

Tupper specials

Candidates for two five-year research fellowships to work at the new laboratory of Evolutionary Neurobiology and Behavior will present seminars:

—Mo, May 9 at 12 noon, Rudi Loesel, Rheinisch Westfaelische Technische Hochschule Aache

The arthropod brain: functional aspects and evolution

—Mon, May 9 at 2pm, Jeremy Niven, Cambridge University
Information, energy and the size of insect photoreceptors

—Mon, May 9 at 4pm, Marc Seid, Zoologisches Institut, Universität Zürich
neuroethology of ants: from ecology to the brain

Bambi special

Mon, May 9, Bambi seminar speaker will be Juan Posada, University of Florida
Tropical trees achieve optimal photosynthetic light use through the canopy by adjusting leaf orientation and physiology

Bocas' talk

Thu, May 12, Bocas's talk speaker will be Georges Pearson, University of Kansas
Early humans, extinct beasts and climatic upheavals in Ice Age
Spanish. Translation into English will be given on Fri, May 13, same place, same time.

Arriving this week

Anna Schmidt, University of Copenhagen, Denmark, to work with Jacobus Boomsma, in Gamboa.

STRI news

2005



Smithsonian Tropical Research Institute, Panamá

www.stri.org

May 6, 2005



Members of the Smithsonian Executive Committee (SEC) met at STRI this past week. The photo shows (standing, from left) National Air and Space Museum (NASM) associate director Ted Maxwell, Environmental Research Center director Anson Hines, STRI deputy director Eldredge Bermingham, National Zoological Park deputy director Mary Tanner, special advisor to the Undersecretary for Science Alyssa Gundersen, Center for Materials Research and Education (CMRE) deputy director Paula Depriest, SI under secretary for Science David Evans, STRI director Ira Rubinoff, Astrophysical Observatory deputy director Steve Murray and director Charles Alcock, and facilitator

Otto Kroeger. Sitting are scientific advisor to the Undersecretary Steve Monfort, CMRE director Robert Koestler, NMNH director Cristian Samper and deputy director Hans Sues, senior executive officer to the Undersecretary Mary Langlais, and NASM director John Dailey.

Los miembros del Comité Ejecutivo de SI (SEC) se reunieron en STRI esta semana. La foto muestra (de pie) a Ted Maxwell, director asociado de Museo Aeroespacial de EU (NASM) Anson Hines, director del Centro de Estudios Ambientales (SERC), Eldredge Bermingham de STRI, Mary Tanner subdirectora del Parque Zoológico de EU, Alyssa

Gundersen, asesora especial del sub-secretario Evans, Paula Depriest, subdirectora del Centro de Materiales para la Investigación y Educación (CMRE), David Evans, subsecretario para Ciencias de SI, el director de STRI Ira Rubinoff, Steve Murray, subdirector del Observatorio de Astrofísica y el director Charles Alcock y Otto Kroeger, facilitador del retiro. Sentados aparecen Steve Monfort, asesor científico del sub-secretario Evans, Robert Koestler, director del CMRE, Cristián Samper, director del NMNH y el subdirector Hans Sues, Mary Langlais, administradora ejecutiva del sub-secretario Evans y John Dailey, director de NASM.

Also arriving

Andre Rivero, University of Arizona, to study the optimal migration in butterflies: trade-offs with immune function, on BCI.

Carlos Francisco Arias, Universidad de Los Andes, Colombia, to work with Jesus Mavarez, at Naos.

Joshua Dumas, University of Minnesota, to work with Helene Muller Landau, on BCI.

Ryan Taylor, University of Texas at Austin, to study multi-modal communication and mate choice in the Túngara frog, *Physalaemus pustulosus*, in Gamboa.

Michael Kaspari, University of Oklahoma, to study army ant diversity and impact across four tropical forests, on BCI.

Jonathan Shik, short-term fellow from the University of Oklahoma, to study smaller ants in larger food patches: determinants of ant body and colony size in local communities, on BCI.

Sheley Sedberry and Steven Dowling, University of Oklahoma, to work with Michael Kaspari, on BCI.

Kirk Zigler, Duke University, to study the reproductive isolation between two Caribbean sea urchins, at Naos.

Michelle Stein, University of Minnesota, to work with Noelle Bechman, on BCI.

Robert Dudley, University of California at Berkeley, to study the eco-physiology and orientation mechanisms of migratory neotropical butterflies, on BCI.

Bill Eberhard and Mary Jane West-Eberhard, to participate in the interviews for the Neurobiology and Behavior



Law creating protected marine corridor signed at STRI's center in Culebra

Panama's president Martin Torrijos signed law 44 declaring Panamanian waters a protected corridor for marine mammals, at STRI's Marine Exhibition Center at Culebra.

The new law provides safe passage to nearly 30 species of marine mammals found in Panama's coastal waters. Humpback whales breed in Panamanian waters year round. Regulated tourism, scientific study and community participation in conservation efforts is encouraged under guidance by a new national commission.

STRI marine biologist Hector Guzman, who

El presidente de Panamá Martín Torrijos ratificó la ley 44 que declara las aguas panameñas como un corredor protegido para mamíferos marinos, en el Centro de Exhibiciones Marinas de STRI en Culebra.

La nueva ley ofrece tránsito seguro a cerca de 30 especies de mamíferos marinos que se encuentran en aguas costeras de Panamá. Las ballenas jorobadas se reproducen en aguas panameñas todo el año. Una nueva comisión nacional invita a realizar turismo regulado, estudios científicos y esfuerzos de conservación por parte de la comunidad bajo su tutela.

contributed scientific expertise throughout the crafting of the law, is especially pleased by an article that states that "This legislation views whale conservation as part of an integrated system of coastal management on both the Atlantic and Pacific sides of the Isthmus." To this end, he plans to organize workshops involving fishermen from the Las Perlas islands and decision makers in efforts to better understand and manage Panama's whales and to define appropriate whale tourism practices. "This was an amazing collaboration between lawmakers and civil society,"

El científico marino Héctor Guzmán, quien contribuyó con conocimientos científicos para la creación de la ley, está especialmente complacido por un artículo de la ley que establece que "Esta legislación considera la conservación de las ballenas como un sistema integrado de manejo costero en ambos lados del Istmo, Pacífico y Atlántico." Con esto en mente, planea organizar talleres con pescadores de las islas de Las Perlas y administradores de recursos naturales en un esfuerzo de entender mejor y administrar las ballenas de Panamá para definir prácticas de turismo de

commented Guzman who mentioned STRI, the Panamanian Congressional Committee on the Environment, the National Environmental Authority (ANAM), the Panama Maritime Authority, the Panamanian Maritime Service as well as the Panamanian Association of Artisanal Fisherman, Mar Viva and ASVEPA as key players.

The photo shows director Ira Rubinoff, Maritime Authority administrator Ruben Arosemena, the President and National Assembly president Jerry Wilson.

ballenas. "Esto ha sido una magnífica colaboración entre los políticos y la sociedad civil" comentó Guzmán quien mencionó a STRI, la Comisión del Ambiente de la Asamblea, la Autoridad Nacional del Ambiente (ANAM), la Autoridad Marítima de Panamá, así como la Asociación de Pesca Artesanal, Mar Viva y ASVEPA, por su importante rol en este esfuerzo. La foto muestra al director Ira Rubinoff, el administrador de la Autoridad Marítima Rubén Arosemena, el Presidente, y el presidente de la Asamblea Legislativa, Jerry Wilson.

Piperno elected for AAAS and NAS

STRI anthropologist Dolores Piperno (also with the NMNH) was elected new fellow of the American Academy of Arts and Sciences and the National Academy of Sciences, for her accomplishments at STRI. Along with Piperno at the AAAS were also elected a Nobel Prize-winning physicist, a Supreme Court Chief Justice, a leader of NASA's program for the exploration in Mars, Academy Award-winning actor and director Sidney Poitier, two Google co-founders, four Pulitzer Prize winners and other distinguished personalities.

The AAAS, that recognizes individuals who have made preeminent contributions to their disciplines and to society at large, will held its induction ceremony on October 8, at its headquarters in Cambridge, Massachusetts.

The National Academy of Sciences also elected Piperno as one of its 72 new members and 18 foreign associates from 14 countries in recognition of their distinguished and continuing

La antropóloga de STRI Dolores Piperno (también con el NMNH) fue elegida en la Academia de Artes y Ciencias de EU (AAAS) y de la Academia Nacional de Ciencias de EU (NAS), por sus logros en STRI. Junto con Piperno en la AAAS también fueron elegidos un Premio Nobel de Física, un magistrado presidente de la Corte Suprema de Justicia, un líder del programa de la NASA para explorar Marte, el actor y director Sidney Poitier ganador de un premio de la Academia, dos co-fundadores de Google, cuatro ganadores del premio Pulitzer y otras distinguidas personalidades.

AAAS, que reconoce a individuos que hayan hecho contribuciones prominentes en sus disciplinas a la sociedad en general, tendrá su ceremonia de

achievements in original research. NAS is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. It was established in 1863 by a congressional act signed by Abraham Lincoln that calls on the Academy to act as official advisor to federal government in science and technology.

Piperno pioneered the use of phytoliths in conjunction with pollen and starch grains to discover plant remains at ancient archaeological sites and shed light on the origins of human food plants. Her findings include processed yucca from 7,000 year-old stone tools in Panama, and processed wild grain on a 23,000 year-old grinding stone found under the waters of the Sea of Galilee in

inclusión de miembros el 8 de octubre en su sede en Cambridge, Massachusetts.

La Academia Nacional de Ciencias también eligió a Piperno como uno de sus nuevos 72 miembros y 18 asociados extranjeros de 14 países, en reconocimiento por sus grandes logros y trabajo continuo en investigaciones originales. NAS es una organización privada de científicos e ingenieros para el avance de ciencia y sus usos, para el bienestar general. Fue establecida en 1863 por un acto del Congreso de EU firmado por Abraham Lincoln, que decidió que NAS fuera la asesora oficial del gobierno federal en ciencia y tecnología.

Piperno fue la primera en usar los fitolitos junto con polen y



Israel. With STRI's Oris Sanjur, she found genetic evidence indicating six independent origins of domesticated squash in the Americas.

In her young career Piperno has produced about 80 publications including three books and articles in the most prestigious scientific journals.

granos de almidón para descubrir los residuos de plantas en sitios arqueológicos muy antiguos, arrojando luz sobre los orígenes de los cultivos humanos. Sus descubrimientos incluyen yuca procesada proveniente de herramientas de piedra de hace 7,000 años en Panamá, y granos silvestres procesados en una piedra de moler de 23,000 años encontradas bajo las aguas del Mar de Galilea en Israel. Junto con Oris Sanjur, encontró evidencia genética que revela seis orígenes independientes de calabaza domesticada en las Américas.

En su joven carrera Piperno ha producido cerca de 80 publicaciones incluyendo tres libros y artículos en las revistas científicas más prestigiosas.

Leaving this week

Richard Condit to Trieste, Italy, to attend a workshop at the International Center for Theoretical Physics, sponsored by UNESCO.

Mark Torchin to Santa Barbara, California, invited to attend a working group at the National Center for Ecological Analysis and Synthesis.

New publications

Ashton, Peter S. 2005. "Lambir's forest: The world's most diverse known tree assemblage?" In David Ward Roubik, Shaoko Sakai, and Abang A. Hamid Karim (Eds.), *Pollination ecology and the rain forest*: 191-216. Petra Yala, Malaysia: Springer.

Davies, Stuart J., Tan, Sylvester, LaFrankie, James V., and Potts, Matthew D. 2005. "Soil-related floristic variation in a hypodiverse dipterocarp forest." In David Ward Roubik, Shaoko Sakai, and Abang A. Hamid Karim (Eds.), *Pollination ecology and the rain forest*: 22-34. Petra Yala, Malaysia: Springer.

Harrison, Rhett D. 2005. "A severe drought in Lambir Hills National Park." In David Ward Roubik, Shaoko Sakai, and Abang A. Hamid Karim (Eds.), *Pollination ecology and the rain forest*: 51-64. Petra Yala, Malaysia: Springer.

Harrison, Rhett D., and Shanahan, Mike. 2005. "Seventy-seven ways to be a fig: overview of a diverse plant assemblage." In David Ward Roubik, Shaoko Sakai, and Abang A. Hamid Karim (Eds.), *Pollination ecology and the rain forest*: 111-127. Petra Yala, Malaysia: Springer.

science in
progress:

“Gatun island system, great for research”: Christoph Meyer

With Marcos Guerra,
on BCNM

Christoph Meyer, doctoral student from the University of Ulm in Germany, studies forest fragmentation effects on bat communities using islands in Gatun Lake as a model system.

Overall, the studied islands hold a less diverse and structurally simplified bat fauna compared to mainland assemblages in continuous forest. Species richness and composition on islands seems to be governed by island isolation rather than island area. With increasing distance from the mainland island assemblages are increasingly dominated by frugivorous bats with good dispersal abilities, especially *Artibeus jamaicensis*, the most abundant species, which readily flies long distances over water. “The islands seem to constitute attractive resource patches for these larger frugivores” he says, “I’ve captured over 200 bats in a single night.”

Bats of other feeding guilds seem to be much more vulnerable to fragmentation as they are completely missing (carnivores, omnivores, sanguivores) or almost absent (gleaning insectivores) from these islands.

Comparing forest edge and interior sites on three mainland peninsulas, Meyer also assesses edge-related effects on the bat fauna.

Species’ responses to fragmentation can be strongly influenced by the matrix surrounding fragments. “The islands in Gatun Lake provide a perfect study system because the aquatic matrix allows one to study fragmentation effects per se while controlling for matrix effects.”

Christoph Meyer, candidato a doctorado de la Universidad de Ulm en Alemania, estudia los efectos de la fragmentación de bosques en comunidades de murciélagos, en islas del Lago Gatún como sistema modelo.

En general, las islas estudiadas mantienen menor diversidad y una fauna de murciélagos de estructura simple si se compara con las combinaciones del bosque continuo. La riqueza de especies y la composición en las islas parece obedecer más al aislamiento que al tamaño de la isla. Al aumentar la distancia de tierra firme, los murciélagos frugívoros con mayores habilidades de dispersión son más dominantes, en especial *Artibeus jamaicensis*, la especie más abundante que puede volar largas distancias sobre el agua. “Estas islas parecen constituir parches atractivos de recursos para estos grandes frugívoros” dice Meyer, “He llegado a capturar más de 200 murciélagos en una sola noche.”

Murciélagos interesados en otros alimentos parecen ser mucho más vulnerables a la fragmentación ya que simplemente no están (carnívoros, omnívoros, sanguívoros) o están casi ausentes (insectívoros recolectores) en estas islas.

Comparando el borde del bosque y sitios en el interior en tres penínsulas de tierra firme, Meyer también estudia los efectos relacionados al borde, en la fauna de murciélagos.

La respuesta de las especies a la fragmentación puede estar fuertemente influenciada por los fragmentos de los alrededores de la matriz. “Las islas del Lago Gatún ofrecen un sistema de estudio perfecto, ya que la matriz, el agua, le permite estudiar los efectos de la fragmentación per se, mientras controla los efectos de la matriz.”



