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## TOP STORIES

**DAVID ROCKEFELLER JR. RECEIVES WORLD ECOLOGY AWARD...**David Rockefeller Jr. received the World Ecology Award on behalf of the Rockefeller Family at a gala dinner held at the Missouri Botanical Garden on April 26, 2004 (page 2).

**DR. TERESE HART TO DELIVER 2004 JANE AND WHITNEY HARRIS LECTURE...**Dr. Terese Hart will present the fourteenth annual Harris lecture at the Missouri Botanical Garden on Wednesday, November 3, 2004 (page 3).

**MISSOURI SCIENCE TEACHING AND EDUCATION PARTNERSHIPS LAUNCHED...**The MO-STEP program, funded by the National Science Foundation, has recruited ten graduate students and teamed them with ten biology faculty in area high schools (page 3).

**JOHN D. HOSKINS (DIRECTOR, MISSOURI DEPARTMENT OF CONSERVATION)...**John Hoskins will present the keynote address at the 2004 Conservation Forum to be held at the Saint Louis Zoo on Wednesday, October 27, 2004 (page 4).

**CHRISTENSEN FELLOWS RECRUITED FROM ECUADOR AND MADAGASCAR...**(page 3).



*Hal A. Kroeger, Chair, ICTE Advisory Board, Dr. Peter Raven, Director, Missouri Botanical Garden, David Rockefeller Jr. and UM-St. Louis Chancellor Tom George at the World Ecology Award ceremony held at the Missouri Botanical Garden, April 26, 2004.*

## INSIDE...

*Plant conservation workshop in Africa*

*Social wasps and nest architecture*

*EarthLinks—Ecology in Transit*

*Earth Day Festival*



## DAVID ROCKEFELLER JR. RECEIVES WORLD ECOLOGY AWARD

The International Center for Tropical Ecology at the University of Missouri-St. Louis presented its World Ecology Award to the **Rockefeller Family** at a gala dinner held at the **Missouri Botanical Garden** on Monday, April 27, 2004. **David Rockefeller Jr.** accepted the award on behalf of the family.



*David Rockefeller presents his acceptance address following the presentation of the World Ecology Award to the Rockefeller Family.*

Since the late nineteenth century members of the Rockefeller family have been deeply engaged in efforts to conserve and preserve the increasingly endangered natural heritage of the United States. This engagement has taken many forms; from creating some of our great national parks—Acadia and Virgin Islands—and expanding others—Great Smokies and Grand Tetons; to saving the tiny community gardens of New York City from careless real estate development; to providing leadership to and supporting the work of the many organizations

leading the fight for stronger environmental standards and greater ecological awareness in the United States and around the world. Five generations of Rockefellers have given us a distinguished and distinctive legacy of commitment and achievement. **David Rockefeller, Jr.**, director and former chair of Rockefeller & Co., Inc., is an active participant in the nonprofit arena, especially in the areas of environment, the arts, public education and philanthropy. He is vice chair of the **National Park Foundation** and former national vice chair of the **Alaska Conservation Foundation**, an organization dedicated to preserving the Alaskan natural environment and its native cultures. He is also an avid sailor and has raced and cruised for forty years in the waters from Labrador to Miami and from San Diego to Alaska.

In his acceptance address, David invoked the work of his grandfather, **John D. Rockefeller** and uncle, **Laurance S. Rockefeller** for their major contributions to the establishment of National Parks in the United States and the Virgin Islands. He noted “...it is humbling to glance down the list of previous recipients of the World Ecology Award and realize all the things they have done much better—certainly better than I have done and better than most of my family: better at singing and sailing, better at ruling or reigning, better at acting or mimicking, better at diving or digging, better at studying or supposing, and even better at giving!”

David identified three themes of special importance for Americans to honor: (1) taking the long view and resisting the emphasis on short-term gains, (2) respect for all species, not just *Homo sapiens*, and (3) the importance of taking an ecosystem approach (not just a single species approach) to conservation. In other words, going beyond “now, me and easy”.

In closing, David quoted from the writings of **Terry Tempest Williams** entitled *Wild Mercy*:

*The eyes of the future are looking back at us, and they are praying for us to see beyond our own time. They are kneeling with clasped hands that we might act with restraint, leaving room for the life that is destined to come.*



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*To protect what is wild is to protect what is gentle. Perhaps the wilderness we fear is the pause within our heartbeats, the silent space that says "we live only by grace". Wilderness lives by this same grace.*

*We have it within our power to create merciful acts. The act of restraint by the United States Congress in the name of the Arctic National Wildlife Refuge would be the most powerful act of all. Call it the act of wild mercy, an interval of silence sustained in the 21<sup>st</sup> Century.*

Previous recipients of the World Ecology Award are: **John Denver** (1991), **Captain Jacques Cousteau** (1992), **Prince Sadrudin Aga Khan** (1993), **Dr. Paul Ehrlich** (1994), **President José Figueres** (1995), **Dr. Richard Leakey** (1997), **Dr. Jane Goodall** (1999), **Ted Turner** (2000), **Dr. Gro Harlem Brundtland** (2001), **Harrison Ford** (2002), **Conservation International** (2002), **Teresa Heinz Kerry** (2003), **H.R.H. The Prince of Wales, Prince Charles** (2003).

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## MO-STEP PROGRAM LAUNCHED

The National Science Foundation has funded a proposal submitted by the ICTE and the Department of Biology: *The Missouri Science Teaching and Education Partnerships (MO-STEP)*. Total funding over three years is \$1,591,972. Principal Investigators of this program are **Dr. Patricia Parker**, E. Desmond Lee and Family Fund Endowed Professor in Zoological Studies, **Dr. Charles Granger**, Professor of Biology and Education, **Dr. Bette Loiselle**, Associate Professor in Biology and **Dr. Patrick Osborne**, Executive Director, ICTE.

The program has recruited ten graduate students and teamed them with high school teachers within the following School Districts: Ferguson-Florissant, Normandy, Maplewood-Richmond Heights, Pattonville and Wellston. MO-STEP will strengthen links between researchers and teachers within the participating high schools, UM-St. Louis and the **Missouri Botanical Garden, Saint Louis Zoo and Forest Park Forever**. The program seeks to improve science education and to facilitate student transition from high school to college.

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## 2004 JANE AND WHITNEY HARRIS LECTURE

The 2004 **Jane and Whitney Harris** Lecture will be presented by **Dr. Terese Hart**, Senior Conservation Scientist and Congo Program Director, Wildlife Conservation Society of New York (Bronx Zoo). The lecture, entitled *Why conservation—and basic botany—must continue in the war torn center of Africa*, will be held in the Shoenberg Auditorium at the **Missouri Botanical Garden** on Wednesday, November 3, 2004 beginning at 7:30 p.m.

Terese Hart first visited the Democratic Republic of Congo (then Zaire) in 1974 as a Peace Corps volunteer. She returned to do her Ph.D. research on regeneration of different forest types in the Ituri region in the early 1980s. Her husband, **John Hart**, was simultaneously doing his dissertation on forest antelope ecology. Following completion of their respective dissertations, the Harts returned to the Ituri Forest with Wildlife Conservation Society to carry out research on Okapi, the rain forest giraffe. With a permanent base in the Congo, they were able to document long term botanical and faunistic change and their commitment to and knowledge of the area has greatly facilitated their ability to lobby for African conservation.

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## THE CHRISTENSEN FUND FELLOWSHIPS

**Cynthia Hong Wa** from Madagascar and **Monica Soria** from Ecuador have joined our Master of Science program as Christensen Fellows. Cynthia worked in the **Missouri Botanical Garden's** Madagascar office for a number of years and edited the Garden's newsletter (*Ravintsara*) on research and botanical exploration in Madagascar.

Monica was born on the Galapagos Islands and has worked as the Introduced Plants Program Coordinator with the National Park Service for the Galapagos Islands. This program is funded by the Global Environment Facility, Galapagos National Park and the Charles Darwin Foundation.

**Corneille Ewango**, despite significant civil unrest in the area, successfully reached his field



site in the northeast Congo, overcame malaria and had a great field season studying the plant communities on granite inselbergs. **David Kenfack** received research support from the **Center for Tropical Forest Science** for his research in Cameroon.

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## THE CHRISTENSEN FUND VISITING SCIENTISTS

**Drs. Jorge Crisci and Liliana Katinas** spent most of March 2004 with the ICTE and **Missouri Botanical Garden** as Christensen Fund Visiting Scientists. Jorge is Professor of Botany and Biogeography at the Universidad Nacional de La Plata, Superior Research Scientist at CONICET, Director of the Laboratory of Systematic and Evolutionary Biology and Chairman of the Department of Vascular Plants at the Museo de La Plata. His primary research has focused on systematic and phylogenetic analysis of Asteraceae, Araceae and Onagraceae, historical biogeography, especially of the southern cone of South America, conservation of biodiversity, science education, and the preservation, management and storage of plant collections.

Dr. Katinas is Assistant Professor of Biogeography at the Universidad Nacional de La Plata and Research Scientist at CONICET. She specializes on the systematics and evolution of the largest plant family, Asteraceae, primarily on the tribe Mutisieae (subfamily Cichorioideae), a very complex group of plants. Jorge and Liliana work closely with **Peter Hoch** and **Peter Raven** at the **Missouri Botanical Garden** on the plant family Onagraceae.

While in St. Louis, Jorge and Liliana co-taught a short course on historical biogeography to over thirty ICTE graduate students.

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## 2004 CONSERVATION FORUM

The 2004 Conservation Forum will be held at the Living World, **Saint Louis Zoo** on Wednesday, October 27 with the theme: *Conversations on conservation in Missouri: Issues and challenges*. The keynote address will be given by **John D. Hoskins** (Director, Missouri Department of Conservation): *Missourians—Leading the nation in conservation* and followed by talks by **Robert Marquis** (Professor of Biology, University of

Missouri-St. Louis): *Issues in conservation: Missouri insects* and **Douglas Ladd** (Director of Conservation Science, The Nature Conservancy-Missouri Chapter): *Do our local conservation efforts have a global impact?* The forum is co-sponsored by the **International Center for Tropical Ecology, University of Missouri-St. Louis, Saint Louis Zoo, Missouri Botanical Garden, The Nature Conservancy (Missouri Chapter)** and the **Missouri Department of Conservation**.

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## ARGENTINA COLLABORATION

The ICTE is developing a strong partnership with the **Laboratorio de Investigaciones Ecológicas de las Yungas (LIEY)** in Argentina and in July 2004, **John Blake** taught a 2-week course *Ecología y Conservación de Aves en el Cono Sur* in northwestern Argentina. The course attracted more than sixty applicants from throughout South America with the final 16 students coming from Venezuela (1), Colombia (3), Uruguay (1), Chile (1), Peru (2), Bolivia (1) and Argentina (7). Participants visited sites throughout northwestern Argentina from 300 m to over 3500 m above sea level. The course was sponsored by the LIEY, the ICTE and **Aves Argentinas** and contributes to our goal of increasing exchanges between Argentina and Missouri, as outlined in the memorandum of understanding between the LIEY and ICTE. This was the third course that John has taught at the LIEY and he will probably volunteer again next year, teaching courses on methods of community analysis as well as repeating the bird ecology and conservation course taught in July.

**Bette Loiselle** taught one 6-day and two 5-day courses focused on the application of Geographic Information Systems (GIS) technology to ecology and conservation. The courses attracted students, professors and conservation professionals from throughout Argentina. The first course, which used ESRI ArcGIS 8.3 software, focused on general spatial analytical tools commonly used in ecological and conservation applications. The second course focused on theoretical and practical applications of ecological niche modeling. The third course was designed around specific research applications of scientists from the LIEY and Pro-



Yungas Foundation. These courses were taught as part of her Fulbright Award, with the LIEY and Universidad Nacional de Tucumán as the host-country sponsors.

**Lucio Malizia** (Ph.D. student, ICTE and LIEY Scientist), **Silvia Pacheco** (Pro-Yungas and LIEY GIS specialist), **Dr. Mercedes Rouges** (ICTE alum and LIEY Scientist) and **Dr. Alejandro Brown** (Director, LIEY) played key roles in organizing the courses and facilitating new collaborative research projects in northwest Argentina. Bette expects to repeat some or all of these courses in the near future.

## EARTH DAY 2004

Earth Day 2004 was celebrated with a festival in Forest Park on Sunday, April 25, 2004. The ICTE participated with an interactive, educational-outreach display with a focus on the impact of coffee and cocoa production on tropical ecosystems and how their harvests can be managed sustainably. In addition to raising awareness about the ICTE, the event raised funds through the sale of bird-friendly, organic coffee and a variety of personalized items. This program was coordinated and organized by ICTE Development Board members **Kathy Bernard**, **Sally Cohn**, **Ilene Follman** and **Dudley Grove**.

For the fourth year, **Arts-in-Transit (Metro)** collaborated with the Center in designing and painting an Earth Day bus. This year's design was developed by ICTE Faculty Associate **Dr. Godfrey Bourne** and ICTE graduate student **Lilla Bartko** in collaboration with **Arts-in-Transit**.

## SOCIAL WASPS AND THEIR NEST ARCHITECTURE

Social wasps are more diverse in the Neotropics than anywhere else on Earth. Several hundred species in twenty-two genera can be found in Latin America. For decades, naturalists and entomologists have known that most of the genera and even some species can be identified by the architecture of their nests. Consistency of nest design is a hallmark of social wasps. Or, it has been until a recent report by UM-St. Louis biologist **James H. Hunt** and his colleague **James M. Carpenter** of the **American Museum**

**of Natural History**. Hunt and Carpenter have traveled sufficiently widely in search of wasps in the Neotropics to recognize that several species in one genus build nests of two distinct forms, and that a few intermediate variations also occur. Hunt and Carpenter report that nests of several *Parachartergus* species at single sites and among sites in Peru, Brazil, and Venezuela show nest form variation sufficiently great that a first-time observer would think that each form was constructed by a different species. They report their findings in a recent issue of *Journal of the Kansas Entomological Society* that is dedicated to the late **Howard E. Evans**, a National Academy of Sciences scholar who placed great importance on nest architecture as a salient feature of social wasp evolution.



*Nests of the wasp *Parachartergus amazonensis* attached to the underside of a Heliconia leaf (left) and oriented vertically on the trunk of an unidentified tree (right). The nests, which were ca. 100 m apart in Amazonian Peru, also differ in dimensions and in the architecture of the nest combs (not visible within the covering envelopes). Differences of this magnitude in nests of polistine wasps are usually associated with*



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*different species.* (Photographs by Karl E. Espelie, University of Georgia).

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## **EARTHLINKS: ECOLOGY-IN-TRANSIT**

The ICTE is working with **The Green Center** in delivering a revised **EarthLinks—Ecology in Transit** program. This has been made possible through significant financial support from **The Trio Foundation of St. Louis**.

EarthLinks—Ecology in Transit is a multidisciplinary educational outreach program in greater metropolitan St. Louis designed to teach elementary and middle school students about the importance of plants and animals that live in their surroundings. Children from University City, Webster Groves and Clayton participated in EarthLinks as part of the Green Center's Arts & Nature summer camps. The program was also utilized in the **Urban Populations Outreach Project** summer camps with children from Downtown YMCA, Dignity House, Wesley House, Walbridge Elementary's Minority Student Science Investigators (City of St. Louis); Castle Point Family Support Center (Jennings) and Pagedale Family Support Center.

Through this program, after a nature walk, children created ecology cards with drawings and information about common, local plants and animals. The completed cards are displayed in advertising spaces on Bi-State MetroBuses, creating a rotating educational exhibit of the children's artwork for bus passengers. In an additional component to this project, through a series of coaster cards, children participating in this program will learn how to live more environmentally friendly lives. By taking these coasters home, the children will teach the lessons they have learned to their parents and siblings.

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## **PLANT CONSERVATION AND EDUCATION IN CENTRAL AFRICA**

ICTE Christensen Fellows, **David Kenfack** and **Corneille Ewango**, participated as regional experts in a workshop that took place at the **Limbe Botanic Garden**, Cameroon, from July 18-24, 2004. The workshop (*A landscape*

*approach to measuring and conserving plant diversity in the Congo Basin*) taught participants basic techniques in collecting and using botanical information in plant conservation. The workshop, organized by **David Kenfack** and the *Réseau des Botanistes de l'Afrique Centrale* (Central African Botanical Network) (REBAC), was supported by the **Missouri Botanical Garden** and the **Smithsonian Institution** with funding from the **Central African Regional Program for Environment (CARPE)** and the **Wildlife Conservation Society-Cameroon (WCS)**. Participants at this workshop were from five countries of Central Africa: Congo, Democratic Republic of Congo, Gabon, Equatorial Guinea and Cameroon. The workshop drew its experts from the region, with instructors from REBAC (including **Corneille Ewango** and **David Kenfack**) and invited speakers from the United Kingdom, United States and Cameroon. They shared their botanical collection management experience with botanists and field technicians from 20 institutions.

Parallel to this workshop, the *Réseau des Botanistes de l'Afrique Centrale* (REBAC) was launched at a meeting held from July 22-24, 2004. At this meeting bylaws for the network were reviewed and adopted, and the administrative board elected. **David Kenfack** became the first Executive Secretary of the Network and **Corneille Ewango** the Focal Point for the Democratic Republic of Congo. REBAC aims to promote botanical research and its application in conservation in Central Africa through capacity building and research.

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## **NEWS OF FACULTY, STUDENTS AND ALUMNI**

**Elizabeth (Toby) Kellogg** has been awarded a Guggenheim Fellowship for the coming academic year (2004-5). This fellowship will support her sabbatical in Australia.

The **E. Desmond Lee Laboratory of Molecular Systematics** has hosted three visiting scientists from Argentina: **Dra. Sandra Aliscioni**, (Darwinion Institute in Buenos Aires), **Dra. Gisela Sancho** (University of la Plata) and **Renata Reinheimer** (University of Santa Fe).



Faculty and graduate students utilizing the **E. Desmond Lee Laboratory of Molecular Systematics** have published the following papers:

**Razafimandimbison, S.G., Kellogg, E.A. and Bremer, B.** (2004). Recent origin and phylogenetic implications of high-level ITS polymorphisms: A case study from *Nauclea* (Rubiaceae). *Systematic Biology* 53: 177-192.

**Doust, A.N., Devos, K. M., Gadberry, M., Gale, M.D. and Kellogg, E.A.** (2004). Branching in grasses: Genetic control in foxtail millet differs from maize prediction. *Proceedings of the National Academy of Sciences* 101: 9045-9050.

**Malcomber, S.T. and Kellogg, E.A.** (2004). Heterogeneous expression patterns of the *SEPALLATA*-like gene *LEAFY HULL STERILE1 (LHS1)* in grasses (Poaceae) suggests separate roles in meristem determinacy, palea/lemma identity, and flower sexuality. *Plant Cell* 16: 1692-1706.

**Kellogg, E.A. and Bennetzen, J.L.** (2004). The evolution of nuclear genome structure in plants. *American Journal of Botany* 91: in press.

**Kellogg, E.A., Hiser, K.M. and Doust, A.N.** (2004). Taxonomy, phylogeny, and inflorescence development of the genus *Ixophorus* (Panicoideae: Poaceae). *International Journal of Plant Sciences*: in press.

**Peter Stevens, Felipe Zapata and Toby Kellogg** are members of the Plant Ontology Consortium that will link genomic databases ([www.plantontology.org](http://www.plantontology.org)) and have received support through a multi-investigator grant from the **National Science Foundation** totaling \$1,499,313 with \$232,935 apportioned to UM-St. Louis.

**Bette Loiselle** and **Kimberly Holbrook** received a U.S.-Ecuador Dissertation Enhancement grant from the **National Science Foundation** for their proposal: *Seed dispersal by toucans in Amazonia Ecuador: Toucan-generated seed shadows and genetic-based models of Virola flexuosa, a Neotropical nutmeg* (\$19,776). Kimberly is working in the Yasuni region of Amazonia Ecuador and is currently an Environmental Protection Agency Star Fellow, (second year of a 3-year fellowship). She received the **John Denver Memorial**

**Scholarship** from the International Center for Tropical Ecology in 2001.

**Mark Beilstein** received a Dissertation Improvement Grant from the **National Science Foundation**: Phylogeny and trichome evolution in the Brassicaceae (\$10,111). Mark was awarded the **Jane Harris Scholarship in Tropical Botany** by the International Center for Tropical Ecology in 2002.

**Patrick Sweeney** received a **TWA Fellowship** (\$6,000) to support his research on the systematics and floral evolution of *Garcinia* (Clusiaceae). Patrick was awarded the **Jane Harris Scholarship in Tropical Botany** by the International Center for Tropical Ecology in 2001.

**Noah Whiteman** also received a **TWA Fellowship** (\$6,000) for his research project on the external parasites of the Galapagos hawk. Noah has also co-authored the following papers: **Whiteman, N.K. and Parker, P.G.** (in press). Using parasites to infer host population history: A new rationale for parasite conservation. *Animal Conservation*; **Whiteman, N.K., Santiago-Alarcon, D., Johnson, K.P. and Parker, P.G.** (2004). Differences in straggling rates between two genera of dove lice (Insecta: Phthiraptera) reinforce population genetic and cophylogenetic patterns. *International Journal for Parasitology*. Noah's research was also supported by the 2003 **Stephen Mitchell Doyle Scholarship** awarded by the International Center for Tropical Ecology.

**Adrián Azpiroz** and **Adriana Rodríguez-Ferraro** have both received research support from the **Wildlife Conservation Society**. Adrián received \$11,690 for his project entitled *Ecology and conservation of pampas' birds*. Adrián received the **Goldie Millstone Scholarship** in 2002 from the International Center for Tropical Ecology. Adriana's project (*Community ecology and conservation of bird assemblages in arid zones of Northern Venezuela*) was funded with \$9,380. Adriana was awarded the 2002 **John Denver Memorial Scholarship** by the International Center for Tropical Ecology.

**Zuleyma Tang-Martinez** and **Elizabeth Congdon** received a Dissertation Enhancement Award (\$25,690) from the **National Science Foundation** for their project: *Natal dispersal and new group formation in capybaras: Combining*



behavioral and genetic information. Elizabeth was able to begin her research with the support of the 2003 **Henry B. Cowhey Scholarship in Tropical Conservation** from the International Center for Tropical Ecology.

**Zuleyma Tang Martinez** and **Danielle N. Lee**, were awarded \$10,000 by the **National Science Foundation** for their proposal entitled: *The effects of early social environment on the physical, behavioral, and social developments of prairie voles, Microtus ochrogaster.*

**Renata Durães** and **Bette Loiselle** published the following paper: Durães, R. and Loiselle, B.A. (2004). Inter-scale relationship between species richness and environmental heterogeneity: a study case with antbirds in the Brazilian Atlantic Forest. *Ornitologia Neotropical* 15 (Suppl.): 127-135.

**Jay King** has published two papers: (1) King, J. (2004). The mountain chicken frog in Dominica. *Solitaire* 15, 1-2. (2) Rollins-Smith, L.A., King, J.D., Nielsen, P.F., Sonnevend, A., and Conlon, J.M. (in press). An antimicrobial peptide from the skin secretions of the mountain chicken frog *Leptodactylus fallax* (Anura: Leptodactylidae). *Regulatory Peptides*.

Winter 2004 **UM-St. Louis Research Board Grants** were awarded to **Bette Loiselle**: *Effectiveness of seed dispersal by birds in a species-rich tropical rain forest* (\$11,274) and to **Robert Marquis**: *The contribution of latitude and phylogeny to leaf traits in broad-leaved trees that influence insect herbivore attack* (\$12,500).

**Zachary Rogers** has recently published his master's thesis (Rogers, Z.S. 2004. A revision of the *Stephanodaphne* Baill. (Thymeleaceae). *Adansonia* 26: 7-35). His fieldwork was funded by the ICTE through the **John Denver Memorial Scholarship**. Zach recognized nine species of *Stephanodaphne*, including three newly described by him. The plants he studied are found only in Madagascar and the Comoro Islands. As well as all the usual taxonomic aspects, the paper contains lovely three-dimensional SEM micrographs of the flowers, a cluster analysis of the species printed in color, and a fine series of illustrations including some done by ICTE student alum, **Bee Gunn**.

**Stephen Mitten** was selected for a Smithsonian Fellowship as a Visiting Student at the **Smithsonian Environmental Research**

**Center (SERC)**. The appointment was from December 28, 2003 through June 28, 2004. Steve's primary research objectives were to document avian species summer and winter diversity, distribution, density and trophic level complexity on two offshore mangrove islands in Belize, Central America. His study is a part of a much larger biodiversity complexity research project on mangroves that is currently being done by the Smithsonian Institute.

**Paulo Camara** taught a short course entitled: *Moss taxonomy, a traditional and phylogenetic approach* to graduate students at the University of Brasilia, Brazil. He also presented a paper (*Phylogenies as tools in moss systematics*) at the Brazilian Botanical Society National Congress held in Viçosa, Minas Gerais, Brazil. During the summer he and collaborators completed the translation of *Glossarium Polyglotae Bryologiae* by **Robert Magill (Missouri Botanical Garden)** into Portuguese.

ICTE alum, **Guillermo Paz y Miño** coauthored a paper in *Nature*: Paz y Miño, G., Bond, A. and Kamil, A.C. (2004). Pinyon jays use transitive inference to predict social dominance. *Nature* 430: 778-781.

**Patricia Camara** is studying molecular and behavioral aspects related to variation in plumage color observed in red-footed boobies (*Sula sula*). In her first field season, one month was spent on Genovesa Island in the Galapagos Archipelago collecting behavioral data on mate choice and pair formation related to plumage color. Fifty-seven blood samples (25 from white birds, 25 from brown birds and 7 from chicks) will be used to determine the molecular basis of the plumage polymorphism. These samples will contribute to the survey of avian diseases on the Galapagos.

Undergraduate **Bart Kensinger**, completed an internship for the Certificate in Conservation Biology with Ph.D. candidate **Beth Congdon** working on capybara behavior in Venezuela.

This biannual Newsletter describes recent activities of the **International Center for Tropical Ecology**. Established in cooperation with the **Missouri Botanical Garden**, the Center promotes research and education in biodiversity conservation and the sustainable use of tropical ecosystems. The Center provides an academic, international environment for graduate education in tropical 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 policies and practices.



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The ICTE gratefully acknowledges the following for their generous support from July 1, 2003 to June 30, 2004.

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