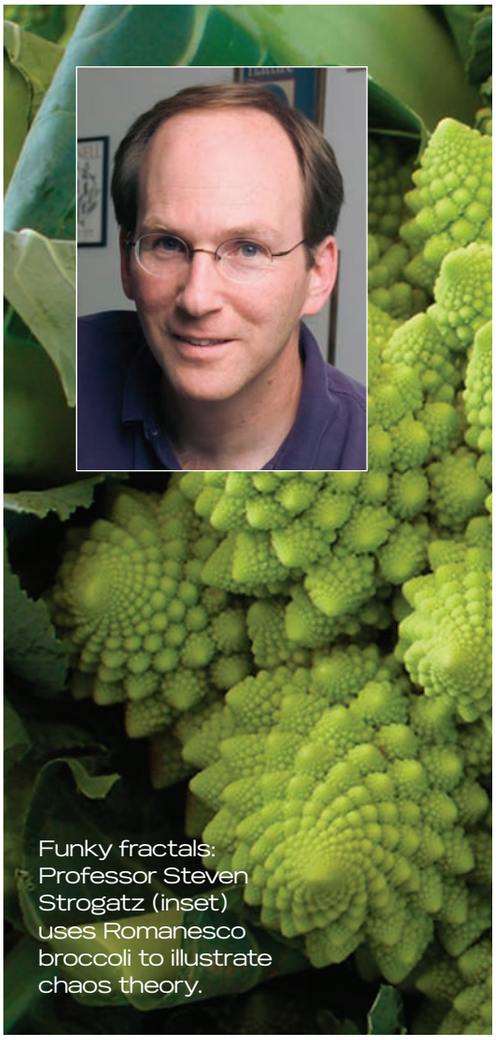
PROVIDED BY JOHANNES LEHMANN

What's cooking: Because biochar is made in low-tech stoves, the process is feasible for the developing world.

nentially, with a direct correlation to temperature. Pull some of that carbon from the atmosphere, the thinking goes, and the rate of climate change will slow. That's why we plant trees: photosynthesis traps carbon dioxide. But when they die and decompose—or humans fell and burn them—they release that CO_2 along with other greenhouse gases. Enter pyrolysis, which chemically locks away carbon as well as the nitrous oxide and methane released in aerobic decomposition.

In January 2008, *Environmental Science & Technology* published Lehmann's calculation that unlike corn-based ethanol, the net benefit of heat generated in making biochar—combined with the carbon sequestration and emissions reductions from using the end product as a soil amendment—exceeds the energy consumed in its production. In December, Lehmann traveled to Poland for the United Nations Framework Convention on Climate Change; in January, another member of his team heads to Kenya to refine low-emission cookstoves that rely on pyrolysis instead of combustion, decreasing indoor air pollution. "We claim we can use the same amount of fuel as a traditional stove, cook the same amount of food, and retain half of the carbon as biochar to return to the soil," Lehmann says. "It makes better use of resources, with a positive effect on health."

— *Sharon Tregaskis '95*



Funky fractals: Professor Steven Strogatz (inset) uses Romanesco broccoli to illustrate chaos theory.

Order Out of Chaos

Professor tapped to explain complex theory on DVD

When Steven Strogatz explains chaos theory to a lay audience, he picks up a head of broccoli. The applied math professor uses the vegetable as an example of a fractal—a geometric structure in which the constituent parts are an exact replica of the larger object. Chaos theory, Strogatz explains, is not only about how small disturbances can lead to massive unpredictability, but also about discovering order and patterns within complex systems.

The broccoli example and other lessons have been collected on *Chaos*, a new DVD comprising two dozen of Strogatz's half-hour lectures on chaos theory. It was produced by the Teaching Company, a Virginia-based firm that offers prerecorded adult-education courses taught by college

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professors whom it has identified as being in the top 1 percent of their field based on teaching awards, evaluations, and other sources. Strogatz, the first Cornell professor tapped by the company, uses some 150 visuals to make chaos theory accessible to people with little background in science or math. Chaos, he explains, is most commonly associated with the "butterfly effect"—the concept that a butterfly flapping its wings in one part of the world could create a tornado elsewhere on the globe—but it also manifests itself everywhere from the stock market to heart arrhythmias. "There are so many complicated systems in the world that traditional science has a lot of trouble making sense of, and especially making predictions about," says Strogatz. "Chaos theory gives us hope of understanding things that previously seemed hopeless, irregular, and unpredictable."

— Jamie Leonard '09

Manners Matter

In today's casual society, one professor is a standard-bearer for proper etiquette

You're a business executive, waiting for an interviewee to join you for a recruiting lunch, when the young man walks through the door and extends his hand. He is wearing a crisp suit—and a baseball cap.

Brian Earle '67, MPS '71, a senior lecturer emeritus in communication, has dozens of such anecdotes—stories that have prompted him to teach the rules of etiquette, battling what he calls a diminishing emphasis on manners in today's society. "Families used to have dinners where everyone sat down; parents taught guidelines and were role models," Earle

says. "Now, kids run home after practice, grab a bite to eat, and head out the door. Everyone eats on their own schedule, and it's rare to find the kinds of family dinners that used to give more instruction." Earle's etiquette career started twenty-five years ago, as a lecture in his Business and Professional Presentation class. Says Earle: "I began getting more and more questions from students who had second interviews over lunch: 'What do I do with my hands?' or 'What do I do with the wine?'"

Since table manners can be so important in the business world, for years Earle held the final exam for one of his comm classes as a dinner meeting for a made-up company, Cornell Communication Consultants. Each student had a different role in the firm and had to give a presentation—but that wasn't the sole source of their grade. Though they didn't know it, they were under particular scrutiny by Earle and his TAs. "We watched how they behaved," Earle says. "If someone was drinking beer out of a bottle, or if they began to eat before I did, that was a 'ding.' We even had the restaurant turn up the heat and the Muzak so they had to deal with that as well."

Earle notes the rise of a new source of potential workplace *faux pas*—online etiquette, or "netiquette." Today's twenty-somethings, with a cell phone in one hand and an iPod in the other, are continually connected to the Internet and to each other—and the emergence of text-messaging and truncated online language has led to impersonality and even rudeness in e-mail communication. "The older generation has been schooled in a more particular and specific etiquette," says Earle, noting that the niceties of formal letter-writing are often lost on the Web. "The Internet equalizes the differentials, such as socioeconomic status, that used to be there."

Alison Wollenberg '09, who took Earle's class two years ago, says that learning about etiquette has made her more confident in the job market. "Whether our generation has good etiquette or not, many of the older generations think that we don't," says Wollenberg, a New Jersey native and varsity fencer. "So when you do have good manners, you'll be perceived as more professional, more respectful, more ready to be in the business world."

Earle notes that when CEOs are asked what they look for in potential employees, they often say it is how they act toward others. "CEOs have said that how you treat a waitperson at a restaurant is a magical window into your soul," says Earle. "If you're rude to a waitperson, then you're likely to manage people poorly."