



By Bruce Bernstein

## An MIT-like Environment at CUNY?

► On Friday, May 10, a delegation of three people from CUNY and NYSIA made a diplomatic foray into the Boston area. We were visiting MIT, our purpose being to understand better how technology transfer from computer science departments to entrepreneurial companies works in the software arena.

MIT, along with Stanford, is considered the "gold standard" in this field. MIT begat Route 128, which begat the mini-computer industry of the 1970s. The university emerged as a leadership center again in the 1990s with many companies in telecommunications equipment, Internet software and systems, enterprise software, artificial intelligence, and a wide range of other subareas in the computer industry milieu.

Our delegation consisted of Dr. Ted Brown, chair of the CUNY Grad Center Computer Science PhD program and the executive director of the new CUNY Institute for Software Development and Design (CISDD); Dr. Mimi Tausner, a computer science professor at the College of Staten Island; and myself. Our most immediate goal was to learn some lessons that will help in designing how the new CISDD Center will function. If you read this column regularly, you know that I'm quite enthusiastic about the prospects for the CISDD Center, which is an attempt

to foster MIT-style software technology transfer in the New York City area.

We had two meetings at MIT. The first was at the Laboratory for Computer Science ([www.lcs.mit.edu](http://www.lcs.mit.edu)), which is a center for MIT's "traditional" computing research. As the Lab's home page states, without undue boasting, "much of the hardware and software driving the information revolution has been and continues to be created at LCS." We met with Dr. Hal Abelson, who heads the lab's research on a topic called "amorphous computing." Amorphous computing is defined as follows: "The study and creation of systems where tiny, reasonably identical hardware and software components collaborate in response to internal and external stimuli to deliver predictable useful functions, in a manner analogous to that of social insects or cells in the natural world." Amorphous computing is a field that can potentially synthesize information and materials science. Paint, for example, could be programmed to automatically fill in cracks; the sheet metal in a car could automatically react flexibly to a crash, and then heal itself. This stuff is two or three decades down the road, but it's coming. ([www.swiss.ai.mit.edu/projects/amorphous/](http://www.swiss.ai.mit.edu/projects/amorphous/)). Our discussion, for the most part, centered not on Abelson's research but on his role as a

member of the committee that oversees MIT's patent licensing.

Our next visit was over at the Media Lab ([www.media.mit.edu](http://www.media.mit.edu)), made famous by Dr. Nicholas Negroponte, its director. The Media Lab, founded in 1980, pioneered such fields as multimedia and digital video. Now, it is concentrating more on "how bits meet atoms: how electronic information overlaps with the everyday physical world." We received an extended tour of one of the Media Lab's components, the Laboratory of Context-Aware Computing. This lab is headed by Dr. Ted Selker, a former PhD student under Dr. Tausner at CUNY Grad Center. Selker spent years at IBM before coming over to the Media Lab, where he invented, among other things, that tiny red mini-trackball used as a pointing device in Thinkpads. He is now working on everyday items that bring computing holistically into the home and office: an office door that acts as an intelligent receptionist; a large display panel on the ceiling above your bed, with appropriate programming to make you go to sleep (or not); a multimedia coffee table; a rug and couch with built-in intelligence and sensitivity. After an extended tour of his lab, we spent some time in his office debating how the CISDD Center should function.

Both the Laboratory for Computer Science and the Media Lab receive extensive funding from private industry. The Media Lab gets most of its funding (its overall budget is \$40 million per year) through a set of "sponsorship consortia." The LCS, which has a budget of \$30 million per year, gets a higher percentage of grants from government but is still extensively supported through research contracts with private industry.

One interesting facet of the tour was that both Abelson and Selker were not optimistic about the ability of universities (or at least the current university model) to continue to play a leading role in research, given the strength of the current venture markets. Abelson told a story about a recent undergraduate who received \$50 million in funding (second round funding, that is; \$50 million would be high, even in the current climate, for a first round). Why should the best students go on to careers in academic research? Will we kill the goose that has laid so many golden eggs? I will explore this issue in more depth in the coming months.

**Bruce E. Bernstein is president of the New York Software Industry Association (NYSIA). He has worked in the software industry since 1984. He can be reached at (212) 475-4503 or at [bruce@nysia.org](mailto:bruce@nysia.org).**