

BIOLOGY PROFESSOR ELECTED TO NATIONAL ACADEMY OF SCIENCES

Robert Ricklefs, Curators' Professor of Biology, was the only Missourian amongst the 72 scientists elected to the highly-prestigious National Academy of Sciences this year. He is only the 25th living Missourian to become part of the elite 2,150-member academy. Also on the list are local scientific giants **Dr. Peter Raven** (Missouri Botanical Garden), **Dr. Barbara Schaal** (Washington University) and **Dr. Roger Beachy** (Donald Danforth Plant Science Center).

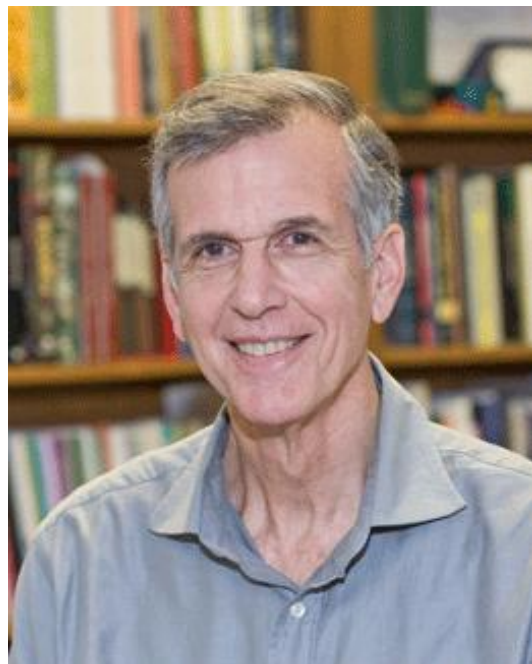
Ricklefs is author or co-author of four books, including two popular textbooks, almost 300 papers and more than 80 other articles. His research spans a variety of subjects in evolutionary biology, focusing on various aspects of the diversification of birds and their growth and life histories. He also has worked on the evolution of plants and other organisms. The National Academy of Sciences was established in 1863 by a congressional act of incorporation signed by Abraham Lincoln. It is supposed to act as an official adviser, upon request, to the federal government on science and technology matters. Two hundred of the Academy's members have won Nobel Prizes.

BIOLOGY PROFESSOR RECEIVES HUMBOLDT RESEARCH AWARD

Robert Ricklefs, Curators' Professor of Biology has received the **Humboldt Research Award** from the **Alexander von Humboldt Foundation**. The award recognizes his lifetime achievements in research and promotes international collaboration in the sciences. Through the Humboldt Foundation, Ricklefs will take sabbatical from September 2009 through August 2010 to conduct avian research at the Max Planck Institute for Ornithology in Radolfzell, Germany.

The Alexander von Humboldt Foundation was established in 1860. Every year, the foundation enables more than 1,800 researchers from all over the world to spend time researching in Germany.

Ricklefs earned a bachelor's degree from Stanford University in Palo Alto, California and a doctorate from the University of Pennsylvania in Philadelphia. He joined the Biology Department at the University of Missouri-St. Louis in 1995.



Dr. Robert E. Ricklefs



HARRIS CENTER SCIENTIFIC DIRECTOR

Dr. Robert Marquis was appointed Scientific Director for the Harris Center in July 2009. Marquis is Professor of Biology and was intimately involved in the discussions that led to its formation in 1990. He completed his master's degree at Oregon State University and his Ph.D. at the University of Iowa.

FROM THE SCIENTIFIC DIRECTOR

It is with great pleasure that I assume the position of Scientific Director of the Harris World Ecology Center. The faculty, students, and administration of the University, the Missouri Botanical Garden, the Saint Louis Zoo and St. Louis community all have worked hard over the last 20 years to make the Center a leading institution in graduate education in ecology, evolution, systematics, and conservation. Students come from throughout the world, especially tropical countries, to take part in our graduate curriculum. I am proud to be part of this effort.

This coming year marks the 20th anniversary of the establishment of the Harris World Ecology Center, and its former incarnation as the International Center for Tropical Ecology. Over 70 students from 22 different countries have completed the 5-6 year doctoral program in Biology that was established in 1989. Many more have fulfilled the requirements for the master's degree. Students from 34 countries have participated in Center programs and have returned home assuming positions in academia, research institutes, herbaria, and in government and non-governmental organizations. When the Center was formed it had no endowments and a limited donor base. Today, the Center has 15 endowments supporting student activities, and two supporting events. The Center's financial future is further underpinned by annuities and planned gifts. Furthermore, the Center relies on the generosity of its donors who provide ongoing support through annual gifts.

During the 2009-2010 academic year, we will celebrate the achievements of the Center. One form of commemoration will be a lecture series by researchers who have been following the fates of the same animal or plant populations over the course of 20 or more years. Much can be learned from such efforts, as many ecological processes only reveal themselves over the long term.

We will continue the original mission of the Center: to provide the means and opportunity to educate graduate students in basic ecological and evolutionary research with emphasis on tropical systems. In so doing, we put in place decision-makers who have the knowledge and training to develop policies that result in sustainable use of resources. We also have had the opportunity to convey our increased understanding to the general public. However, I would like to see that mission expanded. First, we should work to develop further our partnership with the Saint Louis Zoo, to increase the strength of our research ties between the two institutions. Second, with the help of two generous donations, we have begun to include undergraduates in our programs and will expand this in the future. Finally, over the long term, I would like to see the Harris World Ecology Center become a nexus for ecology and conservation science in the St. Louis region.

The next 20 years marks a critical period for humans on Earth. Issues of climate change, biodiversity loss, pollution, and overpopulation are all likely to be resolved for better or worse during this period, depending on what initiatives are taken today. The Harris World Ecology Center can be an important player in formulating these initiatives. I look forward to taking on this new leadership role, and to working with all those associated with the Center to achieve this mission.

CENTER'S FOUNDING DIRECTOR APPOINTED DEAN

Dr. Victoria Sork, founding Director of the Harris Center, has been appointed Dean of the Division of Life Sciences at the University of California-Los Angeles. Sork left UM-St. Louis in 2000 and served as a special assistant to the chancellor for



academic initiatives at UCLA. She was subsequently appointed professor and chair of the UCLA Department of Ecology and Evolutionary Biology, and a professor at UCLA's Institute of the Environment.

HARRIS COUNCIL LEADERSHIP

At the May, 2009 meeting of the Harris Center Council, **Virgil VanTrease** was elected Chair and **Max McCombs** was elected Vice-Chair. The Council acknowledged **Kenneth Kranzberg** for his leadership of the over the last three years. In recognition of Ken's support, the Council matched a challenge from Chancellor George and \$10,000 was added to the Marcelle Kranzberg Undergraduate Research Scholarship endowment.

20TH ANNIVERSARY CELEBRATION

We will celebrate the 20th anniversary of the Harris World Ecology Center by inviting researchers who have accumulated data sets based on following animal or plant populations for 20 years or more. Long-term data sets reveal trends in ecological processes that cannot be seen over the short term. Changes in atmospheric CO₂ concentrations measured in Hawaii and acidity levels of rain in Hubbard Brook, New Hampshire demonstrate the impacts that humans have on the global ecosystem. Short-term annual variation, sometimes contradicting long-term trends, testifies to the importance of following systems for long periods.

Long-term studies offer the possibility of "capturing" infrequent events not likely to be sampled in the short-term but otherwise have long-lasting effects in the system. Periodic outbreaks of pests and diseases and unusual weather events all can have long-term effects but may be missed in short-term studies. Once sampled, the impacts of these events may have to be followed for a long time to understand their repercussions. Finally long-term studies are necessary to understand the population dynamics of long-lived organisms, such as large vertebrates and long-lived tree species.

The series of lectures will be given over 2009-2010 academic years. Our first speaker will be **Dr. Deborah Clark**, who along with her husband **Dr. David Clark**, have been following numerous long-lived, canopy emergent tree species at the La Selva Biological Station, Costa Rica. Their research reveals much about the population dynamics of these tree species and their interactions with local climate and nutrient cycling. Dr Clark's seminar will be held on Friday, October 16 at 12:00 noon in Research Hall 120 and is entitled: *Two decades of ecological discovery in a tropical rain forest: "boring monitoring" is an oxymoron.*

13TH ANNUAL WHITNEY AND ANNA HARRIS CONSERVATION FORUM

The 13th annual Whitney and Anna Harris Conservation Forum will be held at the Saint Louis Zoo on Thursday, November 12 from 5:30-9:00 p.m. This year, the event will have the theme: *Sustainable agriculture: From Field to Market.*

HARRIS CENTER SCHOLARSHIP RECIPIENTS

The following students were awarded scholarships by the Harris World Ecology Center in the 2008-2009 academic year:

Juan Carlos Penagos: Jane and Stanley Birge Scholarship: *Evaluating the relationship of Aioeua with Cinnamomum and Ocotea using cuticular characters.*

Dilys Vela: Henry B. Cowhey Scholarship and Mary Osborne Scholarship: *Systematic study and external and internal morphological variation of Calophyllum L. in South America.*

Linda Marie Svensson: John Denver Memorial Scholarship in Tropical Ecology: *Interactions between birds and pigmented haemosporidian parasites (Haemosporida) in a western Amazonian community.*

Matthew Medeiros: Goldie Millstone Scholarship: *Mosquitoes and the host breadth of Plasmodium parasites.*



Timothy Lescher: Mallinckrodt Research Scholarship: *Alligator snapping turtle* (*Macrochelys temmincki*) *distribution and movement in Missouri*.

Eloisa Sari: Peter H. Raven World Ecology Scholarship: *Colonization history and pathogen pressure in the Galápagos flycatcher*.

Jose R. Hidalgo: Stephen Doyle Tropical Research Scholarship: *Coordinate singing of the blue-backed manakin* *Chiroxiphia pareola*.

Kenneth Yhuanje: Stokes Family Scholarship: *Mammal conservation in Papua New Guinea*.

Jose Ricardo Hidalgo: Harris Center Course Award (Organization for Tropical Studies).

Eliot Miller: Harris Center Course Award (Organization for Tropical Studies).

Christopher Riggs: Marcelle Kranzberg Undergraduate Research Scholarship - Organization for Tropical Studies Field Course.

Payal Patel: Marcelle Kranzberg Undergraduate Research Scholarship - Organization for Tropical Studies Field Course.

DOCTORAL DISSERTATIONS

The following students defended their doctoral dissertations in 2008 and 2009:

BriAnne Addison (Canada): Maternally derived antibodies in avian eggs and offspring: Ecology, life history, and development.

Diego Santiago-Alarcon (Mexico): Evolutionary ecology of haemosporidian parasites infecting new world doves: With emphasis on the endemic Galápagos dove (*Zenaida galapagoensis*).

Patricia Baião (Brazil): Plumage polymorphism in red-footed boobies (*Sula sula*): Genetic basis and mechanisms of maintenance.

Jennifer Bollmer (USA): Distribution of MHC variation in Galápagos endemic birds.

Adrián Azpiroz (Uruguay): The effects of habitat loss on community structure and reproductive success of pampas grassland birds.

Adriana Rodríguez-Ferraro (Venezuela): Community ecology and phylogeography of bird assemblages in arid zones of northern Venezuela.

Brandt Ryder (USA): Understanding coordinated display in a lek breeding bird: Function, maintenance and fitness.

David Kenfack (Cameroon): Systematics and evolution of *Carapa* (Meliaceae-Swietenioideae).

Renata Durães (Brazil): Spatial and temporal dynamics of lekking behavior and female mate choice in the blue-crowned manakin (*Lepidothrix coronata*, Aves: Pipridae).

Paulo Camara (Brazil): A taxonomic, phylogenetic and developmental study on the moss genus *Taxithelium* Mitt. (Pylaisiadelphaceae).

Wendy Tori (Peru): Sexual selection in an exploded lekking bird: the white-crowned manakin (*Pipra pipra*).

NEWS OF HARRIS CENTER FACULTY, STUDENTS AND ALUMNI

Karen E. DeMatteo, Postdoctoral Fellow, has been selected for a Fulbright Specialists project in Argentina at the Universidad Nacional de Misiones during November 2009. She will provide training in noninvasive techniques, including GIS, to understand what influences distribution of organisms and predict how organisms respond to changes in the environment. DeMatteo is one of over 400 U.S. faculty and professionals who will travel abroad this year through the Fulbright Specialists Program.

Deborah Clark and **David Clark**, Adjunct Research Professors in Biology, based at La Selva in Costa Rica, were recently awarded \$75,424 by the National Science Foundation for their project: *Long-term annual performance of tropical rainforest trees: A cross-scale analysis*.

Scott Powell (currently a post-doctoral associate at the University of Arizona) and **Robert Marquis** have been awarded a 3-year grant from the National Science Foundation for \$451,614. The title of the grant is: *Ecological and evolutionary impacts of ecosystem engineering: Wood-boring beetles, arboreal ants, and trophic interactions in Brazilian cerrado*. The research will be conducted



at field sites associated with the University Federal of Uberlandia (UFU), Minas Gerais, Brazil, with whom the Department of Biology has a mutual agreement of shared research and training expertise. **Kleber Del Claro** and **Heraldo Vasconcelos** of UFU and **Henry Hespentheide** of UCLA will be close collaborators in the project.

Danielle Lee (Ph.D. student) was selected as the 2009 Diversity Scholar by the American Institute of Biological Sciences. Her interest in outreach to under-served groups, particularly African-Americans, includes mentoring undergraduate and high school students and participating in after-school science programs. Lee also authors a science blog geared to young people from the inner-city about urban ecology and environmental science. Her blog, Urban Science Adventures! may be viewed at <http://urban-science.blogspot.com/>. Danielle was nominated for this award by the Animal Behavior Society.

Nicholas Barber (Ph.D. 2008) has been appointed to a Postdoctoral Fellowship at University of Massachusetts–Amherst.

Patricia Baiao (Ph.D. 2009) has been appointed Director of Amazon Programs, Conservation International, Brazil.

Jennifer Bollmer has been appointed to a Postdoctoral Fellowship at the University of Wisconsin.

Brandt Ryder (Ph.D. 2008) has been appointed to a Postdoctoral Fellowship with the Migratory Bird Center at the Smithsonian National Zoological Park, Washington DC.

Diego Santiago-Alarcon (Ph.D. 2008) has been appointed as a Humboldt Postdoctoral Fellow, Germany.

Alejandro Masis (M.S. 2005) is now Director, Area de Conservacion Guanacaste in Costa Rica.

Banak Gamui (M.S. 2007) and **Muse Opiang** (M.S. 2008) have co-founded a non-governmental organization in Papua New Guinea. The Papua New Guinea Institute of Biological Research will promote research and conservation activities in PNG. The IBR is funded through grants from the The Christensen Fund, New England Biolabs Foundation, the Indo-Pacific Conservation Alliance, local government agencies and private

gifts. **Muse Opiang** will start his Ph.D. at the University of Tasmania (Australia) in 2010 with research funding from the Australia and Pacific Science Foundation. Muse will also be supported with an Endeavour Awards Australian Scholarship.

Enock Kale (M.S. 2009) has returned to Papua New Guinea and joined the Papua New Guinea Institute of Biological Research as a Research Consultant.

Beth Congdon (Ph.D. 2007) has been appointed Postdoctoral Associate and Field Station Manager at the Bioko Biodiversity Protection Program (BBPP) on Bioko Island in Equatorial Guinea. The position is with Dr. Gail Hearn of Drexel University and is renewable for up to 5 years.

Gonzalo Rivas completed the Spanish-language course *Ecologia Tropical y Conservacion* run by the Organization for Tropical Studies in Costa Rica in January/February 2009 with partial support for the Harris Center.

Kirk Barnett (M.S. student) was awarded a 2009 TWA research scholarship.

GLOBAL CLIMATE CHANGE COURSE

The Harris Center in collaboration with the Saint Louis Zoo and Continuing Education at the University of Missouri-St. Louis has co-sponsored a course entitled *Global Climate Change*. The course, for senior undergraduate and graduate students, and open to the public, explores the political and scientific aspects of global climate change, including the history, evidence of the phenomenon, perspectives and predictions as well as possible solutions.

The course is coordinated by **Dr. Patricia Parker**, E. Desmond Lee Family Fund Professor in Zoological Studies and **Humberto Dutra**, Ph.D. candidate in the Department of Biology. Experts in a variety of disciplines from UM-St. Louis, Washington University, Saint Louis University, the Missouri Botanical Garden and other organizations will deliver guest lectures.



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PiperNotes is the newsletter of the **Harris World Ecology Center**. In collaboration with the **Missouri Botanical Garden** and the **Saint Louis Zoo**, the Center promotes research and education in biodiversity conservation and the sustainable use of natural resources and ecosystems. The Center provides an academic, international environment for graduate education in ecology, evolution, systematics and conservation. The Center supports undergraduate education in conservation biology and promotes awareness within the St. Louis community of the importance of conservation and environmentally sustainable practices.



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Ring-tailed lemur (Photo: Gena Sbeglia).

TOP STORIES

ROBERT RICKLEFS elected to the national Academy of Sciences.

ROBERT RICKLEFS receives Humboldt Research Award.

ROBERT MARQUIS appointed Scientific Director, Whitney R. Harris World Ecology Center.

HARRIS CENTER to celebrate twentieth anniversary with a seminar series.

13TH ANNUAL WHITNEY AND ANNA HARRIS CONSERVATION FORUM to focus on sustainable agriculture.

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