

**National Institutes of Health, Nanomedicine and a SPRING Conference in UTD on  
21<sup>st</sup> Century of Matter**

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Today (December 9, 2003) many of UT System's vice presidents for research attended an informative workshop in the United States Department of Agriculture's Jefferson Auditorium, organized by Dr. Kathie Olsen, Associate Director of Science the Office of Science and Technology Policy (OSTP) in the Whitehouse. The workshop was entitled "Research Business Model" ). The vice presidents' participation was encouraged and arranged by UT System's Vice Chancellor for Federal Relations Bill Shute,

The theme of the workshop, in a nutshell, was to articulate some of the new research paradigms to research administrators in higher education. The workshop was chaired by Geoff Grant, Director of the Research Business Models subcommittee of OSTP.

One speaker, Dr. Raynard S. Kington, Deputy Director of NIH, intrigued me. Besides echoing what everyone else talked about -- namely research of today, by necessity, needs to build into it from day one a strong interdisciplinary nature, he underscored the fact that one area of research which NIH is now promoting heavily is "nanomedicine." There will be significant amount of money going into this field!

Dr. Kington's mention of nanomedicine immediately made me think of the SPRING Conference on 21<sup>st</sup> Century of Matter, which will be held at UTD on the 22<sup>nd</sup>-24<sup>th</sup> of January of 2004. SPRING is a research consortium of the Air Force Materials Research Laboratory, UT Austin, UT Arlington, UT Dallas and Rice University.

In a recent conversation with my colleague Rocky Draper, I learned that several invited speeches at that conference can broadly be classified as "nanomedicine," a term I heard for the first time. Rocky also told me that a critical issue of nanomedicine is how to leverage "nanotechnology" to provide a technological path to deliver drugs. I suspect that such a delivery system is probably still on the drawing board at the moment, and is not ready to be deployed. But, I can imagine that the possibility certainly intrigues many scientists working in the field.

Rocky also informed me that "nanomedicine" is part of "nano-biotechnology".

After I heard the talk of Dr. Kington, I immediately went on to the web and located the three invited speakers who will be talking about this area. I was surprised by what I found.

All three are scientific giants, and none of them made their worldwide scientific reputations in this area. Yet it appears that all three are now deeply involved in this area. The three are:

Esther Conwell of the University of Rochester. Esther will be talking about the “Optical Properties of DNA: Delocalized Excitons”. Esther’s scientific accolades included being both members of the National Academy of Engineering and National Academy of Science. Very few scientists in this country can claim such an honor. About a year ago, Esther gave a talk at UTD where she mentioned about her work in conducting DNA, which as I understood it, was a beautiful spin-off from her brilliant work on conducting polymers. Obviously Esther has made great strides since then since she is now talking about the optical, i.e. light, properties of DNA.

Alan Heeger of the University of California at Santa Barbara. Alan will be talking about “Nanostructured Gene Sensors: Detection of Sequences on DNA.” Alan is the year 2000 Nobel laureate for his work, in collaboration with UTD’s Alan MacDiarmid, in discovering conducting polymers. (The two Alans, plus the year 2003 Nobel laureate in physics Professor Abrikosov are the three Nobel laureates who will be speaking at this conference). I have had the pleasure of hearing several of Heeger’s talks in the past couple of years. Yet this is the first time I am aware of that he is giving a talk with such a distinct “bio” flavor.

Robin Hochstrasser of the University of Pennsylvania. Robin will be talking about “Multidimensional vibrational spectroscopy of alpha helices; Agranovich biphonons in biology.” Although I do not know Robin personally, I am well aware of his thunderous scientific reputation during my many years in Philadelphia. Robin is a member of the National Academy of Science. The title of his talk, which included the name of the great Russian scientist Vladimir Agranovich, means that Agranovich also is now deeply involved in this arena which connects well to this conference as it is to celebrate the 75<sup>th</sup> birthday of Agranovich!

In my many years as a research physicist, I learned to keep my ears to the ground to detect the scientific directional changes. While I am obviously not an expert in nanobiotechnology, it seems to me that when towering figures such as Conwell, Heeger and Hochstrasser are all talking about such a subject in a high profile conference, we can safely assume that this is a scientific direction to which one should pay serious attention.

Whether you are community members, seasoned scientists, graduate students, and undergraduates, come to this unique opportunity in the Metroplex to hear these great people to talk about an area which I believe will not only have intellectual impact, but technological as well as economic impact as well.

I urge you not to miss this opportunity.