

## Tupper 4pm seminar

Tue, May 31, 4pm seminar speaker will be Rudy Raff, Indiana Molecular Biology Institute

**Title to be announced**

## Bambi seminars

Wed, Jun 1, Bambi seminar speaker will be Rudy Raff, **TBA**

Thu, Jun 2, Bambi seminar speaker will be Lissy Coley, University of Utah

**How to write a grant**

## At Culebra

Wed, Jun 1, 6pm, monthly talk speaker will be Helena Fortunato, STRI

**Conocer el presente a través del pasado: la historia del Istmo de Panamá**

## Arriving this week

Hugo Lam, Yale University, to work with STRI's Project of Reforestation with Native Species (PRORENA).

Mary Hart, University of Kentucky, to study the effects of density and risk on the mating behavior of an egg-trading simultaneous hermaphrodite, *Serranus tortugarum*, on Bocas del Toro.

Meredith Blackwell, Carmen Rodriguez, Joe Mchugh, Nhu Nguyen and Sung Oui-Suh, Louisiana State University, to study beetles and their yeast endosymbiont from basidiocarp habitats, on BCI.

Genoveva Collins, University of Delaware, to work on outreach programs, at Tupper.

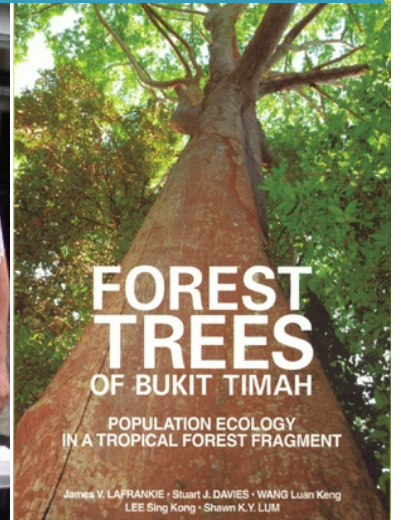
Katia Silvera, University of Florida, to study crassulacean acid metabolism in tropical plants, at Tupper.



Smithsonian Tropical Research Institute, Panamá

[www.stri.org](http://www.stri.org)

May 27, 2005



## STRI's book presentation in Singapore

STRI's Center for Tropical Forest Science, Arnold Arboretum (CTFS-AA) Asia Program, presented its new book *Forest trees of Bukit Timah: The population of trees in a tropical forest fragment* by STRI's James V. LaFrankie and Stuart J. Davies, Luan Keng Wang, Raffles Museum of Biodiversity and Research, and Sing Kong Lee and Shawn KY. Lum from the National

Institute of Education (NIE) in Nanyang Technological University, on Friday, May 20, at NIE, Singapore.

The new plot data book describes and summarizes ten years of census data from the two-hectare plot at Bukit Timah Nature Center in Singapore. The plot program is sponsored by NIE and the Singapore National Parks.

Present at the event were

Lim Swee Say, former Environment minister and current deputy minister for National Development, NIE director Leo Tan Wee Hin, STRI director Ira Rubinoff, CTFS-AA director Stuart J. Davies, staff scientist William T. Wcislo and other personalities.

The photo shows the authors of the book with NIE director Leo Tan Wee Hin.

El Programa de Asia del Centro de Ciencias Forestales del Trópico de STRI-Arnold Arboretum (CTFS-AA) presentó el libro *Forest trees of Bukit Timah: The population of trees in a tropical forest fragment* [Arboles del bosque de Bukit Timah: población de árboles en un fragmento de bosque tropical] por James V.

LaFrankie y Stuart J. Davies de STRI, Luan Keng Wang, Museo Raffles de Biodiversidad e Investigación,

y Sing Kong Lee y Shawn KY. Lum, del Instituto Nacional de Educación (NIE) de la Universidad Tecnológica de Nanyang, el viernes 20 de mayo en NIE, Singapur.

El nuevo libro con información de parcelas describe y resume diez años de censo en la parcela de dos hectáreas en el Centro Natural de Bukit Timah en Singapur. El programa de la parcela está financiado por NIE y los Parques Nacionales de

Singapur.

En el evento estuvieron presentes Lim Swee Say, ex-ministro del Ambiente y actual vice-ministro de Desarrollo Nacional, el director de NIE, Leo Tan Wee Hin, el director de CTFS-AA, Stuart J. Davies, el científico de STRI William T. Wcislo y otras personalidades. La foto muestra a los autores del libro con el director de NIE Leo Tan Wee Hin.

## More arrivals

Alexander Barron, Princeton University, to study patterns and controls on nitrogen fixation in a tropical forest, on BCI.

Monica Ochaney, Florida International University, to study the biotransformation of toxic pyrrolizidine alkaloids from *Prestonia portobellensis* by *Tithorea tarricina* caterpillars, in Gamboa.

Kim Hoke, University of Texas at Austin, to study the comparative structural and functional development of the hypothalamus, in Gamboa.

Sabrina Burmeister, University of Texas at Austin, to study the neural biases for elaborate male traits, in Gamboa.

Susanne Cote, Harvard University, to study the distribution and movement patterns of white-faced capuchins on Barro Colorado Island, Panama.

Heidi Connahs, University of Brighton, UK, to study how do plant quality and parasitoids interact in the regulation of caterpillar populations, on BCI.

Justin Touchon, Boston University, to study multiple interacting environmental effects on embryos and tadpoles of the Neotropical treefrog, *Hyla ebraccata*, in Gamboa.

Karen Warkentin, Boston University, to study the adaptive timing of hatching in red-eye treefrogs, in Gamboa.



## STRI videos travel the Americas

Panama's Albatros Media produced a three-minute video of STRI's International Collaborative Biodiversity Groups (ICBG) *Ciencia y tecnología al servicio de Panamá* [Science and technology at Panama's service] featuring ICBG efforts and researchers, directed and financed by STRI. The video was aired on local television TVN and was shown in all COPA flights during May.

An estimate audience of 300,000 had the opportunity to see the video. This effort was coordinated by Anna Lisa Porras of *Fundación Smithsonian de Panamá*, deputy director Eldredge Bermingham, and Beth King, with valuable input from other OCAPP members.

Researcher Todd Capson, Maria Heller, Rafael Aizprúa, Alicia Ibáñez, from STRI, Eduardo Ortega and Luis Cubilla from the University of Panama and Julio Escobar from SENACYT describe the project in the video.

A second video will be soon released by Albatros on forest fragmentation research conducted at STRI. It will also air on local television and all COPA flights during a month. Researchers William F.

Laurance, Susan Laurance, Stanley Heckadon, George Angehr, Gislain Rompre, among others, will be featured in this upcoming video.

Albatros Media de Panamá produjo un video de tres

minutos sobre los Grupos de Colaboración Internacional para la Biodiversidad de STRI (ICBG), "Ciencia y tecnología al servicio de Panamá" mostrando los esfuerzos que lleva a cabo el ICBG y sus investigadores, dirigido y financiado por STRI. El video se mostró en televisión local TVN y se pasó en todos los viajes de COPA en mayo.

Se estima que 300,000 tuvieron la oportunidad de observar el video. Este esfuerzo fue coordinado por Anna Lisa Porras de la Fundación Smithsonian, el subdirector Eldredge Bermingham, y Beth King, con apoyo valioso de otros miembros de OCAPP.

Los investigadores Todd Capson, Maria Heller, Rafael Aizprúa, Alicia Ibáñez de STRI, Eduardo Ortega y Luis Cubilla de la Universidad de Panamá y Julio Escobar de SENACYT, describen el proyecto durante el video.

Un segundo video producido por Albatros será pronto transmitido por televisión local y también se verá durante un mes en los viajes de COPA. El video describe las investigaciones que se llevan a cabo en STRI sobre fragmentación de bosques. Los científicos William F. Laurance, Susan Laurance, Stanley Heckadon, George Angehr, Ghislain Rompre, entre otros, aparecerán en este video.

## More arrivals

Davin Lopez and Scott Giese, University of Wisconsin, to study metapopulations in a fragmented tropical forest, on BCI.

Natalia Biani, University of Texas at Austin, to study the sensory systems of nocturnal and diurnal bees, at Tupper.

Maria Virginia de la Oz, Bogotá, Colombia, to study tropical mollusks, at Galeta.

Jose Luis Machado, Swarthmore College, to study the functional bases for the trade-off between growth and survival of tree seedlings, on BCI.

Jason Watkins, University of Georgia, for an investigation of *Oomycota fungi* believed to be involved in Janzen-Connell effects observed on BCI, Panama.

## Leaving this week

Eldredge Bermingham and Mark Wishnie to Ecuador to visit the CTFS Project at Yasuni and consult with officials of the PUCE.

David Roubik to Thailand and China to participate in the CTFS-AA International Field Biology Course, and visit the Xishuangbanna Botanical Gardens.

S. Joseph Wright to Puerto Rico, invited to present a seminar at the US Forest Service International Institute of Tropical Forestry.

## New publications

Defew, Lindsey H., Mair, James M., and Guzman, Hector M. 2005. "An assessment of metal contamination in mangrove sediments and leaves from Punta Mala Bay, Pacific Panama." *Marine Pollution Bulletin* 50(5): 547-552.

Heckadon Moreno, Stanley. 2005. "Las selvas del río Obispo, Gamboa y Cruces según Caroline Salvin, 1873." "Epocas" *Segunda Era (Supplement to La Prensa)* 20(5): 2-3.

Powers, Jennifer S., Treseder, Kathleen K., and Lerdau, Manuel T. 2005. "Fine roots, arbuscular mycorrhizal hyphae and soil nutrients in four neotropical rain forests: patterns across large geographic distances." *New Phytologist* 165(3): 913-921.

## STRI in the news

"A green future for the Canal" by Cornelia Dean. 2005. *International Herald Tribune*, May 26.

"Amazon destruction wreaking climate chaos." 2005. *Irish Examiner.com*, May 20.

"Fertile fossils of a wetland" by Chris Hardman. 2005. *Americas* June.

"Ilan forest becomes world's largest subtropical field research site." 2005. *CNA News*, May 17

"Indigenous Huaorani seek oil moratorium on their Amazon lands." 2005. *Environmental News Service*, May 17.

"Proyecto del Smithsonian busca salvar árboles nativos." 2005. *El Panamá América*, Mayo 23.



STRI's Center for Tropical Forest Science (CTFS) invites the STRI community to its 2005 symposium "Tropical Forest Dynamics Research around the Globe", to be held from Saturday June 4 through Sunday, June 5, at the Tupper Conference Center, 8:45am - 5pm.

The symposium will highlight recent findings from Forest Dynamics Plots across the CTFS network, as well as research from other tropical forests around the globe. Topics to be discussed include:

El Centro de Ciencias Forestales del Trópico de STRI (CTFS) invita a los miembros de la comunidad de STRI a su simposio del 2005 "Dinámica de Bosques Tropicales alrededor del Globo" que se llevará a cabo del 4-5 de junio en el Centro de Conferencias Tupper de 8:45am-5pm.

El simposio destacará información recogida recientemente en las Parcelas de Dinámica de Bosques en la red del CTFS, así como investigaciones en otros bosques tropicales alrededor del globo. Los tópicos a ser

—The origin and maintenance of species diversity  
—Comparative biology of forest communities  
—Global change, climate change, and tropical forests.

All those interested in tropical forests are invited to attend, regardless of whether or not they are affiliated with CTFS. For more information, or to request a registration form please, contact CTFS Program assistant Adriana Sautu at: [sautua@si.edu](mailto:sautua@si.edu)  
Tel: 212-8144.

discutidos incluyen:  
—El origen y mantenimiento de la diversidad de especies  
—Biología comparativa de comunidades forestales  
—Cambio global, cambio climático y bosques tropicales.

Todos aquellos que estén interesados en bosques tropicales están invitados a asistir, estén o no afiliados al CTFS. Para mayor información o para pedir una aplicación para registrarse, favor ponerse en contacto con Adriana Sautú, asistente de programas de CTFS al correo electrónico [sautua@si.edu](mailto:sautua@si.edu).  
Tel. 212-8144

## STRI in the news

"Same tree species in Bt Timah forest for last 5,000 years." 2005. *The Straits Times* May 21: H3.

"To save its Canal, Panama fights for its forests, by Cornelia Dean." 2005. *The New York Times* May 24.

## June birthdays

Ruth Gisela Reina	1
Segundo Vegara	1
Plinio Góndola	2
Argelis Ruíz	2
Erika Garibaldo	2
Rodolfo Aguirre	4
Rolando Pérez	4
Harold Maduro	7
Abriel Abrego	7
Klaus Winter	10
Maritza del C. López	12
Norma Cedeño	16
Omar Sousa	16
Aureliano Valencia	16
James La Frankie	17
Edwin Vergara	18
Milton Jackson	19
Paulino Villarreal	22
Alberto González	23
Marlene Flores	23
Abdiel Herrera	23
Melissa de Balcázar	24
Juan Murillo	24
Gian Montúfar	26
Carmen Galdames	27
José Barahona	27
Miguel Samaniego	27
Santos, Eleuterio	29

## Miscellaneous

Used vehicle needed (beginning around 1 July). Reliability, safety, 4-door are main concerns. Contact Greg Gilbert at [ggilbert@ucsc.edu](mailto:ggilbert@ucsc.edu).

For sale: Apartment 2 bedrooms, 2 bathrooms, maid quarters at La Loma, behind San Fernando Hospital. Great view, security, \$67,000 negotiable. Interested please call 229-1408 or 676-5538.

# Asking the big questions with small animals

II: Does environment control evolution?

MA Alvarado & ML Calderón  
Photo: MA Guerra, Bocas del Toro

To what extent do environmental changes control large-scale evolutionary patterns? STRI postdoctoral fellow Aaron O'Dea uses fossils to describe how the Isthmus of Panama turned the Caribbean and Pacific coasts into two very different environmental and ecological systems over the last ten million years.

With STRI's Jeremy B.C. Jackson, Amalia Herrera and Félix Rodríguez, O'Dea also investigates how these changes affected the evolution of cupuladriid bryozoans. These small colonial marine animals generally reproduce sexually in the Caribbean and asexually by fragmentation in the Pacific.

Although asexual propagation is common in marine invertebrates, only in cupuladriids is it possible to unequivocally count the number of sexually- versus asexually-produced colonies, by observing fracture lines that are produced during fragmentation.

Fossils of cupuladriids are very abundant in Central America, making it possible to measure levels of sexuality and asexuality in the geologic past, and then piece together patterns of life history evolution.

"Here we have a unique way of measuring changes in ecological traits through deep time. For the first time we can ask 'what are the benefits and consequences of being sexual *versus* asexual on a grand scale'. We then have the opportunity to travel back in time to see if the environment was the driving factor behind evolutionary changes," concludes O'Dea.

Para grandes preguntas, pequeños organismos

II: ¿Es el ambiente el control decisivo en la evolución?

¿Hasta dónde los cambios ambientales controlan los patrones evolutivos a gran escala? Aaron O'Dea, becario graduado de STRI, usa fósiles para describir cómo el surgimiento del Istmo de Panamá convirtió las costas del Caribe y del Pacífico en dos sistemas ambientales y ecológicos muy diferentes, durante los últimos diez millones de años.

Con Jeremy B.C. Jackson, Amalia Herrera y Félix Rodríguez de STRI, O'Dea también investiga cómo estos cambios afectaron la evolución de pequeños animales marinos—briozoarios cupuládridos. Por lo general, estos animales viven en colonias y se reproducen sexualmente en el Caribe, y asexualmente, por fragmentación, en el Pacífico,

Aunque la propagación asexual es común en invertebrados marinos, solo en los cupuládridos es posible contar inequívocamente el número de colonias producidas sexual y asexualmente, observando las líneas de fractura producidas durante la reproducción asexual.

Los fósiles de cupuládridos son muy comunes en Centroamérica, lo que permite medir los niveles de sexualidad y asexualidad en el pasado geológico, y luego unir las piezas de los patrones de la evolución de historia natural.

"Aquí tenemos una forma única de medir los cambios de características ecológicas a través de mucho tiempo. Por primera vez podemos preguntarnos 'cuáles son los beneficios y consecuencias a gran escala de ser sexuales *versus* asexuales.' De acuerdo a O'Dea esta es una oportunidad para viajar hacia el pasado y saber si el ambiente fue el factor decisivo detrás de los cambios evolutivos."

For more information:  
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