

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

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

**NEW SFI WEBSITE**

SFI launched its new website [www.santafe.edu](http://www.santafe.edu) on December 22. The SFI community might be especially interested in the comprehensive descriptions of ongoing research at SFI. We will be continuing to improve the content of the website in the first half of this year and welcome feedback.

**BOWLES' RESEARCH ON THE EVOLUTION OF HUMAN ALTRUISM APPEARS IN SCIENCE**

In the December 8, 2006, edition of *Science*, **Samuel Bowles** (SFI Professor) published a model of the evolution of human altruism supported by genetic, archaeological, demographic, and climatic data. He shows how a genetic predisposition for genuine altruism—the willingness to sacrifice on behalf of other members of one's group—could have proliferated among our early human ancestors, in part due to lethal intergroup conflicts in which groups with more altruists tended to survive. The same issue of *Science* presents a commentary on the importance of Bowles' research by **Robert Boyd** (SFI External Faculty and UCLA Professor). Both the *New Scientist* and the *Scientific American* also carried stories describing Bowles' model and findings.

**PERELSON NAMED FELLOW OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE (AAAS)**

Three Los Alamos National Laboratory researchers have been named Fellows of the American Association for the Advancement of Science (AAAS): **Alan Perelson** (SFI External Faculty member), Alan Bishop, and Toni Taylor.

Perelson was named for his contributions to the field of mathematical immunology and particularly for studies of the dynamics of HIV infection and its transition to AIDS. He is leader of the Lab's Theoretical Biology and Biophysics Group, and a Senior Laboratory Fellow. He holds adjunct professorships in bioinformatics at Boston University, in biostatistics and computational biology at Rochester University, and in biology at the University of New Mexico. Perelson is also a Fellow of the American Academy of Arts and Sciences and an External Faculty member at SFI.

For more information on **Alan Perelson** and his colleagues please go to [http://www.lanl.gov/news/index.php/fuseaction/home.story/story\\_id/9527](http://www.lanl.gov/news/index.php/fuseaction/home.story/story_id/9527)

**SUMMER INTERNSHIP/MENTORSHIP STUDENTS HEADED TO MIT**

High school students **Luwen Huang** (Santa Fe High) and **Peer Hofstra** (Monte del Sol) who participated in the Santa Fe Institute Summer Internship/Mentorship (SIM) Program have been accepted (early admission) to MIT.

**SFI CHAIRMAN BILL MILLER HIGHLIGHTED IN FORTUNE MAGAZINE**

SFI Trustee and Chairman of the Board **Bill Miller**, of Legg Mason Capital Management, was highlighted in the November issue of *Fortune Magazine*. The article, "The Greatest Money Manager of our Time," noted Miller's close affiliation with SFI as well as SFI regulars such as **Murray Gell-Mann** (SFI Professor and Distinguished Fellow), **Geoffrey West** (SFI President and Distinguished Professor), and **Norman Johnson** (SFI Business Network and LANL) as well as SFI Trustees **Joy Covey**, **Gary Bengier**, **Jim Rutt**, and **David Weinberger**. The entire article is available online at [www.cnn.com/fortune/](http://www.cnn.com/fortune/).

### **"MORE THAN YOU KNOW" NAMED BEST BUSINESS BOOK OF 2006**

"More Than You Know: Finding Financial Wisdom in Unconventional Places," by SFI Trustee and Business Network Member **Michael Mauboussin**, was named one of *Business Week's* Best Business Books of 2006. Mauboussin, of Legg Mason Capital Management, writes, "You will be a better investor, executive, parent, friend—person—if you approach problems from a multidisciplinary perspective." The entire article is available online at [www.businessweek.com](http://www.businessweek.com).

In addition, *strategy+business* Magazine has named *More Than You Know* as well as *Origin of Wealth*, by **Eric Beinhocker** of McKinsey and Company, to its list of Best Business Books of 2006. *More Than You Know* is listed as *s+b's* Top Shelf Book and *Origin of Wealth*, is also highlighted under Economics, where Beinhocker is referred to as "a master synthesizer who packages 'big ideas' into accessible taxonomies and ecologies."

### **APPLICATIONS FOR 2007 REU PROGRAM NOW BEING ACCEPTED**

Applications are now being accepted for SFI's Research Experiences for Undergraduates (REU) program for the summer of 2007. Undergraduate students work with faculty mentors on individual research projects focused on some aspect of complex systems. Students will be in residence at SFI for ten weeks, and housing and partial board will be provided, at no cost to the student, at St. John's College. Interns will receive a modest stipend. Applications are due February 16, 2007. For program details and application information please see <http://www.santafe.edu/education/indexREUS.php>.

### **SFI WELCOMES NEW EMPLOYEE**

**Elisabeth Johnson** has recently joined SFI—from UCLA where she worked for over 20 years—as the new Senior Grants Manager. In this role she will be responsible for assisting faculty with identifying funding sources for their research programs, preparing and submitting proposals, and managing the post-award administration of research grants.

Elisabeth began her career at UCLA in Research Administration, negotiating and managing contracts and grants from a wide variety of sponsors, including government agencies, private foundations and industry.

### **BUSINESS NETWORK NEWS**

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

### **BUSINESS NETWORK FELLOWSHIP—TWO FELLOWSHIPS AVAILABLE IN 2007**

The Business Network is pleased to announce that two Fellowships will be available in 2007. The Fellowships are open to individuals from member companies of the Santa Fe Institute Business Network. The award supports up to four weeks of residency at SFI over a two-year period to pursue research congruent to the research of the Institute.

The application period for the 2007 Fellowship runs from January 1 – March 31, 2007. Application criteria and additional information are available online.

### **COMPLEX SYSTEMS SUMMER SCHOOL 2007**

Requests are now being accepted for Business Network representatives to take part in SFI's signature Complex Systems Summer School (CSSS) to be held June 3-29, 2007 at St. John's College in Santa Fe. Each company's primary representative is invited to request the total number of seats desired by **Friday, January 26** via email to Peg Shearer. Each interested company will be allowed at least one seat and additional slots will be allocated on a space-available basis in early February. There is no tuition fee to take part in CSSS, but Business Network participants are responsible for their own housing, both on- and off-campus. Business Network members must attend the entire four-week course.

Held each summer since 1988, CSSS provides an intensive four-week introduction to complex behavior in mathematical, physical, living, and social systems through an intensive series of lectures, laboratories, and discussion sessions focusing on foundational ideas, tools, and current topics in complex systems research. These topics include nonlinear dynamics and pattern formation, scaling theory, information theory and computation theory, adaptation and evolution, network structure and dynamics, adaptive computation techniques, computer modeling tools, and specific applications of these core topics to various disciplines. Additional information as well as information from past years' summer schools is available online.

### **NEW BUSINESS NETWORK MEMBER**

The Business Network is pleased to announce its newest member, HH Capital Partners LLC. **William Herrmann** is HH Capital's primary representative for the Business Network and he is based in Santa Fe, NM.

### **PUBLICATIONS**

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

### **WORKING PAPERS**

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

### **06-12-055**

"Insects, Trees, and Climate: The Bioacoustic Ecology of Deforestation and Entomogenic Climate Change"

*David Dunn and James P. Crutchfield*

**06-12-054**

“Topology and Evolution of Technology Innovation Networks”  
*Sergi Valverde, Ricard V. Solé, Mark Bedau, and Norman Packard*

**06-12-053**

“Self-Organization and Hierarchy in Open Source Social Networks”  
*Sergi Valverde and Ricard V. Solé*

**06-12-052**

“Unanimity Rule on Networks”  
*Renaud Lambiotte, Stefan Thurner, and Rudolf Hanel*

**06-12-051**

“Adaptive Dynamics for Interacting Markovian Processes”  
*Yuzuru Sato and Nihat Ay*

**06-12-050**

“Life Cycle of a Minimal Protocell -- A Dissipative Particle Dynamics (DPD) Study”  
*Harold Fellermann, Steen Rasmussen, Hans Ziock, and Ricard Solé*

**06-12-049**

“Evolutionary Self-Organization in Complex Fluids”  
*John McCaskill, Norman Packard, Steen Rasmussen, and Mark Bedau*

**06-12-048**

“Collective Intelligence for Decision Support in Very Large Stakeholder Networks: The Future US Energy System”  
*Steen Rasmussen, Diana Mangalagiu, Hans Ziock, Johan Bollen, and Gordon Keating*

**06-12-047**

“Metabolic Photo-Fragmentation Kinetics for a Minimal Protocell: Rate Limiting Factors, Efficiency, and Implications for Evolution”  
*Chad Knutson, Gil Benko, Tristan Rocheleau, Fouzi Mouffouk, and Jerzy Maselko*

**REFEREED LITERATURE**

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

**Abers, D. J., and J. C. Sprott.** “Routes to Chaos in High-Dimensional Dynamical Systems: A Qualitative Numerical Study.” *Physica D—Nonlinear Phenomena* 223(2) (2006): 194-207.

**Albers, D. J., J. C. Sprott, and J. P. Crutchfield.** “Persistent Chaos in High Dimensions.” *Physical Review E* 7405(5 PT 2) (2006): 540-543.

**Bansal, S., B. Pourbohloul, and L. A. Meyers.** “A Comparative Analysis of Influenza Vaccination Programs.” *PLOS Medicine* 3(10) (2006): 1816-1825.

**Bowles, S.** “Group Competition, Reproductive Leveling, and the Evolution of Human Altruism.” *Science* 314(5805) (2006): 1569-1572.

**Kriete, A., B. A. Sokhansanji, D. L. Coppock, and G. B. West.** “Systems Approaches to the Networks of Aging.” *Ageing Research Reviews* 5(4) (2006): 434-448.

**Marsh, J. A., M. A. Fuentes, L. G. Moyano, and C. Tsallis.** “Influence of Global Correlations on Central Limit Theorems and Entropic Extensivity.” *Physica A—Statistical Mechanics and Its Applications* 372(2) (2006): 183-202.

**Merlo, L. M. F., J. W. Pepper, B. J. Reid, and C. C. Maley.** “Cancer as an Evolutionary and Ecological Process.” *Nature Reviews Cancer* 6 (2006): 924-935.

**Warrender, C., S. Forrest, and F. Koster.** “Modeling Intercellular Interactions in Early Mycobacterium Infection.” *Bulletin of Mathematical Biology* 68(8) (2006): 2233-2261.

### **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>

#### **January 2-4, 2007**

Working Group — “The Co-evolution of Behaviors and Institutions,” organized by **Sam Bowles** (SFI). Held at the Santa Fe Institute.

#### **January 4-6, 2007**

Workshop — “Dynamic Structure of Robustness,” organized by **Erica Jen** (SFI) and **Michelle Girvan** (SFI). Held at the Santa Fe Institute.

#### **January 9-11, 2007**

Meeting — “SFI-NREL Energy Meeting,” organized by **Geoffrey West** (SFI) and **Dan Avizu** (National Renewable Energy Laboratory NREL). Held at the Santa Fe Institute.

#### **January 26-27, 2007**

Meeting — “Annual MURI Meeting,” organized by **Scott E. Page** (SFI & University of Michigan) and **Whitman Richards** (Northwestern University). Held at the Santa Fe Institute.

#### **February 7, 2007**

Public Lecture — “More Than Pretty Pictures: The Power of Images in Science,” **Felice Frankel** (Harvard University, Envisioning Science Program) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

#### **February 12-13, 2007**

Working Group — “Ecosystem Models,” organized by **Carlos Castillo-Chavez** (Arizona State University). Held at the Santa Fe Institute.

**February 15-18, 2007**

Working Group — “The Inheritance of Inequality in Pre-modern Societies,” organized by **Sam Bowles** (SFI). Held at the Santa Fe Institute.

**March 1-3, 2007**

Working Group — “The Continued Study of Language Acquisition and Evolution,” organized by **John Holland** (SFI & University of Michigan, Ann Arbor). Held at the Santa Fe Institute.

**March 1-4, 2007**

Workshop — “Deception: Methods, Motives, Contexts & Consequences,” organized by **Brooke Harrington** (Brown University). Held at the Santa Fe Institute.

**March 14, 2007**

Public Lecture — “The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies,” **Scott E. Page** (SFI & University of Michigan - Complex Systems, Political Science & Economics) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**April 18, 2007**

Public Lecture — “Inevitable Life?” **D. Eric Smith** (SFI - Frontiers in Integrative Biological Research Program) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**May 4-5, 2007**

Meeting — “Annual Science Board Meeting and Symposium,” organized by **Geoffrey West** and **Chris Wood** (SFI), and Science Board Co-Chairs **David Campbell** (Boston University) and **Simon Levin** (Princeton University). Held at the Santa Fe Institute.

**May 9, 2007**

Public Lecture — “New Mexico's Renewable Energy Future,” **Ben Luce** (Los Alamos National Laboratory; Director - New Mexico Coalition for Clean Affordable Energy) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**June 1 - August 15, 2007**

Educational Program — “NSF Undergraduate Internship Program,” organized by **Geoffrey West** (SFI). Held at the Santa Fe Institute.

**June 3-19, 2007**

Educational Program — “Complex Systems Summer School 2007 - Santa Fe,” Director: **Daniel Rockmore** (SFI & Dartmouth College). Held at St John's College, Santa Fe & the Santa Fe Institute.

**June 13, 2007**

Public Lecture — “Stylish Mathematics,” **Dan Rockmore** (SFI & Dartmouth College, Mathematics) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**June 19-21, 2007**

Workshop — “Nucleic Acid: The First Billion Years,” organized by **Harold Morowitz** (George Mason University), **D. Eric Smith** (SFI), **Shelley Copley** (University of Colorado) and **Nigel Goldenfield** (University of Illinois). Held at the Santa Fe Institute.

**July 8-21, 2007**

Educational Program — “Graduate Workshop in Computation, Social Science Modeling and Complexity,” organized by **John Miller** (SFI & Carnegie Mellon University) and **Scott E. Page** (SFI & University of Michigan). Held at St John's College, Santa Fe & the Santa Fe Institute.

**July 8 - August 4, 2007**

Educational Program — “Complex Systems Summer School 2007 - Beijing,” Co-directors: **David P. Feldman** (SFI & College of the Atlantic) 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 25, 2007**

Public Lecture — “Sexual Violence during War,” **Elisabeth Wood** (SFI & Yale University, Political Science) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**August 15, 2007**

Public Lecture — “Investor Behavior and Market Efficiency,” **Terrance Odean** (Haas School of Business, University of California at Berkeley) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**September 11, 12, & 13, 2007**

Fourteenth Annual Ulam Memorial Lecture Series — “Twenty First Century Climate,” **Daniel Schrag** (Harvard University, Laboratory for Geochemical Oceanography) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**November 14, 2007**

Public Lecture — “Technology Creating Technology,” **W. Brian Arthur** (SFI & Intelligent Systems Lab, PARC) organized by **Ginger Richardson** (SFI). Held at the James A. Little Theater, New Mexico School for the Deaf.

**JANUARY VISITORS AND ARRIVALS**

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

**Lee Altenberg** (1/2-16), Dept of Information and Computer Sciences, University of Hawaii at Manoa.

**Sam Bowles** (1/2-3/14), Research Faculty, Santa Fe Institute.

**Raffaele Calabretta** (1/1-14), Autonomous Robotics and Artificial Life, Institute of Cognitive Sciences and Technologies.

**David Chen** (1/8-10), Cognition and Neuroscience, University of Missouri-Columbia.

**Simone D'Alessandro** (1/28-2/25), Economics, University of Pisa.

**Charles Efferson** (1/1-3/21), Postdoctoral Fellow, Santa Fe Institute.

**Doug Erwin** (1/12-17), National Museum of Natural History, Smithsonian Institution.

**Humberto Llavador** (1/8-11), Economics and Business, Universitat Pompeu Fabra.

**Suresh Naidu** (1/2-14), Department of Economics, University of California-Berkeley.

**John Roemer** (1/8-11), Political Science, Yale University.

**Bob Rowthorn** (1/1-13), Applied Economics, University of Cambridge.

**Steven Schwager** (1/13-21), Biological Statistics and Computational Biology, Cornell University.

**Rajiv Sethi** (1/1-16), Department of Economics, Columbia University.

**Cosma Shalizi** (1/9-15), Center for the Study of Complex Systems, University of Michigan.

**Carlos Sickert** (1/15-2/15), Instituto de Sociología, Universidad Católica de Chile.

**Joaquim Silvestre** (1/8-11), Economics, University of California-Davis

**Georgiy Starostin** (1/15-2/15), Center of Comparative Linguistics, Russian State University.

**Gerald Sussman** (1/1-6), Electrical Engineering and Computer Science, Massachusetts Institute of Technology.

**Sander van Doorn** (1/2-1/1/2008), Postdoctoral Fellow, Santa Fe Institute.

**Libby Wood** (1/2-3/14), Professor of Political Science, Yale University.