

Monthly talk

Wednesday July 2, Monthly talk speaker will be Milton Garcia, STRI, 6pm, Tupper Center Auditorium

Estudios de eco-fisiología como base para toma de decisiones

Bambi seminar

Thursday, July 3, Bambi seminar speaker will be Rebeca B. Rosengaus, Northeastern University

Strength in numbers: the amplification of immune defenses in social insects

Arrivals

Alejandro Royo, USDA Forest Service; Northern Research Station, to join the PRORENA project, in Gamboa.

Paul Schaeffer, Miami University Ohio, to study energetics and muscle metabolism of clay-colored robins, in Gamboa.

Mary Jane West Eberhard and William Eberhard, STRI, Costa Rica Unit, to participate in interviewing candidates for research scientist.

Departures

Juan Maté, to Ft. Lauderdale, FL, to participate in the 11th International Coral Reef Symposium.

Carmen Schloeder to Managua, to collect snails for genetic comparisons.

Rachel Collin to Carbondale, Illinois, to participate in the American Malacological Society Meeting.



Simmons & Carlos Tejada

Rubinoff gathered thoughts on the old and the new, the living and the deceased, with passages of T.C. Schnerla, Ed Willis and C.R. Carpenter, to the Environmental Science Program, the Center for Tropical Forest Science, the ICBG and the Automated Radio-Telemetry Project. He closed his remarks expressing his confidence that, handing over the baton to Biff Bermingham will lead STRI in new and fruitful directions. (See page 5 for more of his remarks).

Samper congratulated everyone who has been involved in bringing BCI to its current

stature, referring to STRI as the best research center in the tropics. He also used the opportunity to thank Ira Rubinoff for developing STRI and for his influence on his own life. He awarded Rubinoff with the Secretary's Gold Medal for Exceptional Service for being "a stalwart at the Smithsonian for more than three decades..." (See page 7).

A new exhibit "People who shaped Barro Colorado Island" was inaugurated for the Island's 85th anniversary. The event gathered eight of the scientists who have ever hold the STRI's baton (from the left in the photo below) Don Windsor, Haris Lessios, Joe Wright, Eldredge Bermingham, Ira Rubinoff, Cristián Samper, Bill Wcislo and Tony Coates. It also brought to the Island STRI representatives Georgina de Alba, Fernando Pascal, Elena Lombardo, Stanley Heckadon, Carlos Tejada, and a group of young retirees. Folkloric dancers from a nearby highschool celebrated with us (see photo on page 3).

Con la presencia del secretario encargado de SI Cristián



Bert Leigh

Samper y su familia, el director emérito de STRI, Ira Rubinoff y Anabella Rubinoff, el director encargado Eldredge Bermingham, Carlos Vargas de la Autoridad del Canal de Panamá, Diego de la Guardia, abogado, la comunidad de STRI celebró el 85 aniversario del establecimiento de una reserva biológica en la Isla de Barro Colorado, el 17 de abril de 1923.

La celebración del aniversario tuvo lugar el viernes, 20 de junio en la Isla, donde Bermingham y Oris Acevedo, coordinadora de la Estación fueron los anfitriones, con el apoyo del personal de BCI



New publications

Baugh, Alexander T., Akre, K.L., & Ryan, Michael J. 2008. "Categorical perception of a natural, multivariate signal: Mating call recognition in tungara frogs." *Proceedings of the National Academy of Sciences* 105(26): 8985–8988.

Laurance, William F. 2008. "International perspective: Conservation research in the Australian wet tropics." In Stork, Nigel E., & Turton, Stephen M. (Eds.) *Living in a dynamic tropical forest landscape*: 357-359. Malden: Blackwell.

Laurance, William F., & Goosem, Miriam. 2008. "Impacts of habitat fragmentation and linear clearings on Australian rainforest biota." In Stork, Nigel E., & Turton, Stephen M. (Eds.) *Living in a dynamic tropical forest landscape*: 295-306. Malden: Blackwell.

Stork, Nigel E., Turton, Stephen M., Laurance, William F., Kikkawa, Jiro, McNeely, Jeffrey A., Sayer, Jeffrey, & Wright, S. Joseph. 2008. "Lessons for other tropical forest landscapes." In Stork, Nigel E., & Turton, Stephen M. (Eds.) *Living in a dynamic tropical forest landscape*: 618-622. Malden: Blackwell.

Wright, S. Joseph. 2008. "International perspective: Ecological processes and ecosystem services in the wet tropics." In Stork, Nigel E., & Turton, Stephen M. (Eds.) *Living in a dynamic tropical forest landscape*: 2061-2262. Malden: Blackwell Publishing.

Upcoming fair

Take note that STRI's Health Fair will be from July 14-18. This year we will have new activities: talks, new stands, blood exams, a health walk on the Causeway, blood donation.

y los científicos visitantes así como la Oficina de Eventos Especiales.

Joan Siedenburt, donante de SI y autora del recién publicado folleto *Barro Colorado Island: History and Research* (presentado durante la ceremonia) se encontraba entre los presentes al igual que Sue Simmons, una voluntaria que ha ayudado a mejorar los recursos de la web de STRI. Bermingham les hizo entrega de certificados de reconocimiento por su dedicación y apoyo.



El Director Encargado dio la bienvenida a los visitantes y dedicó palabras emotivas al personal de Barro Colorado, aquellos que ya no están con nosotros, pero que han hecho de BCI lo que es hoy día, los antiguos científicos residentes, la Fuerza de Guardabosques, curadores, científicos visitantes, y al actual personal de apoyo y administración en BCI... "ustedes son lo mejor de STRI... la historia de la Isla de Barro Colorado es la mitad de la historia de STRI" concluyó Bermingham.

Luego de una divertidísima anécdota sobre la primera visita de Bermingham a BCI como candidato a científico en STRI en la década de 1980, Bert Leigh compartió sus memorias sobre el arduo trabajo científico y los hallazgos científicos

casuales de los que BCI ha sido testigo durante los 85 años que lleva como reserva. También agradeció todo el apoyo que el personal de BCI ha dado a los científicos a través de los años. Leigh también agradeció a Ira Rubinoff por haberlo hecho conciente de algunos de sus errores, especialmente cuando el Director decidió construir las instalaciones apropiadas que hoy día benefician a biólogos tropicales de todo el mundo.

Rubinoff reunió pensamientos de lo viejo y lo nuevo, los que aun están con nosotros y los que ya han fallecidos desde T.C. Schnerla, Ed Willis y C.R. Carpenter, hasta el Programa de Ciencias Ambientales, el Centro de Ciencias Forestales el Trópico, el ICBG y el Proyecto de Radio-Telemetría Automatizada de BCI. Terminó sus palabras expresando su confianza de que al pasarle el bastón de mando Biff Bermingham, éste enrumbará a STRI a nuevas y fructíferas direcciones. (Vea la página 5 para el resto de sus comentarios).

Samper felicitó a todos los que han ayudado a que BCI mantenga su prestigio actual y se refirió a STRI como al mejor centro de investigadores tropicales del mundo. Aprovechó la ocasión para agradecer a Ira Rubinoff por haber desarrollado a STRI, y por su influencia en su propia vida.



Samper hizo entrega de la Medalla de Oro del Secretario del Smithsonian Institution por Servicios Excepcionales a Rubinoff, por su "infatigable lealtad al Smithsonian por más de tres décadas..." Vea página 7.

Una nueva exhibición "People who shaped Barro Colorado Island" [Gente que le dio forma a la Isla de Barro Colorado] se inauguró con motivo del 85 aniversario. El evento reunió a ocho de los científicos que alguna vez han llevado el mando de STRI (desde la izquierda en la foto inferior de la pagina 2) Don Windsor, Haris Lessios, Joe Wright, Eldredge Bermingham, Ira Rubinoff, Cristián Samper, Bill Wcislo and Tony Coates. También asistieron al evento representantes de STRI Georgina de Alba, Fernando Pascal, Elena Lombardo, Stanley Heckadon, Carlos Tejada y muchos otros miembros del personal.

STRI launches largest study of tropical forest ecosystem services with HSBC: Agua Salud

STRI's Center for Tropical Forest Science (CTFS) inaugurated one of the largest experiments ever attempted to understand the ecosystem services —water, carbon and biodiversity— on Saturday, June 21, with the Panama Canal Authority, Panamá's Environmental Authority (ANAM) and the HSBC Climate Partnership.

the watershed provides water for the cities of Panama and Colon, and generates hydroelectric power to the Canal operations.

STRI's major partners in the Agua Salud project are the Panama Canal Authority and Panama's National Authority for the Environment (ANAM). Primary funding for the project

was provided by HSBC's Climate Partnership and the Agua Salud Foundation, supported by Fundación Alberto Motta and Frank Levinson. SI acting secretary Cristián Samper, STRI's Georgina de Alba and Bill Weislo, and Stanley Motta also attended the event.

El Centro de Ciencias Forestales del Trópico de STRI inauguró uno



Joseph Salterio & Climate champion, HSBC

The 850-hectare focal study site in the Agua Salud and adjacent watersheds in the Soberania National Park, forms part of the Panama Canal watershed. It includes protected mature forests and a variety of typical rural land uses.

"The Agua Salud project will teach us how to improve reforestation projects in the Panama Canal watershed so that they can contribute to local and global economies and to a healthy environment in one of the world's major biological hotspots," said Jefferson Hall, director of applied ecology at the CTFS.

One of the services a healthy environment provides is groundwater storage, critical to ensure year-round operations of the Panama Canal. Runoff from

de los experimentos más extensos que se han intentado alguna vez para entender los servicios que prestan los ecosistemas —agua, carbono y biodiversidad— el sábado 21 de junio, con la Autoridad del Canal de Panamá, la Autoridad Nacional del Ambiente y el Climate Partnership de HSBC.

El lugar de estudio, de 850 hectáreas en las cuencas de Agua Salud y adyacentes en el Parque Nacional Soberanía, forma parte de la cuenca del Canal de Panamá. Incluye bosques maduros protegidos y una variedad de usos de suelos rurales típicos.

"El proyecto de Agua Salud nos mostrará cómo mejorar los proyectos de reforestación en la cuenca del Canal de Panamá para que puedan contribuir a la economía local y global así como a un ambiente saludable en uno de los "hotspots" biológicos más importantes del mundo" aseguró Jefferson Hall, director de Ecología Aplicada en el CTFS.

Uno de los servicios que proporciona un ambiente saludable son los depósitos de agua en los suelos, críticos para asegurar las operaciones del Canal todo el año, así como las correntías que suministran agua para las ciudades de Panamá y Colón, y generan energía hidroeléctrica para las operaciones del Canal.



Carlos Vargas, ACP
Eldredge Bermingham, STRI
Ligia Castro, ANAM

Los socios principales de STRI en el proyecto de Agua Salud son la Autoridad del Canal de Panamá y la Autoridad Nacional del Ambiente (ANAM).



Hall

Samper & Motta



Remarks by Ira Rubinoff STRI director emeritus

It is a great pleasure to welcome you here on the occasion of our celebration of the 85th anniversary of the founding of a biological reserve and research station on Barro Colorado Island and to honor the many people, living and dead, who shared the vision and who, through their research, management, protection and financial support helped to establish and maintain this important institution.

In 1923, as today, most of the research conducted here was easily cataloged as ecology, evolution and behavior.

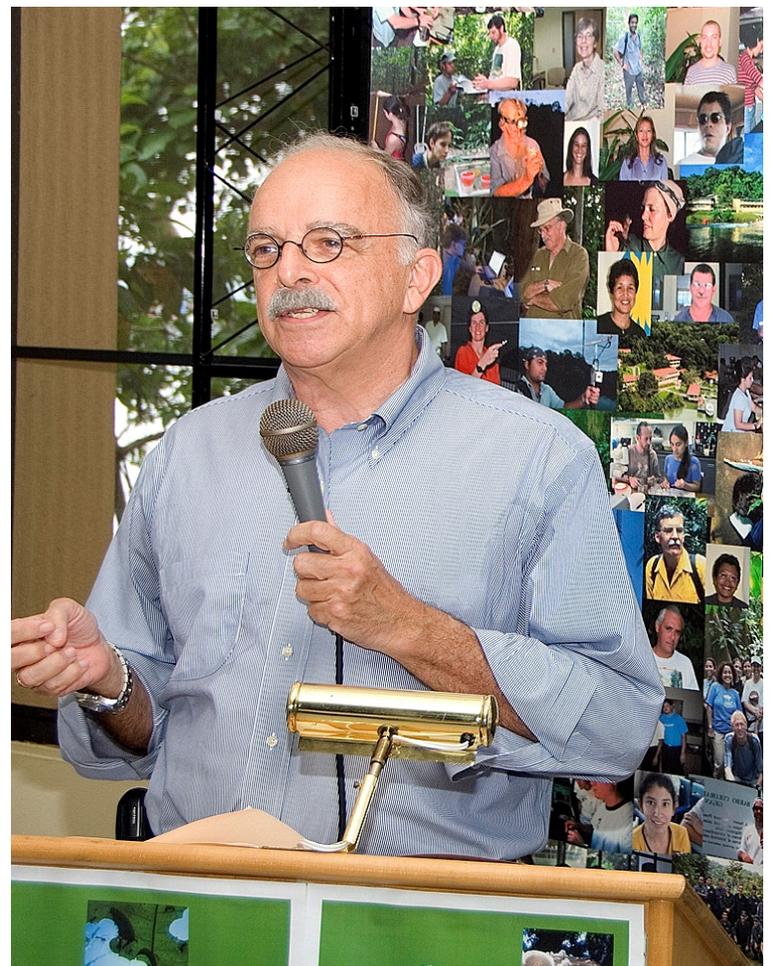
Nowadays there are many more categories and interdisciplinary areas than were likely to be heard around the dining table here in the earlier days. Classical research in behavior and the evolution of cooperation between animals has always been a hallmark of BCI studies. TC Schnerla of the AMNH in New York spent years describing army ants on this Island and how the different species divided up the arthropod resources that constituted their prey. Later, Ed Willis and other ornithologists described the suite of bird species that made their living feeding off the insects escaping from the ant swarms.

More recently, scientists working here have uncovered the amazingly complicated agriculture of leaf-cutter ants made possible by their enormous colonies and elaborate social behavior. CR Carpenter, in 1934 conducted the first ever studies of non captive, primates-examining how the troops of the Howler Monkeys of BCI were organized. Howler monkeys are

still under intense study by Katie Milton and her students. Others have worked with the Island's spider monkeys and more recently the installation of the world's first automated radio tracking systems has enabled Meg Crofoot to learn much about the hitherto elusive white-faced or organ grinder monkeys. Others are currently employing this system to examine the predatory behavior of the islands ocelots discovering in the process that BCI hosts a much larger population of these cats than was suspected before.

Stanley Rand and a host of students have studied the behavior of reptiles and amphibians here and Mike Ryan with his students continues in the tradition. And after WWII and the invention of portable radar detectors it was possible to examine the diversity of the bats on the island and the numbers of species now reported exceeds 70.

The ecologists have been busy as well. The Environmental Science Program, more than 30 years ago, began to monitor the seasonality of not only our rainfall but the pollination, flowering, fruiting, breeding and fluctuations in abundance of many plants and animals in response to seasonal abundances in resources as well as to aperiodic occurrences like *El Niño* and *La Niña* events. Now many studies are searching for the signals of longer term changes such as those thought to be occurring as a result of the warming of the planet. Don Windsor, Joe Wright and Egbert Leigh have been long stalwarts in the design, management and synthesis of



the enormous body of long-term data that this program has generated.

You have just heard from Biff about the Center for Tropical Forest Science which I consider one of the most significant research programs initiated on BCI with global consequences.

I would like to mention one other research program successfully initiated here because it is designed to mine the unique knowledge base this island represents for the direct benefit of mankind. I speak of the International Cooperative Biodiversity Program which is designed to screen plant species for their pharmaceutical properties. Sponsored by the National Science Foundation and the National Institutes of Health of the United States in cooperation with STRI, the University of Panama, ANAM and SENACYT, this project is

only possible because of the work of generations of scientists and particularly of Tom Croat for his comprehensive flora of the Island and Lissy Coley and Tom Kursar whose studies of plant-insect interactions made the survey feasible and not just a search for a needle in a haystack.

Through the years this island has continued to play an important role in the development of new scientific ideas. To keep it attractive to new generations of scientists we have had to continue to adapt and to modernize. Of course our greatest asset is the scientific legacy of the scientists who have been here before-building on their work, their syntheses, to develop new technologies and new ideas and discoveries. But scientists like their toys and want to stay connected. In 1965 under

Martin Moynihan's directorship, the first electrical cable from the mainland was brought to the island providing a quieter more reliable source of energy enabling the use of air conditioning in the laboratories and facilitating the use of instrumentation that was hitherto impossible. The interminable demands of maintaining the original wooden structures of the Island against the ravages of fungi and termites drove the development of a Master Plan, replacing and expanding the research and residence capacity of the Island in 1997. The internet arrived in 1999 and cell phone technology in 2003. Earlier BCI had its own assigned radio frequency used principally by the game wardens and Panamanian Forestry police in the vigorous protection of the island against poaching. This arrangement for joint patrolling by STRI game wardens and the National Forestry Police was initiated in 1977 when the Barro Colorado Nature Monument was established under the terms of the Torrijos-Carter Treaties. Custodianship of the mainland peninsulas surrounding BCI not only opened up new areas for research but established a buffer zone and permitted an expanded surveillance perimeter, allowing us to effectively shut down poaching on the island proper. This arrangement was negotiated with the Government of Panama by Elena Lombardo and me with Omar Torrijos, the father of the current President, who understood the value of the work being conducted here and the importance of helping us to secure its future.

Barro Colorado Island, of course, does not exist in isolation from the rest of STRI and from the Smithsonian

Institution. The early financial support of Tom Barbour of Harvard University made it possible to buy out the small farms that edged the lake just a few meters from here and to build the first dormitory and lab. The devotion and perseverance of the first director, James Zetek saw the station through the hard times of WWII. And, of course, Martin Moynihan, realized that you could not hope to achieve an understanding of the complexities of tropical organisms, their diversity, interactions and evolution with only the minds and labors of scientists whose studies were restricted to visits during their summer holidays or periodic sabbaticals. These questions would only begin to yield to scientists whose careers were based in the tropics and who could devote their careers to the full time pursuit of science here. And so in the early sixties Moynihan began to build a resident staff. He also recognized that while Barro Colorado was extremely well suited for some kinds of studies, the tropics contained a number of other habitats equally worthy of study and he began to expand, off the island into other Panamanian habitats and indeed into other tropical countries, as well. I was fortunate to join STRI in this period and to help build the marine program. Moynihan was by the late 60's tiring of administration and the bureaucracy of Washington and began to groom me as his successor, although I didn't know that at the time.

The success of Barro Colorado Island in contributing to our knowledge of the tropics is the work of many people and I would like to mention some of their names. Francisco Vittola,

the Island's foreman through the 50's and sixties; Fausto Bocanegra devoted his career to the service of the Island and its scientists, Jay Hayden, Barbara Cussati, Daniel Millán, Raineldo Urriola, Nélica Gómez and Oris Acevedo who served long periods as Island Manager. Karl Koford, Robert Dressler, Stanley Rand, Neal Smith, Mike Robinson, Alan Smith, Nick Smythe and Egbert Leigh, all who served as Resident Naturalist or scientist in charge for various periods. And of course, Adela Gomez who labored for more than forty years in the service of BCI and STRI as a spokesperson for STRI with Canal Officials, Government of Panama agencies, and the Smithsonian in Washington. Without her devotion as a passionate advocate for our work we would not be here today. And the sciences here would never have functioned without the logistical support of Gloria Maggiori, Mercedes Arroyo and Maria Leone.

I would like to especially thank our current benefactors who have seen the value of making a good place better. Glenn Tupper, the Andrew Mellon Foundation, Frank Levinson, David and Mary Ann Cofrin, Joan Siedenbug, and Sue Simmons.

We have demonstrated that it is possible to build a world class research institution in the tropics; and that the tools of modern research in fields such as molecular biology and animal and plant physiology developed in the temperate world, can be effectively employed in the tropics. We have further demonstrated that new tools for research can be developed here that were subsequently adopted in other research sites around the world, Canopy Cranes,

Automated Telemetry Systems and the CTFS are notable examples.

I think, most importantly we have demonstrated that the diversity of the tropics is complicated and will not give up the secrets of its organization and evolution, easily. The role of ecologists in a modern world will become increasingly more complicated. Work here will be vital in developing environmental models for understanding the world climate and developing better models to predict its changes. Moreover, we are sited in the middle of the most important watershed on the planet-the Canal Expansion will accommodate more traffic and more of the world's commerce. This translates to more of the world's economy dependent upon this watershed. Our work can assist the authorities of the Panama Canal to build better models of the watershed's hydrology, more efficient methods of reforestation and more effective policies for conservation and dealing with the multiple land use demands of this area-truly the center of the world.

It has been an honor and a privilege for me to serve STRI, and the world's scientific community these last 34 years. I am grateful for this opportunity and for the cooperation afforded by the Government of the Republic of Panama and the United States of America.

I am delighted to hand over the baton to Biff Bermingham whose experience and intelligence will, I am confident, lead STRI in new and fruitful directions.

La traducción aparecerá la próxima semana en la version de español de www.stri.org

Remarks by Cristián Samper Smithsonian Institution acting secretary

Thank you, Ira, and thank you Biff. This is truly an historic day, the 85th anniversary celebration of BCI.

What began in 1923 as small field station here on Barro Colorado Island has become one of the leading research institutions of the world. My congratulations to everyone who has been involved in bringing BCI to this stature.

You should be very proud of what you've done and what you continue to accomplish.

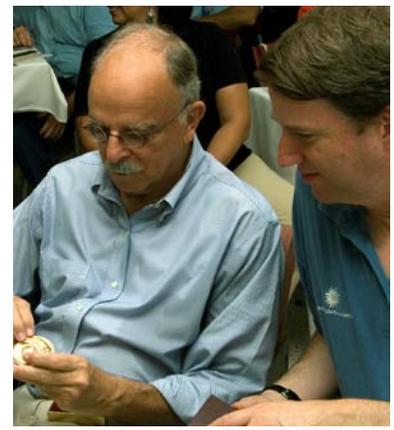
Many of you aren't aware that Ira established the field station in 1923-at age 23, making him 108 years old-and I think you'll agree with me that he doesn't look a day over 100!

I remember when Ira brought me to STRI, and Adrianna and I very much enjoyed our time here. Eventually, I left the jungles of Panama for the jungles of Washington, D.C. I think it's safer down here! And a little over a year ago, I was at NMNH when I got a call from Regent Roger Sant, asking me

to step in as acting secretary of the Smithsonian Institution. The first call I made was to Ira.

Ira came to Washington to be the Acting Under Secretary for Science on 24 hours notice. He has returned home-primarily because it's easier for him to get better cigars in Panama.

Ira has been such a help to me in my career and so kind to my family. He has been a stalwart at the Smithsonian for more than three decades. So, Ira, I have one more surprise for you-this



is a good one. It is my pleasure and honor to award you the Secretary's Gold Medal for Exceptional Service. Let me read the citation, it says it all.

Ira, please come and accept this well deserve award with all my heartfelt thanks.

*The Secretary's Gold Medal
for Exceptional Service*

is presented to

Ira Rubinoff

*in grateful recognition of his extraordinary contributions to
the Smithsonian Institution*

as Director of the Smithsonian Tropical Research Institute in Panama since 1974. Renowned for his politically savvy science leadership and untiring advocacy for graduate training, Ira built and modernized STRI's numerous facilities, defined the field of tropical biology through his publications and the innovative research programs he established, and hosted thousands of visiting scientists and students from around the globe, supporting many with funds he had raised to support fellowship programs. Having negotiated the continuity of Barro Colorado Island (BCI) as a research station and the creation of the larger Barro Colorado Nature Monument in 1977-78, he shepherded STRI through the U.S. invasion of Panama in 1989 and the reversion of the Panama Canal Zone to the Panamanian government at the turn of the 21st century. With intellectual acumen and the utmost dedication to science, his forthrightness, good humor, and charm have enlivened our lives for almost forty years. His tenure elevated the prestige of Smithsonian research and set new standards for fulfilling James Smithson's mandate "for the increase and diffusion of knowledge."

June 20, 2008

Acting Secretary