Eating, one of the most basic of all behaviors, has become extraordinarily complicated in recent years. We eat too much, or too little, or things that don't belong on our plates to begin with. And food has become integrally related not only to how we look but also to our roles as citizens. We should eat local, organic, natural, humane. We should not subsidize cigarette manufacturers, who, it turns out, also manufacture lots and lots of things to eat. We should grow what we eat. Eat what we grow. Reap what we sow. And bring a calculator to the table: carbs, calories, food miles, carbon footprint, value added. Instead of pleasure, eating has become a series of rules and obligations and, sometimes, guilt.

See story, page 2
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Instead of pleasure, eating has become a series of rules and obligations and, sometimes, guilt. In fact, it could be much easier. According to the now famous slogan on the cover of Michael Pollan’s In Defense of Food, people should simply “eat food, not too much, mostly plants.” Pollan’s appearance on the Stanford campus in March was akin to the arrival of a rock star. Kresge Auditorium was jammed a half-hour before he made his way to the stage. Disappointed would be listeners had to resort to Stanford on iTunes U.

There are issues that appear suddenly, containing the essence of the zeitgeist. Such is food. And such is food at Stanford. It is a matter combining science, civic responsibility, health and enjoyment. Food is being served up not only at Stanford Dining, but also in the departments of Economics, Linguistics and Human Biology, interdisciplinary programs, international centers and university community outreach programs. For a university concerned about its place in a globalized globe, there are few things more interesting than understanding where our next meal is coming from and what the cost of that meal will be to us and to the rest of the planet.

The Barbara and Bowen McCoy Program in Ethics in Society captured that sense perfectly in winter and spring with a series called “The Ethics of Food and the Environment,” at which Pollan was one of the featured speakers. Beyond the organizers’ wildest expectations, meeting halls were full night after night as audiences watched movies about the economics and politics of food and discussed matters afterward with an intensity befitting header social movements of prior years.

“We were completely surprised by the large turnout,” said Joan Berry, coordinator of the ethics program and organizer of the series. “What was most gratifying was that the series brought together students, faculty, nutritionists, public health specialists, chefs and interested community members, and we were able to have some really powerful conversations.”

“It was clear that people care deeply about the food they eat, the environment, mass marketing and a host of other related topics. We hope to continue looking at the issues again next year.”

This issue of Interaction focuses on the attention Stanford is paying to sustainable dining, agricultural research and childhood obesity, three different areas that nonetheless are bound together by a series of calculations: how much, how far, at what price, in whose benefit.

Beyond the purely physical aspects of food, there also is a cultural aspect. At this point, Stanford has tried a few courses of “food studies,”
How to feed the planet

Food security” doesn’t refer to the problem of protecting food from theft or bioterrorism. Rather, it’s the opposite of hunger. In practice, it means simply that most of the world’s people have no security whatever over the future or that they will get enough food.

A joint program of the Freeman Spogli and Woods institutes, the Food Security and the Environment (FSE) program was established to generate innovative solutions to global hunger and its causes, but they relate to climate, trade, science or politics.

FSE’s director, Rosamond Naylor, said in the early stages of the program that her goal was “to put food and agriculture back on the map at major universities,” particularly at Stanford. With her own research ranging from rice production to offshore fisheries to meat consumption, Naylor said then that her work was based on the assumption that food and agriculture back on the map at major universities,” particularly at Stanford. With her own research ranging from rice production to offshore fisheries to meat consumption, Naylor said then that her work was based on the assumption that they will get enough food.

Climate change
One of the most newsworthy areas of concentration at FSE is that of climate and food security. As the atmosphere heats up, sea levels rise and storm action increases, people whose access to food is shaky at the best of times may be in danger of literally starving. The loss of agricultural lands in arid or flooded areas will, in turn, affect millions of people worldwide. What happens to the world’s seeds if temperatures rise 3 degrees? And what does that tell us about investment strategies for the next decade?

Among the people trying to answer those questions is David Lobell, a senior research scholar with a PhD in geological and environmental sciences. He was the lead author of a recent article in Science (co-authored by Burke, Falcon and Naylor, among others) that first identified 94 critical crops in 12 areas of the world that are home to the highest numbers of malnourished people. The researchers then matched that data to best-case, likely and worst-case climate data for the next 25 years based on Lobell’s climate modeling work.

The Science research concluded that among the most endangered crops in the world is maize in southern Africa—which could essentially disappear over the next 30 years.

“It’s a great example of interdisciplinary work,” Lobell said. “First you have the socio-economic research, continued on next page

Food can be a symbol of power, an aesthetic display or an ideological expression,” Goldstein said.

“Food, Magnus said, is a social issue, not an individual one. Just as the autonomy model in medicine overlooks the social and systemic nature of medicine, so an approach that looks only at alleged individual choice (e.g., I’m autonomously choosing Pringles over whole wheat crackers) misses the real story.

“IT’s the most wonderful thing that this is happening!” Nestle exclaimed. “It’s a social movement. And we can all do something about food. We have tremendous people power now. This is what America is about, so let’s use it.”

GAE TAN LEE
Biofuels and Rising Prices

A second, closely related cluster of researchers at FSE is working on biofuels. The agricultural space devoted today to biofuels used to be devoted to food. Ethanol, to take the most obvious example, puts pressure on the price of corn. That affects the price of land and of all other crops that become more scarce as corn becomes more plentiful. The price of eggs, bread and milk in the United States, for example, has increased this year because the price of feed has risen.

Chief among the biofuels researchers is agricultural economist Scott Rozelle, the Helen F. Farnsworth Senior Fellow at the Freeman Spogli Institute for International Studies, who says he is more optimistic than his colleagues, who fear widespread starvation.

“I’m more positive than they are,” said Rozelle. “In the short run, there are lots of dangers. But in the long run, there are dynamic effects and it’s the best thing that could happen to agriculture. Prices will invigorate market forces that couldn’t obtain rice.”

Rice farmers stand to gain; consumers do not. Rozelle points to the fact that, for a century or so, food prices have gone down, driven by advances in science and technology that increased productivity. Biofuels mark a historic breakthrough on the demand side, forcing other prices up. Steep rice prices, for example, have led to the imposition of strict export limits in much of Asia, to shortages and to food riots in places that cannot obtain rice.

Rice farmers stand to gain; consumers do not. Rozelle, one of the world’s most prominent experts in modern Chinese agricultural economics, says most Chinese own some land, so most everyone can expect to benefit from the biofuels phenomenon.

But those who are fortunate enough to own land and who can starve in the short run. A grant from the Gates Foundation is enabling FSE researchers (in conjunction with other experts in Washington, D.C., China and Nebraska) to study the impact of biofuels, crop substitution and price and market shifts on the world’s poor.

Agricultural researchers are very concerned about the effect of biofuels on food prices. Continued from previous page

FRI professors were nearing retirement, the department awarded only graduate degrees and there was general pressure at the university to streamline the number of academic units in economics.

So the FRI was a logical candidate to go, though its dismantlement was met with dismay in many circles.

The Food Research Institute

Anyone looking closely at Stanford’s Food Security and the Environment program might be forgiven if they did a little double-take: Wait, isn’t this the old Food Research Institute? Not quite. The famed FRI was established in 1921. Over the decades, it was housed in various schools and built up an unparalleled reputation. “There are no analogs at the present time anywhere” for the FRI, said Marshall Burke, program manager for Food Security and the Environment. “Almost all the great applied agricultural economists in the world worked with FRI.”

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About 90 percent of all vegetable oil consumed in Indonesia comes from palm, and there have been reports that high prices are leading vendors to re-use cooking oil, cutting it with toxic ingredients.

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dent Donald Kennedy put together what would become the Center for Environmental Science and Policy (CESP), out of which the program in Food Security and the Environment (FSE) later emerged.

There are several causes for the high prices, said Peter Timmer, a visiting professor at FSE and former Stanford faculty member at the Food Research Institute: Not just biofuels, but also rapid growth in demand in China and India, drought and disease in certain regions and the weak U.S. dollar, which increases demand for commodities.

“The aim is to move beyond biofuels as an energy question to study them as a social question, to see when and where investments in biofuels might help or hinder the struggle against poverty.”

The aim is to move beyond biofuels as an energy question to study them as a social question, to see when and where investments in biofuels might help or hinder the struggle against poverty. Falcon pointed out. It is a program, not a department, so it does not grant degrees. It is more explicitly multidisciplinary than FRI, which started off that way in the 1920s but as the decades passed became increasingly focused on agricultural economics. FSE has a stronger base in the sciences than FRI did. And, Falcon said, FSE is “more nimble” at forging partnerships. It’s a more flexible beast, less encumbered, more able to respond to complex challenges straddling the natural, climate and social sciences.

Timing can make all the difference, Rozelle said.

“We were just at the start of globalization” when FRI was dismantled, he said. “But now, at FSE, we’re back in the mainstream. A big difference was John Hennessy and his philosophy of taking research to the world.”

A recent article co-written by a group of FSE researchers tried to figure out how the expected shifts in commodity markets will affect consumers depending on which sort of biofuel is developed. Called “The Ripple Effect,” the article studied linkages among energy, food and land prices, and the environment in the United States, Brazil, China and Indonesia, the four biggest biofuels players. “The extent to which biofuels growth is compatible with sustainable development remains questionable,” they said.

The section on oil palms was written by Joanne Gaskell, an IPER student.

“Palm oil is the cheapest vegetable oil in the global market,” she said, “so it’s attractive as a biodiesel feedstock.” But there are serious environmental drawbacks limiting its potential, notably the conversion of rainforest to plantations. As in Brazil, the forests are burned and cleared, displacing species and polluting the air.

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CHILD OBESITY AND THE NEED FOR SOCIAL MOVEMENT

“Stanford School of Medicine stresses translational medicine, from benchside to bedside, but if you really want to disrupt business as usual, put a community advocate in the mix as well,” said Thomas Robinson.

“From very early on in my career, I was exposed to the fact that factors in determining health lay outside the medical care system,” he said. He first realized this as a Stanford biology major, when he started wondering why the healthcare spending wasn’t going to prevention. Later on, in medical school, he worked with John Farquhar, founder of the pioneering Stanford Heart Disease Prevention Program, today called the Stanford Prevention Research Center, which spans several departments.

As a researcher, to make the greatest impact, I had to look across the disciplines. I had a different perspective, a [World Health Organization] approach to health that was very broad and emphasized health and wellbeing,” he said.

Other centers, he said, focus on just research, or just advocacy or just medical care. “But we wanted to do it all, building on our strengths, from basic research to policy, linking physicians with public schools, community advocates, education experts, working together through initiatives such as soccer and dance programs.

“What’s unique about us is that we put an advocate, a lab researcher, a clinician and a community program together. Stanford School of Medicine stresses translational medicine, from benchside to bedside, but if you really want to disrupt business as usual, put a community advocate in the mix as well.”

ENTREPRENEURSHIP WEEK

You might also think about putting a venture capitalist, a mechanical engineer, a surgeon and an entrepreneur together. One of the events at Stanford’s Entrepreneurship Week in winter quarter did just that. Sandra Miller, managing director of the Biodesign Program, referred by someone at the Graduate School of Business to Karen Kembry, director of business development at Lucile Packard Children’s Hospital, who works with Robinson at CHW. They all put their heads together and came up with an event that would combine entrepreneurship and human health.

At a packed gathering in Clark Auditorium, Robinson and 37 others launched the Children’s Health and Wellness (CHW) organization’s current initiative is called Ruckus Nation, a nonprofit research and innovation organization that helps children with chronic illness. The organization’s current initiative is called Ruckus Nation, which recently sponsored a worldwide competition for ideas to get kids moving. More than 400 teams from 37 countries and 41 states entered ideas.

Another of the Entrepreneur Week speakers was alumna Patricia Christen (AB ’82, Values, Technology and Society), president and chief executive officer of HopeLab, a nonprofit research and innovation organization’s current initiative is called Ruckus Nation, which recently sponsored a worldwide competition for ideas to get kids moving. More than 400 teams from 37 countries and 41 states entered ideas.

Many of the finalists drew their inspiration from the arcade and video game Dance Dance Revolution (DDR), in which youngsters gain points for speed and accuracy by moving their feet on a special mat to corresponding dance steps displayed on the screen. But most went one step further, making their devices and games more interactive than DDR.

Yet another idea competition around the problem of child obesity was undertaken by the members of a mechanical engineering class, Transformative Design, taught in winter by a team of professors led by Bernard Roth and also including anthropologist Sarah Jain. Class members divided up into teams according to interest and then used interactive technology to develop products that encourage behavioral transformation.

One of the teams decided to tackle child obesity. The four graduate students, one each from Mechanical Engineering, the Graduate School of Business, Environmental Engineering and Computer Science, came up with two ideas. The first one drew from Dance Dance Revolution, like so many of the Ruckus Nation projects. It was scrapped, among other reasons, because the team did not want a game that might be prohibitively expensive. The second, which they call “Fit Full Fun,” was given a test run at the fourth birthday
part of the nephew of team member Sun K. Kim. It entails standing before a screen and jumping back and forth and side to side to catch healthy food items as they descend, and then putting them into a basket.

**STEALTH INTERVENTIONS**

Robinson, the Irving Schulman, M.D., Endowed Professor in Child Health, is interested in social movement theory, both the theoretical kind and the more obvious kind. Like soccer. Like DDR. Like folk-dancing. Anything to get kids moving. Christen's guiding slogan, "Lead with fun and health will follow" is similar. Don't call it exercise, she said, call it fun.

As a result, Robinson and his medical colleagues have obtained federal funding to work with a sports league in East Palo Alto aimed exclusively at overweight children. Asked if there might not be a stigma to playing on the fat kids' team, he replied that if half the kids are overweight, it's no stigma. For the first time in their lives, he said, the children enjoyed sports.

Parents don't have to take their children to weight clinics or other special appointments, and the kids aren't home getting stuck. It's cheap, it's easy and it works.

Robinson calls such approaches “stealth interventions,” another way of saying that the kids are having too much fun to notice they’re exercising.

How did it get to the point that children don’t know how to play? How did we come to think that “kids’ food” is different from regular food? Children have become expert consumers; Robinson published a study last year revealing that even 3-to-5-year-olds chose what they thought were Mc-Nuggets over identical processed chicken in different packaging. If aiming cigarette advertising explicitly at young people gets the anti-tobacco forces particularly riled, what about the advertising of certain fast-food giants who tuck in stuffed animals and colorful plastic drinkware along with the nutrient-bereft nuggets? What about the fact that those plastic cups, generally filled to the brim with corn syrup, are enormous?

Psychologist Sam McClure works on an area called intertemporal choice or temporal discounting—our ability with corn syrup, are enormous?

Entrepreneurs and inventors are turning their attention to devices and games to get kids to move more and weigh less.

There are moral, economic and social arguments in favor of public policy aimed at obesity, says Michelle Mello, a graduate of Stanford’s Program in Ethics in Society and today a professor of health policy and law at Harvard’s School of Public Health. She has written on obesity as a potential new frontier of public health law and has examined fast-food litigation, in which plaintiffs have sought damages for their health problems. Personal choices, she says, are reaping public ill.

“I did the Ethics in Society Honors Program as a means of learning how to think systematically about the ethical dimensions of problems of major public health significance,” she said. “At the time, I did not know what it meant to analyze problems from an interdisciplinary perspective. But today I know that solutions to the obesity problem are likely to require interdisciplinary research and policy-development efforts. The more we learn about obesity, the more we understand that it has multiple, interacting causes, ranging from the level of the gene to the level of the social structure.”

So it is complex, as complex as the 39 ingredients in a Hostess Twinkie, which, despite all the packaging and processing, is still cheaper than an apple. It sounds like something an economist, a psychologist, a nutritionist—and a soccer coach—could fix.
It's a poor excuse for a celebrity these days who doesn't have a cause for which he's willing to tramp through deserts, meet with refugees or hug patients with tropical diseases. It's a rare shortstop who doesn't give back to the community in the off-season, a rare young multimillionaire who doesn't devote at least part of her wealth to establishing a nonprofit guaranteed to solve a pressing social problem.

Philanthropy is not what it used to be. Today what The New York Times recently called the "celebrity-philanthropy complex" is hot. In the United States, there is more wealth than ever before, and it's not inherited wealth. Many of the newly rich are young people who are pretty sure they know how to run the world. They get glossy spreads in Fortune, cover stories in the New York Times Magazine, websites and blogs. Giving is both sexy and strategic, and philanthropists are called "smart," not just "good." It's what some people call philanthrocapitalism, what Stanford's Bruce Sievers calls venture philanthropy.

A few years ago, Leonard Ortolano, then director of the Haas Center for Public Service, took steps to ensure that recipients of the Haas summer fellowships with philanthropic organizations linked their practice with academic coursework on the subject. At around the same time, Laura Arrillaga, one of the Haas Center's chief donors and an instructor at the Graduate School of Business, where she teaches courses on philanthropy, mentioned to Ortolano that she'd like to see a more deliberate program for undergraduates around philanthropy.

"She really was the one who lit the fuse," Ortolano remembered. "She played a crucial role in getting it launched." Other universities across the country have similar initiatives. For Meyerson, though, it was perfectly logical that Powell would raise his volunteerism and the nonprofit sector.

"It" was the Center on Philanthropy and Civil Society (PACS).

Gradually a vision started to gel; the center would be a place for graduate students to do basic research and a place where research could be linked to practice. Faculty would support research; donors would support practice. Ortolano called a meeting.

"So I explained the vision and I said, 'I already have two jobs,'" said Ortolano, also the UPS Foundation rate scholarship," he wrote. "I have a rate of free enterprise and an interest in the social sciences. It is meant to be a place where people from many fields and disciplines can gather and then take their new knowledge back to their departments. It is a place to conduct basic research.

Stan Katz, director of the Center for Arts and Cultural Policy Studies at Princeton's Woodrow Wilson School, was a speaker at the PACS seminar series in January, and he later blogged about his visit on the Chronicle of Higher Education.

"The establishment of the Stanford Center highlights the importance of convincing bright young scholars... that the field is one that can sustain first-rate scholarship," he wrote.

THE 'THIRD SECTOR'

Among the topics floating through the PACS meeting rooms: the role of nonprofits in the fight against AIDS; the degree to which philanthropic foundations are altering the country's education agenda; the impact of the Internet on donations; and the degree to which charitable tax deductions actually increase inequality.

An astonishing number of Stanford students appear to establish their own nonprofit as soon as they graduate. When she graduated from Stanford, Kopell said, students thought that working for the government was the way to change the world. Today it is neither government nor established businesses that lure them; rather, they strike out on their own in what statesman and Stanford educator John Gardner famously called the "third sector," that intersects both with the state and the market but which aims to use private money for the public good.

The "third sector" [philanthropy and civil society] is a bit misleading, because philanthropy clearly is a subset of civil society," Kopell said. "The point of the center is to study how these sectors overlap and interact, both in theoretical and in practical terms."

The center's leaders define civil society as activities and arenas that pertain to neither the state nor the market, though they are quick to point out that no human activity can be considered as entirely separate from either. The term was originally used by Hegel to describe forms of civic interaction that arose after the decline of feudalism; today it is often synonymous with voluntarism and the nonprofit sector.

"I see three sectors," said Sievers, the former director of the Walter and Elise Haas Fund, who is on the PACS steering committee and is a visiting scholar at the Haas Center. "Economic models, political practices and civil society. To some degree, then, civil society has its own dynamic. There are intersections, but there is a distinct set of institutional structures unique to civil society."

"And I say, vive la difference! These spheres interact, which creates something more interesting than if they were simply smooched together."

GRADUATE RESEARCH

One of the core elements of PACS is the graduate workshop, where fellows and non-fellows study common readings and present their work. The students come from education, communications, economics, political science, sociology, business and environmental studies.

"It's a cliché, but it's really expanded our horizons," said Megan Tompkins, a student of Meyerson's. "I
definitely went toward more political ideas because of those interactions, because we all know such different things. We all have to defend our ideas, and it can get pretty intense.

One of the fellows this year is Hilary Schaffer, a doctoral candidate in the Interdisciplinary Graduate Program in Environment and Resources (IPER). A couple of years ago she sat in on the fall semester of the workshop, and later she applied for the fellowship. Her project, about civic networks formed in response to natural gas facilities, has benefited as a result of the workshop, she said.

Referring to another graduate student with whom she has had a particularly fruitful interaction, she said, “We have totally different subjects but similar pathways. My favorite part about the workshop is hearing from other students. In fall we get a good basis in the literature, and then it’s so much fun hearing how people apply the literature in different ways.”

Powell, who has led the workshop for the past two years, said something similar: “The students learn that there are multiple pathways to one outcome, and also that one pathway can lead to multiple results. This is a nightmare for standard regression analysis, but it happens a lot.”

When PACS was being organized, Powell said, several faculty members went to the provost to discuss the idea. Are there really that many graduate students interested in these topics? the provost asked. Yes, Powell replied, but they have no place to gather. Now they do.

“We’ve produced a community where the students can critique each other, help each other, interact,” he said. “That’s our priority. For the first time, these students have intellectual colleagues.

“One student said, ‘This is the department I wish I was in.’ They’re willing to take risks, and not afraid, like they might be in their department. It’s a wonderful venue for presenting work.”

Among the dissertation topics that have found a home in the PACS workshop are the slums of Rio de Janeiro, teacher labor markets in India, secular and religious nonprofits in Chicago, school desegregation in San Francisco, political campaigns and the Internet, schooling in Sierra Leone, the efficacy of nonprofits adopting business plans, and the distribution of AIDS drugs by nonprofits in South Africa.

Tomkins (“’00) is doing her dissertation on charter schools and philanthropy. She said she returned to Stanford from graduate school at Harvard precisely because the School of Education is so open to working with other schools and departments. “It’s woven into the fabric of the place; they don’t just pay it lip service,” she said.

So she’s studying the ways in which large philanthropic organizations can shape education. Charter schools used to be small, locally-controlled ventures; lately, what are called charter management organizations have begun adopting economies of scale, using a more managerial, professional approach, Tomkins said.

“What’s the normative impact of that?” she asked. “Foundation seeks niches where other foundations aren’t active, so as a result, schools might shift to get more funding. In that way, philanthropy ends up affecting the educational agenda. What does this say about democracy?”

WHAT HAPPENED TO THE STATE?

Similar questions are being raised by Sievers, whose degrees (in political science) are from Stanford. He is not interested in studying the management of philanthropy but rather its normative and evaluative value. Voluntary engagement in civil society, he said, offers people a moral choice.

“Civil society allows opportunities for voices of dissent and champions of other modes of thinking,” he said, offering such examples as the civil rights and the environmental movements. Ideally, philanthropy is one independent source of financial support not driven by the market that enables these ideas and movements to bubble up. Philanthropy is a critical piece of civil society.

And engagement is a critical component of philanthropy, he added. It’s not enough merely to give away your credit card purchases to be shipped off to charity; you have to engage directly in that cause.

“Rob Reich thinks philanthropy adds to inequity,” he said, referring to Reich’s path-breaking work on tax deductions for charitable contributions, which he argues entices the wealthy to give away instead of help. “I say that’s the business of pluralism. The challenge is to have pluralism and equity balanced.”

Reich, an associate professor of political science, and Sievers teach an undergraduate class together, “Theories of Civil Society, Philanthropy and the Non-profit Sector.”
around such issues as AIDS or geno-

not as evident, said Gaines, competing because the linkages and peddlers of biofuels expansion and large-scale local growers do not necessarily have to result in higher prices. But if they conversion on global climate. Not surprisingly, the principal in-

DEADLY CONNECTIONS

Water shortages, hunger and mar-

It also is looking elsewhere in Asia

dernantes, solving policy problems

The effort began after Naylor con-

The seminar was a wonderful forum for people from a wide di-

FSE (see accompanying article) who

Sustainable management more precarious.

Eating

continued from page 2

and Earth Systems junior John Mul-

A second group, led by Pollan, is especially interested in

In Earth Systems, we really study

Montell, acting director of Stanford

to staple grain production, instead

The project, called "deadly connec-

"The income from Lake Vic-

said, “how are they suddenly ev-

Eating

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Some of the more serious concerns

additional, decentralization in Latin America has created an environ-

Rozelle, another of the authors of the chapter on China. He notes that

sustainability in the fraternity house

That’s one of the questions be-

FSE

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It also is looking elsewhere in Asia

ENVIRONMENTAL

colleagues at http://refusepact.org

they pertain to China, the world’s largest contributor of greenhouse
gases emissions. China, in 2007, pro-
hibited crop production for bio-eth-

or to staple grain production, instead

determined the best way to proceed.

The chapter concludes that resil-

Pizzazz is cheap, but many of the

charges because of the

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has been on the various dyads

AIDS, pollution, and possibly can be overstated. But

and social threats, including poverty, infectious disease

The chapter concludes that resil-

The panel could either prioritize

SUSPENSION

Pizza is cheap, but many of the

One of the first grants by Stanford’s

5.0 tons of garbage a week just from

The panel could either prioritize

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Obesity and pollution are bad for

The effort began after Naylor con-
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SPEAKING FROM THE FRONT OF

It’s weird to have a fraternity all

or health. The project, titled "The

butter and cream, and possibly can be overstated. But

One of the groups that has been looking into

Eating

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and Earth Systems junior John Mul-

attitude toward land use and food, and Mul-

some of the research questions

and Stanley Naylor hope next year to

obligation, it also is hard to pinpoint

One of the groups that has been looking into

Food as a social movement. Some of these, ideas, held by just a small minority, are taking off.

The panel could either prioritize

he said. “We’re not conscious of what they
do to the water. Water gets to our
houses, but we don’t know how. We
can be more conscious of what we

and Earth Systems, we really study

I have a dream of a salad bar

and Earth Systems, we really study

FSE

continued from page 5

the byproducts of food: waste, recy-

the byproducts of food: waste, recy-

AIDS, pollution, and possibly can be overstated. But

FSE

continued from page 5

Social forces are looking at what happens to land

One of the first grants by Stanford’s

FSE

continued from page 5

The panel could either prioritize

one, allowing the university to forge partnerships with local, sustainable

The panel could either prioritize

and Earth Systems, we really study

Social forces are looking at what happens to land

Eating

continued from page 2

and Earth Systems junior John Mul-

attitude toward land use and food, and Mul-

social behavior and energy use discussed on page 11.)

AIDS, pollution, and possibly can be overstated. But

The chapter concludes that resil-

Pizzazz is cheap, but many of the

One of the first grants by Stanford’s

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Social forces are looking at what happens to land

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It is difficult to get kids to think they can do something about being overweight, imagine getting them to think they can do something about global warming. But it turns out both are possible, and some people think they are related.

The Precourt Institute for Energy Efficiency was established in 2006 with a gift from alumnus Jay Precourt. The institute is organized into six clusters of research: building, transportation, energy modeling, policy, systems and behavior.

Everyone from Precourt Institute Director James Preckourt down to the average well-meaning citizen knows that overcoming global warming is a complicated endeavor. “There’s no silver bullet,” he told a group assembled in March to celebrate the fifth anniversary of Stanford’s Global Climate and Energy Project (GCEP). “There’s not even silver buckshot.”

In the 1970s, he pointed out, interest in energy alternatives vanished as soon as the price of oil went back down. “So we can’t have a limp response, and it’s not going to be cheap or easy. Behavior change is important, but without fundamental technological change, nothing will happen.”

But there are those who say behavior change is a critical piece, though the approaches are not mutually exclusive. It’s quick, it’s cheap and it’s essential.

Among those proponents at Stanford is postdoctoral scholar K. Carrie Arnel, who earned a PhD in psycholog and cognitive science with an emphasis in neuroscience. She outlined her views this winter to the Energy Seminar, an initiative by the Woods Institute for the Environment that draws crowds week after week to listen to engineers and policy analysts. California State Assemb y Bill 32 in 2006 established the goal of reducing greenhouse gases by 2020 down to 1990 levels, a reduction of nearly 30 percent compared to projected levels. There’s not a lot of time, Arnel said in her presentation, describing those behavior-related approaches that are less effective (public service announcements and standard advertising approaches) and more effective (out options and card-swiping or readable meters that remind users how much energy they’re using and how much they’re paying).

“I’ve known since high school that I wanted to work on something related to both behavior and the environment,” she said later. “I’ve been talking about these issues of behavior so long, I used to get smirks and embarrassed looks. Around a year ago they stopped smiling. Al Gore’s movie changed everything; it made that possible.”

Her first mentor at Stanford was Antonio Rangel, a pioneer in the field of neuroeconomics. Soon after arriving, Arnel submitted a funding proposal to the Woods Institute to design a climate-change reality television show, such as those that have been wildly successful in Latin America. But the proposal did not get funded.

Thomas Robinson, professor of pediatrics and a leader in the fight against child obesity through “stealth interventions,” was one of the researchers on that proposal. He had independently contacted Woods to see if his interest in brain imaging and motivational activities might find some echoes there. Members of an ongoing committee of environmental and medical scholars referred him to Arnel. By then, Rangel was getting ready to leave Stanford, so Arnel and Robinson created a partnership combining their interests in energy, obesity and behavior.

Promoting Behavior Change, cross-listed in Human Biology and Earth Systems, is one of the results. The class develops activities aimed at motivating people to change their energy consumption. Last year, Stanford students divided into four groups—food, waste, electricity and transportation, and their respective relationships to climate change. Each group designed an intervention for high-school students; for example, having them keep logs recording their energy use, setting up a buddy system to enforce behavior or organizing relay races around the use of line-drying clothes (some of the kids had no idea one could dry clothes on a line). This year, the class will move to elementary school.

The hands-on work is accompanied by readings in psychology, marketing, communication, education, behavioral economics, design and other disciplines.

The teaching assistant for the course this year is Anna Lee, an Earth Systems co-term student. Last year, when she was a student in the class, she also worked on the Sustainable Choice Card, a project organized by Earth Systems students to help people make wiser eating choices.

“The Department of Energy is interested in behavior now, and the state Public Utilities Commission is pursuing behavioral initiatives,” Arnel said. “Once they figured out we need to make changes really fast, they got interested, because technology can take decades. The Intergovernmental Panel on Climate Change, among others, has suggested that some of the cheapest and most significant energy reductions are at the residential level.”

Presentations at the conference covered a range of issues that all seemed to hover around one central issue: What do we know about human behavior and decision-making that can be applied to energy-use reduction? The work spanned policy, buildings and technology, media and marketing, and community-based initiatives. What people know, or think they know, may get in the way of certain cost-cutting, it turns out. They may believe clean energy is an impossibility; they may believe it’s too late; they may believe they’re the only ones interested, making their behavior useless. To use a political metaphor, every vote counts.

The Precourt Institute funds research proposals in its six clusters, and Arnel said she hopes the round of proposals this spring will include some that emphasize behavior and energy. There may be one from the Graduate School of Business on environmental attitudes by different social groups, and perhaps one from a researcher at the Lucile Packard Children’s Hospital evaluating media messages about climate change. Psychologist Sam McClure, who is talking with Robinson about possible collaboration regarding child obesity, is also interested in consumer attitudes toward energy-efficient technology. The rate at which people demand to recoup the purchase price of a new refrigerator in reduced power bills is extraordinary, he said. “They are much more impatient in this domain than in most others.”

Post-doctoral scholar Carrie Arnel organized a conference on “Behavior, Energy and Climate Change” that was hugely successful.

The Precourt Institute was one of the sponsors of a unique conference last fall in Sacramento on “Behavior, Energy and Climate Change.”

“We got double the expected attendance,” said Arnel, one of the organizers. Some 500 people attended the meeting — so many, in fact, that the conference will become an annual affair. The next one, in November, will feature an extra day of sessions.

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Solutions for the Good of All

BY JAMES PLUMMER

Engineers take basic scientific discoveries and turn them into things that are useful to people. In that role, engineers are the agents of progress for human society in a natural world. For most of history, people did not consider environmental sustainability in deciding whether something was "useful." Now we must, and the urgency and complexity of this challenge vividly illustrates why energy building is the newest and most visible manifestation of Stanford's commitment to sustainable architecture.

The Energy and Environment building is the newest and most visible manifestation of Stanford's commitment to sustainable architecture. As part of a Stanford community that seeks to meet the challenge of sustainability, we are engaged in building collaborations with colleagues in law, business, Earth sciences, medicine, biology, economics, sociology and numerous other fields to see our technological and mathematical innovations through to the practicability in society. To be an engineer is to create useful solutions, after all, and to make solutions useful is to work with peers who can expand the understanding of the nature of the problem.

Perhaps the newest and most visible manifestation of this collaborative culture is the Jerry Yang and Akiko Yamazaki Environment Building (Y2E2), which brings together students, faculty and staff from many engineering and policy-focused departments and programs. Within Y2E2 are the offices of CCEE and PIEE and the Woods Institute for the Environment. All three of these organizations bring diverse minds together to focus on sustainability challenges.

Woods, through its Environmental Venture Projects program, has brought together 21 groups of Stanford faculty members over the last four years, each explicitly selected because they feature collaboration across department and school lines. Engineers have been part of 11 of those projects, including efforts to improve water sanitation, model the economics of California’s water and sequester toxic metals such as lead. These projects have coupled engineers with colleagues in medicine, law and Earth sciences.

SUSTAINABLE BUILT ENVIRONMENT

This spring, a new research and teaching program emerged within Woods and the university’s environmentally driven initiative that further illustrates this collaborative direction. CEE Professor Ray Levitt and sociology Professor DouglasMcAdam have marshaled the university’s diverse intellectual resources under the umbrella of the Sustainable Built Environment, which refers to the environmental, economic and social sustainability of our buildings and infrastructures. Woods will give interdisciplinary teams of faculty seed grants to develop research proposals along these lines. Funding for the best of these projects will be part of the environmental initiative. Anyone who has studied the history of solar power, for example, will understand why engineering alone is not enough to put panels on buildings; economic, policy and legal issues also hold sway. This new effort recognizes the multifaceted nature of the challenge.

It would be a convenient half-truth to declare all this to be completely new or completely unique to Stanford. We’ve recognized the importance of interdisciplinary research and teaching for some time now, as have other peer institutions. Before Y2E2, the Clark Center proved a successful experiment in bringing together similarly diverse groups of human health researchers. But understood in the broadest sense, this interdisciplinary push is new. For hundreds of years, university structures have evolved around distinct disciplines. Tenure and other incentives have driven people to specialize to the point where their work can become insular and very narrowly focused.

Especially within environmental concerns, collaboration across disciplines is imperative. And so as we pursue innovations for the good of sustainability, we are pursuing innovations in how we approach our broader research and educational missions. James Plummer is the Frederick Emmons Terman Professor of Environmental Engineering.

Ruth MacKay