Transcript Details
This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: https://reachmd.com/programs/project-oncology/personalized-oncology-in-action-advancing-care-with-functional-precision-medicine/36494/

ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Redefining Cancer Care with Functional Precision Medicine

Announcer:
You're listening to *Project Oncology* on ReachMD. And now, here's your host, Dr. Matt Birnholz.

Dr. Birnholz:
Welcome to *Project Oncology* on ReachMD. I'm Dr. Matt Birnholz, and today I have the pleasure of speaking with Jim Foote. He's the co-founder and CEO of First Ascent Biomedical, which is a company focused on functional precision medicine as an approach combining drug testing and genomic profiling with AI to help guide treatment selection. Jim, great to have you on the program.

Mr. Foote:
It's great to be on the program. Thank you.

Dr. Birnholz:
So, Jim, you and I had a chance to speak before this interview opportunity, and I got to understand that your career path into cancer research and diagnostics is actually rooted in a very deeply personal experience. If you're comfortable with it, I'd love for you to share with our audience some aspects about that journey and how it shaped your involvement in the oncology area.

Mr. Foote:
Yeah. Thanks for the opportunity. I've spent my entire career solving complex problems for large companies using technology. And my life changed the moment that I heard that word for the first time: cancer. And as we walked this journey, as much as I wanted that word to be about me, it wasn't. It was about my son, Trey. And Trey was one of those one in three. In America, in 2025, with all the tools and all the technology, realistically, one in three cancer patients will die, and my son fell in that category.

As I walked this journey as a parent with a child that had cancer, I saw this amazing network and infrastructure of doctors, nurses, drug companies, hospitals, and insurance companies, and we were all working together to save my son's life. But I also saw firsthand how few tools and technology doctors had at their fingertips to make such important decisions when their standard of care fails. And I knew it was a solvable problem—I just couldn't solve it in time to save my son. But that was really the basis behind how we started First Ascent Biomedical—to try to provide doctors with the tools and technology to help them make better decisions in a clinically actionable timeframe.

Dr. Birnholz:
That's really powerful, Jim. Thank you for sharing that background, which I'm sure is instantly relatable to the majority of our audience, both on the healthcare side and those of the patients whom they treat.

I want to talk a little bit more about the concept of functional precision medicine. Can you just tell us how that approach differs from more traditional or established molecular or genomic approaches in oncology?

Mr. Foote:
It's a great question. Functional precision medicine isn't a new concept. It's been around for decades. But the biggest difference is our ability to actually execute against the promises functional precision medicine has been making for decades. The standard of care is based off lots of people who look like me who have been treated over time. You come up with a standard protocol—a recipe book—and that becomes the standard of care for the population.

Fundamentally, we look at things differently. We look at things and we say, there are 8 billion people on this planet, and genetically, unless I'm an identical twin, there is nobody on this planet that genetically is exactly the same as me. Your biological profile is as unique as your fingerprint. And so, when you look at the standard of care, biologically, we acknowledge everybody's different, and you see these two things don't fit.

And so that's where functional precision medicine comes in. It is exactly what it claims to be. It is precision based on the biology of that individual patient. And what's kept us from doing it up until this point is to be able to do it effectively, efficiently, economically, and at scale within a clinically actionable timeframe. None of these things were available when my son got sick and ultimately died from cancer. But when you look at the things that we now have at our fingertips, from an automation perspective, AI perspective, and robotics perspective, and including DNA and RNA sequencing and the economies of all of those things, the costs have really come down dramatically. That allows us to now offer this to patients and doctors in an affordable way.

Dr. Birnholz:
Well, let's think about that offering. So, we think in the standard-of-care terms about tumor profiling and getting biomarker readouts established in the tumors using that to guide treatment selections. But what you're proposing through this platform is integrating some more real-time insights that are personalized to the patient. Can you walk us through that?

Mr. Foote:
Yeah, absolutely. So DNA and RNA sequencing is great, right? You see what is present in the DNA, you see what is active in the RNA, you identify those biomarkers, and you try to match a drug that hits those targets. And it's been a very effective tool. But remember, the genome was mapped over 20 years ago. And what we do is take a live biopsy of the patient's cancer cells. We've invented a technology that allows us to rapidly enrich those cancer cells to the point that we can test hundreds of FDA-approved drugs against that cell population. That throws off a very rich data set that tells us how the cancer cells respond to either single agents or combinations at multiple concentrations, but within a margin of safety. When we combine that data with the genomics data—what's present, what's active—and we bring all of that together and we analyze all of that with AI, it literally allows us to generate a personalized cancer treatment plan, and we can deliver those results in less than 10 days.

Dr. Birnholz:
Yeah. That sounds intuitive, Jim. Why don't we talk about the data sets that you've been accumulating over time? And I'm interested in some of the early data that your platform has found so far. Can you walk us through some of the clinical findings today?

Mr. Foote:
Part of what we've prospectively validated and published in *Nature Medicine* was an observational study where the goal of that was to be able to return results in a clinically actionable timeframe. We know that mortality goes up for every 30 days that you delay treatment, so that was really the important part of it. And what we were able to demonstrate is that when doctors allowed our platform to help them guide treatment, patients benefited 83 percent of the time better than just standard doctor's choice or standard of care.

Some of the feedback we got from one of the doctors is, "Until I had access to this data, when we were dealing with patients who failed the standard of care, I felt like I was grasping at straws. And what you helped me do is you helped me find that needle in the haystack." So what we very precisely do is we never come back to a physician and say, "Use this drug." What we do is we come back to the physician with a stacked, ranked list of drugs of efficacy based on our drug sensitivity score, C_{max}, and IC50. And then, the doctor, from that, decides which drugs may be appropriate for that particular patient based on all of the other variables that we don't have access to. How do they respond to certain drugs? How is their immune system? Can they tolerate certain things?

So, again, we look at ourselves as a decision support tool. We're not making the decision, but we're giving the doctor an abundance of data at their fingertips and the supporting mechanisms of why those drugs are working so that physician can make better decisions faster.

Dr. Birnholz:
And I imagine this is operating primarily, or at least often, in the context of relapsed or refractory cancers, so these are complicated cases for which those decision support tools are intervening.

Mr. Foote:
Everything that we've published so far has always focused on patients who have failed the standard of care. So they've either had a relapse or they have a chemo-resistant tumor type. And one of the scary things, one of the things that we've observed in some of our studies, is we've actually had a patient who we got a biopsy from a metastatic site and from the primary site, and the drugs that the metastatic site responded to were completely different than the drugs that the metastatic site responded to. So, again, without this technology, the doctor's going to treat on the standard of care secondary protocols of laws of averages.

What we were able to do is find drugs that were actually synergistic between the primary and the metastatic site and come back with that list so that we can hit both sites at the same time. And that's really the power of the platform and what we do.

Dr. Birnholz:
Well, if you're just tuning in, this is *Project Oncology* on ReachMD. I'm Dr. Matt Birnholz, and I'm speaking with Jim Foote, who is the CEO and co-founder of First Ascent Biomedical, about functional precision medicine's evolving role in cancer care.

So, Jim, you talked about your background in technology, and from what I understand, it's specifically in cybersecurity. Given that, it sounds like there are a number of analogies that you've drawn between threat detection and networks and disease progression. And I'm really curious to dive into that a little bit and get your perspective on how that vantage point influences your approach to cancer profiling.

Mr. Foote:
If I can make a correlation, everybody's familiar with virus protections, right? Virus protections on your PCs and on your servers. There's two different types of virus protections. There are ones that are called signature-based, which are some of the older first-generation virus protections. So, basically, if I've seen this bad guy or this virus before, I can write a signature that I can upload to your computer, and now, if you see something that hits those characteristics, I can block it.

And then the next generation of virus protection for a PC is heuristics based. It's based on the individual PC and the characteristics that are going on within that PC—if they fall outside of a particular range, that next generation endpoint protection blocks that. It's exactly the same thing we're trying to do from a cancer perspective, right? Instead of treating everybody the same and being happy with being successful two-thirds of the time, we believe we can significantly move that needle forward by treating each patient as an individual—how their cancer cells respond based on their own biology based on hundreds of FDA-approved drug tests tested against their cancer cells.

Dr. Birnholz:
Yeah. I'm absolutely fascinated by it. And you talked about moving the needle forward, so I'm interested in diving into that in my last couple of minutes with you. What's next for your platform in terms of moving that needle forward? I'm thinking, for instance, about areas such as clinical validation, the regulatory approvals and any of the hurdles that go into that, and the broader implementations of this platform. What is going to move the needle forward from your vantage point?

Mr. Foote:
Great question. So a couple of things. One, we have concluded three clinical studies and published our clinical results. We have two active clinical studies as we speak, in both adults and pediatrics, and in a pan-cancer way. So we're not focusing on liquid tumors or solid tumors, but it is pan-cancer. So, we've got three clinical studies completed, two clinical studies that are active right now, and we have three more clinical studies in the pipeline. And then we have just started the FDA breakthrough device designation process, and we understand that that's about a three-year journey, but we're starting that journey now.

Dr. Birnholz:
Great. Well, then, let me come to that closing thought with you, then, as we think about the translation to practice. You mentioned ways in which you're expanding that access and delivering this capability to more physicians on behalf of their patients in different types of communities. I'm interested, then, if you are considering those oncologists and other healthcare providers, who are less familiar with this platform's capabilities and platforms like it in this functional precision medicine space. What factors should they consider to help them determine whether or not this is a good fit for them in their practice?

Mr. Foote:
There's three questions that I always tell everybody to seek answers to because there's a million companies out there that are making all of the same claims. I call it the AI gold rush. And so, three questions I will tell everybody to make, whether it's a doctor, an investor, a hospital network, or insurance company. Question number one: Have you published prospective clinical results in a high impact journal? Number two is: How many drugs can you test reliably and consistently? And number three: How quickly can you return results? Because we know that time is of the essence.

Dr. Birnholz:
Well, Jim, on that note, I am looking forward to checking in with you on that again for updates as they are, I'm sure, moving a mile a minute right now. I very much want to thank my guest, Jim Foote from First Ascent Biomedical, for sharing both his company's mission and his personal story behind it. Jim, it's been fantastic to learn more about what you're up to, what your colleagues are up to, and what you're looking to offer to the oncology space. Thanks so much for your time.

Mr. Foote:

Thank you for your time. And like I said, we are patient-inspired, but we're on a mission to bring answers to those facing cancer with relapse, and we believe we can redefine the way cancer is being treated, one patient at a time.

Announcer:
You've been listening to *Project Oncology* on ReachMD. To access this and other episodes in our series, visit *Project Oncology* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!