

**2<sup>nd</sup> Crossing the Palaeontological – Ecological Gap**  
**5<sup>th</sup>–9<sup>th</sup> September 2021**  
**Museum für Naturkunde Berlin**



Preliminary Schedule (Berlin time zone)

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**Sunday 5<sup>th</sup> September 2021**

**18:00 – 21:00** Virtual Icebreaker

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**Monday 6<sup>th</sup> September 2021**

08:50 Opening remarks (*led by Transmitting Science, Martin Aberhan, and Carl Reddin*)

09:00 – 09:45 **Plenary 1:** Erin Saupe: *Interrogating ecological patterns and processes across timescales*  
(*Chair: Carl Reddin*)

**Session 1: Biogeography**

(*Chairs: Faysal Bibi and Johannes Müller*)

**Standard talks**

09:45 – 10:00 Chiarenza: Climatic constraints on the latitudinal distribution and biogeographic history of dinosaurs

10:00 – 10:15 Boschman: South American freshwater fish diversity shaped by Andean uplift since the Late Cretaceous

10:15 – 10:30 Gamboa: Biome specialization enhances diversification in swallowtail butterflies

10:30 – 10:45 **Break**

10:45 – 11:00 Strack: Marine plankton latitudinal diversity patterns since the last ice age

11:00 – 11:15 Flannery Sutherland: Diversity dynamics through deep time: overcoming the hurdle of spatiotemporal sampling bias

11:15 – 11:30 Allen: The impact of the Permian and Triassic biotic crises on spatial patterns of origination and extinction in marine invertebrates

11:30 – 11:45 Capobianco: Fossil evidence for marine dispersal in an iconic example of vicariance

**Lightning talks**

11:45 – 11:50 Villafañá: Palaeobiogeography of Neogene European chondrichthyans

11:50 – 11:55 Cruz: Using the abundance and climatic niche of fossil microvertebrates for paleoclimatic reconstruction

11:55 – 12:00 Buchan: Past and present ecologies, panarchy and possible peatland futures

12:00 – 12:05 *Gap (withdrawn talk)*

12:05 – 12:10 Bose: The role of western Indian pleurotomariid gastropods in changing migration patterns of the family during the Cenozoic

12:10 – 12:15 Clarke: Considering how scale, biases in taxon sample, and evolutionary hotspots influence patterns of size evolution in fishes globally

12:15–12:20 **Questions**

12:20–12:30 **CPEG Quiz**

12:30 – 13:30 **Lunch break**

13:30 – 14:15 **Plenary 2:** Indrė Žliobaitė: *A recommender systems approach to the fossil record*  
(Chair: Faysal Bib)

**Session 2: Community ecology and biotic interactions**  
(Chairs: Martin Aberhan and Ignacio A. Lazagabaster)

**Standard talks**

14:15 – 14:30 Dommain: Shifts in ecological resources recorded in a 1-Ma-long drill core from the southern Kenya Rift explain Pleistocene mammalian faunal turnover and novel hominin behaviors

14:30 – 14:45 Mascord: Worms on film: The colonization of anoxic, matground-dominated sedimentary environments during the Early Cambrian

14:45 – 15:00 Toth: The changing effect of biotic interactions on communities under human disturbance

15:00 – 15:15 **Break**

15:15 – 15:30 Albrecht: Climate and ecosystem productivity control the functional role of omnivores in food webs

15:30– 15:45 De Baets: Phanerozoic prevalence of parasitism and marine metazoan diversity: Dilution versus amplification

15:45– 16:00 Mitchell: The influence of stoloniferous reproduction on intra-specific competition in Ediacaran microfossil assemblages

16:00 – 16:15 Rineau: An evidence of carrying capacity in the biodiversity dynamics of Coccolithophorids

16:15 – 16:30 Guillaume: A common language and tools for multidimensional analyses in ecology and palaeontology

16:30 – 16:45 Behrensmeyer: Time-averaging of ecological signals in the vertebrate skeletal record of a modern African ecosystem

16:45 – 17:00 Huang: Environmental change and body size Evolution in Neogene large mammals

17:00 – 17:15 **Break**

**Lightning talks**

17:15 – 17:20 Assemat: Contribution of calcium isotope geochemistry to the study of diet in present and fossil elasmobranchs, case of Megalodon

17:20 – 17:25 Cooper: 3D model of *Otodus megalodon* body reveal movement and feeding ecology

17:25 – 17:30 Bekeraitė: Multi-scale causal analysis of biotic and abiotic drivers of Cenozoic mammalian evolution

17:30 – 17:35 Caridi: Foraminiferal assemblage along the shallow transect on the Kveithola Trough (NW Barents Sea): An actuopaleontological approach

17:35 – 17:40 Pérez-Pinedo: Ecological data analysis of Ediacaran fossiliferous surfaces in the Bonavista Peninsula of Newfoundland

17:40 – 17:45 Spiridonov: Recurrence plots reveal the 'sloshing bucket'-like ostracod paleocommunity dynamics in the mid-Silurian of Baltica

17:45 – 17:50 Rillo: Integrating community turnover from modern and fossil data

17:50 – 17:55 *Gap (withdrawn talk)*

17:55 – 18:00 Vila: Next generation IBMs shed light on the paleoecological interactions of Late Cretaceous dinosaurs

18:00 **End**

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## Tuesday 7<sup>th</sup> September 2021

08:55 Opening remarks (*led by Transmitting Science and Martin Aberhan*)

09:00 – 09:45 **Plenary 3:** Lee Hsiang Liow: *Consequences of selection and biotic interactions for macroevolution*  
(Chair: Martin Aberhan)

### Session 3: Functional ecology

(Chairs: Catalina Pimiento and Roland Sookias)

#### Standard talks

09:45 – 10:00 Fannin: Carbon and strontium isotope ratios shed new light on the paleobiology and collapse of *Theropithecus*, a primate experiment in graminivory

10:00 – 10:15 Smycka: Do the small-ranged species of mammals diversify slower?

10:15 – 10:30 Monclús-Gonzalo: Unravelling the diverse locomotor repertoire of early primates using ankle bone morphology

10:30 – 10:45 **Break**

10:45 – 11:00 Hedberg: The hidden legacy of megafaunal extinction: Loss of functional diversity and resilience over the Late Quaternary at Hall's Cave

11:00 – 11:15 Fraser: Late Quaternary biotic homogenization of North American mammalian faunas

11:15 – 11:30 Kearns: Linking deep- and shallow-time paleoecology: the need for ecologically relevant traits

11:30 – 11:45 Louail: Investigating fallback dietary habits among hominins: perspectives from controlled feeding experiments on domestic pigs

11:45 – 12:00 Parker: Ecometric modelling of the relationship between turtle body size distributions and climate

#### Lightning talks

12:00 – 12:05 Sibert: Capturing functional ecology from ichthyoliths: what isolated microfossil fish teeth and dermal scales can reveal about ancient vertebrate ecology

12:05 – 12:10 Taylor: Understanding the 3D morphology of the Ediacaran rangeomorph *Fractofusus misrai* from Mistaken Point, Newfoundland

12:10 – 12:15 Smith: Using paleontological trait data to evaluate temporal dynamics of ecosystem services

12:15 – 12:20 Hunter: Southern Ocean Diatom Size Dynamics and the end-Eocene Paleoproductivity

12:20 – 12:25 Furness: Nature, red in one and zero: simulating the evolution of predators

12:25-12:30 **Questions**

12:30 – 13:30 **Lunch break**

13:30 – 14:15 **Plenary 4:** Jenny McGuire: *Paleoecology reveals dynamic landscapes: the case for conserving for change*  
(Chair: Sara Varela)

### Session 4: Behavioral ecology and Extinctions

(Chairs: Roland Sookias and Ignacio A. Lazagabaster)

#### Standard talks

14:15 – 14:30 Berlioz: Dental microwear texture analysis of deer from Combe Grenal (Dordogne, France): new insight into the paleoenvironmental variations during the Middle Paleolithic

14:30 – 14:45 Bibi: Energetic equivalence, isotaphonomy, and productivity loss as a driver of megafaunal extinction in the African fossil record

14:45 – 15:00 Danise: Extinction risk in Plio-Pleistocene Mediterranean bivalves

15:00– 15:15 **Break**

15:15 – 15:30 Ramm: Integrating fossils and genomics to reconstruct the decline of the threatened Mountain Dragon, *Rankinia diemensis*

15:30 – 15:45 Foster: How predictable are mass extinction events?

15:45 – 16:00 *Gap (withdrawn talk)*

16:00 – 16:15 Reddin: Thermal extinction selectivity patterns during global warming events

16:15 – 16:30 Brugger: Modeling the immediate environmental consequences of the Chicxulub impact: Severe cooling and short peak ocean productivity

16:30 – 16:45 **Break**

### **Lightning talks**

16:45 – 16:50 Thiery: Short-term impact of diet on dental mesowear: New insights from dental topography and a controlled feeding experiment on domestic pigs

16:50 – 16:55 Pasinetti: Reproduction and autoecology of an Ediacaran rangeomorph

16:55 – 17:00 Gardin: Biogeochemistry at the crossroads between environment and ecology: use of oxygen isotopes to track environment preference variation in fossil crocodilians

17:00 – 17:05 Mereghetti: A Mammoth buffet: resolving extinct herbivores community structure through high-resolution coprolite analysis

17:05 – 17:10 Villavicencio: Ice Age giants at the end of the world: chronology and extinction of Gomphotheres in Chile, South America

17:10 – 17:15 García-Girón: Shifts in food web architecture and niche occupancy across the end-Cretaceous mass extinction

17:15 – 17:20 Renaudie: Climatic range of modern fossilizable phytoplankton

17:20 – 17:25 Kunstmüllerová: Bivalve assemblages as palaeoecological markers at the onset of the OAE2 event (Bohemian Cretaceous Basin, Czech Republic)

17:25 – 17:30 Traylor: Simulating large grazers with a physiological model

17:30 – 17:35 McMenamin: Lepidophagy in the Triassic coelacanth *Piveteaia*

17:35 – 17:40 Nielsen: Mass spawnings of the arthropod *Isoxys volucris* reveal a seasonal signature to the early Cambrian Sirius Passet Lagerstätte, North Greenland

17:40 – 17:45 **Questions**

17:45 – 18:00 **Discussion with potential hosts of the next CPEG**

18:00 **End**

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## Wednesday 8<sup>th</sup> September 2021

08:55 Opening remarks (*led by Transmitting Science and Fernando Blanco*)

09:00 – 09:45 **Plenary 5:** Jens-Christian Svenning: *Integrating paleobiology and macroecology to inform current and future megafauna-based rewilding*  
(Chair: *Fernando Blanco*)

### **Session 5: Conservation ecology and Biodiversity**

(Chairs: *Fernando Blanco and Faysal Bibi*)

09:45 – 10:00 Neubauer: The sixth mass extinction outpaces the fifth one in freshwater ecosystems

10:00 – 10:15 Mechenich: Improving the performance of species distribution models in new spatial-temporal domains: a trophic rewilding case study

10:15 – 10:30 Bracchi: Quaternary carbonate factories of the Mediterranean Sea: a case study from the Northern Apennines

10:30 – 10:45 **Break**

10:45 – 11:00 Landwehrs: Providing Earth system modeling for studying ecological dynamics in deep time (with a focus on the Mesozoic Era)

11:00 – 11:15 Freymueller: Incorporating recent fossil data in a multi-temporal framework markedly improves predictive power and transferability of ecological niche models

11:15 – 11:30 Short: Refining ecometric analyses to better integrate paleontology with ecology

11:30 – 11:45 Pineda-Munoz: Mammal species occupy different climates following the expansion of human impacts

11:45 – 12:00 Sivakumar: Late Pleistocene fossils recontextualize the ecology of introduced turkeys

### **Lightning talks**

12:00 – 12:05 Baird: Integrative taxonomy of the bushbuck species complex (*Tragelaphus scriptus*): Combining molecular and morphological systematics

12:05 – 12:10 Luthardt: Assessing biodiversity of ancient plant ecosystems: opportunities, constraints, and a case study

12:10 – 12:15 Khan: Relationships between reef proliferation and reef diversity over geological time scales

12:15 – 12:20 O'Brien: Ecological census implications, site description, and systematic paleontology of Boomerang Cave, a vertebrate assemblage in Cache County, Utah, U.S.A.

12:20 – 12:25 Aguilar Lazagabaster: A fossil of forest hog from Rusinga Island (Kenya) and the ecology of extant and extinct African Suidae

12:25 – 12:30 Parker: At the crossroads of conservation palaeobiology: How World Heritage fossil sites contribute to the future by promoting the past

12:30 – 13:30 **Lunch break**

### **Session 6: Responses to Climate change**

(Chairs: *Carl Reddin and Sara Varela*)

#### **Standard talks**

13:30 – 13:45 Weir: Taking the long view: the importance of historical and ecological perspective in our understanding of the effects of climate change on phenological synchrony.

13:45 – 14:00 Özen: Evolutionary dynamics of the Southern Ocean diatoms across the Eocene-Oligocene transition

14:00 – 14:15 Mulqueeney: Assessing the impact of climate change on the structural integrity of benthic foraminifera during the Palaeocene Eocene Thermal Maximum – implications for future climate change

14:15 – 14:30 Whittingham: Functional stasis of mammalian communities across the PETM

14:30 – 14:45 Smith: Taphonomy and site formation history of vertebrate-bearing breccia in the caves of Sumatra

14:45 – 15:00 Kocsis: Increase of marine provinciality over the last 250 million years was governed more by climate change than plate tectonics

15:00 – 15:15 **Break**

15:15 – 15:30 Simova: Diversity-productivity relationship in past 21,000 years: the evidence from North American woody species pollen data

15:30 – 15:45 Antell: Planktonic foraminifera conserved environmental niches across 700,000 years of glacial–interglacial climate change

### **Lightning talks**

15:45 – 15:50 Chan: Consistency in reef assemblages through the Holocene shows diversity persisting in a turbid reef

15:50 – 15:55 Sheward: The size trait toolbox: new perspectives on community structure response to climate change in calcifying marine phytoplankton

15:55 – 16:00 Kruff Welton: The clam before the storm – what bivalves can tell us about climate change

16:00 – 16:05 Kouvari: Climate change and its effect on mammalian diversity in the Cenozoic of South

16:05 – 16:10 Wendt: Bison responses to Late Quaternary climate change in North America

16:10 – 16:15 Albano: Radiocarbon dating of individual foram tests show that alleged Lessepsian species are of Holocene age

16:15 – 16:20 Mathes: Deep-time climate legacies affect origination rates of marine genera

16:20 – 16:35 **Break**

16:35 – 17:35 **Round Table Discussion in the paleontology-ecology gap (webinar format)**

*Moderated by Catalina Pimiento, with plenary speakers and two guests as panelists.*

17:35 **Closing remarks and presentation of awards**  
(Chair: Martin Aberhan)

17:50 **End**

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### **Thursday 9<sup>th</sup> September 2021**

15:00 – 17:00 **Workshop**: Mapping past species distributions – delivered by Dr. Sara Varela

15:00 – 18:00 **Workshop**: Gendered perspective in paleontological research: from definition to action – delivered by Dr. Paula Medina and Dr. Ana Rosa Gómez Cano (Transmitting Science)

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