Lori Garver, NASA Deputy Administrator
National Network for Manufacturing Innovation
Cuyahoga Community College
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- Thank you very much. We at NASA, and specifically our Glenn Research Center here in Cleveland, are pleased to co-host this workshop, *Designing for Impact II,* with Cuyahoga Community College and Case Western Reserve University.

- Today we join together to provide a forum for public discussion on the President's recently announced initiative, the *National Network for Manufacturing Innovation,* also known as the NNMI. The *Designing for Impact* workshop series is organized by representatives from the Department of Commerce, National Institute of Standards and Technology; Department of Defense; Department of Energy; National Science Foundation; and, I'm proud to say, NASA. Many people may be surprised to see NASA as a partner in the NNMI, so let me tell you a little something about technology and innovation at NASA.

- Whether we're developing needed technologies for space exploration or advancing the nation's aeronautics capabilities, great ideas from NASA are benefiting our nation, creating jobs and making life better here on Earth.

- Over the last four years, the Obama Administration has proposed a record four-year investment of more than $74 billion in NASA to maintain America's leadership in space and spur scientific and technical discovery here on Earth. Despite our constrained budget environment, the Obama Administration has made extraordinary investments in NASA and is fully committed to implementing the bi-partisan space exploration plan adopted by Congress.

- This commitment is paying dividends right here in Cleveland at NASA's Glenn Research Center. The Glenn Research Center always has – and always will – play a critical role in America's leadership in space. Under the ambitious U.S. space exploration plan President Obama is carrying out, funding for Glenn *increases* by $17 million next year, helping to support nearly 9,000 high tech jobs in Ohio. Over the past four years, the Administration has proposed spending more than $2 billion on space flight systems, aeronautics research, in-space propulsion and other game-changing technologies at the Glenn Research Center.

- That is what the Administration's FY'2013 proposed budget does, outlining the funding to carry out this plan for next year and future years. We are putting our energies into implementing this plan and passing the fiscal blueprint now before Congress, which will ensure we remain the world's space leader.

- NASA's investments in research and development enable new missions, stimulate the economy, contribute to the Nation's global competitiveness and inspire the Nation's next generation of scientists, engineers and explorers.

- A NASA focused on advancing technology helps ensure that high-tech jobs will be available for these young people when they complete their studies. And in sponsoring research and development, NASA is doing its part to encourage the next generation of aerospace engineers. This investment by NASA is also helping to ensure that our Nation retains the capabilities in advanced technology that are critical to its economic competitiveness.

- Technology investment within NASA had been declining before President's Obama budget request – while not fully funded by Congress, NASA's investment has increased ten-fold.

- NASA's new Space Technology Program currently involves more than 1000 projects that are developing the technologies we need for tomorrow's missions. These include projects to transform space laser communications, deep space navigation using atomic clocks, and in-space propulsion capabilities, including solar sails. These technologies allow our mission to take place – as Bud described with NSF programs – however, they can also enable numerous commercial applications.

- So, it is clear, that like many of you, NASA is in the innovation business and our focus on developing new technologies is playing a critical part in the national effort to improve the quality of life, grow our economy and create jobs.

- The President's manufacturing initiative proposes creating a network of up to 15 regional Institutes for Manufacturing Innovation. Funded by a proposed one-time, $1 billion investment, this network—the NNMI—responds to a crucial competitiveness challenge and threat to future prosperity: that is, as Susan said, closing the gap between research and development activities and the deployment of technological innovations in domestic production of goods.

- Advanced manufacturing is a matter of fundamental importance to the economic strength and national security of the United States. Advanced manufacturing capabilities are essential for turning research discoveries, inventions, and new ideas into better or novel products—our nation's ability to innovate. Innovation, in turn, drives U.S. economic growth and the growth of U.S. productivity. There are many interrelated elements of an innovation economy—entrepreneurs,

workers, tax policies, to name a few—but without manufacturing, the economic power and dynamism of innovation fade.

- Prior to the creation of the proposed 15 Institutes for Advanced Manufacturing, work has begun to create a "pilot" institute in Additive Manufacturing. To this end, the Air Force Research Laboratory, Materials and Manufacturing Directorate, has issued a solicitation via Broad Area Announcement (BAA) on behalf of the Department of Commerce, NIST. NASA is proud to be a partner in this new private-public partnership program and is very excited by the opportunity to partner in this initiative, since it aligns well with current NASA research and development activities that may be of interest to the U.S. manufacturing sector.

- For NASA, additive manufacturing technology can produce rapid engineering prototypes and fabricate complex designs in a more versatile way than other manufacturing technologies, making the agency able to build, test, and fly its next-generation aerospace systems more quickly and cost-effectively. Additive manufacturing is a cutting-edge technology that can be used in the future to manufacture needed tools on site -- either on the space station or other space destinations. An advantage is that these tools can be continually recycled and remanufactured, according to the need, and can be provided to astronauts on demand. A spacefaring civilization will need advanced manufacturing technologies like these.

- In the future, NASA will support manufacturing initiatives and technologies that may be of benefit to the National Network for Manufacturing Initiative partners.

- I would like to thank the NASA Team – NASA Glenn Research Center and the NASA HQ Office of Chief Technologist.

- In closing, let me extend my appreciation to all of you for coming here today to play an active role in designing a piece of our nation's future. Thank you.