

HOWARD G. BUFFETT RECEIVES WORLD ECOLOGY AWARD



Howard G. Buffett

Howard G. Buffett received the Harris Center’s World Ecology Award at a gala dinner held at the **Missouri Botanical Garden** on Friday, May 13, 2011. Buffett was the 19th recipient of the World Ecology Award.

In 1999, using family assets, Buffett established the Howard G. Buffett Foundation, whose mission is to improve the standard of living and quality of life for the world’s most impoverished and marginalized populations. The foundation’s immediate priorities include food security, clean water and humanitarian aid in conflict and post-conflict regions. Through his foundation, he is directing projects in Afghanistan, Burundi, Colombia, Democratic Republic of the Congo, El Salvador, Guatemala, Honduras, Liberia, Nicaragua, Sierra Leone, Sudan, Uganda and many other countries.

In an interview after the award ceremony, he told **David Baugher** from the *St. Louis Beacon*: “Everything has limits and I would say that I’m concerned that at this point in world history we’re approaching some of those limits. Water, soil, air, mineral-based energy. They’ve all been abused. The biggest problem of all is that we continue to do it.

Why? Because the truth is that very few of us, certainly very few of us in this room, suffer the consequences.” In his book—*Fragile: The Human Condition*—he quotes a friend who said: “No one will starve to save a tree”. Improving the human condition is the aim of the Howard G. Buffett Foundation.

Buffett has traveled to more than 100 countries documenting the challenges of preserving our biodiversity while providing adequate resources to meet the needs of a growing global population. He is the recipient of numerous honors bestowed by both international governments and domestic organizations. He has authored a number of books: *On the Edge: Balancing Earth’s Resources* (2001); *Tapestry of Life*, (2002); *Taking Care of Our World*, (2002); *Spots Before Your Eyes* (2003, with a foreword by Dr. Jane Goodall); *Threatened Kingdom: The Story of the Mountain Gorilla* (2005); and *Fragile: The Human Condition* (2009).



Hal A. Kroeger (Chair, Harris Center Advisory Board) and Howard G. Buffett after the presentation of the World Ecology Award on Friday, May 13, 2011.



Howard G. Buffett addresses dinner guests following the presentation of the World Ecology Award at the Missouri Botanical Garden on Friday, May 13, 2011.

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MANAKINS, BIRDS OF TROPICAL FORESTS, COOPERATE FOR COMMON GOAL

From the National Science Foundation

They are called leks, gatherings of males of certain animal species for competitive mating displays, but not every lek's members are competitors, scientists have learned. Some—birds called wire-tailed manakins, residents of tropical forests in the Americas—are cooperators as well as competitors. The research was funded by the National Science Foundation (NSF).

“Male vertebrates often form reproductive coalitions to gain access to or to defend females,” says Brandt Ryder at the Smithsonian Conservation Biology Institute in Washington, D.C., “and in most contexts they compete for those females.”

Wire-tailed manakins, however, are different in that they cooperate, forming alliances for a common cause. Wire-tailed manakins coordinate their courtship displays. “These displays, and the resulting leks formed,” says Ryder, “are rare examples of male cooperation within a lek social system.” This cooperative behavior appears to have evolved twice in the manakin family—in the wire-tailed manakin group, and in another group known as blue-backed manakins, which live in the same tropical forests.

Ryder, John Blake of the University of Florida, Patricia Parker of the University of Missouri-St. Louis and Bette Loiselle of the University of Florida—currently on leave at NSF's Division of Environmental Biology—recently published results of a long-term study of manakin leks in the journal *Behavioral Ecology*.

Manakins are a family, the Pipridae, of unique small passerine birds; the Pipridae contains about 60 species, all living in the tropics. The name “manakin” comes from the Middle Dutch *mannekijn*,



Male wire-tailed manakin displays his striking plumage against the dense rainforest understory (Photo: Brandt Ryder).

or “little man.” Manakins are found from southern Mexico to northern Argentina, Paraguay, and southern Brazil, and on Trinidad and Tobago. They're almost exclusively birds of the forests and woodlands. Most live in humid tropical lowlands, with a few in dry forests, river forests, and the subtropical Andes. The birds feed in the forest understory on small fruits, including berries, and to some degree, on insects. Since they take fruit in flight—similar to how other birds snatch insects from the air—manakins are believed to have evolved from insect-eating birds. Females have large territories, on which they feed socially with other birds of their species. Males spend as much as 90

percent of their time at leks, where they display in elaborate courtship rituals, including using their wing feathers to make buzzing and snapping sounds.

The biologists found that regardless of how manakin leks are formed, they serve several functions: increasing male reproductive success, providing access to otherwise unavailable reproductive opportunities, establishing dominance hierarchies and facilitating new complex social



behaviors. “These display coalitions have long been of interest to scientists from an evolutionary standpoint,” says Loiselle, “because of the paradox of apparent cooperative behavior in a situation with intense competition.”

Loiselle, Ryder and colleagues are conducting a long-term study of wire-tailed manakins at Tiputini Biodiversity Station. Tiputini is located adjacent to the Yasuni Biosphere Reserve in Ecuador. The scientists locate leks of wire-tailed manakins by searching for and mapping locations of “singing” male manakins along transects in study plots. The number of territorial males per lek ranges from 4-12.

Leks are found in seasonally flooded forests, as well as on *terra firme*. The understory vegetation at the leks varies from open to closed, many covered by old tree falls and vine tangles. Most leks are in low-elevation flat areas near streams. There young male wire-tailed manakins are more likely to maintain their own territories, the scientists discovered, if they have an established partnership with a member of the lek. As long as it's not a family member.

While some animals cooperate with relatives, that's not the case with wire-tailed manakins, says Ryder, who used molecular tools to look at the genetics of wire-tailed manakins. Gatherings of manakins may have much to tell us about not only tropical birds, but about leks of other species, such as the sharp-tailed grouse of Canadian and U.S. prairies. Many lekking birds are threatened by habitat loss, whether in prairie or forest. By knowing how—and where—manakins flourish, says Ryder, “we can learn which areas of the tropical forest need further conservation measures.”

Note: Brandt Ryder completed his Ph.D. in the Department of Biology, University of Missouri-St. Louis and was awarded the **Stokes Family Scholarship** and a **Development Board Scholarship** from the Whitney R. Harris World Ecology Center in support of this study. **Drs. John Blake** and **Bette Loiselle** were faculty members in the Department of Biology, University of Missouri-St. Louis when this study was undertaken.

HARRIS CENTER SCHOLARSHIP RECIPIENTS

The Harris Center Scholarship Committee awarded the following research scholarships in April 2011:

Christensen Fund Scholarship

Oyomoare Osazuwa-Peters: Functional diversity and patterns of trait variation in old-growth and secondary forests in Kibale National Park.

Henry B. Cowhey Scholarship

Allisyn-Marie Gillet: Parasite transmission dynamics of the cooperatively breeding Galápagos hawk (*Buteo galapagoensis*).

Leo and Kay Drey Scholarship

Vincenzo A. Ellis: Elucidating the role of pathogens in determining patterns of avian species abundance.

Jane Harris Scholarship in Tropical Botany

Daniel Layton: Stamen evolution in the Commelinaceae: Evo-devo meets ecology.

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Jorie Butler Kent Scholarship

Allisyn-Marie Gillet: Parasite transmission dynamics of the cooperatively breeding Galápagos hawk (*Buteo galapagoensis*).

Stokes Family Scholarship

Oyomoare Osazuwa-Peters: Functional diversity and patterns of trait variation in old-growth and secondary forests in Kibale National Park.

NEW MINOR IN ENVIRONMENTAL STUDIES

The Harris Center was instrumental in promoting an initiative to establish a Minor in Environmental Studies at the University of Missouri-St. Louis. This interdisciplinary program integrates the natural and physical sciences with the social sciences and humanities to study current environmental problems resulting from human population growth, global climate change, overuse of natural resources, pollution and biodiversity loss. The University Senate approved the establishment of the program in Spring 2011 and the program was launched in the Fall Semester 2011.

DEPARTMENT OF BIOLOGY TO RECRUIT NEW FACULTY

The Department of Biology is in the process of filling three new faculty positions. The searches will be in the areas of Animal Behavior (assistant professor level), Animal Physiology (assistant or associate professor), and Ecology/Evolution (assistant or associate professor). The deadline for applications for all three positions is October 1. Interviews will follow soon thereafter. The possibility of filling recent vacancies is generating much excitement within the Department and the College of Arts and Sciences, and is likely to increase faculty and student involvement in the Harris Center.

2011 WHITNEY AND ANNA HARRIS CONSERVATION FORUM

The 2011 Whitney and Anna Harris Conservation Forum will be held at the **Saint Louis Zoo** on **Thursday, November 3**. The theme for this year's forum will be: *Giants in the American Conservation Movement*. Speakers will describe the lives and contributions of three great conservationists: John James Audubon: *Field Guides and Nature in the 21st Century* (**David Allen Sibley**), Aldo Leopold: *Whither Missouri? Aldo Leopold's Challenge* (**Susan Flader**) and Rachel Carson: *Recovering Carson's Conservationist Side* (**Maril Hazlett**).

David Sibley is an ornithologist and author and illustrator of *The Sibley Guide to Birds*, considered by many to be the most comprehensive guide for North American field identification. He has also authored: *Sibley's Birding Basics*, *The Sibley Guide to Bird Life and Behavior*; *The Sibley Field Guide to Birds of Eastern North America*; *The Sibley Field Guide to Birds of Western North America*; and *The Sibley Guide to Trees*.

Susan Flader is Professor Emerita, Department of History at the University of Missouri-Columbia. She has authored or edited six books, among them *Thinking Like a Mountain: Aldo Leopold and the Evolution of an Ecological Attitude Towards Deer, Wolves, and Forests*; *The Great Lakes Forest: An Environmental and Social History*; *The River of the Mother of God and Other*



Essays by Aldo Leopold (with J.B. Callicott); and *Exploring Missouri's Legacy: State Parks and Historic Sites*.

Maril Hazlett is a freelance writer, researcher and editor at Contents Solutions. Her Ph.D. dissertation in environmental history from the University of Kansas focused on Rachel Carson's *Silent Spring* with emphasis on the messaging and backlash involved in one of the first major conflicts of the environmental movement. Previously, she was Associate Director for the Climate and Energy Project (CEP) based in Lawrence, Kansas.

The event will also include informational displays on local, national and international conservation organizations.

UNIVERSITY OF MISSOURI-ST. LOUIS RANKED SEVENTH IN THE NATION FOR RESEARCH

All the papers, citations, grants and awards produced by research faculty at the University of Missouri-St. Louis last year landed the school in the top ten in the nation for scholarly production among universities with less than 15 doctoral programs. *Academic Analytics*, which measures faculty research in 27 separate areas, released the data in June, 2011. The report was based on the analysis of more than 180,000 faculty members at 383 universities and 9,262 doctoral programs. The results are based on work done in the 2009-10 academic year. The data measure a university's overall performance and also that of individual doctoral programs compared to others in their respective fields. UMSL was the only Midwest university ranked in the top 10.

NEWS OF HARRIS CENTER FACULTY, STUDENTS AND ALUMNI

Zuleyma Tang-Martinez, Professor of Biology has been named a fellow in the **Animal Behavior Society** in recognition of her extensive research on the social behavior, chemical communication and kin recognition mechanisms of rodents. She has also been named a **Founders Professor**, a new designation for retired professors with a record of meritorious contributions to the university.

Monica Carlsen (Venezuela) has completed her Ph.D. with her dissertation: Understanding the origin and rapid diversification of the genus *Anthurium* Schott (Araceae), integrating molecular phylogenetics, morphology and fossils. Monica was a **Christensen Fund Fellow**.

Jose Luis Rivera (Ph.D. student, Ecuador) received \$9,950 from the Field Research for Conservation Program of the **Saint Louis Zoo** for his project : *Parasite spread model, based on inter-island host movement and rate of parasite transmission: Seabirds in the Galapagos Islands*.

Allisyn-Marie Gillet (Ph.D. student, USA) received \$9,996 from the Field Research for Conservation Program of the **Saint Louis Zoo** for her project *Parasite transmission dynamics of the cooperatively breeding Galapagos hawk* (*Buteo galapagoensis*).

Saul Hoyos (M.S. student, Colombia) presented a poster (*Anatomical and morphological characteristics among Fusispermum spp. and Rinorea apiculata group (Violaceae) can be useful for understanding the phylogenetic relationships*) at the annual meeting of the Botanical Society of America. His poster was recognized by the Developmental and Structural Section of the Society as the best student presentation and Saul received a certificate, cash award, and was a guest of the Section at the BSA banquet.



Oyomoare Osazuwa-Peters (Ph.D. student, Nigeria) attended the Association for Tropical Biology and Conservation and Africa Section of the Society for Conservation Biology meeting in Tanzania where she presented a paper in an invited symposium: *Does the growth-mortality tradeoff affect radial variation in wood density of tropical rainforest canopy trees?*

Daniel Layton (M.S. student, USA) received a TWA scholarship (\$7,000) from the University of Missouri system and a Graduate Research Award (\$1,000) from the American Society of Plant Taxonomists. This latter award was one of 18 funded (65 applicants) and Daniel's application was ranked in the top three and therefore he also received the Rogers McVaugh Graduate Student Research Grant. He also received a Research Student Academic Appointment from the Smithsonian Institution, allowing him to utilize their collections and facilities. At the Natural History Museum, he is working on the description of two new species, completing a molecular phylogeny of the dayflowers (genus *Commelina*), and carrying out a pollination study on east coast *Commelina* spp.

Vania Torrez (M.S. student, Bolivia) completed an Organization for Tropical Studies course in Costa Rica.

We welcome our new graduate students: **Pagi Toko** from Papua New Guinea (Marquis Lab) and **Elvis Valderrama** (Zanne Lab) from Peru are funded as Christensen Fellows. **Alonso Bussaleu** from Peru (Parker Lab) has been appointed as the first Whitney R. Harris and Saint Louis Zoo Fellow in Animal Conservation. **Christina Baer** has joined the Marquis Lab as a Teaching Fellow. Christina is a graduate of Ladue High School, a STARS alum, and has recently graduated from the University of Chicago with a B.S. in Biology. **Gideon Erkenwick**, a graduate from Grinnell College, has joined the Parker Lab.



Hal A. Kroeger, Chair, Harris Center Advisory Board; Dr. Thomas George, Chancellor, University of Missouri-St. Louis; Dr. Jeffrey Bonner, President and CEO, Saint Louis Zoo; Howard G. Buffett; Dr. Peter Raven, President Emeritus, Missouri Botanical Garden; and Dr. Peter Wyse Jackson, President, Missouri Botanical Garden after the presentation of the World Ecology Award.

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