



100 years of science in Panama



Smithsonian Tropical Research Institute, Panamá

STRI news

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August 6, 2010

Gamboa seminar

Monday, August 9, Gamboa seminar series speaker will be Daniela Schweizer, University of California, Santa Cruz
Phylogenetic ecology applied to native tree reforestation

Tupper seminar

Tuesday, August 10, Tupper seminar speaker will be Dr. Egbert Giles Leigh, Jr., STRI
Mutualism and ecosystems

Paleo-Talk

Wednesday, August 11, Paleotalk speaker will be Fabiany Herrera, CTPA, 4pm
Paleogene macrofloras from Northern South America: Keys for understanding the floristic composition of modern Neotropical rainforests

Bambi seminars

Thu, Aug 12 at 4pm, Bambi seminar speaker will be Marco Visser, Nijmegen University.
Learning how to speak in R; a crash course on data analyses in R;
and at regular time
Negative density dependence in a Neotropical palm; the role of dispersal, seed predation and trophic interactions



SNI distinguishes three STRI scientists

Recently, Panama's Sistema Nacional de Investigación [Panama's National Research System] or SNI, selected STRI researchers Hermógenes Fernández-Marín, Sunshine Van Bael and Roberto Ibáñez, as new members, in the category of distinguished scientists.

The Sistema Nacional de Investigación (SNI), an initiative of SENACYT, was created to promote dedication to scientific and technological research in individuals through distinctions or economic incentives to high quality work in science or development, importance of research subject, high production, and the impact their studies may have on society.

Hermógenes Fernández-Marín, Earl S. Tupper postdoctoral fellow from the University of Copenhagen at STRI focuses his research on ecology and evolution of infectious diseases and disease management in fungus growing ants. Hermógenes is the first Panamanian ever to receive the 3-year Tupper postdoctoral fellowship, the most prestigious research award offered by STRI.

STRI associate scientist Sunshine Van Bael began her research in Panama ten years ago with work on the importance of birds in regulating insect herbivore populations. Birds reduce the damage inflicted by herbivores in forest communities, including

organic cacao farms. She also studies the interaction of endophytic fungi and plants. She expects to use her broad knowledge on bird-insect and plant-fungal interactions in the tropical forests to improve the sustainability of farms in the tropics.

Herpetologist Roberto Ibáñez, for many years STRI's research associate, is the regional director of the Panama's Amphibian Rescue and Conservation Center located at the Summit Municipal Park in Panama. Through this project, STRI and eight partners including SI's National Zoological Park are committed to save Panamanian frogs from extinction.

More arrivals

Samuel Crickenberger, Clemson University, to study the evolution of life histories in geminate echinoderms: a comparative approach to unscrambling the relationships among environment, egg size, and the energetics of development., at Naos Island Laboratories.

Justin Cummings, University of California, Santa Cruz, to evaluate variations in understory light intensities and biotic interactions with *Saccharum spontaneum* and overstory tree species in the Panama Canal Watershed, in Gamboa.

Erica Shaw and Robert G. Lessnau, Detroit Zoological Society, to use radio telemetry technology to facilitate research on the Barro Colorado Island spider monkeys (*Ateles geoffroyi*), on BCI.

Eduardo Javier Sanchez Delgado, Universidad de Panamá, to study tree phenology and epiphyte assemblages, on BCI.

Katrin Wagner, Universität Oldenburg, to study tree phenology and epiphyte assemblages, on BCI.

Departures

William T. Wcislo to Copenhagen, Denmark, to participate as organizing member in the 16th International Congress of the International Union for the Study of Social Insects, and present work. He will also will meet with colleagues to discuss a collaborative study on brain miniaturization in orchid bees, which was funded by the SI Scholarly Studies Program.

Recientemente, el Sistema Nacional de Investigación de Panamá (SNI) seleccionó a Hermógenes Fernández-Marín, Sunshine Van Bael y Roberto Ibáñez como miembros de este organismo, en la categoría de investigadores distinguidos.

El Sistema Nacional de Investigación, una iniciativa de SENACYT, fue creado para promover la dedicación a la investigación científica y tecnológica en individuos, a través de distinciones o incentivos económicos por el trabajo de alta calidad en ciencias y desarrollo, importancia del estudio, una muy alta producción o el impacto de la investigación en la sociedad.

“Dr. Christy rocks!!!”

Children from ages 7-11 from Washington DC cheered STRI marine biologist John Christy after a video-conference broadcasted on Wednesday, July 28. On one end, at Naos, Christy described his work with fiddler crabs to 32 children at the Smithsonian Institution’s Ripley Center. They had the opportunity to listen to John and make questions on real time. Before the video-conference, children and teachers simulated Christy’s research on Panamanian beaches.

“Today the kids watched fiddler crab videos and videos we took when we were there with you on the beach at Culebra. We also made crab claws and then played a game where they had to communicate to each other using their claws to communicate fighting, mating, bird defense and eating. It was hilarious to watch the children take on the role of being a fiddler crab and taking turns observing and identifying each other's crab behavior” wrote

Hermógenes Fernández-Marín, becario postdoctoral Earl S. Tupper de la Universidad de Copenhagen, centra sus investigaciones en la ecología y la evolución de enfermedades infecciosas y cómo manejan sus enfermedades las arrieras cultivadoras de hongos. Hermógenes es el primer panameño que ha recibido la beca de tres años Earl S. Tupper, la más prestigiosa que STRI otorga.

Sunshine Van Bael científica asociada a STRI empezó sus investigaciones en Panamá hace 10 años, sobre la importancia de las aves como reguladoras de las poblaciones de insectos hervíboros. Las aves reducen el daño que causan los hervíboros en las comunidades boscosas,

incluyendo las granjas orgánicas de cacao. También estudia la interacción entre hongos endófitos y las plantas. Ella planea usar su amplio conocimiento sobre las interacciones entre aves e insectos y hongos y plantas para mejorar la sustentabilidad de las granjas en los trópicos.

El herpetólogo Roberto Ibáñez, por muchos años investigador asociado a STRI, es el director regional del Centro de Recate y Conservación de Anfibios en Panamá. A través de este proyecto, STRI y ocho socios, incluyendo el Parque Zoológico Nacional del Smithsonian, están comprometidos a salvar especies de ranas panameñas en peligro de extinción.



Bob Keddell, the head of the Motivation Education Team leading the 32 participants of the Rainforest Researchers Camp held in Washington DC.

Lidia de Valencia, educational specialist at STRI coordinated the video-conference with Keddell and his Team. This was their third video-conference organized with STRI researchers. According to Lidia, “Since we started using this cutting edge technology last summer, children in Panama and the US are having lots of fun while learning about Panamanian ecosystems and the work done by our scientists here. The video-conferences

have a great potential to reach large audiences on real time, and teach them many aspects of tropical biology.”

Niños de 7 a 11 años aplaudieron al biólogo marino de STRI, John Christy, luego de una video-conferencia que se llevó a cabo el miércoles, 28 de julio. Por un lado, en Naos, Christy describió su trabajo con cangrejos violinistas a 32 niños en el Centro Ripley del Smithsonian en Washington DC. Los estudiantes tuvieron la oportunidad de escuchar a John y hacerle preguntas en vivo y directo. Antes de la video-conferencia, los estudiantes y

New publications

Baeza, Juan Antonio. 2010. "The symbiotic lifestyle and its evolutionary consequences: Social monogamy and sex allocation in the hermaphroditic shrimp *Lysmata pederseni*." *Naturwissenschaften* 97(8): 729-741.

Baeza, Juan Antonio, Bolaños, Juan A., Fuentes, Soledad, Hernandez, Jesus E., Lira, Carlos, and Lopez, Regulo. 2010. "Molecular phylogeny of enigmatic Caribbean spider crabs from the *Mithrax*-*Mithraculus* species complex (Brachyura: Majidae: Mithracinae): ecological diversity and a formal test of genera monophyly." *Journal of the Marine Biological Association of the UK* 90(4): 851-858.

Cheesman, Alexander W., Dunne, Ed J., Turner, Benjamin L., and Reddy, K. Ramesh. 2010. "Soil phosphorus forms in hydrologically isolated wetlands and surrounding pasture uplands." *Journal of Environmental Quality* 39(4): 1517-1525.

Clark, Christopher James, and Dudley, T. Robert K. 2010. "Hovering and Forward Flight Energetics in Anna's and Allen's Hummingbirds." *Physiological and Biochemical Zoology* 83(4): 654-662.

Collin, Rachel, and Moran, Emilio. 2010. "*Bostrycapulus heteropoma* n. sp. and *Bostrycapulus tegulicinus* (Gastropoda: Calyptraeidae) from Western Africa." *Veliger* 51(1): 8-14.

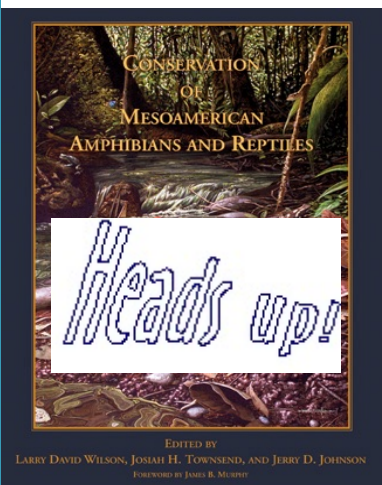
Corre, Marife D., Veldkamp, Edzo, Arnold, Julia, and Wright, S. Joseph. 2010. "Impact of elevated N input on soil N cycling and losses in old-growth lowland and montane forests in Panama." *Ecology* 91(6): 1715-1729.



maestros simularon la investigación de Christy en las playas panameñas.

"Hoy, los niños observaron videos de cangrejos violinistas y videos que tomamos nosotros con ustedes en la Playa de Culebra. Hicimos tenazas de cangrejos y jugamos unos con otros a comunicarnos usando las tenazas para pelear, aparearnos, defendernos de las aves y comer. Fue muy divertido ver a los niños asumir el papel de un cangrejo violinista y tomar turnos para observar e identificar la conducta de cangrejo de cada uno" escribió Bob Keddell, el líder del equipo de Motivation Education, instructores de los 32 participantes del taller

Jaramillo A., César, Wilson, Larry David, Ibañez D., Roberto, and Jaramillo, Fidel E. 2010. "The herpetofauna of Panama: Distribution and conservation status." In Wilson, Larry David, Townsend, Josiah H., and Johnson, Jerry D. (Eds.), *Conservation of Mesoamerican amphibians and reptiles*: 604-671. Eagle Mountain, Utah: Eagle Mountain Publishing.



de verano Rainforest Researchers, en Washington.

Lidia de Valencia, especialista en educación de STRI, coordinó la video-conferencia con Keddell y su equipo. Está fue la tercera video-conferencia organizada con investigadores de STRI. De acuerdo a Lidia, "Desde que estamos usando esta nueva tecnología el verano pasado, los niños en Panamá y Estados Unidos se han divertido muchísimo mientras aprenden sobre los ecosistemas panameños y el trabajo que hacen nuestros científicos aquí. Las video-conferencias tienen un gran potencial de llegar a audiencias grandes en tiempo real, y enseñarles muchos aspectos de la biología tropical."

Escobedo Galván, Armando H., Vanegas-Anaya, Myriam, Espinal, Mario R., Platt, Steven G., and Buitrago, Fabio. 2010. "Conservation of crocodylians in Mesoamerica." In Wilson, Larry David, Townsend, Josiah H., and Johnson, Jerry D. (Eds.), *Conservation of Mesoamerican amphibians and reptiles*: 746-757. Eagle Mountain, Utah: Eagle Mountain.

New publications

Dijkstra, Michiel B., van Zweden, Jelle S., Dirchsen, Maria, and Boomsma, Jacobus J. 2010. "Workers of *Acromyrmex echinator* leafcutter ants police worker-laid eggs, but not reproductive workers." *Animal Behaviour* Online. 4-12.

Garcia, Emilio Fabian. 2010. "Bocas del Toro revisited: A follow up of Olson and McGinty's report on the Panamanian archipelago." *American Conchologist* 38(2): 4-12.

Gnezdilov, Vladimir M., Bonfils, Jacques, Aberlenc, Henri-Pierre, and Basset, Yves. 2010. "Review of the Neotropical genus *Oronoqua* Fennah, 1947 (Insecta, Hemiptera, Issidae)." *Zoosystema* 32(2): 248-257.

Jansen, Patrick A., Elschit, Kelly, Verkerk, P. Johannes, and Wright, S. Joseph. 2010. "Seed predation and defleshing in the agouti-dispersed palm *Astrocaryum standleyanum*." *Journal of Tropical Ecology* 26(5): 473-480

Koehler, Birgit, Zehe, E., Corre, Marife D., and Veldkamp, Edzo. 2010. "An inverse analysis reveals limitations of the soil-CO₂ profile method to calculate CO₂ production for well-structured soils." *Biogeosciences Discussions* 7(8): 2311-2325.

Perez-Ortega, B., Fernandez-Marin, Hermogenes, Loiacono, M., Galgani, Paola, and Wcislo, William T. 2010. "Biological notes on a fungus-growing ant, *Trachymyrmex* cf. *zeteki* (Hymenoptera, Formicidae, Attini) attacked by a diverse community of parasitoid wasps (Hymenoptera, Diapriidae)." *Insectes Sociaux* 57(3): 317-322.

Tarwater, Corey E., and Brawn, Jeffrey D. 2010. "Family living in a Neotropical bird: variation in timing of dispersal and higher survival for delayed dispersers." *Animal Behaviour* Online.



STRI's traditional course on introductory biology takes new path into the sea

STRI offers a program to biology students enrolled in a Panamanian university "Introduction to Field Biology Course" since 1986. The course has been held in Gigante Peninsula, about 200 meters to the south of Barro Colorado Island (BCI). Since 2006, the course takes place at the Center for Education and Research in Gamboa and BCI.

To this day, STRI and the University of Panama have collaborated to carry out this program, graduating about 300 participants. This year, the course had partial support from SENACT, allowing the participation of three students from El Salvador and three from Costa Rica.

This year, the 15-day course held from July 26 through

August 8, took a new path into the sea, and dedicated one day to doing research at STRI's Galeta Marine Laboratory. The 16 participants had the opportunity to visit STRI facilities at the Caribbean entrance to the Panama Canal and experience its reefs and surrounding mangrove forests.

STRI ofrece un programa para estudiantes que cursan biología en una universidad panameña, "Introducción a la Biología de Campo" desde 1986. El curso se ha llevado a cabo en la Península de Gigante, cerca de 200 metros al sur de la Isla de Barro Colorado (BCI). Desde 2006, el curso se realiza en el Centro de Educación e Investigación en Gamboa y BCI.

Hasta la fecha, STRI y la Universidad de Panamá han

colaborado para llevar a cabo este programa y han graduado acerca de 300 participantes. Este año, el curso contó parcialmente con el apoyo de la SENACYT facilitando la participación de tres estudiantes de El Salvador y tres de Costa Rica.

Este año, el curso de 15 días, que se llevó a cabo del 26 de

julio al 8 de agosto, tomó un giro hacia el mar, y se dedicó un día para hacer investigaciones de campo en el Laboratorio Marino de STRI en Galeta. Los 16 participantes tuvieron la oportunidad de visitar las instalaciones de STRI en la entrada Caribe del Canal de Panamá y experimentar los arrecifes y bosques de manglar aledaños al laboratorio.

