Chairman Benninghoff, Chairman Sturla, and members of the Democratic and Republican House Policy Committees, good morning. My name is Maxine Gowen and I am the Chief Executive Officer of Trevena. I would like to thank PA Bio and the Science Center for organizing this panel and for giving me this opportunity to testify on behalf of Trevena and to describe the company's experience as an emerging life sciences company in PA.

First a few words of introduction to me:

As you may hear from my accent, I'm not originally from around here. 24 years ago I moved from the U.K. to Pennsylvania to join what was then SmithKline Beecham, now GlaxoSmithKline.

I'm trained as a scientist, and I started off working in research and development for a number of years. Then after attending business school at Wharton, I helped GSK invest in external innovation with emerging companies.

About nine years ago I left GSK and founded Trevena with the simple goal of building a company dedicated to developing innovative new medicines in areas of great need.

About Trevena:

We started Trevena based on research done by Dr. Bob Lefkowitz of Duke University, who four years later was awarded the Nobel Prize for Chemistry for his work studying novel approaches to target the mechanisms of hormones and neurotransmitters to develop a new generation of safer, better tolerated, and more efficacious medicines.

When I first heard about this idea, it seemed like the kind of discovery that might translate into a meaningful advancement for patients. It would be high risk and require a lot of complex work, resilience, and significant investment of both careers and capital – just the kind of challenge I happen to enjoy.

So, we raised an initial $24M of venture capital funding and started the long difficult road of testing this new idea.

Eight and a half years later, we now have identified four exciting new medicines at different stages of the development process, from pre-clinical stage (not yet being tested in human patients), through to the final stage before marketing approval – Phase 3 clinical trials.

Our most advanced innovation is a new molecule named "oliceridine".

Oliceridine is designed to manage moderate to severe acute pain, and is given intravenously – in other words, administered directly to the patient exclusively by healthcare professionals in the hospital for post-surgical pain, trauma, severe burns, etc. It has been assigned Breakthrough Therapy designation by the FDA, which is applied to drugs that show early evidence of having a benefit over existing therapies for serious conditions. Oliceridine is the first and only pain program to be awarded this designation.

Here's why we're so excited about this molecule: When we compared oliceridine to morphine in patients suffering moderate to severe pain following surgery in our most recent clinical trial, we found:

- oliceridine matched IV morphine's pain relief, but was safer and better tolerated,
- significantly less evidence of the risk of respiratory depression – the life-threatening and sometimes fatal opioid-related adverse effect that kills thousands of people every year both in and out of the hospital,
- and oliceridine showed significantly less nausea and vomiting than morphine –a much more common opioid-related adverse effect, and the most frequently troublesome to patients following surgery.

So we have here the possibility of a better medicine to treat pain, which may improve patients' lives, help doctors do their jobs, and reduce hospitals costs.

The results of our trial were just what we'd hypothesized and consistent with the years of pre-clinical and clinical research that we and others had done before that. But drug development is difficult and risky, and does not always work this well: in May this year another of our candidate drugs for acute heart failure did not show the results we hoped for in a major 600 patient clinical trial. This was after we had spent many years and tens of millions of dollars just to reach and complete our first true test of the idea. And we believe that the investment was the right thing to do – to test if a promising idea could help relieve the terrible effects of acute heart failure

So now we are focused on oliceridine and our earlier programs, and look forward to submitting a new drug application for oliceridine to the FDA next year.

So, what does it take to get here?

It takes time and commitment: We started in 2008 – and our progress compared to any and all benchmarks has been very fast. However we expect that it will take at least another two years before we have our first product to sell.

It takes great people: Our company grew from an initial group of 8 people in the first year to 71 employees today – 20 of whom have been hired since the beginning of 2016 – and we are growing rapidly. The median salary at the company is $145,000 – these are very good jobs that we are creating.

In addition, we work with hundreds of people and companies outside the company, including other companies in Pennsylvania: in the past year alone, we've contracted with companies across Montgomery County, the greater Philadelphia area, and beyond, with contracts totaling over $27 million. Trevena supports many more jobs in the Commonwealth beyond just its employees.

And of course it takes a great deal of money: to date we have raised nearly $350 million from investors to build our company and advance our programs. Biotechnology innovation is not cheap.

This is why state-sponsored funding programs are so important -- Trevena has benefited from:

- R&D tax credits program: approximately $1.5 million awarded for tax years 2008 to 2014
- Equipment loan facility with the Commonwealth of Pennsylvania (~$800,000 in November 2009)
- Opportunity Grant Program ($100,000 in 2011)

All of these programs have helped us– for example the equipment loan facility helped outfit our labs with the right technology and equipment to discover oliceridine.

However, as biotech continues to become an integral industry for Pennsylvanian communities such as Montgomery County, I hope current state funding will grow to continue supporting local companies.

Consider the type of growth that is taking place in Boston – biotech companies are moving there or are choosing to start their business there rather than in Pennsylvania precisely ***because*** of the type of support they receive from their local governments.

We have the opportunity to experience that same kind of explosive growth in our own state and to benefit local communities through job growth, business partnerships, and exciting innovation.

So thank you for your time today, and for your interest in our industry. Scientific discovery is going to continue to transform human health. It is a very exciting time to be a part of this dynamic industry, and I hope we can count on your support in the future.