

Julie Wolfe Turner

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Contact Information

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Career Highlights

- Skilled in data management, statistics, and coding
- 10 peer-reviewed papers published/in review
- Experienced mentor with mentees moving on to their desired positions in scientific fields
- Skilled communicator with diverse audiences

Education

- August 2011 - Michigan State University; East Lansing, MI
May 2018 Dual Ph.D. in Integrative Biology and the interdisciplinary program in Ecology, Evolutionary Biology, and Behavior
Major Advisor: Dr. Kay Holekamp
- August 2007 - Grinnell College; Grinnell, IA
May 2011 Double major in Biology and History (B.A.)
Biology advisor: Kathryn Jacobson; History advisor: Elizabeth Prevost

Research and Work Experience

Positions

- December 2020 - Postdoctoral Fellow, University of British Columbia
Present Cumulative effects of landscape change on movement, habitat selection, and social behaviors
Advisors: Josie Hughes, Eliot McIntire, Cole Burton
- September 2018 - Postdoctoral Fellow, Memorial University of Newfoundland
November 2020 How movement, habitat use, and sociality relate to disease and cause-specific mortality.
Advisor: Eric Vander Wal
- August 2011 - PhD candidate, Michigan State University
June 2018 Social development and its influence on adult traits in the spotted hyena
Advisor: Kay Holekamp
- May 2010 - Summer Research Assistant
August 2010 Oak Ridge National Laboratory, TN
Analyzing behavioral responses after exposing fresh water organisms to magnetic fields (w/ Mark Bevelhimer and Glenn Cada; 40 hrs/week)
- May 2009 - Summer Research Assistant
August 2009 Oak Ridge National Laboratory, TN
Campus Sustainability Initiative implementing a new recycling program (w/ Susan Michaud; 40 hrs/week)

Technical skills

- Coding (primarily R, but experience with SQL and Python)
- Rstudio and Rmarkdown
- Collaborating with Git
- GIS skills (QGIS and R)
- Managing large, long-term databases (MS Access and SQLite)
- Resource selection and step selection analyses
- Social network analysis
- Hierarchical models
- Bayesian and frequentist statistics
- Writing technical reports

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Field work experience

- Wildlife Evolutionary Ecology Lab
- Elk calf captures (Manitoba, Canada, 1 month, 2019)
 - Wolf kill site investigations (Manitoba, Canada, 1 week, 2019)
 - Snowshoe hare captures (Newfoundland, Canada, 1 week, 2018)

Skills:

- Radio-telemetry
- Remote GPS navigation
- Live animal captures

- Mara Hyena Project
- Wild spotted hyena behavioral research (Masai Mara, Kenya, 2 years over 2012 – 2016; 1 year straight 2013 – 2014)

Skills:

- Behavioral observation techniques
- Radio-telemetry
- Remote GPS navigation
- Processing immobilized animals
- Predator/prey surveys
- Field site management
- Permit acquisition
- Hiring assistants

Publications

*Mentee

Peer-reviewed

Newediuk, L, J Ethier, SP Boyle, JA Aubin, J Baluffi-Fry, E Dedeaban, MP Laforge, CM Prokopenko, **JW Turner**, QMR Webber, E Vander Wal. (2021) Sociopolitical factors drive conservation planning timelines: a Canadian case study with global implications. *Biological Conservation* 257(2021): 109091.

Turner, JW, AL Robitaille, PS Bills, and KE Holekamp. (2020) Early life relationships matter: Social position during early life predicts fitness among female spotted hyenas. *Journal of Animal Ecology* 90(1): 183-196.

Robitaille, AL*, QMR Webber*, **JW Turner**, E Vander Wal. (2020) The problem and promise of scale in multilayer animal social networks. *Invited contribution to Current Zoology Special Issue: Embracing the complexity of animal social systems using multilayer network analysis*. 67(1): 113-123.

Turner, JW, RM LaFleur*, AT Richardson*, and KE Holekamp. (2020) Risk-taking in free-living spotted hyenas is associated with anthropogenic disturbance, predicts survivorship, and is consistent across experimental contexts. *Ethology* 126(1): 97-110.

Turner, JW, PS Bills, and KE Holekamp. (2018) Ontogenetic change in determinants of social network position in the spotted hyena. *Behavioral Ecology and Sociobiology* 72:10.

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In review

Turner, JW, CM Prokopenko, KA Kingdon, D Dupont, S Zabihi-Seissan, and E Vander Wal. (*In review*) Death comes for us all: an interplay of habitat selection, movement, and social behavior relate to cause-specific mortality among grey wolves. *Behav Ecol.* [BioRxiv preprint](#).

Webber, QMR, CM Prokopenko, KA Kingdon, **JW Turner**, E Vander Wal. (*In review*) Moving together, foraging apart: effects of the social environment on movement-integrated habitat selection. *Proc R Soc B*.

Gering, E, ZM Laubach, P Weber, GS Hussey, KDS Lehmann, TM Montgomery, **JW Turner**, W Perng, MO Pioon, KE Holekamp, and T Getty. (*in review*) *Toxoplasma gondii* infections are associated with boldness towards lions in wild hyena hosts. *Nature Communications.* [BioRxiv preprint](#).

Laubach, ZM, JR Greenberg, **JW Turner**, TM Montgomery, MO Pioon, L Smale, R Cavalcante, K Padmanabhan, C Lalancette, B vonHoldt, CD Faulk, DC Dolinoy, KE Holekamp, W Perng. (*in review*) Associations of early social experience with offspring DNA methylation and later life stress phenotype. *Nature Communications* [BioRxiv preprint](#).

Other publications and reports

Gering, E, ZM Laubach, P Weber, GS Hussey, **JW Turner**, KE Holekamp, and T Getty. (2020) Time makes you older, parasites make you bolder: *Toxoplasma gondii* infections predict hyena boldness toward definitive lion hosts in a human-altered landscape. *Evolution in Action: Past, Present and Future*. W Banzhaf, BHC Cheng, K Deb, KE Holekamp, RE Lenski, C Ofria, RT Pennock, WF Punch, DJ Whittaker, Eds. Springer International Publishing.

Johnson-Ulrich, L, KDS Lehmann, **JW Turner**, and KE Holekamp. (2018) Testing cognition in the *umwelt* of the spotted hyena. *The experimental umwelt. A practical guide to animal cognition*. N Bueno-Guerra & F Amici, Eds. Cambridge University Press. Cambridge, UK.

Cada, G, M Bevelhimer, K Riemer, and **J Turner**. (2011) Effects on freshwater organisms of magnetic fields associated with instream hydrokinetic turbines. FY2010 Annual Progress Report to the Wind and Water Power Program, U.S. Department of Energy, Washington, DC.

In preparation

Denief, ED*, **JW Turner**, CM Prokopenko, and E Vander Wal. (*In prep*) At a snail's pace: the influence of habitat disturbance on terrestrial snail movement using experimentally manipulated mesocosms.

Turner, JW, PS Bills, KE Holekamp. (*In prep*) Human disturbance negatively affects social development in wild spotted hyenas.

Prokopenko CM*, S Zabihi-Seissan, KA Kingdon*, **JW Turner**, D Dupont, and E Vander Wal. (*In prep*) Pangs of hunger: State drives switching and searching response of gray wolves.

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Presentations

- Turner, JW**, C Johnson, C Daniel, E McIntire, J Hughes. Past, present and future cumulative effects of harvest, fire, & roads on boreal caribou. North American Caribou Workshop, Virtual, Quebec. May 2021.
- Webber, QMR, CM Prokopenko, KA Kingdon, **JW Turner**, E Vander Wal. Integrating habitat selection, sociality, and movement to inform caribou conservation. North American Caribou Workshop, Virtual, Quebec. May 2021.
- Dyson, M, C Simpkins, **J Turner**, S Endicott, R Rempel, P Wiebe, E Nielson, C Johnson, M Leblond, J Baltzer, F Steward, J Hughes. Evaluating the relevance and utility of existing caribou resource selection functions for assessment of cumulative effects of disturbance in Ontario. North American Caribou Workshop, Virtual, Quebec. May 2021.
- Turner, JW**. Social development and its effects on adult traits in spotted hyenas. **Invited** Pop. Bio. Seminar, Duke University, Durham, NC (virtual presentation). Feb. 2021.
- Turner, JW**, CM Prokopenko, KA Kingdon, D Dupont, S Zabihi-Seissan, and E Vander Wal. The walking dead: behaviors leading to cause-specific mortality in gray wolves. The Animal Behavior Society Virtual Conference. July 2020.
- Denief, E, **JW Turner**, CM Prokopenko, and E Vander Wal. At a snail's pace: the influence of habitat disturbance on terrestrial snail movement. The Animal Behavior Society Virtual Conference. July 2020.
- Laubach, ZM, R Cavalcante, DC Dolinoy, CD Faulk, JR Greenberg, C Lalancette, TM Montgomery, K Padmanabhan, W Perng, MO Pioon, L Smale, **JW Turner**, B vonHoldt, and KE Holekamp. Early social experiences contribute to DNA methylation and development of future stress phenotype. The Animal Behavior Society Virtual Conference. July 2020.
- Turner, JW**, CM Prokopenko, KA Kingdon, D Dupont, S Zabihi-Seissan, and E Vander Wal. The walking dead: testing whether end-of-life behaviors can be used to predict cause-specific mortality. The Wildlife Society Joint Conference, Reno, NV. Oct. 2019.
- Dupont DLJ, CM Prokopenko, KA Kingdon, S Zabihi-Seissan, **JW Turner**, VB Harriman, and E Vander Wal. To Eat or Not to Eat: Testing a Predictive Model of Large Carnivore Behaviour to Estimate Prey Kill Rates in Multi-Prey Systems. The Wildlife Society Joint Conference, Reno, NV. Oct. 2019.
- Turner, JW**, CM Prokopenko, KA Kingdon, D Dupont, S Zabihi-Seissan, and E Vander Wal. The walking dead: testing whether end-of-life behaviors can be used to predict cause-specific mortality. Canadian Society for Ecology and Evolution Joint Conference, Fredericton, NB. Aug. 2019.
- Turner, JW**. Social development and its effects on adult traits in spotted hyenas. Invited Biology Department Seminar, Memorial University of Newfoundland, St. John's, NL. Oct. 2018.
- Turner, JW** and KE Holekamp. Effects of early social bonds on adult fitness in free-living spotted hyenas (*Crocuta crocuta*). EEBB Colloquium, Michigan State University, East Lansing, MI. Mar. 2016.

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Turner, JW and KE Holekamp. Effects of early social bonds on female fitness in free-living spotted hyenas (*Crocuta crocuta*). Animal Behavior Society Conference, University of Alaska Anchorage, Anchorage, AK. Jun. 2015.

Turner, JW. The effects of static magnetic fields on fresh water organisms. Biology Seminar, Biology Department, Grinnell College, Grinnell, IA. Oct. 2010.

Turner, JW. The effects of static magnetic fields on fresh water organisms. Fishheads Seminar, Environmental Sciences Department, Oak Ridge National Laboratory, Oak Ridge, TN. Aug. 2010.

Science Communication

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|---------------------------------|---|
| October 2020 | Soapbox Science - St. John's, NL <ul style="list-style-type: none">• 3 minute lightning talk on spotted hyenas• Panelist for Q&A |
| December 2018 -
January 2020 | Consultant on "Family" in Animal Social Networks by Rotating Planet <ul style="list-style-type: none">• Story development• Hyena and social network expertise• Travel guidance when filming in Kenya |
| March 2017 -
August 2018 | Freelance science communicator/naturalist, Masai Mara, Kenya <ul style="list-style-type: none">• Invited formal/informal talks to school and tourist groups• Groups of 1-50 people of all ages and nationalities |
| January 2018 | Interviewed for <i>Girl Power - why do female spotted hyenas rule the pack?</i> by Stewart Wallis in Discover Wildlife |
| September 2014 | Consultant on <i>Mama Hyena</i> (2015) by FL Concepts Paris <ul style="list-style-type: none">• Guided film crew through the Mara• Interviews |
| June 2012 -
August 2018 | Outreach events associated with Holekamp Lab and Mara Hyena Project <ul style="list-style-type: none">• MSU Museum Darwin Discovery Day (East Lansing, MI, 2012, 2013, 2016)• ABS Science Day (Anchorage, AK, 2015)• Hyena and Mara Ecosystem talks to students and tourists (Kenya)• Science nights at local schools (East Lansing, MI)<ul style="list-style-type: none">○ Targeted towards families and children○ Developed games and content |

Blogging

Turner, JW. (Jan. 2021) [Growing up Hyena](#). *Animal Ecology in Focus*.

Turner, JW. (Nov. 2016) [Social networks in spotted hyenas](#). *BEACON blog*.

Turner, JW. (May 2014) [A hyena is a hyena, no matter how small](#). *Notes From Kenya blog*.

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- Turner, JW. (Feb. 2014) [Routine and adventure](#). *Notes From Kenya blog*.
- Turner, JW. (Feb. 2014) [February is hatari time with hyenas](#). *Notes From Kenya blog*.
- Turner, JW. (Jul. 2013) [Alien abduction!](#) *Notes From Kenya blog*.
- Turner, JW. (Jun. 2013) [Battle for the elephant carcass](#). *Notes From Kenya blog*.
- Turner, JW. (Aug. 2012) [An ode to Target and welcoming Junior](#). *Notes From Kenya blog*.
- Turner, JW. (Jul. 2012) [Pan ate Target!](#) *Notes From Kenya blog*.

Service

- September 2018 - December 2020 Cognitive and Behavioural Ecology Program Journal Club Coordinator
Memorial University of Newfoundland
- Leading a review paper being completed by the group
- September 2018 - Present Mentor Undergraduate Students
Memorial University of Newfoundland, Wildlife Evolutionary Ecology Lab
- 1 high school student, 2 undergraduates, 1 honors student
- April 2019 Judge, Biology Graduate Student Symposium at MUN
- October 2018 Judge, Conservation Science Species-at-risk Poster Session
- April 2016 Judge, University Undergraduate Research and Arts Forum at MSU
- December 2015 Panelist, MSU Zoology Student Association Graduate School Forum
- August 2014 - May 2015 Service on MSU Zoology Department Curriculum Committee
- August 2012 - August 2018 Mentor Undergraduate and Post-Undergraduate Research Assistants
Michigan State University and Mara Hyena Project
- 22 undergraduates and 2 post-undergraduates

Teaching Experience

- August 2014 - June 2016 Instructor, Behavioral Ecology of African Mammals (BEAM) (ZOL 490)
(*Lead instructor July 2015 - June 2016*)
Michigan State University Integrative Biology Department
- 3 week field course in Kenya
- May 2012 - present Guest Lectures (# of times given)
- African Mammals and Personality (x3)
 - Animal Personality (x3)
 - Hyena Physiology and Behavior (x2)
 - Behavioral Ecology Techniques in the Wild (x1)
 - Employing Social Network Analysis (x1)
- August 2012 - May 2016 Teaching assistant (6 semesters, 20 hrs/week)
Michigan State University
- Ecology Lab (ZOL/PLB 355L)
 - Organismal Biology Lab (BS 172)
 - Cell and Molecular Biology Lab (BS 171)
 - Marine Biology (ZOL 353)

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Competitive scholarships, fellowships, and awards

College of Natural Sciences Dissertation Completion Fellowship (2017)	\$7500
College of Natural Sciences Dissertation Continuation Fellowship (2016)	\$6000
American Society of Mammalogists Grant-in-aid (2013)	\$1000
Animal Behavior Society Student Research Grant (2013)	\$1250
Ecology, Evolutionary Biology, and Behavior summer fellowship (2013, for 4 years)	\$7200
BEACON Science and Technology Center Top Up Fellowship (2011, over 5 years)	\$15,000
MSU College of Natural Science Recruitment Fellowship (2011)	\$25,000

Awards and honors

- Michigan State University Excellence-in-teaching Citation (2016-2017)
- Phi Kappa Phi Honor Society (2013)
- Graduate with honors in biology at Grinnell College (2011)
- Phi Beta Kappa Honor Society (2011)
- Mortarboard Honor Society (2010)

Other skills

- Conversational Spanish
- Photography
- Skilled at off-road, 4x4 driving
- Wilderness first aid and CPR certified

References

Dr. Josie Hughes
Research Scientist
Environment & Climate Change Canada
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Dr. Kay Holekamp
University Distinguished Professor
Michigan State University
holekamp@msu.edu

Dr. Eric Vander Wal
Associate Professor
Memorial University of Newfoundland
evanderwal@mun.ca

Dr. Matthew Rowe
Professor
University of Oklahoma
mprowe@ou.edu