JACOB PETERSON

🎓 EDUCATION

Present | 2020

M.Sc., Applied Statistics and Analytics
University of Kansas Medical Center
📍 Overland Park, KS
· Emphasis: Data Science

2018 | 2016

M.Sc., Natural Resources Ecology and Management
Oklahoma State University
Advisors: Dr's. Julia Earl & Sam Fuhlendorf
📍 Stillwater, OK
· Thesis: Examined the effects of the Conservation Reserve Program and anthropogenic structures on the long-distance movements of Tympanuchus pallidicinctus
· Graduate Research Assistant

2015 | 2012

B.S., Fish, Wildlife and Conservation Biology
Colorado State University
📍 Fort Collins, CO
· Concentration: Wildlife Biology
· Minor: Spatial Information Management (SIM)

💻 RESEARCH EXPERIENCE

2019

Graduate Teaching/Research Assistant
Purdue University Zollner Lab
📍 West Lafayette, IN
· Led design and development of a spatially explicit agent-based model to simulate chronic wasting disease management in Odocoileus virginianus populations
· Was the lead author on two grant application proposals (PI: Dr. Patrick Zollner)
· Managed collaborations between universities, state agencies, and private stakeholder organizations
· Continued graduate coursework focusing in statistics and data science

2019 | 2016

Student Consultant
Oklahoma State University and Purdue University
· Drew on my expertise in R programming, statistics, and GIS to assist other students, post docs, and research staff within my graduate schools
· Consulting topics included: basic R programming, data cleaning, data management, statistical and spatial analysis
· Led help sessions one on one and within small working groups
· Provided detailed presentations about new techniques to lab research groups and graduate level classes

2018 | 2016

Graduate Research Assistant
Oklahoma State University
Fuhlendorf and Earl Labs
📍 Stillwater, OK
· Utilized resource selection function's (mixed-model logistic regression), semi-variogram-based movement models, and a cumulative distribution function-based method to estimate selection-avoidance-neutral trends in response to features in the landscape
· Designed a spatial classification function in R to characterize different animal behaviors given GPS movement data of an individual
· Developed an R package to increase reproducibility of my research methods
· Located, obtained, prepared, and managed large datasets from multiple state and federal agencies, private companies, and universities
· Lead author on two academic manuscripts and multiple research summary reports
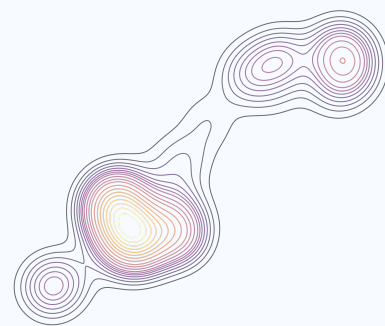
CONTACT

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 github.com/jacpete
📞 +1 (913) 449-1623

SKILLS

Highly experienced with

 Program R
 ArcGIS
 Linux/Bash
 R Markdown
 Github
 Statistical Analysis

Experience with

 Python
 SQL
 QGIS
 Netlogo
 HTML/CSS

My research experience has allowed me to develop and hone my skills in programming, data management, statistics, and GIS that will be transferable to any field.

2015
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2012

Human Dimensions Technician

Colorado Parks and Wildlife
Supervisor: Dr. Stacy Lischka
 Fort Collins, CO

· *Projects:* Examining angler satisfaction in Colorado, assessing motivations of Colorado big game hunters, black bear exploitation of urban environments, assessing motivations of Colorado waterfowl hunters, examine the outdoor oriented values of elementary students using an Outdoor Wilderness Lab, track the effect of implementing a novice hunter program in Colorado

· Created summary reports for survey results and conducted literature reviews

· Designed and managed Access and ESRI geodatabases

2015

GIS & Human Dimensions Independent Study

Colorado Parks and Wildlife & Colorado State University
Supervisor's: Dr's. Stacy Lischka and Yu Wei
 Fort Collins, CO

· Began development of a method to spatially model and predict human attitudes and tolerance to black bears using survey response data

· Experience using SQL to interface with a database and Python & R to script a spatially-explicit model

2015

NSF – Research Experience for Undergraduates Fellow

University of Kansas
Reuman Lab
 Lawrence, KS

· Data-mined a fish stomach database using SQL and R to establish a food web for the North Atlantic Ocean and assess correlation between these interspecific relationships with meta-population synchrony

2014

Predictive Model for Archaeological Sites Affected by Flood Damage

SIM Minor Capstone Project (CSU)
 Fort Collins, CO

· Designed a predictive model to locate prehistoric and historic cultural sites in the Eastern foothills of the Rocky Mountains in Colorado

· Created for National Forest Service archaeologists

· This initial model was designed to be scalable in order to locate cultural sites in a variety of terrains

· Developed using Python scripts and ArcGIS

FIELD EXPERIENCE

2016
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2015

Field Technician – White-tailed Deer Capture

Missouri Department of Conservation
Supervisor: Jon McRoberts
 Rea, MO

· Captured, measured, and collared adult deer using Clover traps and rocket nets. VITs were inserted in does for neonate capture. Used telemetry and GPS to locate dropped collars and find mortalities.

· Neonates were captured and collared using GPS locations retrieved from collars and monitoring VIT and doe collar VHF frequencies

· All collared deer were monitored for mortality using Iridium GPS network or VHF signals

2014

Field Technician – Mule Deer Neonate Capture

Colorado Parks and Wildlife
Supervisor: Mark Peterson
 Piceance State Wildlife Area, CO

· Used telemetry and GPS to locate does and monitor for birth timing

· Captured, measured, and collared mule deer neonates

· Monitored collared fawns for mortality signals and investigated the cause of death

My field experience includes working alone and as a small team in difficult terrain in a large range of weather conditions. I have used a multiple models of Garmin and Trimble GPS's and VHF reciever systems.

🖥 TEACHING EXPERIENCE

2019 ● **Vertebrate Population Dynamics**

Purdue Department of Forestry and Natural Resources   📍 West Lafayette, IN
· Teaching Assistant
· Covered introduction to statistics and life tables in R, distance sampling using
  Program Distance and mark-recapture analysis with Program MARK
· Senior-level undergraduate course

2019 ● **Big Data in Forest Research - Guest Lecture**

Purdue Department of Forestry and Natural Resources   📍 West Lafayette, IN
· Guest lecture on using R as a GIS
· Covered an introduction to the `tidyverse`, the differences between packages
  `sp` and `sf`, using package `raster`, and mapping with `ggplot` and `tmap`
· Graduate level course

I have a passion for teaching those that traditionally would consider themselves non-programmers how scripting and programming can make them more efficient at their jobs. I am also a advocate for free and open source options that allow fully reproducable science.

📈 POSTERS & TALKS

2019 ● **Engaging stakeholders in chronic wasting disease management through agent-based models**

Midwest Deer and Wild Turkey Study Group Meeting   📍 Nashville, IN
· Authors: **Peterson, J. M.**, P. A. Zollner, J. Caudell
· Invited Talk

2019 ● **Effects of Anthropogenic Features and Landcover on the Long-Distance Movements of Lesser Prairie-Chickens**

Quantitative Ecology Working Group at Purdue Department of Forestry and Natural Resources
  📍 West Lafayette, IN
· Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton

2019 ● **Landscape factors affecting large-scale population connectivity in a grassland obligate grouse species**

Indiana State Chapter of The Wildlife Society   📍 Indianapolis, IN
· Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton

2018 ● **An astronomical event reveals the role of landscapes as thermal moderators.**

Ecological Society of America   📍 New Orleans, LA
· Authors: Tanner, E. P., S. D. Fuhlendorf, J. A. Polo, and **J. M. Peterson**

2018 ● **Response of Lesser Prairie-Chickens to Anthropogenic Structures During Long-Distance Movements**

International Association for Landscape Ecology - North America
  📍 Chicago, IL
· Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton
· Invited Symposium on Behavioral Landscape Ecology

2018 ● **Effects of Anthropogenic Structures on the Long-Distance Movements of Lesser Prairie-Chickens**

Midwest Fish and Wildlife Conference   📍 Milwaukee, WI
· Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton

📖 PUBLICATIONS

2019 ● **Estimating response distances of lesser prairie-chickens to anthropogenic features during long-distance movements**

Ecosphere
· Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton
· In Review

2019 ● **An astronomical event reveals the role of landscapes as thermal moderators**

· Authors: Tanner, E. P., S. D. Fuhlendorf, J. A. Polo, and **J. M. Peterson**
· In Review