

Matthew C. Fitzpatrick

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Education

- PhD, Ecology and Evolutionary Biology, University of Tennessee (2008)
- MS, Environmental Science, University of Montana (2003)
- BS, Mechanical Engineering, The Pennsylvania State University (1997)

Appointments

- Distinguished Visiting Researcher*, CSIRO Land & Water, Canberra, AUS (2017-2018)
- Associate Professor*, UMCES-Appalachian Laboratory (2015-present)
- Assistant Professor*, UMCES-Appalachian Laboratory (2009-2015)
- Research Associate*, Harvard University (2009-2010)
- Postdoctoral Fellow*, Harvard Forest & University of Rhode Island (2008-2009)

Awards and fellowships

- UMCES President's Award for Science Application (2019)
- Marine Estuarine Environmental Science Professor of the Year (2013)
- US-IALE Outstanding Paper in Landscape Ecology – Honorable Mention (2012)
- Arthur Yates Dissertation Fellowship. University of Tennessee (2007-2008)
- Research Fellowship. Oak Ridge Institute for Science and Education (2004)

Editorial boards

- Subject Editor, *Ecography* (2011-2019)
- Associate Editor, *Diversity and Distributions* (2011-2015)
- Associate Editor, *Biological Invasions* (2009-2012)

External funding (Total funding of proposals with my participation 2004-2018: ~\$6 million)

Pending

Comprehensive assessment and evaluation of forest biodiversity vulnerability to environmental change in National Capital Region Parks. National Park Service. \$307,983; Co-PI; (2019-2022)

Current

RESEARCH-PGR: Genomic architecture of porous species boundaries: Implications for climatic adaptation and hybrid breeding. National Science Foundation. \$349,224; Co-PI; (2019-2023)

Spatial analysis and modeling to inform management priorities for working forests in the eastern U.S. Natural Resource Conservation Service. \$288,943; CoPI; (2017-2022)

Collaborative Research: Evolutionary responses to climate change at range limits: adaptation, migration, and population size at the core, margin, and trailing edge. National Science Foundation. \$508,644; PI; (2017-2020)

Testing the tests: a predictive framework to guide genome scans for locally adapted polygenic traits. National Science Foundation. \$56,386; Sen. Pers.; (2017-2020)

Managing forests for sustainable harvest and wildlife habitat using earth observations and modeling of forest structure and landscape connectivity. National Aeronautics and Space Administration. \$425,728; CoPI; (2017-2020)

Previous

Collaborative research: Combining genomics, remote sensing, and geospatial modeling to understand adaptation to growing season length in balsam poplar. National Science Foundation. \$1,495,713; CoPI; (2013-2018)

Conduct geospatial analyses to assess habitat connectivity throughout the length of C&O Canal National Historic Park. National Park Service. \$35,000; CoPI; (2017-2018)

Collaborative research: Incorporating biotic interactions into models of species assemblages under climate change: A comparison of single-species and community-level approaches. National Science Foundation. \$326,780; Lead PI; (2013-2016)

Assessment of climate change impacts on key terrestrial ecosystems and species in the Arabian Gulf countries. Environmental Agency Abu Dhabi & Climate Change Research Group. \$130,169; PI; (2015-2016)

Supplement to IOS-1238885: Field-testing accelerometers to study landscape phenomics: A citizen-scientist pilot study. National Science Foundation. \$5,236; CoPI; (2016)

Population genomics of bats killed by wind turbines in the central Appalachians. Maryland Depart. of Natural Resources Power Plant Research Program. \$40,000; CoPI; (2015-2016)

Assessing potential migration pathways and changes in effective population size of hoary bat populations in the central Appalachians. Maryland Department of Natural Resources Power Plant Research Program. \$40,000; CoPI; (2014-2016)

License for Google Map Engine. Google Earth for Educators grant program. Fee waiver; PI (2014-2016)

Sampling to support an isotopic and genetic assessment of red bats in Maryland. Maryland Depart. of Natural Resources Power Plant Research Program. \$25,000; CoPI; (2014-2015)

Modeling coastal vulnerability for tidal reaches of the Potomac and Anacostia Rivers. National Park Service. \$423,000; CoPI; (2010-2015)

A biologically-optimized environmental classification of Maryland streams: Assessing impacts of stream burial and responses to climate change. NOAA Maryland Sea Grant. \$138,842 (plus 2-year student fellowship); PI; (2012-2014)

How representative are wind-turbine killed red bats of the broader population in Maryland? An Isotopic and genetic assessment. Maryland Department of Natural Resources Power Plant Research Program. \$40,000; CoPI; (2013-2014)

Continuing isotopic and genetic assessment of the impacts of wind-turbine mortality on bat populations in the central Appalachians. Maryland Department of Natural Resources Power Plant Research Program. \$40,000; CoPI; (2012-2014)

Review of climate change impacts on key terrestrial ecosystems and species in the Arabian Gulf countries. Environmental Agency Abu Dhabi & Climate Change Research Group. \$4,000; PI; (2012)

A preliminary isotopic and genetic investigation of the impacts of wind-turbine mortality on bat populations in the central Appalachians. Maryland Department of Natural Resources Power Plant Research Program. \$40,000; CoPI; (2011-2013)

Improving forecasts of species responses to climatic change: Hierarchical Bayesian analysis of tree distributions across space and time. Depart. of Energy. \$163,145; PI; (2009-2011)

Modeling the spread of Hemlock Woolly Adelgid using Graph-Theory-Based Network Analysis. National Science Foundation. \$9,894; Sen. Pers. (2010)

Climate change, seed dispersal mutualisms and the future of biodiversity in Western Australia. National Science Foundation. \$5000; PI; (2006; declined)

An assessment of landscape connectivity for grizzly bears in the Greater Yellowstone Ecosystem. Yellowstone to Yukon Initiative. \$4,000; PI; (2004)

Publications (H-index = 28, i10-index = 42, total citations = 3957)

([†]Undergraduate student, ^{*}Graduate student or postdoctoral advisee)

Wainger L, Fox J, Aplet G, Bonneau J, Chauvenet A, Damschen E, **Fitzpatrick MC**, Fletcher R, Gazenski K, Klein M, Lee T, Lohner T, Madsen R, Meiers J, Picardi A, Possingham H, Rao N, Urban D, Walker J, Wilcove D (in review) Bridging the research-practice gap in voluntary corporate biodiversity conservation. *Solutions*

2019

Fitzpatrick MC, Dunn RR (2019) Contemporary climatic analogs for 540 North American urban areas in the late 21st century. *Nature Communications* 10:614 [Altmetric score: 1209 \(Top 1%\), covered by over 700 media outlets globally.](#)

2018

Gougherty AV^{*}, Keller SR, Kruger A, Stylinski CD, Elmore AJ, **Fitzpatrick MC** (2018) Estimating tree phenology from high frequency tree movement data. *Agricultural and Forest Meteorology* 263:217-224

Fitzpatrick MC, Keller SR, Lotterhos KE (2018) Comment on: Genomic signals of selection predict climate-driven population declines in a migratory bird. *Science* 361:eaat7279

Fitzpatrick MC[†], Blois JL[†], Williams JW, Nieto-Lugilde D, Maguire KC, Lorenz D (2018) How will climate novelty influence ecological forecasts? Using the Quaternary to assess future reliability. *Global Change Biology* 24:3575–3586 [†][Authors contributed equally](#)

Ellison AM, Orwig DA, **Fitzpatrick MC**, Preisser E (2018) The past, present, and future of the hemlock woolly adelgid (*Adelges tsugae*) and its ecological interactions with eastern hemlock (*Tsuga canadensis*) forests. *Insects* 9:172

Arnan X, Andersen AN, Parr CL, Sanders NJ, Dunn RR, Angulo E, Baccaro F, Bishop T, Castracani C, Cerda X, Del Toro I, Delsinne T, Donoso, DA, Elten E, Fayle T, **Fitzpatrick MC**, Gomez C, Grasso D, Grossman B, Guenard B, Gunawardene N, Heterick B, Hoffmann B, Janda M, Jenkins C, Klimes P, Lach L, Laeger T, Leponce M, Lucky A, Majer J, Menke SB, Mezger D, Mori A, Moses J, Munyai T, Paknia O, Pfeiffer M, Philpott S, Souza J, Tista M, Vasconcelos H, Retana J (2018) Dominance–diversity relationships in ant communities differ with invasion. *Global Change Biology* 24:4614–4625

2017

Johnston MR*, Elmore AJ, Mokany K, Lisk M, **Fitzpatrick MC** (2017) Field-measured variables outperform derived alternatives in stream biodiversity models. *Diversity & Distributions* 23:1054–1066

Nieto-Lugilde D*, Maguire KC, Blois JL, Williams JW, **Fitzpatrick MC** (2017) Multispecies algorithms for community-level modeling: review of theory, applications, and comparison to species distribution models. *Methods in Ecology & Evolution* 9:834–848

Keller SR, Chhatre V, **Fitzpatrick, MC** (2017) Influence of range position on locally adaptive gene-environment associations in *Populus* flowering time genes. *Journal of Heredity* 109:47–58

Katzner TE, Nelson DM, Braham MA, Doyle JM, Fernandez NB, Duerr AE, Bloom PH, **Fitzpatrick MC**, Miller TA, Culver RCE, Braswell L, DeWoody JA (2017) Golden eagle fatalities and the continental-scale consequences of local wind-energy generation. *Conservation Biology* 31:406–415

Gibb *et al.* (2017) A global database of ant species abundances. *Ecology* 98:883–884

Parr CL, Dunn RR, Sanders NJ, Weiser MD, Photakis M, Bishop TR, **Fitzpatrick MC**, Arnan X, Baccaro F, Brandão CRF, Chick L, Donoso, DA, Fayle TM, Gómez C, Grossman B, Munyai TC, Pacheco R, Retana J, Robinson A, Sagata K, Silva RR, Tista M, Vasconcelos H, Yates M, Gibb H (2017) GlobalAnts: a new database on the geography of ant traits (Hymenoptera: Formicidae). *Insect Conservation and Diversity* 10:5–20

2016

Lorenz DJ, Nieto-Lugilde D*, Blois JL, **Fitzpatrick MC**, Williams JW (2016) Downscaled and debiased climate simulations for North America from 21,000 years ago to 2100 AD. *Scientific Data* 3:160048

Maguire KC[†], Nieto-Lugilde D^{*†}, Blois JL, **Fitzpatrick MC**, Williams JW, Ferrier S, Lorenz DJ (2016) Controlled comparison of species- and community-level models across novel climates and communities. *Proc. of the Royal Society:Series B* 283:20152817 [†][Authors contributed equally](#)

Pylant C*, Nelson DM, **Fitzpatrick MC**, Gates JE, Keller SR (2016) Geographic origins and population genetics of bats killed at wind-energy facilities. *Ecological Applications* 26:1381–1395

2015

Fitzpatrick MC, Keller SR (2015) Ecological genomics meets community-level modeling of biodiversity: Mapping the genomic landscape of current and future environmental adaptation. *Ecology Letters* 18:1–16 [Faculty of 1000 recommendation](#)

Nieto-Lugilde D*, Maguire KC, Blois JL, Williams JW, **Fitzpatrick MC** (2015) Close agreement between pollen-based and forest inventory-based models of vegetation turnover. *Global Ecology & Biogeography* 24:905–916

Maguire KC, Nieto-Lugilde D*, **Fitzpatrick MC**, Williams JW, Blois JL (2015) Modeling species and community responses to past, present, and future episodes of climatic and ecological change. *Annual Review of Ecology, Evolution, and Systematics* 46:343–368

Gibb H, Sanders NJ, Dunn RR, Watson S, Photakis M, Abril S, Andersen AN, Angulo E, Armbrrecht I, Arnan X, Baccaro FB, Boulay R, Castracani C, Del Toro I, Delsinne T, Diaz M, Donoso DA, Enríquez ML, Fayle TM, Feener DH, **Fitzpatrick MC**, Gómez C, Grasso DA, Groc S, Heterick B, Hoffmann BD, Lach L, Lattke J, Leponce M, Lessard JP, Longino J, Lucky A, Majer J, Menke SB, Mezger D, Mori A, Paknia O, Pearce-Duvet J, Pfeiffer M, Philpott S, de Souza JLP, Tista M, Vonshak M, Parr CL (2015) Climate regulates the effects of disturbance on ant assemblage structure. *Proceedings of the Royal Society:Series B* 282:20150418

2014

Gavin DG, **Fitzpatrick MC**, Gugger P, Heath K, Rodríguez-Sánchez F, Dobrowski S, Hampe A, Hu F, Ashcroft M, Bartlein P, Blois J, Carstens B, Davis E, de Lafontaine G, Edwards M, Fernandez M, Henne P, Herring E, Holden ZA, Kong W, Liu J, Magri D, Matzke NJ, McGlone MS, Saltré F, Stigall AL, Tsai YE, Williams JW (2014) Climate refugia: joint inference from fossil records, species distribution models and phylogeography. *New Phytologist* 204:37–54

Ferrari J, Preisser EL, **Fitzpatrick MC** (2014) Modeling the spread of invasive species using dynamic network models. *Biological Invasions* 16:949–960

Landesman WJ, Nelson DM, **Fitzpatrick MC** (2014) Soil properties and tree species drive beta-diversity of soil bacterial communities. *Soil Biology & Biochemistry* 76:201–209

2013

Fitzpatrick MC, Sanders NJ, Normand S, Svenning JC, Ferrier S, Gove A, Dunn RR (2013) Environmental and historical imprints on beta-diversity: Insights from variation in rates of species turnover along gradients. *Proceedings of the Royal Society:Series B* 280, art. 1768 [Faculty of 1000 recommendation](#)

Fitzpatrick MC, Gotelli NJ, Ellison AM (2013) Maxent vs. Maxlike: Empirical comparisons with ant species distributions. *Ecosphere* 4:art55

Blois JL, Zarnetske PL, **Fitzpatrick MC**, Finnegan S (2013) Climate change and the past, present, and future of biotic interactions. *Science* 341:499–504

Blois JL, Williams JW, **Fitzpatrick MC**, Jackson ST, Ferrier S (2013) Space can substitute for time in predicting climate-change effects on biodiversity. *Proceedings of the National Academy of Sciences* 110:9374–9379

Record S*, **Fitzpatrick MC**, Finley A, Veloz S, Ellison AE (2013) Should species distribution models account for spatial autocorrelation? A test of model projections across eight millennia of climate change. *Global Ecology and Biogeography* 22:760–771

Elmore AJ, Julian JP, Guinn SM, **Fitzpatrick MC** (2013) Potential stream density in mid-Atlantic watersheds. *PLoS ONE* 8:e74819

Blois JL, Williams JW, **Fitzpatrick MC**, Ferrier S, Veloz S, He F, Lui Z, Manion G, Otto-Bliesner B (2013) Modeling the climatic drivers of spatial patterns in vegetation composition since the Last Glacial Maximum. *Ecography* 36:460–473

2012

Fitzpatrick MC, Preisser EL, Porter A, Elkinton J, Ellison AE (2012) Modeling range dynamics in heterogeneous landscapes: Invasion of the hemlock woolly adelgid in eastern North America. *Ecological Applications* 22:472–486

Broennimann O[†], **Fitzpatrick MC**[†], Pearman P[†], Petit-Pierre B, Pellissier L, Yoccoz NG, Thuiller W, Fortin M-J, Randin C, Zimmermann N, Graham C, Guisan A (2012) Measuring ecological niche overlap from occurrence and spatial environmental data. *Global Ecology and Biogeography* 21:481–497 [†]Authors contributed equally

2011

Fitzpatrick MC, Sanders NJ, Ferrier S, Longino JT, Weiser MD, Dunn RR (2011) Forecasting the future of biodiversity: a test of single- and multi-species models for ants in North America. *Ecography* 34:836–847

Jenkins CN, Andersen AN, Arnan X, Brühl CA, Cerda X, Ellison AM, Fisher BL, **Fitzpatrick MC**, Gotelli NJ, Gove AD, Lattke JE, Lessard JP, McGlynn TP, Menke SB, Parr CL, Philpott SM, Sanders NJ, Weiser MD, Dunn RR (2011) Exploring the limits to our knowledge of ant diversity in light of climate change. *Diversity and Distributions* 17:652–662

Belote T, Prisley S, Jones R, **Fitzpatrick MC**, de Beurs K. (2011) Forest productivity and tree diversity relationships depend on ecological context within mid-Atlantic and Appalachian forests. *Forest Ecology and Management* 261:1315–1324

Turner JL[‡], **Fitzpatrick MC**, Preisser EL (2011) Simulating the dispersal of hemlock woolly adelgid (Hemiptera: Adelgidae) in the temperate forest understory. *Entomologia Experimentalis et Applicata* 141:216–223

2010

Fitzpatrick MC, Preisser EL, Porter A, Elkinton J, Waller LA, Carlin BP, Ellison AE (2010) Ecological boundary detection using Bayesian areal wombling. *Ecology* 91:3448–3455

Svenning JC, **Fitzpatrick MC**, Normand S, Graham CH, Pearman PB, Iverson LR, Skov F (2010) Geography, topography, and history affect realized-to-potential tree species richness patterns in Europe. *Ecography* 33:1070–1080 [Faculty of 1000 recommendation](#); [2012 US-IALE Outstanding Paper in Landscape Ecology \(Honorable Mention\)](#)

2009

Ingwell L, Brady J, **Fitzpatrick MC**, Maynard B, Casagrande R, Preisser E (2009) Intraspecific variation in *Tsuga canadensis* foliar chemistry. *Northeastern Naturalist* 16:585–594

Fitzpatrick MC, Preisser E, Ellison AE, Elkinton J (2009) Observer bias and the detection of low-density populations. *Ecological Applications* 19:1673–1679

Fitzpatrick MC, Hargrove WW (2009) The projection of species distribution models and the problem of non-analog climate. *Biodiversity and Conservation* 18:2255–2261

Gove A, **Fitzpatrick MC**, Majer JD, Dunn RR (2009) Dispersal traits linked to range size through range location, not dispersal ability in Western Australian angiosperms. *Global Ecology and Biogeography* 18:596–606

Dunn, RR, Agosti D, Andersen A, Arnan X, Bruhl C, Cerdá X, Ellison A, Fisher B, **Fitzpatrick MC**, Gibb H, Gotelli NJ, Gove AD, Guenard B, Janda M, Kaspari M, Laurent EJ, Lessard JP, Longino JT, Majer JD, Menke SB, McGlynn TP, Parr CL, Philpott SM, Pfeiffer M, Retana J, Suarez AV, Vasconcelos HL, Weiser MD, Sanders NJ (2009) Climatic drivers of hemispheric asymmetry in global patterns of ant species richness. *Ecology Letters* 12:324–333

2008

Fitzpatrick MC, Dunn RR, Sanders NJ (2008) Datasets matter, but so do evolution and ecology. *Global Ecology and Biogeography* 17:562–565

Fitzpatrick MC, Gove AD, Sanders NJ, Dunn RR (2008) Climate change, plant migration and range collapse in a global biodiversity hotspot: the *Banksia* (Proteaceae) of Western Australia. *Global Change Biology* 14:1337–1352

2007

Fitzpatrick MC, Weltzin JF, Sanders NJ, Dunn RR (2007) The biogeography of prediction error: why does the introduced range of the fire ant over-predict its native range? *Global Ecology and Biogeography* 16:24–33

Sanders NJ, Weltzin JF, Crutsinger GM, **Fitzpatrick MC**, Nuñez MA, Oswalt CM, Lane KE (2007) Multiple controls on a plant invasion: Insects mediate the interactive effects of propagule supply and resource availability. *Ecology* 88:2383–2391

Sanders NJ, Lessard JP, **Fitzpatrick MC**, Dunn RR (2007) Temperature, but not productivity or geometry, predicts elevational diversity gradients in ants across spatial grains. *Global Ecology and Biogeography* 16:640–649

Dunn RR, Sanders NJ, **Fitzpatrick MC**, Laurent E, Lessard JP, Agosti D, Andersen AN, Bruhl C, Cerda X, Ellison AM, Fisher BL, Gibb H, Gotelli NJ, Gove A, Guenard B, Janda M, Kaspari M, Longino JT, Majer J, McGlynn TP, Menke SB, Parr CL, Philpott SM, Pfeiffer M, Retana J, Suarez AV, Vasconcelos, HL (2007) Global ant biodiversity and biogeography – A new database and its possibilities. *Myrmecological News* 10:77–83

Book chapters

Fitzpatrick MC, Ellison AM (2018) Estimating the exposure of carnivorous plants to rapid climate change. In: *Carnivorous plants: physiology, ecology, and evolution*. Edited by Ellison, AM, Adamec L. Oxford University Press

Dunn RR, **Fitzpatrick MC** (2012) Every Species is an Insect (or Nearly So): On insects, climate change, extinction and the biological unknown. In: *Saving a Million Species: Extinction Risk from Climate Change*. Edited by Hannah L

Sanders NJ, Dunn RR, **Fitzpatrick MC**, Carlton CE, Pogue MR, Parker CR, Simons TR (2009) Diverse elevational diversity gradients in Great Smoky Mountains National Park, USA. In: *Data Mining for Global Trends in Mountain Biodiversity*. Edited by Körner C, Spehn E

Fitzpatrick MC, Weltzin JF (2005) Ecological niche models and the geography of biological invasions: A review and a novel application. In: *Invasive plants: Ecological and Agricultural Aspects*. Edited by Inderjit

Reports

Fitzpatrick MC, Pradhan K*, Lisk M (2016) Terrestrial Biodiversity and climate change. Final Technical Report from Environmental Agency Abu Dhabi's (AGEDI) Local, National, and Regional Climate Change Programme

Elmore AJ, Cadol D*, Guinn SM, Sanders GM, Engelhardt KAM, **Fitzpatrick MC** (2015) Spatially Explicit Modeling of Coastal Vegetation Change Associated with Projected Sea Level Rise The Potomac Estuary. Natural Resource Data Series. NPS/NCRN/NRR-2015/1034. National Park Service, Fort Collins, Colorado.

Conn C, Claggett S, Drake B, Dunn J, **Fitzpatrick MC**, Hairston-Strang A, Inouye D, Limpert D, Miles W, Samson D, Sprague E (2011) Forests and terrestrial ecosystems. In Boicourt K and Johnson ZP (eds) Comprehensive Strategy for Reducing Maryland's Vulnerability to Climate Change, Phase II: Building societal, economic, and ecological resilience.

Serveiss V, Catanzaro D, **Fitzpatrick MC**, Hargrove WW, Eskew D (2008) Predicting future introductions of nonindigenous species to the Great Lakes. National Center for Environmental Assessment, Washington, DC. EPA/600/R-08/066F

Book reviews

Fitzpatrick MC (2011) Understanding the distribution of life on Earth in an age of phylogenetic systematics. *Landscape Ecology* 26:1049–1050

Fitzpatrick MC, Weltzin JF (2005) Characterizing ecosystem response to climate variability. *Global Ecology and Biogeography* 14:600–601

Products

Software

Fitzpatrick MC, Lisk M, Mokany K, Manion G, Ferrier S (2018) *gdm: Generalized Dissimilarity Modeling*. (<https://cran.r-project.org/web/packages/gdm/index.html>)

Web applications

Fitzpatrick MC (2018) *Urban area climate analog mapper*. (<https://fitzlab.shinyapps.io/cityapp/>)

Fitzpatrick MC, Lisk M (2015) *Maryland stream biodiversity mapper*. (<http://streammapper.al.umces.edu/streamsdiv.html>)

Recent teaching

Spatial Ecology
Landscape Ecology
Spatial Analysis and Modeling in R
Introduction to Geographic Information Systems

Graduate students

Current

Andy Gougherty, PhD exp 2019
Claire Nemes, PhD exp 2023

Previous

Kavya Pradhan, MS 2017
Miriam Johnston, MS 2014

Service on graduate student committees

Current

Elizabeth Green (FSU); Sam Jantz (UMD); Ian McFadden (UCLA); Mayda Nathan (UMD);
Carrie Perkins (UMD); Suzanne Marselis (UMD)

Previous

Caitlin Campbell (FSU); María Natalia Umaña (UMD); Roy Weitzell (UMCES); Brittany
Marsden (UMD); Kimberley Gardner (UMCES); Laura Smith (FSU); Cortney Pylant (FSU);
Lauren McChesney (UMCES)

Postdoctoral researchers

Diego Nieto-Lugilde (now a Professor at the University of Córdoba, Córdoba, Spain)
Sydne Record (co-advisor, now an Assistant Professor at Bryn Marw)
Dan Cadol (co-advisor, now an Assistant Professor at New Mexico Tech)

Undergraduate students

Kavya Pradhan (2014); Nicholas Arnold (2012); David Moon (2010, 2011); Eliza Ledwell
(2009); Jenna Turner (2009)

Invited talks, seminars, workshops

2018

Central Appalachian Spruce Restoration Initiative Meeting

2017

Australia National University; CSIRO Ecosystem Sciences; International Biogeography
Society

2016

SESYNC

2015

University of New Hampshire; University of Richmond, University of Maryland; University of Granada

2014

International Biogeography Society (Keynote); CSIRO Ecosystem Sciences; Maryland Department of Natural Resources; ESA-NSF Scaling-UP workshop

2013

Harvard Forest

2012

University of Maryland, West Virginia University; Maryland Water Quality Monitoring Council

2011

UMCES-Chesapeake Biological Laboratory; UMCES-Horn Point Laboratory

2008

UMCES-Appalachian Laboratory; Stanford fire ant workshop; Harvard Forest; Riederl Advances in Spatial Modeling workshop

2006

Oak Ridge National Laboratory, Environmental Sciences Division. Oak Ridge, TN

Conferences, Workshops and symposia organized

2017

Conference co-organizer: US-IALE annual conference, Baltimore, MD

2014

Workshop organizer, "Mapping streams and stream biodiversity in Maryland". NOAA Maryland Sea Grant and Maryland Water Quality Monitoring Council

Symposium co-organizer, "Modeling and mapping spatiotemporal patterns of stream biodiversity in the Chesapeake Bay watershed", Chesapeake Modeling Symposium, 28-29 May, Annapolis, MD

2013

Workshop co-leader, "Scaling UP: Population and Community Ecology - A Workshop for Early Career Scientists". Ecological Society of America and NEON. 4-7 June, Linthicum Heights, MD

Recent conference presentations (since 2016)

Blois JL, **Fitzpatrick MC**, Williams JW, Maguire KC, Nieto-Lugilde D, Williams JE (2018) The influence of cross-trophic associations on community structure at the end of the Pleistocene. American Society of Mammalogists, 25-29 June, Manhattan, KS

Fitzpatrick MC, Blois JL, Nieto-Lugilde D, Maguire KC, Williams JW (2017) How novel is too novel? Using the paleo-record to define the limits on projections of biodiversity under future climate. International Biogeography Society, 9-13 January, Tucson, AZ

Gougherty AV, Chhatre VE, Keller SR, and **Fitzpatrick MC** (2017) Adaptation corridors: integrating genetic information into the mapping of past and future climate corridors. International Biogeography Society, 9-13 January, Tucson, AZ

Gougherty AV, Chhatre VE, Keller SR, and **Fitzpatrick MC** (2017) Adaptation corridors: Integrating genetic information into the mapping of past and future climate corridors. US-International Association for Landscape Ecology, 9-13 April, Baltimore, MD

Pradhan K, **Fitzpatrick MC** (2017) Testing methods to account for biases when using presence-only data to model patterns of biodiversity. US-International Association for Landscape Ecology, 9-13 April, Baltimore, MD

Guinn SM, Elmore AJ, Cadol D, Engelhardt KAM, **Fitzpatrick MC**, Sanders G (2017) Predictions of coastal vegetation change associated with sea level rise. US-International Association for Landscape Ecology, 9-13 April, Baltimore, MD

Gougherty AV, Chhatre VE, Keller SR, **Fitzpatrick MC** (2017) Integrating genetic information and spatial modeling to estimate migration speeds through past and future climates. Ecological Society of America 6-11 August, Portland, OR

Campbell CJ, **Fitzpatrick MC**, Nelson DM (2017) Range-wide migratory movements of North American tree bats inferred from stable isotopes. Ecological Society of America 6-11 August, Portland, OR

Campbell CJ, **Fitzpatrick MC**, Nelson DM (2017) Range-wide migratory patterns of North American tree-roosting bats. North American Society for Bat Research 18-21 October, Knoxville, TN

Fitzpatrick MC, Blois JL, Nieto-Lugilde D, Maguire KC, Williams JW (2016) How novel is too novel? Using the paleo-record to define the limits on projections of biodiversity under future climate. Ecological Society of America, 07-12 August, Ft. Lauderdale, FL

Fitzpatrick MC, Keller SR, Chhatre V (2016) Incorporating climate adaptation into biogeographical models of species responses to climate change. International Biogeography Society, 4-8 May, Beijing, China

Gougherty AV, Chhatre VE, Keller SR, **Fitzpatrick MC** (2016) How did past climate change and current range patterns shape genetic patterns of balsam poplar (*Populus balsamifera*)? Ecological Society of America – Mid-Atlantic, 8-10 April, Kutztown, PA

Gougherty AV, Chhatre VE, Keller SR, **Fitzpatrick MC** (2016) How did past climate change and current range patterns shape genetic patterns of balsam poplar (*Populus balsamifera*)? Ecological Society of America 7-13 August, Ft. Lauderdale, FL

Fitzpatrick MC, Blois JL, Nieto-Lugilde D, Maguire KC, Williams JW (2016) How novel is too novel? Using the paleo-record to define the limits on projections of biodiversity under future climate. Ecological Society of America, 07-12 August, Ft. Lauderdale, FL

Fitzpatrick MC, Keller SR, Chhatre V (2016) Incorporating climate adaptation into biogeographical models of species responses to climate change. International Biogeography Society, 4-8 May, Beijing, China

Professional Service

Reviews for journals

American Journal of Botany; Biological Invasions; Biology Letters; CAB Reviews; Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources; Conservation Biology; Diversity & Distributions; Ecography; Ecology; Ecology Letters; Ecological Modelling; Ecological Monographs; Ecosphere; Frontiers in Ecology and the Environment; Global Change Biology; Global Ecology & Biogeography; Herpetologica; ICES Journal of Marine Science; Journal of Applied Ecology; Journal of Biogeography; Journal of Molluscan Studies; Methods in Ecology and Evolution; Molecular Ecology; Myrmecological News; Nature Climate Change; Nature Communications; PeerJ; Perspectives in Plant Ecology, Evolution, and Systematics; Proceedings of the National Academy of Sciences; PLOS One; Scientific Reports; Trends in Ecology & Evolution

Reviews for funding agencies

Macquarie University Research Fellowships; Maryland Agricultural Experiment Station; NOAA Maryland Sea Grant (*panel*); National Research Foundation, South Africa; National Science Foundation (*3 DEB panels to date*); Netherlands Organization for Scientific Research, Board of Science for Global Development (WOTRO); U.S. Civilian Research & Development Foundation

Departmental service

Chair, Animal Ecologist Faculty Hiring Committee (2018)
Chair, Ecologist Faculty Hiring Committee (2017)
Chair, Terrestrial Ecologist Faculty Hiring Committee (2016)
UMCES Computational Resources Evaluation Committee (2015-2017)
Vice President for Science Application Review Committee (2015)
Ecological Modeler Faculty Hiring Committee (2015)
UMCES Faculty Senate (2012-2017)
UMCES Database Management Committee (2014-present)
Departmental Seminar Series organizer (2011, 2015)
UMCES Accreditation Self Study Working Group (2014)
UMCES MEES Curriculum Task Force (2013)
UMCES Faculty Convocation Co-organizer (2013)
MEES Colloquium Committee (2011)
Forest Ecologist Faculty Hiring Committee (2010)

State and regional service

NOAA Maryland Sea Grant Academic Advisory Committee (2014)

MADEClear Science Advisor (2013-present)

Member, *Maryland Commission on Climate Change, Adaptation: Forests and Terrestrial Ecosystems* (2009-2011)

Public service & outreach

WYPR FM88.1 *On The Record*. June 4, 2018 interview on trees, fossil pollen, and climate change.

Constellation Energy Community Champions Grant Recipient (\$500 donated to Bishop Walsh School)

Author of numerous newspaper editorials on the science of climate change. *The Republican* (newspaper). Oakland, MD

Invited instructor: The past, present, and future of climate change. (2017) Allegany College of Maryland Adult Education Program, Lifelong Learning Series. Cumberland, MD

Invited speaker: Biodiversity in a warming world: From the mountains of Maryland to the outback of Australia. (2013) Maryland Native Plant Society, Western Mountains Chapter. Frostburg, MD

Popular articles

Fitzpatrick MC (2006) Spotted coral root leads a shady life of deception. *The Missoulian*

Fitzpatrick MC (2005) Bitterbrush adds history to native plant gardens. *The Missoulian*

Fitzpatrick MC (2003) Sticky sundew catches more than just insects. *The Missoulian*

Fitzpatrick MC (2003) High Tide on Flathead Lake. Audio essay for Field Notes, *KUFM, Montana Public Radio*