OPENING STATEMENT

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House Committee on Science, Space, and Technology
Subcommittee on Research and Technology
"The Future of Biotechnology: Solutions for Energy, Agriculture and Manufacturing"
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Thank you Chairwoman Comstock for holding this hearing on the future of biotechnology. I also want to thank all the witnesses for being here this morning. I look forward to your testimony.

One of the reasons I chose to be on the Science Committee and this Subcommittee in particular is that we have the opportunity to learn firsthand about new and emerging research fields and technologies that will transform society, and to hear what the federal government can do to help society benefit from these technologies. This morning is no different. Today we will hear about new technologies that have the potential to transform the energy, agricultural, and manufacturing sectors.

A number of these new biotechnologies are based in engineering biology research, which is research at the intersection of biology, the physical sciences, engineering, and information technology. This emerging field has been fueled by the development and increased affordability of technologies such as DNA sequencing and DNA synthesis. In the case of DNA sequencing, the Human Genome Project, an international research project to sequence the human genome that was coordinated by the Department of Energy and National Institutes of Health, took over a decade and cost 2.7 billion dollars. Remarkably, sequencing the human genome now cost less than 1500 dollars.

Several agencies under this Committee's jurisdiction have significant programs in engineering biology. The Department of Energy has invested in programs focused on bioenergy. The National Science Foundation has invested in this area both in individual research awards and through their support of an engineering research center, SynBERC, at U.C. Berkeley. NASA and NIST also have programs in this area. NIST has a particularly important role in the development of technical standards for a future bio-manufacturing economy. And of course agencies outside the Committee's jurisdiction, including DARPA, NIH, and the Department of Agriculture are also significant players in this research. Due to the importance of this growing

research field, the nation would benefit not just from increased investment at individual agencies, but also from coordination of federal efforts under some kind of national plan or strategy.

Additionally, we should ensure that we are facilitating public-private partnerships. Given the potential commercial applications across nearly all sectors of our economy, there is a need to engage and encourage private sector collaboration at a pre-competitive level. I look forward to hearing from our private sector witnesses what they are looking for in partnerships with federal agencies, national labs, and universities.

And finally we must pay careful attention to issues of human and environmental safety and ethics when it comes to engineering biology research, including through support of research on these topics.

The future of biotechnology could include automotive and even jet fuels produced cheaply, cleanly, and safely by specially engineered bacteria, more drought and pest-tolerant crops and feedstocks, and a transformation of materials and manufacturing with applications across our economy. These technologies would have significant economic benefit for the United States, so it is important that we make the necessary federal investments in the foundational research and partner with the private sector across the potential application areas.

I look forward to all of the witness testimony and the Q&A, and I thank you all for being here today. I yield back the balance of my time.