

# Jonathan E Katz

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## EDUCATION

### UNIVERSITY OF VERMONT

PHD, NATURAL RESOURCES

Grad. May 2015 | Burlington, VT  
Cum. GPA: 3.99

### MIDDLEBURY COLLEGE

B.A., BIOLOGY

Grad. May 2002 | Middlebury, VT  
Cum. GPA: 3.42

## COURSEWORK

Bayesian Statistics

Database Design for Environmental Data

Statistical Methods

Data Analysis & Graphics w/R

## SKILLS

R • shiny • Linear modeling •  $\LaTeX$   
Markdown • Git • Excel • Access  
Bayesian & frequentist statistics  
Spatial analysis in R • MySQL  
Stochastic & deterministic event modeling  
Ubuntu/Linux • OSX • Windows  
MongoDB • CSS • HTML5 • JavaScript

## GRANTS

2009 - 2013 USDA Nat'l Needs Fellow

## WORKSHOPS LED

Year	Topic	Attendees
2014	Intr. to R	VT DFW
2013	Intr. to Access	UVM
2012	Intr. to Access	UVM
2011	Intr. to Access	UVM

## EXPERIENCE

### INDEPENDENT CONTRACTOR | PROGRAMMING, DATABASE DESIGN, AND DATA ANALYSIS

Oct 2012 – Present | Colchester, VT

- Developed a 'shiny' app to query New England wildlife experts about spatial distributions of elusive species.
- Developed a 'shiny' app front-end for the [Herring River Estuary Restoration project](#) multi-criteria decision-analysis (via USGS, 2018).
- Co-wrote 'OBA' (the Online Biogas App), a 'shiny' front-end for the R package 'biogas' (2016).
- Co-wrote 'ALFAM2', a 'shiny' tool to explore biogas data (2016).
- Assisted the [Wildlife Management Institute](#) with an audit of the state of Minnesota [deer population model](#), an R model used by the state Division of Fish and Wildlife to estimate the effect of hunting pressure on deer populations (2016).
- Developed and deployed a MySQL schema and MS Access front-end to track inventory and sales for annual fundraisers by the [Winooski Natural Resources Conservation District](#) (2013).
- Developed a grant management database for the Wildlife Management Institute (ongoing since 2012).

### UVM | COMPUTER PROGRAMMER

Nov 2014 – April 2017 | Burlington, VT

- Co-authored an R package for estimating population size from harvest counts (subm. to CRAN pending).
- Co-authored the R package 'AMModels' for storing models and data as R objects with metadata for use in an adaptive management framework, including a built-in shiny interface.
- Developed a dynamic shiny interface with sub-apps for analysis, visualization, report generation, and interactive surveys.
- Linked shiny apps to a MongoDB database and AWS S3 storage to handle user permissions, analysis tracking, and output storage.
- Created portable shiny apps that can be used as desktop apps using portable R and portable Chrome, launched via desktop shortcut to an executable shell script.

### UVM | RESEARCH ASSISTANT/DOCTORAL STUDENT

Sept 2009 – May 2015 | Burlington, VT

- Developed a MySQL database interface and a manual feature annotation interface to the R package '[monitoR](#)', tools for automated sound detection and population monitoring.
- Developed and evaluated MacKenzie-Royle occupancy models of species presence using automated acoustic detection data.
- Managed data quality and storage for automated acoustic observations.

### MLJ-LLC | ENVIRONMENTAL SPECIALIST, FIELD MANAGER

Mar 2007 – Aug 2009 | Davis, CA

- Collected water samples for agricultural pollutant analysis.
- Coordinated sample delivery to and reporting from four laboratories.
- Contributed written summaries to monthly and annual reports for the California Central Valley Regional Water Quality Control Board.

## SELECTED PUBLICATIONS

- Donovan, TM; Katz, J. In review. Codifying Models For Adaptive Management With The R Package AMModels. Submitted to the Journal of Statistical Software.
- Katz, JE; TM Donovan. In review. Occupancy monitoring with automated acoustic detections. Submitted to Bioacoustics: The International Journal of Animal Sound and its Recording.
- Brauer, CL; Donovan, TM; Mickey, RM; Katz, J; Mitchell, BR. (2016), A comparison of acoustic monitoring methods for common anurans of the northeastern United States. *Wildlife Society Bulletin*, 40: 140–149. [doi:10.1002/wsb.619](https://doi.org/10.1002/wsb.619).
- Katz, JE; SD Hafner; TM Donovan. 2016. Tools for automated acoustic monitoring within the R package monitoR. *Bioacoustics: The International Journal of Animal Sound and its Recording*. 25:197-210. [DOI:10.1080/09524622.2016.1138415](https://doi.org/10.1080/09524622.2016.1138415)
- Katz, JE; SD. Hafner; TM Donovan. 2016. Assessment of Error Rates in Acoustic Monitoring with the R package monitoR. *Bioacoustics: The International Journal of Animal Sound and its Recording*. 25:177-196. [DOI:10.1080/09524622.2015.1133320](https://doi.org/10.1080/09524622.2015.1133320)