

**INÉS IBÁÑEZ**  
**CURRICULUM VITAE**

---

School for Environment and Sustainability-Department of Ecology and Evolutionary Biology

University of Michigan

Ann Arbor, MI-48109-1041, USA

e-mail: iibanez@umich.edu

Phone: 1-734-615-8817

<https://sites.google.com/a/umich.edu/ines-ibanez/>

---

**EDUCATION AND PROFESSIONAL EXPERIENCE:**

-Ph.D. Ecology. 2006. Duke University

-M.S. Range Sciences. 1998. Utah State University

-B.S. Biology (Botany). 1993. Universidad Complutense de Madrid-Spain. Licenciatura de Grado. 1994.

- 2021-present Professor, School of Natural Resources and Environment and Department of Ecology and Evolutionary Biology University of Michigan.

- 2014-2021 Associate Professor, School of Natural Resources and Environment and Department of Ecology and Evolutionary Biology University of Michigan.

- 2008-2014 Assistant Professor, School of Natural Resources and Environment and Department of Ecology and Evolutionary Biology University of Michigan.

- 2006-2007 Postdoctoral research scientist, University of Connecticut.

- 1999-2000 Research associate, Duke University.

- 1998-1999 Research technician, San Diego State University.

**PUBLICATIONS-JOURNALS:**

Qiu, T. M.C., ~60 authors, and J. S. Clark (2023). Mutualist dispersers and the global distribution of masting: mediation by climate and fertility. *Nature Plants*, in press.

Bogdziewicz, M. ~60 students, Clark, J.S. 2023. Linking seed size and number to trait syndromes in trees. *Global Ecology and Biogeography*. *In press*

**Ibáñez, I.**, L. Petri, D. T. Barnett, E. M. Beaury, D. M. Blumenthal, J. D. Corbin, J. Diez, J. S. Dukes, R. Early, I. S. Pearse, C. J. B. Sorte, M. Vilà and B. Bradley. 2023. Combining local, landscape, and regional geographies to assess plant community vulnerability to invasion impact. *Ecological Applications*. *In press*.

Requena-Mullor, J.M., Steiner, A., Keppel-Aleks, G., **Ibáñez, I.** 2023. Tradeoffs in forest resilience to satellite-based estimates of water and productivity losses. *In press*. Remote Sensing of Environment.

Zonneville, H.M., Acharya, K., Potvin, L., Romanski, M., **Ibáñez, I.** Long-term effects of herbivory on tree growth are not consistent with browsing preferences. *CJFR In press*.

Petri, L., Beaury, E., Corbin, J., Peach, K., Sofaer, H., Pearse, I., Early, R., Barnett, D., **Ibáñez, I.**, Peet, R., Schafale, M., Wentworth, T.R., Vanderhorst, J., Zaya, D., Spyreas, G., Bradley, B. 2023. SPCIS: Standardized Plant Community with Introduced Status Database. *Ecology* e3947. <https://doi.org/10.1002/ecy.3947>

Qiu T., +60 authors, and James Clark. 2022. Limits to reproduction and seed size-number trade-offs that shape forest dominance and future recovery. *Nature Communications* 13:2381 <https://www.nature.com/articles/s41467-022-30037-9>

Journe, V., 60 authors, Clark, J.S. 2022. Globally, tree fecundity exceeds productivity gradients. *Ecology Letters*. 25:1471-1482.

Wang, X. and **Ibáñez, I.** 2022. The contrasting effects of local environmental conditions on tree growth between populations at different latitudes. *Forests* 13, 429 [doi.org/10.3390/f13030429](https://doi.org/10.3390/f13030429)

Sharma, S. Andrus, R., Bergeron, Y., Bogdziewicz, M., Bragg, D. C., Brockway, D., Cleavitt, N.L., Courbaud, B., Das, A.J., Dietze, M., Fahey, T.J., Franklin, J.,F., Gilbert, G.S., Greenberg, C.H., Guo, Q., Hille Ris Lambers, J., **Ibanez, I.**, Johnstone, J.F., Kilner, C.L., Knops, J.M.H., Koenig, W.D., Kunstler, G., LaMontagne, J.M., Macias, D., Moran, E., Myers, J.A., Parmenter, R., Pearse, I.S., Poulton-Kamakura, R., Redmond, M.D., Reid, C.D., Rodman, K.C., Scher, C.L., Schlesinger, W.H., Steele, M.A., Stephenson, N.L., Swenson, J.J., Swift, M., Veblen, T.T., Whipple, A.V., Whitham, T.G., Wion, A.P., Woodall, C.W., Zlotin, R., Clark, J.,S. 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>

Pellitier, P., **Ibáñez, I.**, Zak, D.R., Argiroff, W., and Acharya, K. 2021. Ectomycorrhizal access to organic nitrogen mediates CO<sub>2</sub> fertilization response in a dominant temperate tree. *Nature Communications* 12: 5403 <https://doi.org/10.1038/s41467-021-25652-x>

Qiu, T., M.C. Aavena, Acuna, R. Andrus, D. Ascoli, Y. Bergeron, R. Berretti, M. Bogdziewicz, T. Boivin, R. Bonal, T. Caignard, R. Calama, J.J. Camarero, C. Clark, B. Courbaud, S. Delzon, S. Donoso Calderon, W. Farfan-Rios, C.A. Gehring, G.S. Gilbert, C.H. Greenberg, Q. Guo, J. Hille Ris Lambers, K. Hoshizaki, **I. Ibáñez**, V. Journé, C.L. Kilner, R. Kobe, W.D. Koenig, G. Kunstler, J.M. LaMontagne, M. Ledwon, J.A. Lutz, R. Motta, J.A. Myers, T.A. Nagel, C.L. Nuñez, I.S. Pearse, Ł. Piechnik, J. Poulson, R. Poulton-Kamakura, M.D. Redmond, C.D. Reid, K.C. Rodman, C.L. Scher, H. Schmidt Van Marle, B. Seget, S. Sharma, M. Silman, J.J. Swenson, M. Swift, M. Uriarte, G. Vacchiano, T.T. Veblen, A.V. Whipple, T.G. Whitham, A.P. Wion, J. Wright, K. Zhu, J.K. Zimmerman, M. Zywiec, and J.S. Clark. 2021. Is There Tree Senescence? The Fecundity Evidence. *PNAS* DOI: 10.1073/pnas.2106130118.

Sotnik, G., Fischer A.P., Cousins, S. and **Ibáñez, I.** 2021. A transdisciplinary typology of change identifies new categories of adaptations and forms of co-adaptation in coupled human and natural systems *Sustainability Science* 16: 1609-1623  
<https://doi.org/10.1007/s11625-021-00979-y>

Lee, B.R. and **Ibáñez, I.** 2021. Improved phenological escape can help temperate tree seedlings maintain demographic performance under climate change conditions. *Global Change Biology* 27(16): 3883-3897 . <https://doi.org/10.1111/gcb.15678>

Lee, B.T. and **Ibáñez, I.** Spring phenological escape is critical for the survival of temperate tree seedlings. *Functional Ecology* (in press) <http://doi.org/10.1111/1365-2435.13821>

**Ibáñez, I.**, Liu, G., Petri, L., Schaffer-Morrison, S., & Schueller, S. 2021. Assessing vulnerability and resistance to plant invasions A native community perspective. *Invasive Plant Science and Management*, 14(2), 64-74. doi:10.1017/inp.2021.15  
\*WSSA Outstanding Paper Award

Juno, E. and **Ibáñez, I.** 2021. Biochar application and soil transfer in tree restoration. A meta-analysis and field experiment. *Ecological Restoration* 49 (3): 158-167 doi: 10.3368/er.39.3.158

Vilà, M., Beaury, E.M, Blumenthal, D., Bradley, B.A., Early, E., Laginhas, B.B., Trillo, A., Dukes, J.S., Sorte, C.J.B, & **Ibáñez, I.** Understanding the combined impacts of weeds and climate change on crops. 2021. *Environmental Research Letters* 16 034043 <https://doi.org/10.1088/1748-9326/abe14b>

Clark, J.S., et al (62 coauthors). 2021. Continent-wide tree fecundity driven by indirect climate effects. *Nature Communications* 1242 <https://doi.org/10.1038/s41467-020-20836-3>

Carman, J., Zint, M., Burkett, E., & **Ibáñez, I.** 2020. The role of interest in climate change instruction. *Science Education*. <https://doi.org/10.1002/sce.21610>

McCollum, C. and **Ibáñez I.** 2020. Soil moisture gradients and climate change: predicting growth of a critical boreal tree species. *Canadian Journal of Forest Research* 50. <https://doi.org/10.1139/cjfr-2019-0397>

Wallingford, P.D, Morelli, T.L., Allen, J.A., Beaury, E.M., Blumenthal, D.M., Bradley, B.A., Dukes, J.S., Early, R., Fusco, E.J. Goldberg, D.E., **Ibáñez, I.**, Laginhas, B.B., Vilà, M. Sorter, C.J.B. 2020. Adjusting the lens of invasion biology to focus on the impacts of climate-driven range shifts. *Nature Climate Change* 10: 398-405. <https://doi.org/10.1038/s41558-020-0768-2>

**Ibáñez I.** and Rodríguez, A. 2020. Understanding neighborhood effects to increase restoration success of woody plant communities. *Ecological Applications*. <https://doi.org/10.1002/eap.2098>

**Ibáñez I.**, Acharya K., Juno E., Karounos C., Lee B.R., McCollum C., Schaffer-Morrison, S., Tourville, J. 2019. Forest resilience under global environmental change: Do we have the information we need? A systematic review. *PLOS ONE*: 14(9):e0222207.

Cruz Alonso, V., Villar-Salvador, P., Ruiz-Benito, P., **Ibáñez I.**, Rey-Benayas, J.M. 2019. Long-term dynamics of shrub facilitation shape the mixing of evergreen and deciduous oaks in Mediterranean abandoned fields. *J. Ecol.* doi: 10.1111/1365-2745.13309

**Ibáñez I.**, Zak, D.R., Burton, A.J. and Pregitzer, K.S. 2018. Anthropogenic nitrogen deposition ameliorates the decline in tree growth caused by a drier climate. *Ecology* 99: 411-420. doi: 10.1002/ecy.2095

McClung, T. and **Ibáñez, I.** 2018. Quantifying the synergistic effects of impervious surface and drought on radial tree growth. *Urban Ecosystems* 21: 147-155 doi:10.1007/s11252-017-0699-5

Margulies, E., Bauer, L. and **Ibáñez, I.** 2017. Buying time: preliminary assessment of biocontrol in the recovery of native forest vegetation in the aftermath of the invasive Emerald Ash Borer. *Forests* 8: 369. doi:10.3390/f8100369.

Carman J., Zint M. and **Ibáñez I.** 2017. Assessing student interest and desire to learn more about climate change effects on forest in middle school: an intervention-based path model. *Electronic Journal of Science of Education*, 21(5).

**Ibáñez, I.**, Katz, D.W. and Lee, B.R. 2017. The contrasting effects of short-term climate change on the early recruitment of tree species. *Oecologia* 184: 701-713 doi: 10.1007/s00442-017-3889-1.

Tonn, N. and **Ibáñez, I.** 2017. Plant-mycorrhizal fungi associations along an urbanization gradient: implications for tree seedlings survival. *Urban Ecosystems* 20: 823-837 doi: 10.1007/s11252-016-0630-5.

Vizcaíno-Palomar, N., **Ibáñez, I.**, Benito-Garzón, M., González-Martínez, S. C., Zavala, M. A., Alía, R. 2017. Climate and population of origin shape pine tree height-diameter allometry. *New Forests* 48(3): 363-379.

Katz, D.W. and **Ibáñez, I.** 2017. Differences in biotic interactions across range edges have only minor effects on plant performance. *Journal of Ecology* 105(2): 321-331.

Phillips, R.P., **Ibáñez, I.**, D'Orangeville, L., Hanson, P.J., Ryan, M.G., and McDowell, N. G. 2016. A belowground perspective on the drought sensitivity of forests: Towards improved understanding and simulation. *Forest Ecology and Management* 380: 309-320.

Katz, D.W. and **Ibáñez, I.** 2016. Biotic interactions with natural enemies do not affect potential range expansion of three invasive plants in response to climate change. *Biological Invasions* 18: 3351-3363.

Early, R., Bradley, D., Dukes, J., Lawler, J., Olden, J., Blumenthal, D., Gonzalez, P., Grosholz, E., **Ibáñez, I.**, Miller, L., Sorte, C. and Tatem, A. 2016. Global threats from invasive alien species in the 21st Century and national response capacities. *Nature Communications* 7: doi: 10.1038/ncomms12485.

Katz, D.W. and **Ibáñez, I.** 2016. Foliar damage beyond species distributions is partly explained by distance dependent interactions with natural enemies. *Ecology* 97: 2331-2341.

Vizcaíno-Palomar, N., **Ibáñez, I.**, González-Martínez, S. C., Zavala, M. A., Alía, R. 2016. Adaptation and plasticity in aboveground allometry of pine species along environmental gradients: implications for forest management. *Ecology and Evolution* 6(21): 7561-7573.

**Ibáñez, I.**, Zak, D.R., Burton, A.J. and Pregitzer, B.K. 2016. Chronic nitrogen deposition alters allometric relationships in a dominant tree species: Implications for woody biomass production and ecosystem carbon storage. *Ecological Applications* 26: 913-925.

Clark, J. S., Iverson, L. R., Woodall, C. W., Allen, C., Bell, D.; Bragg, D., D'Amato, A., Davis, F., Hersh, M., **Ibáñez, I.**, Jackson, S., Matthews, S., Pederson, N., Peters, M., Schwartz, M., Waring, K., Zimmerman, N., 2016. The impacts of increasing drought on forest dynamics, structure, and biodiversity. *Global Change Biology* 22: 2329-2352.

**Ibáñez, I.** and McCarthy-Neumann, S. 2016. Effects of mycorrhizal fungi on tree seedling growth: quantifying the parasitism-mutualism transition along a light gradient. *Canadian Journal of Forest Research* 46:48-57.

Peltier, D. and **Ibáñez, I.** 2015. Patterns and variability in seedling carbon assimilation: implications for tree seedlings recruitment under climate change. *Tree Physiology* 35: 71-85.

Ibáñez, B., **Ibáñez, I.**, Gómez Aparicio, L., Ruiz-Benito, P., Gracia, L. and Marañón, T. 2014. Contrasting effects of climate change along life stages of a dominant tree species: the importance of soil-climate interactions. *Diversity and Distributions* 20: 872-833.

Brym, Z.T., Allen, D. and **Ibáñez, I.** 2014. Community control on growth and survival

of an exotic shrub. *Biological Invasions* 16: 2529-2541.

Gonzalez, P., Diez, J., **Ibáñez, I.**, Font, X. and Vila, M. 2014. Plant-invasions are context-dependent: multi-scale effects of climate, human activity and habitat. *Diversity and Distributions* 20: 720-731.

**Ibáñez, I.**, Katz, D.W., Peltier, D., Wolf, S.M. and Connor Barrie, B.T. 2014. Assessing the integrated effects of landscape fragmentation on plants and plant communities: The change of a multiprocess-multiresponse dynamics. *Journal of Ecology* 102: 882-895.

Diez, J.M., **Ibáñez, I.**, Silander, J., Primack, R., Higuchi, H., Kobori, H., Sen, A., James, T.Y. 2014. Beyond seasonal climate: statistical estimation of phenological responses to weather *Ecological Applications* 24: 1793-1802.

**Ibáñez, I.** and McCarthy-Neumann, S. 2014. Integrated assessment of the direct and indirect effects of resource gradients on tree species recruitment. *Ecology* 95(2): 364-375.

**Ibáñez, I.**, Diez, J.M., Miller, L.P., Olden, J.D., Sorte, C.J.B., Blumenthal, D.M., Bradley, B.A., D'Antonio, C.M., Dukes, J.S., Early, R.I., Grosholz, E.D., Lawler, J.J. 2014. Integrated assessment of biological invasions. *Ecological Applications* 24: 25-37.

Caldeira, M.C., **Ibáñez, I.**, Nogueira, C., Bugalho, M.N., Lecomte, X., Moreira, A. and Pereira, J.S. 2014. Direct and indirect effects of tree canopy facilitation in the recruitment of Mediterranean oaks. *Journal of Applied Ecology* 51: 349-358.

Bugalho, M.N., **Ibáñez, I.** and Clark, J.S. 2013. The effects of deer herbivory and forest type on tree recruitment vary with plant growth stage. *Forest Ecology and Management* 308: 90-100.

Diez, J.M., James, T.Y., McMunn, M., and **Ibáñez, I.** 2013. Predicting species-specific responses of fungi to climatic variation using historical records. *Global Change Biology* 19: 3145-3154.

Martin\_Queller, E., Diez, J.M., **Ibáñez, I.** and Saura, S. 2013. Effects of silviculture on native tree species richness: interactions between management, landscape context and regional climate. *Journal of Applied Ecology* 50: 775-785.

McCarthy-Neumann, S. and **Ibáñez, I.** 2013 Plant-soil feedback links negative distance dependence and light gradient partitioning during seedling establishment. *Ecology* 94(4): 780-786.

Sorte, C.J.B., **Ibáñez, I.**, Blumenthal, D.M., Molinari, N.A., Miller, L.P., Grosholz, E.D., Diez, J.M., D'Antonio, C.M., Olden, J.D., Jones, S.J. and Dukes, J.S. 2013. Poised to prosper? A cross-system comparison of climate change effects on native and non-native species performance. *Ecology Letters* 16: 161-170.

**Ibáñez I.**, Gornish E.S., Buckley, L., Debinski, D.M., Hellmann J., Helmuth B., Hille Ris Lambers, J., Latimer A.M., Miller-Rushing A.J. and Uriarte, M. 2013. Moving forward in global-change ecology: capitalizing on natural variability *Ecology and Evolution* 3(1): 10-181.

McCarthy-Neumann, S. and **Ibáñez, I.** 2012. Tree range expansion may be enhanced by escape from negative plant-soil feedbacks. *Ecology* 93(12): 2637-2649.

Diez, J.M., D'Antonio, C.M., Dukes, J.S., Grosholz, D.H., Olden, J.D., Sorte, C.J.B., Blumenthal, D.M., Bradley, B.A., Early, R., **Ibáñez, I.**, Jones, S.J., Lawler, J.J., and Miller, L.P. 2012. Will Extreme Climatic Events Facilitate Biological Invasions? *Frontiers in Ecology and the Environment* 10:249-257.

Diez, J.M., **Ibáñez, I.**, Miller-Rushing, A., Mazer, S. J., Crimmins, T. M., Crimmins, M. A., Bertelsen, C. D., and Inouye, D.W. 2012. Forecasting phenology: from species variability to community patterns. *Ecology Letters* 15: 545-553.

Ellwood, E.R., Diez, J.M., **Ibáñez, I.**, Primack, R.B., Kobori, H., Higuchi, H., and Silander, J.A. 2012. Disentangling the paradox of insect phenology: are temporal trends reflecting the response to warming? *Oecologia* 168: 1161-1171.

Bradley, B.A., Blumenthal, D.M., Early, R.I., Grosholz, E.D., Lawler, J.J., Miller, L.P., Sorte, C.J.B., D'Antonio, C.M., Diez, J.M., Dukes, J.S., **Ibáñez, I.**, and Olden, J.D. 2012. Global change, global trade, and the next wave of plant invasions. *Frontiers in Ecology and the Environment*, 10(1): 20-28.

Vila, M. and **Ibáñez, I.** 2011. Plant Invasions in the Landscape. *Landscape Ecology*, 26: 461-472.

**Ibáñez, I.**, Primack, R.B., Miller-Rushing, A.J., Ellwood, E., Higuchi, H., Lee, S.D.,

Kobori, H., and Silander, J.A. 2010. Forecasting phenology under global warming. *Phil. Trans. R. Soc. B.* 365:3247-3260.

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

**Ibáñez, I.**, Silander, J.A, Allen, J., Treanor, S, Wilson, A. 2009. Identifying hotspots for plant invasions and forecasting focal points of further spread. *Journal of Applied Ecology* 46: 1219-1228.

Primack, R.B., **Ibáñez, I.**, Higuchi, H., Lee, S.D., Miller-Rushing, A.J., Wilson, A.M. and Silander, J.A. 2009. Spatial and interspecific variability in phenological responses to warming temperatures. *Biological Conservation* 142: 2569-2577.

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

**Ibáñez, I.**, Silander, J.A, Jr., Wilson, A., LaFleur, N., Tanaka, N., and Tsuyama, I. 2009. Multi-variate Forecasts of Potential Distribution of Invasive Plant Species. *Ecological Applications* 19(2): 359-375.

**Ibáñez, I.**, Clark, J.S. and Dietze, M. 2008. Evaluating the sources of potential migrant species. Implications under climate change. *Ecological Applications* 18:1664-1678.

**Ibáñez, I.**, Clark, J.S., LaDeau, S., and Hille Ris Lambers, J. 2007. Exploiting temporal variability to understand tree recruitment response to climate change. *Ecological Monographs* 77(2):163-177.

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

Clark, J.S., Dietze, M., Chakraborty, S., Agarwal, P., **Ibáñez, I.**, LaDeau, S., and Wolosin, M. 2007. Resolving the biodiversity paradox. *Ecology Letters*:10: 647-662.

**Ibáñez, I.**, Clark, J.S., Dietze, M.C., Feeley, K., Hersh, M., LaDeau, S., McBride, A., Welch, N.E., and Wolosin, M.S. 2006. Predicting biodiversity change: Outside the climate envelope, beyond the species-area curve. *Ecology* 87(8):1896-1906.

Clark, J. S., S. LaDeau, and I. **Ibáñez**. 2004. Fecundity of trees and the colonization-competition hypothesis, *Ecological Monographs* 74(3):415-442.

Clark, J. S., Mohan, J. Dietze, M. and **Ibáñez**, I. 2003. Coexistence: How to identify trophic trade-offs. *Ecology* 84(1):17-31.

**Ibáñez**, I., Schupp, E.W. 2002. Effects of litter, soil surface conditions, and microhabitat on *Cercocarpus ledifolius* Nutt. Seedling emergence and establishment. *Journal of Arid Environments* 52(2):209-221.

**Ibáñez**, I., Schupp, E.W. 2001. Positive and negative interactions between environmental conditions affecting *Cercocarpus ledifolius* seedling survival. *Oecologia* 129(4):543-550.

**Ibáñez**, I. and Burgaz, A.R. 1998. Epiphytic species of the *Lecanora subfusca* group (Lecanoraceae) in Spain. *Nova Hedwigia* 67: 45-58.

**Ibáñez**, I. and Burgaz, A.R. 1995. Líquenes epífitos de Barco de Ávila (Ávila, España). *Botanica Complutensis* 20: 9-18.

Martínez, I., **Ibáñez**, I., and Aragón, G. 1995. Fragmenta Chorologica Occidentalia, Lichenes. *Ana. Jar. Bot. Madrid* 52: 201-205.

#### **PUBLICATIONS-BOOKS:**

National Academies of Sciences, Engineering, and Medicine. 2019. *Forest Health and Biotechnology: Possibilities and Considerations*. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/25221>. Authors: Briscoe, J., Chhatre, V.E., Delborne, J.A., Difazio, S., Gordon, D.R., **Ibáñez, I.**, Jaffe, G., Laney, K., Needham, M.D., Offutt, S.E. (Chair), Palmer, C., Romreo-Severson, J., Sederoff, R.R., Six, D.L., Sinezko, R.A.

#### **PUBLICATIONS-BOOK CHAPTERS:**

Reeves, M., **I. Ibáñez**, Blumenthal, D., Chen, G., Guo, Q., Jarnevich, C., Koch, J., Sapio, F., Schwartz, M.K., Meentemeyer, R., Whyllie, B.K., and Boyte, S. 2021. Tools and technologies for quantifying spread and impacts of invasive species. Pp: 243-266. In: Poland, T.M., Patel-Weynand, T, Finch, D., Ford Miniati, C., Hayes, D.C., and Lopez, V. (eds.) *Invasive Species in Forests and Grasslands of the United States: A Comprehensive Science Synthesis for the United States Forest Sector*. Springer Verlag, Cham, Switzerland. [https://doi.org/10.1007/978-3-030-45367-1\\_11](https://doi.org/10.1007/978-3-030-45367-1_11)

Clark, J.S., D. Bell, M. Dietze, M. Hersh, **I. Ibáñez**, S. LaDeau, S. McMahon, J. Metcalf, E. Moran, L. Pangle, and M. Wolosin. 2010. Models for demography of plant populations. In T. O'Hagan and M. West (eds.) *Handbook of Bayesian Analysis*, Oxford University Press. pp. 431-481.

Clark J. S, Beckage B, HilleRisLambers J, **Ibáñez I**, LaDeau S, MacLachlan J, Mohan J, Rocca M. 2002. Dispersal and plant migration. In: Mooney H, Canadell J, editors. *Encyclopedia of Global Environmental Change*, Vol. 3. Chichester UK: Wiley and Sons. p. 81-93.

#### **PUBLICATIONS-PROCEEDINGS AND REPORTS:**

McDowell, N. Hanson, P.J., **Ibáñez, I.**, Phillips, R.P., Ryan, M.G. 2016 Physiological Responses of Forests to Future Drought. In J. Vose, C. Luce, and J.S. Clark (eds). *The National Assessment of Drought Impacts on Forests*.

Clark, J.S., L. Iverson, C. W. Woodall, C. D. Allen, D. M. Bell, D. Bragg, A. D'Amato, F. W. Davis, M. Hersh, **I. Ibanez**, S. T. Jackson, S. Matthews, N. Pederson, M. Peters, M. W. Schwartz, K. Waring, and N. E. Zimmermann. 2016. The impacts of increasing drought on forest dynamics, structure, diversity, and management. In J. Vose, C. Luce, and J.S. Clark (eds). *The National Assessment of Drought Impacts on Forests*.

Handler, S. et al. 2014. Michigan Forest Ecosystem Vulnerability Assessment and Synthesis: A report from the Northwoods Climate Change Response Framework. Gen. Tech. Rep. NRS-129. Newtown Square, PA; U.S. Department of Agriculture, Forest Service, Northern Research Station.

Silander, J.A.Jr., **Ibáñez, I.** and Merhoff, L.J. 2007. The Biology and Ecology of Invasive Species - the Importance of International Collaboration in Predicting the Spread of Invasive Species. Proceedings of the NIAES International Symposium (Tsukuba, Japan): 8-17.

**Ibáñez**, I., Schupp, E.W., and Boettinger, J.L. 1999. Successional History of a Curlleaf Mountain Mahogany Stand: a Hypothesis. In: McArthur, E.D.; Ostler, W.K.; Wambolt, C.L. comps. 1999. Proceedings: Shrubland Ecotones. 1998 August 12-14, Ephraim, UT. Proceedings RMRS-P-000. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

**CURRENT GRANTS (PI OR CO-PI):**

September 2022-August 2026. Co-PI. PI: J. Clark. "Continent-wide forest recruitment change: the interactions between climate, habitat, and consumers" NSF-DEB \$185,395 to Ibanez.

October 2022-September 2024. PI "Assessing tradeoffs in forest resilience to water and productivity losses at the Boreal-Temperate ecotone" USDA-Forest Service McIntire-Stennis. \$149,607.

March 2022-February 2015. PI. Co-PI D. Zak "Assessing the Contribution of Nitrogen from Soil Organic Matter on Plant Growth Response to Elevated CO<sub>2</sub>". NSF-DEB. \$888,000.

June 2021-May 2023. PI "OPUS - Enhancing capabilities through synthesis for forecasting tree species population trajectories under changing environments." NSF-DEB. \$349,000.

**PAST GRANTS (PI OR CO-PI):**

January 2019 - May 2023. Co-PI "Institute for Global Change Biology" University of Michigan \$2.1 M.

October 2020-September 2022. PI "Towards a mechanistic prediction of forest functioning under climate change" USDA-Forest Service McIntire-Stennis. \$150,000.

October 2018 - September 2021. Co-PI "Impacts of Socio-Ecological Adaptation to Global Change on Forests Ecosystems " USDA McIntire-Stennis \$138,800.

October 2019 – November 2021. Co-PI “The other side of invasibility: vulnerability of recipient ecosystems” NCEAS-NSF Working group. \$105,000

August 2019 – July 2021. PI “Forest Vulnerability and Resilience: Assessments and Solutions.” Working group. SEAS Themes \$84,000.

January-June 2020. Elisabeth Crosby Faculty Grants Program. \$15,000.

April 2019 – March 2020. Co-PI “Reframing invasions: from the invader to the invaded, a focus on vulnerability” Workshop. SEAS Themes \$15,000.

July 2013 – August 2020. PI “The emergence of novel regeneration niches: forecasting tree species recruitment dynamics in a time of change.” NSF-CAREER \$749,994.

October 2016 – September 2018. PI “Establishing a Network of Forest Inventory Plots across U. Michigan Properties to Assess and Inform About Forest Performance Under Global Change ” USDA McIntire-Stennis \$139,022.

January 2018-August 2018. PI “ Providing solutions to address the risk and impact of biological invasion under climate change” Graham Sustainability Institute \$10,000.

June 2014 – September 2016. PI “Assessing forest species resilience to drought: implications for forest conservation and management.” USDA McIntire-Stennis \$67,151.

April 2012 – September 2014. PI “Forests and forests pests: the next big challenge in forest conservation and management.” USDA McIntire-Stennis \$60,903.

January 2012- PI “Showcasing SNRE research at Saginaw Forest: A proposal to enhance local formal and informal environmental science education opportunities to strengthen the “Broader Impacts” of SNRE research.” SNRE seed Award amount: \$20,668. CoPI-Michaela Zint.

January 2011 – PI “Assessing the effectiveness of incentive programs to preserve forest health: biodiversity and forest regeneration surveys.” Elisabeth Crosby Program-UM. Award amount: \$ 12,845.

August 2010 - PI "Evaluating the impact of land use on the adaptation potential of tree species to global warming." McIntire-Stennis USDA. Award amount: \$62,229.

May 2010 - PI "Phenological responses to climate change in Japan." UM Center for Japanese Studies. Award amount: \$3,500.

August 2009 - PI "The Role of Plant-Soil Feedbacks on Species Potential to Expand their Distributional Ranges in Response to Climate Change." NSF-EAGER. Award amount: \$247,752.

March 2009 - CoPI "Spatiotemporal models of phenology: Integrating the effects of climate change in plants and animals." NSF-DEB \$700,000, award amount to Ibáñez at UM: \$179,837.

September 2009 - PI "The impact of land use on the adaptation potential of tree species to global warming." McIntire-Stennis USDA. Award amount: \$25,321.

October 2008 - PI "Plant-soil feedback effects on colonization potential of migrant tree species tracking global warming." McIntire-Stennins USDA. Award amount: \$59,684.

October 2008 - PI "Evaluating the Colonization of Great Lakes Trees Species Under Climate Change." Seed Grant University of Michigan. SNRE seed. Award amount: \$10,020.

January 2008 - CoPI "A multi-scale approach to the forecast of potential distributions of invasive plant species." USDA. \$545,000.

### **TEACHING EXPERIENCE AND TRAINING:**

Instructor: UMich - NRE 549- *Analysis and Modeling of Ecological Data*, a graduate level course. This course will consist on an overview of standard and innovative techniques in ecological data analysis and modeling. Topics will include: linear regression, mixed effects models (fixed and random effects), maximum likelihood, general linear models and general additive models, survival analysis, time series, spatial analysis and Bayesian and hierarchical Bayesian approaches. The course will be a combination of lectures and computer labs, for which we will be using two open source programs. This course is designed for students to work on their own data, or

simulated data, related to their research projects or scientific interests. While reviewing the major statistical techniques, students will work on their projects and will be presenting their work to the class along the semester, these presentations will consist on: initial exploratory data analysis, selection of statistical analysis or modeling approach, implementation, and results.

Instructor: UMich - NRE 547- *Forest Ecology in a Changing World*, a graduate level course. In this course we cover from the basic concepts in ecology that apply to forests to the challenges that forests face due to global change (climate change, landscape fragmentation, pollution, introduced species). We study the ecological mechanisms behind individuals, populations, communities and whole ecosystems together with the dynamic processes associated to forests (succession, disturbances). We also review the role and impact of humans on these communities. Field and computer labs are implemented during the semester, during those sessions students learn to formulate research questions, design data collection protocols, use field equipment and analyze the data.

Instructor: UMich - NRE 436- *Woody Plants*, a graduate and upper level undergraduate course. This is an intensive field- and lecture-based learning experience, in which students learn to identify trees, shrub and vine species that are important in Michigan environments. They learn about their taxonomy, distribution, habitat associations, and biogeographic history and how to identify them in their leafless winter condition. The lab component (see web page on field sites) consists of weekly field trips in the Ann Arbor area, which include riparian and floodplain habitats, glacial lakes, moraines, bogs, fens and mesic forests. The lectures cover elementary aspects of plant identification, taxonomy and ecology; however, the broader themes include biogeographic history and the assembly of Michigan plant communities, both before and after major glaciations, ecological specialization, and impacts of global warming and other anthropogenic environmental changes.

Outreach Co-PI and Ecology consultant: *Down to the Core*, a two-week lesson plan for 7<sup>th</sup> grade students, students learn about plant growth and the use of mathematical models to predict plant growth responses to varying environmental conditions. Based on the PI's research.

Co-instructor: UConn-EEB 482 - *Hierarchical Bayes*, an introduction developing Hierarchical Bayesian models with ecological and bio-geographical data.

Workshop Co-organizer: Ogle, K., Ibáñez, I., and Hille Ris Lambers, J. *A brief introduction to hierarchical Bayesian modeling in ecology* Ecological Society of America, Annual Meeting August 6<sup>th</sup>, 2006, August 5<sup>th</sup>, 2007, August 3<sup>th</sup>, 2008, August 1<sup>st</sup>, 2010, August 7<sup>th</sup>, 2011, August 5<sup>th</sup>, 2012 and AEET meeting October 18, 2009.

Invited Lecturer: Teachers Institute - Global Change. Michigan Technological University. July 2009.

**ADVISEES** (\*Degree/project completed):

Postdoctoral researchers: Jeff Diez\*, Sarah Neumann\*, Juan Miguel Requena-Mullor

PhD students: Dan Katz\*, Ben Lee\*, Laís Petri (exp 2024)

MS thesis students: Zack Brym\*, Ben Connor Barrie\*, Liana May\*, Samantha Wolf\*, Drew Peltier\*, Elan Margulies\*, Natalie Tonn\*, Teegan McClung\*, Chris Karounos\*, Edith Juno\*, Caleb McCollum\*, Kirk Acharya\*, Sam Morrison-Schaffer\*, Xiaomao Wang\*, Chantalle Vincent\*, Ezekiel Herrera-Bevan.

Undergraduate Honor Thesis: Bhavya Sridhar\*, Hannah Zonneville\*.

**AFFILIATIONS:**

-Ecological Society of America, ESA, SEEDS program  
-UROP, Undergraduate Research Opportunity Program at the University of Michigan.  
Mentor.

**FELLOWSHIPS AND AWARDS:**

- Biology grant-in-aid, Department of Biology, Duke University, three times, 2002-04.  
- Fulbright Fellowship to pursue a M.A. degree in Utah State University, Logan, Rangeland Resources Department, September 1995 to February 1998.  
- University of Helsinki Fellowship, Department of Botany, February 1994 to June 1994. Research with Professor T. Ahti in "Ecology, Physiology, and Taxonomy of Lichens."

- ERASMUS Fellowship to attend the University of Wales, Bangor, School of Biological Sciences. October 1993 to February 1994. Project "Lichens and Pollution."

**PROFESSIONAL ACTIVITIES:**

- Since 2023 Chief Editor Global Environmental Change-Advances
- National Academies of Sciences, Engineering and Medicine. Committee member in report " Research at Multiple Scales: A Vision for Continental Scale Biology" 2023-2024.
- Since 2020 Deputy coordinator IUFRO
- Since 2018 handling editor for PLOS ONE.
- National Academies of Sciences, Engineering and Medicine. Committee member in report " The Potential for Biotechnology to Address Forest Health" 2017-2018.
- January 2017-January 2021 handling editor for Diversity and Distributions.
- January 2012-December 2017 handling editor for Oecologia.
- NSF grant proposal reviewer 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2020, 2021.
- NSF panelist 2010, 2014, 2015, 2016, 2020, 2023.
- NICRR grant proposal reviewer and panelist 2009.
- DOD grant proposal reviewer 2011, 2013, 2015, 2017.
- US-Israel Binational Science -Foundation proposal reviewer 2017, 2018.
- Spain- Agencia Estatal de Investigación reviewer and panelist 2017.
- AAUW reviewer and panelist 2018.
- AXA grant proposal reviewer 2009, 2010, 2011, 2012, 2013.
- Government of the Netherlands grant proposal reviewer 2009.
- Government of Chile grant proposal reviewer 2009 (2).
- BioDiversa proposal reviewer 2013.
- Cooper Award Committee, Ecological Society of America, 2006-2008.

**REVIEWS FOR:**

American Journal of Botany, Annals of Botany, Biological Conservation, Biological Invasions, Biotropica, Canadian Journal of Forestry Research, Climate Change,

Conservation Biology, Conservation Genetics, Diversity and Distributions, Ecography, Ecology, Ecological Applications, Ecological Monographs, Ecology Letters, Ecosciences, Environmental Research Letters, Forest Ecology and Management, Forests, Frontiers in Ecology and the Environment, Global Change Biology, Global Ecology and Biogeography, International Journal of Biodiversity Science and Management, Invasive Plant Science and Management, Journal of Applied Ecology, Journal of Biogeography, Journal of Ecology, Journal of Environmental Management, Journal of Plant Ecology, Journal of Theoretical Biology, Journal of Vegetation Science, Methods in Ecology and Evolution, Nature Climate Change, Nature Communications, Nature Ecology and Evolution, Nature Plants, Oecologia, Oikos, Philosophical Transactions of the Royal Society B: Biological Sciences, Plant Ecology, PNAS, PLOSOne, Proceedings of the Royal Society, Scientific Reports.

**LANGUAGES:**

English, Spanish.

**INVITED SPEAKER:**

- .EcolInformatics Program. Northern Arizona University, April 2022. Virtual
- .Department of Biological Sciences. Mississippi State University. November 2021 – Virtual.
- .Department of Biometrics and Environmental Systems Analysis, Statistics Seminar Series. University of Freiburg, February 2020.
- .National Center for Ecological Analysis and Synthesis, Santa Barbara, October 2019.
- .New Horizons Conference, Chicago, April 2019.
- .Department of Plant Biology, Michigan State University, East Lansing, March 2019.
- .Department of Botany, Charles University, Prague, April 2016.
- .German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, Leipzig, April 2016.
- .Plant Ecology and Nature Conservation, Institute of Biochemistry and Biology, University of Potsdam, April 2016.
- .EEB Department, University of Michigan. February 2015.
- .Department of Forestry-Michigan State University. February 2014.
- .EEB Department -Rice University. January 2014.
- .Biology Department-Eastern Michigan University. March 2013.
- .EEB Department-University of Tennessee. Students' elected speaker. January 2013.
- .RNC FORECAST New Investigators Conference. Woods Hole, MA. October 2012.

- .Biology Department-Howard University. March 2012.
- .CIFOR INIA-Center for International Forestry Research \_ Spain INIA Instituto Nacional de Investigación y Tecnología Agraria and Alimentaria. Madrid, Spain, July 2011.
- .NCEAS-National Center for Ecological Analysis and Synthesis. Santa Barbara, CA. January 2011.
- .EBD-CSIC Estación Biológica the Doñana, Seville, Spain, May 2010.
- .EEB Department Iowa State University. November 2009.
- .EEB Department, University of Toronto. November 2009.
- .CIES Cary Institute of Ecosystem Studies. November 2009.
- .INIA Instituto Nacional de Investigaciones Agrarias, Madrid, Spain. December 2008.
- .Department of Forestry, Michigan State University. October 2008.
- .Department of Ecology and Evolutionary Biology, University of Michigan. March 2008.
- .Biology Department, Boston University. October 2007.
- .Department of Ecology, Evolution, and Environmental Biology, Columbia University. September 2007.
- .Harvard Forest Seminar Series, Harvard University. April 2007.
- .School of Natural Resources and the Environment, University of Michigan. March 2007.
- .Ecology and Evolutionary Biology, Departmental Seminar. University of Connecticut. December 2006.
- .Plant Ecology Seminar. University of Connecticut. October 2006.
- .University Program in Ecology Seminar Series, Duke University. April 2006.
- .Population Biology Group, Duke University. March 2005.
- .Department of Botany Seminar Series, Duke University. October 1999.
- .Department of Range Land Resources Seminar Series, Utah State University. January 1998.

### **CONFERENCE PRESENTATIONS**

“Integrating data across scales to predict native community vulnerability to plant invasion” ESA 2020, Salt Lake City, Utah - Virtual

“Assessing trends on tree species diversity and biomass change across human-dominated tropical forests” ESA 2019, Louisville, Kentucky

"Imminent threats to forest health from insect pests and pathogens," Organized session and panel discussion, AAAS 2019, Washington D.C.

"Neighborhood effects on early survival and growth of restored woody plant communities" SERE 2018, Reykjavik, Island.

"Forecasting the impact of phenological shifts on ectotherm species" Organized oral session, ESA 2017, Portland, OR.

"Accounting for ontogenetic and population variability among tree seedlings to predict recruitment dynamics in novel environments" Organized oral session, ESA 2016, Fort Lauderdale, FL.

"Chronic nitrogen deposition alters tree allometric relationships and growth resilience to drought: Implications for biomass production and carbon storage under global change" Organized oral session, ESA 2015, Baltimore, MD.

"Integrating data sources to assess biological invasions: from individual performance to species distributions." IALE 2013, Austin, TX.

"Using effect size to assess non-native and native species sensitivity to future conditions." Organized oral session, ESA 2012, Portland, OR.

"Life on the frontier: assessing tree species competitive interactions at their migratory front." Organized oral session, ESA 2011, Austin, TX.

"Beyond their ranges, outside their niches: Assessing the adaptation and migratory potential of temperate forests to global warming." Symposium presentation (organizer). ESA 2010, Pittsburg, PA.

"Forecasting Phenology Under Global Warming." International Phenology and Climate Change Workshop, June 6, 2010. Jeju Island, South Korea.

"Plant-soil feedback effects on the colonization of tree species tracking climate change." Oral presentation. IALE 2010, Athens, GA.

"Forecasting species phenological responses to global warming". Oral presentation. IALE 2009, Snowbird, UT.

"Invasive species: Identifying hotspots and focuses of further spread." Oral presentation. ESA, 2008, Milwaukee, WI.

"Identifying focal points of invasive species spread." Oral presentation. US-IALE, 2008, Madison, WI.

"Spatio-temporal mismatches in species responses to climate change." Poster presentation. NSF Workshop on Data-Model Assimilation, October 2007, Norman, OK.

"Challenges of modeling invasive species spread." Oral presentation. Ecological Society of America, 2007. San Jose, CA.

"Modeling patterns of future plant invasions in the New England region." Oral presentation. Colonization versus Invasion. Ascona, Switzerland. February 2007.

"Predicting tree seedling recruitment of resident and potential immigrant species under climate change." Oral presentation. Ecological Society of America, 2005. Montreal, Canada.

"Interannual variability and tree species recruitment. Implications under global change." Poster presentation. Winemiller Symposium, 2004. Columbia, MO.

"Regional and temporal variability on habitat suitability for seedling establishment." Poster presentation. ESA 2004. Portland, OR.

"Role of climatic variability on tree species recruitment." Poster presentation. ESA, 2003. Savannah, GA.

"Role of environmental gradients on tree species recruitment. Comparisons within and between sites." Poster presentation. ESA, 2002. Tucson, AZ.

"The role of seed fall patterns vs environmental resources in the spatial distribution of tree seedlings." Poster presentation. ESA, 2001. Madison, WI.

"Effects of seed rain and fecundity variability on the successional dynamics of neighboring communities." Poster presentation. ESA, 2000. Snowbird, UT.

"Long-term photosynthetic response of Southern California Chaparral to elevated CO<sub>2</sub>." Poster presentation. ESA, 1999. Spokane, WA.

"Successional History of a Curleaf Mountain Mahogany Stand: a Hypothesis." Poster presentation. Shrublands Ecotones, 1998. Ephraim, UT.

"Environmental conditions affecting emergence and seedling establishment of the tree *Cercocarpus ledifolius* during the first growing season." ESA, 1998. Baltimore, MD.

"Contribución al conocimiento de la flora líquénica epífita de Barco de Ávila (Ávila, España)." Poster presentation. X Simposio Nacional de Botánica Criptogámica, 1994. Tenerife, Spain.

### **WORKSHOP PARTICIPANT/ORGANIZER**

NSF-NCEAS "Vulnerability to biological invasions" 2019-2021, Co-PI.

SEAS "Reframing invasions: from the invader to the invaded, a focus on vulnerability" February 2020, Co-organizer.

RISCC "Invasive species and climate change" July 2018, Participant.

RNC Forecasting, "Coupling demography and physiology to forecast species responses to novel conditions" January 2015. Organizer.

NCEAS, "Climate change and invasive species," January 2011 February 2012, Participant.

NIACS, "Vulnerability Assessment of Great Lakes forests", September 2012. Consultant.

Cary Institute for Ecosystems Studies "Climate Change and Species Interactions", November 2012. Panel facilitator.

Duke University "Macrosystems Forest Group", May 2013. Consultant.