Sebastián Block Munguía

munguia@princeton.edu blockecology.github.io +1 609 933 8203

Education

Apr 2016 – present **Ph.D. in Ecology and Evolution**
Princeton University, USA (since September 2019)
ETH Zürich, Switzerland (April 2016 - August 2019)
Advisor: Jonathan Levine

Aug 2013 – Aug 2015 **M.Sc. in Applied Ecology**, graduated with distinction
Erasmus Mundus International Program
University of Poitiers, France — Aug 2013 to Mar 2014
- University of Coimbra, Portugal — Mar 2014 to Jul 2014
- University of Kiel, Germany — Oct 2014 to Mar 2015

Master thesis co-advised by Corey Bradshaw, Ingmar Unkel, and Frederik Saltré at the University of Adelaide, Australia.

Aug 2007 – Nov 2011 **B.Sc. in Biology**, graduated with honors
Faculty of Sciences, National Autonomous University of Mexico, Mexico City, Mexico
Advisor: Jorge A. Meave

Additional Research Experience

Oct 2015 – Feb 2016 **Research Associate**
University of Adelaide, Australia
I compiled a global database of fossil records to study the range shifts, extinctions, and community dynamics of the Late Pleistocene, and their implications for modern conservation science.

Feb 2007 – Aug 2007 **Research Assistant**
Plant Molecular Biology Research Group, Center of Genomic Sciences, National Autonomous University of Mexico, Cuernavaca, Mexico
I assisted research aiming at the genetic transformation of *Phaseolus vulgaris* with the bacteria *Agrobacterium rhizogenes*, and the study of the genetic basis of plant associations with nitrogen-fixing bacteria.

Publications

Published (Google Scholar profile)

Block S., Alexander J.M., and Levine J.M. 2019. Phenological plasticity is a poor predictor of subalpine plant population performance following experimental climate change. *Oikos*.
DOI: 10.1111/oik.06667

Block S. and Meave J.A. 2017. Landscape-scale effects of geomorphological heterogeneity on variability of oak forest structure and composition in a monogenetic volcanic field. *Plant Ecology and Diversity* 10: 167–174.
DOI: 10.1080/17550874.2017.1330367

Block S., González E.J., Gallardo-Cruz A., Fernández A., Solórzano J.V., and Meave J.A. 2016. Using Google Earth Surface Metrics to Predict Plant Species Richness in a Complex Landscape. *Remote Sensing* 8(10):865.
DOI:10.3390/rs8100865

Block S., Saltré F. Rodríguez-Rey M., Fordham D.A., Unkel I., and Bradshaw C.J.A. 2016. Where to Dig for Fossils: Combining Climate Envelope, Taphonomy and Discovery Models. *PLoS ONE* 11(3):e0151090.
DOI:10.1371/journal.pone.0151090

Block S. and Meave J.A. 2015. Structure and diversity of oak forests in the El Tepozteco National Park (Morelos, Mexico). *Botanical Sciences* 93(3): 1–32.
DOI:10.17129/botsci.150

Presentations

Contributed conference talks

Block S. and Levine J.M. 2018. Population spread acceleration due to migration lags during climate change-driven range shifts. Ecological Society of Germany, Austria and Switzerland, September 10 – 14, Vienna, Austria.

Block S., Levine J.M. and Alexander J. 2017. Phenological plasticity is a poor predictor of alpine species responses to climate change. POPBIO 2017, Halle / Salle, Germany.

Contributed conference posters

Block S., Levine J.M. and Alexander J. 2017. Phenological plasticity is unrelated to alpine species responses to warming. BES, GfÖ, NecoV, and EEF Joint Annual Meeting, Ghent, Belgium.

Block S. and Meave J.A. 2013. Geomorphological heterogeneity is a major driver of oak forest diversity in a complex volcanic landscape. INTECOL-BES-2013 Joint Meeting, London, United Kingdom.

Block S. and Meave J.A. 2013. How Does Geomorphological Heterogeneity Affect Structure and Beta-Diversity of the Tropical Montane Oak Forests of the El Tepozteco National Park (Morelos State), Mexico? ATBC-OTS-2013 Joint Meeting, San José, Costa Rica.

Block S. and Meave J.A. 2013. Estructura y diversidad de los encinares del Parque Nacional El Tepozteco (México). XIX Congreso Mexicano de Botánica (XIX Mexican Congress of Botany), Tuxtla Gutiérrez, Chiapas, Mexico.

Block S. and Meave J.A. 2013. Heterogeneidad florística de los encinares del Parque Nacional El Tepozteco (Morelos, México). IV Congreso Mexicano de Ecología (IV Mexican Congress of Ecology), Villahermosa, Tabasco, México.

Awards

2017. Best Oral Presentation Award. POPBIO2017. 30th Conference of the Plant Population Biology Section of the Ecological Society of Germany, Austria and Switzerland (GfÖ)

2016. 1st Prize Modelling Complex Ecological Dynamics Award (BSc/MSc Category)

2014-2015. University of Coimbra Academic Achievement Award

2013-2015. Erasmus Mundus Category A Scholarship

2010-2011. National Autonomous University of Mexico Academic Achievement Recognition

2011. National Autonomous University of Mexico International Mobility Scholarship

Teaching

University courses

Quantitative Approaches to Plant Population and Community Ecology (Spring 2018 & 2019, ETH Zürich)

Organized and taught two-week module on analysis of community data

Fundamental Questions in Environmental Sciences (Spring 2017, ETH Zürich)

Mentored bachelor students in writing essays about fundamental questions in ecology and evolution.

Quantitative Approaches to Plant Population and Community Ecology (Spring 2017, ETH Zürich)

Assisted in a two-week module on using experiments to parameterize models of interspecific competition

Environmental Biology Seminars (Fall 2016, 2017, 2018; ETH Zürich)

Mentored students reviewing the scientific literature and preparing presentations about climate change effects on plant communities and about the causes of the Late Pleistocene megafauna extinctions

Summer School on Alpine Plant Ecology (Summer 2018, Zürich-Basel Plant Science Center)

Co-mentored students analyzing data and preparing presentations about brief field research projects in Furka Pass, Swiss Central Alps.

Online courses

Coastal Ecology (Fall 2014, 2017, *Latin American Center for Environmental Education*; Fall 2016-2018, *México Sostenible*)

I designed and taught a three-week module on marine and coastal ecology in the online course "Integral Coastal Zone Management"

Student Mentoring & Community Outreach

Students mentored

Fabienne Spahn – "Different facets of climate change impose contrasting selection pressures on *Arabidopsis thaliana*" (ETH Zürich)

Camille Brioschi – "Using Landolt indicator values to predict alpine species responses to climate change" (ETH Zürich)

Popular science blog posts (in Spanish)

Nuestra riqueza invisible - About the great ecosystem services of the poorly known bacterial diversity. Link

Ingeniería climática - About climate engineering. Link

La cena romántica de una serpiente - About the natural history of *Lampropeltis* snakes. Link

La grandeza perdida - About the Australian megafauna. Link

La danza glacial de la vida - About the glacial cycles of the Pleistocene. Link

Academic Community Service

Peer referee (Publons profile)

Journal of Ecology (×2)
Functional Ecology
Palaeogeography, Palaeoclimatology, Palaeoecology
Plant Ecology & Diversity

Professional society membership

British Ecological Society (since 2013)

Ecological Society of America (since 2016)

Mexican Society of Botany (2011-2013)

Mexican Society of Ecology (2011-2013)

Advanced Coursework

2018. Landscape Genetics – Distributed Graduate Seminar
University of Zürich (17-week graduate course)

2017. Learning to Teach. Course for ETH Doctoral Teaching Assistants
ETH Zürich (3-day graduate course)

2017. Biotic Interactions (1-week workshop)

Instructors: Ragan M. Callaway, Christopher J. Lortie, Rob W. Brooker, Richard Michalet, Francisco I. Pugnaire, Lohengrin A. Cavieres, Christian Schöb, Bodil Ehlers.

2016. Mixed-Effects Modelling with R

University of Zürich (1-week graduate course)

2016. Alpine Ecology – International Summer School on Alpine Plant Life

Zürich-Basel Plant Sciences Center (1-week field course)

2015. Reproducible Research
Coursera Online Platform / Johns Hopkins University (10-hour online course)

2015. R Programming

Coursera Online Platform / Johns Hopkins University (20-hour online course)

2014. The Data Scientist's Toolbox

Coursera Online Platform / Johns Hopkins University (8-hour online course)

2012. Diploma in Science Communication

National Autonomous University of Mexico (1-year course)

Skills

Computer

Data analysis and modelling in R and Python

Basic database management with SQL

Version control with Git and GitHub

Spatial analysis with R, QGIS and ArcGIS

Languages

Spanish (native)

English (full professional proficiency)

French (Level B1 in Common European Framework of Reference for Languages)