

The Bulletin of the Santa Fe Institute is published by SFI to keep its friends and supporters informed about its work. The Santa Fe Institute is a private, independent, multidisciplinary research and education center founded in 1984. Since its founding, SFI has devoted itself to creating a new kind of scientific research community, pursuing emerging synthesis in science. Operating as a visiting institution, SFI seeks to catalyze new collaborative, multidisciplinary research; to break down the barriers between the traditional disciplines; to spread its ideas and methodologies to other institutions; and to encourage the practical application of its results.

Published by the Santa Fe Institute  
1399 Hyde Park Road  
Santa Fe, New Mexico 87501, USA  
phone (505) 984-8800  
fax (505) 982-0565

home page: <http://www.santafe.edu>  
Note: The SFI Bulletin may be read at the website:

<http://www.santafe.edu/bulletin.html>

If you would prefer to read the Bulletin on your computer rather than receive a printed version, contact

Patrisia Brunello at 505/984-8800, Ext. 2700  
or [pdb@santafe.edu](mailto:pdb@santafe.edu).

**EDITORIAL STAFF:**

Ginger Richardson  
Lesley S. King  
Andi Sutherland

**Contributors:**

Jessica Flack  
David Krakauer  
Kathleen Raphael  
Dan Rockmore  
Barbara Elizabeth Stewart  
Janet Stites  
James Trefil

**Design & Production:**

Paula Eastwood  
[www.eastwooddesignsf.com](http://www.eastwooddesignsf.com)

**Contributors:**

Patrick McFarlin  
Kip Malone

# Bold Irreverence Meets Humble Respect

By Geoffrey West, President

**The Santa Fe Institute** has been very much in the news this year. The latest is a recent feature article in *Fortune* magazine highlighting SFI Board of Trustees Chairman Bill Miller in which he generously credits the Institute for some of his most important business insights. Earlier, in October, *Wired* magazine boldly stated that “Since its founding in 1984, the nonprofit research center (SFI) has united top minds from diverse fields to study cellular biology, computer networks, and other systems that underlie our lives. The patterns they’ve discovered have illuminated some of the most pressing issues of our time and, along the way, served as the basis for what’s now called the science of complexity.” Incidentally, this praise appeared in an article featuring our distinguished “writer-in-residence” Cormac McCarthy!

The observation echoes a remark by the well-known science-writer Philip Ball (a past editor of *Nature*), who wrote in his 2004 book *Critical Mass* that SFI is “...the center of the intellectual universe for any researcher interested in complex interacting systems, whether in physics, biology, geophysics, social science, or anything else.” Indeed, our research and, in particular, our leadership in transdisciplinary science, is featured in many recent books, several by SFI authors. Notable among these are Michael Mauboussin’s *More Than You Know* and Eric Beinhocker’s *The Origin of Wealth*, both named by *strategy + business Magazine* as two of the three “Best Business Books: Economics” in 2006, while *More than you Know* was also named by *Business Week* as one of the “Best Business Books of 2006.”

Meanwhile, our researchers continue to claim prestigious awards and accolades. Among these were Lisa Curran, who was awarded a MacArthur Fellowship, and David Sherrington, who won the 2007 Dirac Medal and Prize of the Institute of Physics. In addition, I was named one of *Time Magazine*’s “100 Most Influential

People in the World.” Although embarrassingly hyperbolic, it reflects as much, if not more, about the accomplishments of the Institute than it does about anything I have contributed. It is a marvelous recognition of how far we’ve come in establishing the crucial role of transdisciplinary thinking and complexity science in addressing some of the most important and challenging problems facing science and society. SFI has been and remains the leader in this hugely important paradigm shift.

Although SFI is dedicated to risk-taking and supporting more speculative investigation, our researchers continue to be published and recognized in leading scientific journals. For example, in 2006 we had 20 articles in *Nature* and *Science*, arguably two of the most important scientific journals in the world. I could fill another page with similar kinds of accolades attesting to the extraordinary impact SFI has had, and continues to have. Despite this, however, we must continually look to the future.

In this issue of the *Bulletin*, we look at some of those efforts that are casting out into the future. One area that some of us have been thinking about is that of aging and mortality. Can we conceive of an integrated, comprehensive theory of “aging” as a general concept that unifies the aging of rocks, the planet, the solar system, and the cosmos, with the aging of airplanes, bridges, cities, societies, and, of course, biological organisms—especially ourselves? In a similar vein, an effort was begun last summer under the leadership of David Krakauer to bring together the many disparate threads in the medical world and begin an exploration of establishing a “science-based” unified theory of medicine.

As all of these examples illustrate, the work at SFI goes far beyond theorizing, whether in the realm of finance or biomedicine. That’s what makes our way of doing science so extraordinary. The interdisciplinary approach combines the best of abstraction in the form of theory with cutting-edge research in the field and laboratory; researchers such as Doug Erwin and Henry

Wright, profiled in this issue, exemplify such an approach as they traverse the globe. Like all the scientists affiliated with SFI, they work with a seemingly contradictory combination of

bold irreverence and humble respect for the rules that govern science, systems, and academia.

That combination is particularly important in today’s environment of urgency in scientific research around the pressing problems of climate change, violence, terrorism, epidemics, and pandemics. Through exploring such problems, we have learned how important it is to recognize that perturbing one part of a system may have catalytic or destructive implications in another part of the system. While many universities expound the virtues of interdisciplinary research and developing systemic approaches to problems, the realities of today’s complex funding picture make such an approach challenging for even the most dedicated researcher in the most prestigious university.

The problems before us are profound, and we at SFI are both humbled and energized by the challenges they pose. This year, we’re dedicated to attracting even more top minds that possess the confidence and intelligence to challenge existing paradigms in a deep and thoughtful manner. We will continue to build bridges to other scientific institutions and initiatives and see ourselves as a vitally important node in an extended global network of dedicated scientists.

I hope that you will join us as part of our core constituency this year. Contributions to the Unrestricted Fund support the heartbeat of SFI and are vitally important. If you would like to be more involved, either as a member of the President’s or Chairman’s Circle, or through a targeted gift, I would be pleased to speak with you personally. ◀

