Spring 2020: Graduate Seminar in Evolution (EEOB 8896.05) – 1 credit hour

Digitized Data: Using museum collections to study biodiversity in the Anthropocene

Instructors:Dr. Lisa Barrow (barrow.36@osu.edu), Dr. Bryan Carstens (carstens.12@osu.edu)Dates:Second 7 weeks (2/26–4/20)Time: Tentatively Tuesdays 9–10:30 AMLocation: Aronoff TBD

The billions of specimens in natural history collections hold vast potential for understanding global biodiversity across time and space, particularly in this time of rapid global change (the "Anthropocene"). Major digitization efforts in the last few decades have increased accessibility of collections data in public databases, enabling research on topics such as phenological shifts, species interactions, pollution, emerging pathogens, and phenotypic evolution.



Fig. 1 from Meineke et al. 2018. Phil Trans R Soc B 374:20170386.



Fig. 1 from Dubay and Fuldner 2017. Bird specimens track 135 years of atmospheric black carbon and environmental policy. PNAS 114:11321–11326.

Course Objectives: Students will be introduced to some of the methods and potential for working with museum specimens and their associated data. We will discuss recent papers that harness digitized collections to study global change and biodiversity. Each student will develop a short proposal idea to supplement their research with open-access collections data, stimulating discussions about what data already exist and what challenges remain for addressing a variety of questions in global change biology using museum collections.