

# UPDATE



May 2006

## SANTA FE INSTITUTE

### INSIDE SFI: ON AND OFF THE COWAN CAMPUS

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

#### WEST FEATURED IN *HARVARD BUSINESS REVIEW*

SFI President and Distinguished Professor **Geoffrey West** was featured in the *Harvard Business Review*. The article, "Connecting Maverick Minds: A Conversation with Geoffrey West," discusses SFI's philosophy towards innovation and research in the academic and corporate worlds.

#### WEST SELECTED FOR "TIME 100: SCIENTISTS AND THINKERS"

SFI President and Distinguished Professor **Geoffrey West** has been selected for *Time* magazine's "Time 100: Scientists and Thinkers" category for 2006. This issue of *Time*, on newsstands May 1, includes stories about the lives and ideas of the world's 100 most influential people.

#### TSALLIS RECEIVES ORDER OF RIO-BRANCO FROM PRESIDENT OF BRAZIL

SFI Visiting Professor **Constantino Tsallis** has been awarded the Ordem do Rio Branco, one of Brazil's highest honors, by decision of the President and from the Ministry of Foreign Affairs. Constantino is the only scientist chosen for this distinction in recent years. The President of Brazil, **Luiz Inácio Lula da Silva**, presented the award on Thursday, April 20, 2006, in Brasilia. Since Constantino is at SFI, he was not present to accept. Also receiving this honor during the ceremony was **Michelle Bachelet Jeria**, President of Chile.

The Order of Rio Branco is bestowed annually on people who provide meritorious service to Brazil and for contributions to Brazilian studies. Founded in 1963, this award is named for the Baron de Rio Branco, the founder of the Brazilian diplomatic service.

#### SIM ALUMS GO TO COLLEGE

Three high school seniors and Summer Internship Mentorship Program (SIM) alums are going off to college next fall. **Dylan Allegretti**, Santa Fe Preparatory School, is going to the University of Chicago (math and physics); **Alexei Pesic**, Santa Fe Preparatory School, is going to Stanford University (biology); and **Matt Matson-Tibbetts**, Santa Fe Secondary School, is going to New Mexico Technical Institute (astrophysics and computer science or electrical engineering).

#### BOOK TO BECOME MOVIE

Former Visiting Researcher **Cormac McCarthy**'s book entitled *No Country For Old Men* is being produced as a movie. The Coen Brothers, Ethan and Joel, responsible for hit movies like "Fargo," "Raising Arizona," and "O Brother, Where Art Thou?" are gearing up to shoot the movie in New Mexico.

For more information, please see <http://www.cormacmccarthy.com/>

#### 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 given by **Michael Mauboussin**, Senior Vice President, Legg Mason Capital Management, Inc., with **John Miller**, Professor, Carnegie Mellon University and Santa Fe Institute.

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A special book signing of *More than You Know: Finding Financial Wisdom in Unconventional Places* will begin at 6:45 p.m. prior to the lecture, courtesy of Garcia Street Books.

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 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.

## BUELTEMAN FEATURED IN NEW MEXICO MAGAZINE

For a sampling of **Robert Buelteman's** electrifying images of flowers and leaves see the cover and article in the May 2006 issue of *New Mexico Magazine*. Also see Robert's work as part of an exhibition at the Gerald Peters Gallery in Santa Fe, June 9-July 4, 2006.

<http://www.nmmagazine.com/FEATURES/current.html>

## NEW ADDITION TO SFI FAMILY

SFI welcomes **Katherine Frew** who joined SFI April 24 as the Administrative Assistant, Business Network and Fund Development. Katherine (**Kay**) is a recent graduate of Indiana University where she received her B.A. in music (trumpet), and has administrative experience in the non-profit sector. Welcome Kay!

## BUSINESS NETWORK NEWS

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

## AGENT-BASED MODELING UPDATE

The annual Agent-Based Modeling and Simulation (ABMS) was held at Argonne National Labs April 24-28. The meeting provides an introduction to agent-based modeling techniques and their possible application in business scenarios. The first two days of the meeting provides an overview of agent-based models and the last three days are dedicated to hands-on tutorials

and applications. Among the many instructors were **Robert Axtell**, **Michael North** (Argonne National Laboratories), and **John T. Murphy** (University of Arizona). SFI Vice-President, **Chris Wood**, started the school with an overview of SFI science and the role of ABMS at SFI, past, present, and future.

## NOTES FROM THE INTERNATIONAL PROGRAM

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

## INTERNATIONAL FELLOW VISITS SFI

International Fellow **Jorge Velasco-Hernandez**, of the Instituto Mexicano del Petroleo, returned to SFI to continue his work in applied mathematics and biological processes.

## PUBLICATIONS

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

## WORKING PAPERS

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

06-04-013

Simple Models of Assortment through Environmental Feedback

*John W. Pepper*

## REFEREED LITERATURE

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

**Cooper, F.**, and **G. C. Nayak**. "Nonperturbative Gluon Pair Production from a Constant Chromo-Electric Field via the Schwinger Mechanism in Arbitrary Gauge." *Physical Review D* 7306(6) (2006): 1011-1015.

**Farmer, J. D.** "Comment on 'Large Stock Price Changes: Volume or Liquidity?'" by Weber and Rosenow. *Quantitative Finance* 6(1) (2006): 1-3.

**Hertel, J., M. Lindemeyer, K. Missal, C. Fried, A. Tanzer, C. Flamm, I. L. Hofacker, and P. F. Stadler.** "The Expansion of the Metazoan microRNA Repertoire." *BMC Genomics* 7 (2006): 1-15.

**Kuhnert, C., D. Helbing, and G. B. West.** "Scaling Laws in Urban Supply Networks." *Physica A—Statistical Mechanics and Its Applications* 363(1) (2006): 96-103.

**Morowitz, H. J., V. Srinivasan, and E. Smith.** "The Swiss Army Knife of Biological Catalysis — A Compact Toolkit of Organic Functional Groups." *Complexity* 11(3) (2006): 9-10.

**Moyano, L. G., C. Tsallis, and M. Gell-Mann.** "Numerical Indications of a  $q$ -Generalized Central Limit Theorem." *Europhysics Letters* 73(6) (2006): 813-819.

**Price, M. E.** "Monitoring, Reputation, and 'Greenbeard' Reciprocity in a Shuar Work Team." *Journal of Organizational Behavior* 27(2) (2006): 201-219.

**Samal, A., S. Singh, V. Giri, S. Krishna, N. Raghuram, and S. Jain.** "Low Degree Metabolites Explain Essential Reactions and Enhance Modularity in Biological Networks." *BMC Bioinformatics* 7 (2006): 15-24.

**Shalizi, C. R., R. Haslinger, J. B. Rouquier, K. L. Klinkner, and C. Moore.** "Automatic Filters for the Detection of Coherent Structure in Spatiotemporal Systems." *Physical Review E* 7303(3 PT 2) (2006): 79-94.

**Tirnakli, U., and C. Tsallis.** "Chaos Edges of  $z$ -Logistic Maps: Connection between the Relaxation and Sensitivity Entropic Indices." *Physical Review E* 7303(3 PT 2) (2006): 1068-1071.

**Valverde, S., G. Theraulaz, J. Gautrais, V. Fourcassie, and R. V. Solé.** "Self-Organization Patterns in Wasp and Open Source Communities." *IEEE Intelligent Systems* 21(2) (2006): 36-40.

**Wiley, D. A., S. H. Strogatz, and M. Girvan.** "The Size of the Sync Basin." *Chaos* 16(1) (2006): 355-362.

**Zuniga, R., A. Lucchetti, P. Galvan, S. Sanchez, C. Sanchez, A. Hernandez, H. Sanchez, N. Frahm, C. H. Linde, H. S. Hewitt, W. Hildebrand, M. Altfeld, T. M. Allen, B. D. Walker, B. T. Korber, T. Leitner, J. Sanchez, and C. Brander.** "Relative Dominance of Gag p24-Specific Cytotoxic T Lymphocytes is Associated with Human Immunodeficiency Virus Control." *Journal of Virology* 80(6) (2006): 3122-3125.

## 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>

### 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 Ballati** (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," Director: **Dr. Dan Rockmore**, Dartmouth College and SFI. 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), **Alan Perelson** (LANL and SFI). Held at the Santa Fe Institute.

### July 9 - August 4, 2006

Educational Program — "Complex Systems Summer School - Beijing," Co-directors: **Dr. David P. Feldman** (College of the Atlantic and SFI), and **Dr. 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.

## MAY VISITORS AND ARRIVALS

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

**Gil Benkoe** (5/28-6/24), Bioinformatics, University of Leipzig

**Ernesto Borges** (5/1-12), Chemical Engineering, Universidade Federal da Bahia

**Anne Buchanan** (5/7-13), Biological Anthropology, Penn State University

**Doug Erwin** (5/5-6/2), National Museum of Natural History, Smithsonian Institution

**Linda Henderson** (5/18-24), College of Professional Studies, University of San Francisco

**Richard Lewontin** (5/1-8), Museum of Comparative Zoology, Harvard University

**Harold Morowitz** (5/3-7/31), Krasnow Institute for Advanced Study, George Mason University

**Martina Morris** (5/7-13), Department of Sociology, University of Washington

**Luis Moyano** (5/1-7/31), Statistical Physics Group, Centro Brasileiro de Pesquisas Fisicas

**David Pines** (5/1-12), Institute for Complex Adaptive Matter, LANL

**Fabrice Saffre** (5/20-6/11), Pervasive ICT Research Centre, BT Group plc.

**Alan Swedlund** (5/7-13), Department of Anthropology, University of Massachusetts at Amherst

**Laurent Tambayong** (5/1-27), Institute for Mathematical Behavioral Sciences, University of California, Irvine

**Ken Weiss** (5/7-13), Anthropology and Biology, Penn State University

**Doug White** (5/1-20), Institute for Mathematical Behavioral Sciences, also Anthropology Department, University of California, Irvine

**Libby Wood** (5/19-21), Professor of Political Science, Yale University