Stanford Medical School Suffers Fiscal Ideological Crises

Palo Alto, California. When General Eisenhower was president of Columbia University, the story is told, he once offered to swap jobs with President Harold Willis Dodds of Princeton. Dodds asked why. "Because you don't have a medical school," the general allegedly sighed.

President Richard W. Lyman of Stanford might be forgiven if he feels like Ike these days. Stanford's prestigious medical school and its 668-bed teaching hospital, which together account for 42 percent of the entire university's $380-million operating budget, are in the throes of a fiscal and administrative crisis that offers no ready or painless resolution and shows every prospect of worsening. Last month the situation moved Lyman to ask for the resignation of his dean and vice president for medical affairs, Clayton Rich, who has held the jobs since 1972.

Stanford's current problems are indeed extreme; nonetheless they are representative of issues that face major medical centers nationwide.

Stanford's plight is not only financial; it is inevitably ideological as well, involving as it does who cuts and serves the pieces of a shrinking pie. It concerns the viability of a private institution with a frankly elitist vision of itself. As a recent Stanford manifesto proclaims, the school is devoted far more to biomedical research and the training of the next generations of medical "innovators and pioneers" than to turning out nonacademic physicians, caring for patients, or studying the role of medicine in society. One high-level Stanford administrator said in an interview with *Science*: "I think you would get an argument around here that doctors are even the principal product of Stanford Medical School."

The lines between those who consider general medical training paramount and those who think basic and clinical research of greatest importance at Stanford are drawn. As yet it is not clear what kind of accommodation can be reached. Kenneth Melmon, who was recently lured to Stanford from the University of California at San Francisco, is concerned about what he sees as diminishing public enthusiasm for basic research. He accepted the chairmanship of medicine at Stanford because of the school's reputed commitment to basic research as the underpinning of medical progress. "I really felt this was the place that would outlive the pressure to downplay reseach and do it royally," he told *Science*. "I still do, but I'm goddamned worried."

Nineteen seventy-eight has been a watershed year for Stanford University Medical Center, a time of gloomy portents from within and thunderbolts from without. "The fiscal problem was on the horizon last fall," said Deputy Dean Lawrence G. Crowley, who will become acting dean 1 January, "but the speed and magnitude of it took us by surprise." Last spring, medical center finance officers concluded that the medical school faced mounting deficits in the years ahead; unless drastic steps were taken, they said, the cumulative shortfall would reach more than $7 million by 1982 to 1983. A key reason lay in the amount of income generated by the school's clinical faculty—the ones who care for patients as opposed to those who only do basic research. In a memo dated 8 June, Dean Rich told the clinical chiefs that soaring expenses had far outstripped the hospital's net revenue, which rose only 2 percent over the previous year; outlays for the clinicians' salaries, for instance, jumped 23 percent this year.

"There has been a reduction in the number of patients seen this year and little price increase, but continued escalation of costs," the dean wrote. "There appears to have been a reduction nationally in the number of office visits and hospital admissions. Locally we see the effects of increasing competition from well-trained private practitioners, and may suffer from reduced referrals as HMO's [health maintenance organizations] are organized in this region, and because of increasingly tight price control and regulations."

Into this perilous situation charged two troublemakers with their view of reform. Eugene Dong, a renegade faculty heart surgeon, and Robert L. Weinmann, an ultraconservative Stanford-trained community neurologist, have been attacking the very basis of Stanford's faculty billing system, a regime that Crowley, who's in charge of it, acknowledges is "a little bizarre." Like perhaps half of all U.S. medical schools, Stanford's full-time clinical faculty are on salary in a medical universe that operates according to the time-honored laws of fee-for-service. That is, Stanford clinicians turn over all their fees to the institution, which allocates salaries and applies the rest for activities such as unfunded research and teaching. Under this system, cross-subsidizations within the medical center have become so intricate over the past decade that it seems doubtful that even the administration fully understands who is being paid how much for doing precisely what.

Dong and Weinmann have persisted all year long in raising awkward public questions about the way Stanford bills Medicare and Medi-Cal for patient care: where the money goes, who controls it, how faculty members really spend their government-reimbursed time. Most crucially, they have dredged up the charge that makes all medical educators squirm: double-billing. The charge commonly arises out of the difficulty of sorting out which functions are supposed to be paid for through the professional fee, ostensibly tied to personal service rendered to the patient, and which through hospital cost-reimbursement funds, a category that wraps in such ineluctables as teaching and supervision of house staff and other personnel.

Dong, who is best known outside Stanford as coauthor of a recent science fiction thriller on artificial hearts, stopped doing heart surgery years ago because of "changing goals." He says he has a grand aim: "I want to reorganize the direction of this school. It's not going in the direction I've been raised to believe in—delivering first-quality, individualistic medical care." He also has a grand ambition: to enter "state or national" politics. "There are well-meaning people in legislatures," he explained in an interview, "but they don't have the expertise to know when they're being conned by people with apparently altruistic motives." To further his new ambition, he is currently going to law school in his free time now that he no longer performs much surgery.

From yet another quarter Stanford suffered the most telling blow to date in early September. Federal Medicare officials announced they would not pay Stanford $2.4 million in anticipated reimbursement. The Medicare fees that Stanford faculty received for their professional services and turned over to the institution were now to be considered "restricted funds" and deducted from the hospital's Medicare cost-reimbursement. Stanford is appealing the action but the medical center's finance director told the faculty that "our chances of

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a successful appeal . . . are not great."

One immediate effect of the Medicare bombshell was to wipe out the clinical faculty's accustomed end-of-the-year bonuses, up to 40 percent of base salary for the highest-paid specialists. That was the beginning of the end for the dean. Many of the clinicians were incensed; and since they do not generally consider Clayton Rich their staunchest ally and defender—a former clinical chief calls him "the dean for biochemistry"—they naturally blamed him.

On 3 November, with his future uppermost in his mind, Rich had an especially unpleasant task. He appeared before 350 Stanford medical students to tell them that tuition would jump next year by 27 percent for entering students (from the current $5388 to $7373 for the academic year) and 15 percent for those currently enrolled (up to $6373); and also that it will take longer to win a Stanford M.D. (a minimum of 13 quarters, or just over 4 years). The average attendance now for students in Stanford's unique, all-elective program is 12.9 quarters, but there has been a growing tendency for students to leave after 3½ years to take clinical clerkships elsewhere. The net effect of the tuition changes, after adding 9 percent annual inflation to next year's "catch-up" increase, will be to add $6500 to the cost of a Stanford medical education. And Rich had to admit he didn't know where the school was going to get additional student aid funds.

Although the increase would not place Stanford ahead of what many private medical schools levy, the students' response was predictably angry. They assumed, in part correctly, that they were paying for the Medicare disallowance they had heard about.

By the time Rich appeared before the students, President Lyman had received emissaries from the medical faculty. Consulting key faculty on his own, Lyman discovered a quiet mutiny. One faculty member later said: "It's not the style here to have open discussions and votes of no-confidence." In individual conferences, some of the most influential clinical chairmen are said to have imparted the same message: "Things can't go on like this."

Lyman got the message. On 8 November he announced Rich's resignation.

"It was clear there was going to be a confrontation within the school if I didn't resign and that I would need the substantial support of Lyman," Rich explained recently to *Science*. "Neither of us felt it would be the best course for the school at this point. . . . It's absolutely essential not to have the departments pulling in different directions and pointing the finger at each other."

Two days later the other shoe fell. The chief fraud and abuse official for Medi-Cal reportedly told Stanford officials in private the results of the double-billing investigation instigated by Dong and Weinmann. On the basis of a review of "effort report" forms, which are supposed to reflect how much time a faculty member spends in "direct patient care" of the "hands-on" variety, California officials are said to have concluded that there was double-billing of Medi-Cal over a 3-year span. One Medi-Cal official told *Science* that Stanford has also been informed that the state may seek restitution for the double-billed amount, which could amount to several million dollars. Crowley, the deputy dean, who was at the meeting, says he did not hear that message; but he and several other medical center officials acknowledge Stanford's vulnerability to the charge. "We may come to feel we used some funds we shouldn't have on the basis of those time reports," Rich said. A medical center lawyer added: "Our answer is that the [effort report] form wasn't very well designed."

A Grocery List of Troubles

As the dean hinted last spring, government reimbursement difficulties are not the only ones that bedevil Stanford these days, nor even the thorniest. A grocery list of others would include:

• Declining demands for Stanford's services. Fewer patients are coming to Stanford's clinics and hospital. The hospital was budgeted for 188,000 patient-days last year but counted only 166,000. The trend is especially pronounced in the "community" beds of the hybrid teaching-community hospital, which account for about half the total. Last year the community beds were filled only somewhat more than 60 percent of the time. As Rich suggested, the growth of several fledgling prepaid health plans on the San Francisco Peninsula threatens to accelerate the exodus, since Stanford is too expensive a place for routine hospitalization under prepaid plans.

• Wretched town-gown relations. Last summer, at the urging of clinical faculty members, Stanford Hospital directors voted to close off hospital privileges for certain services—radiology, anesthesiology, and labs such as neurology, nuclear medicine, and cardiac catheterization—to community doctors not already on the staff. Access to inpatient beds would remain open to qualified outside clinicians "for the foreseeable future"—a phrase that despite repeated disavowals sounded to community physicians "like a week from Thursday," as one Stanford official put it. The decision angered and alarmed area doctors, especially the 120-doctor Palo Alto Medical Clinic group which sends patients nowhere else but Stanford. Many of these community doctors are Stanford-trained; they view the recent action as an abrogation of the university's promises back in 1959, when the medical school moved here from San Francisco, and 1968, when the university bought out Palo Alto's interest in the community hospital component. President Lyman and other Stanford officials have denied bad faith but they are clearly worried about the threats from community doctors to take their patients down the road to some quite respectable nonteaching hospitals where the welcome is warmer.

• Clinical facilities problems. According to James H. Stanford, the medical center's finance director, 20-year-old Stanford Hospital requires more than $12 million in renovations (after just losing millions on a new addition in cost overruns and delays) to meet accreditation and licensure standards. Yet the hospital has no separate endowment, he said, and the time is not propitious to be launching any community fund drives "given the current [town-gown] tensions." Moreover, Stanford is worried about the future of another vital resource, the county-owned Santa Clara Valley Medical Center. A quarter of Stanford's medical students and an equal proportion of its residents rotate through Valley Medical Center at any one time. But Proposition 13 has frozen salaries at the public hospital, causing an exodus of nurses and occasional shutdowns of intensive care units, and no one is sure how California governments are going to meet next year's Proposition-13 crunches. More ominously, the conservative fiscal mood impinges on the chances of an $84-million reconstruction program for the county institution, without which it cannot maintain accreditation and licensure.

Stanford University can't do much about the San Andreas Fault except to try to make its buildings "earthquake-proof." Likewise, Stanford University Medical Center cannot wish away inflation, competition, Proposition 13-ism, or lurking threats such as federal demands for more primary-care doctors or the Carter Administration's contemplated cutbacks in medical school capitation grants and research funds (see *New York Times*, Sunday, 3 December, p. 1). That means the school and hospital face some sort of fiscal earthquake-proofing; or as

the exiting dean characterizes it, "significant reprogramming and rebudgeting."

As any initiate of faculty politics knows, those are fighting words. In terms of the medical school, the sibling rivalry is between those who see patients and those who do not—the clinicians and the researchers—and also between "have" departments, such as surgery and radiology, and "have-nots," such as pediatrics and many subspecialties.

The struggle has been a long time coming, arguably since 1959, when Stanford Medical School moved from San Francisco to Palo Alto and was reincarnated as the very model of a research-oriented medical school. For 10 years the decision paid off stunningly; by 1969 federal research funds supported 60 percent of the budget. But as everyone knows, or should have known, what goes up must come down. By 1974 research funds paid 41 percent of the faculty's salaries; since then the ratio of research-derived to clinically derived support has dwindled from 1.5 to parity.

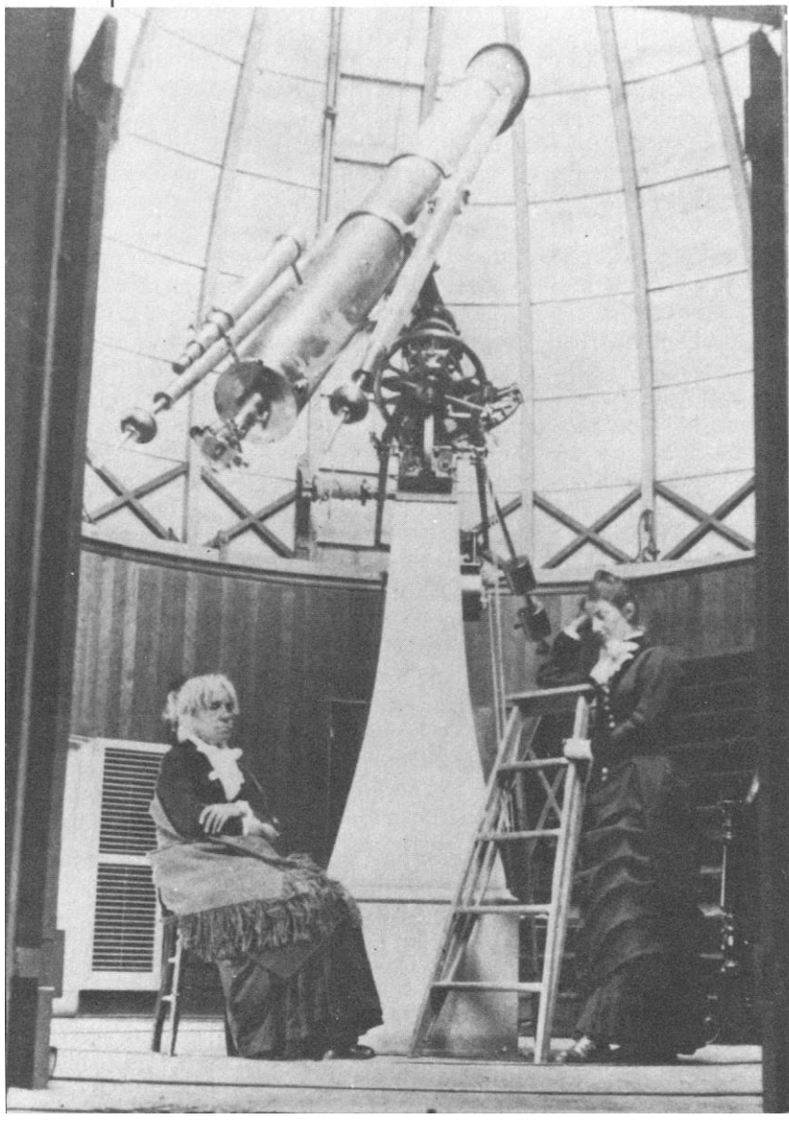
For years Stanford weathered the shift by virtue of its complex administrative structure, which allowed the dean to reallocate revenues according to his priorities. But such a structure is vulnerable at a time of across-the-board and increased fiscal accountability, a lesson that Stanford has seemed slow to learn.

Rich had hoped to meet the emergency without much structural reform. Lately he had been pushing for a plan to organize the clinical faculty into a large corporate group practice, apparently on the theory that government agencies and statutes, such as a California law against "the corporate practice of medicine" that Stanford is accused of violating, would thereby be satisfied. Under such a group practice, the faculty would technically no longer be "on salary" from the university, but the dean, as executive head of the corporation, might presumably maintain a good deal of redistributive discretion.

With Rich's departure that resolution of the problem may be down the drain too. The more powerful clinical chiefs, such as heart surgeon Norman Shumway, are said to be designing departmental group practices that would keep firm control of departmental revenues.

The implications of these plans are not lost upon basic researchers, who of course see no patients, nor upon have-not clinical departments that depend on cross-subsidization from their more prosperous brethren. "Basic research

Women and Science in the Nineteenth Century



The mahogany telescope erected at Vassar College in 1865 is the centerpiece of a Smithsonian Institution exhibit on 19th-century American women of science. The small but sturdy show, occupying a room at the Museum of History and Technology, demonstrates that even in the Victorian era, women and science took each other seriously. It contains scientific instruments donated by women's colleges, models, photographs, and books and illustrations done by women in the latter part of the century.

Featured in the show is astronomer Maria Mitchell, America's first woman scientist of note, who became director of Vassar's observatory when the college opened in 1865. "For many," says astronomy curator Deborah Warner, "she symbolized the emergence of women from dependent domesticity into the public world of science."

This is not to say, of course, that they were accorded the same status as men. In fact, the Victorian feminist rationale for female participation in science is not one that would go down well today. Mitchell summed it up in 1876: "Women are needed in scientific work for the very reason that a woman's method is different from that of a man. All her nice perceptions of minute details, all her delicate observation of color, of form, of shape, of change, and her capability of patient routine, would be of immense value in the collection of scientific facts."

Since men's colleges were extremely reluctant to grant women advanced degrees in science, and since it was not thought that women could combine a family and a career, the recognized scientists portrayed in the show hardly hint at the numbers of women who were actually doing science in the last century. As Warner points out, many wives of scientists actively collaborated in the work of their husbands. One wonders what the membership list of the National Academy of Sciences would have looked like in 1900 if it reflected the achievements of wives.

The exhibit is open through February.—C.H.

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just can't survive if the dean loses his discretion to shift funds," argues one of the nonclinical department chiefs, Eric Shooter of neurobiology. "We aren't exactly the poor relations but we've got to have some subsidy. There has to be a transfer from the clinical side to the basic side." Resentful of the surgeons' boasts that they bring in the lion's share, and groping for solutions, Shooter even suggests plaintively that researchers "get some kind of incentives too, like some part of the indirect [research grant] costs coming back to the investigator as an incentive to write the next grant." It is an idea unlikely to excite the interest of the Department of Health, Education, and Welfare.

Creeping unease about a change in Stanford's mission—a natural and perhaps ineluctable consequence of the funding and power shifts within the school—is emerging in other contexts these days. Last summer Nobel Laureate Arthur Kornberg, the faculty's most forceful exponent of the Stanford status quo, complained in the alumni magazine about the "erosion of our scientific enterprise" and the "inordinate control over school policy" exercised by clinicians just because they bring in "a major fraction of the school's budget."

"I am concerned," Kornberg wrote, "when there is a proliferation of teaching, clinical service or administrative activity far beyond what is appropriate for an institution with a major mission to create new knowledge."

And the ideological debate extends beyond fiscal power. Two years ago Kornberg and a number of like-minded faculty concluded that Stanford was admitting far too many students who were more interested in practicing medicine than in "creating new knowledge." As Shooter put it recently, echoing many others, "In the early seventies the admissions committee went overboard in the admission of students who knew from the day they came that they wanted to be general medical practitioners. Stanford is not the place to train that kind of individual."

Those who felt this way engineered a restructuring of the school's admissions procedure that many believe has corrected the trend, though one department chief recently lamented: "Lately I find students drifting toward the practice of medicine. I don't object to that," he added quickly, "but I thought originally that Stanford was more research-oriented."

There is some evidence, however, that

(Left) Collecting marine specimens at the Marine Biological Laboratory in Woods Hole, Mass., in the 1890's. One Woods Hole participant, Nettie Stevens, is credited with establishing in 1905 that chromosome patterns determined sex.

(Right) Anatomy class at Western College (now defunct) in Oxford, Ohio. According to the exhibit "physiology was an especially important subject for women, whose destiny was thought to be determined by their anatomy."

(Far left) Maria Mitchell, one of America's first woman scientists, sits with professor Mary W. Whitney in the Vassar College Observatory. The 13-inch reflecting telescope was only 2 inches smaller in diameter than the one at Harvard.

sharply calls into question whether Stanford Medical School has ever turned out a preponderance of scientists and academicians, even in the biomedical boom days of the sixties. Lawrence Horowitz, a staffer for Senator Edward M. Kennedy's Senate Health Subcommittee, did a survey of Stanford alumni while he was a Robert Wood Johnson Clinical Scholar at Stanford from 1974 to 1977. Horowitz found that the "new," post-1959 Stanford Medical School did indeed graduate significantly more M.D.'s who ended up in medical research and teaching than the old San Francisco-based school had. Even so, he found, only one out of five Palo Alto-period alumni became full-time medical school faculty members. Moreover, a majority of those who graduated between 1960 and 1972 do no medical research, and a majority of those who do spend less than a quarter of their time at it.

"If it is clear that the majority of Stanford students do not want to become scientists or do research in a meaningful way," Horowitz asked in an article published last summer, "then does it not follow that Stanford's education is unbalanced because of a research and subspecialty bias?"

The "Horowitz Report" is not much talked about at Stanford Medical School; out of two dozen interviews with *Science* recently, no one brought it up spontaneously and most brushed it aside when it was mentioned. Last month, however, as if in rebuttal to Horowitz's question, a curriculum reform committee chaired by Robert A. Chase, a surgeon, said the school should take firm steps to ensure more research-oriented and scientifically competent graduates. Specifically, the committee frowned on the growing tendency of Stanford students to get through medical school as rapidly as possible and get on to clinical training; to reverse this state of affairs, it recommended that all students be required to write and defend a thesis, and to stay at least 13 quarters to do it.

The recommendation has not yet been acted upon by the school's faculty senate. So far its critics have been found mostly among the students, who question whether the thesis requirement will produce better doctors, diminish diversity among the student body or even, given its coercive aspect, lead to scientific competency and useful work. Proponents tend to take the attitude that it matters not one whit what the current students think: in the future, if the thesis requirement is adopted, Stanford will attract only those students who *want* to engage in "a scholarly investigative experience." The students' self-appointed ombudsman and faculty spokesman, William Creger, sees it a different way. Creger, who was dean of student affairs at the medical school until he had a falling out with Rich over admissions procedures and other matters 2 years ago, calls the proposed thesis requirement "more depressing than a required religion" and adds caustically: "I think we've got some scientists around here who feel threatened because students don't think they're the only gods any more."

Apart from the particulars of the "thesis" debate, however, the interesting thing about the Chase committee's report is the set of underlying "assumptions" which the authors took the trouble to lay out. Two of the 13 assumptions stand out:

- "Stanford should specifically address the public's need for medical scientists"; and
- "It should not be Stanford's function to meet specific societal needs through production of the number and proportion of various kinds of M.D.'s needed in today's maldistributed pool."

If this language sounds a tad defiant at a time when HEW Secretary Joseph A. Califano is telling the Association of American Medical Colleges to curb "the runaway growth of specialists and subspecialists," the implication is entirely deliberate. In discussions of the Chase committee's report among the faculty leaders recently, someone reportedly pointed out that the school should consider how such statements would read "on the front page of the *New York Times*." But after due consideration, the faculty decided to let it stand.

The document is merely symptomatic, in an unusually stark way, of the tensions within academic medicine in the late 1970's. Stanford traditionalists see their plight as tragic and their resistance as noble. But even one of Stanford's own, health economist Victor Fuchs, sees it in quite a different light. Speaking before the New Orleans convention of the Association of American Medical Colleges in late October, Fuchs said:

"Even a sympathetic, friendly observer can't help but get the impression that academic medicine's interest in health policy begins and ends with two commandments:

"First, 'give us money,'

"Second, 'leave us alone.' "

—RICHARD A. KNOX

Knox, medical editor of the Boston Globe, *is currently a Professional Journalism Fellow at Stanford University.*

Briefing

Toxicologists Struggling for Federal Identity

Environmental legislation of the past decade has been a boon to the still-emerging discipline of toxicology. Toxicologists are in great demand—but short supply—in both the regulatory establishment and the private sector. In the government alone, more than 2000 toxicologists are expected to be employed by 1985, up from a relative handful now working in each of the large agencies, such as the Food and Drug Administration, Environmental Protection Agency, Occupational Safety and Health Administration, and Consumer Product Safety Commission.

In the heady hiring competition between government and the private sector, however, the federal government has more often than not been the loser—in part, the bureaucrats say, because of civil service regulations. The civil service has not yet recognized that the independent discipline of toxicology even exists. On the registers of scientists available for federal employment—from which all applicants must be drawn—toxicologists are classified under any of a number of related disciplines, such as pharmacology, biochemistry, entomology, or veterinary medicine. The result has apparently been a lot of confusion and extra work for applicants and employers alike. Without a separate toxicology register, "we are effectively prevented from recruiting toxicologists on the basis of their particular knowledge and abilities in toxicology," wrote the heads of the four agencies recently to the chairman of the civil service commission, Alan C. Campbell. Difficulty in recruiting, they said, soon becomes difficulty in regulating.

The agencies have proposed that a separate register be established, and that toxicologists be given a federal job description that would make them something akin to Christopher Reeve amid the test tubes. Intensive preparation would be expected in toxicology; substantial preparation would be demanded in physiology, chemistry, and biochemistry; and additional preparation would be required or desired in pharmacology, anatomy, pathology, biostatistics, genetics, neurotoxicity, cytology, immunology, morphology, ecosystems, and epidemiology. These qualifications are similar to those

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