



BUCKMINSTER FULLER INSTITUTE
BFI.ORG

DESIGN SCIENCE NEWS

Welcome to Vol. 8 No. 9 of Design Science News, the e-bulletin of the Buckminster Fuller Institute

Design Science News brings you news from around the world related to humanity's option for success and comprehensive design science. It also features updates from BFI and periodic special offers for our members.

Buckminster Fuller Challenge call for entries



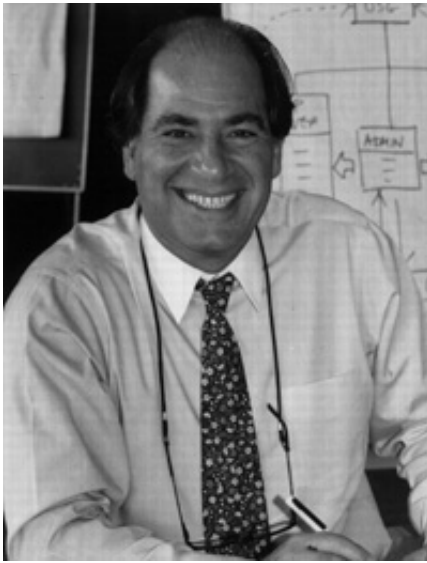
Catalyzing the vanguard of a design science revolution

The Buckminster Fuller Institute has announced a call for entries to THE BUCKMINSTER FULLER CHALLENGE, an international design science competition which seeks to confer a prize of \$100,000 to a single winning solution.

Prize monies will be awarded in June 2008 to support the development and implementation of a solution that has significant potential to solve humanity's most pressing problems in the shortest possible time while enhancing the Earth's ecological integrity.

The official Entry Form is now available at the [Challenge website](#).

Design Science and the Challenge of Sustainability



A weekend seminar, conducted by Dr. Michael Ben-Eli, exploring the legacy of Buckminster Fuller, the relevance of Fuller's Design Science and the Five Core Principles of Sustainability.

Dates: November 17th & 18th, 2007

Location: Helen Mills Theater, 137 West 26th St., NYC

The Buckminster Fuller Institute is pleased to offer the professional community a weekend-long seminar with Dr. Michael Ben-Eli, a close collaborator of Buckminster Fuller. Dr. Ben-Eli is an international consultant on management and organization with extensive experience in the use of systems thinking and cybernetics in planning and problem solving. Registration is limited, click [here](#) for program details and to register.

Group rates are available — if two or more people from your organization would like to attend, please contact Matt Barron at [mbarron \(at\) bfi \(dot\) org](mailto:mbarron@bfi.org) or (718) 290 9284 for further details.

Store Special: BFI Tote Bag \$19.95



We are featuring our 100% organic cotton BFI Tote Bag for sale this month for \$19.95! To purchase a bag for yourself or a friend, visit: [Dymaxion Artifacts](#)

TRENDS & PERSPECTIVES

The power of voluntary actions



Dismissing the importance of small personal behavior choices in favor of a sole focus on policy changes is a big mistake. Small behaviors are important not only for the direct environmental impact they have, but because they often lead to more and more pro-environmental behaviors over time. Research shows that personal action and political action to protect the environment go hand in hand, rather than undermining each other. When people do something like buy a more expensive and perhaps less aesthetically pleasing compact fluorescent lightbulb, they justify it to themselves and others. This tends to result in changes in their self-perceptions (I am a person who cares about fighting global warming), their beliefs (global warming is a really important problem), and how others see them (they really care about the environment).

The more people voluntarily engage in pro-environmental behaviors and justify it themselves and others, the more it creates social pressure to do good things for the environment. Numerous psychological studies have shown that people are more likely to agree to take a big action if they've previously agreed to smaller, similar actions. Thus, changing a light bulb may lead to higher impact behaviors like giving up plastic water bottles, insulating one's house, living closer to work, reducing meat consumption, and actively supporting legislation that will likely require personal sacrifice. When ExxonMobil hears about people changing lightbulbs and buying Priuses, they should expect public policy changes to follow. (Source: [Grist](http://gristmill.grist.org/story/2007/9/11/13338/9554/?source=weekly))

<http://gristmill.grist.org/story/2007/9/11/13338/9554/?source=weekly>

Sunny outlook: can sunshine provide all U.S. electricity?

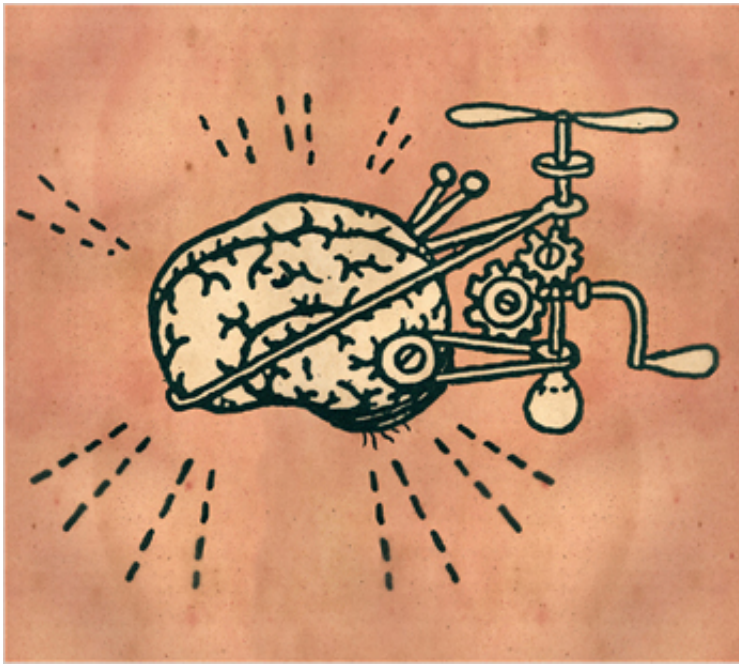


In the often cloudless American Southwest, the sun pours more than eight kilowatt-hours* per square meter of its energy onto the landscape. Vast parabolic mirrors in the heart of California's Mojave Desert concentrate this solar energy to heat special oil to around 750 degrees Fahrenheit (400 degrees Celsius). This hot oil transfers its heat to water, vaporizing it, and then that steam turns a turbine to produce electricity. All told, nine such mirror fields, known as concentrating solar power plants, supply 350 megawatts of electricity yearly.

In the face of mounting concern about climate change, alternatives to coal and natural gas combustion such as these never seemed more attractive. And with the bounty of the sun waiting to be captured near fast-growing major centers of electricity consumption — Las Vegas, Los Angeles and Phoenix, among others — interest in such solar thermal technology is on the rise. The first such plant to be built in decades started providing 64 megawatts of electricity to the neon lights of Vegas this summer. (Source: [Scientific American](http://tinyurl.com/2hvwcx))

<http://tinyurl.com/2hvwcx>

An oracle for our time, part man, part machine



In the 12th century A.D., when the Arabic treatise *On the Hindu Art of Reckoning* was translated into Latin, the modern decimal system was bestowed on the Western world — an advance that can best be appreciated by trying to do long division with Roman numerals. The name of the author, the Baghdad scholar Muhammad ibn Musa al-Khwarizmi, was Latinized as *Algoritmi*, which mutated somehow into *algorismus* and, in English, *algorithm* — meaning nothing more than a recipe for solving problems step by step.

It was the Internet that stripped the word of its innocence. Algorithms, as closely guarded as state secrets, buy and sell stocks and mortgage-backed securities, sometimes with a dispassionate zeal that crashes markets. Algorithms promise to find the news that fits you, and even your perfect mate. You can't visit Amazon.com without being confronted with a list of books and other products that the Great *Algoritmi* recommends.

Its intuitions, of course, are just calculations — given enough time they could be carried out with stones. But when so much data is processed so rapidly, the effect is oracular and almost opaque. Even with a peek at the cybernetic trade secrets, you probably couldn't unwind the computations. As you sit with your eHarmony spouse watching the movies Netflix prescribes, you might as well be an avatar in *Second Life*. You have been absorbed into the operating system.

Last week, when executives at MySpace told of new algorithms that will mine the information on users' personal pages and summon targeted ads, the news hardly caused a stir. The idea of automating what used to be called judgment has gone from radical to commonplace. (Source: [The New York Times](#) may require free registration)

<http://tinyurl.com/2bwpwo>

Power harnessed one step at a time



In the push to harvest alternative energy, scientists have tapped a number of novel sources: the sun, corn, old cooking oil. But how about the simple act of walking?

For two architecture students at the Massachusetts Institute of Technology in Cambridge, Mass., the sound of footsteps is an echo of energy gone to waste. They figure that the stomp of every footfall gives off enough power to light two 60-watt bulbs for one second.

"Now imagine how many people walk through a train station each morning, or walk down the street in Hong Kong," says James Graham, who, with fellow MIT graduate student Thaddeus Jusczyk, is helping to develop the growing field of "crowd farming."

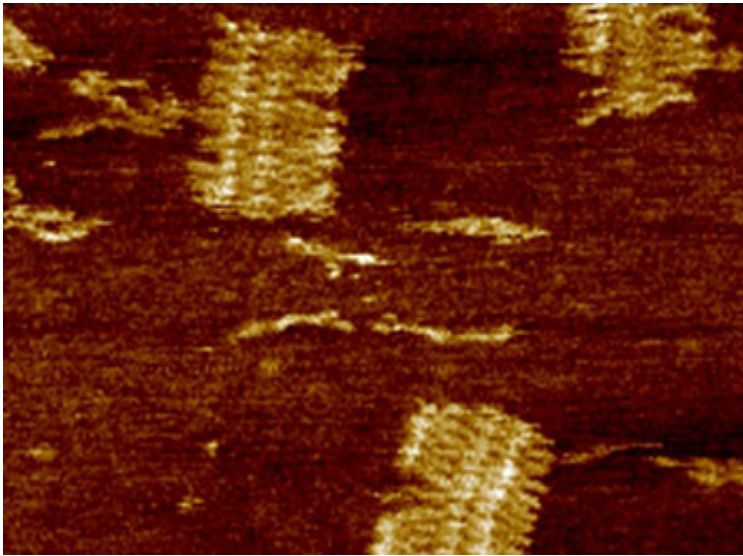
They devised a special floor of sliding blocks that can turn motion energy (such as from a footstep) into electrical energy. As commuters march across the floor, it would collect tiny flickers of power from each stride and channel that energy.

According to their design — which this summer won a prestigious award from the Holcim Foundation for Sustainable Construction in Zurich, Switzerland — 28,527 footsteps could power a train for one second — 84,162,203 paces could launch a space shuttle.

The problem with their plan: Right now, it only exists on paper. But others have developed real-world examples of plugging into people power. Over the past few years there's been a boom in technology that harnesses piezoelectricity — the science of drawing power from mechanical stress, including motion. While the crowd-farming push has its critics, the discipline is growing, and businesses are signing on. (Source: [Christian Science Monitor](http://www.csmonitor.com/2007/0926/p14s02-stgn.html))

<http://www.csmonitor.com/2007/0926/p14s02-stgn.html>

Scientists amass "bar codes" with information on species



To help shoppers avoid mislabeled toxic puffer fish and pilots steer clear of birds, federal agencies are starting to draw on an ambitious project that is gathering DNA "bar codes" for the Earth's 1.8 million known species.

A consortium of scientists from almost 50 nations is overseeing the building of a global database made from tiny pieces of genetic material. Called "DNA barcoding," the process takes a scientist only a few hours in a lab and about \$2 to identify a species from a tissue sample or other piece of genetic material.

David Schindel, a Smithsonian Institution paleontologist and executive secretary of the Consortium for the Barcode of Life, said the purpose is to create a global reference library — "a kind of telephone directory for all species."

"If I know that gene sequence, I can submit it as a query to a database and get back the telephone number," he said. "I can get back the species name."

The government's interest in the project stems from a variety of possible uses. The Food and Drug Administration has begun eyeing it as a tool to ferret out hazardous fish species and to confirm a type of leech used in some surgery. In May, the FDA used it to warn that a shipment labeled monkfish from China might actually be a type of puffer fish that could contain a deadly toxin if not prepared properly.

The Federal Aviation Administration and Air Force said they hope it will help them identify birds prone to collide with aircraft. The National Oceanic and Atmospheric Administration sees it as a means to track commercial fish and reduce killing of unwanted species also caught by nets. (Source: [Baltimore Sun](http://www.baltimoresun.com/news/health/baltimore.barcoding15sep15.0.3943834.story))

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RESOURCES

o2 Global Network: the international network on sustainable design



o2 Global Network is an informal network for anybody interested in sustainable design.

Network members are involved in industrial design, architecture, styling, graphic design, fashion, innovation and the arts. Included as well are people from academies, universities, public authorities, private companies, NGOs and knowledge centers.

[o2 Global Network](#)

Video from 2005 "Synergetics in the Arts Symposium" now online

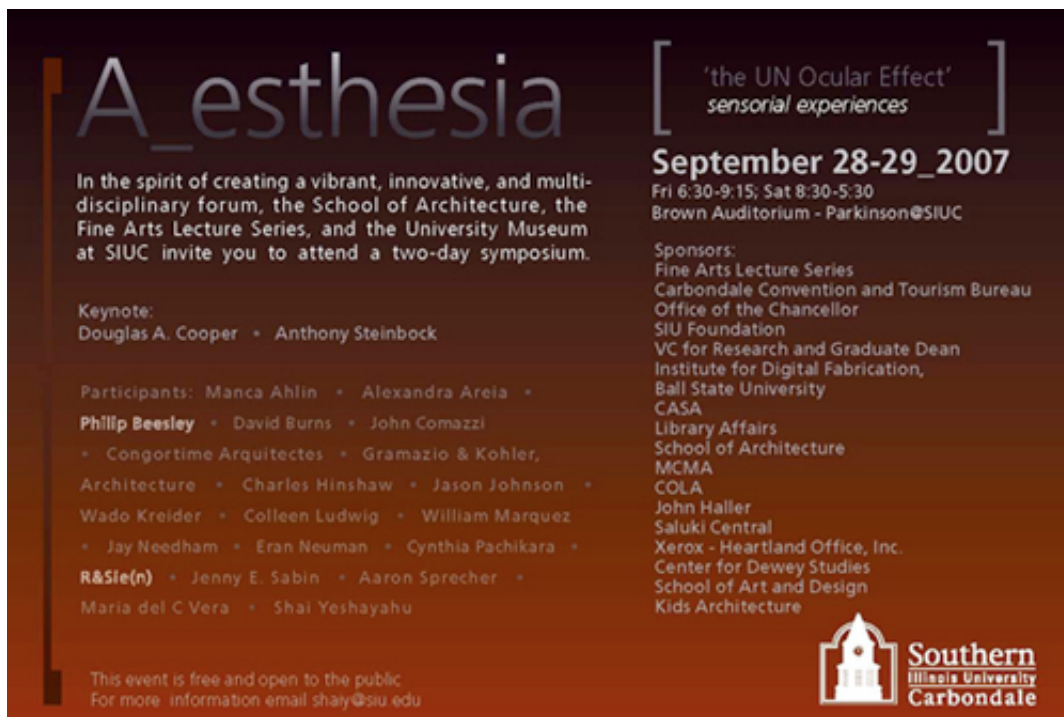


Dr. Donald Ingber presented a talk on "The Relevance of Tensegrity Architecture for Biology and Medicine" at the Synergetics Collaborative Fall 2005 Symposium on "Synergetics in the Arts" at the Noguchi Museum.

A video excerpt of Ingber's talk is now available for download (note: it is a large 12MB QuickTime movie): [Download the video \(12mb\)](#)

EVENTS

[A]esthesis



Aesthesia ['the UN Ocular Effect' sensorial experiences]

September 28-29, 2007
 Fri 6:30-9:15; Sat 8:30-5:30
 Brown Auditorium - Parkinson@SIUC


In the spirit of creating a vibrant, innovative, and multi-disciplinary forum, the School of Architecture, the Fine Arts Lecture Series, and the University Museum at SIUC invite you to attend a two-day symposium.

Keynote:
 Douglas A. Cooper • Anthony Steinbock

Participants: Manca Ahlin • Alexandra Areia • Philip Beesley • David Burns • John Comazzi • Congortime Arquitectes • Gramazio & Kohler, Architecture • Charles Hinshaw • Jason Johnson • Wado Kreider • Colleen Ludwig • William Marquez • Jay Needham • Eran Neuman • Cynthia Pachikara • R&Sle(n) • Jenny E. Sabin • Aaron Sprecher • Maria del C Vera • Shai Yeshayahu

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 Kids Architecture

This event is free and open to the public.
 For more information email shay@siu.edu

 Southern Illinois University Carbondale

[A]esthesia

Curated by Shai Yechayahu-Sharabi

September 14 - October 26

Reception: Friday, September 28, 8:15 - 9:15 p.m.

Mitchell Gallery — Southern Illinois University, Carbondale

"The ability to feel and perceive — Aesthesia" is the idea behind SIUC Architecture's Shai Yeshayahu's group exhibit and symposium. Working in a multi disciplinary forum with the ideas of John Dewey, R. Buckminster Fuller and John McHale and the ideas of invited scholars from many disciplines, the exhibit will feature original works that respond to physical needs and relationships in building and living. The exhibit will run from September 14 — October 26. The Symposium will take place September 28-29. For additional information, contact Shai Yeshayahu at [shaiy\(at\)siu\(dot\)edu](mailto:shaiy(at)siu(dot)edu) or (618) 453-3734.

NYC Uban Design Competition



Mayor Michael R. Bloomberg and Office of Emergency Management (OEM) Commissioner Joseph F. Bruno today (September 27th, 2007) launched the "What If New York City" housing design competition, which seeks innovative approaches to sheltering victims in the aftermath of a disaster. If a catastrophe impacted New York City, thousands of residents would be displaced from their homes. Because fully rebuilding communities could take several years, so the competition seeks designs for the provisional housing that could be used in the interim. The competition scenario focuses on a fictional neighborhood called Prospect Shore that has just been hit by a Category 3 hurricane, leaving 38,000 families without housing. Entrants are asked to design a provisional housing plan for the community that could be used by emergency planners in real life. The judging criteria recognize that traditional post-disaster housing, such as mobile homes, is not suitable for New York City's high population density and concentrated infrastructure. The competition is being sponsored by OEM, the Rockefeller Foundation, and Architecture for Humanity — New York.

[Visit the competition website](#)

[Download the full press release \(pdf 97kb\)](#)

Have you come across interesting Design Science news articles, resources, or events?

We invite you to forward them so we can consider them for inclusion in future e-bulletins. Send them to: [designsciencenews \(at\) bfi.org](mailto:designsciencenews(at)bfi.org)

If we use your suggestion for future e-bulletins and you would like to be credited by name, please indicate it in your e-mail.

Thank You!

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