

Human Biology Newsletter

The Program in Human Biology | Stanford University

Winter 2008

Journey to the Center of the Core

Winter Quarter: From DNA to Human Behavior



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As you recall, the Human Biology “Core” is a 30-unit course sequence taken by students in their sophomore year. The Core is the academic foundation of the Human Biology major, offering students a broad understanding of humans from biological, behavioral, and social perspectives.

During the winter quarter, the Core consists of two integrated courses—one on cell biology (HB-3A or A-side) and the other on human behavior and development (HB-3B or B-side). One of the strengths of the series is the breadth and diversity of lecturers, who come from departments across Stanford.

HB-3A is led by [Margaret Fuller](#), the Reed-Hodgson Professor in Human Biology and a Professor of Genetics in the medical school.

continued on page 6

DIRECTOR'S MESSAGE

This academic year the HumBio staff is busy settling into its new quarters in Building 20, located at the opposite corner of Stanford's main quad. This new location allows us to house our advisors, faculty and administrative staff under one roof, and provides us with nicer seminar rooms, a larger kitchen, and a student lounge, complete with an espresso machine. Although there are still a few kinks to work out, overall everyone is charmed with the new situation. Come visit us, if you haven't already!



Carol Boggs

The social highlight of the fall quarter was our first ever HumBio trivia contest and reception, which was held during homecoming weekend. This fun event provided a chance for old friends to reunite, and for alumni and students of different generations to compare notes on how the HumBio program has evolved over the years. Look inside to view some snapshots of this celebration. §

What's Inside

RESEARCH/TOBACCO ADS.....	2
STOREY HOUSE NEWS.....	3
DIETS, FACULTY NEWS.....	4
NET WORTH OF NATURE.....	5
INSIDE THE CORE.....	6
RETIREMENTS.....	7
NOBEL PRIZE, AWARDS, BOOKS.....	8
CALL FOR MENTORS.....	9

UNDERGRADUATE RESEARCH

Smoking Out Deceptive Tobacco Ads

When **Kelsey Hills-Evans** (HB '08) researched the effects of Lorillard Tobacco's new youth smoking prevention program, she came to a startling conclusion — the Lorillard print and TV advertising campaign actually increased the number underage smokers.

“The campaign's words and images were designed to grab the attention of young, rebellious middle school kids,” said Kelsey. “The slogan, ‘Tobacco is Whacko if You're a Teen,’ carried the subliminal message that it's O.K. for college students to smoke. Overall these ads increased curiosity about smoking and positive attitudes toward the tobacco industry.”

Each day in the United States, approximately 4,000 young people between the ages of 12 and 17 years start smoking cigarettes, and once they start, many become addicted to nicotine for life. (CDC 2006) One of the more famous examples of “Big Tobacco” stealth marketing was the kid-friendly Joe Camel advertising campaign, which according to the Federal Trade Commission, quadrupled Camel's brand share of underage smokers within five years.

Kelsey is no stranger to tobacco company advertising tactics; in high school, she received an award from the Campaign for Tobacco-Free Kids for leading an anti-youth smoking campaign in Colorado. She also organized a protest against Lorillard Tobacco Company for their teen-focused sponsorship of the Winter X Games in Aspen. With the help of her efforts, the company withdrew as a sponsor the following year.

As a Human Biology major at Stanford, Kelsey was able to continue her antismoking advocacy through participation in an HB-REX research project, directed by **Lisa Henriksen, Ph.D.**, at Stanford Medical School's Prevention Research Center. Kelsey was one of 40 students who participated in HB-Rex (HumBio Research Exploration), which enables declared HumBio majors to receive full-time wages to work in labs with experienced mentors during the summer following their sophomore year.

Henriksen's lab looks at ways that the tobacco industry recruits young smokers through stealth marketing practices such as the “Wacko” campaign. The group analyzes tobacco-related television and print ads, as well as point-of-purchase displays at retail stores near schools through

surveys and focus groups. Then tobacco control advocates use their reports to help develop regulations for the packaging and marketing of tobacco products.

“While on the surface tobacco company ads claim to discourage teen smokers, the ads often have an opposite boomerang effect,” said Kelsey. When asked whether she thinks that tobacco companies do this intentionally, she said, “absolutely.”

This year Kelsey changed research projects, and she's working with fellow student Sarah Booth on an educational guide for pandemic flu preparation. You can download a copy of this booklet, “[Influenza Pandemic Preparation and Response: A Citizen's Guide](#),” on the FluWiki website. Upon graduation from Human Biology, she hopes to pursue a graduate degree in public health. §



“Stanford-To-Go” on iTunes

Alumni can now download courses, faculty lectures, interviews, music and sports to their iPods, Macs or PCs at <http://itunes.stanford.edu/>. Experience a wealth of learning from Stanford, including popular Human Biology lectures. §



UNDERGRADUATE RESEARCH

Storey House Goes Willy Wonka



When people say that the residents of Storey House are food-obsessed, they mean it in the nicest possible way. This winter students living in this Human Biology theme house will be exploring the “science of food” outside of their regular class work. Located on the prestigious “Row,” next to the Braun Music Building, Storey House is where 52 students with a shared passion for HumBio sleep, study, hang out, and dine.

Choosing a house academic theme is part of a long-standing tradition at Storey House. Whether residents are majoring in HumBio or not, all are required to participate in a minimum number of Human Biology-related events. They also recommend books related to the house theme and each deliver a presentation on a HumBio topic to their housemates. Past themes have included stem cell research, forensics, and last year, HIV/AIDS. This year individual presentations will cover a range of topics, from the Amazon rainforests to birth control. Residents are also planning a field trip to “Body Worlds 2: The Anatomical Exhibition of Real Human Bodies” at the Tech Museum.

During winter quarter Storey residents will read a book about chocolate, in preparation for a student-led spring course on this subject. This course will cover the biological, chemical, historical, and social aspects of chocolate as a food, export, item of conquest, and social justice issue.



Homework will entail rigorous experimentation (taste tests) and field studies, a trip to the Scharffen Berger chocolate factory in Berkeley. (It’s a tough job, but someone has to do it.) They also plan on examining social justice issues surrounding cacao harvesting.

To complement the nutrition theme, Storey House is organizing a lecture featuring

Michael Pollan, the author of “The Omnivore’s Dilemma: A Natural History of Four Meals,” named one of the ten best books of 2006 by the New York Times. In his lecture, Pollan, a Knight Professor of Journalism at UC Berkeley, will discuss what we unwittingly ingest and explain how our taste for particular foods reflects our evolutionary inheritance. [This event, which is open to the public, will be held March 3 at Kresge Auditorium.](#) §



Students Research VA Issues

As part of a student-organized course on the impacts of war,

Tamar Berger (HB ’07) and six other Stanford students went to Washington D.C. to research the social, economic and biomedical aspects of the record numbers of injured veterans returning from the Iraq war.



Christina Hall, Wen Qi Chin, Soumo De, Tamar Berger, Ryan Melton, Jessica Tao, Anna Khan

During this trip, the students attended congressional hearings on Veterans’ Health Care, engaged in briefings with organizations such as the Veterans of Foreign Affairs (VFW), volunteered at Walter Reed Army Hospital, and visited several transitional housing programs. They were also asked to present their ideas on how to improve the Veteran Administration’s use of the Internet to better serve returning veterans.

Since their return, the group has shared their experiences at guest lectures, readings, seminar discussions, and a symposium for incoming freshman. To further their work on veteran affairs, they presented their trip findings to a group of local high school students, for whom they are organizing a volunteer group to help out in the Palo Alto VA Hospital. They hope to have this program up and running by the 2008-2009 school year. This trip was supported by HumBio’s Bingham Fund for Student Innovation. §

FACULTY NEWS

Battle of the Diets

Which is the best diet approach -- Low fat, low carb, or high protein?



Christopher Gardner

Christopher Gardner, Ph.D., a researcher at the Stanford Center for Research in Disease Prevention who teaches HumBio's Nutrition class, answered this question at an informative presentation delivered at this year's Homecoming Reunion. His lively and informative presentation included results from his diet study and an honest appraisal of what still isn't known about how these diets work.

In this study, 311 overweight women were randomly assigned to either the Atkins, Zone, or Ornish diet, or to a "health professional's diet" for one year. Study participants in all four groups attended weekly diet classes for the first eight weeks of the study and each received a book outlining the specific diet to which they were assigned. For the remaining 10 months of the study, the women's weight and metabolism were regularly checked, and random phone calls monitored what they were eating.

At the end of a year, the 77 women assigned to the Atkins group had lost an average of 10.4 pounds. Those assigned to the health professional's diet lost 5.7 pounds, those on the Ornish diet lost 4.8 pounds, and women on the Zone lost 3.5 pounds, on average. In all groups, however, some participants lost and kept off up to 30 pounds.

After 12 months, women following the Atkins diet, relative to at least one of the other groups, had larger decreases in body mass index, triglycerides and blood pressure, and larger increases in their high-density lipoprotein, the good kind of cholesterol.

The take home message from the study, said Gardner: "The potential advantages of a 'low-carb' vs. a more traditional 'low-fat' diet for weight loss can no longer be dismissed, especially if the emphasis is eliminating or reducing the carbohydrates that were the least healthy to begin with, such as sweetened caloric beverages, high-fructose corn syrup, white bread, white rice, and the many foods with added sugars."

For more details on this study, visit these websites:

- [National Public Radio's Christopher Gardner interview](#)
- Stanford Report, "[Read this and lose 50 pounds](#)" §



Abigail Zuger teaches writing to future physicians.

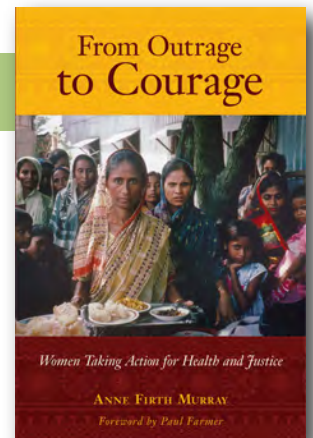
Zuger M.D. on Medical Writing

HumBio welcomes **Abigail Zuger**, M.D., as the second recipient of the Medical Humanities Fellowship. Zuger, who is a regular columnist in the Health & Fitness section of the New York Times, will teach an upper division course in Human Biology called, "Writing Medicine." Students will read classic and contemporary narrative prose about medicine by authors such as Didion, Fadiman, Styron, Tolstoy, and Williams. Class discussions will focus on patients, doctors, chronic illness, pain, modern medicine, and the modern hospital illness and recovery, in addition to good writing.

Zuger is an infectious disease specialist with an expertise in HIV infection. The public is invited to her talk, "[The New Metaphors of AIDS](#)," on February 28, 2008. §

FACULTY BOOKS

Anne Firth Murray, consulting professor in Human Biology, has just published "From Outrage to Courage," a book that explores critical issues in international women's health, such as ending gender-based violence, increasing access to education, and supporting reproductive rights.



Students and Alumni interested in these issues may be interested in attending the [thinkBIG conference](#) on international women's health and human rights, which was started by former students of Murray. You can [register now](#) (<http://thinkbig.stanford.edu>) for this conference, which is open to the public and will take place at Stanford University from February 1-3, 2008. §



LOKEY VISITING PROFESSOR

The Net Worth of Nature

How do you measure the economic benefit of clean water or an old growth forest? This is a question being addressed by **James Boyd** this year's Lorry Lokey

Visiting Professor in Human Biology. He believes that the development of a "green gross domestic product," or Green GDP, is a first step in developing a system of environmental accountability and a way to track assets like oceans, forests or rivers.

While the size of a country's market-based economy is typically quantified using an index called the gross domestic product, or GDP, there is currently no universal method for measuring the future economic value of a country's natural resources. The market-based GDP is a simple index for measuring a complex system that evolves over time. Since it is product-based, measurements are as easy to track as, for example, a gallon of milk or a bushel of corn. The first step in developing a Green GDP is to quantify the units that can be measured, and this is the focus of Boyd's current research.

One analogy that Boyd discussed was that of clean air.

"How do you measure air quality and place an economic value on it?" asked Boyd. "Developing an air quality unit of measure involved reducing a complex set of scientific and medical factors into something intuitive that average people could understand. It started with measuring particulates in the air, and then, with the help of the medical community, translating particulate levels into days of hospitalization and missed work for a given population."

Boyd will teach these types of concepts in his spring class, "Human Biology 113 Environmental Performance: Measuring and Managing the Benefits of Nature." Students taking this class will learn about environmental data and models used in science and public policy. And they'll be taught how to use of spatial data architectures, like Google maps, to develop biophysical and social science methods to count, track, and communicate the benefits of nature.

"As we move forward defining a Green GDP, we're trying to gain consensus on how to structure and store en-



James Boyd

vironmental data in a centralized place, so that we can effectively track it," said Boyd. "For example, in assessing open space, spatial relationships matter in determining value—in other words, open space in Central Park is much more valuable than the same acreage in Alaska. And if you block a migratory pathway, a given open space loses value. That's why spatial databases, such as Google Maps are useful."

Boyd is the former Director of Energy and Resources Division at [Resources for the Future](#) (RfF) in Washington, D.C. Boyd's research focuses on environmental regulation and economics, and when he's not teaching, he's working with **Gretchen Daily** at Stanford's [Center for Conservation Biology](#). Last quarter, Boyd taught "Human Biology 111: 21st Century Environmental Problems, Policies, Conflict, and Progress," and he spoke at the Stanford seminar, "[Environmentalism and the Scientific Method](#)." You can watch this hour-long seminar on the HumBio website. §



How do you appraise open spaces like Central Park in NYC?

Seeking "Beyond HumBio" Panelists

We're looking for alumni volunteers for "Beyond HumBio," a Human Biology student advisory panel that will be held on January 28, 2008. This event attracts eager undergraduates contemplating life after Human Biology. Come and discuss your own career path and share your unique perspectives on your area of expertise. We would prefer Human Biology alumni who graduated five or more years ago. Please contact **Lia Cacciari** if you'd like to participate now or in the future: cacciari@stanford.edu or 650-725-0332 §

Inside the Core: From DNA to Human Behavior

continued from page 1



Student Michael Robinson presenting his poster abstract.

The A-side covers cell metabolism, development from fertilized egg to embryo, stem cells, and basic immunology.

HB-3B is co-led by **David M. Lyons**, Ph.D., Associate Professor-Research in Psychiatry and Behavioral Sciences, and **Anne Fernald**, Ph.D., Josephine Knotts Knowles Professor of Human Biology and an Associate Professor of Psychology. The B-side explores how genes and the environment interact to guide cognitive and social development during childhood, as well as how biological and social factors influence cognitive, linguistic, and social behavior throughout a lifetime. Nutrition and the obesity epidemic will be emphasized, featuring guest lectures from nutrition expert Christopher Gardner, Ph.D., Assistant Professor of Medicine at the Stanford Prevention Research Center, and Tom Robinson, M.D., the Irving Schulman Endowed Professor in Child Health.

Lyons, who is in his third year of teaching the Core, is most excited about the addition of the latest psychobiology findings to the curriculum: “In the last few years there has been a tremendous amount of research showing that environmental experiences can change an individual’s genes, and that these genetic changes can be passed on to future generations. For example, one study showed that starving Eastern European women who gave birth to children during the Nazi supply blockage passed on genes that gave these children very efficient metabolisms. When high fat foods became abundant after the war, these children of famine were more susceptible to obesity.”

The concept that the human genome is a dynamic structure, not a static blueprint for life, is an important concept taught in this course.

To keep up with these rapidly changing fields, assigned reading is primarily from journal articles rather than text

books. For their final project, students must create a poster presentation based on research from a journal article, then share it with the class.

“Last year when we did this, I was impressed at how the student really took ownership and used their critical thinking skills in presenting the results,” said Lyons.

The HumBio faculty invites you to visit the Core poster session if you are in the Stanford area on February 29. You can view the 3A/B syllabus for specifics on presentation times and locations here:

<https://www.stanford.edu/dept/humbio/cgi-bin/?q=node/177> §



Fernald on Baby Talk

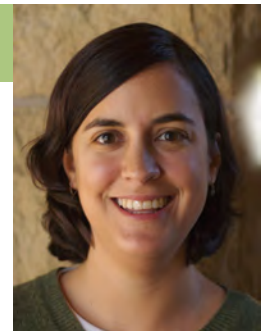
Dr. Anne Fernald has discovered that the funny sounds that we make to infants are widespread across different languages and cultures, and that these verbal constructs serve an important purpose in childhood language development. For more

about this research, you can listen to an interesting radio interview on the [National Public Radio \(NPR\) website](#). Fernald, who runs the [Center for Infant Studies](#) in the Department of Psychology, studies the origins of communication and language in infancy and early childhood. Recently her lab has been looking at how young children develop competence in understanding spoken language and social awareness. §

New Core Coordinator, Nicole Dudukovic

Human Biology welcomes **Nicole Dudukovic** as the new HumBio Core Course Coordinator.

Dudukovic received her Ph.D. from Stanford’s Psychology department. Her research emphasis is in cognitive neuroscience, more specifically human memory and how people learn and remember. She has extensive teaching experience in systems neuroscience, psychology, and statistics. §



Nicole Dudukovic

FACULTY TRANSITIONS

Lee “Retires” and Addresses Health Care Reform

Philip R. Lee (M.D. '48), a favorite in Human Biology, is formally retiring from his teaching duties, so he can spend more time working on one of the more challenging problems our country faces – escalating health care costs and the growing ranks of the uninsured.

“Health care in the U.S. consumes 16% of the GDP, more than twice that of any other country. We use more technology and pay higher prices, all without providing quality care for everyone.” said Lee. “I’m working with a very smart group of people from Stanford and UCLA to look at ways to fix these problems.”

Dr. Lee had ample experience tackling national health care issues while serving as the Assistant Secretary of the Department of Health and Human Services under Presidents Lyndon B. Johnson (1965-1969) and Bill Clinton (1993-1997). He was also chancellor at UC-San Francisco, where he founded and directed the Institute for Health Policy Studies.

Lee is proposing that our country transition from an employer-financed health insurance system to a system financed by a VAT (value-added tax) on retail goods. Consumers would be able to choose from a nationwide assortment of private health insurance plans, rather being limited to a few plans pre-selected by their employers. This in turn would bring consumer choice and market forces back into the health care system, increasing competition and lowering overall costs. In addition, VAT financing would provide a more reliable means of offering affordable health insurance to the unemployed. According to



Philip Lee, M.D.

Lee, VAT-financing is used by almost all other developed nations in the world, and on the whole, it has resulted in better quality care at lower prices.

“Another force driving up national health care expenditures is the cost of caring for the chronically ill. Today 50% of our total health care costs are consumed by a mere 10% of all patients,” said Lee. “To address this issue, we’re working on a ‘Chronic Care Model’ that will provide clinics and hospitals with guidance on how to provide chronically ill patients with better care in ambulatory settings, to avoid expensive hospital stays.”

As if this wasn’t enough to keep a retiree busy, Lee is also finishing up a UCSF/Stanford report on diversity in medical education, writing a chapter in a Medicare book, preparing for the George Silver Lecture (on Silver’s work in desegregating hospitals) at George Washington University, and mentoring Stanford HumBio Honors students.

Always a big supporter of Stanford’s Program in Human Biology, Lee added: “I don’t know of any other undergraduate program that provides a better foundation for careers in public health and health policy.” §



Teen Development Lecturer Retires

Nancy Brown, Ph.D. ('92), Research Associate in Child and Adolescent Development, retired during the spring of 2007. Brown taught the popular "Sexuality in Adolescence" class from 2000 to 2007. Brown will continue her clinical work and research at Palo Alto Medical Clinic. §

AWARDS

Professors Share Nobel Prize



[Stephen Schneider](#), [Mike Mastrandrea](#) and [Lawrence Goulder](#) are among the 2,000 members of the United Nation's Intergovernmental Panel on Climate Change (IPCC) who recently shared the 2007 Nobel Peace Prize with Al Gore, the former vice president. All three have made contributions to IPCC, writing reports that have provided scientific legitimacy to governmental efforts to deal with climate change.

Schneider is the Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies and Senior Fellow at Woods & Professor, courtesy of Civil and Environmental Engineering. Mastrandrea is a lecturer in the School of Earth Sciences, part of the Interdisciplinary Program in Environment and Resources (IPER). Both taught "HumBio 116: Controlling Climate Change in the 21st Century." Goulder is the Shuzo Nishihara Professor in Environmental & Resource Economics and teaches "Environmental and Health Policy Analysis" in the HumBio Core 4B.

Chen Named a Fulbright Fellow

Fannie Chen (HumBio/Political Science '07) was awarded a 2007 Fulbright Fellowship for a 2007-2008 project in China. During her stay, she will assess the sexual health education needs of Chinese university

students, in order to produce a culturally appropriate program and resource center for a local university. Fulbright grants allow recent college graduates the chance to gain meaningful international experience. This program has provided more than 230,000 participants, chosen for their leadership potential, with the opportunity to exchange ideas and embark on joint ventures of importance to the general welfare of the world. §

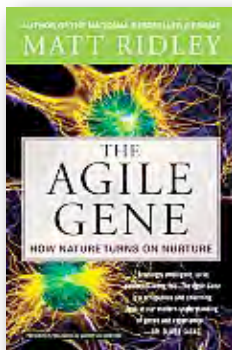


Fannie Chen

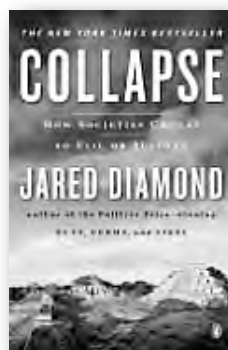


The [Stanford Book Salon](#) is a way to keep your mind active and to stay in touch with what students and faculty are reading. This [new webpage](#) includes two special "Read and Discuss" selections chosen by Book Salon members and hosted by professors Barbara Gelpi and Ursula Heise. We hope they will both broaden your own intellectual horizons, and remind you of the richness and diversity of the Stanford experience. §

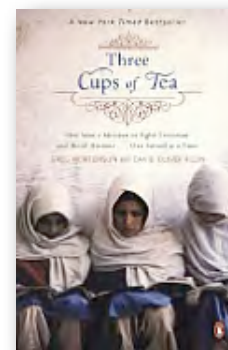
HumBio Reading List: Recommendations from Faculty and Students



The Agile Gene:
How Nature Turns on Nurture
by Matt Ridley



Collapse: How Societies Choose to Fail or Succeed
by Jared Diamond



Three Cups of Tea:
One Man's Mission to Promote Peace
by Greg Mortenson and David Oliver Relin

Call for Humbio Mentors

The Program for Human Biology invites its alumni from all professions to share their experiences with undergraduates through Stanford's new online mentoring program, called [SAM \(Stanford Alumni Mentoring\)](http://sam.stanford.edu/).

SAM aims to connect undergraduates with alumni in one-on-one mentoring relationships bringing experienced alumni who are eager to share their insights about career planning and goals. It provides alumni with the opportunity to reconnect with the Stanford community and share their extensive experiences with students.

If you've ever had a great mentoring experience and want to mentor someone in return, or if you simply wanted to reconnect to Stanford in a more active and personal way, SAM is the perfect resource for you. The next round of mentoring begins in March, but mentors can register online at anytime at <http://sam.stanford.edu/>. §

Donors

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[This newsletter is available online::
http://humbio.stanford.edu/?q=node/211](http://humbio.stanford.edu/?q=node/211)

HumBio's Trivial Pursuits

The HumBio highlight of Stanford's Homecoming weekend was the HumBio Reunion and Trivia Challenge. Festivities began with snacks and conversation on the "Geo



Bob Siegel

Corner", followed by a HumBio trivia challenge, starring emcee [Bob Siegel](#) and Tech Diva [Anne Friedlander](#). Those who proved that they were "Smarter than a 5th Grader" were awarded HumBio logo mugs and tote bags. For all participants, it was an enjoyable synaptic reactivation of latent memories and a chance to reconnect with old friends.

To view more photos see the [HumBio website](#). §

We'd Like to Hear from You:

Our alumni, students and faculty are a community focused on making a difference in the world. You can strengthen this community by staying in touch and sharing your stories. Please send us news about your achievements, or ideas for this newsletter. And visit the [HumBio website](#) for updates on your former classmates.

Contact Information:

Program in Human Biology
Attn: **Robyn Duby**
Stanford University, Bldg 20
Stanford, CA 94305-2160
Phone: (650) 725-0336
rduby@stanford.edu



Ashleigh, Brian (HB '97), Amanda, and Nicole Morris joined the HumBio Reunion during Homecoming.