

UPDATE



April 2006

SANTA FE INSTITUTE

INSIDE SFI: ON AND OFF THE COWAN CAMPUS

<http://www.santafe.edu/events/update/insidesfi.php>

WEST HONORED BY UNIVERSITY OF OXFORD

SFI President and Distinguished Professor Dr. **Geoffrey B. West** was awarded the Weldon Memorial Prize by the University of Oxford. The prize was founded to perpetuate the memory of Professor W. R. E. Weldon and to encourage Biometric Science. Previous recipients include **Ronald Fisher, Sewall Wright, John Maynard Smith, and Lord Robert May.**

WOOD SERVES ON NATIONAL SECURITY PANEL

SFI Vice President **C. C. Wood** served on an Issues Panel on National Security for the Hill Forum on Complexity Science and Public Policy, held on March 9 at the U.S. Capitol Building in Washington DC.

KOHLER PROMOTED TO REGENTS PROFESSOR

SFI External Faculty member **Timothy Kohler**, has been promoted to Regents Professor at Washington State University. Anyone considered for promotion to Regents Professor must be a tenured full professor or the equivalent. Candidates must have served at WSU for the last seven years; achieved the highest level of distinction in a discipline; raised the standards of the university through activities in teaching, scholarship and public service; and sustained a level of accomplishment receiving national or international recognition. The number of these promotions is limited to three annually, with the number of active Regents Professors not to exceed 30.

Kohler is best known for his archaeological research in the southwestern United States. He has, in some ways, changed the face of archeology with his sophisticated computer analysis of voluminous data related to climate, geography, food sources and other factors that influence human settlements.

For more information, please see <http://www.wsutoday.wsu.edu/completestory.asp?StoryID=2782>

SFI FEATURED IN NATIONAL GEOGRAPHIC

SFI is mentioned in the March 2006 issue of *National Geographic*. "The Origin of Life...Through Chemistry," an article by Joel Achenbach, describes work by **Harold Morowitz** (George Mason University) and **Eric Smith** (SFI Professor). Achenbach reviews the idea that metabolism may have been the first departure on the road from abiotic geochemistry to life, and that many core metabolic pathways surviving in modern cells may be central clues to how that transition occurred almost four billion years ago.

MAY PUBLIC LECTURE

The Santa Fe Institute will present a Public Lecture on Wednesday, **May 10, 2006**, at 7:30 pm at the James A. Little Theater.

The Lecture, entitled "More than You Know: Finding Financial Wisdom in Unconventional Places," will be presented by **Michael Mauboussin**, Senior Vice President, Legg Mason Capital Management, Inc., with **John Miller**, Professor, Carnegie Mellon University and Santa Fe Institute.

Because most occupations encourage a degree of specialization, most of us end up with pretty narrow slices of knowledge. For example, many economists base their models on rational investors or normal distributions without looking at how the world really works. The core premise of this talk is simple to state

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but devilishly difficult to live: you will be a better investor, parent, friend—person—if you approach problems from a multidisciplinary perspective. Mauboussin will discuss how lessons from Babe Ruth, Tupperware parties, the Wright Brothers, and ant colonies can make you a better decision maker.

NEW EVENT'S MANAGER

SFI welcome's new Event's Manager **Wayne Coté**. Wayne has extensive events management experience with major hotels nationally and internationally (including experience in Santa Fe) and will bring much expertise and experience to the position.

Wayne is a Communications graduate from the University of Maine and a Clinical Psychology graduate from Washington University, St. Louis.

BUSINESS NETWORK NEWS

<http://www.santafe.edu/events/update/businessnetwork.php>

AGENT-BASED MODELING AND SIMULATION COURSE

An intensive introduction to agent-based modeling and simulation (ABMS) with a focus on business applications will be held on April 24-28, 2006, at Argonne National Laboratory. The first half of the course will focus on ABMS concepts from the perspective of company managers and analysts. The second half of the course will focus on ABMS implementation from the perspective of company software developers and will include extensive hands-on exercises. Participants are invited to attend the first session, the second session or both, depending on their interests.

For more information and to register please go to <http://www.dis.anl.gov/abms/>

NOTES FROM THE INTERNATIONAL PROGRAM

<http://www.santafe.edu/events/update/international.php>

FELLOWS VISIT SFI

SFI International Fellow **Miguel Fuentes** of Centro Atómico de Bariloche returned to SFI in March to continue his research with **David Krakauer**. He will also further his own research on the extension of escape rate equations in chaotic maps and the studies of power spectrum behavior in colored noise processes.

SFI International Visitor **Manuel Eguia** of the Centro de Estudios e Investigaciones, Universidad Nacional de Quilmes in Argentina, arrived at SFI in March to further his recent work on social capital networks that evolved following the Argentinian currency crisis.

SFI VISITS PRAGUE AND BUDAPEST

Chris Wood, Vice President, and **Shannon Larsen**, International and Business Networks, traveled to Prague and Budapest to visit with former SFI International Fellows **David Storch**, **Beata Oborny**, and **Balazs Vedres**.

PUBLICATIONS

<http://www.santafe.edu/events/update/publications.php>

WORKING PAPERS

<http://www.santafe.edu/research/publications/working-papers.php>

06-03-012

Market Efficiency and the Long-Memory of Supply and Demand: Is Price Impact Variable and Permanent or Fixed and Temporary?

J. Doyne Farmer, Austin Gerig, Fabrizio Lillo, and Szabolcs Mike

06-03-011

Chemical Carnot Cycles, Landauer's Principle, and the Thermodynamics of Natural Selection
D. Eric Smith

06-03-010

Qubit Complexity of Continuous Problems
A. Papageorgiou and J. F. Traub

06-03-009

A Model of the Ethylene Signaling Pathway and its Gene Response in *Arabidopsis thaliana*: Noise-Filtering Properties
José Diaz and Elena R. Alvarez-Buylla

06-03-008

Hierarchical Self-Organization in the Finitary Process Soup
Olof Goernerup and James P. Crutchfield

06-03-007

Dynamic Patterns of Gene Regulation I: Simple Two Gene Systems
Stefanie Widder, Josef Schicho, and Peter Schuster

REFEREED LITERATURE

<http://www.santafe.edu/events/update/publications.php>

Bernhart, S. H., I. L. Hofacker, and P. F. Stadler. "Local RNA Base Pairing Probabilities in Large Sequences." *Bioinformatics* 22(5) (2006): 614-615.

Morse, G. "Connecting Maverick Minds." *Harvard Business Review* 84(3) (2006): 23, 147.

Pruessner, G., and O. Peters. "Self-Organized Criticality and Absorbing States: Lessons from the Ising Model." *Physical Review E* 7302(2 PT 2) (2006): 39-42.

Wilkins, J. F., and F. W. Marlowe. "Sex-Biases Migration in Humans: What Should We Expect from Genetic Data?" *Bioessays* 28(3) (2006): 290-300.

LIBRARY ACQUISITIONS

For a list of recent purchases by the SFI library, please see <http://www.santafe.edu/events/update/library.php>

CALENDAR OF EVENTS

<http://www.santafe.edu/events/calendar.php>

April 3 - 5, 2006

Workshop — "Degeneracy and Complexity in the Immune System," Organized by **Eli Sercarz** (Torrey Pines Institute) and **Alan Perelson** (LANL and SFI)

April 5, 2006

Public Lecture — "The Origin of Life," by **Christian de Duve** with **D. Eric Smith**, organized by **Ginger Richardson**. Held at the James A. Little Theater.

April 16 - 20, 2006

Workshop — "Languages, Chronology, and Prehistory," organized by **Murray Gell-Mann** and **Ilia Peiros** (SFI). Held in Baku, Azerbaijan.

May 10, 2006

Public Lecture — "More than You Know: Finding Financial Wisdom in Unconventional Places," by **Michael Mauboussin** with **John Miller**, organized by **Ginger Richardson**. Held at the James A. Little Theater.

May 12 - 13, 2006

Meeting — "Annual Science Board and Trustee Meeting," organized by **Geoff West** and **Chris Wood** (SFI). Held at the Santa Fe Institute.

May 23, 2006

Workshop — "Annual Science Writers Workshop," organized by **Susan Ballatti** (SFI). Held at the Santa Fe Institute.

May 29 - June 2, 2006

Workshop — "From Vent Chemistry to Biochemistry," organized by **Harold Morowitz** (George Mason University and SFI) and **Eric Smith** (SFI). Held at the Santa Fe Institute.

June 4 - 30, 2006

Educational Program — "Complex Systems Summer School - Santa Fe," directed by **Dan Rockmore** (Dartmouth College and SFI) and administered by the Santa Fe Institute (SFI). Held at St. John's College in Santa Fe, New Mexico.

July 6 - 8, 2006

Workshop — "Degeneracy and Complexity in The Immune System," organized by **Eli Sercarz** (Torrey Pines Institute) and **Alan Perelson** (LANL and SFI). Held at the Santa Fe Institute.

July 9 - August 4, 2006

Educational Program — “Complex Systems Summer School - Beijing,” co-directed by **David P. Feldman** (College of the Atlantic and SFI) and **Chen Xiao-song** (Institute for Theoretical Physics, CAS). Sponsored by SFI in cooperation with the Institute of Theoretical Physics, and the Graduate School, Chinese Academy of Sciences (CAS). Held at the Institute of Theoretical Physics in Beijing, China.

July 9 - 22, 2006

Educational Program — “Grad Workshop in Computational Social Sciences,” organized by **John Miller** (Carnegie Mellon University and SFI) and **Scott Page** (University of Michigan-Ann Arbor). Held at St. John’s College.

July 12, 2006

Public Lecture — “The Mother of Mass Extinctions: How Life on Earth Nearly Ended 250 Million Years Ago,” by **Douglas Erwin** with **David Krakauer**, organized by **Ginger Richardson**. Held at the James A. Little Theater.

July 16 - 23, 2006

Educational Program — “Foundations of Theoretical Medicine,” organized by **David Krakauer** (SFI). Held at the Santa Fe Institute.

September 10 - 12, 2006

Workshop — “Probing the Limits,” organized by **Doug Erwin** (SFI). Held at the Santa Fe Institute.

September 12 - 14, 2006

Public Lecture — Thirteenth Annual Stanislaw Ulam Memorial Lecture Series: “On Plants—From Genes to Genomes to Genetically Modified Foods,” by **Nina Fedoroff**, organized by **Ginger Richardson**. Held at the James A. Little Theater.

September 13 - 19, 2006

Working Group — “Global IP Fellows Meeting,” organized by **Shannon Larsen** (SFI). Held at the Santa Fe Institute.

September 28 - October 1, 2006

Working Group — “Unifying Current Theories of Ecology,” **Drew Allen** (University of California-Santa Barbara); **Jessica Green**, Organizer (University of California- Merced); **Steve Hubbell**, (University of Georgia and Smithsonian Tropical Research Institute); **Pablo Marquet**, (Catholic University of Chile and former SFI International Fellow). Held at the Santa Fe Institute.

November 1 - 2, 2006

Workshop — “ARCS (Adaptive and Resilient Computer Security) Workshop BusNet,” organized by **Robert Ghanea-Hercock** (BT) and **Shannon Larsen** (SFI). Held at the Santa Fe Institute.

November 3 - 5, 2006

Meeting — “Annual Business Network and Board of Trustees Meeting,” organized by **Bill Miller** (Legg Mason), **Geoff West** (SFI), and **Chris Wood** (SFI). Held at the Santa Fe Institute and Inn at Loretto.

November 15, 2006

Public Lecture — “Forecasting Natural Disasters in the Chaotic and Complex Earth,” by **John Rundle** with **Geoffrey West**, organized by **Ginger Richardson**. Held at the James A. Little Theater.

APRIL VISITORS AND ARRIVALS

<http://www.santafe.edu/events/monthlyvisitors.php>

George Djorgovski (4/19-27), Professor of Astronomy, California Institute of Technology.

Anna Dybo (4/28-5/28), Institute of Linguistics, Russian Academy of Science.

Erica Jen (4/12-21), Faculty, Santa Fe Institute.

Carolyn Kosiol (4/12-16), EMBL-European Bioinformatics Institute.

Matthew Meselson (4/5-12), Molecular Biology, Harvard University.

Bob Phillips (4/23-29), Institute for Inclusive Learning Communities, University of Tasmania.

Dawn Sumner (4/11-12), Geology Department, University of California-Davis.

Jorge Velasco-Hernandez (4/8-22), Matematicas Aplicadas y Computacion, Instituto Mexicano del Petroleo.

Santa Fe Institute
1399 Hyde Park Road • Santa Fe, New Mexico 87501
(505) 984-8800 • email@santafe.edu

Editorial Coordinator: Della Ulibarri
Proofreader/Copy Editor: Laura Ware