

Collin Michael McCabe, Ph.D.

Curriculum Vitae
January 31, 2018

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PROFESSIONAL EXPERIENCE:

Postdoctoral Associate, Duke University School of Medicine, Department of Medicine,
Division of Infectious Diseases and Global Health 2017-2018

EDUCATION:

Duke University Certificate, One Health Training Program	Durham, NC 2017
Harvard University Ph.D., Human Evolutionary Biology <i>Dissertation: Behavioral determinants of pathogen risk across scales</i>	Cambridge, MA 2017
Harvard Business School Pass with Honors, HBX Credential of Readiness (CORE)	Boston, MA 2014
University of Notre Dame B.S., Biological Sciences B.A. with Honors, Anthropology <i>Thesis: Conceptualizing & operationalizing a theory of culture among great apes</i>	Notre Dame, IN 2010 2010

RESEARCH INTERESTS:

Disease ecology, emerging infectious diseases, disease surveillance, zoonoses, parasitology, culture, personality, innovation, social learning, primatology, commensalism, cooperation, global health, one health, open data management, biostatistics, phylogenetic comparative methods, meta-analysis, social network analysis, simulation modeling of disease spread

PUBLICATIONS:

* Undergraduate advisees underlined

McCabe CM, Nunn CL. In Revision. Effective network size predicted from simulations of pathogen outbreaks through social networks provides a novel measure of structure-standardized group size. *Front Vet Sci*.

McCabe CM. 2016. The scientist's guide to summer reading: Death on Earth. *Science* 352(6290):1169-1170. DOI: 10.1126/science.aaf6929.
[Non-peer-reviewed Editorial]

Nunn CL, Jordán F, Verdolin J, **McCabe CM**, Fewell J. 2015. Infectious disease and group size: More than just a numbers game. *Philos Trans R Soc B* 370:20140111. DOI: 10.1098/rstb.2014.0111.

McCabe CM, Reader SM, Nunn CL. 2014. Infectious disease, behavioral flexibility, and the evolution of culture in primates. *Proc R Soc B* 282:20140862. DOI: 10.1098/rspb.2014.0862.

McCabe CM, Rand DG. 2014. Coordinated punishment does not proliferate when defectors can also punish cooperators. In: JH Gallo (Ed.), *Antisocial Behavior: Etiology, Genetic and Environmental Influences and Clinical Management*. Nova Science Publishers: Hauppauge, NY. pp 1-14.

Garamszegi LZ, Nunn CL, **McCabe CM**. 2012. Informatics approaches to developing dynamic meta-analyses. *Evol Ecol* 26(5):1275-1276. DOI: 10.1007/s10682-012-9592-0.

Sumner K, **McCabe CM**, Nunn CL. In Review. Pathogen transmission and network modularity: A simulation study comparing different community detection algorithms. *Behaviour*.

McCabe CM, Agwanda B, Weinstein SB, Young HS, Nunn CL. In Prep. Human-rodent commensalism and implications for parasite transmission in the modern agricultural transitions of central Kenya.

McCabe CM, Lee T, Archie EA, Shaw E, Fuentes A. In Prep. Variation in gastrointestinal parasite burdens among semi-free-ranging Barbary macaques, *Macaca sylvanus*, in the Upper Rock Nature Reserve, Gibraltar.

Yegian AK, Castillo ER, **McCabe CM**. In Prep. If you can't stand the heat: Evolutionary patterns of mammalian species distributions and their associations with habitat temperature, heat retention, and tendon inefficiency.

RESEARCH GRANTS:

Doctoral Dissertation Research Improvement Grant, NSF (\$21,812)	2014
Dissertation Fieldwork Grant, Wenner-Gren Foundation (\$15,681)	2014
Early Training & Research Grant, Harvard University, H.E.B. Dept. (\$5,000)	2012
Nanovic Institute Research Grant, University of Notre Dame (\$1,072)	2010
President's Circle Grant, University of Notre Dame (\$500)	2010
College of Science Travel Grant, University of Notre Dame (\$500)	2010
Undergrad Research Opportunity, University of Notre Dame (\$1,750)	2009

AWARDS & FELLOWSHIPS:

Cora du Bois Dissertation Completion Fellowship	2016
Graduate Research Fellowship, NSF	2011-2016
Lambda Alpha National Collegiate Honors Society for Anthropology	2010
McGrath Award for Excellence in Research, University of Notre Dame	2009
Bernard J. Hank Research Fellowship, University of Notre Dame	2008-2009
Eagle Scout Award	2006

INVITED LECTURES:

McCabe CM, Jordán F, Nunn CL. "More than just a numbers game: populations, networks, and disease dynamics in primates." Keynote session podium presentation at: *Joint International & American Society of Primatologists Biannual Meeting*; Bend, OR, June 2015.

McCabe CM, Castillo ER, Otárola-Castillo E. "Enhancing physical anthropology graduate education with public outreach in the K-12 classroom." Invited poster at: *American Association of Physical Anthropologists Annual Meeting*; St. Louis, MO, March 2015.

McCabe, CM. "Monkey Business: How studying primates and other animals can teach us more about human epidemiology." *Harvard Global Health Institute Seminar Series*; Cambridge, MA, October 2012.

PRESENTATIONS:

* *Undergraduate advisees underlined*

Nunn CL, Sumner K, **McCabe CM**. "Infectious disease and group size: The social bottleneck hypothesis." Podium presentation at: *European Society for Evolutionary Biology XVI Congress*; Groningen, The Netherlands, August 2017.

McCabe CM, Young HS, Weinstein SB, Nunn CL. "Unwelcome guests: Human-rodent commensalism and its implications for zoonotic disease transfer." Podium presentation at: *American Association of Physical Anthropologists Annual Meeting*; New Orleans, LA, April 2017.

McCabe CM, Wrangham RW. "Habitat temperature and implications for total energy expenditure among mammals and primates." Poster at: *American Association of Physical Anthropologists Annual Meeting*; Atlanta, GA, April 2016.

McCabe CM, Reader SM, Nunn CL. "Social learning as a conduit for parasite transmission in the evolution of primates." Podium presentation at: *Göttinger Freilandtage IX*; Göttingen, Germany, December 2013.

McCabe C, Nunn C, Reader S. "How do social learning and environmental exploration affect infectious disease risk in primates?" Poster at: *Ecology and Evolution of Infectious Diseases Annual International Meeting*; Ann Arbor, MI, May 2012.

Nunn CL, Rifkin JL, Garamszegi LZ, **McCabe CM**. "Do parasites constrain group size? A phylogenetic comparative study and meta-analysis." Podium presentation at: *American Association of Physical Anthropologists Annual Meeting*; Portland, OR, April 2012.

McCabe CM, Nunn CL, Reader SM. "Infectious disease risk in the evolution of culture." Podium presentation at: *American Association of Physical Anthropologists Annual Meeting*; Portland, OR, April 2012.

McCabe CM, Lee T, Fuentes A. "Variation in parasite burdens among semi-free-ranging Barbary macaques, *Macaca sylvanus*, in the Upper Rock Nature Reserve, Gibraltar." Poster at: *Midwest Primate Interest Group Annual Meeting*; Allendale, MI, October 2009.

TEACHING:

Teaching Fellow, Harvard University

- *Primate Social Behavior* (Drs. Zarin Machanda & Stephanie Meredith) Fall 2013
- *Animal Behavior* (Profs. Bence Ölveczky & Naomi Pierce) Spring 2013
- *Primate Disease Ecology and Global Health* (Prof. Charles Nunn) Fall 2012

Teaching Assistant, University of Notre Dame

- *Practicum in Environmental Field Biology* (Prof. Gary Belovsky) Summer 2010

LABORATORY & FIELD RESEARCH EXPERIENCE:

Veterinary Medicine Institute

Postdoctoral Associate; PI: Gregory Gray & Battsetseg Gonchigoo
Surveillance of Emerging Mosquito-borne Arboviruses in Mongolia

Mongolia
2017-present

Duke University

Dissertation Laboratory Researcher; Advisors: Charles Nunn & Christine Drea
Parasite Ova Flotation, Ectoparasite Identification, and Behavior Evaluation

Durham, NC
2015-16

Mpala Research Centre

Dissertation Field Researcher; Advisors: Charles Nunn & Richard Wrangham
Zoonotic Disease Risks of Rodent-Human Interactions

Kenya
2012-15

UND Environmental Research Center-West

Undergraduate Researcher; Advisors: Gretchen Gerrish & Gary Belovsky
Geospatial Movement Patterns and Learning Behavior in *Marmota flaviventris*

Moiese, MT
2009

Upper Rock Nature Reserve

Field Researcher & Technician; PI: Agustín Fuentes
Gastrointestinal Parasites in *Macaca sylvanus* on the Rock of Gibraltar

Gibraltar
2009-2011

UND Environmental Research Center-East

Undergraduate Researcher; Advisors: Michael Cramer & Gary Belovsky
Habitat Disturbance and Foraging Strategies in *Peromyscus maniculatus gracilis*

Land Lakes, WI
2008

University of Notre Dame, Department of Biological Sciences

Laboratory Technician; PI: Gary Belovsky
Ecosystem Structure and Function in Palouse Grasslands

Notre Dame, IN
2007-2010

ACADEMIC SERVICE:

Conference Organizing Committee , 2nd annual meeting of International Society for Evolution, Medicine, and Public Health (ISEMPH), Durham NC	2016
Manuscript Reviewer: <i>EcoHealth, Intelligence</i>	2014-present
Undergraduate Thesis Mentor , Harvard University & Duke University	2013-2017
Curriculum Development Coordinator , "Professional Development for Graduate Students," Department of Human Evolutionary Biology, Harvard University	2013-2014
Faculty-Graduate Student Liaison , Harvard University	2012-2014
Invited Panelist , Notre Dame Undergraduate Research Grant-writing Workshop	2010

PUBLIC OUTREACH:

Guest Lecturer , American School of Ulaanbaatar, Human Evolution Lecture and Q&A Session; Ulaanbaatar, Mongolia, December 2017.	
Guest Lecturer , Chapel Hill High School, Parasite Ecology Lecture / Human Evolution Lecture and Hands-on Fossil Comparisons; Chapel Hill, NC, April-May 2016.	
Education Volunteer , Clearwater Environmental Festival; Croton-on-Hudson, NY, June 2014.	
Human Evolution Educator , Harvard Museums of Science and Culture, Stories Through Time Family Festival; Cambridge, MA, March 2013.	
Guest Lecturer , Boston Day and Evening Academy, Global Development and Infectious Diseases Lecture and Q&A Session; Cambridge, MA, December 2012.	
Guest Lecturer , Somerville High School, Human Evolution Lecture / Hands-on Fossil Comparisons; Somerville, MA, May 2012-2014.	
Microblogger , Twitter, Sharing interesting biology and infectious disease news stories and commentary from @collinmmccabe; April 2012-present.	

COLLABORATIVE RESEARCH AFFILIATIONS:

National Evolutionary Synthesis Center (NESCent) Working Group	Durham, NC
Participating Researcher ; Organizer: Jennifer Fewell	2011-2013
Large-scale Demographic, Network, and Behavioral Trait Analyses of Sociality	
National Evolutionary Synthesis Center (NESCent) Working Group	Durham, NC
Participating Researcher ; Organizers: Charles Nunn, Brian Hare	2011
How Does Cognition Evolve?	

SKILLS:

Parasitological quantification via ova flotation, incubation, and microscopy
Ectoparasite combing, small mammal handling, Sherman trap use and repair
Mammalian gut dissection, cardiac puncture and retro-orbital blood collection
Rodent anesthesia, IACUC review for ethical treatment of small mammals
Field project management, manual transmission driving and basic vehicle repair
Linear and non-linear modeling, non-linear dynamics, game theory modeling
Bayesian phylogenetic comparative methods and trait reconstruction
Social network analysis, epidemiological and diffusion simulation

Languages: English (native), Kiswahili (basic), Mongolian (basic)

Software: R, Matlab, Python, MySQL, BayesTraits, Mesquite, NetLogo, Noldus Ethovision XT