Testimony of Karl Rectanus, Leader of NC STEM Community Collaborative

to Senator Kay Hagan's Field Hearing of the HELP Committee of the United States Senate

April 19, 2010

Charlotte, North Carolina

Thank you, Senator Hagan for your leadership, and holding this hearing in a state that has been dedicated to innovation since well before the Wright Brothers' first flight on North Carolina's coast.

Education is not simply about teaching, learning and graduating. Education is the basis for economic prosperity. Education should be equitable so all have the opportunity to be informed citizens who can thrive economically and civically in our now global environment. Education is even a nationally security issue—an informed global citizen is much more able to interpret and contextualize global events.

Increasingly our education system in the US does not meet our needs for informed science, technology, engineering, and math (or STEM) trained students. Everyone needs some basis of STEM literacy to function in today's world. The environment, health care innovations, use of the Internet impacts our daily lives, and every single major challenge our country faces this century requires STEM skills to solve.

In addition, our need for STEM skilled workers has never been greater. This is not merely about doctors and researchers, but about the majority of jobs. These are the innovation careers. And our children are the inventive minds that will meet the challenges of the 21st century with new ideas about energy, healthcare, and infrastructure. In fact, I would argue that the best economic stimulus is an educated child.

It will take all of us working together to address the challenge. I applaud your recognition of the critical need to prepare our children for the world they live in, not just the one we came from. To do this we must take new approaches, based on proven practices.

I have the honor of leading the NC STEM Community Collaborative, and I appreciate the opportunity to discuss how our state and nation can foster education innovation. NC STEM is developing a statewide network of communities and assets who drive education innovation in STEM fields further, faster.

NC STEM is housed at MCNC, with the support of nationally recognized innovators including the Bill & Melinda Gates Foundation and the Battelle Memorial Institute. As you know, MCNC primarily focuses on supporting the broadband needs of education and public health of the state of North Carolina. MCNC manages the NC Research and Education Network (NCREN). NCREN is the single broadband network that all public schools, all public universities, the majority of the private universities all share to drive education innovation. MCNC works with education, private industry, economic development, foundations and private industry – it is a model for public/private partnership. NC STEM builds on the valuable state infrastructure asset by doing three things.

First, we invest in communities ready to change the way they prepare their children for their regional economic needs. Our state's economy is transitioning from manufacturing and agriculture to one steeped in STEM skills – advanced manufacturing, aerospace, IT, health and biotech. Whether a mechanic, farmer, doctor, artist, or any other sector of our workforce, STEM skills are critical, and many communities are now willing to change they way they teach and learn to ensure their children are able to fill these roles.

NC STEM has developed a "Community Visioning & Design Process" that brings a systems-thinking – a STEM approach – to communities who don't just want to do a new project, but want to design education innovation that is sustainable, scalable, and serves all children. In 3 communities– Davie County, Lenoir County, and the 11 Counties around Ft Bragg – leaders and community members are working in new ways to change teaching, learning, funding, and decision-making to bolster the economic strength of their communities. The process has been so successful, communities in each of the other 4 economic development regions of the state will implement their own Community Visioning & Design Process later this spring.

Second, we connect communities to the broad swath of assets, resources, and experts in NC and other states who can best move education innovation further faster. North Carolina has a wealth of wonderful, effective programs that impact students. Our universities offer over 70 different STEM programs that impact K12 education – for example, the Kenan Fellows Program matching science teachers with industry and university scientists. Our community colleges have proven their flexible responsiveness to business needs. Our K12 education, business and non-profit sectors have also created a multitude of impactful teaching and learning programs; a wonderful example of this is the NC New Schools Project with redesigned high schools and STEM Schools.

However, not all programs are created equal, effective, or appropriate for all communities' needs. NC STEM focuses on ensuring that our state's assets and others from around the country work together to provide children with good choices in life and bolster the economic strength of their communities.

Finally, we believe we must consider a new approach to funding education innovation – venture philanthropy, a proven model in the public and private sectors that provides an agile approach to local capacity building and ongoing sustainability of innovation.

NC STEM and its partners recognize that networks help move innovation further, faster. Of course, the Ipad, the Ipod, Twitter, Facebook, Google and other private sector examples prove the power of networks. Our partners believe we need to take another page from private sector's efforts to spark innovation – that is, the venture capital approach to funding innovation, especially in the STEM arena.

What's the idea of the Venture Capital, or Venture Philanthropy, to drive innovation? In a nutshell, it's about active investment and protecting that investment. It's about providing the support and guidance needed to take the seed of an idea and nurture it to full flower with assistance and financial support.

We aren't the first to utilize the model. Business and industry has nurtured innovation this way with incredible results in IT, Biotech, and other industries globally, and here at home. And, Venture philanthropy is well-documented as a valid model. National leaders like New Profit Inc., the Robin Hood Foundation, New Schools Venture Fund, and others have driven great education innovations like the KIPP school model and New Leaders for New Schools in regions and across the country. Venture Philanthropy encourages a more active role in investments to push for faithful and effective implementation of good ideas.

This is an idea whose time has come. A STEMVentures Fund will:

- spur innovative approaches;
- put capital into ideas and organizations best positioned to succeed;
- provide the expertise, support, and guidance needed for effective implementation and impact;
- build local capacity while providing opportunities to scale proven practices and programs quickly;

- minimize the risk and exposure for public investment through private investment and assistance;
- support a portfolio of evidence-based innovations rather than individual point programs; and
- Leverage public investment for multiplier effect with private dollars.

This approach responds to local needs to drive innovation and innovative approaches. And it responds at the pace of innovation – not the pace of a legislative appropriation process or a foundation giving cycle.

By doing these three things – building local capacity in communities, networking their successes across the state, and actively investing in a portfolio of sustainable innovation – we believe we can ensure we support our children, our families, our economies, and our nation to continue to lead the world.

Thank you again for your leadership, your support of STEM skills and NC's STEM economy, and your willingness to help North Carolina lead the world in education innovation.

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BIO:

Karl Rectanus is the Leader of the NC STEM Community Collaborative, a partnership housed at MCNC with NC communities, the Bill & Melinda Gates Foundation, Battelle Memorial Institute and other corporate & education stakeholders. In this role, Karl is responsible for the operations, growth, and executive leadership of NC STEM. Karl gets to work with leaders from every sector aligning North Carolina communities around innovative structures for the successful teaching and learning of Science, Technology, Engineering, & Math (STEM) disciplines for the economic vitality of North Carolina's citizens. Karl, a social entrepreneur, brings extensive public and private sector expertise from a diverse background, domestically and abroad, including as a teacher, charter school administrator, technology executive in high-growth environments, entrepreneur, and improv comic.

Karl serves as an advisor to NC's Joining Our Businesses & Schools (JOBS) Commission chaired by the Honorable Lt. Governor Walter Dalton, and is an active volunteer with the United Way of the Greater Triangle, NC Technology Association, and White Memorial Presbyterian Church. In 2007, Karl was one of 40 emerging leaders from government, education, non-profit, and private sectors from the US and Europe honored by the BMW

Herbert Quandt Foundation, and has presented on education and social innovation internationally.

Karl graduated from University of North Carolina - Chapel Hill as a NC Teaching Fellow and James M. Johnston Scholar. Karl has completed certificates from CalTech, UCLA Anderson Business School Extension, the Institute for International Mediation and Conflict Resolution (IIMCR), and is a 2009 Education Policy Fellow with the NC Public School Forum's EPFP program.