

**Introductory Remarks at the University of Texas Arlington TXMEMS-2003
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President Charles Sober, Vice President Keith McDowell, Professor Frank Lewis, ladies and gentleman:

I am greatly honored by the invitation by the organizers of this conference to say a few words here today.

I am not an expert in MEMS, although there was a period in my scientific life when I was deeply involved in unraveling the fascinating and profound issues of quantum-classical correspondence, which in some sense is the gateway to understanding the elusive subject of “quantum chaos.” Many of us in the business were hoping that as electronic circuit boards got to be smaller and smaller, perhaps, reaching well below the micro-level, we could actually glimpse into the world of quantum classical interface. I can see that with MEMS (*a la* micro level) becoming more mature, and nanotechnology becoming more exciting (or fashionable), the dreams and hopes of “quantum chaoticians” such as myself may indeed come to fruition!

But today, I want to talk about collaborations.

I am here today as a “collaborator” with UTA. Ever since I came to Texas 26 months ago, my good friend Keith McDowell, the Vice President for Research for UTA and I have been working together on many projects. In these past months, one of the most nationally visible and successful collaboration is the SPRING project, or Strategic Partnership of Research in Nanotechnology. This project links UTD, UTA, UT-Austin and Rice, and places Texas squarely on the global radar screen of nanotechnology.

An exciting spin-off of SPRING is the Nano-At-The-Border, which now includes the University of Texas at Pan Am and the University of Texas at Brownsville.

I would be remiss in my duty if I did not mention that SPRING is championed by Senator Hutchison, our senior Senator in this state, and strongly supported by great leaders such as Kay Grainger, Pete Sessions, Martin Frost, Sam Johnson, Eddie Bernice Johnson, Ralph Hall, Chet Edwards, Solomon Ortiz, and many others. I am waiting with great anticipation for the first SPRING conference in September!

We also should be realistic that while there is no doubt that both UTA and UTD have many truly remarkable world class research efforts, such as SPRING, even by combining

our two campuses, we are still below the national threshold. While there are unquestionably world class medical research activities here, the Metroplex may be the only high-tech metropolitan in the United States without world class comprehensive higher educational research powerhouses. This is an economic and intellectual shortcoming that needs to be addressed. I firmly believe that UTD and UTA must address it in a collective manner.

With greater stability and cooperation between UTA and UTD, and working closely with the University of Texas Southwestern Medical Center, I believe that in the coming months and years, the intertwined research scaffoldings of these three components of the University of Texas system in northern Texas can truly be the Metroplex's economic and intellectual engines.

Let me give you an anecdote about a serious regional collaboration I have had the privilege of participating in before I came to the University of Texas at Dallas.

Three years prior to my coming to UTD, I was the Vice President for one of the largest "unknown" high technology companies in the country: Science Applications International Corporation (SAIC). I was in charged of a project called HUBS, which stands for Hospitals, Universities, Businesses and Schools. Of course, if I had a little more foresight, I would have dubbed it Businesses, Universities, Schools and Hospitals, or BUSH.

But, I am not that smart!

Anyway, HUBS was fundamentally an economic development project, envisioned by the political leadership of Delaware, New Jersey, Maryland and Pennsylvania. The mission of the project was to leverage the fledgling information technology trinity: data engines, massive archival storage capabilities, and high performance network, to foster collaboration among, inter- and intra- disparate communities represented by the acronym HUBS. The aim from the political leadership was clear -- technology is a realm in which politicians, even those from different states, can both agree on and benefit from.

Indeed, by the time I was coming to Texas, we already saw some apparent benefits. For example, the four medical centers, The University of Medicine and Dentistry of New Jersey, Johns Hopkins University Medical School, University of Pittsburgh Medical School, University of Pennsylvania Medical School, together with the Pittsburgh Supercomputing Center, were jointly developing a DARPA program on tele-radiology and tele-pathology. For tele-radiology, the four medical centers, together with the supercomputing center, developed a massive secure and intelligent archival system for mammography (I was told that each hospital could have on the average 1.6 terabytes of data, if the systems were all digitized).

The collaborations involved enormously complicated issues:

- First, there was the “human engineering” (i.e. dealing with personality differences, personal agendas, egos, different medical expertises and hence different technical languages).
- Second, there were, and still are, inter-state difficulties (health care issues across state boundaries).
- Third, difficult interactions between information technologists and medical experts, between SAIC, a for-profit company and universities which are not. All these interactions need a great deal of patience, and sometimes, what my Jewish colleagues refer to as “chutzpa,” to overcome.

So what was the benefit of climbing such steep steps? The benefit was that the impact of the group is much greater than that of the individuals. It was clear that the four powerful health institutions in the four states working together was a formidable signal to the world.

More and more problems confronting mankind require massive collaboration. The recent SARS pandemic is a case in point. Competing, while cooperating (i.e. coopeting...) is no longer a luxury, but a must. I believe that UTA, UTD and UT Southwestern, with enormous federal, regional and local political and communities palpable support, can create a HUBS-like vision and programs for northern Texas. It can spur the Metroplex into a new economic and intellectual era.

I am optimistic about the future.

Thank you.