

Testimony of

Teresa R Whalen, CEO CytoAgents, Inc

Senate Majority Policy Committee Hearing

Pennsylvania as an Innovation Leader – Shaping the Future for Tomorrow

Friday September 15, 2023

Ladies and Gentlemen:

Thank you for having me, my name is Teresa Whalen, I am a graduate of Pitt's School of Pharmacy and worked at UPMC during the 1990's, witnessing first-hand the economic impact of innovation such as liver transplantation, a key component of the revitalization of the Pittsburgh economy following the decline of the steel industry. Currently, I am the CEO of CytoAgents, a biotech company headquartered in Pittsburgh, PA. CytoAgents is a startup founded in Pittsburgh in Dec. 2018 and launched in January 2019. We are focused on developing a treatment for a condition called Cytokine Release Syndrome or Cytokine Storm, an overreaction of the immune system causing overwhelming inflammation. CytoAgents' mission is to build a foundation that will enable the development of a universal treatment for Cytokine Storm, regardless of the cause, across multiple billion-dollar markets. In 4 short years, our accomplishments are great, in the summer of 2021 we successfully completed our Phase 1 Clinical Trial. In March 2023 we received an FDA Letter May Proceed for a Phase 1b/2a Clinical Trial in Lymphoma Patients Receiving CAR T-Cell Therapy at Risk for Cytokine Release Syndrome (CRS). These patients have a greater than 90% risk of CRS, 33% risk of an ICU admission and spend an average of 12 days in the hospital managing this life-threatening side effect. We have activated our first trial site at the UPMC Hillman Cancer Center and expect to treat our first patient by the end of September 2023.

I appreciate the opportunity to participate in the Life Sciences panel and to provide a perspective on the impact of public policy. I am here today as the voice of the entrepreneur. While I have no doubt every entrepreneur's journey is unique, I am confident there are many common threads. I will be focusing my remarks today on the importance of access to capital and proper leadership, these are inextricably linked and must be central to any policy to advance innovation in the state of PA. I applaud you for recognizing your critical role in increasing economic growth by removing barriers to capital formation.

[According to the Brookings Report](#), The state of Pennsylvania has world class capabilities in research and development but has not been able to unlock the innovation potential because of a lack of execution, we have fallen short in our ability to advance basic science by building strong companies, with large employment footprints accelerating to commercialization. The Universities are the backbone of research, however, industry is the backbone to commercialization and the resources and skill sets needed are vastly different.

How might we cross the chasm from discoveries in the lab to success in industry? Adequate access to capital will attract seasoned executive leadership, both of which will vastly improve the likelihood of

success. While funding for startup incubators serves a purpose, stopping there is entirely inadequate. Life sciences companies have the potential to bring high value, high paying job creation, but to execute on this potential requires capital and leadership. While the academic powerhouses in the state produce talented scientists, we lag behind in our ability to leverage this to produce innovation related jobs. It is critical to recognize that technical talent is quite different than seasoned business acumen. We must fill the gap of executive leadership with taking the innovative startup and transforming it into high performing companies driving economic growth. We don't have the time to create leaders, therefore we must bring experienced leaders to drive this forward from the outside. PA must commit to significant funding and shift the awards from the university settings to the private sector. Companies properly capitalized with strong leadership together with the scientific founders have no limits in what can be accomplished. Any future policy must combine these elements into a cohesive strategy to accelerate company formation, job creation and M&A activity.

Success breeds success when it comes to building entrepreneurial ecosystems, particularly in the field of life sciences. Successful exits catalyze the next generation of companies and clinical innovations by seeding new opportunities with the risk capital, talent, knowledge, relationships, and ideas necessary to take on the challenge of drug development and other areas of the life sciences sector. If PA wants to build the kind of dynamic life science hub one sees in Boston and San Francisco, PA will need to invest in the companies that can transform research into clinical development programs that unlock tremendous value and create life-saving products for patients.

I'd like to point to [Krystal Biotech](#) and the [Cancer Prevention and Research Institute of Texas](#) as examples that may serve as potential roadmaps.

My first example highlights the power of private capital. Krystal was a company established in California and relocated to Pittsburgh circa 2017. The CEO and COO were very seasoned executives with significant experience successfully launching products and exiting companies. Since 2017, Krystal has expanded its facilities, employs more than 100 people and has a market cap of more than \$3B. The combination of strong science, leadership and access to capital is at the core of their success and is the recipe for accelerating other such high potential companies in PA.

The second example highlights the public sector joining forces with the private sector. Texas voted in 2007 to create the Cancer Prevention and Research Institute of Texas (CPRIT), and is now a \$6B, 20-year initiative, the largest state cancer research investment and prevention program in the world. CPRIT has funded 1901 awards totaling \$3.3B. Recipients include 133 academic institutions, non-profit organizations and private companies all located in Texas. The research and prevention efforts funded by CPRIT advance the health of Texans, research superiority of the state, life science infrastructure and the Texas economy. For example:

- 56 companies started, expanded, or brought to Texas with CPRIT investment totaling \$639M.
- \$2.93B in direct follow-on funding were raised by CPRIT grantees
- \$1.2B total expenditures generated by CPRIT activities statewide in 2022
- \$49M annual and local tax collections
- Over 7800 permanent jobs created in 2022 in Texas

PA is at risk of losing companies to states offering these types of compelling incentives, you have the power to enact a similar type of program.

Thank you for your thoughtful consideration of these matters. A commitment to improving access to capital, which will in turn attract seasoned executives for the life sciences ecosystem across the state of PA will produce long term benefits to our economy.

<https://www.brookings.edu/articles/commonwealth-of-innovation-a-policy-agenda-for-revitalizing-pennsylvanias-economic-dynamism/>

<https://www.krystalbio.com/>

<https://www.smartbusinessdealmakers.com/articles/topic/krystal-biotech-krish-krishnan-startup-ipo/#:~:text=Krystal%20Biotech's%20route%20was%20different,going%20public%20in%20September%202017.>

<https://www.fiercepharma.com/manufacturing/krystal-biotech-investing-up-to-100m-facility-for-its-gene-therapies>

<https://www.cprit.state.tx.us/our-programs>



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

REAL MOMENTUM **MEASURABLE RESULTS**

The Cancer Prevention & Research Institute of Texas was created in 2007 when Texans voted to invest \$3 billion in a historic fight against cancer. Texas voters continued their support in 2019, when they overwhelmingly approved a constitutional amendment to provide an additional \$3 billion, making CPRIT a \$6 billion, 20-year initiative.

CPRIT awards grants for a wide variety of innovative cancer-related research, prevention and product development projects. Established by the Texas Legislature, our three-fold mission is:

Invest in the research prowess of Texas universities and research organizations

- ▶ 293 stellar researchers and their labs recruited to Texas research entities
- ▶ Texas achieved 3 NCI comprehensive cancer centers - previously only MD Anderson Cancer Center
- ▶ \$2.93 billion in direct follow-on funding raised by CPRIT grantees
- ▶ 73 CPRIT core facility awards and renewals to provide access to cutting-edge shared technology through specialized instrumentation and technical expertise

Expand life science infrastructure by attracting companies to Texas & creating high-quality jobs

- ▶ 56 companies started, expanded, or brought to Texas with CPRIT investment totaling \$639 million
- ▶ 50 CPRIT-funded companies have established connections to Texas academic institutions
- ▶ \$1.21 billion total expenditures generated by CPRIT activities statewide in 2022
- ▶ \$49.4 million annual state and local tax collections
- ▶ \$6.48 billion (10 to 1) direct follow-on funding raised by CPRIT companies
- ▶ Over 7,840 permanent jobs created in 2022 in Texas

Expedite innovation breakthroughs in prevention and cures

- ▶ 46,858 patients in 262 clinical trials or studies statewide
- ▶ \$341 million in grants awarded for 282 prevention projects in all 254 Texas counties
- ▶ 32,684 cancer precursors and 4,959 cancers detected in Texas
- ▶ Nationally recognized teams and centers in immunotherapy and childhood cancers
- ▶ 12 percent of CPRIT's portfolio goes to childhood cancer projects - proportionately 3 times more than national commitment

Follow-on Funding Success

CPRIT-funded academic research grantees and companies raised \$9.41 billion in follow-on funds, exceeding contracted awards by \$6.42 billion



