Delivering Protection From Serious Viral Infectious Diseases

An Interview with Marc Elia, Chairman of the Board, Invivyd

EDITORS' NOTE *Marc Elia has served as a member of the Invivyd board since June 2022 and as Chairman of the Board since July 2022. Elia has served as the founder and chief investment officer of M28 Capital Management L.P., a healthcare sector investment fund, since September 2019. Prior to that, from January 2012 to September 2019, Elia served as a partner at Bridger Capital, an investment fund. He currently serves on the board of directors of Fractyl Health Inc., a metabolic therapeutics company. He previously served on the board of directors of Adimab LLC. Prior to his career in investing, Elia held various roles across the biotechnology industry at N30 Pharmaceuticals, Tiger Management, Chiron Corporation, and L.E.K. Consulting. Elia holds a BA degree in economics from Carleton College.*

Marc Elia

COMPANY BRIEF *Invivyd (invivyd.com) is a biopharmaceutical company devoted to delivering protection from serious viral infectious diseases. By pairing state-of-the-art viral surveillance and predictive modeling with advanced antibody engineering techniques, Invivyd is committed to developing a robust pipeline of product candidates which could be used in prevention or treatment of serious viral diseases, starting with COVID-19 and expanding into influenza and other high-need indications.*

Will you discuss your career journey?

My father gave me one piece of career advice: "find a complicated industry with high value to people, and spend your life learning." I was in college in the 1990s when I had extraordinary luck. A family friend was a CEO in the then-young biotechnology industry and offered me a summer internship. I was entranced by the laboratories and discussions and it all fit my father's advice perfectly. Every day, scientists were unlocking secrets at the molecular and cellular level, then using their exploding knowledge and new technologies to try to make new medicines for people in need. I knew I wanted to learn more. I wrote my senior economics thesis on the FDA and pharmaceutical industrial organization; I graduated and went right to work. For about 15 years I built a career in the biotech industry. I was in strategy consulting, industry positions in corporate development and R&D at companies large and small, all the while focused on accumulating a medical and scientific education and a practical knowledge and experience base. I sometimes think I should have gone back to school for formal scientific training, but all the science was so new and changing so fast it seemed more efficient to learn on the job. By the time companies were asking me to run R&D and design experiments and so on, I figured I had learned enough the hard way. Thank goodness my career overlapped with the growth of Amazon.com so I could build my own library fast. These days Wikipedia and PubMed can get you there almost free.

Around 2010, I moved into finance and the investment world. I worked as an analyst at hedge funds investing in biotechnology passively for a decade or so, but I became entranced with the concept of using capital to try to help drive corporate and technological outcomes actively, rather than just passively owning stocks. I think as the biotechnology ecosystem has exploded over the last 10 years, the capital markets have evolved to a place in which differences in business incentives and expertise between public financial investors and corporate operators are as wide as they have ever been. I wanted to build my fund, M28, to move investing back to a long-term, true fundamental approach in biotech, in which my fund would be a capital partner to companies but often in a deterministic way, almost like private equity in a public portfolio. As a result, my biggest portfolio positions often have an aspect of either activism or constructive engagement with management with the goal being to help biotech managers accelerate shareholder value creation. That is what I do today, although my involvement with Invivyd has been the most intense of any investment and by far the most volatile.

What interested you in joining the board of Invivyd, and how do you focus your efforts as chairman of the board?

My work on Invivyd started in early 2020 at the founding of the company, just as a mysterious "pneumonia" was circulating in China. I was on the Board of Directors of a private biotechnology company called Adimab, which operates the world's most powerful technology for discovering pharmaceutical antibodies, and we were discussing this new virus, human immunology, and the problems that were posed by what we would all shortly call SARS-CoV-2 and COVID-19. In February and March of 2020, I did three weeks of dedicated reading of all of the science available at the time on coronaviruses, and when I was done it was clear to me that humans would need some extra immunologic help to deal with this virus, beyond whatever protection we could get from vaccination or natural infection. The immunology/vaccine challenge for COVID-19 is not technological; the challenge is really the limits of our own immunologic capacity. For any number of reasons, when humans see coronaviruses, or the COVID-19 vaccines that simulate one of them, we do not make immune responses that are robust and durable enough to stop disease. Instead, we make enough immunologic memory to slow the disease down and cut down on most deaths and the most severe disease. Of course, that is the best-case outcome – elderly people and immunocompromised people get even less durable benefit than average. Other pathogens and vaccines happen to be different. For example, the measles vaccine generates extraordinary immune response that is of effectively infinite duration. But for SARS-CoV-2, not so. The result? We have COVID-19 vaccines that worked to keep the most of us alive, but now those same vaccines struggle to keep all of us well. And it all comes down to our own biological limitations. To see the problem with COVID-19 vaccines unfortunately you just have to look in the mirror. Most of the rest of the debate around COVID-19 vaccines is a personal or political sideshow to that immutable fact. The implication, therefore, given that we have all now been vaccinated or infected, is that we are all going to get sick over and over and over again forever, with ongoing damage and death, until we bring something more to bear.

To me, those facts meant that an important investment idea would be to add extra immunologic power to people by making new medicines we call monoclonal antibodies directed against SARS-CoV-2 that would finally close the gap between what we need to stay well and what is on offer via vaccination. Monoclonal antibodies (mAbs) are pharmaceuticals inspired by naturally occurring antibodies that all of us have from our immune systems. The difference is that in a company like Invivyd we use technology to make mAbs designed to do tricks that naturally occurring antibodies cannot. The interesting,

founding thought behind Invivyd was that a company with technology could make designer mAbs that are specific and incredibly potent to place on top of human immune systems, giving humans an extraordinary level of immunity against SARS-CoV-2, well beyond what was possible naturally. This idea was compelling to me as an opportunity that could be actioned by capital and technology. When Adimab decided to spin out a technology company dedicated to COVID and other viruses, my fund invested in the first round alongside other great investors. I joined the company's Board of Directors at the founding, and that company is today Invivyd.

As a Director and Board Chairman, I am responsible for representing shareholders and providing strategic direction and oversight – my fund is a shareholder of the company – as well as managing the company's Board of Directors and being the primary interface between the Board and the management team. Of late, following a CEO departure, I have been working more closely with the company on its mission. We are at a sensitive moment in our corporate history, even as we have accomplished amazing things over two years. We are one of the faster companies in the history of biotech to discover a candidate molecule and move it through clinical development to FDA authorization, having discovered pemivibart in 2022 and then launching it as PEMGARDA in 2024. But because we are just getting started with our strategy and mission, and because we are in a fast-evolving new area of medicine, we are in an all-hands-on-deck posture across the Board and management team. As a result, you will find me these days, for example, appearing on the company's quarterly conference calls and so on. It's a critical moment for vulnerable populations and shareholders as the company tries to realize the promise of the technology at scale, despite a lot of social and governmental challenges.

How do you define Invivyd's mission and purpose?

Our mission is very simple: we make medicines that give people the immune systems they cannot get otherwise, and that they need to stay alive and well in the face of viral threats. We are starting with SARS-CoV-2 and COVID-19 disease and we have our first drug in that area. Our mission flows directly from the work that got Invivyd started in the first place, only now instead of calling COVID-19 a "pandemic" we consider ourselves at the beginning of our permanent relationship with endemic virus. Today, in 2024-2025, we still see far too many Americans dying of COVID-19. While we don't consider this a pandemic, roughly every 10 minutes an American dies of COVID-19, hundreds of thousands of Americans are hospitalized every year, and ICU admissions were higher in 2024 than they were in 2023. Even more, a major and growing population of people are damaged, perhaps permanently, by Long COVID, including young people. Pandemic or not, this is the infectious disease challenge of all of our lives. Our goal is to give people the protection they need to drive these numbers much lower, and it cannot and will not be done via vaccination. At Invivyd we have worked to bring forward our first authorized mAb to prevent COVID-19 disease for immunocompromised people – PEMGARDA. Today we regard PEMGARDA as the first COVID-19 antibody option Americans have in our new world of permanent, endemic COVID-19. Our clinical trials evaluating PEMGARDA have generated data similar to prior COVID-19 antibodies, and this strong protection across similar molecules underlines the incredible protective power of a mAb approach. Overall, a good COVID-19 mAb can lower the odds of getting symptomatic COVID-19 compared to placebo by 80 percent or more. As you would imagine, the data on mAbs in preventing hospitalization and death has also looked great in the past, but these days we talk about something further upstream, and I daresay we are talking about what most of us hoped for from vaccines: a medicine that radically lowers our risk of ever getting sick in the first place. Vaccine boosts struggle to get to about 40-50 percent effective on similar endpoints in young healthy people, and that benefit only lasts about 60 days and then wanes fast. Moreover, we see what we have done with PEMGARDA as only the beginning of the beginning. Our mission is to keep innovating until we can scale high-quality, long-term protection to large populations of Americans. That means low doses of a potent mAb, given infrequently, and via a convenient route of administration, all suitable for millions of people. Those millions would include people like me – I am not immunocompromised so I am not eligible for PEMGARDA, but I also know that the COVID-19 vaccines don't do that much for me and I think getting COVID-19 over and over again is not a great idea – rather akin to playing Russian Roulette with my health. Invivyd is working tirelessly so that more people can be protected with high-quality options like these and enjoy real protection from disease. Longer term, Invivyd would like to move even beyond COVID-19 to build medicines for other viruses or pathogens that can augment or substitute for vaccines in situations where those vaccines similarly fall short in safely generating durable, strong immunity.

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Will you highlight the talent and expertise of the Invivyd team?

We have extraordinary capability and expertise across the company. People that enter the biotechnology industry tend to be pretty bright, and if you are choosing to work in COVID-19 you may also be a little braver and more likely to think differently than even the biotech average. What is fascinating about COVID-19 is that we are at the dawn of the field – the virus itself is only about five years old. No one has been studying COVID-19 for their entire careers unless they are still in their twenties. So while the people at Invivyd have diverse backgrounds, many of us can now credibly say we have studied this disease virtually from the moment it existed and we consider ourselves on equal or better footing than any so-called expert anywhere in the field. What you see in our small company is that talent and fortitude are made manifest: we're the only company that has made a new antibody in the last few years, while many other, much larger pharmaceutical companies have tried and failed. I think our company is a triumph of capability and intention, and I think our accomplishments already speak to our best-in-class capability across the board. We will have to keep that spirit and verve as we scale the company.

What are your priorities for Invivyd as you look to the future?

One of the virtues of pharmaceutical innovation, when companies put patients and science first, is that the companies only do well when patients and society do well. Our desire at Invivyd is not to build a medicine at small scale and put a high price tag on it to benefit only a few people. Our goal is to innovate to democratize access to high-quality protection for anyone who wants it. We have two obsessions: understanding SARS-CoV-2 evolution and change as it goes to our R&D, and then innovating our discovery, development, and commercialization to scale protection. In that way, we hope PEMGARDA is like a lot of early technologies: something a bit less elegant and a lot more expensive than where we ultimately get in the end, rather like computers or consumer electronics. PEMGARDA is version 1.0. Our minds are already deep into 2.0 and 3.0 thinking, and our hope is that many more Americans benefit as a result. ●