



Advisory Panel to Better Understand and Make Recommendations Regarding the Implications of Genome-editing Technology for the Citizens of the State

Testimony of Dana O'Brien, President of FocusMaine October 19, 2022

Good morning, Senator Claxton, Representative Zager, and members of the advisory panel. My name is Dana O'Brien, and I am the President of FocusMaine.

About FocusMaine

FocusMaine is a private sector led economic development organization that seeks to accelerate the growth of Maine's highest potential industries. We are a catalyst and collaborator. We are an impactful partner. We are a funder. We marshal the best assets across the state to enrich strategies and ultimately deliver wins for the people of Maine – in the form of new jobs, businesses, and market opportunities.

FocusMaine's work is currently centered on advancing Maine's food and agriculture, aquaculture, and biotechnology industries, as well as promoting workforce opportunity across all industries.

We invest in workforce development, business development, and market development. We co-create initiatives with partners. Our resources come from charitable foundations, businesses, and state & federal government grants, as well as individual giving.

Innovation sits at the intersection of our current signature industries, as does plentiful opportunity for Maine to lead. It is this theme of opportunity that I want to discuss with you today and ultimately challenge you to embrace as you think about the workflow coming out of this advisory panel.

I will focus less on genome editing as a specific biological tool and more on Maine's opportunity to enrich itself on the foundation of life science progress and economic growth.

Opportunity to Confront Big Challenges Through Science

Society is confronted by monumental challenges – to our planet, our health and well-being, and our food systems. COVID-19 has, in many ways, magnified those challenges. But the pandemic has also shown us the value of science as an impactful tool to confront, mitigate, or even move beyond our biggest obstacles. The speed at which companies developed COVID-19 vaccines and therapeutics through biotechnology is eye popping. We must embrace science, educate the public about science, and enhance workforce and business opportunities centered on science to meet these urgent societal needs.

Opportunity to Understand and Position Biotechnology as a Solution

It's important to remember that genome editing is one of many biotechnologies in use today. Biotechnology is a rich set of tools that play a big role in our lives. We benefit from biotechnology regularly – and may not even know it.

Some common biotechnologies include monoclonal antibody technology to diagnose and treat disease. Or bioprocessing technology that uses bacteria, yeast, or enzymes to cleanup toxic waste sites, produce food, manufacture chemicals, or produce energy from agricultural feedstocks. Other biotechnologies are used to tailor human and animal drug treatments, slow food spoilage, improve food nutritional content, produce meatless proteins, and develop biodegradable plastics, among other things.

Opportunity to Build a Competitive, Thriving Maine Bioeconomy

Investment in biotechnology and the data analytics that accompanies advances in genetics is off the charts. A McKinsey analysis showed a \$35 billion venture capital investment in biotechnology companies with advanced platform technologies, between 2019 and 2021. Because this kind of scientific innovation is so central to confronting the challenges already discussed, private and government dollars are flowing toward research, development, and product development – for human and animal health, for agriculture, and for green manufacturing. A recent study published by MassBio notes that so much money is flowing into the Boston-Cambridge, Massachusetts, biotechnology epicenter that demand is outpacing the state's existing biomanufacturing infrastructure and workforce capabilities.

Maine should, and really must, take steps to capture the overflow reverberating out of Massachusetts. Doing so would mean more on-ramps for people in Maine to be part of this transformational industry and more connections across the region to strengthen innovation and economic opportunity.

Maine has quality existing life science infrastructure – at our universities and community colleges, within our top-notch scientific institutions, and in private industry. According to the 2022 BioME Industry Report, life science jobs in Maine have grown 42 percent over the past 5 years, outpacing all other industries in the state and leading the industry’s job growth in New England. And the Roux Institute is injecting exciting new investment and growth opportunity in our state. FocusMaine is motivated by the early progress of the Roux Institute and counts itself as an impactful Maine partner with Northeastern University and others.

We are also motivated by the Governor’s commitment to life science innovation and the promise of biotechnology as a tool to fight climate change and build a modern Maine economy – as outlined in the state’s 10-year economic development plan. FocusMaine worked closely with the state as that plan was drafted and is pleased to hold a seat at the implementation table.

Our congressional delegation is also leading for us. Just yesterday, Senator Collins reinforced her already robust commitment to federal biomedical research investments that are transforming our lives. It is exciting to think about how this investment will positively impact Maine as she prepares to become the chairwoman or ranking member on the Senate Appropriations Committee.

But there is work to be done.

Turning Opportunity into Action

FocusMaine is a lead voice working to enhance the state’s bioeconomy.

The focus of our work to date has centered on business and talent attraction, sector promotion, and partnering with premier research institutions like the Roux Institute and the University of Maine System to draw federal resources toward the state. We are linked to more than 50 small biotech companies in the Boston-Cambridge area, many of which have a profound interest in building business growth in Maine. Including the company Brian Whitney mentioned, which I think will draw several small biotechs to Maine if it gets rooted.

But to fully capture the opportunity just discussed and to secure Maine’s place as a bioeconomy powerhouse will take focused work and the collection of valuable input from the private sector, academia, and government.

We believe there is room for the creation of a singular, all of Maine approach, or strategy, that provides our congressional delegation, Maine lawmakers and our Governor with a concise bioeconomy action plan.

We must turn opportunity into action.

We must position Maine to outcompete other states and regions working diligently to capitalize economically on massive life science investment trends. We must learn from and model other regions, including Boston-Cambridge, North Carolina's RTP, St. Louis, and so on.

There are also tremendous opportunities to leverage biotechnology for the benefit of Maine people. Maine's health care systems are integrating precision medicine tools into clinical practice. Access to cutting edge clinical trials for cancer and other diseases is expanding to reach underserved, rural communities. And federal funding for scientific research to understand gene-editing technologies like CRISPR and the ethical, legal, and social implications of genetics and genomics is a priority for the NIH.

I joined FocusMaine in June and since then have been listening and learning from leaders across the state operating in this space. There is tremendous energy to move and FocusMaine is uniquely positioned to bring people together and catalyze this energy for the good of the state and its people.

In closing – a call to action:

- Let's beat the other states and regions
- Let's organize and act
 - Invest in science
 - Invest in people
 - Invest in business development

Thank you for the opportunity to speak with you today. I would like to submit FocusMaine's 2021 annual report and the BioME annual economic report for the advisory panel's record.

I look forward to answering any questions you may have.