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Testimony Semiconductor Joint Committee

Members of the Semiconductor Joint Committee,

For your record, my name is Audrey Darus. I am a third-year student at Oregon State University studying chemical engineering. I am a Johnson Scholar, an opportunity that introduced me to research experiences. I am currently an intern at Thermo Fisher, and last year, I participated in the NSF Research Experience for Undergraduates (REU) program.

I am here today to thank you for all your efforts related to building the semiconductor ecosystem in Oregon. I am also urging you to support investments into higher education, increase the number of faculty with expertise aligned with the semiconductor industry, and invest in the research “start-up packages.” When we talk about investing in start-up packages, we mean investing in capabilities. Start-up funds provide the tools and equipment to make research possible and help enhance the skills of graduates so we can successfully compete for jobs. A good analogy is like those who pursue a career as an instrumental musician. You can learn all the music theory in the world, but you still need a guitar to play music.

I’ve had an incredible opportunity to work in a research lab at Oregon State. I worked with Dr. Greg Herman a leading researcher at Oregon State, prior to being recruited to OSU he worked at HP and Sharp Labs.

In this research experience, I synthesized lead selenide quantum dots in order to create room temperature ambient pressure radiation sensing devices that are less bulky, lower cost, and more efficient than industry standard radiation sensors. I was exposed to various tools and equipment that make semiconductor research possible, including XPS, FTIR, UV-vis NIR, and electron microscopy.

This experience helped to drive my interest in the high-tech and semiconductor field and is a competitive edge. I was able to use my research experience at Oregon State University to launch me to the next step, where I participated in the National Science Foundation’s Application of Microscopy and Microanalysis research experience for undergraduate programs at Portland State University.

Right now, I am an intern at Thermo Fisher Scientific. I work in the research and development for electron and ion beam microscopes. For the semiconductor industry, having a thorough understanding of both existing and emerging materials in their processes, along with understanding semiconductor industry developing trends, plus optimizing the time to gather data when they are performing failure analysis are all components that drive microscope manufacturer’s research and development for hardware, software, and workflow solutions.

I have prepared a slide that shows the transmission electron microscope I was exposed to at Oregon State University, the focus ion beam microscope I use in my current internship at Thermo Fisher Scientific, and a patterned IBM wafer as an example of the significance of having instrumentation and workers with expertise.

My goal is to graduate from Oregon State with an ideal career in high tech R&D. The state’s investments in higher education will ensure future generations of OSU graduates will lead the discoveries of tomorrow. Thank you for this opportunity to testify. I can answer any questions.