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THE OBERLIN COLLEGE FACULTY AND STAFF NEWSPAPER

Community-Planned Center Will Model Ecological Design

By Betty Gabrielli

"If we are to make the transition to a sustainable and decent future in a world of 10 to 12 billion people in the next 50 years, the size of the 'human footprint' must be reduced by 50 to 90 percent," says Professor of Environmental Studies David Orr. "This transition will require broad changes in our ideas, perception, and values—which makes it, in large part, a challenge to educational institutions."

Oberlin is ready to face the challenge. In June President Nancy Dye approved a proposal from the Environmental Studies Program Committee to design and construct a $2.5 million 10,000-square-foot environmental-studies center to showcase the latest in ecological design and teach the latest in environmental thinking.

The project is anything but modest.

Oberlin's Environmental Studies Center will be one of the first structures of its kind built on any campus, here or abroad. Minimizing its environmental impacts by using ecologically sensitive technologies, landscape techniques, and design strategies, when completed the facility will be used to foster environmental education for the entire Oberlin community—town and gown—and serve as a demonstration model for ecological design at other liberal arts colleges.

Dye gave her approval to the Environmental Studies Center on the condition that Orr raise the money. With a half-million-dollar boost from John and Libby Bowen Morse, both 1935 graduates of the College, he is doing that. The total raised to date, $860,000, also includes grants of $225,000 from the Educational Foundation of America and $50,000 from the Gund Foundation.

What Will the Center Look Like?

While the design of the center is just beginning, certain features are likely to be included. Several academic departments will probably have classroom space in the new building. The center will include a multistory greenhouse, a library, balconies and catwalks, and living quarters for the several students who will help maintain the building. The foyer may house transparent tanks and conduits that make up the building's organic waste-water-purification system.

Central to the structure—and visible to visitors—may be digital displays of the building's energy budget, the heat used, and the kilowatt hours produced by the building's photovoltaic (solar electric) paneling and wind generator.

One of the project's main goals is to recoup the complete cost—environmental and dollar—of the resources used to construct and maintain the building. The design criteria for the center will include maximum energy efficiency to reduce the costs of power and other expensive resources used to operate it. The full cost accounting required to build this way is seldom done, Orr says, and the project will demonstrate how to do it.

Orr

Orr envisions the center as not just a building but the linchpin of a cutting-edge, interdisciplinary program that will have a beneficial impact across the Oberlin community. Beginning with its participatory design process, he sees the center bringing together disparate departments, students, faculty, and staff, as well as uniting the campus and local communities.

Long in the Talking Stage

Talk about a building that would demonstrate ecological principles—often going by the name Eco House—has been kicking around campus for at least 14 years.

Now that the project is getting off the ground, Orr wants to involve the whole Oberlin community—College and town—in its planning. Along the way, he hopes, everyone will gain a greater mastery of ecological design. Town meetings, brainstorming sessions, focus groups, and intensive planning discussions with architects will occur through summer 1996. An all-faculty session is scheduled for October 31. Yesterday an information session in Wilder called together members of the College Administrative and Professional Staff for their opinions. The Oberlin Public Library hosted a public meeting about the center October 18 that 15 non-College-affiliated persons attended. Student sessions, of which there will be four, started September 20; the fourth will be November 9.

Who's Who in the Project

Working closely with Orr on the project is the faculty-student Environmental Studies Program Committee, which Orr chairs. The other members are senior Miriam Axel-Lute; sophomore Kirti Baranwal; Dan Barber, visiting assistant professor of chemistry; David Benzing, Danforth Professor of Biology; Norman Care, professor of philosophy; David Egloff, professor of biology; sophomore Asha Goldstein; Clayton Koppes, professor of history; Roger Laushman, assistant professor of biology; junior Jessica Resnik; John Scofield, associate professor of physics; Stephen Sheppard, associate professor of economics and environmental studies; Athena Tacha, professor of art; and Harlan Wilson, associate professor of politics.

Playing a large role in publicizing the project and coordinating the players are two new staff employees of the Environmental Studies Program: environmental-design plan-

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Shansi Extends Deadline for Winter Term Proposals to November 3

The Shansi Memorial Association has extended to November 3 the deadline by which it must receive proposals for Winter Term projects based at its sites in China, Japan, Indonesia, or India.

The association is offering a $10,000 competitive grant that will underwrite the travel and other expenses of a faculty member and between seven and twelve students during three or four weeks in January. But so far it has seen no competitors.

"We welcome proposals in any discipline," says Carl Jacobson, Shansi's executive director. "We're amazed that no one has yet submitted a proposal. It would be a shame if no one took advantage of this opportunity."

To prime the pump Jacobson offers these suggestions:

- Someone from the Environmental Studies Program or Biology Department could take students to work with members of the zoology departments at the American and Lady Doak colleges in Madurai, India, on environmental issues. One professor there is an expert on the fresh-water ecology of the area, while another heads the Madurai Environmental Protection Council. A recent campaign involved noise pollution; another, clearing out the storm-water system, some of which was occupied by squatter communities.
- Students and a faculty member could work with a member of the Tamil Department of the American College on village life in India, looking at issues of villager identity and village dance forms.
- Members of the Obirin University economics department, some of whom speak fluent English, have contacts with people in automobile manufacturing in the area of Japan between Tokyo and Yokohama. Labor, pollution controls, and the relationship of this kind of manufacturing to the community are some topics that could be examined.
- Yunnan University is located in the midst of an astounding variety of Chinese subcultures, and its faculty is very strong in the anthropology, history, and religion of the region. Some of the faculty members have good English skills and would be willing to work with Oberlin faculty. Visits to the various regions could be arranged.

Jacobson and Associate Vice President David Love will help interested faculty develop their proposals and budgets. Biology professor David Benzing, who took 10 students to China last Winter Term, will share his experiences with persons who ask. The Shansi office (x8605) has detailed information about the sites and conditions of the grant.

Last Winter Term these students explored a rain-forest preserve and nearby village in Xiswangbanna, south of Shansi's site in Kunming, China. David Benzing, Danforth Professor of Biology, took them on a grant from the Minneapolis and Ethel and Raymond F. Rice foundations. This year the Shansi Association will help underwrite a similar Winter Term experience—if it receives faculty proposals by November 3.

PHOTOGRAPH BY LINDA K. GRASHOFF

Who Killed Steve Biko? Ben Schiff and June Goodwin Tell the Story in a November Issue of the *Nation* Magazine

The November 13 issue of the *Nation* magazine will carry the first public revelation of a story well known in South African police circles. The story includes the name of the police officer who allegedly beat and killed antiapartheid activist Steve Biko 18 years ago while he was in South African police custody. The narrative about the Biko killing is only one of many that Ben Schiff, professor of politics, and award-winning journalist June Goodwin, his wife, collected for *Heart of Whiteness: Afrikaners Face Black Rule in the New South Africa.* The book's publication date is November 6.

But readers won't find the alleged murderer's name in the book. The publisher, Scribner, would not publish it because—as Schiff says he understands—libel law in foreign countries in which the publisher's parent company maintains offices could leave Scribner open to legal suit. Such suits are much more difficult to win under U.S. libel law, and the *Nation*, which does not maintain foreign offices, has filled the gap.

Both Scribner and the *Nation* publish the Goodwin–Schiff account that within police circles the alleged murderer reputedly went by a nickname that commemorates his deed: "Biko." The *Nation* article gives the officer's whole name and carries his denial of the nickname and of his responsibility for the murder.

Goodwin and Schiff's book, based on more than 120 interviews, depicts white South Africa in a wide range of Afrikaner voices, from those who still believe in apartheid, to those who fought against that system from its inception.

"The book shows," says Schiff, "why it's wrong to be complacent about Afrikaner views of the transition in government."

This year or early next year, the South African government will begin probing apartheid-era crimes.

"This is as explosive an issue in South Africa as the Nuremberg trials were in post-Nazi Germany," write Goodwin and Schiff for the *Nation.* ". . . The probe into South Africa's past could open old wounds, revivify a right wing that fears exposure, horrify the sheltered middle-class Afrikaners and infuriate those people who were wronged and their relatives. Truth and reconciliation may be antithetical objectives. The upheaval that could result from faulty compromise could imperil the tenuous peace in South Africa and the national elections scheduled for 1999."

But the authors conclude their book optimistically:

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Norman Craig Wins ACS Undergraduate Research Award

What's the Secret of His Success?

Like many visual artists, Norm Craig doesn't talk long without sketching something. Like many poets he never discards a line of thought that doesn't have immediate use. And like many politicians he makes and remembers connections with many people.

What has made Craig an outstanding chemistry professor—as noted not only by his peers at Oberlin but also by the American Chemical Society (ACS) and other national organizations—may be largely these personal qualities that he shares with other creative and effective people.

The ACS 1996 Award for Research at an Undergraduate Institution, to be conferred in March at the ACS annual meeting, together with a profile of Craig that the ACS will run in the January issue of its journal, *Chemical and Engineering News*, will make more broadly known what his colleagues on and off campus have long acknowledged: The man has a real knack for doing significant research and for drawing students into doing it with him. In nominating him for the award, Martin Ackermann, professor of chemistry, and Robert Thompson, associate professor of chemistry and department chair, called Craig "the essence of a scholar–teacher."

PHOTOGRAPH BY JOHN SEYFRIED

This summer Craig (standing) conducted research with chemistry majors Helen Barnes '97, from Arcata, California; Emilio Morales '96, from Quincy, Washington; and Sonan Osmani '97, from Kabul, Afghanistan. An NSF grant supported their work—to obtain and analyze very high-resolution infrared spectra of nonpolar molecules. Craig's ability to secure federal, foundation, and corporate grants has enabled much of his student-aided research.

Since 1957, when Craig returned to his alma mater to begin his now nearly 40-year teaching career (he'd graduated in 1953), he has squired 107 undergraduate Oberlin students through chemistry research. Fifty-two (and counting) of his students have co-authored publications with him.

One such student was David Evans '63, now the Abbott and James Lawrence Professor of Chemistry and the chemistry-department chair at Harvard University. Although he "liked science in high school," he says, Evans was uncertain of his major when he arrived at Oberlin. Even after taking some science courses here, he still wavered between science and medicine as a career—until he thought about his research experiences with Craig, which he characterizes as "deep and passionate." Three years of personal contact with Craig, says Evans, made him realize: "I want to be like this man." Even now, when he has to work at balancing his own teaching and research, Evans says he tries to keep in mind what Craig did for him. "That he won [the ACS] award is wonderful," he says.

The Chinese Have a Word for It

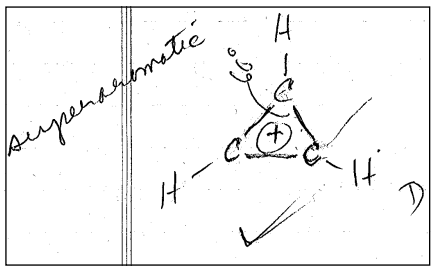
How has Craig managed to mentor so many students and at the same time contribute to the literature in his fields?

Part of what has enabled him may be what in Chinese is called *guanxi*, which translates as *personal connections* in English. When he gave the Sigma Xi lecture May 8, reviewing his first 18 years on Oberlin's faculty, Craig applied the honorary society's motto to this experience: Companions in Zealous Research.

Companions he has had.

Craig's first undergraduate research experience—during two summers—was at the National Bureau of Standards (NBS), where his father was a staff scientist. Craig calls those summer experiences "wonderful," in part because they gave him the confidence to ask to use the bureau's instruments for his own work, which he did 10 years later, in 1961. In 1986 he initiated another connection with the organization, which by then had changed its name to the National Institute for Standards and Technology (NIST). Still working with the chemists and instruments at NIST, he says he is able to do it "because of knowing something about the operations."

His first experiences at the NBS influenced him to provide similar opportunities for Oberlin students, he says.



Craig's sketches help his students follow his line of thinking and give others a hint of the excitement he feels about his research.

For Craig, a "companion in zealous research" is not only someone with whom he shares chemical information. Former Oberlin students and professional colleagues figure importantly, but so do certain major scientific instruments (including computers) that make his work possible, fellow graduate and undergraduate students, an extraordinary landlady who for many years let rooms rent-free to summer chemistry-research students, and his congressional representative, who brought to Craig's attention a gifted high-school student who helped him in summer research and later enrolled at Oberlin.

An Important Key: Stepping Sideways

Another Oberlin professor in the science division has noted that it is no small feat for an academic scientist to develop a research program sustainable at a small college that also attracts outside support *and* is able to involve undergraduates over four decades. Craig has touched all three of those bases, and he's done it not by *guanxi* alone.

He created the opportunity to develop companions in zealous research by stepping sideways from the knowledge he had built earning his Ph.D. degree at Harvard.

Craig refers to his sideways step as "the transformation of an enzyme kineticist into a molecular spectroscopist with a special interest in fluorocarbons." But he explains that transformation in simple language.

"Fluorocarbons are relatively unexamined by organic chemists," says Craig, an organic and physical chemist. "Most physical chemists don't make compounds. Falling between these cracks meant I could work at my own speed." And, not incidentally, he could accommodate the diverse speed and talents of student researchers. "Making the compounds is something students can do with little background yet still understand," he says.

All chemists are devoted to understanding the structure, function, and properties of molecules. Compounds are complex molecules. Creating and then examining a series of molecules that are similar to each other can illuminate the molecules' structure—especially the bonds between the different of elements of the compound.

"This decision to step out of the accepted mode of physical chemists and attempt syntheses of needed, interesting molecules proved to be a key to finding a vibrant research niche for me as a college faculty member," Craig told his Sigma Xi audience; the importance he attaches to that decision is revealed in the written version of his speech: the sentence is set in italics.

"Despite being a physical chemist, I have learned how to synthesize special molecules . . . .," Craig continued. "Thus, my students and I have had interesting materials to study as well as temporary control over the investigation of these new substances. We have not been outcompeted as we do the more slow-paced investigations that are characteristic of work done in college laboratories. Our success in synthesizing small fluorocarbons was confirmed when a biochemist at the University of Southern California called to ask how we had made 3,3-difluorocyclopropene. He had found this substance in one of our spectroscopy papers in the *Journal of Physical Chemistry*, after being told by his organic colleagues that this substance could not be made."

Mining one's own exotic vein could make a person who is less connected than Craig feel orphaned. Not only is this obviously not the case for Craig, but by finding his own niche, Craig says, he has "learned things way beyond anything I'd ever imagined."

Other Secrets of His Success

To be complete about how Craig stays in the thick of things while doing his own thing requires mentioning his sabbatical and research leaves. In the course of his career he has used these times, as well as summers and other stolen moments, to learn new research techniques and constantly retool. But it's a cycle; wherever he goes he is following an established connection or making a new one. He connects with people who are connected to geographic locals and institutions, which are connected to other people and instruments—including computers, computer programs, and communication protocols—which are connected to other people, and the connecting goes on and on.

It's hard to hold on to the stereotype of scientist as lab hermit after 15 minutes of talking with Norman Craig. Instead, one wishes one had been a better chemistry student oneself. This man is having fun, doing good, and reaping rewards. What could be more fulfilling?

The electronic version of this issue of the *Observer* (http://www.oberlin.edu/~observer/main.html) has hyperlinks to a September 3, 1992, *Observer* story, "Professorships to Craig and Hamburger" that carries an account of Craig's professional history. It was written on the occasion of his being named Biggs Professor in the Natural Sciences.

—Linda K. Grashoff

Center . . .

Continued from page 1

ners Deirdre Holmes and Brad Masi. Both are Oberlin graduates of 1993 who were involved in earlier incarnations of the project as undergraduates. Holmes returned to Oberlin this year from California, where she had earned an M.A. at the University of California–Los Angeles in urban planning. She is coordinating the design and planning aspects of the project. Masi, who worked with the Rocky Mountain Chapter of the Sierra Club before returning to campus this year, is coordinating communications and community and campus involvement.

The next big step in the project's timeline is a weekend open-meeting session November 10 through 12, when everyone with interest in the project will gather to develop a conceptual document summarizing the standards and uses of the proposed center.

Facilitated by landscape architect John Lyle, author of *Regenerative Design for Sustainable Development* and founder of the Center for Regenerative Studies in Pomona, California, the session, called a *charrette*, will provide an uninterrupted block of time to think through and develop a major portion of the building program. In January the project will pass to a project architect, who will guide the further development of the design. In the spring experts in waste water, energy efficiency, materials, landscaping, and integrated planning will visit Oberlin to share their expertise with the architect and others.

The location of the building will not be determined until April or May, Orr says, in part because the architect (not yet chosen) needs to have a say in siting the building. The Board of Trustees must then approve the site before construction can begin.

Groundbreaking ceremonies are scheduled for June 1997, and the building is expected to be ready for occupancy in July 1998.

Betty Gabrielli is a senior writer in the Office of Communications.

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News Notes

Professor of Religion **James Morris** was one of the organizers of an international symposium, Le Spirituel: Unité et Pluralité, sponsored by UNESCO, the French Ministry of Culture, and the Académie de Paris. Held September 7-10, the symposium focused on the role of spirituality in everyday life. At the assembly Morris gave a public lecture, "La pensée d'Ostad Elahi." Elahi was a Kurdish jurist, musician, philosopher, and religious thinker born in 1895 whose centennial the symposium commemorated. While in Paris Morris gave interviews for the France-Culture and France-Inter radio networks concerning his use of feature films to teach about religion and spirituality in his Oberlin classes and in recent workshops in Europe, India, and the Middle East. An English version of Morris's lecture was read at the symposium's London session, held at the University of London's School of Oriental and African Studies September 13. Morris coorganized a related New York symposium September 22-24 cosponsored by UNESCO, the New York University Department of Near Eastern Studies, and Metropolitan Life. There he gave the concluding address, "The Practical Spiritual Teaching of Ostad Elahi." • A recent presentation by **David Orr**, professor of environmental studies, must have made an impression on syndicated writer Donella Meadows, an adjunct professor of environmental studies at Dartmouth. September newspapers in West Virginia, Vermont, Massachusetts, and Maine—among others—carried a piece she wrote retelling a story Orr relates about open faucets gushing water on the floor. What's the common remedy: mopping up or turning off the tap? Orr (and Meadows) are making the case for turning off the tap rather than endlessly mopping up. Orr's context was the environment and its problems; Meadows applied Orr's theme also to health care, poverty, and social and personal problems in general. • **Dennison Smith**, professor of psychology and neuroscience, **Jeffrey Witmer**, associate professor of mathematics, and **Melissa Ballard**, an Oberlin College affiliate scholar, are running together in the November election for the Oberlin Board of Education. They want to improve communication between the board and the community and support teachers more effectively. • **Inez Smith**, who worked in Oberlin's housekeeping department from 1963 until she resigned in 1982, died September 8 in Mendenhall, Mississippi, following a sudden illness. Six of her children—including **Indiana Smith**, a cook in Dascomb Residence Hall—survive. • **Donald Walden**, visiting assistant professor of jazz studies and saxophone, performed August 27 at Detroit's Chene Park Music Theatre with other jazz musicians to honor the 75th anniversary of the birth of Charlie Parker, one of the originators of modern jazz. • Lake Forest, California, resident **George Waln**, emeritus professor of clarinet and music education, remembered how he began writing a column, "Woodwind Clinic," for Instrumentalist magazine in the publication's August issue. His 40-year relationship with the journal, he wrote in his letter to the editor, "added inspiration" to his life. His columns are collected in *Woodwind Anthology*.

Faculty Meeting

Conservatory Takes a Vote on Noon Classes, Discusses the Place of the Con in Oberlin College

At the October 10 meeting of the Conservatory Faculty, faculty members passed a motion drafted by the conservatory's Educational Policy Committee that encourages use of the noon slot for sections of multiple-section courses. The motion also permits faculty to use—"sparingly and with flexibility"—the noon time for applied-studies lessons, studio classes, and ensemble coaching as necessary. The motion, since forwarded to the College Educational Plans and Policies Committee, is expected to receive consideration by the General Faculty this fall. The College is in its second year of a two-year schedule experiment that permits noon classes under certain conditions

President Nancy Dye spoke at the meeting on the place of the conservatory in the College. "The conservatory is not a jewel," she said in beginning her remarks. People who say it is, no doubt, intend the comment as a compliment, but the word choice inappropriately suggests that the con is a luxury, and separate from the rest of the College. Despite its specific mission, the conservatory is integral to the functioning of Oberlin College, Dye said. The president and faculty went on to discuss strategic planning, financial aid, financial reserves, and the double-degree program, among other topics.

Other New Courses And a Correction

The *Observer* learned about some new courses being offered this year too late for inclusion in the last issue's article "New Courses Sprinkle the Curricula." The departments of Art, Geology, and Neuroscience and Biopsychology have these additions:

Both semesters, Assistant Professor of Art Lynn Lukkas is teaching a new course in the art department's Visual Concepts and Processes series: Time-Based Media. The course introduces students to the basic techniques and concepts used to work in interactive and time-based media such as video and digital imaging.

In the second half of the spring semester river specialist Andres Aslan, visiting assistant professor of geology, will teach Rivers and the Environment, using case studies such as the Mississippi River floods of 1993 to discuss the characteristics and processes of rivers and river environments as they relate to wetlands and floodplain land-use management, river engineering and flood control, and water-resources management. The course is cross-listed in environmental studies.

Bradford Bratton, visiting assistant professor of neuroscience, will teach Sensory Physiology and its accompanying laboratory this spring. The courses will examine sensory systems in invertebrates and vertebrates. Topics will include aspects of neural transmission, mechanisms of sensory transduction, and neural coding and information processing in a variety of nervous systems. The laboratory will study several sensory systems to understand their structure, physiology, and behavior.

Alyssa Paul Billiard '93, not Catherine Jarjisian, is teaching the new music-education course Teaching Children to Sing, described in the October 12 *Observer* article.

Electronic Obie

Good Times: Not a Virus but a Hoax

By Linda K. Grashoff

A week or so ago a friend called from across campus with a worry in her voice, "Have you heard about this Good Times computer virus? It sounds really awful."

Well, yes, I had heard of it about six months earlier. It supposedly is a virus that can wipe out your hard drive (by placing the processor in an "nth-complexity infinite binary loop") if you open an E-mail message that contains it. The message will arrive with the subject "Good Times" in its header.

When I first heard about the Good Times virus, I called Linda Iroff, assistant to the director of the computing center, almost immediately. "No," said Linda; there's no such thing. It's a hoax." I relaxed and forgot about it.

Now that the hoax is making rounds again, it may be time to get serious about debunking this critter. Here are some facts and advice I pulled last week from Chester Andrews, the computing center's client-support analyst who works with Macintosh machines, and Don Hilton, the client-support analyst who works with PCs:

- No known virus has ever spread by E-mail messages alone; to work, viruses must imbed themselves in executable programs, applications; they can't attach themselves to plain text, which is what E-mail messages are. They *can* spread by E-mail attachments (enclosures) if the attachments are executable programs. See below.
- If you run virus protection on your computer (such as Disinfectant or SAM for Macs, F-Prot for PCs), chances are slim that you will suffer from a computer virus. The computing center sends out all new machines with virus-protection software, and tries to see that older machines receive it, too.
- So far, most computer viruses are spread by floppy disks, not the Internet. Let your computer scan a floppy that has an application program—especially shareware—on it before you install the application. Commercial programs you receive on disks in sealed envelopes from the manufacturer are usually clean; don't worry about them. Even though most viruses are spread by floppies, some virus outbreaks have occurred from downloading programs from electronic bulletin boards.
- QuickMail enclosures of application programs may contain viruses. Don't retrieve enclosed files that you think might be application programs if you don't know or trust the sender. Retrieving such an enclosure to a floppy rather than your hard disk is no protection; the virus could still infect other parts of your machine before your virus-protection program could scan it.

How serious a threat are computer viruses at Oberlin?

"I really don't worry about them," says Chester. "I leave SAM on all the time." He says he doesn't even worry when downloading programs from the Internet. So far this year he's heard of two fairly benign Mac viruses on campus, and thinks there may have been 10 all last year. "Most Mac viruses have not been destructive," he says.

"Hardly a week goes by that I don't receive a virus report on at least one machine in the computing center PC public area," says Don. "No vicious ones, though. It's like having a low-grade infection. The machine refuses to format high-density floppies, or everything slows down." Five or six faculty members and two staff people have called Don with problems traceable to PC viruses in three years. The only really bad virus Don has ever known of in that time was on a student's personal PC. The student lost all the files on his hard drive as a result.

If you want to learn more about the Good Times virus hoax, which has now passed into the arena of urban myth, go to the web page http://www.tcp.co.uk/tcp/good-times/index.html and poke around.

One more thing: If you fell for the Good Times hoax, don't feel bad. So, reportedly, have people at AT&T, Hughes Aircraft, Texas Instruments, the Department of Defense, and NASA.

South Africa . . .

Continued from page 1

"In the end, we are hopeful for South Africa, not so much because Afrikaners have finally faced reality, but because the majority population is richly supplied with thoughtful, talented leaders and empathetic, forgiving people. We believe . . . that the experience Afrikaners now face, of living closely with blacks, holds within it the greatest promise for development of a humane, egalitarian, and democratic South Africa. We are convinced that Afrikaners will continue to astonish the world and themselves as they learn from their fellow South Africans."

Do the authors think their writings could have an influence in South Africa? "We wrote the book as outsiders for outsiders," says Schiff. But in trying to portray Afrikaners to others, if the authors portray Afrikaners to themselves in a helpful way, that would be "the most wonderful outcome," he says. The book, however, has no publisher in South Africa, and Scribner is not distributing it there.

Archbishop Desmond Tutu endorses *Heart of Whiteness*, calling it "thoroughly gripping and fascinating," and Barbara Masekela, South Africa's ambassador to France, wrote the forward. The Co-op Book Store will hold a book signing for Goodwin and Schiff November 4.

Premed . . .

Continued from page 4

cal, and economic constraints on delivering health care to those who need it. Faculty and local practitioners would contribute a lecture or discussion of a topic of interest to them while a faculty coordinator would tie it together with readings, small group discussions, and assigned papers on poverty, racism, health policies, public health, and medicine. I envision physicians, hospital and HMO administrators, insurance representatives, patients, and patient advocates participating in this course.

I also propose that one or more seminars for premedical students be offered by interested faculty. The seminars would focus on medical and other relevant readings in the humanities along the lines developed by Lantos and Coles. The seminars could stand alone or be coupled with students engaging in real-world internships or volunteer work in hospitals, clinics, and nursing homes. By combining academic work and service, students would have an opportunity to reflect on their service experiences and put them into larger perspectives through discussions and readings.

I am *not* proposing a new individual major or program. I am only proposing a solitary, multidisciplinary course on contemporary health-care issues, augmented by a seminar or two and a suggested course of study that students could follow using electives outside their major. Whether we have the resources to implement this modest proposal remains to be seen.

David Egloff is professor of biology. This article is adapted from a talk he gave at the October 6 Faculty and Administrative and Professional Staff Luncheon. He is preparing a formal proposal for the interdisciplinary course that he envisions in this piece.

Observations

Premedical Curricula at Oberlin: How to Make More Humane Physicians

By David Egloff

One of the things I did on my sabbatical leave last fall was audit a course in the humanities at Harvard. I did it to hear how Robert Coles answers the question How does a child grow up to be a good person? As one of Oberlin's premedical-student advisers, I wanted to learn if his answers would help me answer a related question: How does a person grow up to be a good physician?

Physicians must be more than just good persons. In fact, the American Medical Association's Working Group on Personal Qualities, Values and Attitudes of Physicians for the 21st Century concluded in 1984 that good doctors

> should possess stamina, moral sensitivity and integrity, curiosity and creativity, the ability to cope with intellectual and emotional demands, and a commitment to help and work with others. They should value intellectual growth, science and the scientific method, social responsibility, and altruism. They should be respectful, modest, and compassionate toward their patients and other health professionals.

Abundant evidence—cited in a 1984 Association of American Medical Colleges report and elsewhere—shows that medical education either fails or inhibits the development of those traits.

Is the undergraduate premedical curriculum part of the problem or part of the solution? I am going to conclude that the latter is the case. But before I do, I'll review briefly the recent history of U.S. medical education.

Premed Requirements, Premed Majors

Admissions requirements for U.S. medical schools have changed little since the great medical-education reforms of the early 20th century replaced for-profit proprietary medical schools with medical schools in accredited research universities. Typically, one or two years of chemistry and one year each of biology, physics, mathematics, and English have been required for the past 70 years for entrance to medical school. Colleges and universities, more or less willingly, provide the necessary courses, although the topics selected for testing on the Medical College Admissions Test (MCAT) are not always the ones that a good professor of chemistry, biology, or physics includes in an introductory course.

Some undergraduate institutions established premedical majors during the first half of this century. Oberlin offered two premed majors from the 1930s through the 1950s, one called zoology-premed and one called chemistry-premed.

But by the mid-1950s medical schools and liberal arts colleges recognized that changes in premedical education were necessary because emphasis on undergraduate scientific preparation had become excessive. Education relating to many other qualities and skills required to be a good physician was being neglected in the premedical curriculum, they said.

Some medical educators advocated accepting students directly from high school so that medical schools could have full control of the undergraduate *and* medical education. Thirty such programs in the country today accept 18-year-olds and grant them a B.S. and an M.D. degree after six to eight years of study. These programs account for 2 to 3 percent of the students entering medical schools each year.

Other medical educators argued that premeds should have a full four-year undergraduate education before medical school, but that the emphasis on the natural sciences should be moderated. Colleges cooperated by eliminating premedical majors and encouraging premedical students to major in any discipline of their choice, including majors outside the natural sciences.

Ironically, in the 1950s Oberlin's two premed majors had more electives than any other major except French, resulting in the Oberlin premed major obtaining a broader course of study than he or she could obtain by majoring in any other subject. But to show cooperation with the medical educators, Oberlin did drop the two premed majors and replaced them with a 40-hour composite major in chemistry and biology called the chem-bio major. Although created for premeds, it was not called a premed major. The compromise pleased no one except, perhaps, the students who continued to gain a broad general education while earning the minimum number of science courses to enter medical school. Those who failed to enter medical school, however, did not get enough background in either chemistry or biology to proceed to graduate school in those fields without additional work. The chem-bio major lasted only a few years. From the mid-'60s on, premeds at Oberlin had to major in a traditional discipline.

What Major Do Premeds Choose?

At Oberlin and elsewhere, after 40 years of being urged to major in any discipline, about 75 percent of the premedical students still major in a natural science. Why? Because medical schools have not changed their requirements or their selection process to match their rhetoric. They continue to emphasize science grades and science topics on the Medical College Admissions Test. Good science grades are required regardless of the academic major. The average grade-point average for the entering class for all allopathic medical schools in 1994 was 3.48 on a four-point scale.

This science emphasis is discouraging to premed advisers, who see the medical schools distorting the educational options of their undergraduates. In the 1960s premed advisers began to fight back and demand a larger role in the selection process. Forming the National Association of Advisers for the Health Professions (NAAHP), they conceded the need for strong science requirements but demanded that medical schools allow them a larger role in evaluating students. They argued that grades and test scores alone are not sufficient to identify persons who will make the best physicians.

Currently two chemists, two biologists, one neuroscientist, and one social scientist are Oberlin's designated premedical advisers. Each year one of the advisers prepares a confidential internal report—a digest of the American Association of Medical Colleges report on applications, MCAT scores, and acceptances—and circulates it among the other advisers. The Office of Career Services provides catalogs and applications packets; holds mock medical-school-admissions interviews; and distributes a premed handbook (whose first edition was produced by Emina Hui-Na Huang '84, then a premed student and intern in Career Services).

Has this loosely organized premedical program been effective? Yes and No.

Our most talented students gain entry to medical schools of their choice. But many students are rejected. Some of the rejected students have good credentials and personalities that would make them good physicians.

In 1993 the national acceptance rate to medical school was 41 percent. Oberlin's was 52 percent, or 11 percent above the national average. In 1994, the national acceptance rate was 38 percent; Oberlin's was 56 percent. That's an 18 percent margin. Not bad, but far below the 30-50 percent margins enjoyed at some other highly competitive colleges and universities.

How to Improve Oberlin's Medical-School-Acceptance Rate

Can we improve on that performance? I think yes, and for two years I have been working and lobbying for two changes:

- I think Oberlin should join the vast majority of undergraduate institutions that have a health-careers committee that works aggressively to facilitate the entrance of their students into a health profession that fits their talents and personalities.
- I think we should identify and develop more curricular and noncurricular options that will attract students to the health professions for the right reasons.

One approach to the second suggestion is to provide more information so that students can make more informed choices about their careers based on their interests and skills. One kind of vehicle for doing this is something I used in Medicine and Ambiguity, a Winter Term course I taught in 1994. The course consisted of reading and discussing narratives written by physicians and patients.

I got the idea from John Lantos, a pediatrician and bioethicist who teaches a course called Medical Odysseys to undergraduates at the University of Chicago. Lantos's students read, as did we, several recent accounts of what it feels like to be a care giver or a patient or a medical student. We read, among other books, Philip Roth's *Patrimony*, Perri Klass's *Other Women's Children*, Audre Lorde's *The Cancer Journals*, William Styron's *Darkness Visible*, and John McPhee's *Heirs of General Practice*. (The McPhee book is about family practice in rural Maine and features Sandy Burstein '75.)

At Harvard College and Harvard Medical School Robert Coles has been using both fiction and nonfiction for many years to increase future doctors' sensitivity to their patients.

Medical humanities and social-science courses are also being added to the curricula of medical schools, for two reasons: Premed students are not getting enough as undergraduates, and undergraduates are often too inexperienced or distracted to assimilate the lessons.

> I envision a multidisciplinary, team-taught course that would give an overview of health care primarily from the perspectives of the social and natural sciences.

Can we improve on the quantity and quality of such teaching at Oberlin? Perhaps.

Several Proposals

I propose that premed advisers publish a list of suggested courses for premeds outside the required science courses. By a judicious selection of introductory courses that premeds elect to meet distribution requirements, premeds will get a good introduction to fundamental concepts in the social sciences and humanities that will be valuable to them as physicians. Advanced courses focused on health care are scarce at Oberlin, but there are a few, like Professor of Religion Gilbert Meileander's Medical Ethics course, and there could be more if we encouraged them. Advanced work not related directly to medicine—in religion, philosophy, classics, English, and other disciplines—may, in the long run, prove just as valuable to future physicians.

Coles argues that stories—many of the great novels and poems—can be guides to how we live our lives. He assigns readings by some favorite authors—including Flannery O'Connor, James Agee, William Carlos Williams, George Eliot, Charles Dickens, and Walker Percy—in his courses and seminars.

Coles has frequently said that he considers it a privilege to be able to urge some of these books on others—and specifically on medical students. In a 1986 issue of the *Journal of the American Medical Association* he followed that train of thought like this:

> A medical or psychiatric "reductionism" does not quite explain how any given person comes to terms with his or her life, or illness, or final moments on this earth. . . . Novels and short stories or poems help us to understand such matters . . .

In the same journal three years later he wrote:

> [Students] need (and in my experience, almost hungrily crave) a chance to ask those haunting moral and philosophical questions a George Eliot, for instance, in *Middlemarch*, keeps posing: what is the meaning of the life we doctors so constantly try to protect, and how ought that life be lived—with what ideals and aspirations, with what accommodations, adjustments, compromises in the face of this world's constantly pressing opportunities, frustrations, and obstacles?

Are Undergraduates Ready?

Coles and others are concerned that undergraduates are not ready to absorb these lessons. Undergraduates *are* young. Short of raising the minimum age for college to 21, perhaps we should provide at least one interdisciplinary course that will put health care in a broad and meaningful context for them.

I envision a multidisciplinary, team-taught course that would give an overview of health care primarily from the perspectives of the social and natural sciences. The course would survey what is technically and scientifically feasible and identify the political, sociologi-

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Blocker's article described the implications of an ecological perspective in the elementary school setting. Banning and his colleagues at WICHE have been interested in institutional change in higher education. While this article does not describe a â€œprogramâ€ per se, it does describe in some detail a methodology for change. After discarding traditional student personnel perspectives (unenlightened, adjustment, and developmental), Banning and Kaiser push out the frontier with their concept of â€œecosystems.â€ An ecosystem is one in which there is a true transaction between mutually dependent p 9 Ecological Models. Learn vocabulary, terms and more with flashcards, games and other study tools.Â 9 Ecological Models. STUDY. Flashcards.Â In planning an intervention using an ecological model, which level would you be addressing by focusing on attitudes, beliefs and knowledge? A. Intrapersonal B. interpersonal level C. institutional level D. community level. A. Intrapersonal. The underlying concept of ecological models is best reflected in which of the following: A. The more people change, the better the environment. B. The environment in which people live is the basis for behavior change. C. Nature is at the center of behavior change. D. Behavior results from an interplay between personal and environmental influences. Are you curious about the concept of ecological design? Are you interested in developing complex design models? Do you want to use scripting and programming as a creative aspect of design and engineering? If so, sign up for the Design Computation Symposium at AU 2011. The symposium is organized into two sessions around the subjects of "Ecologic Design Strategies in Architecture" and "Advanced Research." These are broken down into a series of 20-minute TED-style presentations from: Architect Terri Peters, guest-editor of Architectural Design. Peter Busby, Perkins+Wills Canad...Â Robert Aish, director of software development for Autodesk Platform Solutions, chairs the symposium. Learn more about design computation from this 2009 interview with Robert Aish