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Testimony/Opening Remarks – January 22, 2026
Senate Committees on Institutional Sustainability & Innovation and Communications & Technology
Hearing on Use of Artificial Intelligence in Pennsylvania's Life Sciences Community

Chairs Farry, Kearney, Pennycuick, and Miller, and Members of the Senate Committees on Institutional Sustainability and Innovation and Communications and Technology:

Thank you for the opportunity to provide testimony for today's hearing on the usage of artificial intelligence in the biotech and life sciences community in Pennsylvania. I will provide some general background on Pennsylvania's life sciences ecosystem, ways in which the AI and life sciences sectors overlap, and some thoughts on how state government can incentivize the development and partnership of these industries in the state.

Life Sciences Pennsylvania is the statewide trade association representing more than 950 member organizations in the Commonwealth's life sciences ecosystem. Those members are comprised of small biotech companies, large pharmaceutical manufacturers, academic research institutions, medical device and diagnostics makers, patient advocacy organizations, and myriad service providers related to the development of groundbreaking therapies and cures. In fact, we have a cross section of that ecosystem represented at today's hearing. These experts can provide greater detail and information on their work and the overlap of the AI and life sciences sectors driving innovation in medicine and the commonwealth's economy.

Before their testimony, however, it is important to provide an overview of the state's life sciences industry and some general background on the existing interconnection of these two sectors.

Pennsylvania's life sciences sector is made up of more than 3,000[1] establishments in total and is researching, developing, and manufacturing novel medicines and technologies for millions of patients around the world facing thousands of unmet medical needs. The commonwealth is home to world-leading academic research institutions, a long legacy of pharmaceutical manufacturing (particularly in the Southeast), a robust medical technology sector (specifically in the Southwest), and a diverse collection of organizations part of the robust supply chain necessary to support these research- and development-intensive endeavors.

In addition to their collective efforts to help individuals live longer, healthier lives, those 3,000 organizations – academia, manufacturers, and R&D intensive companies – makeup a robust ecosystem that directly employs more than 102,000[1] individuals, accounts for more than $61 billion[1] in direct annual economic impact in the Commonwealth, and contributes $4.9 billion in federal, state and local tax revenue. Additionally, there is a significant multiplier effect of approximately three to four times each of those numbers.

Of the 3,000 life sciences establishments in the state, approximately 67 percent[1] of them are organizations with fewer than 10 employees. While the statistics I just referenced relay a positive picture of the state's life sciences economy – indeed, Pennsylvania has organically built a strong

[1] Pennsylvania Life Sciences Industry, KPMG, September 2022

foundation for its life sciences community – it is critical policymakers know this is largely a start-up ecosystem fraught with failure.

This brings me to one of the most important points about AI and the life sciences - the likelihood of success in the industry (particularly the biopharmaceutical sector) is low – almost 90[2] percent of the new drug applications filed with the FDA fail to receive approval. Indeed, less than eight percent[3] of Phase one clinical trial candidates ultimately receive approval.

Science is incremental, and many companies will work tirelessly for more than a decade only to find they must start all over again, and all the resources – costs that can be in excess of $2 billion[2] – poured into their work are sunk costs.

AI has the potential to both reduce costs and accelerate the time it takes to move medicines through the drug discovery process, but I will note that the science by which AI is effective in the drug development process continues to evolve and must continue to be scientifically validated.

The key phases of developing a new medicine include drug discovery, preclinical testing, clinical trials, regulatory review, and manufacturing. Obtaining scientific data in each of those phases is critical to determining the validity of the compound and its therapeutic targets and raising the necessary funding to continue a path toward approval. We hope AI will make that process more efficient.

Anything that helps companies, researchers and scientists determine faster whether a product will fail or succeed is critical. The more time it takes to obtain data, the more resources companies are exhausting. When you fail in this industry, the faster you can do it the better. By utilizing AI to analyze large datasets to identify promising compounds, create models to simulate biological processes to predict how a drug will behave in humans, and to improve trial design and optimize patient selection in the clinical trial process, research and development in the biopharmaceutical sector has the potential to reduce the time it takes to move through inflexion points.

If we pivot away from the biopharmaceutical sector, you'll find the medical technology – devices and diagnostics – industry to be in a more developed relationship with AI and machine learning. I am sure two of the growing MedTech companies here today – Cogwear and OK2StandUp – can speak to this, but AI and machine learning have been incorporated into the FDA's review of the medical technology industry for approximately 30 years[4].

In fact, many of the medical technology products utilizing AI and machine learning are diagnostic in nature and support or assist clinicians in making decisions through better data or imaging results. The critical piece to understanding how AI and machine learning are incorporated into medical technologies is that most AI-enabled devices were and are cleared or approved by the FDA with "locked" algorithms, meaning that those systems cannot be modified without requiring FDA review and authorization. In many ways, the FDA and the medical device industry are significantly further along in their partnership

[2] Research and Development in the Pharmaceutical Industry, Congressional Budget Office (CBO), April 2021

[3] Clinical Development Success Rates and Contributing Factors, BIO, February 2021

[4] AI One Pager, AdvaMed, February 2024

on AI and machine learning, though can certainly benefit from new economic development-focused ideas or incentives to partner two leading industries in PA.

The commonwealth is also home to many entities that support the development of novel medicines and technologies – contract research organizations (CROs), contract development and manufacturing organizations (CDMOs), and many other life sciences equipment and distribution companies.

Utilizing AI to generate efficiencies in the workflow of those companies can help everyone in the ecosystem appropriately prioritize capital allocation to manufacturing, supply chain, and distribution efforts – all things that can help ensure enhanced patient access to new treatments and cures.

Those are three ways in which our members, at a very high level, do and can use AI to accelerate the research, development and manufacturing of therapies for patients around the world. We are fortunate to be able to characterize the commonwealth as a national leader in both AI and the life sciences and policies put forth by government at the state (and federal) level have a significant effect on life sciences company growth, which is largely based on their ability to attract investment.

Chairs Farry, Pennycuick, Kearney and Miller have all been actively engaged with Pennsylvania's life sciences community, as have many of the other committee members present here today. We thank you for that leadership and an open line of communication to discuss issues like this one as they tend not to lend themselves to legislation by bumper sticker.

That said, we believe there are ways in which the state government can incentivize the development of these two industries, particularly the life sciences, by which I have no doubt our industry's relationship with AI will continue to grow.

Anything the state can do to help accelerate the timelines I outlined earlier is critical – especially for growing or early-stage companies. Ideas the administration floated as part of its Innovation fund last year, such as derisking the manufacturing of novel medicines and creating a clinical trial network to help companies reach needed milestones faster, are certainly worth continuing and comprehensive discussion.

In addition, Life Sciences PA is supportive of initiatives that generally benefit innovative companies. Those proposals include expanding the Research & Development Tax Credit program, creating a state matching program for the federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grant programs, continuing to lower the Corporate Net Income Tax, and allowing early-stage companies to trade net operating losses (NOLs). These are all necessary for innovative sectors like ours to thrive.

They become especially important when you realize other states are not sitting idly by in their efforts to attract these companies – and the talent they employ – to their borders. Life sciences, and other growth industries, faces steep competition from our peer states (e.g. Massachusetts, New York, Ohio, and North Carolina) if we simply remain content with the industry as outlined above. It is critical that Pennsylvania think about ways in which the state can create a business and policy climate that encourages entities in these two sectors – where the state has a clear competitive advantage – to remain, rather than take an adversarial or, perhaps even worse, apathetic approach.

Specific to the life sciences our programs pale in comparison to what other states – such as the $1 billion fund (now up to approximately $2.5 billion[5]) Massachusetts created in 2008 – have put forth to attract investment. The Massachusetts Life Sciences Center is widely thought of as the gold standard in life sciences state government support.

But other states are jumping on board: Governor Hochul in New York recently announced an investment of $150 million in Nation-Leading Cell and Gene Therapy Innovation Hub[6]; Ohio recently initiated a $120 million Innovation Hub program[7]; and Novo Nordisk announced $4.1 billion expansion in North Carolina[8] with strong investments in BioWork "a statewide certification program that teaches the fundamentals of working as a process technician in biotechnology, pharmaceutical, or chemical manufacturing facilities."

Moreover, the benefits of investing in this ecosystem are not solely confined to individuals with an MD, or Ph.D. behind their name. Life sciences investment benefits many Pennsylvanians. Supporting industries like manufacturing, logistics and agriculture, and individuals in the building trades and construction industries benefit significantly from the expansion of life sciences – something that AI can help further catalyze.

Additionally, this kind of support for innovative companies is helpful and noticed by investors. By comparison, the only direct support the state offers early-stage life sciences companies is the $3 million – one million each – that goes to the state's three life sciences greenhouses. A program that was created more than 20 years ago under the tobacco settlement agreement.

Unfortunately, policies that do not support innovative companies are also noticed by investors. Though we were pleased to see the state invest $5 million in neurodegenerative disease research and extend the sunset on the Pennsylvania Rare Disease Advisory Council (PARDAC), we were disappointed to see the decoupling of Pennsylvania's tax code from the Internal Revenue Code under Section 174. This will require Pennsylvania companies to continue amortizing R&D expenses over multiple years – something we fought successfully to reverse in Washington, DC with many state and national partners.

This policy is likely to reduce economic growth and penalize investments by companies in R&D-intensive industries – such as manufacturing, technology/AI, and life sciences – and have a disproportionate impact on small, innovative companies significantly affected by changes to cash flow. Though we do expect to see more states pass legislation to "decouple," Pennsylvania currently sits as a national outlier with this policy. This is not ideal given the state's leadership in life sciences and AI.

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[5] Governor Healey sings Mass Leads Act, Massachusetts Life Sciences Center, November 2024

[6] Governor Hochul announces $150 million for Cell and Gene Therapy Hub, Office of NY Governor, October 2024

[7] Ohio Initiates Innovation Hub Program, Ohio Dept of Development, November 2023

[8] Novo Nordisk announces $4.1 billion expansion in NC, NC Biotech Center, June 2024

However, that is why conversations like this one are so helpful as they generate new ideas and policies that can forge a path forward for Pennsylvania's growth.

Life Sciences PA and its member organizations – again, several of whom you'll hear from today – are happy to be a resource to you and your colleagues as you consider proposals to enhance and expand these two critical sectors. We look forward to working with this Committee, the General Assembly and Governor's administration on policies that support Pennsylvania's life sciences economy and incentivize partnerships between two of the commonwealth's economic strengths.

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