"least case" analyses; rather, it employs a "best judgment" approach. Although some reviewers complained that the draft emphasized results indicating an adverse health effect, other participants believe there are factors in the CHESS approach which could cause *underestimation* of health effects.

•Even if one assumes the worst about CHESS, that does not call into question EPA's regulatory program for sulfur oxides, which is based on a broad array of studies and analyses. The national ambient air quality standards for sulfur dioxide were set before the CHESS studies even began, and the emission standards for power plants are based on the ambient standards, not on CHESS. CHESS has indeed been cited to support EPA's case for controls on power plants converting from oil or gas to coal, and to buttress EPA's opposition to the use of dispersion techniques to control pollution—but it is only one among many supporting studies.

CHESS is only one. In some cases, CHESS was not even a factor in establishing federal standards.

By the end of the long day, Finklea had emerged with his reputation largely restored. Even those congressmen who asked the most hostile questions stressed that they were not questioning his integrity. But the avalanche of support for Finklea proved disquieting to some. Witness Buechley claimed that some EPA scientists who had been critical of CHESS in conversations with him [and presumably with journalist Rood as well] sang a different tune when called upon to testify. Rood, who attended the hearing, declined to comment afterward but gave no indication he does not stand behind his original piece.

Some congressmen said that, in exonerating Finklea, they did not intend to endorse EPA's sulfur oxides program. They noted that the CHESS monograph had been prepared in a great rush while the agency was facing a legal challenge to one of its sulfur dioxide standards—not necessarily the best environment for objective analysis. Moreover, the allegations of distortion had been largely investigated by the agency itself. Representative Barry M. Goldwater, Jr. (R–Calif.) has requested additional investigations, and he said at the hearing that Congress should examine whether EPA's research function should be separated from the regulatory process. But chairman Rogers, probably the most influential House member in air pollution matters, indicated that such further scrutiny will not necessarily weaken the antipollution fight. In a day that was largely devoted to examining charges that sulfur oxides regulations have been made too stringent, Rogers managed to extract some testimony which indicated to him, at least, that the standards may not be strict enough.—PHILIP M. BOFFEY

Universities and the Law: Legislation, Regulation, Litigation

Administrators in higher education have reason to feel that the era of confrontation has been succeeded by an era of litigation. The spirit of the 1960's generated a spate of legislation aimed at increasing equality and strengthening the rights of individuals, and now universities must contend with what happens when causes become court cases.

The spectrum of legal and quasi-legal problems facing colleges and universities is very broad. Cases arising from affirmative action and nondiscrimination programs mandated by civil rights legislation have attracted the most attention, but a bigger case load is probably produced by more traditional labor relations conflicts growing out of collective bargaining agreements. In the case of faculty, recession and retrenchment in higher education has, not surprisingly, led to increasing litigation over layoffs and questions of tenure or promotion. And student rights are still very much in the process of being legally redefined.

The complications colleges and universities encounter in complying with multiplying federal regulations (*Science*, 31 October 1975) provide another dimension of legal involvement. And the institutions must still deal with perennial legal problems posed by taxes, property transactions, patents and copyrights, contracts of all kinds, bequests, and the often touchy relations with local and state governments.

University legal staffs are bigger and legal costs are up—in some places alarmingly so. But what is more difficult to assess and doubtless even more important is that changes in legal relationships between the institution and faculty, students, and staff have been accompanied by significant changes in attitudes and atmosphere on the campus.

These changes have come very rapidly. In the 1950's, the doctrine of in loco parentis governed relations between academic institutions and students. The authority of the institution was generally unquestioned, and its actions were assumed to be benign. College attendance was regarded as a privilege, not a right. As for faculty, the McCarthyism of the early 1950's had shaken confidence in the doctrine of academic freedom, but the expansion of higher education made promotion and tenure more readily accessible and had increased faculty mobility, thereby minimizing friction. Nonfaculty staff were low-paid, ununionized, and, for the most part, legally invisible. The courts in general showed a reluctance to intrude in matters they regarded as the university's business.

A legal milestone generally regarded as marking the start of a major shift in attitudes was the case of Dixon *v.* Alabama State Board of Education in 1961. Some students arrested in a sit-in aimed at integrating public facilities were dismissed from college as a result. They brought suit for reinstatement in federal court on 14th Amendment grounds and the court ruled in their favor, saying that they had been denied the "rudiments of due process." The court held that the students were entitled to a formal hearing with all that implies in the way of right to legal counsel and adherence to the rules of evidence.

The Magna Carta for those who felt oppressed by universities, however, was the Civil Rights Act of 1964 as amended in 1972. The law, under various titles, prohibits discrimination on the basis of race, color, national origin, and sex and covers both students and employees of public and private institutions.

A lot of the legislation affecting colleges and universities was enacted with business and industry in mind—for example, the Occupational Safety and Health Act and the Equal Pay Act. In re-

cent years, private institutions of higher education have come under the jurisdiction of the National Labor Relations Board.

Much of the legal work done on behalf of colleges and universities is for the purpose of avoiding litigation. The Equal Employment Opportunity provisions of the Civil Rights Act, for example, prescribe in detail measures which must be taken to attempt conciliation before the initiation of court action. And university lawyers tend to be deeply involved in grievance procedures designed to settle labor problems short of the courtroom. Lawyers have figured centrally in setting up and operating the elaborate new internal machinery many institutions have created to handle discipline questions for both students and faculty.

In recent years a sort of second-generation plaintiff has appeared, seeking recourse for discrimination allegedly caused by antidiscrimination laws. A landmark example is the DeFunis case (DeFunis *v.* Odegaard). In 1970, Marco DeFunis applied to the University of Washington Law School and was turned down. DeFunis, a Jew, brought legal action, claiming that his constitutional rights under the 14th Amendment had been violated. He argued that he had been unjustly rejected although his test scores and other admission criteria would have won him admission if he had been black or an American Indian or a member of other minority groups in a special admissions category set up by the university.

DeFunis won his case in a lower court, but the legal issue was not definitively decided. The university appealed to the Supreme Court, but DeFunis had been admitted to the Washington law school after the lower court acted; the Supreme Court declared the case moot and dismissed it. The significance of this particular landmark, therefore, remains somewhat ambiguous.

The experience of the University of Washington is fairly typical for a large state university with professional schools. With about 15,000 students, it is the second largest employer in Seattle and the third largest in the state. As with most universities which operate hospitals, a lot of its litigation is in the medical area. In the university as a whole, the state has recently instituted a civil service system for nonacademic staff and the number of grievances filed has escalated.

The university counsel, James E. Wilson, a state assistant attorney general who has been assigned to the university since the early 1960's, says that the university docket runs to between 60 and 70 cases these days. When he first arrived, he was the only lawyer on the staff. Now there are four in his office.

Despite the fact that the University of Washington, like most other universities, has been in the throes of a legal reconstruction period for several years, the new legal framework is still incomplete. For example, the state legislature has had before it legislation to permit faculty collective bargaining for its last three sessions. The American Association of University Professors currently is pressing a case which asks that an election to designate a bargaining agent be held pending action by the legislature.

Another source of uncertainty at the university is a "sunshine" law recently passed by the state with the purpose of opening up the processes of state government. Law students at the university argued that the new law applied to meetings of the governing body of the law school and engaged counsel to fight the case. The students lost in lower court. Subsequently the students, who had meanwhile been graduated, appealed the decision and successfully pleaded their own case. In the decision, the law school was held to be an agency of government subject to the provisions of the "sunshine" law, and now Wilson notes that committees all over the university are wondering if they are governing bodies of subagencies in the legal sense.

The Nonresident Question

Universities often win their cases, of course, and sometimes substantial amounts of money are at stake. The question of nonresident tuition has been a controversial one for public institutions in recent years, and state universities which attract sizable numbers of out-of state students were given pause recently when a Connecticut law requiring higher nonresident tuition was thrown out as unconstitutional. At Washington, Wilson and his colleagues drafted a statute on nonresident tuition they believed would be upheld. The point was that the Connecticut law provided no way for a student to acquire residence after matriculating. The Washington statute avoided this snare, and the state may well have been saved $11 million a year.

Private colleges and universities avoid the sort of legal imbroglios in which public institutions find themselves because of direct state funding, but the private sector is equally prone to litigation. Stanford University has been something of a pacemaker in reforming university governance and expanding student participation in policy-making; along the way it has had to bolster its legal services. It was Stanford president Richard W. Lyman, incidentally, who in 1971, when Vietnam-incited violence was still erupting on campus, suggested that America's colleges and universities "may be headed into an era in which litigation and collective bargaining replace both violence and coercion, on the one hand, and traditional methods of petition and working for consensus, on the other."

The next year, Stanford, in a sense, pioneered the transition with the long university proceedings which led to the dismissal of Stanford professor H. Bruce Franklin (*Science*, 17 March 1972), for his actions during a campus protest.

Stanford, which operates the Stanford Linear Accelerator, as well as medical and law schools on its extended campus, has seen a major proliferation of its legal business.

While only a few years ago an attorney in the business office handled legal problems for the medical center, there are now three full-time attorneys. Medicare and Medicaid cases account for a large part of the increased work load. At Stanford, as at most universities which operate hospitals, medical malpractice suits are handled by insurance company lawyers, but Stanford attorneys monitor the proceedings.

James V. Siena, legal adviser to the president of Stanford, says that the university business office uses the services of the equivalent of two and one-half lawyers full time and that there are five people with legal training in the office responsible for fund raising. Like most universities, Stanford uses outside legal services when specialized knowledge is required. The university retains outside counsel on complicated tax and patent matters, for example.

The legal budget at Stanford has risen from $260,000 in 1968 to over $1 million this year. Siena emphasizes, however, that several of the attorneys are in income-generating jobs as, for instance, in the fund-raising office.

Particularly during the universities' time of campus troubles in the 1960's and early 1970's, law school faculty members were frequently called upon to act as university lawyers. Often they were not specially trained for the tasks that fell to them. Also, the work intruded on their regular duties. At Stanford and elsewhere the trend appears to be away from asking law faculty to act as lawyers for the university.

Evidence of the growth of the role of the campus lawyers is the expansion of their own national organization. The National Association of College and Univer-

sity Attorneys (NACUA) was established in 1961. As of 1964 about 200 institutions belonged to it. Today, some 713 institutions are members and about 1550 lawyers are involved in the organization.

NACUA started publication of a journal in the middle 1960's and increased membership steadily during the period of disruption. But the period of most rapid growth occurred after 1973, when the organization—until that time run essentially by volunteer effort—hired a full-time executive officer, Peter L. Wolff, and opened a Washington office.

A main function of NACUA now is its Exchange of Legal Information Program based on its collection of briefs, opinions, memoranda of law, and other relevant legal documents. In response to inquiries from attorneys in member institutions, NACUA staff searches the collection and, when possible, provides material germane to the question.

By no means all colleges and universities have in-house legal services. Many are still served by lawyers in private practice. A number of state universities rely on lawyers from the state attorney general's office, who may or may not be assigned exclusively to the campus. The patterns vary widely in both private and public sectors, but the trend seems to be in the direction of more "house counsels."

By now, university lawyers have become a distinct enough breed to be recognized by the American Bar Association (ABA) as a specialty bar and to have a seat in the ABA house of delegates with 17 other specialty bar associations.

What about the university lawyers' opposite numbers, the attorneys for the plaintiffs in the cases where colleges and universities are the defendants? So far, no group of trial lawyers with higher education litigation as a specialty seems to have emerged, although some union lawyers have considerable experience in the field. Legal representation often costs more than students and faculty members can pay, and they often seek assistance from the American Civil Liberties Union, legal aid organizations, public interest law groups, or, in some cases, approach regular law firms whose members do pro bono work.

There seems to be no very good general answer to the question of why colleges and universities appear to be getting more than their share of litigation, beyond a suggestion that students and faculty members are well informed about developments in the law and, as a group, tend to be contentious.

Some university lawyers see higher education's legal position becoming more and more like that of a regulated industry. The difference is that industry can pass along the additional costs resulting from litigation as a cost of doing business. For colleges and universities they mean a boost in the cost of education.

To look only at the impact on the university budget and on the "independence" of the institutions is, of course, to ignore that colleges and universities have often acted arbitrarily and that legal action may be the only way for students and faculty to establish and protect their reasonable rights. The increase of litigiousness does, however, appear to threaten the spirit of collegiality which is supposed to encourage teaching and learning. And while the ideal of a community of scholars is doubtless achieved on few campuses, replacing that ideal with a set of adversary relationships would not appear to be a great improvement.—JOHN WALSH

Plutonium: Its Morality Questioned by National Council of Churches

To have scientifically illiterate clergy or laity issue pronunciamentos on behalf of us who are the Church on this tiny issue is insufferable effrontery and intolerable popery. To have statements drawn up for the Church by a group of fine citizens and some good scientists, but most with zero background in, or commitment to, the Christian community or faith borders on the weird. Laity arise, we've nothing to lose except our illegitimate representatives.—RUSTUM ROY, director of the materials research laboratory at Pennsylvania State University, expressing displeasure with the process by which the National Council of Churches reached its decision to question plutonium. Roy was former chairman of the Council's ad hoc committee on science, technology, and the church.

There was another age in which the church meddled in affairs of state and made sweeping pronouncements on what was right or wrong for nations. It was called the "DARK AGES."—Angry comment received by the Council in the course of its nuclear deliberations.

The scientific community is split down the middle on the technical issues. The moral and ethical issues have yet to be clearly delineated. This is unquestionably a job for the churches.—CHRIS COWAP, staff associate for the Council, with prime responsibility for shepherding the plutonium project.

The debate over nuclear power entered a new dimension last month when the governing board of the National Council of Churches (NCC) called for a moratorium on the commercial processing and use of plutonium as an energy source and on the building of a demonstration plutonium breeder reactor.

The action, which was taken at the board's meeting in Atlanta on 4 March, represented a significant victory for antinuclear forces in the scientific community and the churches over determined opposition from the nuclear industry and its allies. It culminated a months-long struggle in which leading scientists, industrialists, and church figures sought to swing the church group behind their point of view.

The struggle was launched when a group of eminent scientists and laymen assembled under the Council's auspices issued a strongly worded condemnation of plutonium. That statement—a deliberately one-sided and provocative one—sparked a strenuous counterattack from industry leaders and eminent pronuclear scientists, with the result that church councils were torn with dissension and debate. The counterattack forced the Council to take somewhat less vigorous