

Twentieth Lecture in the Series

James P. Holland Memorial Lecture

Monday, October 21, 2019, at 4:00 p.m.

Myers Hall 130 (915 East Third Street)
Indiana University Bloomington campus

Disentangling the tree of life: from species discovery in a biodiversity hotspot to the origin of African savannas

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Head of Biological Sciences
University of Cape Town, South Africa

Africa—the cradle of human evolution—has much to reveal about life on earth. From the species that currently form the tips of the tree of life, to the older branches that represent extinct ancestral lineages, knowing the evolutionary history of species, past and present, is essential for sustainable utilization of our shared biodiversity resources. New species continue to be discovered, especially in the southern hemisphere, but the race to find them is impeded by large-scale changes in land use and the global impacts of climate change. For example, the Cape Flora is a biodiversity hotspot that has attracted naturalists since the 1600s, yet dozens of new species are discovered annually especially in ephemeral habitats. Why are there so many species in such a small area, and how is the Cape biota related to other regions of the world? Molecular phylogenetic studies are reconstructing this rich tapestry of life, revealing the varied ages of different lineages, long-distance dispersal among similar habitats, evolutionary diversification into newly formed habitats, and coevolution between different lineages. African savannas—grass-dominated plant communities that rely on fire and/or herbivores to limit the growth of trees and shrubs—are an evolutionary hotbed for unique biodiversity. Reconstructing the origin of African savannas is critical for understanding our own evolutionary history.

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About Muthama Muasya

Muthama Muasya, whose career began in Kenya, researches diverse aspects of the evolution and ecology of flowering plants, including mechanisms of speciation in sedges, patterns and drivers of wetland vegetation, edaphic niches of legumes, and the origin of spines, underground forests, and other unique traits associated with African savanna plants.

Professional Experience

University of Cape Town (UCT)
Professor, 2020-
Head of Department of Biological Sciences and Director of
Bolus Herbarium, 2016-2020
Associate Professor, 2014-2019
Senior Lecturer, 2006-2013
National Museums of Kenya
Research Associate, 2008-present
Senior Research Scientist, 1993-2008
Royal Botanic Gardens Kew, Honorary Research Associate,
1999-present

Education

Royal Botanic Gardens Kew (UK), Postdoctoral Fellow, 1998-99
Katholieke Universiteit Leuven (Belgium), Postdoctoral Fellow,
2003-2005
Rutgers University (USA), Visiting Research Scholar, 2000-02
University of Reading, UK, PhD, 1998
Moi University, Kenya, MPhil, 1993
Moi University, Kenya, BSc, 1992

Honors

UCT Faculty of Science Research Award, 2018
Academy of Science of South Africa, elected 2016
UCT Faculty of Science Young Researcher Award, 2010

