Initial Thoughts for the JCOTS White Paper on a Virginia Nano-technology Development Plan

Jim Kadtke, 30 September 2006

This document is meant to reference, and add to, the draft white paper on nano-technology recently distributed by the working group chair, Lisa Friedersdorf. That document contains a great deal of valuable background material and statistics on nano-technology activities currently underway in Virginia, or planned for the near term. We expect that a great deal of modification and addition will take place over the next few months, and hence the comments included here are intended simply to propose additional directions for sections to be included in the final report.

Perhaps the single most important recommendation I would like to make is that the development of a plan for a world-class nano-technology industry in Virginia should embrace the new models for innovation-based economic growth being proposed by the current innovation policy documents. These documents include academic and policy studies such as from the National Academy of Sciences and the Council on Competitiveness, but also State and regional development plans, and the Federal policies being developed in legislative proposals in the US Senate and House. Not only are these documents excellent sources of programmatic guidance, but aligning Virginia with these national-level concepts will make it more likely that Federal/State partnerships and leveraged funding programs will subsequently be awarded to Virginia. This approach will also make it easier to establish mutually beneficial relationships with other States and regional innovation initiatives occurring in several places within the US.

In essence, the core of the new innovation-based economic growth models is about building an "innovation ecology" – that is, taking a holistic view to developing economic resources and capabilities, since any sector that is a "weak-link" will result in a significant disadvantage in competitiveness in today's globalizing economy. The policy tools for developing such an ecosystem are, inter alia, public-private partnerships, social and business networking activities, educational and outreach activities, and leveraging of funding and financing from a variety of sources. The technological tools for developing an ecosystem are primarily from information technology, including web, wireless, and visualization tools and new learning and virtual meeting applications. Also, new models for financing and IP transition could be creating distinct advantages for those companies and regions which can develop them.

The principal recommendation to JCOTS at this early stage would be to think about establishing or fostering a new set of governance, networking, and community-building organizations and programs in our region for nano-technology, since these are the novel and transformational elements that are driving the innovation hotspots we see in various places of the globe. This approach will help organize, optimize, and leverage our state resources to the maximum, in a way that is driven at the grassroots and business level.

The point is **not** to try to allocate our regional resources in nanotechnology in a stove-piped or conventional top-down fashion, since this is the conventional economic model that is clearly losing out globally to the more vigorous innovation-ecology approaches which are already being implemented by many countries.

Although trying to develop policies in Virginia to foster an innovation ecology may sound confusing and risky, there are a multitude of examples currently being developed or in existence, both in the US and in other countries, which can be drawn upon. There are also numerous policy and economic planning documents which describe each approach and which are freely available online. Since they all have a good deal in common in their approach, the effort required to summarize these documents, and apply them to Virginia's particular case, would not be large.

Hence, my principal recommendation to JCOTS would be to call for a preliminary study of these innovation activities and attempt to create the first iteration of a Virginia Innovation Initiative, which at least initially would have a strong nanotechnology emphasis.