

# ALISON CARTWRIGHT KETZ

Scientist 1, University of Wisconsin, Madison  
Wisconsin Cooperative Research Unit, Department of Forest and Wildlife Ecology  
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## EDUCATION

### 2013 - 2017 Ph.D. Ecology, Colorado State University, Fort Collins, CO

Graduate Degree Program in Ecology, Department of Ecosystem Science and Sustainability,  
Natural Resource Ecology Laboratory  
Dissertation Topic: Hierarchical Bayesian Models for Population Ecology  
Advisor: Dr. N. Thompson Hobbs

### 2011 - 2013 M.S. Statistics, Colorado State University, Fort Collins, CO

Department of Statistics  
Thesis topic: Occupancy Models for Golden Eagles  
Advisors: Dr. Mevin B. Hooten, Dr. Jean D. Opsomer

### 2009 - 2011 Hunter College, City University of New York, New York, NY

Science and mathematics undergraduate coursework

### 2003 B.F.A. Photography with honors, Lesley University, Boston, MA

College of Art and Design

## PROFESSIONAL APPOINTMENTS

### 2017 - Scientist 1, University of Wisconsin, Madison

Wisconsin Cooperative Wildlife Research Unit, Department of Forest and Wildlife Ecology  
Collaborative Team: Daniel P. Walsh, Daniel J. Storm, Robin E. Russell, Michael, D. Samuel

### 2016 - 2017 Ecological Data Analyst, U. S. Geological Survey, Fort Collins, CO (remote)

Developing generalized mixed models for several studies on population dynamics of cottonwoods

## PUBLICATIONS

### Peer-Reviewed Publications

1. **Ketz, A. C.**, Storm, D. J., & Samuel, M. D., (2019) Chronic wasting disease and implications for cervid populations, *CAB Reviews*, 14(38):1-15, doi:10.1079/PAVSNNR201914038
2. **Ketz, A. C.**, Johnson, T. L., Hooten, M. B. & Hobbs, N. T., (2019) A hierarchical Bayesian

nested multinomial approach for handling missing classification data, *Ecology and Evolution*, 9(6), 3130-3140. doi:10.1002/ece3.4927

3. **Ketz, A. C.**, Johnson, T. L., Monello, R. J., Mack, J., George, J. L., Kraft, B. R., Wild, M. A., Hooten, M. B. & Hobbs, N. T., (2018) Estimating abundance of an open population with an N -mixture model using auxiliary data on animal movements. *Ecological Applications*, 28 (3), 816-825. doi:10.1002/eap.1692

4. **Ketz, A. C.**, Johnson, T. L., Monello, R. J. & Hobbs, N. T. (2016). Informing management with monitoring data: the value of Bayesian forecasting. *Ecosphere*, 7(11). doi:10.1002/ecs2.1587

#### **In Preparation (to be submitted within ~3 months)**

**Ketz, A. C.**, Storm, D. J. & Samuel, M. D., Implications of pathogen-mediated selection on heterogeneous transmission and survival for cervids exposed to chronic wasting disease

**Ketz, A. C.**, Storm, D. J. & Walsh, D. P., Bayesian integrated age-period survival modeling for complete lifespan analysis

**Ketz, A. C.**, Storm, D. J. & Walsh, D. P., Accounting for left truncation and disease associated mortality for age-period spatio-temporal force of infection transmission models

#### **In Preparation (to be submitted within ~1 year)**

**Ketz, A. C.**, Storm, D. J. & Walsh, D. P., Using semi-supervised machine learning anomaly detection for prediction of parturition of ungulates.

**Ketz, A. C.**, Storm, D. J., Russell, R. E., Samuel, M. D. & Walsh, D. P., An integrated population model incorporating dynamic spatial-temporal disease transmission.

#### **GRANTS, AWARDS, AND FELLOWSHIPS**

2013 Graduate Degree Program in Ecology, Colorado State University, Graduate Fellowship (\$2000)

2013 Elmer E. Remmenga Scholarship In Applied Statistics, Colorado State University,  
Department of Statistics (\$1000)

2003 Regis de Silva Award for Outstanding Achievement in Photography.  
Lesley University, College of Art and Design (\$500)

#### **PRESENTATIONS**

**Ketz, A. C.**, Storm, D. J., Russell, R. E., Samuel, M. D. & Walsh, D. P., Forecasting population impacts of chronic wasting disease on white-tailed deer in Wisconsin. Oral presentation at Data Driven Wisconsin, Milwaukee, WI (July 2019).

**Ketz, A. C.**, Storm, D. J., Russell, R. E., Samuel, M. D. & Walsh, D. P., Forecasting population impacts of chronic wasting disease on white-tailed deer in Wisconsin. Lightning talk at Ecological Forecasting Initiative Conference, Washington, DC (May 2019).

**Ketz, A. C.**, Storm, D. J., & Walsh, D. P., Using semi-supervised machine learning anomaly detection to predict parturition of ungulates. Oral presentation at The Wildlife Society 25th Annual Conference, Cleveland, OH (October 2018).

**Ketz, A. C.**, Johnson, T. L., Monello, R. J., Mack, J., George, J. L., Kraft, B. R., Wild, M. A., Hooten, M. B. & Hobbs, N. T., Estimating abundance of an open population with an N -mixture model using auxiliary data on animal movements. Poster presentation at Ecological Society of America Annual Conference. Portland, OR (August 2017).

**Ketz, A. C.**, Johnson, T. L., Monello, R. J., Mack, J., George, J. L., Kraft, B. R., Wild, M. A., Hooten, M. B. & Hobbs, N. T., Estimating abundance of an open population with an N -mixture model using auxiliary data on animal movements. Poster presentation at Graduate Student Showcase at Colorado State University. Fort Collins, CO (November 2015).

**Ketz, A. C.**, Johnson, T. L., Monello, R. J. & Hobbs, N. T., Estes valley elk population modeling. Oral presentation at Regional elk meeting, Estes Park, CO (September 2015).

**Ketz, A. C.**, Johnson, T. L., Monello, R. J. & Hobbs, N. T., Estes valley elk population modeling. Oral presentation at the Rocky Mountain National Park Research Conference, Estes Park, CO (March 2015)

**Ketz, A. C.**, Johnson, T. L., Monello, R. J., Mack, J., George, J. L., Kraft, B. R., Wild, M. A., Hooten, M. B. & Hobbs, N. T., Bayesian state space modeling of elk in Rocky Mountain National Park. Oral presentation at Front Range Student Ecology Symposium. Fort Collins, CO (February 2015)

**Ketz, A. C.**, Kjellander, Petter, & Hobbs, N.T., Bayesian estimation of line transect distance sampling of roe and fallow deer in Västergötland, Sweden. Fort Collins, CO (February 2014).

**Ketz, A.C.**, Opsomer, J.D., Hooten, M.P. Difficult data and occupancy modeling. Oral presentation at the GDPE Graduate Forum. Fort Collins, CO (November 2013).

**Ketz, A.C.**, Opsomer, J.D., Hooten, M.P., Occupancy Modeling and Golden Eagles, Oral presentation at the American Statistical Association, Joint Statistical Meeting. Montreal, QB, Canada (August 2013).

**Ketz, A. C.**, Johnson, T. L., Monello, R. J., Mack, J., George, J. L., Kraft, B. R., Wild, M.

A., Hooten, M. B. & Hobbs, N. T., Bayesian state space modeling of elk in Rocky Mountain National Park. Poster presentation at the Spatial Statistics: Short Course on INLA. Fort Collins, CO (February 2015)

## **PROFESSIONAL ACTIVITIES, SERVICE, AND OUTREACH**

2017- Dr. Timothy R. Van Deelen and Dr. David Drake Lab Group Participation  
2014-2017 Dr. N. Thompson Hobbs and Dr. Cameron L. Aldridge Lab Group Participation  
2014-2015 Photographer and Newsletter Editor, Graduate Degree Program in Ecology  
2014 Graduate Student Committee at the Natural Resource Ecology Laboratory  
2014 Front Range Student Ecology Symposium Committee  
2011-2014 Member of American Statistical Association

**Reviewer for:** *Ecological Applications, Journal of Wildlife Diseases, Ecology & Evolution, EcoHealth, Ecosphere*, U. S. Geological Survey FSP review

**Member of:** The Ecological Society of America (Statistical Ecology Section, Early Career Ecologists Section), The Wildlife Society (Biometrics Working Group).

## **PROFESSIONAL DEVELOPMENT**

Artificial Intelligence Through Reinforcement Learning Tutorial, Data Driven Wisconsin (July, 2019)  
U.S. Geological Survey High Performance Computing Workshop - HPC Carpentry, (April, 2018)  
Software Carpentry, (January, 2018)  
Integrated Population Models Short Course - Patuxent Wildlife Research Station, (October, 2017)  
NIMBios Graduate Workshop - Current Issues in Statistical Ecology, (May, 2015)  
PaleON Summer Short Course - Assimilating Long Term Data Into Ecosystem Models, (August, 2014)  
Spatial Statistics: Short Course on INLA, (May, 2013)

## **TEACHING EXPERIENCE**

### **2015 Graduate Teaching Assistant, Colorado State University**

Department of Ecosystem Science and Sustainability  
ESS575 – Models for ecological data, assisted graduate students during lab sessions and advised on research projects

### **2012-2013 Instructor. STAT 301: Introduction to Statistics, Colorado State University**

Initial duties were the distance course coordinator, and then became instructor for the distance section of the undergraduate general introductory statistics course for science majors.

**2012 Graduate Teaching Assistant, Colorado State University**

Department of Statistics

Frank Graybill Statistics Laboratory statistical consultant

**2011-2012 Graduate Teaching Assistant, Colorado State University**

Department of Statistics

STAT 201: General Statistics, Teaching assistant. Graded papers and ran a lab section

**2011 – 2015 Statistics Tutor.** Freelance undergraduate statistics tutoring

**Guest Lectures**

Animal Population Dynamics F&W ECOL 655 University of Wisconsin, Madison,

Guest lecture on logistic growth (February 2019)

An epistemological introduction to Bayesian statistics, University of Wisconsin, Madison,

Van Deelan Lab lecture (December 2018)

Data visualization with ggplot2 - R Programming Course, Colorado State University, (November 2015)

**PROFESSIONAL EXPERIENCE**

**2013 – 2017 Graduate Research Assistant, Colorado State University**

Department of Ecosystem Science and Sustainability, Natural Resource Ecology Laboratory

Supervisor: Dr. N. Thompson Hobbs

**2003 – 2011 Photographer** [www.alisoncartwright.com](http://www.alisoncartwright.com), New York, NY

Selected Clients and Publications: Wall Street Journal, New York Post, Spin Magazine, Vibe Magazine, Edible Manhattan & Brooklyn, W Architecture, Thread Collective, Partnership for The Homeless, Mandela Day/46664, Galerie Lefebvre, International Tax Review, Verizon, Brooklyn Bridge Park Conservancy, Women Moving Millions, Auburn Theological Seminary, Netherlands Board of Tourism, XLR8R, Elle Magazine

**2006 – 2007 English Teacher** Luzhou Tianli International School, Luzhou, Sichuan, China

**2004 – 2005 Artist Assistant**, George Peck Fine Artist, New York, NY

**2003 – 2004 Production Assistant**, Stick Figure Productions, HBO Documentary Family Bonds

**2001 Photography Internship**, Annie Leibovitz Studio, New York, NY

**Interests:** Sailing, Trail running, Snowboarding, Yoga, Rock climbing, Outdoor enthusiast, Foodie

## REFERENCES

Dr. N. Thompson Hobbs

Senior Research Scientist and Professor at the Natural Resource Ecology Laboratory,  
Department of Ecosystem Science and Sustainability,  
Graduate Degree Program in Ecology,  
Colorado State University  
Ph.D. advisor. Email: tom.hobbs[at]colostate.edu

Dr. Mevin B. Hooten

Assistant Unit Leader in the U. S. Geological Survey Colorado Cooperative Fish and Wildlife  
Research Unit,  
Professor in the Department of Fish, Wildlife, and Conservation Biology,  
Department of Statistics,  
Colorado State University  
M.S. Advisor and Ph.D Committee member. Email: mevin.hooten[at]colostate.edu

Dr. Daniel P. Walsh

Quantitative Ecologist at the U. S. Geological Survey National Wildlife Health Center in  
Madison, WI  
Research Scientist Advisor.  
Email: dwalsh[at]usgs.gov

Dr. Daniel J. Storm

Natural Resource Research Scientist at the Wisconsin Department of Natural Resources  
Email: DanielJ.Storm[at]wisconsin.gov