

The Observer

An institution on his own

Answers from Paul Gray - 'Mr. MIT' to some

By Sam Allis, Globe Columnist | October 14, 2007

The Observer needed to give his tiny brain a workout last week after vacation sloth, so I hightailed it to MIT and sat down with Paul Gray.

Aside from two years off for Army service, Gray has been on campus in various incarnations since he began his freshman year there in 1950. Think professor, chancellor, president, chairman of the governing board, professor again. Think Mr. MIT.

Gray grew up in Newark. His father never finished high school and worked for a public utility. The son decided to become an engineer because his father took orders from engineers.

Last December, he finished 17 years of teaching electrical engineering following his 10-year presidency that ended in 1990. At 75, he's still active on campus. His memory is acute and his brain still Extra Large, so I started throwing out big ones.

To wit: Who around here lost the computer? Why did that industry end up in Silicon Valley rather than Route 128? There are scads of reasons, but as far as MIT was concerned, says Gray, "It was a failure of vision."

He continues, "Some of it happened because the San Francisco area had two really great universities in electrical engineering - Stanford and Berkeley. But we contributed to missing the boat."

"MIT was the only place in this area with substantial ability in engineering, and it made a conscious decision in the early '60s that the field was moving so rapidly that we couldn't expect to stay current."

What MIT needed was a fab lab - a semiconductor fabrication shop to build and test cutting-edge components for science and industry. But the costs involved for construction and maintenance were high enough that MIT chose not to pursue one.

"It was the wrong decision," he says. "That was a big miss."

(If only Senator Hillary Clinton were that honest about her Iraq vote.)

OK, what about biotech? We in Massachusetts have bet the ranch on it. Any chance we've put our dough on the wrong horse?

"No," he says, "I don't sense that. The 20th century was a century of physics. It is my conviction that this will be the century to unravel the last part of life we don't understand - how the nervous system and the brain work."

So what about MIT's long dependence on federal research dollars? Has it been a Faustian bargain? Would the place implode without all that money?

No, he says. That said, things were sketchy at one point. When he took over in 1980, almost half of faculty salaries were being paid out of federal dollars. In a moment of some understatement, he says, "That struck many of us as unwise, so we gradually shifted the budget. Now, 100 percent of all faculty salaries are paid by institute funds."

Gray sees no downside to the infusion of research bucks, which ran annual double-digit increases from the mid-'50s through 1968, when Lyndon Johnson, in Gray's words, "realized he couldn't have guns and butter."

He insists that without graduate students, research will ultimately fail: "Neither Congress nor OMB [The Office of Management and Budget] understands that. You need graduate students in research to create a new cadre for the future."

And the pipeline is alarmingly thin. About half of MIT's grad students today are foreign: "We've got to go overseas to find scientists and engineers."

After the Sputnik wakeup call in 1957, college-track high school students were required to take four years of math and science, he notes, and the results were obvious: "The best-qualified classes here were in the late '60s. They were the beneficiaries of post-Sputnik high school transformation in math and science."

Gray, a phlegmatic man, gets riled at the abject failure of the media to grasp and mark the difference between engineering and science. Stories that blithely use "science" rather than "engineering" irritate him no end.

"I read 'scientists do this and do that,' " he says. "The iPod comes from engineering, not science. Same for the World Wide Web and artificial intelligence."

As an electrical engineer, he reminds me that MIT began as an engineering school, and was colloquially called "Mass Tech" in its early years near Copley Square before moving across the Charles in 1916. MIT was actually weak in science until 1930, when, he says, "The board concluded this was not the way to the future."

I ask him what has been the most significant change at MIT during his 57 years there?

"Women."

When he was a freshman, there were fewer than 20 women in his class of 900. "It was limited by space in a boarding house for women on Bay State Road," he says. "It was unlikely you'd have a woman in your class, and certainly none in a position of authority."

The women who came to MIT in the '50s were exceedingly qualified - they had to be given the minuscule number of slots available to them - but most left long before graduation. "Few had a satisfying experience," he says.

One of Gray's goals as chancellor and president was to raise the profile of women at MIT. Today, they comprise 44 percent of the undergraduate body - "For which," he says, "I take a fair amount of credit."

Sam Allis can be reached at allis@globe.com.

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