INTERNATIONAL
BIOGEOGRAPHY
SOCIETY

PROGRAM GUIDE &

ABSTRACTS

9th Biennial Conference
of
The International Biogeography Society

MÁLAGA, SPAIN
January 8-12, 2019

The International Biogeography Society gratefully acknowledges generous support towards IBS Málaga 2019 from the following sponsors:

Conference Co-Sponsors

FRONTIERS OF BIOGEOGRAPHY

UNIVERSIDAD DE MÁLAGA

Gondwana & Workshop Sponsors

Diversity and Distributions — A Journal of Conservation Biogeography

Global Ecology and Biogeography — A Journal of Macroecology

Journal of Biogeography

Sponsors of Student Travel Awards & Prizes

ECOGRAPHY — A JOURNAL OF SPACE AND TIME IN ECOLOGY

transmitting science

PeerJ

FRONTIERS OF BIOGEOGRAPHY

Sponsors of Travel and Accommodation

ALSA

diputación de málaga

renfe

The society would also like to thank the many donations received by members and attendees towards the Student Travel Awards – Thank you!

*Sponsor Levels: Co-Sponsor ($10,000+), Gondwana ($3,000), Student Travel Awards ($10-800)

INTERNATIONAL BIOGEOGRAPHY SOCIETY

2017-2019 International Biogeography Society Board

Dov Sax	President
Kathy Willis	President-Elect
Carsten Rahbek	Past-President
Richard Field	Secretary
Lois Alexander	Treasurer
Pedro Peres-Neto	VP of Conferences
Jacquelyn Gill	VP of Communications
George Stevens	VP of Development and Awards
Uma Ramakrishnan	Director at Large
Kostas Triantis	Director at Large
Shirin Taheri	Student at Large

Málaga Local Organizing Committee

Raimundo Real (Host)
Antonio Román Muñoz
Ana Luz Márquez
Alba Estrada Acedo
Luis Javier Palomo
Ma Carmen Fernández
Ignacio Morales Castilla
Jesús Olivero Anarte
Miguel Ángel Farfán Aguilar
Jesús Martínez Padilla
Francisco Díaz Ruiz
Karen Faller

IBS Malaga 2019 Program/Review Committee

Pedro Peres-Neto
Avi Bar-Massada
Michael Borregaard
Miguel Farfán
Chandravilashini Hettiarachchi
David Jenkins
Petr Keil
Florent Mazel
Antonio Román Muñoz Gallego
Jesús Olivero
Hugo Mauricio Ortega Andrade
VV Robin
Marta Rueda
Lauren Schiebelhut

INTERNATIONAL BIOGEOGRAPHY SOCIETY

TABLE OF CONTENTS PAGE#

PE-02

Paleo-occupancy models reveal species detectability and occupancy in the pollen record

Jenny McGuire[1], Michelle Lawing[2], Jessica Blois[3], Kaitlin Maguire[4], Simon Goring[5]

[1]Georgia Institute of Technology, Atlanta, GA, United States
[2]Texas A&M University, College Station, TX, United States
[3]University of California, Merced, Merced, CA, United States
[4]Idaho STEM Action Center, Boise, ID, United States
[5]University of Wisconsin-Madison, Madison, Wisconsin, United States

The late Quaternary fossil record contains abundant, broadly distributed data to investigate how species and communities respond to climate change. However, inconsistent sampling and differential preservation of fossil specimens can pose obstacles to our ability to create accurate reconstructions of past communities. We leverage occupancy modeling methods and the fossil pollen record from 531 sites across eastern North America. We simultaneously estimate the abundance and detectability of fossil pollen taxa in a spatially and temporally explicit manner that accounts for imperfect detection. In this modeling framework, we examine the spatial structure of site occupancy and species detection across the Eastern U.S. We then use model comparison techniques to determine the physical geography, soil, and climate variables that most affect the detectability of pollen taxa. We found that all variables examined contribute significantly to the detectability of most species during most time periods in the late Quaternary fossil pollen record. Specifically, maximum temperature of the warmest quarter, average yearly potential evapotranspiration, and average yearly actual evapotranspiration are consistently important observation covariates to determine detection probabilities. The ranks of models containing different covariate combinations (ordered by their AIC) are highly consistent across taxa. However, the power of covariates to account for detection probability degrades through time. This work will advance the integration of ecological and paleontological sciences by allowing us to better identify when a species is truly absent from a fossil site versus when it has gone undetected, i.e. detection probability is low, allowing us to produce more robust ecological models.

PE-03

New data about pollen and fire regime in Cantabria (Northern Spain) from the Late Glacial to the present

Marc Morales[1], Sara Rodriguez Coteron[2], Juan Carlos Codrón[3], Virginia Martín[4], Raquel Artigas[5], Jordi Tersa[5], Joan Manuel Soriano López[6], Albert Pélachs Mañosa[6], Ramon Obiol[1]

[1]Universitat Autònoma de Barcelona, Spain
[2, 3, 4] Universidad de Cantabria, Santander, Spain
[5, 6] Universitat Autònoma de Barcelona, Spain

The evolution of mountain landscapes during the Late glacial and the Holocene is explained by a multifarious interaction system between society and the environment, where fire has played an essential role. Cantabria (Northern Spain) is one of the European regions with more known Palaeolithic sites, and some of these records enable the study of climate and vegetation dynamics over time. In this communication, we present new data from two Cantabrian sedimentary records. The first one, *El Cueto de la Espina* peat bog (1130 m a.s.l.), covers from the Neolithic period (5.880 Cal years BP) to the present, and microscopic charcoal (examined on pollen slides) and macro-charcoal (>150 μm) were analysed. Microscopic charcoal provides information about the fire regime at a regional scale, while the origin of macro-charcoal particles is more local. The results indicate the existence of several fire peaks during the Neolithic. From the second location, *La Molina* peat bog (484 m a.s.l.), which covers the Late glacial (18.000 Cal years BP) and the Holocene, new pollen and macro-charcoal data are presented. In this location, macro-charcoal particles were detected since the Late Glacial and the intensity of the fire regime increased with the beginning of the Holocene. The fire regime was more intense than in *El Cueto de la Espina*, probably due to the lower altitude and a greater accessibility by humans. The pollen spectra suggest an open landscape at the end of the glacial period.