



STRINNEWS

APR 2, 2015



How Will Warming Affect Tropical Forests?

Full story: www.stri.si.edu/issuu.com/strinewspanama

"This new modeling effort is an amazing opportunity for us to connect 30-plus years of data about tree biodiversity, growth and survival in the tropics with expertise in long-term modeling," said Stuart Davies, who directs the Center for Tropical Forest Science-Forest Global Earth Observatory Network at the Smithsonian Tropical Research Institute.

"Este nuevo esfuerzo de modelo es una grandiosa oportunidad para conectar más de 30 años de datos sobre la biodiversidad de árboles, el crecimiento y la supervivencia en los trópicos con la experiencia en el modelaje a largo plazo", comentó Stuart Davies, que dirige el Centro de Ciencias Forestales del Trópico-Red Observatorios Globales del Instituto Smithsonian de Investigaciones Tropicales".

SEMINARS

BEHAVIOR DISCUSSION GROUP MEETING

Tue, Apr. 7, 2pm

Karen Kaphiem

Utah State University

Tupper Large Meeting Room

The ACGT's of social behavior: what ten bee genomes tell us about how eusociality evolves

TUPPER SEMINAR

Tue, Apr. 7, 4pm

Sabrina Amador

STRI

Tupper Auditorium

Brain and behavioral correlates of colony size in ants lacking morphological castes

PALEOTALK

Wed, Apr. 8, 4pm

Andrea Kern

University of São Paulo

CTPA

High resolution paleoenvironmental studies in relation to climatic changes and solar cycles in the Miocene

WHAT'S HAPPENING AT STRI?

FIELD COURSES and SPECIAL EVENTS

Princeton University - Semester in the field

Contact person: Lolly O'Brien

Feb 3 - Apr 30

MarineGEO Workshop

Contact person: Rachel Collin

Mar 28 - Apr 5

Bocas Earth Day Celebration

Contact person: Marlon Smith

April 17 - 22



STRI GATHERS TO CELEBRATE YOUNG SCIENTISTS



STRI SE REUNE PARA CELEBRAR A JÓVENES CIENTÍFICOS



STRI's Academic Dean, Owen McMillan welcomed the scientific community to the Bi-Annual Fellows Symposium, featuring 19 research talks by our current group of fellows, pre-doctoral and post-doctoral fellows. Wouter Halfwerk took the \$1000 Jackson-Knowlton Prize for the best research paper by a fellow, presented by last year's recipient, Brian Sedio [pictured: Director, Matthew Larsen, Jeremy Jackson, Wouter Halfwerk, Brian Sedio, Nancy Knowlton]. STRI Archaeologists Dolores Piperno and Richard Cooke ended the day by remembering emeritus staff scientist Olga Linares (1936-2014). A research symposium will be held in her honor in 2016.

El Decano Académico del Smithsonian en Panamá, Owen McMillan dio la bienvenida a la comunidad científica al Segundo Simposio Anual de Becarios, con 19 charlas de investigación presentadas por nuestro grupo actual de becarios, becarios de pre doctorado y de post doctorado. Wouter Halfwerk se llevó el galardón Jackson-Knowlton de \$1,000 por el mejor trabajo de investigación hecho por un becario, el cual fue entregado por el destinatario del año pasado, Brian Sedio [en la imagen: el Director, Matthew Larsen, Jeremy Jackson, Wouter Halfwerk, Brian Sedio y Nancy Knowlton]. Los arqueólogos del Smithsonian Dolores Piperno y Richard Cooke terminaron la jornada recordando a la científica emérita Olga Linares (1936-2014). En el 2016 se llevará a cabo un simposio de investigación en su honor.



Once a year we try to take a group photo of our globetrotting staff scientists / **Una vez al año tratamos de tomar una foto de grupo de nuestros científicos trotamundos:** Helene Muller-Landau, Richard Cooke, Harilaos Lessios, Stuart Davies, Dolores Piperno, Mireya Correa, Nancy Knowlton, Jeremy Jackson, Norris Salazar, Rachel Collin, John Kress (interim SI Under Secretary for Science), Rachel Page, William Eberhard, Don Windsor, John Christy, Ira Rubinoff, Annette Aiello, Matthew Larsen (STRI Director), Robert Stallard, Andrew Altieri, Klaus Winter, D. Ross Robertson, Mark Torchin, Jefferson Hall, Mary-Jane West Eberhard, William Wcislo, Allen Herre, Ben Turner, Owen McMillan, Richard Condit. Not present: Kristina Anderson-Teixeira, Stanley Heckadon-Moreno, Stephen Hubbell, David Kenfack, Sean McMahon, David Ward Roubik, Fernando Santos Granero, S. Joseph Wright, Carlos Jaramillo, Egbert Leigh, Anthony Coates.



FELLOWSHIPS MEETING AND SYMPOSIUM 2015

CONGRATULATIONS GO TO:

The 2015 Three-Year Tupper Fellowship (STRI Funds):

Juan Carlos Villarreal

Title: Genomic scale study of symbiosis between plants and nitrogen-fixing cyanobacteria

Main advisor: Noris Salazar, Co-Advisors: Owen McMillan and Allen Herre

SI FELLOWSHIP PROGRAM:

CATEGORY: Postdoctoral Fellowship

Inga Geipel (24 months)

Title: How do bats perceive prey in rain?

Raindrops as echo obstacles and masking noise

Main Advisor: Rachel Page.

Co-Advisors: John Christy and Egbert Leigh

Matthieu Leray (24 months)

Title: The Scaling of Diversity in key marine ecosystems of the Bocas del Toro Lagoon

Main Advisor: Nancy Knowlton,

Co-Advisor: Owen McMillan and Andrew Altieri

CATEGORY: Predoctoral Fellowship

Anne Armstrong

Title: The evolution of major developmental transitions: linking egg size, gene expression, and developmental mode in *Leodia sexiesperforata*

Main Advisor: Haris Lessios,

Co-Advisors: Rachel Collin and John Christy

Peter Marting

Title: Causes of a collective behavioral syndrome in Azteca ants and its effect on their *Cecropia* hosts

Main Advisor: William Wcislo

Co-Advisors: David Roubik and John Christy

NEXT FELLOWSHIP MEETING

The 2016 Annual Fellowship Meeting will be on Wednesday, February 17 and the Fellows' Symposium on Friday, February 19. Please mark your calendars accordingly.

FELICITACIONES PARA:

La Beca Tupper 2015 de tres años (Fondos del Smithsonian en Panamá):

Juan Carlos Villarreal

Título: Genomic scale study of symbiosis between plants and nitrogen-fixing cyanobacteria

Asesor principal: Noris Salazar,

Co-Asesores: Owen McMillan y Allen Herre

PROGRAMA DE BECAS DEL SMITHSONIAN INSTITUTION:

CATEGORÍA: Beca de Post doctorado

Inga Geipel (24 meses)

Título: How do bats perceive prey in rain? Raindrops as echo obstacles and masking noise

Asesor principal: Rachel Page.

Co-Asesores: John Christy y Egbert Leigh

Matthieu Leray (24 meses)

Título: The Scaling of Diversity in key marine ecosystems of the Bocas Del Toro Lagoon

Asesor principal: Nancy Knowlton,

Co-Asesores: Owen McMillan y Andrew Altieri

CATEGORÍA: BECA DE PRE DOCTORADO

Anne Armstrong

Título: The evolution of major developmental transitions: linking egg size, gene expression, and developmental mode in *Leodia sexiesperforata*

Asesor principal: Haris Lessios,

Co-Asesores: Rachel Collin y John Christy

Peter Marting

Título: Causes of a collective behavioral syndrome in Azteca ants and its effect on their *Cecropia* hosts

Asesor principal: William Wcislo

Co-Asesores: David Roubik y John Christy

PRÓXIMO SIMPOSIO DE BECARIOS

La Reunión Anual de Becarios del 2016 se llevará a cabo el miércoles 17 de febrero y el Simposio de Becarios será el viernes 19 de febrero; marquen sus calendarios.

ARRIVALS

Margaret Crofoot

University of California – Davis

Demography and Intergroup Relationships
in *Cebus capucinus*

Barro Colorado Island

Adriel Sierra

Universidad de Panamá

What are the consequences of shared
enemies for the community structure of a
tropical forest?

Cindy Meagher and James Meagher

Simon Fraser University

Environmental Education Community
Outreach

Galeta Station

Katherine Glodoski and Jennifer Engel

University of Wisconsin – Milwaukee

Anne Arnold

Viterbo University

Do Lianas Cause Chronic Disturbance
and Alter Successional Trajectories in
Tropical Forests?

Barro Colorado Island

DEPARTURES

Andrew Altieri

To Bocas Del Toro

To monitor and establish
MarineGEO work at field
sites in Bocas del Toro

Rachel Collin

To Bocas Del Toro

To oversee administration at
the Research Station and for
MarineGeo

Sean Mattson

To Bocas Del Toro

To cover MarineGeo

PUBLICATIONS

Huber, B., Whibley A., Poul Y. L., Navarro N., Martin A., Baxter S., Shah A., et al. “Conservatism and Novelty in the Genetic Architecture of Adaptation in *Heliconius* Butterflies.” *Heredity*, March 25, 2015. doi:10.1038/hdy.2015.22

Oliveira, K. N., Coley P. D., Kursar T. A., Kaminski L. A., Moreira M. Z., and Campos R. I. “The Effect of Symbiotic Ant Colonies on Plant Growth: A Test Using an Azteca-Cecropia System.” *PLOS ONE* 10, no. 3 (2015): e0120351. doi:10.1371/journal.pone.0120351.

Rodgers, T. W., Giacalone J., Heske E. J., Janečka J. E., Jansen P. A., Phillips V., and Schooley R. L. “Socio-Spatial Organization and Kin Structure in Ocelots from Integration of Camera Trapping and Noninvasive Genetics.” *Journal of Mammalogy* 96, no. 1 (February 1, 2015): 120–28. doi:10.1093/jmammal/gyu012.

Visser, M. D., McMahon S. M., Merow C., Dixon P. M., Record S., and Jongejans E. “Speeding Up Ecological and Evolutionary Computations in R; Essentials of High Performance Computing for Biologists.” *PLOS Computational Biology* 11, no. 3 (March 2015): e1004140. doi:10.1371/journal.pcbi.1004140.



INTERN PAPER IN BIOTROPICA

Congratulations to STRI interns Becca Tarvin & Catalina Silva who's project with advisor, Karen Warkentin from Boston University, made the cover of *Biotropica*.

ARTÍCULO ESCRITO POR PASANTE EN BIOTROPICA

Felicitaciones a las pasantes del Smithsonian en Panamá Becca Tarvin y Catalina Silva quienes junto a su mentora Karen Warkentin de la Universidad de Boston, salieron en la portada de la revista *Biotropica*.

Tarvin, RD, CS Bermúdez, VS Briggs, and KM Warkentin. 2015. Carry-over effects of size at metamorphosis in red-eyed treefrogs: higher survival but slower growth of larger metamorphs. *Biotropica* 47:218-226. [pdf link](#)



Brain and behavioral correlates of colony size in ants lacking morphological castes

Sabrina Amador
STRI

TUESDAY, APRIL

7

2015

4PM

Tupper auditorium



Colony size has been proposed to increase task-specialization among workers in social animals (Task-specialization hypothesis), but life in groups could also impose higher cognitive skills (Social brain hypothesis), which in turn affect allocation of neural tissue to different brain regions. The social brain hypothesis predicts that integration centers in the brain should get larger with colony size, while the task-specialization hypothesis predicts an increase in the relative size only of regions relevant to the performed tasks. I will present a study addressing whether colony size affected task-specialization and brain anatomy of acacia ant workers. Acacia ants lack morphological castes and the division of labor relies only on behavioral differentiation, which allows studying brain anatomy correlates of colony size without the confounding variable of body morphology. We found task-specialization to increase with colony size, which in turn was correlated with task-dependent volume changes of different brain neuropiles. In societies with monomorphic workers, brain polymorphism enhanced by group size could be a mechanism by which division of labor is achieved.