colloquium Series. "Sexual coercion among wild chimpanzees."
- 2007 (June) Human Behavior and Evolution Society, Annual Meeting. Williamsburg, Virginia. "Fatherhood and testosterone in Hadza hunter-gatherers and neighboring Datoga pastoralists."
- 2007 (March) University of New Mexico, Department of Anthropology. "The reproductive ecology of male chimpanzees."
- 2006 (Oct) University of Michigan, Department of Anthropology. "Male mate choice and sexual coercion in wild chimpanzees."
- 2006 (June) International Primatological Society, Annual Meeting. Entebbe, Uganda. "Male

- aggression against females and stress in wild chimpanzees.” (MN Muller, S Kahlenberg, M Emery Thompson & RW Wrangham)
- 2006 (June) International Primatological Society, Annual Meeting. Entebbe, Uganda. Conference Symposium. “Male aggression towards females: variation with social system.” (Organized by MN Muller & RW Wrangham)
- 2006 (Feb) University of Southern California. Department of Anthropology. “Ecology and endocrinology of aggression in wild chimpanzees.”
- 2005 (Nov) Hunter College, CUNY. Department of Anthropology. “Male aggression against females and stress in wild chimpanzees.”
- 2005 (Feb) University of Texas, Austin. Department of Anthropology. “Ecology and endocrinology of aggression in wild chimpanzees.”
- 2004 (April) American Association of Physical Anthropologists, Annual Meeting. Tampa, Florida. “Dominance, cortisol and stress in wild chimpanzees.” (Abstract: *Am J Phys Anth S* 38:151)
- 2003 (Nov) Howard Hughes Medical Institute. University of Alabama, Birmingham. “The reproductive ecology of wild chimpanzees.”
- 2002 (April) American Association of Physical Anthropologists, Annual Meeting. Buffalo, New York. “Testosterone and reproductive aggression in wild chimpanzees.” (Abstract: *Am J Phys Anth S* 34:116-117)
- 2000 (June) Max Planck Institute for Evolutionary Anthropology. Symposium on Behavioural Diversity in Chimpanzees and Bonobos. “Testosterone, dominance and aggression in wild chimpanzees.”
- 2000 (April) Southern California Primate Research Forum. Pasadena City College. “The reproductive ecology of male chimpanzees.”

Teaching

University of New Mexico, Department of Anthropology:

Evolution and Human Emergence
Human Biology
Human Behavioral Ecology
Great Apes: Mind and Behavior
Human Reproductive Ecology (Graduate seminar)
Chimpanzees and Human Evolution (Graduate seminar)
Behavioral Endocrinology Laboratory

Boston University, Department of Anthropology:

Introduction to Biological Anthropology
Primate Social Behavior
Advanced Topics in Human Evolution

Human Reproductive Ecology
Behavioral Biology of Human Sex Differences

Harvard University, Department of Anthropology:
Sophomore Tutorial in Biological Anthropology
Human Behavioral Biology (as Head Teaching Fellow)

University of Southern California, Department of Anthropology
Introduction to Physical Anthropology (1996) Graduate Teaching Assistant

Reviewer for Academic Journals/Funding Agencies

<i>Science</i>	<i>PNAS</i>
<i>Proceedings: Biological Sciences</i>	<i>Journal of Human Evolution</i>
<i>Hormones and Behavior</i>	<i>Biology Letters</i>
<i>Evolutionary Anthropology</i>	<i>Current Biology</i>
<i>Advances in the Study of Behavior</i>	<i>Animal Behaviour</i>
<i>Human Nature</i>	<i>Physiology and Behavior</i>
<i>Behavioral Ecology and Sociobiology</i>	<i>Psychological Science</i>
<i>American Journal of Primatology</i>	<i>American Journal of Human Biology</i>
<i>Marine Mammal Science</i>	<i>Current Directions in Psychological Science</i>
U.S. National Science Foundation	

Administrative work with professional societies

- 2015 Southwestern Association of Biological Anthropologists. Program committee and local area coordinator for annual meeting in Albuquerque, NM.
- 2011 Human Behavior and Evolution Society. Program committee for annual meeting in Albuquerque, NM.
- 2010 Human Biology Association. Local area coordinator for annual meeting in Albuquerque, NM.