

Tupper 4pm seminar

Tuesday, May 17, 4pm seminar speaker will be Olivier Hardy, Université Libre de Bruxelles

Investigating neutral and non-neutral processes in tropical trees using the parallelism between population genetics and community ecology processes.

Bambi seminar

Thursday, May 19, Bambi seminar speaker will be Stacey Combes, University of California at Berkeley

Insect wing flexibility and design for flapping flight

Arrived this week

James Mair, Lina Barrios, Nohora Galvis, Orea Anderson and Karen Graeney, Heriot-Watt University Edinburgh, to work with Héctor Guzman in the Darwin Initiative, at Naos.

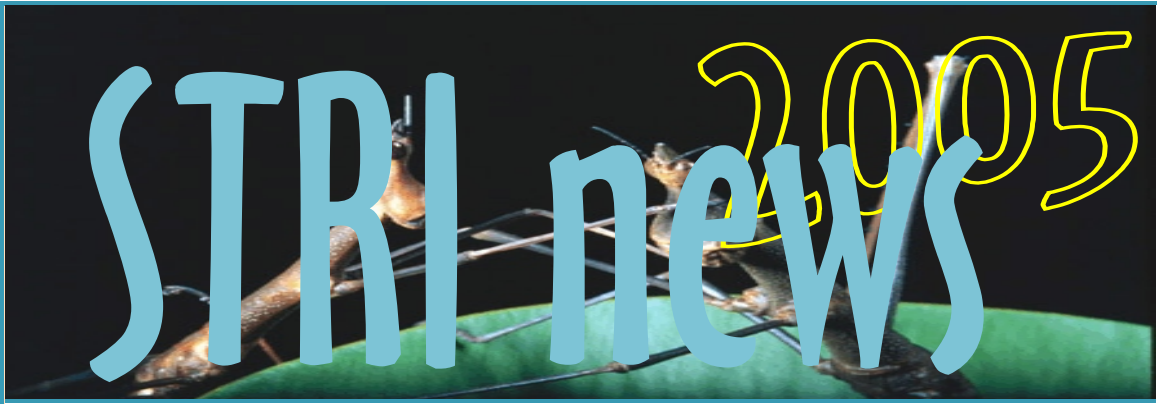
Arriving next week

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

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

Joshua Dumas, University of Minnesota, to study the life history traits of tree species and their roles in determining forest dynamics and structure, on BCI.

Jonathan Shik, Shelley Sedberry & Steven Dowling, University of Oklahoma, to work with Michael Kaspari, on BCI



Smithsonian Tropical Research Institute, Panamá

www.stri.org

May 13, 2005



William T. Wcislo

STRI is expanding its research on animal behavior and evolutionary biology by establishing a Laboratory of Evolutionary Neurobiology and Behavior under the leadership of behaviorist William T. Wcislo. The new facility will focus on comparative neurobiological and behavioral studies of tropical invertebrates with extreme body size reduction.

STRI establecerá un Laboratorio de Neurobiología Evolutiva y Comportamiento para expandir investigaciones sobre comportamiento animal y biología evolutiva, bajo el liderazgo de especialista en comportamiento William T. Wcislo. El nuevo laboratorio se enfocará en estudios comparativos de neurobiología y comportamiento en invertebrados tropicales que son extremadamente pequeños. El Laboratorio también ofrecerá instalaciones bien

The Laboratory will also provide well-equipped facilities for visiting neurobiologists; will host symposia on topics relating to brain miniaturization; and will explore connections between brain miniaturization and applied research related to engineering and information technology. As part of the program, six finalists were interviewed and presented

equipadas para neurobiólogos visitantes, celebrará simposios en tópicos relacionados con la miniaturización del cerebro, y explorará conexiones entre la miniaturización del cerebro e investigaciones aplicadas relacionadas a la ingeniería y a la informática. Como parte de este programa, seis finalistas fueron entrevistados y presentaron seminarios en STRI como requisito para competir por dos becas de cinco años, una en Neurobiología y la otra en

STRI's new Laboratory of Evolutionary Neurobiology and Behavior

seminars at STRI as a requirement to compete for two five-year research fellowships, one in Neurobiology and the other in Behavioral Biology, this past week. The candidates were Rudi Loesel, Rheinisch Westfaelische Technical University, Germany, Jeremy Niven, Cambridge University, Marc Seid, University of Zurich, Culum Brown, University of Edinburgh, Gerlinde Hoebel, University of Missouri and Rafael Rodríguez, University of Missouri. In the photo, Bill Wcislo shows part of his collection of small insects, in his laboratory.

Biología del Comportamiento, esta semana. Los candidatos son Rudi Loesel de la Universidad Tecnológica Rheinisch Westfaelische, Alemania, Jeremy Niven de la Universidad de Cambridge, Marc Seid, Universidad de Zurich, Culum Brown, de la Universidad de Edinburgh, Gerlinde Hoebel, University of Missouri y Rafael Rodríguez, Universidad de Missouri. En la foto, Bill Wcislo muestra parte de su colección de pequeños insectos.

More arrivals

Michael Kaspari, University of Oklahoma, to study the regulation of brown food webs: The ecology of tropical litter food webs, on BCI.

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

Michelle Stein, short-term fellow from the University of Minnesota, to study the implications of hunting for tropical plant community composition: Differential effects on seed removal, on BCI.

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

Robert Dudley, University of California at Berkeley, to study ecophysiology and orientation mechanisms of migratory Neotropical butterflies, on BCI.

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

Leaving this week

Ira Rubinfoff to Singapore to meet with Frank Levinson to discuss programs and visit CTFS sites.

David Roubik to Quintana Roo, Mexico, to work with colleague, Rogel Villanueva, on joint field projects in Sian Ka'AN Biosphere Reserve.

Bill Weislo to Singapore to meet with Frank Levinson and engineers to evaluate a new device for data collection and discuss the neurobiology initiative at STRI.

Panama's Major recognizes Heckadon as Panama's most distinguished environmentalist

In an event taking place on April 22, Earth Day, Panama's major Juan Carlos Navarro presented a parchment bound to Sonia Martinelli de Heckadon who attended in the name of STRI's director for Communication and Public Programs (OCAPP) Stanley Heckadon Moreno, in recognition for his efforts to conserve Panama's flora, fauna and its diversity.

"More than any other person in Panama, Heckadon has had more to do with conservation and education to our youth, in his struggle to maintain our natural legacy" concluded Navarro, who highlighted Heckadon's career and tireless contributions to conservation efforts in Panama.

Heckadon has produced more than 200 contributions

En un evento celebrado el 22 de abril, Día de la Tierra, el alcalde de Panamá, Juan Carlos Navarro hizo entrega de un pergamino a Sonia Martinelli de Heckadon, que asistió en nombre del director de la Oficina de Divulgación y Programas Públicos de STRI (OCAPP), Stanley Heckadon Moreno, en reconocimiento de sus esfuerzos por conservar la flora y fauna de Panamá y su diversidad.

"Más que ninguna otra persona en Panamá, Heckadon ha tenido que ver más con la conservación y la educación de la juventud, en su lucha por mantener nuestra herencia

including 14 monographs and books. He has given more than 500 conferences to help raise the level of environmental awareness and the need for tropical developing countries to strengthen scientific research on their natural resources to all audiences, from international decision makers to fishermen, taxi drivers and small children. He has served as public servant in the areas of community development, environmental coordinator and advisor, director of Panama's renewable resources agency, and has worked as international consultant for a variety of

natural" concluyó Navarro, quien resaltó la carrera de Heckadon y sus incansables contribuciones a los esfuerzos de conservación en Panamá.

Heckadon ha producido más de 200 contribuciones incluyendo 14 monografías y libros. Ha dado más de 500 conferencias para ayudar a elevar el nivel de conciencia ambiental y la necesidad que tienen los países tropicales en desarrollo de reforzar la investigación científica sobre sus recursos naturales, a todo tipo audiencias, desde administradores de recursos internacionales hasta pescadores, taxistas y niños



institutions in the US, Europe, and Latin America. As OCAPP director, Heckadon is STRI's voice and face for local and international audiences, is responsible for educational programs at four research centers, marine and terrestrial, and the Office for Public Information.

pequeños. Ha servido en el sector público en áreas de desarrollo comunitario, coordinador ambiental y asesor, director nacional del Instituto de Recursos Naturales Renovables de Panamá y ha trabajado como consultor internacional en una variedad de instituciones en los EU, Europa y Latinoamérica. Como director de OCAPP, Heckadon es la voz y el rostro de STRI ante audiencias locales e internacionales, es responsable por los programas educativos en cuatro centros de investigación, marinos y terrestres, y la Oficina de Divulgación de STRI.

New publications

Collin, Rachel. 2005. "Development, phylogeny, and taxonomy of *Bostrycapulus* (Caeno gastropoda: Calyptraeidae), an ancient cryptic radiation." *Zoological Journal of the Linnean Society* 144(1): 75-101.

Cooke, Richard G. 2005. "Prehistory of native Americans on the Central American land bridge: Colonization, dispersal, and divergence." *Journal of Archaeological Research* 13(2): 129-187.

Crawford, Andrew J., and Smith, Eric N. 2005. "Cenozoic biogeography and evolution in direct-developing frogs of Central America (Leptodactylidae: *Eleutherodactylus*) as inferred from a phylogenetic analysis of nuclear and mitochondrial genes." *Molecular Phylogenetics and Evolution* 35(3): 536-555.

Fernandez, Hermogenes, Zimmerman, Jess K., Wcislo, William T., and Rehner, Stephen A. 2005. "Colony foundation, nest architecture and demography of a basal fungus-growing ant, *Mycocepurus smithii* (Hymenoptera, Formicidae)." *Journal of Natural History* 39(20): 1735-1743.

Gutierrez, Marcelino, Capson, Todd L., Guzman, Hector M., Gonzalez, Jose, Ortega Barria, Eduardo, Quiñoa, Emilio, and Riguera, Ricardo. 2005. "Leptolide, a new Furanocembranolide diterpene from *Leptogorgia alba*." *Journal of Natural Products* 68: 614-616.

O'Dea, Aaron. 2005. "Zooid size parallels contemporaneous oxygen isotopes in a large colony of *Pentapora foliacea* (Bryozoa)." *Marine Biology* 106(6): 1075-1081.



Seminario de Nomenclatura de las Plantas

The University of Panama invites the STRI community to attend a seminar on plant terminology from June 6-11 totaling 40 hours. Registration fee is \$100. The

application form must be filled and sent before May 21. Interested to attend please call 213-0009, or e-mail Jorge Mendieta, coordinator at:

mendija@cwpanama.net mendi_ja@yahoo.es

La Universidad de Panamá invita a los miembros de la comunidad de STRI al Seminario de Nomenclatura de las Plantas que se llevará a cabo del 6-11 de junio, con un total de 40 horas. El costo de la inscripción es \$100. El formulario de inscripción debe llenarse y enviarse antes del 21 de mayo. Los interesados en participar favor llamar al 213-0009, or enviar un correo electrónico a Jorge Mendieta, coordinador, a: mendija@cwpanama.net mendi_ja@yahoo.es

Tupper champions!

The STRI's "Fulbito" championship trophy was passed to the Tupper team, congratulations! Special thanks to Franklin Guerra and Bolivar Castillo who organized the event!

El trofeo del campeonato de Fulbito de STRI pasó al equipo de Tupper este año. ¡Felicitaciones a todos! Un agradecimiento especial a Franklin Guerra y Bolívar Castillo, quienes organizaron el evento, y lo llevaron a feliz término.



More publications

Perdices, Anabel, Doadrio, I., and Bermingham, Eldredge. 2005. "Evolutionary history of the synbranchid eels (Teleostei: Synbranchidae) in Central America and the Caribbean islands inferred from their molecular phylogeny." *Molecular Phylogenetics and Evolution* Online.

Roubik, David Ward. 2005. "Large processes with small targets: rarity and pollination in rain forests." In David Ward Roubik, Shaoko Sakai, and Abang A. Hamid Karim (Eds.), *Pollination ecology and the rain forest*: 1-12. Petra Yala, Malaysia: Springer.

Santos-Granero, Fernando. 2005. "Arawakan sacred landscapes. Emplaced myths, place rituals, and the production of locality in western Amazonia." In Ernst Halbmayer, and Elke Mader (Eds.), *Kultur, Raum, Landschaft: Zur Bedeutung des Raumes in Zeiten der Globalität*: 93-122. Frankfurt am Main: Brandes and Apsel.

Torres-Mendoza, Daniel, Urena Gonzalez, Luis D., Ortega Barria, Eduardo, Coley, Phyllis D., Kursar, Thomas A., Capson, Todd L., McPhail, Kerry, and Cubilla Rios, Luis. 2004. "Novel cassane and *Cleistanthane diterpenes* from *Myrospermum frutescens*: Absolute stereochemistry of the cassane diterpene series." *Journal of Natural Products* 67: 1711-1715.

Wake, David B., Hanken, James, and Ibanez D., Roberto. 2005. "A new species of big black *Bolitoglossa* (Amphibia: Caudata) from Central Panama." *Copeia* 2005(2): 223-226.

science in progress:



Figs and their fig wasps

With Charlotte Jander and Marcos Guerra, on BCI

In the mutualism between fig trees and their pollinating wasps, both partners are completely dependent on each other for reproduction. Fig trees are dependent on wasps for pollination, whereas wasps use some of the fig's resources for the development of wasp offspring. "What prevents the two partners from exploiting each other?" Charlotte asks.

Charlotte Jandér, medical doctor from Sweden, hopes to uncover the mechanisms that maintain the fig-fig wasp mutualism. Last year, she left

her country and former career to pursue a doctorate degree in biology at Cornell University in Ithaca, New York. She conducts her thesis research around BCI in collaboration with STRI staff scientist E. Allen Herre.

One focus of Charlotte's research is examining the consequences for wasps if they fail to pollinate. "If wasps cheat by not doing their share in the agreement, do they have lower fitness?" Charlotte uses experiments to determine whether pollinating wasps have more offspring than wasps that are forced not to carry pollen. Charlotte's research should shed light on a question that

has mystified biologists for many years: how are mutualisms maintained?

"Doing biological research is very creative and challenging, I absolutely love it!" Charlotte concludes.

En el mutualismo entre los higueros y sus avispas polinizadoras, ambos socios son completamente dependientes uno del otro para la reproducción. Los higueros dependen de las avispas para su polinización, mientras que las avispas usan parte de los recursos de los higueros para el desarrollo de sus crías. ¿Qué previene que los dos socios se exploten entre sí?

Charlotte Jandér doctora en medicina de Suecia, espera descubrir los mecanismos que mantienen el mutualismo entre el higuero y su avispa polinizadora. El año pasado,

dejó su país y su antigua carrera para enrolarse en un programa de doctorado en biología en la Universidad de Cornell en Ithaca, New York. Charlotte lleva a cabo sus investigaciones de tesis en los alrededores de BCI, en colaboración con el científico de STRI E. Allen Herre.

Uno de los enfoques de la investigación de Charlotte es examinar las consecuencias si las avispas dejaran de polinizar. "Si las avispas dejan de cumplir su convenio, ¿perderían condiciones físicas? Charlotte realiza experimentos para determinar si las avispas polinizadoras tienen más crías que las que son forzadas a no portar polen. Las investigaciones de Charlotte podrían arrojar luz sobre la pregunta que ha confundido a los biólogos por muchos años: ¿Cómo se mantienen los mutualismos?

"Llevar a cabo investigaciones biológicas es un reto y es muy creativo, ¡absolutamente adoro lo que hago!" concluye Charlotte.