

Palestras Plenárias

PALESTRA PLENÁRIA - 27/02/2018, 9H

Políticas Públicas em Biodiversidade, com ênfase para a América Latina

BRÁULIO DIAS
Universidade De Brasília

Resumo não disponível.

PALESTRA PLENÁRIA - 27/02/2018, 14H

Species Divergence Shaped by the Intersects of Ecology and Climate Change

LACEY KNOWLES
University of Michigan

Most species we study today have been subject to periods of rapid climate change of differing severity at some point in their past. The impact of rapid climate change, and specifically, its genetic consequences have been studied at large geographic scales (e.g., comparisons between low and high latitudes). In contrast, we have a limited understanding of the genetic consequences of rapid climate change for taxa within local communities beyond simply describing patterns of genetic variation within and between populations. Yet, such information about *how* climate change impacts species divergence is essential for understanding *why* patterns of genetic variation differs across a landscape and varies among species. With the application of recent developments at the molecular level, as well as computational advances, what is emerging is a story of how patterns of genetic variation are shaped by an intersection of species ecology and climate change. I will review the methodologies that are propelling this promising area of research through the testing of hypotheses that accommodate differences in species-specific ecologies. By reference to two examples – results from an analysis of endemic beetles across the Greek islands to test the role of sea-level change as a driver of divergence, and test of how microhabitat differences mediate the impact of climate change in montane sedges from the Southern Rocky Mountains– I discuss how these insights are useful for understanding not only how the divergence process may differ among geographic regions, but also why members of communities may respond differently to climate change.

PALESTRA PLENÁRIA - 28/02/2018, 9H

A Perfect Storm: Climate Change, Disease, Us

DANIEL BROOKS^{1,2}

¹University of Toronto; ²University of Nebraska-Lincoln

One of the challenges facing humanity in an era of global climate change is the crisis of emerging infectious diseases (EIDs). Health providers have long thought there was no way to anticipate EIDs, so we could only react to each new outbreak after it occurred. We thought this would be sufficient because traditional views of pathogen-host evolution predicted that the host range expansions producing EIDs should be rare. However, they are daily occurrences – this is the *Parasite Paradox*. And although most EIDs are *high probability/low impact* threats, their sheer number has made those reactive efforts unsustainable, due to *pathogen pollution*. A recent breakthrough in our understanding of the evolution of pathogen-host systems – the *Stockholm Paradigm* – resolves the parasite paradox but makes us aware of the scope of the EID threat. Climate changes allow pathogens of humans, crops, and livestock to expand from the areas in which they traditionally existed. In the newly occupied areas, pathogens come into contact with hosts that are susceptible but which had never before been exposed. This allows the rapid emergence of disease in hosts that have not had the opportunity to evolve resistance. That sets the stage for rare highly pathogenic variants to establish and thrive, and for novel mutants to emerge, producing new specialized pathogen-host associations. Urbanization, globalization and human movements are threat multipliers for this phenomenon, making EID an existential threat to technological humanity. The Stockholm Paradigm gives us hope that proactive measures can be taken to mitigate the impact of EIDs. The host attributes needed for survival and the means of transmission for pathogens are both highly specialized and evolutionarily conservative. This means we can anticipate how known pathogens can become established in a new place, and what hosts are most at risk. It also means we can assess the risk potential for close relatives of known pathogens because they will have similar, and predictable, biological requirements. This leads directly to the DAMA (*document, assess, monitor, act*) protocol, also known as “finding them before they find us.” DAMA proposes to document pathogens that are at high risk of arriving in a place and pathogens that are in residence but have not yet caused disease outbreaks, determining their actual or likely reservoirs, and monitoring them in the interfaces between human activities and wildlands. The goal of DAMA is to anticipate hot spots before they become unmanageable.

PALESTRA PLENÁRIA - 28/02/2018, 14H

Mudança climática e resgate evolutivo em populações animais

JOSÉ ALEXANDRE FELIZOLA DINIZ FILHO
Universidade Federal de Goiás

Resumo não disponível.

PALESTRA PLENÁRIA - 01/03/2018, 9H

A multidisciplinary framework for biodiversity prediction in the Brazilian Atlantic forest hotspot

ANA CAROLINA O. Q. CARNAVAL
City University of New York - CUNY

A multidisciplinary approach is required to explain and predict of the distribution of animal and plant species in the endangered yet megadiverse Brazilian Atlantic forest. Through studies of climate and landscape, and their changes over the last 120,000 years, our research group has been contributing to the understanding of how species have responded to repeated environmental shifts of the past. For that, we are combining data from Earth-orbiting satellites and meteorological stations, paleoenvironmental information from the fossil pollen record, and ancient precipitation data derived from the geochemistry of deposits found in caves. Contrasted with information on modern species ranges, patterns and levels of genetic and genomic diversity, and the physiology of target taxa, we use these environmental data to infer how the biodiversity of the Atlantic forest evolved over time. In this presentation, I discuss the novel methodological advances behind this integrative study, and how they allow us to reconstruct the contemporary and historical factors influencing current biodiversity patterns in the Atlantic forest. Given a range of climate change scenarios, I also introduce how these integrative methods are permitting the prediction of the distribution of diversity under future environments.

PALESTRA PLENÁRIA - 01/03/2018, 14H

La Buitrera, el Gobi sudamericano: Un desierto fósil del Cretácico

SEBASTIÁN APESTEGUÍA

Fundacion Azara, Universidad Maimonides; CONICET

El Área Paleontológica de La Buitrera (APLB) provee especímenes de tetrápodos articulados, tridimensionales y de exquisita preservación histológica. Destacan importantes fósiles como el esfenodonte *Priosphenodon avelasi* Apesteguía y Novas 2003, el deinonicosaurio *Buitreraptor gonzalezorum* Makovicky, Apesteguía y Agnolín 2005; la serpiente con patas *Najash rionegrina* Apesteguía y Zaher 2006 y el mamífero driolestoideo *Cronopio dentiacutus* Rougier, Apesteguía y Gaetano 2011, publicados en la revista Nature, así como el cocodrilo *Araripesuchus buitreiraensis* Pol y Apesteguía 2005; el alvarezsáurido *Alnashetri cerropoliciensis* Makovicky, Apesteguía y Gianechini 2012; el iguano pleurodonte más antiguo conocido, tortugas Chelidae y peces pulmonados. La semejanza preservacional y tafonómica con la cuenca de Ukhaa Tolgod (Mongolia) fortaleció las observaciones de una alternancia entre mayor actividad eólica y momentos fluviales efímeros en el desierto que llamamos Kokorkom, el desierto de los huesos.

PALESTRA PLENÁRIA - 02/03/2018, 9H

Towards a dynamical view of distribution areas, based on niche theory

JORGE SOBERÓN

Universidad Nacional Autónoma de México / University of Kansas

Resumo não disponível.

PALESTRA PLENÁRIA - 02/03/2018, 14H

Ecologia, Evolução e Desenvolvimento (EcoEvoDevo) na herpetofauna brasileira

TIANA KOHLSDORF

Universidade de São Paulo

Resumo não disponível.