Gray discusses Course VI overenrollment

By Diana ben-Aaron

President Paul E. Gray '54 is a former professor of electrical engineering at MIT, where he taught for twenty-five years. He is now a consultant in the Department of Electrical Engineering and Computer Science and a group that will push faculty to the limit of their capacity to increase faculty. The problem is not a problem that is unique to MIT; it's a problem that's occurring in engineering schools everywhere.

A: I wouldn't put it as an either/or situation. You say there are undergraduate majors, as opposed to expanding the department. That problem, for the moment, is going the other way. Chemistry Engineering, largely because of the poor poor job market in the last two years. The sophomore class in chemical engineering this fall is down by 50 percent. In fact, the student body this fall is the lowest level of qualification that is needed. There just aren't enough faculty and enough potential faculty candidates available to meet the demand for engineering education.

There are a variety of estimates you can get out of it; the American Association for Engineering Education estimates that about 15 percent of potential candidates at 450 schools of engineering in the US are vacant. We have nowhere near that number of vacancies, but a number of the undergraduate population is enrolled in the Department of Electrical Engineering and Computer Science and it's growing at a rate that will push that group to its limit of capacity. The problem is not that we can't grow to 150 faculty. It could not grow because of the national situation, the very strong selection of the very highest people to fill the positions that are budgeted that could have been filled.

The problem, as I see it - that is, in numerical terms is that a good deal of academic space represents as a limit on increased faculty. So the office space or other limits on physical capacity also add up to what I think they told us. By February or March, when they decide on the applications that they are going to accept, we are going to be in a position to see if it made any impact.

A: That's right. What we know right now is what physical capacity we've got. We know something about what financial resources we have, and we know quite a lot about general objectives, but in terms of details, what's going to happen, who's going to do what, is going to affect what set of undergraduate courses in what way - those are speculative. We know something about what happened last year, but not enough to say with any confidence that artificiality, and looking at the educational side of the place, the costs of education have been, for as long as we've kept the records of them - and that goes back to the Depression, 1930 - the cost of education at MIT, per year, per student, has been something on the order of twice the tuition charge, and the difference between the price, which is what the student pays - and the cost, is made up in earnings on the endowment, is made up out of the gifts, but some of it comes from the federal level, from research reimbursement on the federal level.

Q: Nobody knows exactly what it's going to do?

A: That's right. What we know now is what physical capacity we have, and what financial resources we have, and what general objectives we have, and we know quite a lot about general objectives, but in terms of details, what's going to happen, who's going to do what, is going to affect what set of undergraduate courses in what way - those are speculative. Six months from now we'll know quite a lot, but cause these programs will all be beginning next fall, but there's very little that can be said specifically right now.

I will tell you that my hope is that Project Athena and the tremendous research computing resources generally available under the graduate program across the Institute, will ease the pressures that are on Course VI. I believe that stands a chance of happening, if other departments can be encouraged to use those resources which bring computing into activities in a natural manner, and which makes clear to students what I believe to be the truth - that if you're interested in learning not only how to use computing in professional field, but also learning something about the future of computation and how to develop its capacities.