

DANIEL S. W. KATZ

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Education

- 2009 - 2015 **University of Michigan School of Natural Resources and Environment** Ann Arbor, MI
Ph.D. in Natural Resource Ecology and Management, 3.99 GPA
Dissertation: The effect of biotic interactions on range expansion of plant species
Dissertation chair and committee: Inés Ibáñez, Don Zak, Knute Nadelhoffer, and Mark Hunter
- 2003 - 2007 **Bard College** Annandale, NY
B.A. in Environmental Studies, 3.82 GPA

Current position

- 2016 - 2019 **Postdoctoral Research Fellow** Ann Arbor, MI
National Institutes of Health NRSA Postdoctoral Fellow
Michigan Institute of Clinical Health Research Postdoctoral Fellow
University of Michigan, School of Public Health, Environmental Health Sciences Department
Research project: Allergenic pollen production, dispersion, exposures, and health effects
Advisors: Stuart Batterman and Alan Baptist

Grants, fellowships, and awards

- 2016-2019: F32 Postdoctoral Research Fellow – National Institutes of Health
- 2016-2018: PTSP Fellow – Michigan Institute of Clinical Health Research
- 2017: Planet Ambassador, Planet Labs
- 2017: Library Data Grant – University of Michigan Clark Library
- 2015: Rackham Dissertation Grant – University of Michigan Rackham Graduate School
- 2013-2015: Doctoral Dissertation Improvement Grant – National Science Foundation
- 2011-2014: Graduate Research Fellow – National Science Foundation
- 2009-2014: Wheeler Fellow – School of Natural Resources and Environment
- 2013: Earnest A.H. Woodman Award – School of Natural Resources and Environment
- 2012: E.S. George Reserve Scholarship Award – E.S. George Reserve
- 2012: Howard M. Wight Memorial Award – School of Natural Resources and Environment
- 2012: William D. Drake Prize – Matthaei Botanical Gardens and Nichols Arboretum
- 2012: Winifred Chase Award – Matthaei Botanical Gardens and Nichols Arboretum
- 2011: Samuel A. Graham Award – School of Natural Resources and Environment
- 2011: Donald M. Matthews Award – School of Natural Resources and Environment
- 2010-2014: Rackham Travel Grants – University of Michigan Rackham Graduate School
- 2010: Jeffrey Lund Forest Ecology Award – School of Natural Resources and Environment
- 2007: Alice Doyle Award – Bard College
- 2006-2007: Trustee Leader Scholar – Bard College
- 2005: Alice Doyle Prize – Bard College

Publications

Katz, D.S.W. and S. Batterman. 2018. Effect of intra-urban temperature variation on tree flowering phenology, airborne pollen, and measurement error in epidemiological studies of allergenic pollen. *Science of the Total Environment*. In press: <https://doi.org/10.1016/j.scitotenv.2018.11.020>.

I. Ibáñez, **D.S.W. Katz**, and B. Lee. 2017. The contrasting effects of short-term climate change on the early recruitment of tree species. *Oecologia* 184.3: 701-713.

- Katz, D.S.W.** and I. Ibáñez. 2017. Differences in biotic interactions across range edges have only minor effects on plant performance. *Journal of Ecology* 105: 321-331.
- Katz, D.S.W.** and I. Ibáñez. 2016. Foliar damage beyond species distributions is partly explained by distance dependent interactions with natural enemies. *Ecology* 97.9: 2331-2341.
- Katz, D.S.W.** 2016. The effects of invertebrate herbivores on plant population growth: a meta-regression analysis. *Oecologia* 182.1:43-53.
- Katz, D.S.W.** and I. Ibáñez. 2016. The effect of biotic interactions on range expansion of three invasive plant species. *Biological Invasions* 18:3351-3363.
- Katz, D.S.W.** and T.S. Carey*. 2014. Heterogeneity in ragweed pollen exposure is determined by local and neighborhood plant composition. *Science of the Total Environment* 485: 435-440.
- Katz, D.S.W.**, B. Connor-Barrie, and T.S. Carey*. 2014. Urban ragweed populations in vacant lots: An ecological perspective on management. *Urban Forestry and Urban Greening* 13.4: 756-760.
- I. Ibáñez, **Katz, D.S.W.**, B. Connor-Barrie, S. Wolf, D. Peltier. 2014. Assessing the integrated effects of landscape fragmentation on plants and plant communities: the challenge of multiprocess – multiresponse dynamics. *Journal of Ecology* 102: 882-895.
- Katz, D.S.W.**, G.M. Lovett, C.M. O'Reilly, and C.D. Canham. 2010. Legacies of land use diminish over 22 years in a forest in southeastern New York. *Journal of the Torrey Botanical Society* 137.2: 236-251.
- In preparation:*
- Katz, D.S.W.** and S.A. Batterman. Allergenic pollen production across a large city for common ragweed (*Ambrosia artemisiifolia*). Anticipated submission: November 2018 to *Ecological Applications*.
- Katz, D.S.W.** and S.A. Batterman. Pollen production of 15 species of common North American street trees. Anticipated submission: December 2018 to *Aerobiologia*.
- Katz, D.S.W.**, Y. Hu, and S.A. Batterman. Modeling short range pollen dispersion from oak trees with a Gaussian plume model. Anticipated submission: December 2018 to *Agricultural and Forest Meteorology*.
- *coauthor is an undergraduate mentee

Publications for broader audiences

- V. Bankowski* and **D.S.W. Katz**. 2018. Estimates of common ragweed pollen production for urban ragweed plants. *The University of Michigan Undergraduate Research Journal* 12: 27-32.
- M. Larson and **D.S.W. Katz**. Natural Resource Group: Wetlands of the Bronx River Watershed. http://www.nycgovparks.org/sub_about/parks_divisions/nrg/bronx_river_epa/main_page.html
- Katz, D.S.W.** and G.M. Lovett. Forest Change Offers Insight. *Poughkeepsie Journal*. 1/20/2008. E1.

Presentations in professional meetings

- Katz, D.S.W.** and S. Batterman. 2018. “Measurement error in epidemiological studies of allergenic pollen due to heterogeneity in flowering time.” Oral presentation. International Society of Exposure Science and International Society of Environmental Epidemiology, Ottawa, Canada.

- Katz, D.S.W.** and S. Batterman. 2018. "Creating a comprehensive municipal inventory of common ragweed (*Ambrosia artemisiifolia*) to predict allergenic pollen exposures." Poster presentation. Translational Science, Washington, DC.
- V. Bankowski* and **D.S.W. Katz**. 2018. "Allometric equations for predicting common ragweed pollen production. Oral presentation, Michigan Academy of Science, Arts, and Letters, Mount Pleasant, MI.
- Katz, D.S.W.** and S. Batterman. 2017. "Allergenic pollen in cities: Using remote sensing to determine source plant locations." Oral presentation. Ecological Society of America, Portland, OR.
- V. Bankowski* and **D.S.W. Katz**. 2017. "Spatial variation in *Alternaria* spore concentration in Detroit." Poster presentation. Undergraduate Research Opportunity Program symposium, Ann Arbor, MI.
- Katz, D.S.W.** and I. Ibáñez. 2015. "Will biotic interactions determine temperate tree range expansion success?" Oral presentation: Organized oral symposium. Ecological Society of America, Baltimore, MD.
- T. Carey* and **Katz, D.S.W.** 2014. "Allergies on the rise: Spatial correlations between management, plant populations and airborne pollen concentrations for ragweed" Oral presentation. Ecological Society of America, Sacramento, CA.
- Katz, D.S.W.** and I. Ibáñez. 2014. "You can run but you can't hide: biotic interactions and range expansion" Oral presentation. Ecological Society of America, Sacramento, CA.
- Katz, D.S.W.** 2014. "Biotic interactions and range expansion dynamics" Oral presentation. Michigan Academy of Science Arts and Letters, Oakland, MI.
- Katz, D.S.W.** and I. Ibáñez. 2013. "The impact of biotic interactions on seedling recruitment during tree range expansion" Oral presentation: Organized oral symposium. Ecological Society of America, Minneapolis, MN.
- Katz, D.S.W.** 2013. "Can agricultural biodiversity buffer against climate variability?" Oral presentation. Michigan Academy of Science Arts and Letters, Holland, MI.
- Katz, D.S.W.** and I. Ibáñez. 2012. "Range expansion of plants in response to climate change" Poster presentation. Ecological Society of America, Portland, OR.
- Ennis, K., **Katz, D.S.W.**, T. Ong, L. Cline, Y.J. Su, B. Li, D. Gonthier, I. Perfecto, and B. Cardinale. 2012. "Crop diversity and yield stability: Do polycultures buffer against climate variability?" Oral presentation. Ecological Society of America, Portland, OR.
- Katz, D.S.W.** and T. Carey*. 2012. "Allergenic pollen in the urban environment" Oral presentation. Michigan Academy of Science Arts and Letters, Alma, MI.
- Katz, D.S.W.** and I. Ibáñez. 2011. "Is the grass greener on the other side? Range expansion and enemy release" Oral presentation. Ecological Society of America, Austin, TX.
- Carey, T.* and **Katz, D.S.W.** 2011. "Pollen and public health: A citizen science project" Poster presentation. Ecological Society of America, Austin, TX.

Katz, D.S.W. 2011. “The potential for tree range expansion in response to climate change” Oral presentation. Michigan Academy of Science Arts and Letters, Saginaw, MI.

Katz, D.S.W. and I. Ibáñez. 2010. “Frost and flowers: how will climate change effect spring frost damage in North America?” Oral presentation. Ecological Society of America, Pittsburgh, PA.

*coauthor is an undergraduate mentee

Invited presentations and guest lectures

“Human –environment interactions and allergenic pollen.” 2/7/16. Guest lecture: Environment and Society (ENV 105), Washtenaw Community College.

“Alternate stable states and novel ecosystems.” 12/2/15. Guest lecture: Ecological Systems – Concepts and Applications (NRE 509), University of Michigan.

“Climate change, fragmentation, and invasive species in Michigan.” 9/8/15. Invited presentation: Steward’s Circle, Ann Arbor Natural Areas Presentation.

Service & Affiliations

- 2010-2014, 2016-2018: Michigan Undergraduate Research Opportunity Program – Mentor and Supervisor
 - 2010-2018: Ecological Society of America – Member
 - 2011-2014: Michigan Academy of Science Arts and Letters – Plant Ecology Section Chair
 - 2012-2013: SNRE Promotion and Tenure Committee – Member
- Reviewer for: *Journal of Ecology*, *Ecography*, *Ecosphere*, *Pest Management Science*, *PLOS One*, *Restoration Ecology*, *BioScience*, *Oecologia*, *Journal of the Torrey Botanical Society*

Teaching and mentoring

- Fall 2014 & 2015 **University of Michigan**, Course Coordinator Ann Arbor, MI
- Assisted with the creation and implementation of NRE 509: Ecological Systems – Concepts and Applications, the largest field class in departmental history.
 - Oversaw the efforts of six graduate student instructors each semester, assisted with curriculum development and implementation, worked with students to develop independent projects, and arranged logistics for the lab component of this class of ~90 students.
- 2010-2018 **University of Michigan**, Supervisor and Mentor Ann Arbor, MI
- Supervisor and mentor of five undergraduate students through the Undergraduate Research Opportunity Program at the University of Michigan.
 - Currently working with a non-traditional undergraduate student to quantify spatial heterogeneity in *Alternaria* spore concentration in Detroit.
 - Worked with one student to create an educational outreach program in a Detroit high school. This project investigated spatial variation in allergenic pollen production as a function of land use. This work was presented at the Undergraduate Research Symposium at the University of Michigan and mentee received a competitive travel grant from SEEDS to present this work at the 2011 and 2012 Ecological Society of America meetings. Mentee subsequently received the prestigious SEEDS fellowship and the results have been published in peer-reviewed journals.
 - Investigated plant-animal interactions in the context of tree range expansion with an additional student. This work was presented at the Undergraduate Research Symposium at the University of Michigan.
 - Determined spatial heterogeneity in the impacts of deer on tree seedlings using automatic trail cameras with two other undergraduate students.

- 2013-2014 **University of Michigan**, Ecological Education Consultant Ann Arbor, MI
- Assisted with curriculum development for 7th graders in Ann Arbor public schools for a unit focusing on the impacts of climate change on Michigan forests.
- Winter 2010 & 2011 **University of Michigan**, Graduate Student Instructor Ann Arbor, MI
- Taught two sections of EEB 315: Ecology and Evolution of Infectious Diseases.
 - Led 68 students in discussions, computer labs, and wet labs over two semesters.

Experience

- 2011-2013 **National Science Foundation**, Distributed Graduate Seminar Participant Ann Arbor, MI
- Participant in the NSF sponsored Dimensions of Biodiversity Seminar.
 - Collaborated with six UM graduate students and two professors to investigate the relationship between agricultural diversity and resilience to extreme growing conditions.
- 2006-2010 **Cary Institute of Ecosystem Studies**, REU Student, Student Researcher Millbrook, NY
- Conducted independent research project, leading to a presentation, poster, and scientific paper.
 - Performed all phases of research, including project design, fieldwork, lab work, data analysis, presentation, and publication.
 - Investigated changes in forest composition and soil chemistry over the past 22 years as a result of insect herbivory, invasive species, and anthropogenic influences.
- Summer 2009 **Boston University**, Research Assistant San Saba, TX
- Investigated the pest consumption services provided by bats in pecan orchards.
 - Monitored local and regional bat populations using sophisticated thermal imaging techniques, acoustic detectors, mist netting, and radio tracking.
- Fall 2008 **Progressive Future**, Community Organizer PA, NH, CO
- Worked to elect Senator Barack Obama and other key Democratic legislators.
 - Organized and participated in canvasses to sway undecided voters, recruited and coordinated volunteers, and led “get out the vote” efforts in four precincts of Greeley, Colorado.
- Summer 2008 **Cornell University**, Research Assistant Ithaca, NY
- Developed a case study of “EcoAgriculture” in central New York: designed project, reviewed literature, interviewed experts, obtained data and ultimately created a spatially explicit (GIS based) model of pollination dynamics in apple orchards, as a function of surrounding land use.
 - Assisted with the final phases of a long term investigation of the effects of phosphorus enrichment on plant biodiversity in fens.
- 2007-2008 **We Love LEDs**, Entrepreneur and Business Co-Founder Hong Kong
- Collaborated with a successful entrepreneur to found We Love LEDs, an online retailer of high efficiency, environmentally friendly LED light bulbs.
 - Designed and constructed company website, formulated and implemented business strategies, directed marketing and outreach, and handled customer service.
- 2007 **Natural Resources Group**, Research Assistant New York, NY
- Worked with this internationally recognized branch of the New York City Park Department to complete a \$100,000 grant funded by the EPA.
 - Collected a season of field data on benthic invertebrates and riparian vegetation, analyzed the entire four year dataset, produced a set of recommendations for future restoration work along the Bronx River, wrote a final report and submitted it to the EPA.
 - Assisted with the creation of the Bronx River wetlands website.
- 2005-2007 **EcoDiscoverers**, Program Co-Director Annandale, NY
- Led the environmental education program EcoDiscoverers, a project devoted to educating youth about nature, science, and the outdoors.

- Organized weekend expeditions for groups of up to 20 children aged 8-15, designed lesson plans, coordinated volunteers, and maintained a fun and safe learning environment.

Summer 2005

Harvard Forest Research Experience for Undergraduates, REU Student Petersham, MA

- Used aerial photographs and GPS technology to locate research plots across Massachusetts, identified vascular plants, recorded the abundance of invasive plant species, took soil profiles, noted historical land use, determined forest characteristics.
- Gave a presentation based on data collected by the Forest Harvest Project, entitled “The Effects of Forest Harvesting on Invasive Plants in Massachusetts.”