



Opening Statement
Full Committee Hearing on Quantum Information Science
Chairman Lisa Murkowski
September 25, 2018

Good morning everyone and welcome to the Senate Committee on Energy and Natural Resources. The Committee will come to order, as we convene for a hearing on quantum information science.

As I came into the hearing room the hallways were packed with reporters, and I thought, “yes! We are finally here – we’ve got such excitement and enthusiasm about quantum information science.” We do have a full committee room and I think that’s good.

Welcome each of you as experts in this area, an opportunity for us to learn more. We’re here because our nation has never shied away from tackling the world’s biggest scientific challenges. Whether mapping the human genome or landing on the moon, we have seen how committed research efforts can change the world.

Today we face another outsized scientific challenge. As computing power nears the realization of Moore’s law, newer, faster, and more efficient means of computing will be required. And that’s where quantum computing, and the broader field of quantum information science, comes in. Quantum promises to revolutionize the speed and scale at which we process data, which could enable discoveries and advances that border on science fiction.

The potential reward from investments in quantum are tremendous, and we are hardly the only ones to recognize that. A number of other countries and the European Union are devoting significant sums to develop this technology – none more so than China, which recently announced a \$10 billion investment.

But I think we know here in this country that we always want to stay ahead of the curve. To that end, the Department of Energy is exploring ways to leverage resources and form partnerships to solve these challenges—a reflection of how we chose our witnesses, with the Under Secretary for Science joined by representatives from the labs, universities, and industry.

We are very glad to have you all here today, although I will note that it was another company, Intel, who caught my attention based on their decision to name a new superconducting test chip after a chain of lakes in Alaska. They call their chip Tangle Lake, which is also a reference to the extreme cold temperatures and snarled state that quantum bits desire to function.

The technology is complicated, so I’ll leave the details to you and ask you to help educate us as

our expert witnesses. But, I think also recognizing the opportunities that exist with quantum are easy to understand. Quantum science could allow for breakthroughs in energy, medicine, communications, and almost every other facet of our lives.

So great possibilities here. I'm proud to be working with the House Science Committee and the Senate Commerce Committee on quantum legislation. I'm glad to see strong interest in this subject—as evidenced by the administration's summit on quantum, held yesterday at the White House.

We have a lot of work in front of us. And as that proceeds, I want to make clear that funding for quantum is not a replacement for the investments that we need to make in supercomputing or exascale computing. Instead, we should see quantum as a tool that will augment and improve our nation's computing capability and work in tandem with more traditional computing capabilities.

Again, I look forward to hearing from our distinguished panel, and will now turn to Senator Duckworth for her opening comments. Thank you for being here this morning, and filling in for Senator Cantwell.

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