

PERSPECTIVES

On the Professions

A periodical of the Center
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"Ethics Across the Curriculum"

Michael Davis, Editor, CSEP,
Illinois Institute of Technology

Four years ago, we received a major grant from the National Science Foundation to integrate ethics into IIT's technical curriculum. We called this effort "Ethics Across the Curriculum" before we knew how many different undertakings that name would soon cover. Now seems a good time to report what we did.

"Ethics" has at least three uses today: as a synonym for ordinary morality; as the name of a field of philosophy (the study of the good and the right); and as the name for those special (morally permissible) standards of conduct governing members of a group because they are members of that group (for example, engineering ethics for engineers). Some programs called "Ethics Across the Curriculum" are in fact concerned with encouraging ordinary morality. Some try to increase understanding of philosophical theories. But IIT's Ethics Across the Curriculum is concerned primarily with teaching those special standards of conduct that apply to members of a profession.

People often ask, "Can ethics be taught?" The question is hard to answer in part because the varied

uses of "ethics" make the question ambiguous. Certainly the roles of ordinary morality can be taught—and generally are. Even a thief can recite the rule, "Don't steal". Those who ask whether ethics (in our first sense) can be taught to college students must be asking whether students can be made moral—whether, that is, they can be made to want to do what they know they should do. The answer to that question is that few college students need to be made to want to do what they know they should do. By and large, they come to college meaning well. Those few who do not will probably not be changed much by anything an institution of higher education can do. Even prisons, which exercise much greater control over inmates than colleges can over students, are relatively unsuccessful at making bad people good. The most college can do for morality is increase sensitivity to moral issues and sharpen moral judgment.

When people ask, "Can ethics be taught?" they do not seem to be asking whether philosophical ethics can be taught. Often, perhaps most often, they are asking whether professional (or business) ethics can be taught.

Professional ethics differs from ordinary morality in at least one important respect. While students come to college knowing a good deal about ordinary morality, they

generally do not come to college knowing much about the ethics of their profession. The reason is obvious. Professional ethics differs from profession to profession and cannot be deduced from ordinary morality or philosophical theory. In this respect, professional ethics resembles law rather than morality. A profession's ethics must be learned much as laws must be. While we can assume our students have a pretty good understanding of morality and want to behave decently, we cannot assume that they know, for example, whether to put their client's welfare or the public welfare first. (For lawyers, the client's welfare generally has priority; for engineers, the public's welfare does.)

For IIT, Ethics Across the Curriculum means teaching professional (and business) ethics. We believe that professional ethics can be taught, but only in the sense that any other subject that is part of a professional curriculum can be taught. We cannot guarantee that everyone will learn the material or that, having learned it, they will always use it as they should. We can only provide a necessary condition of good conduct.

IIT has had courses in professional (and business) ethics since the late 1970s. Most of these, offered by the Humanities

Department, prosper as advanced electives. They have, however, never reached more than a quarter of all undergraduates (and, except for a law school course in professional responsibility, virtually none of the graduate students).

What can be done to raise the percentage of students receiving some training in professional ethics? That was a question we asked ourselves for half a decade. Both tight budgets and stiff requirements seemed to forbid turning ethics electives into requirements. There were other reasons as well. Those teaching professional ethics did not want to teach students who felt the course an imposition. Many professional faculty also felt the incongruity of requiring of students what they could not teach, of insisting that ethics is integral to practicing one's profession while not making ethics integral to teaching the profession.

The goal of Ethics Across the Curriculum is to assure that every IIT student graduates with at least a basic knowledge of professional ethics gained in a way making ethics seem integral to the practice of the profession.

We have tried to achieve that goal by teaching IIT faculty in engineering, accounting, computing, biology, and other "technical" programs to include some ethics in their courses. Fifteen faculty a summer have gone through our thirty-hour workshop. What follows is a sample of what those forty-five have done with what we taught them.

Geoffrey Williamson attended our workshop in 1992. His integration of ethics into an advanced

electrical engineering course is, in one respect, typical of what IIT faculty have achieved. He found a way to include an issue of professional ethics in an ordinary problem set. In another respect, however, Williamson represents a special achievement. Electrical engineering is generally considered the engineering program least hospitable to professional ethics. Technical detail is thought to leave no room for anything else. Williamson nonetheless found a way to integrate ethics into his course, a way that both he and his students found natural and rewarding.

Jacquelyn Fox-Good's thoughtful description of her (relative) failure is therefore striking. Many both in the humanities and in engineering, business, and other technical programs think that the humanities faculty have the easiest time integrating ethics into their courses-if, indeed, they have not had ethics there all along. Fox-Good, who attended our workshop in 1993, confirms my own surprised observation. In general, the humanities faculty find it harder than the technical faculty to accommodate professional ethics. Fox-Good helps us to understand why (while also helping us to see both how it can be done and why it should be done).

Louise Hewitt, who attended our first workshop in 1991, describes her efforts to integrate ethics into three courses in Computer Science. One, a first year course, forced her to think carefully about how to teach professional ethics to students who did not share a common profession or know much about their own. The second course, somewhat more advanced, mixed engineers with computer science students. The third course

combined ordinary advanced undergraduates with graduate students already "out in the world". Hewitt's piece illustrates both the general utility of our strategy for integrating ethics into technical courses and some ways in which different courses require different tactics. While teaching ethics is no harder than teaching one's specialty, it is no easier.

Mukund Acharya, who attended our workshop in 1992, could have described how he integrated ethics into Thermodynamics. Instead, he describes his efforts to integrate ethics into a Research Experience for Undergraduates, an extra-curricular program NSF supports to encourage undergraduates in research universities to think about going into research. Like Hewitt's piece, Acharya's suggests the variety of ways in which professional ethics fits naturally into teaching students their profession. But Acharya's piece suggests something more that we probably are far from exhausting the ways in which we can productively integrate ethics into professional education.

During the summer of 1994, fifteen faculty from institutions other than IIT will take a somewhat compressed version of the workshop IIT faculty have taken. That workshop, like this issue of *Perspectives*, is part of our effort to disseminate what Ethics Across the Curriculum has taught us. We hope you find this issue useful.

"Ethics in a Senior-Level Course"

Geoffrey Williamson,
Electrical and Computer
Engineering

I participated in an Ethics-Across-the-Curriculum workshop at IIT in the summer of 1992. Since that time, I have twice incorporated some ethics into my senior-level control systems engineering course. Even though the classroom time devoted to ethics was small (the equivalent of two fifty minute lectures), the results were rewarding-to the students and to me.

I initially feared that devoting much time to ethics would take away from the technical material. After all, it had been difficult enough to discuss all the topics already in the course syllabus. This fear proved unfounded. The course material concerning ethics enhanced the technical material; and the work I put into the "ethics part" of the course has broadened my perspective on my role as an educator of engineers.

The ethics part of my course consisted of distribution of the Code of Ethics of Engineers prepared by the Accreditation Board for Engineering and Technology (ABET), classroom discussion of the Code, class development of a case study coupling ethics and control systems, a few homework exercises, and some brief exam questions. The intent was to make the students aware that ethical issues do arise in their profession and that they would have to make choices having ethical import.

I felt it was important to connect the precepts in the ABET Code both with the technical material at the heart of the course and with the students themselves. Though the Code embodies the fundamental principles of ethical conduct within the engineering profession, students could find it dry and impersonal. I surmised

that showing a relationship between the students, the command of technology imparted to them by the course, and ethics would powerfully carry the message that the students have a responsibility to behave ethically as engineers, while at the same time interesting them by tying in the course's technical material.

The basic technique I used was including calculations and analysis, much like those carried out in a typical homework problem, in the development of ethics case studies and assignments. The students then learned that the computations that they had become so familiar with have actual meaning in application, that engineers not only make the calculations but also use the results to make decisions, and that those decisions can connect directly (or indirectly) with ethical issues. In this way, the students could see that the knowledge they acquire in their engineering education places responsibility upon them for its good and ethical use.

Here is an example of what I did. I coupled a homework exercise intended to introduce cost/performance tradeoffs in engineering designs with the issue of honesty in representing the performance capabilities of the resulting product. The assignment placed the student in the role of an engineer working for Whiz-Bang Motor Control. Whiz-Bang is competing to win a contract from Big Machines for a controlled motor system. The students, as engineers for Whiz-Bang, evaluate two approaches to the motor control problem. Their objective: meet Big Machine's performance specifications, while keeping the cost of the system low (to help win the contract).

The contrast between the two proposed control systems is dramatic. One of them, a velocity feedback approach, will work like a charm but requires relatively expensive sensors to measure motor speed. The other system, a current feedback solution, is much less costly to implement but is more sensitive to variations in motor characteristic. Whiz-Bang's engineers cannot guarantee that the inexpensive system will meet all Big Machines' specification. Several exercises have the students work through the technical details of the motor control systems, enabling them to provide these characterizations of performance and cost.

Having completed their investigations of the motor system's performance, the Whiz-Bang engineers must draft a design proposal to win Big Machine's contract. The project supervisor asks them to favor the less expensive current feedback system, but to present it to Big Machines as though it meets all specifications. She says the velocity feedback system is too expensive; Whiz-Bang will lose the bid if it goes with that choice. And, she adds, since the design fails to meet the required performance specifications only in rather rare circumstances, Big Machines is unlikely to notice such failures.

The homework assignment asked the students whether they agreed with the supervisor's position and how they evaluated her approach based both on ethical principles and on the design's technical merit. They were to describe the potential short-term and long-term benefit or harm of the supervisor's suggested course of action.

I found the students' responses

encouraging. The dishonesty of the supervisor's suggestion was apparent to all. Not one student recommended doing as the Supervisor suggested or ascribed any merit to the "win the bid at all costs" mentality it implied. The students' responses were, however, not all ethically pure: one student, indignant at the supervisor's lapse of ethics, said he felt that she "should be taken out and shot"! The students did not, however, blindly reject the current feedback system. A good number recommended informing Big Machines of the advantages and disadvantages of both option. And happily for me, some showed a capacity for creative engineering problem solving, without resort to unethical practice. They suggested showing Big Machines how a minor modification of the stated specifications would enable the use of the less expensive current feedback system. In this assignment, honesty is the best policy.

Many students had an emphatically positive reaction to the inclusion of ethics in the course. One student told me, "Wow! I've never had an engineering course in which ethical behavior was discussed. This is great!" He continued by describing how he and some of his friends had had animated discussions about what the Whiz-Bang engineers should do. His friends were challenged by the problem of finding a technological solution that maintained economic competitiveness without resorting to unscrupulous means. Other students have approached me to say that they were very much affected by the discussions of ethics in the class, that it helped them see more clearly the role engineers play in society.

So, in the end, the inclusion of ethics raised the students' awareness of the ethical aspects of the engineering profession without sacrificing, and in fact enhancing, the course's technical content.

"Ethics in a Literature Course"

Jacquelyn Fox-Good,
Humanities

It's my guess that many teachers of literature, whether or not they would admit it, secretly regard themselves as teachers of ethics, at least in the important sense that their subject matter frequently raises and even depends on ethical issues, on standards of right and wrong. Such standards affect not just what we teach but how we teach it. They lie behind our hope, if not of "teaching ethics," then at least of influencing our students' critical thinking about such matters as civility, fairness, and justice. Yet this hope remains uncomfortable and often unexpressed, something many of us won't admit, especially to students-because we have also been trained to suppress our own political positions in the classroom, to assume a posture neutral enough to prevent overwhelming students with our temporary authority, to allow for openness and a free exchange of ideas.

The conflict between these wishes-to influence yet to remain neutral-was neatly illustrated for me several years ago in a graduate seminar. One student in the seminar had quickly earned a reputation for making

interpretative statements about Tennyson's poems that seemed both interminable and ridiculous. One day, after he had made a particularly choice offering of this kind, we all sat silently, waiting to see how our professor would respond. He hesitated only slightly, looked the student squarely in the eye and said, "That's very true, Mr. Williams, but isn't it just the opposite?"

Over the last twenty years, developments in literary theory have of course complicated the way in which we make judgments about what is "true" or right or correct. These developments have also made such judgments seem more urgent. This urgency can be accounted for in general by the political climate of academia itself, but it arises more particularly from the growing emphasis on cultural studies. That emphasis contextualizes literature as just one of many cultural productions, embedded in history and thus in moral terrain potentially quite different from one's own. A view of cultural artifacts as both producing and being produced by a culture makes them seem more real," the "rights" and "wrongs" of literary figures not merely fictional but bound in complex ways to the lives of actual people.

What this means for "literature courses" is that we are thinking and talking about ethics. But do we acknowledge this? Do students know this is what we're talking about? Does discussing ethical issues constitute "teaching ethics"? How can such discussion be extended to include "professional ethics"?

I faced these questions in a course I teach on autobiography, a genre that calls pronounced attention to

the relation between literature and history, between "fiction" and "fact. From the first time I taught the autobiographies I had selected for the course, I sensed that students responded to them differently because of their presumed status as "true"-this no matter how often we addressed the point that any truth made into a story must be, in some measure, a fiction. This "truth value" seemed to make our discussions of ethical questions more careful and probing, partly out of respect for the real person telling the story, the very act of which invoked ethical questions regarding privacy (was it ethical to be, as Rodriguez calls himself, "Mr. Secrets," to reveal others' private lives to a public audience?). The intensity of these discussions also owed to the books' raising issues that many of us had encountered in some form ourselves. In *Incidents in the Life of a Slave Girl*, for instance, Harriet Jacobs vilifies slavery as not only immoral but as destructive of any moral code in the culture that allows it. What made possible, my students asked, the oppressive social structure of slavery? If we were part of such a society, would we conform to its definitions of right and wrong? In *The Things They Carried*, Tim O'Brien recalls his temptation to evade the draft that sent him to Vietnam. Would we, my students asked, should we fight in what we believed was an unjust or unnecessary war?

The nature of these questions suggests that in order to "do ethics" in the course, I wouldn't need to alter the substance of our inquiry so much as the name I gave it; I would need to refer to such questions as "ethical". I would need, further to discover ways of enabling students to see

ethical issues not only in the lives of the writers we were studying but also in their own lives and professions. The ethics-related activities I devised for the course were of three basic kinds: class discussion of "ethics" in general; writing about an ethical issue; and role-playing of a case study. At the semester's start, I bluntly told the students that we were often going to talk about the books in terms of "ethics". We then spent one or two classes simply discussing the word, along with "morality": how the words are related, how different. We discussed the words again whenever we came across them in the texts: In *I Know Why the Caged Bird Sings*, for instance, Maya Angelou justifies the illegal activities of con men in the black community by stating that "the needs of a society determine its ethics". How does Angelou's use of the word help us to understand what she regards as "right" and "wrong"?

About midway through the course, I asked the students to write informally about affirmative action, evaluating it from the point of view of a "minority student," as Richard Rodriguez does in his controversial book, *Hunger for Memory*. If they supported affirmative action, they were to justify it to someone critical of it as unfair; if they did not support it, they were to explain why, and (if they thought they were benefiting from it) to decide whether to continue to be part of a program they felt to be unfair or unethical.

Later in the course, I handed out a case study based on the real-life whistle blower case of John LiCari (at Beech Nut Corporation), who believed the company was making apple juice

from a concentrate not made from apple. The configuration of LiCari's dilemma roughly paralleled that of Tim O'Brien (mentioned above) as he made his decision about Vietnam. During one class period, students played the roles of various people (in what I at first told them was a fictional company) who were involved in responding to LiCari's claim about unethical practice. The students worked in three separate groups, then compared their result. On the following day, I described the real case on which I had based the exercise. Finally, we discussed the parallels between LiCari's and O'Brien's situations-parallels they saw quite readily: both men had to weigh conflicting loyalties (to principles, self, family, company, or community); and in deciding whether to resist those with power over them, both risked exposure, embarrassment, ostracism. At the conclusion of this discussion, I made what I took to be the summary point not just for this exercise but for our focus on ethics in the course as a whole. I said that the moral or ethical dilemmas described by the writers of the books we had read often seemed acted out on a grand stage (that of slavery, civil rights, war), but that these were really the same kinds of issues they would face in what we might think of as the "everyday" course of events-as business people, engineers, architects, and so on. I wanted them, I said, to see that connection. They nodded.

Yet by the course's end (just a couple of weeks later), when I asked them in an evaluation about "doing ethics" in the course, several of them seemed to recall only vaguely, if at all, that it had come up. This was disheartening, to say the least; still more, it was

puzzling. What might account for their response, however, is a point that also helps illuminate the special difficulties of incorporating ethics into a literature course, or perhaps into any humanities course. In science or engineering, ethics will likely seem quite different from the main subject matter of a course, both in content and approach, but in my course-and, I suspect, in many humanities courses-what I regarded as separate "ethics material" must have seemed, to the students, continuous with our other work, enough in keeping with it as to go unobserved by a number of students in the class.

I might, of course, construe this as success, as an integration so effective that it made the material invisible. But given my objectives for the material within the course, this "success" felt more like a failure. I did benefit in a way I think many teachers might from doing ethics in literature courses: I discovered a more explicit and systematic means of engaging issues we discuss anyway, of foregrounding the standards we bring to bear in judging and interpreting those issues. Maybe it was enough that the students in my course benefited generally from interesting and productive discussions; maybe they don't need to know they're doing ethics to learn about ethics. But if they do need this awareness in order to become responsible professionals, then not enough of them recognized the specifically ethical content of our discussions, despite what I regarded as an obvious, even heavy-handed, emphasis on ethics as such. What this may mean for teaching ethics in literature (and perhaps other) courses is that we need to do it more often and to do it even more obviously, by dislocating

activities more markedly from the contexts into which we want them to fit.

"Three Approaches to Implementing Ethics into Undergraduate Education"

Louise C. Hewitt, Assistant
Dean for Education
Technology

During the summer of 1991, I participated in a seminar for IIT faculty with the unusual topic of ethics. Having taken several courses in philosophy during my undergraduate studies, I approached the seminar intellectually, wondering what I would learn about ethics in the profession. The seminar leaders, however, had a practical agenda-preparing faculty to incorporate ethics into technical course. Rather than sit back and listen, we were provoked to think for ourselves; rather than being placated, we were forced to debate; rather than taking our promise to integrate ethics into our courses, they asked us to get up in front of our colleagues and show what we would do.

During the next two years, I had the opportunity to try out what I had learned, in three different programs: a freshmen lab course; a programming course in computer science; and an upper level course in multimedia.

1. HAWK, or Hands-On-Workshop, is a university-wide on: credit, course taken by every IIT freshmen regardless of major (about 400 each semester). Its purpose is to present freshmen with a range of problems from a

variety of disciplines to widen their awareness of the professions, to ease their advising, and to teach them how to use a personal computer productively.

2. CS 200, Introduction to Computing II, teaches students from computer science and engineering the basics of programming. It has a lecture and closed lab format. (Approximately 100 students enroll each semester, on-site or remote via microwave).

3. CS 460, Fundamentals of Multimedia, introduces students to a wide range of media and their integration. The course also has a lecture and open lab format. (Approximately 60 students enroll each semester on-site, remote via microwave, or remote via satellite).

Because HAWK is a university wide requirement, students may be in IIT's Institute of Design, College of Architecture, Armour College of Engineering and Science, Lewis College of Humanities and Social Sciences, or the Stuart School of Business. One way we introduced ethics into HAWK was by having students secure a copy of the professional code of ethics corresponding to their major. Each faculty member teaching HAWK was provided with a contact in the Ethics Center who would provide codes.

In my own HAWK section, I began a class period by asking students to agree on the meaning of ethics. I then presented a problem situation related to the use of computers and asked them to assume varying roles in its resolution. On the conclusion of the period, we compared their resolution with that of the Code of Ethics of the ACM (Association

<p>for Computing Machinery). Not surprisingly, they were very similar.</p> <p>Almost all of the students were positive in their review of this class period. They thought that it would make a difference in their professional lives. The most common comment was that the exercises and discussion would help them identify ethically problematic situations. The only student who did not agree felt that he was already an ethical person and had heard nothing he didn't know. Very refreshing!</p> <p>CS 200, a programming course, presented a challenge: How could I engage these students? I had them do a short exercise in lab (some coding). The following lecture period I suggested that they exchange their work with the student next to them, even if the other student did not complete the assignment. The students were not pleased about sharing their coding. This led to a lively discussion about copyright and the illegal copying of computer software. A general discussion about professional ethics followed.</p> <p>Multimedia is one of the "hot" topics of the 1990's. It implies the integration of sound, graphics, imagery, animation, video, and text. The students in CS 460 are approximately half upper-level undergraduates from many disciplines and half corporate students from such institutions such as Argonne National Laboratory, Motorola, and IBM. Many of the students are from Korea, China, India, Afghanistan, Russia, and the like.</p> <p>Many of the regular topics covered in lecture involve cultural</p>	<p>diversity. For example, in our discussion of color presentation and publishing, we considered how colors are understood in various culture. Which colors are associated with death, sex, female and male, or religion can differ dramatically between cultures. An awareness of such differences is important.</p> <p>The higher academic level of the audience in Fundamentals of Multimedia necessitated a more innovative approach to ethics than I took in HAWK or CS 200. Given the cultural diversity I thought that a discussion of the differences between moral and ethical conduct was appropriate. I began the session with a self-test. The students were told to make two columns on a sheet of paper, number from 1 to 4 in each column, and then answer for themselves in the first column and for the population as a whole in the second.</p> <p>The four questions were moral ones: Do you believe killing is wrong? Do you believe stealing is wrong? Do you believe wanting what others have is wrong? Do you believe using profane language is wrong? The survey results (which I shared with them) demonstrated that, while individuals saw themselves as "moral," they tended to view the community as "amoral".</p> <p>We then discussed this overall lack of a sense of community. The discussion led us to a definition of ethics emphasizing community. Along the way we discussed the ethics of morphing software, where one image can be altered into another, the use of camcorders in capturing video, the use of microphones to capture sound, and the use of graphics,</p>	<p>video, sound, and a variety of multimedia techniques now available. We also discussed how cultural differences may affect the way multimedia products should be used.</p> <p>The students' responses to this were quite positive. I intend to do something similar in coming semesters of this course.</p> <p>Overall, the students liked the ethics exercises, discussions, and activities in each of the three courses. But I had some difficulties. Once a discussion of ethics began, I found it difficult to keep students from straying into the black abyss of unethical practices of politicians, businessmen, and professionals. In particular, students wanted to describe examples of software copying or distortion of graphics they had witnessed.</p> <p>The first academic year in which we attempted to integrate ethics into the undergraduate curriculum was difficult. Faculty were often not aware of their own profession's code of ethics. Some had more than a single code to reconcile. Forcing all first year students to become "code-literate" pressured faculty to discuss the codes with students. It was an interesting year. The next year was much easier; ethics was a popular topic for faculty over lunch.</p> <p>I am pleased to be associated with a university which has taken an institutional approach to ethics.</p> <hr/>
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**"Introducing Ethics in an Undergraduate Research Program:
A Personal Experience"**

Mukund Acharya, Mechanical and Aerospace Engineering

Beside technical knowledge, a practicing engineer needs to write well, to speak well, and to exercise sound business and ethical judgment. The best way to teach an engineer these skills is, I believe, by integrating their practice into appropriate technical courses. Because I believe that, I became involved in efforts to introduce ethics across IIT's curriculum. At first, I felt less than qualified to "teach ethics," since I have no formal background in moral philosophy or professional ethics. A summer workshop for faculty, organized and conducted by Michael Davis and Vivian Weil of IIT's Center for the Study of Ethics in the Professions, helped me overcome this impression and provided me with guidance and some techniques to introduce ethics into engineering courses. I suspect this was easier than the alternative: to teach a philosopher engineering! At any rate, with the workshop under my belt, I was able to integrate ethical issues into two courses that I taught during the following semester. I do this now on a regular basis.

During a discussion of related issues, Davis, Weil, and I asked ourselves if there were other ways of exposing students to ethics in a professional setting. Undergraduate participation in research seemed a promising candidate for this purpose. The Research Experience for Undergraduates (REU) is a program that I direct at IIT's Fluid

Dynamics Research Center. Sponsored by the National Science Foundation (NSF), the REU provides an opportunity for interested and qualified undergraduates to participate in on-going research at the Center. Each student selected for participation in the program receives a stipend and becomes a member of a research team, working under the guidance of a faculty member and graduate student. He or she is given specific assignments tailored to obtain the right mix of knowledge, skills, and accomplishment. The objectives are to provide the student with a rich learning experience, a perspective on research opportunities in engineering, and encouragement to consider graduate studies followed by a career in research and development. We decided that the REU would provide an excellent opportunity to introduce students to ethical issues in research. NSF agreed, awarding a small supplemental grant to test our ideas.

Each participant in the REU, working under the supervision of one of five faculty members at the Fluid Dynamics Research Center, followed a schedule designed to fit in with his or her other commitments. I conducted a meeting about once a month for all the participants. During these meetings, each participant made a short presentation of his or her progress in the research. These presentations familiarized each participant with the research in which the others were involved. Other topics relevant to research were also discussed.

Davis, Weil, and I decided that these meetings were a good place

to introduce ethics, even though the relatively short time available (about fifteen minutes a meeting for ethics) seemed a severe constraint. We then looked for techniques to introduce ethics in a natural way.

One of the topics for discussion at these meetings was the need for record keeping in research. While there are several scientific and technical arguments in favor of organized and objective record keeping, there are sound ethical and business reasons as well. We decided discussing record keeping would provide one focal point for the integration of ethics.

The REU provided the participants with the opportunity to sharpen their oral communication skills through monthly presentations and their writing through a brief written report at the end of the program, summarizing research done and benefits received. One of the topics for discussion during our meetings was the preparation of technical reports and journal articles. Several important ethical issues could be raised easily in this context: objectivity in the reporting of research, suppression of results, assignment of proper credit to all involved, and so on.

A third area that we chose for discussion highlighted the social context of research: the interaction of people in a research group, the ways in which research is funded at universities in the US, and the implication of goals and outcomes of specific research projects for society in general.

I first tried to integrate ethics in this way at three meetings with REU participants in the spring of 1993. Apart from selecting a topic

of ethics on which to focus during a meeting, I had no "game plan"-I would go with the flow of the meeting. At the first meeting, I initiated a discussion of record keeping in research and let the students bring out the various reasons for keeping good records. Without actually using the word "ethics," I was able to introduce some of the ethical arguments. One student's description of experimental results during the second meeting included his reasons for rejecting what he considered bad data. This opened a natural avenue to discuss *both* scientific and ethical tests for the acceptance or rejection of data *and* the proper way to report results to substantiate conclusions.

I felt that the discussions had gone very well during the two meetings. The ethical and technical issues had meshed together so well that I had not stated explicitly that we had, in fact, been discussing professional ethics. This concerned me a little. Had the group realized they were doing ethics? I decided to make sure at our last meeting. I brought up the earlier discussions and asked if they had recognized that some of the issues were related to ethics. Much to my satisfaction, they had.

During this last meeting, we discussed strategies employed by researchers in the writing of proposals for funding and the ethical issues related to defining research areas and programs of work. This topic generated a lively discussion of accepted practice and "borderline ethics".

Davis or Weil attended the meetings, but generally played the role of observer. All three of us felt that the plan had worked well,

that we had given participants an awareness of the importance of ethics in research and of the need to treat ethics as an important factor in all aspects of research.

Feedback from the participants completed assessment of our efforts. We had devised a questionnaire for the participants. We also monitored their final reports for any mention of ethics. Two of the eight students specifically mentioned ethics (as against none in previous years). The relevant passages from the two reports are:

"REU taught me a lot about ethics in our profession, the importance of communication, and the need for good management skills."

"Dr. Acharya...also introduced into these meetings the discussion of ethics in the professions. I sincerely enjoyed these parts of the discussions. I believe that ethics need to be discussed more frequently and thoroughly in any field. These discussions brought out many situations and activities that go on in the environs of research which need to be addressed from an ethics standpoint. [I] feel that this is an aspect of this program which needs to be rigorously continued. I also believe this to be a field that needs to be very strongly incorporated into the curriculums [sic] of any and all fields of study."

Clearly, we made a strong impression on at least two of the participants. In response to one of the items in the questionnaire, three participants stated that they would have liked to have spent more time on issues related to ethics. All participants felt the ethics was useful and worthwhile.

It appears that our time was well spent. Discussion of ethical issues is now a regular feature of my REU's meetings.

"Announcements"

CONFERENCES: The 1994 Bioethics Conference in Hawaii, *Health Care, Technology, & Money: Choices or Dilemmas?* will be held at the Sheraton Waikiki Hotel, Honolulu, February 17-18. Contact: Georgene Jansen, St. Francis Medical Center, Department of Medicine, Room 470, 2230 Liliha Street, Honolulu, HI 96817 (ph. 808-547-6497 or fx. 808-526-2027).

The Annual Meeting of the American Association for the Advancement of Science, *Science and a Changing World*, will be held at the San Francisco Hilton, February 18-23. Sessions will include: "Ethics in the Science Curriculum" and "Coping with Crisis: Sexual harassment". Contact: AAAS Annual Meeting, P.O. Box 630285, Baltimore, MD 21263 (fx. 202-289-4021).

The Fifth Annual National Conference on Ethics in America, *From Dispute to Dialogue: Communication and Cooperation within the World of Ethics*, will be held in Long Beach, California, March 9-11. Submit proposals. Contact: Delona Davis, Conference Coordinator, University Extension Services, California State University, Long Beach, 1250 Bellflower Blvd., Long Beach, CA 908408002 (ph. 310-985-8446).

The American Association of Critical-Care Nurses and the Society of Critical Care Medicine will again sponsor *HealthCare Ethics Forum*, a yearly 2-day interdisciplinary forum on "the most burning issues, current wisdom, knowledge, and experience in health care ethics", March 29-30, Washington, DC. Contact: AACN Critical Care, 101 Columbia, Aliso Viejo, CA 92656 (ph. 800-899-2226 or fx. 714-362-2020).

Fourth Annual Conference of Healthcare Ethics and Ethics Committees, *Designs on Life: Choice, Control, and Responsibility in Genetic Manipulation* will be held at the Sheraton Palace Hotel, San Francisco, April 15-17. Submit proposals. Contact: William A. Atchley, MD, International Bioethics Institute, 1721 Mar West, Tiburon, CA 94920-1932 (ph. 415-435-4900 or fx. 415-435-2635).

The First World Congress on Medicine and Philosophy: Sciences, Technologies, and Values will be held in Paris, France, May 30-June 4. Contact: Professor Henk ten Have, Secretariat ESPMH, Department of Ethics, Philosophy, and History of Medicine, Catholic University, P.O. Box 9101, 6500 HB Nijmegen, the Netherlands (fx. 31-80-540254).

The second European Bioethics Seminar, *Health Care Issues in Pluralistic Societies*, will be held in Nijmegen, The Netherlands, August 8-12. Special attention will be paid to European traditions in health care ethics. All lectures and plenary sessions will be in English. Contact: Ms. I.G. van der Heide, MA, Catholic University

of Nijmegen, Department of Ethics, Philosophy, and History of Medicine (M244), P.O. Box 9101, 6500 HB, Nijmegen, The Netherlands (ph. 3180-616320 or fx. 31-80-540254).

WORKSHOPS: A workshop, *Student Outcomes and Student Assessment: Do They Make a Difference in a College Curriculum?*, will be held at Alverno College, April 14, Alverno Institute, 3401 South 39 Street, P.O. Box 343922, Milwaukee, WI 53234-3922 (ph. 414-382-6087).

The Kennedy Institute of Ethics will offer: *Advanced Bioethics Course V, Theories and Methods in Bioethics: Principlism and Its Critics*, March 59; Intensive Bioethics Course XX, June 5-11; and *Intensive Bioethics Course for DENTISTS*, June 19-25. Contact: Moheba Hanif, Course Coordinator, Kennedy Institute of Ethics, Georgetown University, Washington, DC 20057.

The Center for the Teaching and Study of Applied Ethics, University of Nebraska, Lincoln, will hold another of its week-long interdisciplinary seminars, *Ethics and the Professions: Moral Theories and Contemporary Problems*, June 4-11. \$1000 stipend plus accommodations. Contact: Stephen Kalish, College of Law, University of Nebraska, Lincoln, NE 68583-0902 (ph. 402-472-1248).

PUBLICATIONS: *Ethics Across the Curriculum: The Marquette Experience*, edited by Robert B. Ashmore and William C. Starr, 267 pages (14 chapters) reports the results of a project funded by the National Endowment for the Humanities. For your copy (only

\$6), write: Center for Ethics Studies, Marquette University, Milwaukee, WI 53233.

The Center for the Study of Ethics in the Professions at the Illinois Institute of Technology was established in 1976 for the purpose of promoting education and scholarship relating to ethical and policy issues of the professions.

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