# MICHAEL C. DIETZE

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**Academic Positions**

Boston University
  Full Professor, Department of Earth and Environment, 2021-present
  Associate Professor, Department of Earth and Environment, 2015-2021
  Assistant Professor, Department of Earth and Environment, 2012-2015
  Additional Affiliations: Biogeosciences program, URBAN program, Biology Department, Pardee Center for the Longer-Range Future, Hariri Center for Computing, Center for Emerging Infectious Diseases Policy & Research,
University of Illinois Urbana-Champaign
  Assistant Professor, Department of Plant Biology, 2008-2012.
  Additional Affiliations: Natural Resources and Environmental Sciences, Institute for Genomic Biology, Energy Biosciences Institute
Harvard University
  Postdoctoral Research Fellow, 2006 – 2008

**Education**

Duke University
  Ph.D., Ecology, April 2006
  Thesis: *Regeneration Dynamics in Large Forest Gaps*
Duke University
  B.S., Biology, 2000

**Honors**

ESA Ecological Forecasting Outstanding Publication Award -  2022

Web of Science Highly Cited Researcher - 2020, 2021

"Top Downloaded" papers in Ecosphere (2021), Reviews of Geophysics (2021)

NSF Distinguished Lecture - 2018

Top 10 most downloaded Global Change Biology Bioenergy papers in 2012

Top 25 most downloaded Global Change Biology papers in 2012

Giles-Keever Award, Duke Ecology Program, 2002

Lotka-Volterra Award, Ecological Society of America Theoretical Ecology Section, 2001

Excellence in Botany Award, Duke Botany Dept, 2000

NSF Predoctoral Fellowship – Honorable Mention, 2000

Howard Hughes Biology Forum -  Fellow, 1999

## Grants

31) **M Dietze** "Prototyping a Distributed, Asynchronous Workflow for Iterative Near-Term Ecological Forecasting" Red Hat Collaboratory 01/2023-12-2023 — $149,489

30) Paschalidis et al. (Dietze is Senior Personnel) "PIPP Phase I: Predicting and Preventing Epidemic to Pandemic Transitions" NSF PIIP 08/2022-01/2025 — $999,997

29) **M Dietze** "Harvard Forest carbon cycle forecasting: testbed and anchor" Harvard Bullard Fellowship 09/2022-08/2023 — $60,000

28) J Mclachlan, **M Dietze**, Stefano Castruccio "Collaborative Research: MRA: Evaluating hypotheses of long-term woody carbon dynamics with empirical data" NSF Macrosystems 09/22-08/27 — $533,255 of $1,478,736

27) **M Dietze**. S Serbin "Multisensor data assimilation to support terrestrial carbon cycle and disturbance Monitoring, Reporting, Verification, and Forecasting" NASA CMS 06/21-05/24 — $1,121,847

26) G Wardle, C Dickman, A Greenville, A Tulloch, T Newsome "Ecological forecasts of species response to fire, drought, and heatwaves" Australian Research Council 2021-2024 (involved as Senior Personnel) — $0 of $371,000AUS

25) Q Thomas, **M Dietze**, M Kenney, C Laney, J McLachlan "NEON RCN: The Ecological Forecasting Initiative RCN: Using NEON-enabled near-term forecasting to synthesize our understanding of predictability across ecological systems and scales." NSF 01/20-12/24 — $1,483 of $500,000

(24) **M Dietze**, H Lynch. "The Ecological Forecasting Initiative: An Interdisciplinary Conference" Sloan Foundation 08/2018-12/2019 — $50,000 of $50,000 total

(23) **M Dietze** "The Ecological Forecasting Initiative: An Interdisciplinary Symposium" Pardee Faculty Research Fellowship 09/2018-08/2021 — $10,000 of $10,000 total

(22) **M Dietze**, A. Matta Ecological Forecasting Cyberinfrastructure. Hariri Institute Research Award — $30,000 of $30,000 total

(21) **M Dietze**, S. Serbin, A. Andrews "A prototype data assimilation system for the terrestrial carbon cycle to support Monitoring, Reporting, and Verification" NASA CMS 11/2017 – 10/2020 — $521,807 of $1,049,739 total

(20) **M Dietze**, R Gallery, J McLachlan, R Vargas "Ecological Knowledge And Predictions: Integrating Across Networks And National Observatories" NSF OISE 09/2017 – 08/2019 — $41,443 of $50,000 total

(19) C. Staudhammer, M. Binford, A. Desai, **M. Dietze**, P. Duffy, R. Kelly, W. Kleindl, P. Stoy, C. Schultz "Collaborative Proposal: MSB-FRA: The future of US forest function under changing climate, disturbance, and forest management" NSF Macrosystems 07/2017 – 06/2022

$121,478 of $1,590,376 total

(18) **M Dietze**, J Talbot, S. LaDeau, K. Weathers "Collaborative Proposal: MSB-ENSA: The Near-term Ecological Forecasting Initiative" NSF Macrosystems 01/2017 – 12/2021

$1,148,858 of $1,704,663 total

(17) B. Allen, L. Flory, **M Dietze** "Climate change impacts on fire regimes, plant invasions and tick-borne disease exposure risk" DOD SERDP, 05/2016-04/2021

$521,537 of $2,453,879 total

(16) **M Dietze, *A. Shiklomanov** "Tracking successional dynamics of foliar traits using remote sensing" NASA NESSF 09/2016-08/2019

$90,000 of $90,000 total

(15) **M Dietze, *J Mantooth** "Dissertation Research: Linking Tree Demography and Nonstructural Carbon in Eastern US Forests" NSF DDIG 07/2015 – 06/2017-

$21,212 of $21,212 total

(14) **M Dietze**, A Desai, K McHenry "Collaborative Research: ABI Development: The PEcAn Project: A Community Platform for Ecological Forecasting" NSF ABI, 07/2015 – 06/2019

$487,861 of $1,164,442 total

(13) Lapenas, A. et al. "IDBR: TYPE A : Collaborative Research:  The NANAPHID:  A novel aphid-like nanosensor network for real-time measurements of carbohydrates in live plant tissue" NSF IDBR, 01/2015 – 01/2017

$33,818 of $797,705 total

(12) S. Serbin, **M. Dietze**, P. Townshend. "Assimilation of imaging spectroscopy data to improve the representation of vegetation dynamics in ecosystem models" NASA Terrestrial Ecosystems, 03/2014-03/2017

$192,048 of $503,929 total

(11) K. McHenry, **M. Dietze**, J. Lee, P. Kumar, B. Minsker  "CIF21 DIBBs – Brown Dog" NSF DIBBs 1261582, 11/2013-11/2018

$660,955 of $10,519,716 total

(10) C. Staudhammer, M. Binford, L. Boring, A. Desai, **M. Dietze**, P. Duffy, J. Franklin, G. Starr, P. Stoy "Collaborative Research: Building forest management into Earth system modeling: Scaling from stand to continent" NSF Macrosystems 1241894, 05/2013 - 04/2015

$249,358 of $1,212,300 total

(9) J. McLachlan, **M. Dietze**, P. Duffy, A. Finley, P. Higuera, M. Hooten, J. Marlon, D. Moore, N. Pederson, J. Williams, J. Zhu "Collaborative Research and NEON: PalEON2 – a PaleoEcological Observatory Network to assess terrestrial ecosystem models" NSF Macrosystems 1241891 05/2013-04/2018

$397,415 of $5,113,062 total

(8) **M. Dietze**, A. Leakey. "Sustainability of woody biofuel feedstocks" Energy Biosciences Institute 01/2012-12/2014.

$579,551 of $579,551 total

(7) J. Clark, **M. Dietze**, A. Finley, A Gelfand, J. Mohan, M. Uriarte. "Collaborative Research: Climate change impacts on forest biodiversity: individual risk to subcontinental impacts" NSF Macrosystems 1318164, 10/2011 to 9/2016

$619,668 of $4,273,484 total

(6) **M. Dietze**, C.E. Caceres, R.E. DeVille, M. Kantorovitz, Z. Rapti "UBM Group: Biomathematics Research and Training for Undergraduates at the University of Illinois Urbana-Champaign" NSF UBM 1129198, 08/2011 – 08/2014.

$239,586 of $239,586 total

(5) **M. Dietze**, A. Desai, K. McHenry. "Collaborative Proposal:ABI Innovation: Model-data synthesis and forecasting across the upper Midwest: Partitioning uncertainty and environmental heterogeneity in ecosystem carbon" NSF ABI 1062547, 05/2011-05/2014.

$674,945 or $770,653 total

(4) J. McLachlan, **M. Dietze**, C. Paciorek, J. Williams, S. Jackson, D. Foster. "Collaborative Research and NEON: PalEON – a PaleoEcological Observatory Network to assess terrestrial ecosystem models" NSF Macrosystems Biology 1346748. 05/2011-04/2013

$219,535 of $657,156 total

(3) F.S. Hu, M. Dietze, P. Higuera, P. Duffy. "Collaborative Research: Integrating paleoecological analysis and ecological modeling to elucidate the responses of tundra fire regimes to climate change" NSF Arctic Systems Science 1023477. 08/2010-07/2014

$680,022 of $1,136,634 total

(2) **M. Dietze**. "Regional Biofuel Modeling" Energy Biosciences Institute. 01/2009-12/2011.

$1,006,128 of $1,006,128 total

(1) **M. Dietze**. "Refined estimates of the eastern North American carbon budget: Multi-objective model calibration" NCSA Faculty Fellows Program, 8/2009-8/2010

$10,000 of $10,000 total

## Books

**Dietze, M**. 2017. Ecological Forecasting. Princeton University Press

## Publications

UNDERLINE DENOTES ADVISEE CO-AUTHOR

In prep  (146) **Helgeson A**, **K Zarada**, A Desai, **H Dokoohaki**, **L Dramko**, **M Dietze** "Near-term forecasting of terrestrial carbon and water pool fluxes" Methods in Ecology and Evolution *in prep* (special issue)

In review  (145) **Werbin Z, C Averill**, J Bhatnagar, **M Dietze** "Forecasting the soil microbiome at a continental scale" Science *in review*

(144) Record S, S Malone, S Albert, I Aston, JK Balch, M Balk, MG Betts, JL Blanchard, T Crimmins, **MC Dietze**, AJ Eichenwald, E Eloe-Fadrosh, R Fiorella, R Hensley, A Hudson,

V Jirinec, J Knott, SL LaDeau, D Luther, P Mabee, M Marshall, S Petruzza, AD Richardson, JM Rodriguez, D Rubenstein, S Serbin, I Shepard, ER Sokol, J Thoms, C Wall "Appropriate reuse of data relies on investment into FAIR principles by data providers and reusers" Scientific Data *in review*

(143) Murphy B,  C Rollinson, **M Dietze**, P Stoy, C Staudhammer, N vonHedemann, W Kleindl, C Schultz, A Desai "Management versus climate change as drivers of multi-decadal variability in forest function across two US regions" GCB *in review*

(142) Fizpatrick, L, B Murphy, M Midgley, A Desai, **M Dietze**, K Dreisilker, C Rollinson. "Harvest legacies and climate change interact to shape forest structure and biomass through time" Ecological Applications *in review*

(141) Kennedy R, Serbin S, CMS Uncertainty working group. 2022. "Characterizing and communicating uncertainty: lessons from NASA's Carbon Monitoring System" ERL in review

(140) **Foster J**, S LaDeau, R Ostfeld, K Oggenfuss, **M Dietze**  "A modified matrix model to describe the population dynamics for the primary vector of Lyme disease in North America" (news)

(139) **Wheeler K, Dietze MC.** "A Trigger May Not be Necessary to Cause Senescence in Deciduous Broadleaf Forests"

(138) **Dietze M**, EP White, A Abeyta, C Boettiger, N Bueno Watts, C Carey, R Chaplin-Kramer, R Emanuel, SKM Ernest, R Figueiredo, Renato MD Gerst, LR Johnson, MA Kenney, J McLachlan, IC Paschalidis, JA Peters, CR Rollinson, J Simonis, K Sullivan-Wiley, RQ Thomas, GM Wardle, A Willson, J Zwart. 2023. "Forecasting the Field of Ecological Forecasting" Nature Climate Change

(137) **Dietze M**, S Serbin, R Kennedy, BE Law. "Assimilating disturbance: Toward real-time monitoring and forecasting" Ecological Applications

(136) Hiatt D, W Dillon, A Gardner, S Cabrera, B Allan, **M Dietze**, **T McCabe**, BF Allan, and SL Flory. "Mechanistic pathways of tick exposure risk in native and invaded plant communities" Global Change Biology *in review*

(135) **Fer I**, **A Shiklomanov**, KA Novick, CM Gough, MA Arain, J Chen, B Murphy, AR Desai, **MC Dietze**. 2021. "Capturing site-to-site variability through Hierarchical Bayesian calibration of a process-based dynamic vegetation model" bioRxiv https://doi.org/10.1101/2021.04.28.441243

(134) **Dietze M, I Fer, T McCabe, E Cowdery**, A Desai, A Gardella, D LeBauer, A Raiho, S Serbin, **A Shiklomanov**. New methods for ecological forecasting and model-data integration. New Phytologist Tansley Insight *in revision*

2024 (133) **Wheeler K, M Dietze**, D LeBauer, Q Thomas, K Zhu, U Bhat, M Chen, R Floreani Buzbee, B Goldstein, J Guo, D Hao, C Jones, M Kelly-Fair, H Liu, C Malmborg, N Neupane, D Pal, J Peters, L Ries, A Richardson, A Ross, V Shirey, Y Song, M Steen, E Vance, W Woelmer, J Wynne, L Zachmann. 2024. "Predicting spring phenology in deciduous broadleaf forests: An open community forecast challenge" Ag Forest Met. *Volume 345:109810  https://doi.org/10.1016/j.agrformet.2023.109810* Preprint: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4357147

2023  (132) Qui et al [MASTIF team]. 2023. "Masting is uncommon in trees that depend on mutualist dispersers in the context of global climate and fertility gradients." *Nature Plants 9(7):1044-1056 http://doi.org/10.1038/s41477-023-01446-5*

(131) **Dietze MC**, RQ Thomas, J Peters, C Boettinger, **AN Shiklomanov**, and J Ashander. 2023. "A Community Convention for Ecological Forecasting: Output Files and Metadata" Ecosphere 14(11):e4686 https://dx.doi.org/10.1002/ecs2.4686 EcoEvoRxiv https://doi.org/10.32942/osf.io/9dgtq

(130) Bogdziewicz, Michał et al [MASTIF team] 2023 "Linking seed size and number to trait syndromes in trees" Global Ecology and Biogeography 32(5):683-694 DOI: 10.1111/geb.13652

(129) **Zhang D, MC Dietze**. 2023. "Towards Uninterrupted Canopy-Trait Time-series: A Bayesian Radiative Transfer Model Inversion Using Multi-Sourced Satellite Observations" Remote Sensing of Environment 287:113475 *https://doi.org/10.1016/j.rse.2023.113475*

(128) Thomas, R.Q., C. Boettiger, C.C. Carey, M.C. Dietze, L.R. Johnson, M.A. Kenney, J.S. Mclachlan, J.A. Peters, E.R. Sokol, J.F. Weltzin, A. Willson, W.M. Woelmer, and Challenge Contributors. 2022. The NEON Ecological Forecasting Challenge. Frontiers in Ecology and the Environment *21(3):112-113. https://doi.org/10.1002/fee.2616* Preprint: ESS Open Archive. https://www.doi.org/10.22541/essoar.167079499.99891914/v1

(127) Lewis ASL, CR Rollinson, AJ Allyn, J Ashander, S Brodie, CB Brookson, E Collins, **M Dietze**, AS Gallinat, N Juvigny-Khenafou, G Koren, D McGlinn, JA Peters, NR Record, CJ Robbins, J Tonkin, GM Wardle. 2023. "The power of forecasts to advance ecological theory" Methods in Ecology and Evolution 14(3):746-756 *http://doi.org/10.1111/2041-210X.13955*

(126) Halpern BS, C Boettiger, **MC Dietze**, et al. 2023 "Priorities for synthesis in ecology and environmental science" Ecosphere 14(1):e4342 *10.1002/ecs2.4342*

2022  (125) **Werbin ZR**, B Hackos, **MC Dietze**, JM Bhatnagar. "The National Ecological Observatory Network's soil metagenomes: assembly and basic analysis" F1000Research *in review https://doi.org/10.12688/f1000research.51494.2*

(124) Cameron D, F Hartig, F Minunno, J Oberpriller, B Reineking, M Van Oijen, **M Dietze** "Issues in calibrating models with multiple unbalanced constraints: the significance of systematic model and data errors" Methods in Ecology and Evolution 13(12):2757-2770 https://doi.org/10.1111/2041-210X.14002

(123) Journé V, et al. [MASTIF team] 2022 "Globally, tree fecundity exceeds productivity gradients" Ecology Letters 25(6): 1471-1482 *http://doi.org/10.1111/ele.14012*

(122) Qiu T, et. al. [MASTIF team] 2022 "Limits to reproduction and seed size-number trade-offs that shape forest dominance and future recovery" Nature Communications *13, 2381 https://doi.org/10.1038/s41467-022-30037-9*

(121) Lofton M, JA Brentrup, WS Beck, JA Zwart, R Bhattacharya, LS Brighenti, SH Burnet, IM McCullough, B Steele, CC Carey, KL Cottingham, **MC Dietze,** HA Ewing, KC Weathers, SL LaDeau. 2022. "Using near-term forecasts and uncertainty partitioning to improve predictions of low-frequency cyanobacterial events" Ecological Applications 32(5): e2590 *https://doi.org/10.1002/eap.2590*

*preprint: https://doi.org/10.1002/essoar.10510778.1*

(120) **Dokoohaki H**, B Morrison, A Raiho. S Serbin, **MC Dietze**. 2022 "A novel model–data fusion approach to terrestrial carbon cycle reanalysis across the contiguous U.S using SIPNET and PEcAn state data assimilation system v. 1.7.2" GMD 15:3233–3252 *https://doi.org/10.5194/gmd-2021-236*

(119) **Averill C**, C Fortunel, DS Maynard, **MC Dietze**, JM Bhatnagar, TW Crowther. 2022. "Alternative stable states of the forest mycobiome are maintained through positive feedbacks" Nature Ecology and Evolution *https://doi.org/10.1038/s41559-022-01663-9*

(118) Fisher  JB, M Sikka, GL Block, CR Schwalm, NC Parazoo, HR Kolus, M Sok, A Wang, A Gagne-Landmann, S Lawal, A Guillaume, A Poletti, KM Schaefer, B El Masri, PE Levy, Y Wei, **MC Dietze**, DN Huntzinger. "The JPL Terrestrial Biosphere Model 'Farm'" Journal of Advances in Modeling Earth Systems *14(2): e2021MS002676. 1-16 p.* https://doi.org/10.1029/2021MS002676

(117) Heilman, Kelly; **Dietze, Michael**; Arizpe, Alexis; Aragon, Jacob; Gray, Andrew; Shaw, John; Finley, Andrew; Klesse, Stefan; DeRose, Justin; Evans, Margaret. 2022. "Ecological forecasting of tree growth: regional fusion of tree-ring and forest inventory data to quantify drivers and characterize uncertainty" Global Change Biology 28(7):2442-2460 *https://onlinelibrary.wiley.com/doi/10.1111/gcb.16038*
**Winner of 2022 ESA Ecological Forecasting Outstanding Publication Award**

(116) Sharma S et al. [MASTIF team]. 2022. "North American tree migration paced by climate in the West, lagging in the East" PNAS 119(3):e2116691118 *https://doi.org/10.1073/pnas.2116691118*

2021   (115) Saifuddin M, RZ Abramoff, **MC Dietze**, EA Davidson, AC Finzi. "Identifying Data Needed to Reduce Parameter Uncertainty in a Coupled Microbial Soil C and N Decomposition Model" JGR-Biogeosciences 126(12):e2021JG006593 *http://dx.doi.org/10.1029/2021JG006593*

(114) Bodner K, CR Firkowski, J Bennett, **M Dietze**, S Green, J Hughes, J Kerr, M Kunegel-Lion, S Leroux, E McIntire, P Molnar, C Simpkins, E Tekwa, A Watts, MJ Fortin. 2021. Bridging the divide between ecological forecasts and environmental decision-making. Ecosphere 12(12):e03869  *http://dx.doi.org/10.1002/ecs2.3869*
**Ranked as a "Top Downloaded Article" in Ecosphere**

(113) Meunier, Félicien; Visser, Marco; **Shiklomanov, Alexey**; **Dietze, Michael;** Guzmán, J. Antonio; Sanchez-Azofeifa, Arturo; De Deurwaerder, Hannes; Krishna Moorthy, Sruthi M.; Schnitzer, Stefan; Marvin, David; Longo, Marcos; Chang, Liu; Broadbent, Eben; Zambrano, Angelica; Muller-Landau, Helene; Detto, Matteo; Verbeeck, Hans. 2021. "Liana optical traits increase tropical forest albedo and reduce ecosystem productivity" Global Change Biology 28(1):227-244. *https://doi.org/10.1111/gcb.15928*.

(112)  MEK Evans, DeRose RJ, S Klesse, MP Girardin, KA Heilman, MR Alexander, A Arsenault, F Babst, M Bouchard, SMP Cahoon, EA Campbell, **M Dietze**, L Duchesne, D Frank, C Giebink, A Gomez-Guerrero, G Gutiérrez García, S Armando Villela Gaytán, EH Hogg, J Metsaranta, C Ols, SA Rayback, A Reid, M Ricker, PG Schaberg, JD Shaw, PF Sullivan. "Adding Tree Rings to North America's National Forest Inventories: An Essential Tool to Guide Drawdown of Atmospheric CO2" BioScience, biab119 *https://doi.org/10.1093/biosci/biab119*

(111) Baatz, R.; Hendricks-Franssen, H-J.; Euskirchen, E.; Debjani, S.; **Dietze, M**.; Ciavatta,S.; Fennel, K.; Beck, Hylke; de Lannoy, G.; Pauwels, V.; Montzka, C.; Williams, M.; Mishra, U.; Van Looy, K.L.; Bogena, H.; Adamescu, M.; Fox, A.; Görgen, K.; Naz, B.; Zeng, Y.; Vereecken, H.; 2021. "Reanalysis in Earth System Science: Towards Terrestrial Ecosystem Reanalysis" Reviews of Geophysics 59, e2020RG000715 http://doi.org/10.1029/2020RG000715
**Ranked as a "Top Downloaded Article" in Reviews of Geophysics**

(110) **Terry C**, RB Primack, M Rothendler, L Zipf, **MC Dietze**. 2021. "Effects of the COVID-19 pandemic on noise pollution in three protected areas in metropolitan Boston (USA)" Biological Conservation, 256:109039 https://doi.org/10.1016/j.biocon.2021.109039

(109) **Averill C**, **ZR Werbin**, KF Atherton, JM Bhatnagar, **MC Dietze**. 2020. "Soil microbiome predictability increases with spatial and taxonomic scale" Nature Ecology and Evolution https://doi.org/10.1038/s41559-021-01445-9

(108) Oberpriller J, D Cameron, **MC Dietze**, F Hartig. 2020. "Towards a statistical theory for robust inference with complex computer simulations" Ecology Letters 24(6):1251-1261 *http://doi.org/10.1111/ele.13728*

(107) **Wheeler KI**, **MC Dietze**. "Improving the monitoring of deciduous broadleaf phenology using the Geostationary Operational Environmental Satellite (GOES) 16 and 17" Biogeosciences *18, 1971–1985, 2021 https://doi.org/10.5194/bg-18-1971-2021*

(106) Clark JS, R Andrus, M Aubry-Kientz, Y Bergeron, M Bogdziewicz, DC Bragg, D Brockway, NL Cleavitt, S Cohen, B Courbaud, E Crone, R Daley, AJ Das, **M Dietze**, TJ Fahey, **I Fer**, JF Franklin, CA Gehring, GS Gilbert, CH Greenberg, Q Guo, J Hille Ris Lambers, I Ibanez, J Johnstone, CL Kilner, J Knops, WD Koenig, G Kunstler, JM LaMontagne, KL Legg, J Luongo, J Lutz, D Macias, E McEntire, Y Messaoud, C Moore, E Moran, JA Myers, OB Myers, C Nunez, R Parmenter, S Pearson, S Pease, R Poulton-Kamakura, E Ready, MD Redmond, CD Reid, KC Rodman, CL Scher, WH Schlesinger, AM Schwantes, E Shanahan, S Sharma, M Steele, NL Stephenson, S Sutton, J Swenson, M Swift, TT Veblen, AV Whipple, TG Whitham, A Wion, K Zhu, R Zlotin. 2021. "Continent-wide tree fecundity driven by indirect climate effects" Nature Communications 12:1242. https://doi.org/10.1038/s41467-020-20836-3

(105) Zipkin EF, ER Zylstra, AD Wright, SP Saunders, AO Finley, **MC Dietze**, MS Itter, MW Tingley. 2020. "Linking ecological processes across scales with data integration" Frontiers in Ecology and the Environment 19(1):30-38 https://doi.org/10.1002/fee.2290

(104) Farrell KJ, KC Weathers, SH Sparks, JA Brentrup, CC Carey, **MC Dietze**, **JR Foster**, KL Grayson, JH Matthes, MD SanClements. 2021. "Training macrosystems scientists requires both interpersonal and technical skills" Frontiers in Ecology and the Environment *19(1):39-46* DOI: 10.1002/fee.2287

(103) **Rollinson CR**, A Dawson, AM Raiho, JW Williams **MC Dietze** T Hickler, ST Jackson, J McLachlan, DJP Moore, B Pouler, T Quaife, J Steinkamp, M Trachsel. 2021. "Forest responses to last-millenium hydroclimate variability are governed by spatial variations in ecosystem sensitivity" Ecology Letters 24(3):498-508  http://dx.doi.org/10.1111/ele.13667 Authora preprint https://doi.org/10.22541/au.160103349.96327473

(102) Meunier F, H Verbeeck, **E Cowdery,** S Schnitzer, C Smith-Martin, J Powers, X Xu, H De Deurwaerden, M Detto, M di Porcia e Brugnera, D Bonal, M Longo, M Slot, **MC Dietze**.

2021. "Unraveling the relative role of light and water competition between lianas and trees in tropical forests: A vegetation model analysis" Journal of Ecology 109(1):519-540 *http://dx.doi.org/10.1111/1365-2745.13540*

(101) Ely, Kim S., Alistair Rogers, Deborah A. Agarwal, Elizabeth A. Ainsworth, Loren P. Albert, Ashehad Ali, Jeremiah Anderson, et al. 2021. "A Reporting Format for Leaf-Level Gas Exchange Data and Metadata." Ecological Informatics 61: 101232. doi: 10.1016/j.ecoinf.2021.101232

(100) **Shiklomanov, AN**, **MC Dietze**, **I Fer**, T Viskari, SP Serbin 2020 "Cutting out the middle man: Calibrating and validating a dynamic vegetation model using remotely sensed surface reflectance" Geoscientific Model Development *14, 2603–2633,* *https://doi.org/10.5194/gmd-14-2603-2021*

2020    (99) Raiho A, **MC Dietze**, A Dawson, CR Rollinson, J Tipton, JS McLachlan. "Determinants of Predictability in Multi-decadal Forest Community and Carbon Dynamics" bioRxiv https://doi.org/10.1101/2020.05.05.079871

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2010　(15) Clark J, D Bell, C Chu, B Courbaud, **M Dietze**, M Hersh, J HilleRisLambers, I Ibanez, S LaDeau, S McMahon, J Metcalf, J Mohan, E Moran, L Pangle, S Pearson, C Salk, Z Shen, D Valle, and P Wyckoff. 2010. High Dimensional coexistence base on individual variation: a synthesis of evidence. Ecological Monographs 80(4):569-608

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(12) **Wang D**, **D LeBauer**, **M Dietze**. 2010  A quantitative review comparing the yield of switchgrass in monocultures and mixtures in relation to climate and management factors. Global Change Biology Bioenergy.  Global Change Biology Bioenergy 2(1): 16-25

2009　(11) Ibáñez I, J Clark, **M Dietze**. 2009.  Estimating performance of potential migrant species. Global Change Biology. 15:1173-1188

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2008　(9) **Dietze M**, Clark J.  2008.  Rethinking gap dynamics: the impact of damaged trees and sprouts.  Ecological Monographs.  78(3):331-347 *doi:10.1890/07-0271.1*

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2007 & Earlier　(6) Clark J, **M Dietze**, S Chakraborty, P Agarwal, I Ibanez, S LaDeau, M Wolosin.  2007. Resolving the biodiversity paradox.  Ecology Letters 10(8): 647-659

(5) Clark J, M Wolosin, **M Dietze**, I Ibanez, S LaDeau, M Welsh, B Kloeppel.  2007.  Tree growth inference and prediction from diameter censuses and ring widths.  Ecological Applications.  *17(7): 1942-1953*

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(1) Clark J, **M Dietze**, I Ibanez, J Mohan. 2003. Coexistence: how to identify trophic tradeoffs. **Ecology**, 84:17-31.

## Reports

Williams, CA, A Andrews, M Brown, KJ Davis, F Hoffman, L Larson, B Poulter, G Shrestha, ET Sundquist, Y Wei, et al. 2023. "2022 North American Carbon Program Science Implementation Plan", Report of the North American Carbon Program. Washington, DC: US Carbon Cycle Science Program, DOI: 10.5065/kwe1-w815

Geller GN, G Bohrer, J Cavender-Bares, R Chaplin-Kramer, FP Chavez, MC Dietze, TE Fatoyinbo, RP Guralnick, E Hestir, F Muller-Karger, HJ Lynch, MJ Oliver, VC Radeloff, HM Sosik, PA Townsend, AM Wilson, K Gaddis, W Turner. 2022. NASA Biological Diversity and Ecological Forecasting: Current state of knowledge and considerations for the next decade. NASA.

Bradford, J.B., Weltzin, J.F., McCormick, M., Baron, J., Bowen, Z., Bristol, S., Carlisle, D., Crimmins, T., Cross, P., DeVivo, J., **Dietze, M.**, Freeman, M., Goldberg, J., Hooten, M., Hsu, L., Jenni, K., Keisman, J., Kennen, J., Lee, K., Lesmes, D., Loftin, K., Miller, B.W., Murdoch, P., Newman, J., Prentice, K.L., Rangwala, I., Read, J., Sieracki, J., Sofaer, H., Thur, S., Toevs, G., Werner, F., White, C.L., White, T., and Wiltermuth, M., 2020, Ecological forecasting—21st century science for 21st century management: U.S. Geological Survey Open-File Report 2020–1073, 54 p., https://doi.org/10.3133/ofr20201073

U.S. DOE. 2018. Disturbance and Vegetation Dynamics in Earth System Models; Workshop Report, DOE/SC-0196. Office of Biological and Environmental Research, U.S. Department of Energy Office of Science. (https://ess.science.energy.gov/wp-content/uploads/2020/12/Dynamic_Vegetation_FINAL.pdf)

**Dietze M.C**., A. Fox, J. Betancourt, M. Hooten, C. Jarnevich, T. Keitt, M. A. Kenney, C. Laney, L. Larsen, H. W. Loescher, C. Lunch, B. Pijanowski, J. T. Randerson, E. Read, A. Tredennick, K. C. Weathers, E. P. White. 2017. Iterative ecological forecasting: Needs, opportunities, and challenges. NEON Workshop Report. DOI: 10.6084/m9.figshare.4715317

## Software & Code Repositories

### PEcAn Project
Role: project lead
http://pecanproject.github.io/
https://github.com/pecanproject/pecan/
Open-source community platform for ecosystem model-data assimilation.
73 developers, >1900 downloads, >20,000 commits, >190 forks

### Ecosystem Demography Model

Role: core development team since 2006
https://github.com/EDmodel/ED2
Open-source terrestrial biosphere model
19 developers, >1700 commits, >100 forks

### Ecoforecast

Role: project lead
https://github.com/ecoforecast
Open-code repositories (n=21) for book, ecoforecastR R package, EE585 course
materials and group projects, and Near-Term Ecological Forecasting Initiative

### EE509 Applied Environmental Statistics

Role: Instructor
http://people.bu.edu/dietze/Bayes2020/EE509.htm
https://github.com/mdietze/EE509
Open courseware, including hands-on activities (GitHub), assignments, readings, lecture
videos (YouTube), and slides


## Video & Multimedia

Sept 2021: Reddit Ask Me Anything on Ecological Forecasting
https://www.reddit.com/r/IAmA/comments/pymssh/im_michael_dietze_ecologist_researching_how_to/

Dietze, M. 2021. "21st Century Science For 21st Century Environmental Decision Making:
The Challenges And Opportunities Of Near-Term Iterative Ecological Forecasting"
Delta Independent Science Board. https://www.youtube.com/watch?v=eO7SNHmkUyw

Dietze, M. 2021 "Prediction, Predictability, and Emerging Imperatives" NCEAS Future of
Synthesis Workshop
https://youtu.be/ZOY9IBAg_xQ?t=1501

Oct 2020: The Sweaty Penguin Podcast. Guest for episode "Old-Growth Forests Are
Special. Why Are They Under Threat?
https://thesweatypenguin.com/podcast/23-old-growth-forests/

NEON & EFI 2020 "Fundamentals of Ecological Forecasting"
https://www.youtube.com/playlist?list=PLLWiknuNGd50Lc3rft4kFPc_oxAhiQ-6s

NEON & EFI 2020 "Near-Term Forecasting Initiative Summer Course Lectures"
https://www.youtube.com/playlist?list=PLLWiknuNGd500TE80k3MTfWMfFv20zHuf

Dietze, M. 2020. EE375 Intro to Environmental Modeling
https://www.youtube.com/playlist?list=PLYbd7iIaRtNTDYM7GU-PdhiAGMh-p63zi

Dietze, M. 2020. EE509 Applied Environmental Statistics.
https://www.youtube.com/playlist?list=PLYbd7iIaRtNTfXLWI4a3lUp_gV61eD1jN

Dietze, M. May 2020. "21st Century Science For 21st Century Environmental Decision
Making: The Challenges And Opportunities Of Near-Term Iterative Environmental

Forecasting" CSDMS 2020 https://csdms.colorado.edu/wiki/Presenters-0454

Dietze, M. May 13, 2020 "Model–data fusion approach to estimating terrestrial carbon budgets across the contiguous U.S" IALE-NA 2020 https://youtu.be/8chQhAqixc8

EFI-RCN 2020 Conference Videos https://ecoforecast.org/efi-rcn-2020-workshop-videos/

Dietze, M. Feb 6, 2020. "Forecasting Ecology in a Changing World" NCSU Geospatial Forum https://youtu.be/Ryp0WHub8J0

USGS 2020 "USA National Phenology Network — Partner to Advance Science Decisions" https://youtu.be/vg0dAcZo3Fw

AMS 2020 "The Era of Ecological Forecasting" presentations and panel discussion https://ams.confex.com/ams/2020Annual/videogateway.cgi/id/520513?recordingid=520513

Dietze, M. May 23, 2019. "Forecasting Ecology in a Changing World" Ecological Society of America / EFI webinar https://register.gotowebinar.com/recording/4016647217159841794

EFI 2019 Conference Videos https://ecoforecast.org/efi2019-conference-videos/

Dietze, M. Sept 27, 2018. "Solving the Challenge of Predicting Nature" NSF Distinguished Lecture Series https://youtu.be/Ebz2hlY10u8

NEON 2018 "Ecological Forecasting: The Science of Predicting Ecosystems" https://youtu.be/Lgi_e7N-C8E

Dietze, M. 2017. "There and back again - a model-data assimilation tale" 39th New Phytologist Symposium: Trait covariation: Structural and functional relationships in plant ecology https://youtu.be/t-ziqmNjWG0

## Workshops & working groups

American Geophysical Union Annual Meeting, December 2023
  **Session Organizer** "Ecological Forecasting in the Earth System", 1 oral, 1 poster

Ameriflux annual meeting, Petersham, MA, October 2023

NASA Carbon Monitoring System PI Meeting, Pasadena CA, Sept 2023

Ecological Society of America, August 6-11, 2023
  **Session Organizer** "Ecological Forecasting: Applications, Discoveries, and Opportunities"

EFI 2023 Unconference, June 2023, Boulder, CO (**steering committee**)

The Royal Society, "Forecasting natural and social systems," London October 2020
  [POSTPONED to March 13-14, 2023]

American Geophysical Union Annual Meeting, December 2022
  **Session Organizer** "Ecological Forecasting in the Earth System", 1 oral, 1 poster

Ecosystem Demography model PI meeting, Cornell, October 2022

NASA Carbon Monitoring System PI Meeting, Washington DC, Sept 2022

LTER All-Scientists' Meeting, Pacific Grove CA, Sept 2022
    **Workshop Organizer**, "Ecological Forecasting Contests: A Bridge Across Networks"

Ecological Society of America, August 15-19 2022
    Session Organizer "Ecological Forecasting: Applications, Discoveries, and Opportunities"
    Session Moderator "Planning Resilient Ecological Futures with Indigenous Communities",
    cosponsored by ESA TEK section

AIMES "New Directions in Land Data Assimilation" June 2022

Ecological Forecasting Initiative 2022, May 2022 **Steering Committee**

American Geophysical Union Annual Meeting, December 2021
    **Session Organizer** "Ecological Forecasting in the Earth System", 1 poster

NEON/NCAR workshops, Sept 2021, Nov 2021, **Organizing Committee**

NASA Carbon Monitoring System PI Meeting, Nov 2021

Ecological Society of America, August 2021
    **Session Organizer** "EFI/NEON Ecological Forecasting Challenge"

EFI-RCN Empowering the Development of the Next Generation of Educational Materials for
    Forecasting, June 2021

EFI-RCN Inclusive Pedagogy Workshop, June 2021

AIMES "Tackling Technical Challenges in Land Data Assimilation Workshop" June 2021

North American Carbon Program "7th Open Science Meeting" March 2021

NCEAS Workshop "Future of Synthesis in Ecology and Environmental Science" February 2021

Macrosystems Biology Annual PI meeting, January 2021

Ecosystem Demography model PI meeting, January 2021

American Geophysical Union Annual Meeting, December 2020
    **Session Organizer** "Ecological Forecasting in the Earth System"
    **Town Hall Organizer** "Ecological Forecasting Initiative: NEON Forecasting Challenge"

NASA Carbon Monitoring System PI Meeting, Nov 2020

CIEE Forecasting in the Anthropocene, Nov 2020

RCN: Cross-Scale Processes Impacting Biodiversity, October 2020

Ecological Society of America, August 2020
    **Session Organizer** "Ecological Forecasting: Applications, Discoveries, and Opportunities"

National Academies of Science, Engineering, Medicine "Workshop on Earth System
   Predictability Research and Development", June 2020 **Invited Panelist**

USFS – NASA Joint Applications Workshop: "Earth Observations in Support of Forest and
Rangeland Response to Changing Environmental Conditions", June 2020

International Association for Landscape Ecology - North America conference, May 2020

Open Modelling Foundation, May 2020

Community Surface Dynamics Modeling System "CSDMS 2020 – Linking Ecosphere and
   Geosphere", May 2020

Ecological Forecasting Initiative conference **Co-organizer**
   May 2020, Boulder, CO [held virtually]

American Meteorological Society Annual Meeting
   January 2020, Boston MA

American Geophysical Union Annual Meeting
   December 2019, Washington DC
   **Session Organizer** "Ecological Forecasting in the Earth System" 1 oral, 1 poster session

Ecosystem Demography model PI meeting
   November 2019. Boston, MA
   **Workshop co-organizer**

NASA Carbon Monitoring System PI Meeting
   November 2019, La Jolla, CA

"Forecasting Cultures in Environmental Science"
   October 2019, U. Freiburg, Germany

Ecological Society of America Annual Meeting
   August 2019, Louisville, KY
   **Oral Session Organizer:** "Advancing the Ecological Forecasting Initiative: Novel
   Applications, Discoveries, and Opportunities"

PalEON State Data Assimilation Hackathon
   June 2019, Gloucester, MA

USGS Workshop "Building capacity for Applied Short-Term Ecological Forecasting"
   May 2019, Ft Collins, CO

Ecological Forecasting Initiative conference **Lead organizer**
   May 2019, Washington, DC

NEON/NCAR joint workshop "Predicting life in the Earth system – linking the geosciences and
   ecology" **Organizing committee**
   April 2019, Boulder, CO

NASA Biodiversity & Ecological Forecasting (BDEF) decadal report working group
   2018-present

American Geophysical Union Annual Meeting
   December 2018, Washington DC
   **Organizer** "Ecological Forecasting in the Earth System" 1 oral session, 1 poster session
   **Co-organizer** "PEcAn Town Hall: Let's Talk Model Data Integration"

Boston University Research on Tap: "Understanding and Forecasting Change in Our Natural
   World" **Host**
   November 2018, Boston, MA

Ecological Forecasting Initiative strategic planning meetings. **Lead organizer**
   January 2018, South Bend IN
   August 2018, Boston MA

RCN: Cross-Scale Processes Impacting Biodiversity
   June 2018, Cedar Creek LTER, MN

DOE workshop "Vegetation Dynamics and Disturbance in the Earth System"
   March 2018, Gaithersburg, VA

NSF Workshop "Ecological Knowledge And Predictions: Integrating Across Networks And
   National Observatories"
   February 2018, Tucson, AZ
   **Workshop lead organizer**

Joint CZO / LTER / NEON / ISMC Workshop "Using Observation Networks to Advance Earth
   System Understanding: State of the Art, Data-Model Integration, and Frontiers"
   February 2018, Boulder, CO

Ecosystem Demography model PI meeting
   January 2018. South Bend IN
   **Workshop co-organizer**

NSF Macrosystems Biology Annual PI meeting
   January 2018. Alexandria VA
   **Lead organizer**

American Geophysical Union Annual Meeting
   December 2017, New Orleans, LA
   **Co-Organizer** "Advances and Opportunities in Forecasting and Data-Model Integration:
   Approaches for Reducing Complexity and Improving Predictive Understanding in
   Biogeochemical Models of the Earth System" 1 oral session, 1 poster session

PROFOUND Final Conference: "Robust projections of forests under climate change – data,
   methods and models"
   October 9-10, 2017. Potsdam, Germany
   **Keynote Speaker**

Ecological Society of America Annual Meeting
   August 2017
   **Oral Session Organizer**: "Ecological Forecasting: Advances and Opportunities"
   **Oral Session Co-organizer**: "[Using Data to Improve Models of Forest Dynamics](Using Data to Improve Models of Forest Dynamics)"

39th New Phytologist Symposia "Trait covariation: Structural and functional relationships in

plant ecology"
June 27–29, 2017 University of Exeter, UK

NSF Workshop "An examination of data assimilation algorithms, observations, and applications in the context of next-generation computing"
April 6-7, 2017, Arlington VA

Joint North American Carbon Program and Ameriflux Primary Investigators Meeting
March 27-30, 2017, Bethesda, MD

NEON workshop "Optimizing NEON Science"
February 14-16, 2017 Boulder, CO

DIBBs (Data Infrastructure Building Blocks) PI meeting, NSF HQ
January 2017, Arlington, VA

American Geophysical Union Annual Meeting
December 2016, San Francisco, CA
**Co-Organizer** "Quantifying Uncertainties and Merging Observations, Experiments, and Models for Improving Estimation, Mapping, and Forecasting of Terrestrial Ecosystem Dynamics" 2 oral sessions, 1 poster session

PalEON Data Assimilation Hackathon, Berkeley CA
November 2016
**Workshop organizer**

Sustaining Biological Infrastructure (SBI), Ecological Society of America
June 2016, Washington, DC

PEcAn workshop "Ecoinformatic needs and opportunities in ecosystem modeling"
May 2016, Boston, MA
**Workshop organizer**

NACP workshop "Development of Predictive Carbon Cycle Science"
March 2016, College Park, Maryland

NEON "Operationalizing Ecological Forecasting"
January 2016, Ft Collins, CO
**Workshop proposer and lead organizer**

NCAR "Ecosystem Demographics in the Earth System"
January 2016, Boulder, CO

American Geophysical Union Fall Meeting
December 2015, San Francisco, CA
**Co-organizer** "Constraining Ecosystem Carbon Uptake and Long-Term Storage with Integrated Modeling, Experiment, and Observation" 3 oral sessions, 1 poster session

DOE "Trait methods for representing ecosystem change"
November 2015, Rockville, MD

Ecological Society of America Annual Meeting
August 2015

**Oral Session Co-organizer** "Paleoecological Patterns, Ecological Processes, Modeled Scenarios: Crossing Scales to Understand an Uncertain Future"

NSF Macrosystems Biology Annual PI meeting
August 2015, Arlington VA

NSF "Building Global Ecological Understanding"
May 2015, Newark, DE

North American Carbon Program "All Investigator Meeting 5"
February 2015
Member of **organizing committee** (April 2014 – February 2015).

EU COST Action FP1304 "Towards robust PROjections of European FOrests UNDer climate change (PROFOUND)"
**2013-2017**
Working Group 2: Uncertainty of process and scaling issues
Working Group 3: Model comparisons and multi-model assessments

American Geophysical Union Fall Meeting
December 2014
**Co-organizer** "Constraining Ecosystem Carbon Uptake and Long-Term Storage Using Models and Data" 1 oral session, 1 poster session

National Ecological Observatory Network Annual Meeting
October 2014, Boulder Colorado
**Primary organizer of 1 day workshop on ecological scaling**

Brown Dog Early Users Workshop
July 2014, Urbana, IL

"Climate-Change Induced Changes in Forest Disturbance Regimes and Their Interaction with Forests Managed under Contrasting Management Regimes"
July 2014, Harvard Forest, Petersham, MA

NSF Macrosystems Biology Annual PI meeting
June 2014. Arlington VA

New Phytologist Trust Workshop, "Improving Representation of Photosynthesis in Earth System Models"
April 2014, Montauk, NY

FORECAST RCN workshop, "Advancing Software for Ecological Forecasting"
March 2014, Urbana, IL

National Assessment of Drought Impacts on Forests, US Forest Service
December 2013

American Geophysical Union Fall Meeting
December 2013
**Co-organizer** "Ecological Disturbance: Observing and Predicting the Impacts of Landscape Disturbance" 2 oral sessions, 1 poster session

MANDIFORE PI meeting
    July 2013, Jones Center, GA

NSF Macrosystems Biology Annual PI meeting
    June 2013. Arlington VA

North American Carbon Program "All Investigator Meeting 4"
    February 2013, Albuquerque, New Mexico
    Member of **organizing committee** and **session chair**.
    **Organizer of breakout session** on "Harnessing the 'long tail' of ecosystem carbon cycle
    observations: Approaches and challenges in synthesizing and assimilating non-automated
    and experimental data"

DIMACS Geological Data Fusion workshop
    January 2013, Rutgers, NJ

NSF workshop "Climate change and species interactions: ways forward"
    November 2012. Cary Institute

FORECAST RCN "Promoting New Perspectives on Data Assimilation in Global Change
    Science"
    Woods Hole, MA, October 2012

University of Illinois LAS Reflective Teaching Seminar (AY 2010-2011).

Paleo-Ecological Observatory Network (PalEON) workshops:
    Kick-off meeting: **co-organizer**, May 2011.
    Settlement-era vegetation meeting, October 2011, May 2013
    Data-assimilation meeting: **co-organizer**, January 2012
    Annual meeting: **co-organizer**, December 2012-2019
        Ecosystem modeling meeting: **co-organizer & host,** March 2014

National Ecological Observatory Network (NEON), Annual Meeting
    4th Annual Meeting - September 2011
    5th Annual Meeting - October 2012 (**invited presenter**)
    6th Annual Meeting – October 2013
    7th Annual Meeting – October 2014 (**workshop organizer)**

IAMCS Large-scale Inverse Problems Workshop
    College Station, TX, February 2011

Energy Biosciences Institute woody biofuels workshop
    December 2010, Berkeley, CA
    **co-organizer**

Ecological Society of America Annual Meeting
    August 2010, Pittsburgh, PA
    **Principal Organizer** of Oral Session "Forecasting Ecosystem Responses to Elevated CO2:
    Confronting Models with Long-Term CO2 Enrichment Experiments"

NSF Research Coordination Network: "Forecast of Resource and Environmental Changes: data
    Assimilation Science and Technology (FORECAST)"
    July 2010, Boulder, CO

iPlant Initiative, **advisory committee** on Tree Biology Cyberinfrastructure project, 2010-present

NCEAS Working Group "Benchmarking ecosystem response models with experimental data from long-term CO2 Enrichment Experiments"
October 2008, May 2009, September 2010

North American Carbon Program (NACP), Site-level model-data inter-comparison.  Participant (2007-2014) and workshop attendee (Jan 2009, November 2009)

"Rapid Directional Environmental Change" NSF Workshop
December 2018, Arlington, VA

"Data-model Assimilation in Ecology: Techniques and Applications".  NSF Workshop.
October 2007, Norman, Oklahoma

"Program on Development, Assessment and Utilization of Complex Computer Models"
Statistical and Applied Mathematical Sciences Institute (SAMSI).
September 2006, Research Triangle Park, NC
April 2007, Research Triangle Park, NC

"Regional and Global Models: A study in model sensitivities to various parameters"
UCAR/NCAR Early Career Scientists Assembly (ECSA) Junior Faculty Forum on Future Scientific Directions (JFF).
August 2006, Boulder, Colorado.

Summer Institute on Ecological Forecasting Workshop, Duke Center on Global Change.  A two week program on modern statistical computing, decision making, and ecological forecasting.
June 2004, Durham, North Carolina

NASA Workshop "Multi-Dimensional Forested Ecosystem Structure: Requirements for Remote Sensing Observations"
June 2003. Annapolis, Maryland

## Teaching

Boston University

EE375 – Introduction to Quantitative Environmental Modeling
Spring 2013, 2014, 2015, 2017
Fall 2015, 2017, 2018, 2019, 2020, 2021, 2023

EE585 – Ecological Forecasting and Informatics
Fall 2013
Spring 2016, 2019, 2021, 2024

EE509 – Applied Environmental Statistics
Fall 2014
Spring 2018, 2020, 2022

Short Courses

Forecasting for Decision-Making: An Epidemiological & Ecological Perspective, Toronto
Summer 2023, Instructor

Near-Term Ecological Forecasting Initiative, Boston, MA
Summer **2018, 2019, 2020, 2022**

**Lead organizer**

EFI book & code discussion group "Spatio-Temporal Statistics with R"
[http://spacetimewithr.org/](http://spacetimewithr.org/)
Fall 2020, Lead organizer

Ecological Society of Australia workshop "Near-term Ecological Forecasting for Early Career
Researchers", Launceston, Tasmania
November 2019
**co-organizer**

FILAMO short-course "Ecological Forecasting", October 2019, Oslo, Norway **organizer**

"Summer Course in Flux Measurements and Advanced Modeling" Niwot Ridge
Summer **2011, 2012, 2013, 2014, 2015, 2016, 2017, 2019, 2022, 2023**

COST PROFOUND "Bayesian calibration, forecasting and multi-model predictions of
process-based vegetation models" Rencurel, France
Summer **2015, 2016, 2017**

ESA workshop: "A Brief Introduction to Bayesian and Hierarchical Bayesian Modeling in
Ecology"
**Lead organizer**: **2012-2014**
Instructor: **2008-2014**

PalEON Summer Course, "Assimilating Long-Term Data into Ecosystem Models" University
of Notre Dame Environmental Research Center
Summer **2012, 2014, 2016**

Macrosystems Workshop: Integrating Evidence on Forest Response to Climate Change:
Physiology to Regional Abundance, Duke University
May 13-14, 2013

Ecosystem Demography model workshop, Harvard University
2012, 2013, 2018, 2019

Harvard Ecology Discussion Group – organizer/moderator
2007-2008

University     MATH/IB 199 – BioMath Seminar
of Illinois        Fall 2010, 2011, Spring 2012

IB / NRES 509 – Statistical Modeling
Spring 2010, 2012

IB 447 – Field Ecology
Spring 2011

IB 496 – Mathematical Modeling in Ecology and Evolution
Fall 2009

IB 100/101 – Biological Sciences
Fall 2009, 2010, 2011

IB 546 – Topics in Ecology and Evolution
   Fall 2010, Spring 2011, Fall 2011

Duke
University

Teaching Assistant, Duke University. 2003-2004
   Introduction to Ecology
   Comparative Biomechanics
   Ecological Models and Data

## Mentoring Experience

Graduate
Students:

Andrew Roberts (2022-present, PhD Data Science) coadvisor: Jonathan Huggins

Helen Scott (Spring 2021, Bioinformatics PhD rotation)

Dongchen Zhang (2021-present, PhD)

Alexis Helgeson (2021-2023, research Masters)

Charlotte Malmborg (2020 - present, PhD)

Zoey Werbin (2018 – present, PhD) coadvisor: Jenny Bhatnagar

Kathryn Wheeler (2017 – 2022, PhD)

John Foster (2017 – 2022, PhD) coadvisor: Shannon LaDeau
   https://hdl.handle.net/2144/47882

Tempest McCabe (2016 – 2022, PhD)
   https://hdl.handle.net/2144/46935

Elizabeth Cowdery (2014 – 2021, PhD)

Alexey Shiklomanov (2014 – 2018, PhD)
   https://hdl.handle.net/2144/32714

Joshua Mantooth (2011 – 2017, PhD)
   https://hdl.handle.net/2144/47882

Carl Davidson (2010 – 2012, MS)

Xiaohui Feng (2009 – 2014, PhD)

Matt Locus (2009, MS)

Postdoctoral
fellows:

Hamze Dokoohaki (2018-2020)

Istem Fer (2016-2019)

Colin Averill (2015-2019) coadvisor: Jenny Bhatnagar

Christy Rollinson (2014-2016)

Ryan Kelly (2014-2015)

Afshin Pourmokhtarian (2013 – 2015)

Jaclyn Hatala (2013-2014)

Toni Viskari (2013-2015)

Brady Hardimann (2012 – 2014)

Bjorn Brooks (2011 – 2012)

Shawn Serbin (2011 – 2012)

David LeBauer (2009 - 2012)

Dan Wang (2008 - 2012)

Graduate
Committees:    Eli Horner (2024-present)

Quinn Adams (2023-present)

Zhenpeng Zuo (2023-present)

River (Luofan) Dong (2023-present)

Alyssa Willson (2022-present), Notre Dame

Kathryn Atherton (2020-2023)

Ryan Quinn (2020)

Yetianjian Wang (2019)

Steven Gougherty (2019-2023)

Meghan Vahsen (2018-2023), Notre Dame

Minkyu Moon, Ph.D. (2018 – 2020)

Mustafa Saifuddin, Ph.D.  (2015 – 2018)

Hollie Emery, Ph.D.  (2013 – 2018)

Arnold Fernandes, M.A. (2016 – 2017)

Tim Maguire, Ph.D.  (2015 – 2017)

Angela Rigden, Ph.D.  (2014 – 2017)

Dan Gianotti, Ph.D.  (2013 – 2016)

Travis Andrews, Ph.D.  (2013-2015), Lehigh Univ.

Ryan Kelly, Ph.D. (2009-2014) , U. Illinois

Katie Heinman (2010-2012) , U. Illinois

Claire Baldeck, Ph.D. (2008-2011), U. Illinois

Zack Kron, M.S. (2009-2011) , U. Illinois

Katie Richter, M.S. (2011) , U. Illinois

Kelly Anderson, Ph.D. (2009) , U. Illinois

Visiting
Scholars:     Félicien Meunier (AY 2018-2020), Postdoctoral Fellow, U. Ghent

Hocheol Seo (Spring 2019), PhD Candidate, Yonsei University

Jason McLachlan (AY 2015-2016), Sabbatical, Notre Dame

Ann Raiho (AY 2015-2016, Fall 2016), PhD Candidate, Notre Dame

Elizabeth Kearsley (summer, fall 2014), PhD Candidate, U. Ghent

Lizzy Hare (fall 2013), Anthropology PhD Candidate, UC Santa Cruz

Brett Raczka (spring 2012), PhD Candidate, Penn State

Undergraduate
Independent
Study:     Dain Kim (summer 2023 UROP)

Joshua Ploshay (California State University, Monterey Bay, BRITE REU 2023)

Isa Kazen (UT Austin, Harvard Forest REU 2023)

Fernando Miguelena (U. Florida, Harvard Forest REU 2023)

Meet Agarwal (GSOC 2023)

Nihar Sanda (GSOC 2023)

Shashank Singh (GSOC 2023)

Yixuan "Phyllis" Li (Spring 2023 Directed Study)

Josh Bowers (U Wisconsin, Oshkosh, BRITE REU 2022)

Courtney Leung (U. Chicago, Harvard Forest REU 2022)

Erick Calderon Morales (VCU, GSOC 2022)

Cameron Reimer (summer & fall 2021, spring and summer 2022 UROP)

Sarah Sosa (Rowan, Harvard Forest REU 2021)

Xaun Wilson (Howard, Harvard Forest REU 2021)

Christina Francis (Johns Hopkins, Harvard Forest REU 2021)

Victor Feagins (U. Texas San Antonio, BRITE REU 2021)

Akhil Jha (GSOC 2021, 2022)

Carina Terry (summer 2019 UROP; AY19/20 Senior Thesis)

Clara Lerchi (Fall 2018)

Luke Dramko (U. North Dakota, BRITE REU, summer 2019)

Liam Burke (GSoC, summer 2018, summer 2017)

Saloni Shah (spring & fall 2018)

Eliandro Tavares (summer 2017)

Anne Thomas (Brigham Young, GSoC, summer 2017)

Hannah Ditty (fall 2016, spring & summer 2017)

Qiyuan (Lucy) Fu (summer 2015)

Alvina Jiang (summer 2015)

Scott Flaherty (spring 2015)

Aine Russell (spring 2015)

Tony Gardella (spring 2015)

Sam Worley (spring 2015)

Francesca Schiavello (fall 2014)

Rani Murali (spring 2014)

Lindsey Shanks (fall 2013, spring 2014)

Mary Gianotti (fall 2013, spring 2014)

Kshitij Sharma (summer & fall 2013)

Jennifer Ruth (fall 2013)

Thomas Azeizat (fall 2012, spring 2013)

Nick Brady (fall 2011, spring 2012)

Dan Dickson (spring 2010)

Sen Lu (fall 2009)

Undergraduate
Technicians:   80+ total

**Service**   Ecological Forecasting Initiative (2018 – present)
   **Founding director, 2018-2021**
   **Chair, 2021-present**

NEON Science, Technology & Education Advisory Committee (STEAC)
   2018-2023
   **Chair**, 2019-2021

BU Faculty Search Committee "Endowed Chair in Environmental Data Science"
   **Co-chair**, 2022-present

Organized numerous workshops and conference sessions, see **Workshops & working groups**

Meteorological Applications special issue "For a future informed by science at the
   climate-ecology interface" Lead Guest Editor, 2022-present

Environmental Defense Fund, Expert Working Group on the use of soil carbon models for
   carbon market application, Member 2022-2024

Climate Action Reserve (CAR) Soil Enrichment Protocol, 3rd party reviewer for model
   certification: DayCent-CR v1.0 (2021), v1.0.2 (2022)

Verra Carbon Standard, certified Independent Modeling Expert for protocol VM0042
   Methodology For Improved Agricultural Land Management (2022-present)

Earth & Environment Diversity, Equity, and Inclusion Committee, 2021-present
   **Chair**, 2021 - Spring 2022, Fall 2023 - present

Hariri Institute Steering Committee, Boston University, 2020-present

American Meteorological Society, Ecological Forecasting Committee
   Member, 2019 - present

BU CAS Mathematical & Computational Sciences Task Force, 2020-2021

MDPI Forecasting
Special Issue Editor (2020-2022) "Near-Term Ecological Forecasting"

NASA grant panel "Modeling, Analysis, and Prediction (MAP) Program" 2021

NSF grant panel "Signals in the Soil 2020"

University Council General Education Committee (GEC)
   Member, 2018 - 2021

NASA Oak Ridge DAAC Advisory Board
   2015 – 2020

Global Change Biology
    Editorial Advisory Board (2017 – 2019)

Agricultural and Forest Meteorology
    Editorial review board (2012-2020)

Ecological Society of America "Ecological Forecasting Award" Committee
    2017-present
    **Chair** 2017-present

NASA ABOVE grant panel
    2018

American Geophysical Union
    Nominations Committee, 2018

CAS Natural Sciences Curriculum Committee
    **Committee Chair**, 2017-2018
    Member, 2015-2018

Ecological Applications
    Guest editor (2017, 2019)

NSF Advances in Biological Informatics Grant panel (2017)

Faculty Search Committee "Human Dimensions of Global Change", Department of Earth &
    Environment, Boston University (2015-2016)

Research Computing Governance Committee, Boston University (2014)

Summer Lab, Upward Bound college prep program, (June 2014)

Admissions Committee, Earth and Environment, Boston University (2014)

QUEST (Quantifying Uncertainty in Ecosystem Studies) RCN
    Statistical Advisory Board (2013-present)

NEON representative
    Boston University (2012-2016)
    University of Illinois (2011- 2012)

Awards Committee, Program in Biogeosciences, Boston University (2013)

Graduate Affairs Committee, Department of Plant Biology, University of Illinois (2008-2012)

Awards Committee, School of Integrative Biology, University of Illinois (2011-2012)

Faculty Search Committee "Global Change Ecology", School of Integrative Biology, University
    of Illinois (2011-2012)

Seminar Committee, Program in Ecology, Evolution, and Conservation Biology, University of
    Illinois (2010-2012)

Grant Proposal Review Panels: NSF (2013), NASA (2014)

Individual grant proposal reviews: NSF, NASA, NERC (UK), Portuguese Foundation for Science and Technology, Indo-US Science and Technology Forum, Energy Biosciences Institute, University of Illinois Campus Research Board

Peer review of the book: Koricheva, J., J. Gurevitch, K. Mengersen. 2013. "Handbook of Meta-analysis in Ecology and Evolution", Princeton University Press

Reviewed manuscripts for: Agricultural and Forest Meteorology, Annals of Botany, Atmospheric Chemistry and Physics, Biogeosciences, Bioscience, Earth System Dynamics, Ecological Applications, Ecological Informatics, Ecological Modelling, Ecological Monographs, Ecological Processes, Ecology Letters, Ecosphere, Ecosystems, Environmental and Ecological Statistics, Functional Ecology, Forest Ecology and Management, Frontiers in Ecology and the Environment, Geophysical Model Development, Geophysical Research Letters, GIScience, Global Change Biology, Global Change Biology Bioenergy, Journal of Advances in Modeling Earth Systems, Journal of Biogeography, Journal of Ecology, Journal of Geophysical Research, Journal of Plant Ecology, Methods in Ecology and Evolution, Nature, Nature Climate Change, New Phytologist, Oecologia, Photosynthesis Research, Plant Physiology, PLOS One, Proceedings of the National Academy of Science, Remote Sensing, Science, Theoretical Ecology, Tree Physiology, Trees.

External tenure evaluator: Stanford, U. Arizona, SUNY

## Conference & Workshop Presentations

December 2023 - "Landscape-scale iterative monitoring and forecasting of terrestrial carbon pools and fluxes: a Harvard Forest testbed" American Geophysical Union 2023, San Francisco, CA

October 2023 - "The NEON Ecological Forecasting Challenge" Ameriflux 2023, Petersham, MA [poster]

September 2023 - "Multisensor data assimilation to support terrestrial carbon cycle and disturbance Monitoring, Reporting, Verification, and Forecasting" NASA Carbon Monitoring System 2023, Pasadena, CA

September 2023 - "Landscape-scale forecasting and adaptive monitoring" NASA Carbon Monitoring System 2023, Pasadena, CA [poster]

August 2023 - "Landscape-scale iterative forecasting of terrestrial carbon pools and fluxes: a Harvard Forest testbed" Ecological Society of America 2023, Portland, OR

June 2023 - "A Community Convention for Ecological Forecasting: Output Files and Metadata v1.0" Ecological Forecasting Initiative 2023 Unconference, Boulder, CO [poster]

June 2023 - "Solving the Challenge of Predicting Nature: How Close are We and How Do We Get There?" Gordon Research Conference, Predictive Ecology **[INVITED]**

April 2023 - "Prototyping a Distributed, Asynchronous Workflow for Iterative Near-Term Ecological Forecasting" - Red Hat Research Interest Group, Boston, MA **[INVITED]**

March 2023 - "Forecasting Ecology in a Changing World" Royal Society: Forecasting natural

and social systems, London, UK **[INVITED]**

December 2022 - "Integrating networked observations and remote sensing into a CONUS-scale carbon cycle reanalysis and forecasting system" American Geophysical Union 2022, Chicago, IL **[INVITED]**

October 2022 - "Synthesizing networked observations, remote sensing, and disturbance in a carbon cycle reanalysis and forecasting system" 4th Annual NASA/ESA Carbon From Space (online)

September 2022 - "Multisensor data assimilation to support terrestrial carbon cycle and disturbance Monitoring, Reporting, Verification, and Forecasting" NASA CMS PI Meeting, Washington, DC

September 2022 - LTER All-Scientists' Meeting, Pacific Grove, CA
- "Ecological Forecasting Contests" workshop talk
- "Synthesis lessons learned from model-data fusion" workshop talk
- "Reducing uncertainty through model-data feedbacks & forecasting" workshop talk

June 2022 - "Assimilating disturbance: Toward real-time monitoring and forecasting" AIMES "New Directions in Land Data Assimilation" (online)

June 2022 - Ecological Forecasting Initiative 2022 (online)
- Conference welcome
- "Ecological Forecasting Output Standards: v0.4"
- "Multimodel Community Forecasts of Vegetation Phenology: Results From Year 1 Of The EFI-NEON Forecasting Challenge"

May 2022 - "Forecasting Ecology in a Changing World" Climate Science for Ecological Forecasting, Joint workshop of the Royal Meteorological Society and British Ecological Society, London, England **[INVITED KEYNOTE]**

December 2021 - "Continental bottom-up data assimilation to support terrestrial carbon cycle and disturbance Monitoring, Reporting, Verification, and Forecasting" American Geophysical Union 2021, New Orleans, LA

November 2021 - "Multisensor data assimilation to support terrestrial carbon cycle and disturbance Monitoring, Reporting, Verification, and Forecasting" NASA Carbon Monitoring System meeting (virtual)

October 2021 - "Ecological Forecasting Initiative: Building a Community of Practice" American Fisheries Society Annual Meeting 2021, Baltimore, MD

August 2021 - "Assimilating Disturbance: Toward Real-Time Monitoring And Forecasting" Ecological Society of America Annual Meeting 2021 (online)

June 2021 - "BU EE585, etc. - Experiences teaching ecological forecasting" Ecological Forecasting Initiative Workshop: Empowering Development of the Next Generation of Educational Materials for Forecasting

Mar 2021 - "Near real-time carbon forecasting: toward a more predictive and societally-relevant science" North American Carbon Program

Feb 2021 - "Prediction, Predictability, and Emerging Imperatives" NCEAS Future of Synthesis Workshop **[INVITED KEYNOTE]**

Jan 2021 - "Near-Term Ecological Forecasting Initiative" NSF Macrosystems Biology meeting

Jan 2021 - "PEcAn: Model-data Community Cyberinfrastructure" ED2 Modeling Team annual community meeting

Dec 2020 - Dietze M, S Serbin, H Dokoohaki, B Morrison, K Zarada. 2020 "Assimilating disturbance: Toward real-time carbon monitoring and forecasting" American Geophysical Union Annual Meeting

Nov 2020 - Dietze, Serbin, Dokoohaki, Morrison, Andrews. "A Prototype Data Assimilation System for the Terrestrial Carbon Cycle to Support MRV" NASA CMS PI meeting

Oct 2020 - "Quantifying and Communicating Forecast Uncertainty" Canadian Ecological Forecasting Initiative

Oct 2020 - "PEcAn: Model-data Community Cyberinfrastructure" NCAR Community Land Model meeting

Oct 2020 - "Ecological Forecasting Initiative" Biodiversity RCN

Sept 2020 - "PEcAn State Data Assimilation" UK RETINA Kick-off meeting

August 2020 - "Improving ecological prediction: The role of cross-network data fusion in iterative ecological forecasting" Ecological Society of America annual meeting

August 2020 - "Building an ecological forecasting initiative" Ecological Society of America annual meeting

June 2020 - "Exploring Predictability through New Methodologies and Technologies" National Academies Workshop On Earth System Predictability Research & Development **[INVITED]**

June 2020 - "The potential for near-term iterative forecasting to advance USFS land-management and decision support" USFS – NASA Virtual Pitch Fest

May 2020 - "Ecological Forecasting Output Standards: v0.1" Ecological Forecasting Initiative 2020

May 2020 "Ecological Forecasting Initiative" EFI Student Association Workshop

May 2020 "Model-data fusion approach to estimating terrestrial carbon budget across the contiguous U.S." International Association for Landscape Ecology - North America conference

May 2020 - "21st Century Science For 21st Century Environmental Decision Making: The Challenges And Opportunities Of Near-Term Iterative Environmental Forecasting" Community Surface Dynamics Modeling System (CSDMS) Annual Meeting [**INVITED KEYNOTE**]

January 2020 - "Building an Ecological Forecasting Community: towards and more predictive and societally-relevant science" American Meteorological Society, Boston, MA **[INVITED**]

December 2019 – "Near real-time forecasting of terrestrial carbon and water pools and fluxes" American Geophysical Union, San Francisco, CA [**INVITED]**

December 2019 – "Near real-time forecasting in the biogeosciences: toward a more predictive and societally-relevant science" American Geophysical Union, San Francisco, CA [**CENTENNIAL SESSION**]

November 2019 - "A prototype data assimilation system for the terrestrial carbon cycle to support Monitoring, Reporting, and Verification" NASA Carbon Monitoring System, La Jolla, CA

August 2019 – "Linking iterative forecasting to hypothesis testing: a case study for how to do this in practice" Ecological Society of America Annual Meeting, Louisville, KY

August 2019 – "Building an ecological forecasting community of practice" Ecological Society of America Annual Meeting, Louisville, KY [**INVITED**]

May 2019 – "Forecasting Ecology in a Changing World" Ecological Society of America webinar [**INVITED**]

May 2019 – "Basics Of Iterative Ecological Forecasting" USGS Ecological Forecasting workshop, Ft Collins, CO [**INVITED**]

May 2019 – "Ecological Forecasting Initiative" Ecological Forecasting Initiative 2019, Washington, DC

April 2019 – "Near-term iterative forecasting is win-win" NEON/NCAR joint workshop: *Predicting life in the Earth system.* Boulder, CO [**INVITED**]

March 2019 - "Solving the Challenge of Predicting Nature: How close are we and how do we get there?" Massachusetts Environmental Education Society Annual Meeting [**INVITED KEYNOTE]**

December 2018 – "Forecasting forest responses in real-time: How close are we and how do we get there?" American Geophysical Union Fall Meeting, Washington DC [**INVITED]**

October 2018 – "Solving the Challenge of Predicting Nature: Ecology in the 21st Century" LTER All Scientists Meeting [**INVITED KEYNOTE]**

August 2018 – "Forecasting forest responses to climate variability in real-time: How close are we and how do we get there?" Ecological Society of America Annual Meeting, New Orleans, LA [**INVITED SYMPOSIUM]**

February 2018 – "The Near-term Ecological Forecasting Initiative" Ecological Knowledge and Prediction, Tuscon, AZ

January 2018 – "Ecological Forecasting Lab: Progress update" Ecosystem Demography Model PI meeting, South Bend, IN

January 2018 – "The Near-term Ecological Forecasting Initiative" NSF Macrosytems Biology PI meeting, Alexandria, VA

December 2017 – "Community Cyberinfrastructure for Ecological Forecasting" American Geophysical Union, New Orleans, LA

October 2017 – "PROFOUND thoughts on Model-Data Integration & Forecasting (pun intended)" COST PROFOUND Workshop, Potsdam, Germany [**INVITED KEYNOTE**]

August 2017 – "On the nature of prediction in ecology" Ecological Society of America Annual Meeting, Portland, OR

June 2017 – "There and back again: a model-data assimilation tale" 39th New Phytologist Symposia, University of Exeter, UK **[INVITED]**

March 2017 – "Enabling carbon cycle terrestrial model-data assimilation and forecasting - The Predictive Ecosystem Analyzer project tutorial and discussion" North American Carbon Program All-Investigators Meeting, Bethesda, MD

December 2016 – "Show me the data: Advances in multi-model benchmarking, assimilation, and forecasting" American Geophysical Union, San Francisco, CA

December 2016 – "On the Nature of Prediction in Ecology" American Geophysical Union, San Francisco, CA **[INVITED]**

August 2016 – "Why we must forecast, starting today" Ecological Society of America, Ft. Lauderdale, FL **[INVITED]**

March 2016 – "The PEcAn Project" NACP Development of Predictive Carbon Cycle Science Workshop, College Park, MD

January 2016 – "The PEcAn Project" Ecosystem Demographics in Earth System Models, National Center for Atmospheric Research, Boulder, CO

January 2016 – "Ecological Forecasting" and "The PEcAn Project: Putting ecosystem model-data fusion in your pocket", Operationalizing Ecological Forecasts, USGS Powell Center, Ft Collins CO

December 2015 – "Fusing data and models to forecast disturbance impacts on ecosystems: past, present, and future" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED]**

December 2015 – "Chasing the long tail of environmental data: PEcAn is nuts about Brown Dog" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED]**

November 2015 – "Model-Data Assimilation" DOE Workshop "Trait methods for representing ecosystem change", Rockville, MD

August 2015 – "Breaking the communication gaps: models talking with ecologists, the data, and each other." Ecological Society of America Annual Meeting, Baltimore MD **[INVITED]**

July 2015 – "Breaking the communication gaps: models talking with ecologists, the data, and each other." International Association for Landscape Ecology World Congress, Portland, OR **[INVITED]**

March 2015 – "A Bayesian Data Analysis Activity to Produce Allometric Equations for Use by Harvard Forest Scientsts" Harvard Forest Annual Meeting

January 2015 – "The PEcAn Project: a scalable, multi-model platform for uncertainty

quantification, analysis, and propagation" North American Carbon Program, Washington DC

January 2015 – "Carbon cycle data-model integration in the classroom" North American Carbon Program, Washington, DC (poster)

December 2014 – "Caught in the flux net: disentangling error, uncertainty, heterogeneity, and spatial process in biogeochemical scaling" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED]**

December 2014 – "Integrating Satellite and Tower Phenology: a case-study in real-time ecological forecasting" American Geophysical Union Fall Meeting, San Francisco, CA

November 2014 – "On The Communication between Models & Data" COST PROFOUND Workshop, Potsdam, Germany **[INVITED KEYNOTE]**

October 2014 – "Fires, invasives, migrations, oh my! Scaling spatial processes into earth system models and global change projections" NEON Annual Meeting, Boulder, CO

August 2014 – "Predicting phenology: a case-study in real-time ecological forecasting." Ecological Society of America Annual Meeting, Sacramento, CA

July 2014 – "Brown Dog Case Study: Long Tail Vegetation Data in Ecology and Global Change Biology" Brown Dog Early Users Workshop, Urbana, IL

June 2014 – "Informatics and data management" Macrosystems Biology Annual Meeting, Arlington, VA

March 2014 – "The PEcAn Project: Accessible ecoinformatic tools for carbon-cycle model-data analysis and assimilation" NSF FORECAST RCN, Workshop on ecological forecasting software

December 2013 – "Impact Of Diffuse Mortality In A Terrestrial Biosphere Model: Stress, Succession, And Disease" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED]**

December 2013 – "Fires, invasives, migrations, oh my!  Scaling spatial processes into earth system models and global change projections" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED]**

August 2013 – "Assimilating forest inventory data into models" Ecological Society of America Annual Meeting, Minneapolis, MN

February 2013 – "PalEON: Synthesis, model validation, and data-assimilation on centennial time-scales" North American Carbon Program All-Investigators Meeting, Albuquerque NM

January 2013 – "Assimilating paleoecological data into land surface & biogeochemical models" DIMACS Geological Data Fusion workshop, Rutgers University, NJ **[INVITED]**

December 2012 – "What do we need to measure, how much, and where? A quantitative assessment of terrestrial data needs across North American biomes through data-model fusion and sampling optimization" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED]**

December 2012 – "The modeled effects of fire on carbon balance and vegetation abundance in Alaskan tundra" American Geophysical Union Fall Meeting, San Francisco, CA

October 2012 – "A Tale of Two Macrosystems Biology Projects" NEON Annual Meeting, Washington, DC

October 2012 – "The PEcAn Project: Carbon-Cycle Reanalysis Facilitated by Model-Data Ecoinformatics" RCN FORECAST Workshop, Woods Hole, MA **[INVITED]**

August 2012 – "Reconciling inventory, tower, and remotely-sensed carbon estimates across northern Wisconsin through model-data fusion." Ecological Society of America Annual Meeting, Portland, OR

September 2012 – "The PEcAn Project Carbon-Cycle Reanalysis Facilitated By Model-Data Ecoinformatics" MGHPCC Seed Fund 2012 Kickoff Meeting

June 2012 – "Challenges in ecosystem modeling and model-data fusion" Chequemegon Ecosystem Atmosphere Study, Kemp Biological Station, WI

May 2012 – "The PEcAn Project: Carbon-Cycle Reanalysis Facilitated by Model-Data Ecoinformatics" American Meteorological Society. First Meeting on Atmospheric Biogeochemistry. Boston, MA

December 2011 – "The PEcAn Project: Model-Data Ecoinformatics for the Observatory Era" American Geophysical Union Fall Meeting, San Francisco, CA

August 2011 – "Regional-scale impacts of climate and environmental variability on tree carbon reserves" Ecological Society of America Annual Meeting, Austin, TX

December 2010 – "Does complex terrain matter for global terrestrial ecosystem models?" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED UNION TALK]**

May 2011 – "Ecosystem Modeling in Paleoecology" Paleo-Ecological Observatory Network (PalEON) workshop, Petersham, MA

September 2010 – "Spectral Analysis" North American Carbon Program – Model Inter-comparison Workshop, Oak Ridge, TN

August 2010 – "How well are we modeling forest responses to elevated CO2? Results of the FACE/model inter-comparison project" Ecological Society of America Annual Meeting, Pittsburgh, PA, **[INVITED]**

May 2010 – "Seeing the Forest for the Trees: Data Resources on Forest Ecology and Global Change" iPlant Workshop on Tree Biology, Point Reyes Station, CA **[INVITED]**

December 2009 – "Beyond MCMC: Data-constraint and error propagation in a dynamic terrestrial biosphere model through Bayesian model emulation" American Geophysical Union Fall Meeting, San Francisco, CA **[INVITED]**

November 2009.  North American Carbon Program – Model Inter-comparison Workshop, Oak Ridge, TN

September 2009 – "The effects of landscapescale environmental heterogeneity on forest ecosystem dynamics in central New England" Ameriflux Annual meeting, Washington, DC

(poster)

August 2009 – "The effects of landscape-scale environmental heterogeneity on forest community and ecosystem dynamics in central New England" Ecological Society of America Annual Meeting, Albuquerque, NM

February 2009 – "Incorporating landscape-scale edaphic variation into regional ecosystem forecasts using ED2" North American Carbon Program Meeting, San Diego, CA (poster)

August 2008 – "Drivers of tree mortality in the eastern and central U.S" Ecological Society of America Annual Meeting, Milwaukee, WI

April 2008 – "Hierarchical Bayes in Ecology" Hubbard Brook Committee of Scientists Meeting **[INVITED]**

March 2008 – "Incorporating landscape-scale edaphic variation into regional ecosystem forecasts using ED2" Harvard Forest Annual Symposium (poster)

August 2007 – "The role of landscape-scale edaphic variation in forecasting regional-scale forest ecosystem dynamics" Ecological Society of America Annual Meeting, San Jose, CA

April 2007 – "Forest Ecosystem Models" Statistical and Applied Mathematical Sciences Institute (SAMSI), Cary, NC

March 2007 – "Modeling Regional Carbon" Harvard Forest Annual Symposium, Petersham, MA

August 2006 – "Regeneration dynamics in large forest gaps: assessing the importance of resprouting" Ecological Society of America Annual Meeting, Memphis, TN

August 2005 – "Data assimilation, inference, and prediction in a hierarchical forest model" Ecological Society of America Annual Meeting, Montréal, Canada **[INVITED]**

August 2004 – "Light heterogeneity in forest gaps: the impact of damaged tree demography" Ecological Society of America Annual Meeting, Portland, Oregon

August 2003 – "North Atlantic Hurricane Disturbance: Current Patterns and Climatic Phases" Ecological Society of America Annual Meeting, Savannah, GA

July 2003 – "A comparison of factors affecting leaf-level drag in trees and shrubs" 4th Plant Biomechanics Conference, East Lansing, MI. (poster)

August 2002 – "Computational methods for ecological forecasting: Spatial models and algorithms" Ecological Society of America Annual Meeting, Tucson, AZ

August 2001 – "The Extinction Debt Revisited: Population Dynamics in a Point-Process Model" Ecological Society of America Annual Meeting, Madison, WI **[Lotka-Volterra Award winner]**

## Invited Seminars

Michigan State University, Triple G Colloquium Series, East Lansing, MI - March 2023

"Forecasting Ecology in a Changing World"

Climate Change and Emerging Infectious Disease, University of Albany, Albany, NY - March 2023 "Forecasting Ecology in a Changing World"

Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden - November 2022 "Forecasting Ecology in a Changing World"

Finnish Meteorological Institute, Helsinki, Finland - November 2022 "Forecasting Ecology in a Changing World"

Rensselaer University, Jefferson Project - October 2022 "Forecasting Ecology in a Changing World"

Harvard Forest - September 2022 "Forecasting Ecology in a Changing World"

CarbonTracker meeting - April 2022 "A Prototype Bottom-up Terrestrial Carbon cycle reanalysis"

PSU METEO 561 Guest Lecture - March 2022 "Can we predict the terrestrial carbon cycle like we forecast weather?"

University of Texas, Austin - February 2022 "Ecological Forecasting: Toward A More Predictive And Societally-Relevant Science"

Boston University Research on Tap: Pandemic Preparedness & Response - September 2021 "Forecasting ticks the way we forecast weather"

EFI Interagency Federal Roundtable - August 2021 "Ecological Forecasting: Toward A More Predictive And Societally-Relevant Science"

Sacramento-San Joaquin Delta Independent Science Board - May 2021 "21st Century Science For 21st Century Environmental Decision Making: The Challenges And Opportunities Of Near-Term Iterative Ecological Forecasting"

Boston University Biogeoscience Program - March 2021 "The Emerging Era of Ecological Forecasts: Feedbacks between Models and Data"

LTAR All-Hands monthly meeting - November 2020 "Ecological Forecasting and the EFI / NEON Forecasting Challenge"

Western Sydney University - September 2020 "Forecasting ecology in a changing world"

University of Albany - April 2020 [postponed]

University of Texas, Austin - March 2020 [postponed]

North Carolina State University, Center for Geospatial Analytics - February 2020 "Forecasting Ecology in a Changing World"

NSF Biology Advisory Committee - September 2019
   "Building an ecological forecasting community of practice"

ESA Science Committee - August 2019
    "Building an ecological forecasting community of practice"

National Ecological Observatory Network - July 2019
   "Forecasting Ecology in a Changing World"

Harvard Forest REU Program - July 2019
   "Solving The Challenge Of Predicting Nature: How Close Are We And How Do We Get
   There?"

Cary Institute for Ecosystem Studies - April 2019
    "Solving The Challenge Of Predicting Nature: How Close Are We And How Do We Get
   There?"

University of Wisconsin, Department of Forest and Wildlife Ecology - March 2019
   "Solving The Challenge Of Predicting Nature: How Close Are We And How Do We Get
   There?"

Woods Hole Oceanographic Institution - December 2018

Boston University Research on Tap: Understanding and Forecasting Change in Our Natural
   World - November 2018
   "Solving the Challenge of Predicting Nature"

University of Toronto, Department of Ecology and Evolutionary Biology - October 2018
   "Solving the Challenge of Predicting Nature: How Close are We and How Do We Get
   There?"

**NSF Distinguished Lecturer** - September 2018
   "Solving the Challenge of Predicting Nature: How Close are We and How Do We Get
   There?"

Sloan Foundation - September 2018

OneNOAA Science Seminar Series, Silver Spring MD - September 2018
   "Solving the Challenge of Predicting Nature: How Close are We and How Do We Get
   There?"

Harvard Forest REU Program - June 2018
   "The PEcAn Project: Putting ecosystem model-data fusion in your pocket"

University of Arizona, School of Natural Resources and the Environment - February 2018
   "Forecasting Ecology in A Changing World"

Harvard Forest REU program, Petersham, MA - July 2017
   "Forecasting Ecology in A Changing World"

Boston University Pardee Center - June 2017
   "Ecological Forecasting"  **[book release event]**

First Parish Church, Beverly, MA - April 2017
   "View From The Pew: Science March" **[Public outreach]**

Barro Colorado Island, Panama - March 2017
   "Forecasting Ecology in A Changing World"

Smithsonian Tropical Research Institute, Panama - March 2017
   "The PEcAn Project: Putting ecosystem model-data fusion in your pocket"

University of Washington, Seattle, WA - November 2016
   "Ecological Forecasting: Past, Present, and Future"

NASA Jet Propulsion Lab, Pasadena, CA - October 2016
   "Ecological Forecasting: Past, Present, and Future"

University of California, Irvine - October 2016
   "Ecological Forecasting: Past, Present, and Future"

Boston University Alumni Weekend - September 2016
   "Forecasting Ecology in A Changing World" **[Alumni outreach]**

Lawrence Berkeley National Lab, Berkeley, CA - September 2016
   "Ecological Forecasting: Past, Present, and Future"

Harvard Forest REU Program - July 2016
   "The PEcAn Project: Putting ecosystem model-data fusion in your pocket"

Harvard University Science by the Pint, The Burren, Davis Square, Somerville, MA, June 2016
   "Fire, invasives, and ticks, oh my! Forecasting ecology in a changing world"
   **[Public outreach]**

University of Georgia, Odum School of Ecology - October 2015
   "Forecasting ecosystems: challenges and opportunities"

Harvard Forest Summer REU Program - July 2015
   "The PEcAn Project:Carbon-Cycle Reanalysis Facilitated by Model-Data Ecoinformatics"

University of New Hampshire, Biology - May 2015
   "Ecological Forecasting: from theory to practice"

Stony Brook University, Biology - April 2015
   "The PEcAn Project: A Community Platform for Synthesis & Forecasting of Ecosystems"

Montana State University, Biology - March 2015
   "The PEcAn Project: A Community Platform for Ecological Synthesis & Forecasting"

University of Florida, Wildlife Ecology and Conservation - February 2015
   "Ecological Forecasting: From Theory to Practice"

Columbia University, E3B - October 2014
   "The PEcAn Project: A Community Platform for Synthesis & Forecasting of Ecosystems"

Boston University, Math and Statistics - October 2014
   "Ecological Forecasting: An Emerging Challenge"

Kent State University, Biology - September 2014
  "Terrestrial Ecosystems: Past, Present, & Future"

Boston University, Earth and Environment - September 2014
  "Terrestrial Ecosystems: Past, Present, & Future"

Harvard Forest Summer REU Program - July 2014
  "The PEcAn Project:Carbon-Cycle Reanalysis Facilitated by Model-Data Ecoinformatics"

The Ecosystem Center, Woods Hole Marine Biological Laboratory - January 2014
  "The PEcAn Project: Accessible ecoinformatic tools for carbon-cycle model-data analysis
  and assimilation"

Harvard Forest Summer REU Program - June 2013
  "The PEcAn Project:Carbon-Cycle Reanalysis Facilitated by Model-Data Ecoinformatics"

Harvard Forest Seminar Series - May 2013
  "The PEcAn Project:Carbon-Cycle Reanalysis Facilitated by Model-Data Ecoinformatics"

Harvard ClimaTea Seminar Series - April 2013
  "The PEcAn Project:Carbon-Cycle Reanalysis Facilitated by Model-Data Ecoinformatics"

Boston University EBE seminar series - March 2013
  "Ecology in a Data Rich Era"

Boston University, Department of Geography - February 2012
  "The Emerging Era of Ecological Forecasts: Feedbacks between models and data"

Ohio State University, EEOB seminar series - January 2010
  "Global change impacts on tree mortality and east temperate forest dynamics"

University of New Hampshire, Complex Systems Research Center - March 2009
  "Incorporating landscape-scale edaphic variation into regional ecosystem forecasts using
  ED2"

University of Vermont, Department of Plant Biology - March 2009
  "Incorporating landscape-scale edaphic variation into regional ecosystem forecasts using
  ED2"

Michigan State University, Department of Forestry - March 2009
  "Regeneration Dynamics in Large Forest Gaps"

University of Illinois, Plant Biology Colloquium - November 2008
  "Missing pieces? Tree mortality and regeneration"

Energy Biosciences Institute  - October 2008
  "Biofuels and Ecosystem Services: Model  Data Synthesis"

University of Illinois, School of Integrative Biology - March 2008
  "Reassessing Paradigms of Forest Dynamics"

Harvard University OEB Seminar Series - February 2007
  "Regeneration Dynamics in Large Forest Gaps"

Harvard Forest Seminar Series - October 2006
    "Regeneration Dynamics in Large Forest Gaps"

Duke University - April 2006
    "Regeneration Dynamics in Large Forest Gaps"

Harvard University - September 2005
    "Shadow and light: heterogeneity in forest gaps"


**Affiliations**    Ecological Society of America – 2000-present

    American Geophysical Union – 2009-present

    Ecological Forecasting Initiative – 2018-present

    American Meteorological Society – 2012-present

    US-IALE – 2015-present

    Society for Conservation Biology – Duke Chapter, Executive Committee – 2001