

Written Testimony in favor of LD 416, an Act to promote the growth of Maine's biomedical research and development community:

Chairwoman Rotundo, Chairwoman Sachs, esteemed members of the Committee on Appropriations and Financial Affairs, my name is Jim Strickland, and I am the Director of MDI Bioscience at the MDI Biological Laboratory, in Bar Harbor. I am here to testify in support of LD 416, which is vital to the acceleration of Maine's flourishing life science economy.

MDI Bioscience is a new initiative at the MDI Biological Laboratory dedicated to translational research that is applied to real-world challenges, such as discovering new medicines and therapies, or pinpointing the risks posed by environmental toxins such as PFAS "forever chemicals".

We are working to more effective ways to predict safety and therapeutic value of new molecules, with the goal of helping people lead longer, healthier lives.

LD 416 could directly support infrastructure needed to expand and speed this effort, potentially creating dozens of new jobs in an industry that pays an average salary of more than \$108,000 a year in Maine.

MDI Bioscience's parent organization, MDI Biological Laboratory, is a unique, non-profit institution for fundamental research based on stand-ins for human physiology such as zebrafish and *C. elegans* roundworms. The faculty is also developing state-of-the-art technologies based on human cells, called organoids and organs-on-a-chip, as well as "in silico" models that exist entirely in the computer environment.

This new commercial initiative, MDI Bioscience is tapping into the research faculty's expertise with these models to develop novel screening methodologies for drug discovery. We are pioneering new ways to assess thousands of potentially useful molecules and drug compounds very early in the development phase. We can test them for systemic and synergistic effects on whole organisms more quickly and at less cost than with traditional models.

We can also use the same research models to evaluate the toxicity of substances introduced into the environment, such as the PFAS "forever chemicals" that Mainers are contending with now. Better

understanding of the role these toxins play in human disease can lead to risk mitigation strategies and the identification of new care pathways for people who have been exposed.

Congress recently appropriated more than \$600,000 to help with basic infrastructure costs. We have also received valuable support from Maine Technology Institute, which has been very instrumental in hiring initial employees at MDI Bioscience. LD 416 could help us leverage these investments and advance the pace of our growth.

Maine is rich with world-renowned academic and research institutions such as MDI Biological Laboratory. The collaborative potential of these organizations is extraordinary, and the state is poised to become a formidable presence in the life sciences on national and global scales.

For instance, we are now in the early stages of a very exciting partnership with the Bigelow Laboratory for Ocean Sciences.

Bigelow curates a massive collection of tiny marine organisms that are an underexplored source for new drugs to address menacing medical problems such as cancer, auto-immune diseases, and antibiotic-resistant infections. MDI Bioscience and Bigelow's National Center for Marine Algae and Microbiota are working together to screen more than 3,000 strains of marine microbes and translate their therapeutic potential into new pharmaceutical products and new commercial ventures.

This kind of entrepreneurial partnership holds huge promise for the transformation of Maine's future economy. Yet, more work is required to build the ecosystem needed to realize this potential.

Investment in Maine's life science economy is critical, and LD 416 would be an instrumental accelerator for commercializing the multitude of important discoveries being produced by Maine institutions. I hope the legislature will choose to support this important bill and help deliver catalytic investment to this rapidly growing part of Maine's economic future.