## Testimony to
## The House Standing Committee on Vision 2020
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## Kansas Department of Commerce
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Thank you for the opportunity to appear before you today, in order to discuss the role that the Department of Commerce can have in advancing the question – Is upgrading our state's computing capacity a viable activity and will it benefit the private sector in this state, particularly from an enhanced research and development standpoint.

While there are clear benefits to our core industries such as aviation, agriculture and the life sciences, the primary mission of Commerce and our partners is best described in the report submitted here today: "to define the common HPC computing problems faced by Kansas researchers, technology innovators and entrepreneurs in order to develop a reasonable timeline and estimate the need for future investment in all facets of a comprehensive HPC system."

The Department of Commerce is in a unique position to undertake this project. The integration of the Centers of Excellence and Entrepreneurship into the agency in the last legislative session is as I see it, the primary vehicle and resource with by which to leverage the relationships in the private sector that we must consult. These organizations, some located on university campuses, and others which are not, are all closely aligned with Kansas companies. For example, during the course of our initial study into the HPC question in 2011, I reached out to one of our partner organizations – MAMTC. MAMTC is located in Overland Park and works closely with small to medium sized manufacturers in Kansas in order to provide

access to services and public & private resources in order to remain competitive in the global marketplace. MAMTC took my very basic question to their customers across the state – would access to High-Performance Computing be a benefit to your business? The results of this informal poll were mixed. Many questioned whether their company would have products or projects that could be improved by this infrastructure. Others, who thought that there might be an opportunity for growth or innovation, were concerned about lack of technical expertise within their firms to take full advantage. I would point to the "Six Essential Components" that Dr. Heppert calls out in the report, particularly the need for not only the software, but the computational science and system administration expertise that is critical, so that areas of the potential market are not excluded from benefiting, because they don't have the resident expertise to compile, sort and draw conclusions from the large volumes of data that these systems would handle. Understanding not only *would* Kansas companies use this technology, but *how* are key areas that need to be addressed.

MAMTC and small to medium-sized manufacturers are only one segment of the marketplace that we seek to capture. The National Institute for Aviation Research (NIAR) at Wichita State University is on the cutting edge of aerospace design and research and has very close relationships with aviation firms located in Wichita. NIAR can be a great resource to assist us in properly evaluating how this sector would respond to increased HPC capacity in Kansas. Not only will we seek to determine the future market potential, but how is HPC being accessed today? Do your private sector partners possess this in-house currently? Are universities and research institutions out of state or country engaged in the effort? Are there practical examples of projects or products that would be enhanced by this state investment? All of these are questions the Department of Commerce will pose to our partners. I could continue down a long list of assets, such as the Kansas State Institute for Commercialization in (among others) the Animal Health space, The Kansas Polymer Research Center at Pittsburg State, and ITTC -The Information and Telecommunications Technology Center at KU – ITTC, who, according to their mission statement, seek:

- To advance knowledge and create innovative technologies in telecommunications, information systems, bioinformatics, and radar;

- To transfer knowledge and innovative technologies to Kansas companies and national industries by providing an excellent interdisciplinary research and development environment.

ITTC will clearly be an indispensable resource throughout this process.

It will be the responsibility of the study group moving forward, along with the Department of Commerce set the goals, expectations and deadlines at the outset of this effort, and maintain close contact with Dr. Heppert and the other university research leaders, which will be critical to a successful evaluation. As the report recommends, the development of a survey to gather information on university/private sector collaborations is the logical and vital next step. Let me speak for a moment on how I envision this approach taking shape: First, the study group that this committee convened will come together once again to draft the surveys that will serve as the basis for our research. I've indicated that multiple versions of the survey may be required, as I don't believe a "one size fits all" approach will suffice. We will need to approach our questioning in a way that reflects the unique aspects of the company we are surveying: industry, number of employees and resident expertise, public v. privately held and location of facilities. I also view this as an opportunity to educate and inform our participants on the potential of access to high performance computing, as much as it will be on acquiring data from them.

In summary, I believe our agency and our partners have the resources, knowledge base and access to expertise to adequately measure the prospective demand in Kansas for enhanced high performance computing capacity. I look forward to having an opportunity to update this committee throughout the process.