

SEMINARS

Tupper Center Auditorium

Tuesday, Feb 5, 12:30 p.m. seminar speaker will be Andrew Martin, University of Hawaii.

Variation in rates of mitochondrial DNA evolution in vertebrates.

Abstract

Modification of genomes occurs by intrinsic and extrinsic processes. Intrinsic processes are those molecular systems that are encoded by the genome for the purpose of replication and expression of genetic information. Polymerase infidelity is perhaps the greatest source of intrinsic modification. This is supported by recent studies showing that the rate of nucleotide substitution is best described in relation to generation time instead of chronological time. Modification of genomes by extrinsic processes by definition involves the environment. This source of mutations is hierarchical in nature. Genomes are embedded within the cells of organisms which are themselves living in a hostile environment. Changes at any level may impinge on the genome. Adequate description of molecular evolution requires that we consider both sources of mutation. In an attempt to discern the relative importance of intrinsic and extrinsic factors in molecular evolution, I compared the tempo and mode of mitochondrial DNA sequence evolution among divergent vertebrates: sharks, large and small ungulates, rodents, cetaceans, and primates. The results indicate that differences in aerobic respiration rates among taxa best explain the variation in nucleotide substitution rates. An implication of this result is that changes in the environment can alter rates of nucleotide substitution.

Next Week

Feb 12 is Carnival Tuesday. No seminar scheduled.



Lizzy Leigh and students from Oberlin College at special concert for employees held in the Tupper Center Auditorium ••• Lizzy Leigh y estudiantes de la Universidad de Oberlin durante el concierto celebrado para empleados en el Auditorio del Centro Tupper. (Foto: M.A. Guerra)

PEOPLE

Arrivals

- Antonio Salas, Short Term Visitor from the Universidad Nacional Mayor de San Marcos, Feb 8-28, to work at BCI on iguana research.
- Mary Jane West Eberhard, STRI Staff, Feb 1-7, to visit STRI facilities and consult with staff.
 - Charles Handley, National Museum of Natural History, with Penny Welton, Feb 13, to continue their research in Bocas del Toro.
 - Ian Woiwod, Rothamsted Experimental Station, U.K., Senior Scholar, to visit STRI facilities and present seminar.

For SI/STRI International Course on Conservation and Management of Natural Areas in Panamá:

- John Mayne, Office of SI/MAB Program Manager, Jan 31-Mar 1.
- Francisco Dallmeier, Office of SI/MAB Director, Jan 31-Feb 8.
- Laura Neal, Office of SI/MAB assistant, Jan 31-Feb 15.
- Roberto Ulloa, course instructor, Ecuador, Feb 3-Mar 1.
- Cynthia Silva, course instructor, Bolivia, Feb 4-Mar 1.
- The following course participants will arrive on Feb 3 and depart Mar 1: Migdalia Alvarez, Puerto Rico; Gonzálo Alvarado, Honduras; Carlos Roberto Hasbun, El Salvador; Tulio Monterroso and Rogelio del Cid, Guatemala; Maritza Centeno and Aura Izquierdo, Nicaragua; Edgar Ulate, Costa Rica.

Departures

- Feb 15, Stanley Rand, STRI staff, and Roberto Ibañez, STRI fellow, to Costa Rica to attend the Amphibian Populations Meeting.
- Steve Miller to Curaçao, to collaborate with on-going bryozoan research.

Becas Otorgadas a Personal del STRI

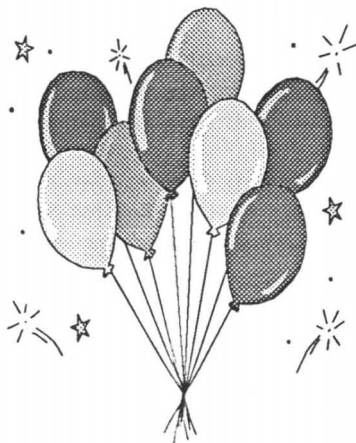
- Juan Diego López Giraldo, asistente de investigación de Haris Lessios en Naos, fue escogido para representar a Colombia como becario del programa de Rotary International en la Universidad de Newcastle upon Tyne, Inglaterra. Iniciará sus estudios de maestría sobre el manejo de áreas costeras tropicales en octubre de 1991.
- Viterbo Rodríguez, asistente de investigación de Don Windsor, ha recibido una beca del Programa para Carreras Regionales CSUCA-D.A.A.D. que le permitirá realizar estudios de Maestría en Biología, en la Universidad de Costa Rica. ¡Muchas felicidades a Juan Diego y Viterbo por este gran logro!

Invited Instructor in Parataxonomy Course

STRI scientist Dave Roubik has just returned from teaching an intensive and innovative course to train parataxonomists in entomology at Santa Rosa National Park; the course was organized by the Costa Rican National Biodiversity Institute.

February Birthdays

Martin Moynihan	5
Eduardo Navarro	6
Mireya Correa	6
Karl Kaufmann	8
Roberto Borrell	10
Isis Estribí	12
Ricardo Cortez	14
Georgina De Alba	15
Walter Dillon	18
Robin Foster	18
Gilberto Ocaña	22
Consul Chamorro	28
Vielka Chang-Yau	29



THINGS YOU SHOULD KNOW

Curso del Smithsonian en Febrero

El Curso de Conservación y Manejo de Areas Silvestres es un curso itinerante organizado por el Instituto Smithsonian de Investigaciones Tropicales en Panamá (STRI) y el Programa del Hombre y la Biósfera de la

Institución Smithsonian en Washington, D.C. (SI/MAB), que se realizará en forma intensiva durante el mes de febrero 1991, en diferentes comunidades de la República de Panamá. En STRI, la Oficina de Asuntos Externos e Internacionales, bajo Elena Lombardo, está a cargo de la administración del curso, con Argelis Román, de la Oficina de Educación, como coordinadora. En Washington, Francisco Dallmeier y John Mayne actúan como coordinadores.

El curso permitirá que directores de parques nacionales y áreas protegidas, miembros de organizaciones no-gubernamentales y personas responsables de la formulación y/o implementación de programas de manejo de Areas Silvestres de Latinoamérica y Panamá, discutan, intercambien experiencias y formulen planes o estrategias de protección y uso sostenido de los recursos naturales.

Expertos nacionales e internacionales en el manejo, la ecología tropical, la administración, la protección y la educación ambiental, dictarán conferencias, orientarán mesas redondas, y realizarán giras de campo, que permitirán analizar de forma sistemática ciertos aspectos relevantes de la problemática local y latinoamericana.

Los participantes, 15 panameños y 8 latinoamericanos, son representantes de organizaciones gubernamentales y no-gubernamentales que laboran en la conservación del medio ambiente.

Este curso se llevará a cabo en el Centro Tupper en la ciudad de Panamá, en Fortuna, Chiriquí, en el Monumento Natural de Barro Colorado y en la estación de PEMASKY en Nusagandi. Durante los días 5, 6 y 26 que el curso estará en Tupper, todos los científicos, visitantes, estudiantes y personal administrativo están invitados a asistir. Habrá un programa detallado en el mural en la recepción del Centro Tupper. A continuación los temas generales de esos días:

- 5 feb La Problemática Ambiental Hoy
- 6 feb Las Leyes Ambientales en Panamá
- 26 feb Los Grupos No-Gubernamentales y la Conservación en la mañana. Captación de Fondos para la Conservación en la tarde.

Speed Limit and Use of the Amador Causeway *Limite de Velocidad y Uso del Area de la Calzada de Amador*

Please be advised that the posted speed limit for the Amador causeway is 30 kph or 20 mph. It is illegal and in violation of the spirit of the agreement between STRI and the Alcaldia Municipal to exceed this speed.

Please remember also that if you use the causeway or its beaches for recreation you must enter on foot and pay the normal entrance fee. Your strict compliance with these regulations will ensure continued good relations between STRI and the administration of the causeway and access to the area for STRI official business. Thanks for your cooperation.

Favor recordar que el límite de velocidad indicado en la calzada de Amador es 30 kph o 20 mph. El exceso de velocidad es ilegal y además es una violación del acuerdo entre el STRI y la Alcaldía Municipal.

También recuerde que si Ud. desea utilizar la calzada de Amador o sus playas para recreación, Ud. debe entrar a pie y pagar la tarifa de entrada regular. El estricto cumplimiento de estas regulaciones aseguran la continuidad de las buenas relaciones entre el STRI y la administración de la calzada de Amador y el acceso al área por parte del STRI para asuntos oficiales. Gracias por su cooperación.

From BCI



The Jacana will be pulled out of the water for repairs on Feb 1st. On that date, the Las Cruces schedule will become effective. This schedule will be posted in all bulletin boards. We appreciate your patience.

From Procurement



We have been informed by the military postal service that beginning February 5, 1991 the cost of stamps will increase from \$0.25 to \$0.29.

From Office of International Relations- Information for Travelers



The FAA is asking all air travelers to arrive at airports at least 2 hours prior to departure for domestic flights and 3 hours early for foreign travel. There will be no curbside luggage check-in and even if you have boarding cards, you should go through the lines in the terminal, not go directly to the gate.

ANNOUNCEMENTS

Welcome

A special welcome to Ernest Williams and Ernst Mayr, who will be arriving this week to visit STRI and use facilities.



Dorita Justo, Facilities Management Secretary, cuts the cake during the baby shower given by her co-workers ••• Dorita Justo, Secretaria del Departamento de Operaciones, corta el pastel durante una fiesta de regalos para su nuevo bebé, organizada por sus compañeros.

(Foto: Cortesía de Mirna Fernández)

Change in Employment Status

Alcibiades Cedeño is one of our contractors that will be placed on the rolls effective Jan 27, 1991 with a temporary appointment of one year. He works as laboratory assistant to Ross Robertson. This position is to support biological research on population biology of reef fishes, both in the field and laboratory. Alcibiades has a BS in Biological and Geological Oceanography from Brazil.

For Sale

Apartment in Marbella, "Torre Marbella", 4 bedrooms, 3 bathrooms. Area of construction 225 m². \$110,000. Mortgage available. For information contact Hely Andrade.

From The Personnel Office • *De la Oficina de Personal*



"I can't do it" never accomplished anything.

"I will try" has worked wonders.

Anonymous

Nothing is so contagious as enthusiasm.

"No puedo" nunca ha logrado nada.

"Trataré" ha hecho maravillas.

Anónimo

No hay nada más contagioso que el entusiasmo.

Determination

The English writer, Samuel Crowther, once wrote an article in which he examined the traits of many successful people.

Fuerza de Voluntad

El escritor inglés Samuel Crowther, escribió una vez un artículo en el que detallaba los atributos que poseían muchos triunfadores.

"The only common trait that can be discovered among them," he wrote, "has to do with the capacity for sustained work in an emergency. Someone has said that the chief difference between a big man and a little man is that the little man quits when he is tired and sleepy, while that is the very time the big man presses on harder than ever."



"Ú. sólo dijo 'archívelo' - no dijo porqué ni dónde."

"You only said 'File it.' You didn't say why and where."

Sense of humor • Sentido del humor

Along the same lines, another author wrote: "The longer I live the more deeply I am convinced that the difference between one person and another, between the weak and the powerful, the great and insignificant, is energy - invisible determination. This quality will do anything that has to be done in the world; and no talents, no circumstances, no opportunities, will make one a successful person without it."

"El único atributo común que se distingue entre ellos," escribió, "tiene que ver con la capacidad que tienen para mantener el ritmo de trabajo durante las crisis. Alguien ha dicho que la principal diferencia entre un hombre grande y uno pequeño es que el pequeño se detiene cuando se cansa y tiene sueño, mientras que en ese mismo momento, el grande se esfuerza más que nunca."

Sobre ese mismo tema, otro autor escribió: "Mientras más vivo más me convengo de que la diferencia entre una persona y otra, entre el débil y el poderoso, entre el grande y el insignificante, se encuentra en la fuerza - la invisible fuerza de la voluntad. Esta cualidad permitirá que se realicen todas las cosas

que tengan que hacerse en el mundo; y nadie que no la posea, será un triunfador, no importa el talento, las circunstancias o las oportunidades que tenga."

And another author, Edward B. Butler, said: "Everyone is enthusiastic at times. One person has enthusiasm for 30 minutes - another has it for 30 days, but it is the person who has it for 30 years who makes a success in life."

Y otro autor, Edward B. Butler, dijo: "Todo el mundo se entusiasma a veces. Algunas personas tienen entusiasmo por 30 minutos - otras por 30 días, pero la persona que lo tiene por 30 años es la que triunfa en la vida."

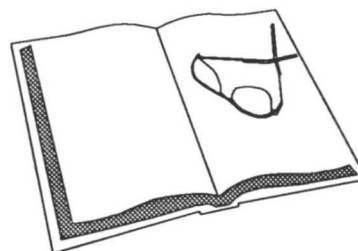
A leader is an ordinary person with extraordinary determination.

Un líder es una persona común con una fuerza de voluntad fuera de lo común.

Hasta la proxima!

Carmen Jacue

1990 STRI Publications Not Previously Announced in the Newsletter



- Aiello, Annette.** 1990. "Doctor's Adventures Among the Famous and the Infamous from the Jungles of Panama to a Park Avenue Practice, by B.H. Kean and Tracy Dahlby" (Book Review). *Library Journal*
- Aiello, Annette.** 1990. "Gardening from the Heart, by Carol Olwell" (Book Review). *Library Journal*
- Aiello, Annette.** 1990. "Saving Seeds: The Gardener's Guide to Growing and Storing Vegetables and Flower Seeds, by Marc Rogers" (Book Review). *Library Journal*
- Aiello, Annette.** 1990. "Ticks and What You Can do About Them, by Roger Drummond" (Book Review). *Library Journal*
- Becker, Peter and Castillo, Anayansi.** 1990. "Root Architecture of Shrubs and Saplings in the Understorey of a Tropical Moist Forest in Lowland Panama." *Biotropica* 22(3): 242-249.
- Brawn, Jeffrey D.** 1990. "Interspecific Competition and Social Behavior in Violet-Green Swallows." *Auk* 107: 606-608.
- Clifton, K.E.** 1990. "The Costs and Benefits of Territory Sharing for the Caribbean Coral Reef Fish, *Sacrus iserti*." *Behavioral Ecology and Sociobiology* 26: 139-147.
- Coffroth, Mary A.** 1990. "Mucous Sheet Formation on Poritid Corals: An Evaluation of Mucous Sheets as a Nutrient Source on Reefs." *Marine Biology* 105: 39-49.
- De Steven, Diane.** 1989. "Genet and Ramet Demography of *Oenocarpus mapora* spp. *mapora*, a Clonal Palm of Panamanian Tropical Moist Forest." *Journal of Ecology* 77: 579-596.
- Dudley, Robert and DeVries, Philip J.** 1990. "Tropical Rain Forest Structure and the Geographical Distribution of Gliding Vertebrates." *Biotropica* 22(4): 432-434.
- Foster, Robin B. and Hubbell, Stephen P.** 1990. "The Floristic Composition of the Barro Colorado Island Forest." In: *Four Neotropical Rainforests: 85-98*, edited by A.H. Gentry. New Haven, Yale University Press.
- Foster, Robin.** 1990. "Long-Term Change in the Successional Forest Community of the Rio Manu Floodplain." In: *Four Neotropical Rainforests: 565-572*.
- Foster, Robin.** 1990. "The Floristic Composition of the Rio Manu Floodplain Forest." In: *Four Neotropical Rainforests: 99-111*, edited by A.H. Gentry. New Haven, Yale University Press.
- Glanz, William E.** 1990. "Neotropical Mammal Densities: How Unusual is the Community on Barro Colorado Island, Panama?" In: *Four Neotropical Rainforests: 287-313*, edited by A.H. Gentry. New Haven, Yale University Press.
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- Ibáñez, Roberto and Rand, A. Stanley.** 1990. "Geographic Distribution: *Eleutherodactylus johnstoni*." *SSAR Herpetological Review* 21(2): 37.
- Inoue, Tamiji and Roubik, David W.** 1990. "Kin Recognition of Stingless Bee, *Melipona fasciata*." In: *Social Insectas and the Environment: Proceedings of the 11th International Congress-IUSSI 1990, India: 517-518*.
- Johnson, Mark J.** 1990. "Overlooked Sedimentary Particles from Tropical Weathering Environments." *Geology* 18: 107-110.
- Karr, James R.** 1990. "The Avifauna of Barro Colorado Island and the Pipeline Road, Panama." In: *Four Neotropical Rainforests: 183-198*, edited by A.H. Gentry. New Haven, Yale University Press.

- Karr, James R., Robinson, Scott, Blake, John G. and Bierregaard, Jr., Rochard O. 1990. "Birds of Four Neotropical Forests." In: *Four Neotropical Rainforests: 237-272*, edited by A.H. Gentry. New Haven, Yale University Press.
- Lasker, Howard R. 1990. "Clonal Propagation and Population Dynamics of a Gorgonian Coral." *Ecology* 71(4): 1578-1589.
- Leigh, Jr., Egbert G. and Wright, S. Joseph. 1990. "The Role of Barro Colorado in Tropical Biology." In: *Four Neotropical Forests: 28-47*, edited by A.H. Gentry. New Haven: Yale University Press.
- Leigh Jr., Egbert Giles. 1990. "Afterword". In: *The Causes of Evolution: 130-212*, by J.B.S. Haldane F.R.S. Princeton: Princeton University Press.
- Leigh Jr., Egbert Giles. 1990. "Introduction". In *The Causes of Evolution: ix-xxvi*, by J.B.S. Haldane F.R.S. Princeton, Princeton University Press.
- Petersen, C.W. 1990. "The Occurrence and Dynamics of Clutch Loss and Filial Cannibalism in Two Caribbean Damsel Fishes." *Journal of Experimental Marine Biology and Ecology* 135: 117-133.
- Putz, Francis E., Leigh Jr., Egbert G. and Wright, S. Joseph. 1990. "Solitary Confinement in Panama." *Garden Magazine* 14(2): 18-23.
- Rand, A. Stanley and Myers, Charles W. 1990. "The Herpetofauna of Barro Colorado Island, Panama." In: *Four Neotropical Rainforests: 386-409*, edited by A.H. Gentry. New Haven, Yale University Press.
- Robertson, D. Ross. 1990. "Differences in the Seasonalities of Spawning and Recruitment of Some Small Neotropical Reef Fishes." *Journal of Experimental Marine Biology and Ecology* 135: 117-133.
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- Roubik, David W. 1990. "Nesting and Defence in Tropical Honeybees and Stingless Bees: You Are What Eats You?" In: *Social Insects and the Environment: Proceedings of the 11th International Congress-IUSSI 1990, India: 662-663*.
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- Shulman, M.J. 1990. "Aggression Among Sea Urchins on Caribbean Coral Reefs." *Journal of Experimental Marine Biology and Ecology* 140: 197-208.
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- Warner, R.R. 1990. "Resource Assessment vs. Traditionality in Mating Site Determination." *The American Naturalist* 135: 205-217.
- Wcislo, W.T. 1990. "Olfactory Cues in Nest Recognition by Solitary Bees (*Lasioglossum figueresi*; Halictidae) as a Preadaptation for the Evolution of Kin Association." In: *11th International Congress-IUSSI 1990, India: 412*.
- West Eberhard, Mary Jane. 1990. "The Relationship Between Behavioral-Development Switches and Major Steps in Social Insect Evolution." In: *11th International Congress-IUSSI 1990, India: 12-14*.
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