**Workshop Abstract for a Workshop for the International Biogeography Society “Off-year” Meeting in Quito, Ecuador, 2019**

**Title**

Neotoma Paleoecology Database: How to find and use paleoecological data for biogeographic research

**Leaders**

Anna George, University of Wisconsin-Madison

Suzette Flantua, Bergen University

**Maximum number of participants**

30

**Half day or full day** (if half day, please specify if you prefer morning or afternoon)

Half day. Either side of day is fine.

**Abstract**

This workshop will provide 1) guidance on best practices in paleoecological data analysis and 2) training in use of the Neotoma Paleoecology Database ([www.neotomadb.org](http://www.neotomadb.org)) to access and analyze paleoecological data. Neotoma is a multi-proxy, community-curated database that stores multiple kinds of paleoecological & paleoenvironmental data (Williams et al., 2018, Grimm et al. 2018). One of the strengths of Neotoma is the ability to compare one data type with other proxies; currently, fossil pollen, vertebrates, diatoms, ostracodes, insects, charcoal, and geochemical data are all archived by Neotoma. In addition, the database is structured to relate absolute dates to taxon occurrences and to allow the creation and storage of age models built on absolute dates from stratigraphic sections. All Neotoma are open and Neotoma is emerging as a standard repository for Pliocene and Quaternary paleoecological data.

This half-day workshop will include lecture material and hands-on work with paleoecological data, focusing on Quaternary mammals and pollen. The workshop will include an overview of key elements of paleoecological data and best practices and issues associated with using long-term spatio-temporal data.

Workshop participants will learn how to search and acquire data using web tools, and how to use online mapping functions. Participants will also learn how to use Neotoma’s APIs (Application Programming Interface) and the neotoma R package to write scripts to import Neotoma data into R for further analysis, and perform simple analyses with those scripts. Finally, Neotoma and the Paleobiology Database have recently launched an umbrella organization, called the Earth-Life Consoritum, and with it a new series of APIs that allow joint querying and retrieval of data from both resources.

Participants should bring a laptop computer. Participants should have downloaded and installed R and RStudio. Both are free to download and work on multiple platforms. Familiarity with R is helpful but not required. The class will be taught in English with Spanish-language support available. Early-career scientists from Central and South American institutions are especially encouraged, but all are welcome.

**Equipment-venue requests**

Need a computer projector and reliable WiFi. Workshop leaders will bring their own laptops. Participants will be expected to bring laptops as well, so room needs tables and chairs, with lots of power outlets.

**Coffee break details** (morning, afternoon, both—full day workshop or permanent coffee and cookie station)

Would be nice to have access to coffee and cookies during the entire workshop. Break-only access also OK.