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From UPMC Children's Hospital of Pittsburgh, welcome to That's Pediatrics. [I am Carolyn Coyne](#). I am a scientist in the division of Pediatric Infectious Diseases.

Brian Martin:[And I'm Brian Martin](#). I'm Vice President of Medical Affairs here at Children's. We're pleased to welcome [Terence Dermody](#), Terry as we know him. Dr. Dermody, he's our physician-in-chief and scientific director here at Children's. He has interest in viral pathogenesis and vaccine development, focusing mainly on reo virus which is an important experimental model for studies of viral encephalitis in infants. He is a thought leader here at Children's Hospital and we welcome to hear about what brought him here to Pittsburgh and a little bit about where he sees our scientific work here at Children's progressing into the future.

Terry Dermody: Brian, Carolyn, thanks for having me. I've been here almost two years now, Brian. June 1st is my anniversary day. So I'm looking forward to celebrating my second year at [Children's Hospital at Pittsburgh](#). I came from Vanderbilt where I was almost 26 years, and there led training programs for physician scientists in the pediatric infectious disease division. I came to Pittsburgh to partner with a magnificent team, to advocate for children in one of the world's greatest cities. That's why I came to Pittsburgh.

Of course I brought my research team, a group that's incredibly close to me, to continue the work we do to understand better how viruses cause disease. But I've also worked with a number of people in our community to think about how we can work harder and smarter at developing solutions to problems that have been very challenging, that prevent us from treating children with some of the most challenging diseases that we see.

It's my conviction that the only thing that provides hope to those kids who don't have it now is discovery, research. To understand better the nature of disease, to figure out new therapeutic alternatives, and then to get those new therapies deployed in the community to improve childhood health. That's what drives me every day.

Carolyn Coyne: So what was it when you were a trainee perhaps, as a clinician that drew you to basic science. And then sort of second to that is why did you choose infectious disease, virology? What was it about those areas that you felt really drawn to?

Terry Dermody: Thanks, Carolyn, for the question. I have to say I went to medical school because I wanted to be a teacher. My parents were both teachers. They were truly the giants on whose shoulders I stand and were my role models growing up. I thought it would be very fulfilling to teach in the context of the medical school.

So I was a biology major in college, and then went on to medical school to learn how to teach medical students.

Of course my most formative role models in medical school and then in my residency were infectious disease physicians. [Infectious disease](#) physicians are probably the talkiest group of healthcare providers you will find. I found great company with those folks, and decided I would train in infectious diseases. That then took me to Boston for my fellowship. I worked with Bernie Fields, a legendary virologist, driven to understand the basis of viral disease. And of course, Dr. Fields was an infectious disease physician. So a role model physician scientist.

I hadn't done much scientific work at all before that experience. And I would say after probably two years of working with Dr. Fields and his team, I started to understand better my project, the kinds of questions that we were asking, how we could best answer them. And I have to say it was at that point that I learned how exciting it is to be the first person in the world to know a new fact, that you could work to discover.

So I was there for four years, and then a great opportunity came for me at Vanderbilt. Actually it was within the pediatric infectious disease division. So I trained formally in internal medicine. So at that point shifted to pediatrics and really it wasn't long after my arrival at Vanderbilt that I stopped caring for adult patients, and then focused entirely on children, which is of course what I do now.

So I think that infectious diseases excited me because there's so many types of germs that cause illness, so little we know about so many of them, so many opportunities for discovery. And whether it's a discovery that leads to new anti-infectives or a discovery that leads to a vaccine, or just discovery to figure it out, just to satisfy the curiosity about how things work, it just seemed that we would only be limited by our ideas. So we wouldn't be limited.

Brian Martin:

Terry, can you tell us a little bit about how you've balance your research work over the years with on-going clinical work. I've seen you on the floors here. I know that you engage with our residents and fellows. Can you tell us a little bit how you've stayed in touch with the clinical side as you've developed your career and such research prowess?

Terry Dermody:

Yeah. Caring for patients is very important to me. When I was younger in my career I thought I could actually teach the fellows, and the residents, and the students the cutting edge or maybe a little bit ahead of the cutting edge about where fields were going and new therapeutics and so forth. Now I think I can help them a little bit better in learning how to take histories and perform physical exams, actually interacting with children and their families. Something that's challenging to do now because of all of the other responsibilities that healthcare providers have. Documenting in the electronic medical record. Keeping track of all the tests and so forth that are ordered.

But being able to care for children is one of the greatest privilege of my life, being able to do that. I couldn't imagine not being able to do that. And sometimes I wonder in the care that I provide if the interaction is of greater benefit to me or of greater benefit to the children who I'm seeing.

I also think it's very important for institutional leaders to be participating in the work that their team members are performing. When I hear about opportunity for improvement, to have experienced them firsthand helps me better understand what those opportunities are, and actually helps me better formulate solutions. So that's very important too.

And I have to say, when I'm on the clinical service I do a week at a time. It's a very intense week. But it's almost as if I'm on sabbatical from everything else I do. So all of the normal meeting that occur during the week I postpone them. The only meeting I have in the office are critically important, urgent, must meet at that minute kinds of ... And there're not that many of those. So I can essentially go on sabbatical as a physician and I really enjoy those opportunities.

Carolyn Coyne: And I'm wondering how much impact you think that has on your lab. Because certainly your lab is probably largely non-clinicians, perhaps trainees, like myself who would never see patients. So how do you translate that? Does that help you excite your trainees in the kinds of stuff they do? Sort of that idea.

Terry Dermody: In fact, most of our trainees are PhD students, or PhD post doctoral fellows, or PhD faculty who join my research team. I now have a single MD PhD student. And right now there's a very young MD PhD student who's visiting our lab just for the summer. And everyone else are PhD trained or PhD trainees.

Yet there's something that's compelling about a mystery that effects a child. And our hospital is filled with mysteries that effect children, that we don't have understood. I often will share a story, a puzzling case, a puzzler that we don't have resolved yet, looking for ideas. Often I'll present stories of children who have touched me in some way because I need to share them and I need the support from my team to help me more effectively care for those children.

Now on occasion there have been students who have wanted to make rounds with me. Especially students who are working on common pathogens that effect children in the hospital. Imagine that you're a PhD trainee working on a common virus like an enterovirus and our hospital is filled with children who have enterovirus infections. And yet they've never seen one. It really helps them frame the research they're doing, even if it's not directly related to either that virus or that topic.

The face of their work, the fuel that drives their engine for discovery, is often that three year old girl with the fever and the rash who has trouble when the lights are turned down because she has enteroviral meningitis. It stays with them. A lot of times even weeks after I've finished clinical service rotation I'll get

a question about, "How did the girl with the leukemia do? Is she okay?", because it's compelling. I think it provides for them a bit of a sense of why we do what we do, this deep motivation to try and learn things to help those who need it.

Brian Martin:

I think that's beautifully put. One of the things Carolyn and I were discussing a little bit about your career beforehand, and one of the things which she noted was your consistent history of combining this basic virology, the bench research, with the translational story that you just relayed in terms of relating the human interest impact to what you're doing.

Do you have any other major research initiatives at Children's, or other areas going on here as scientific director at Children's that may be outside of specifically your lab, that you would care to highlight for our listeners?

Terry Dermody:

Thank you Brian. You know the hospital engaged in a strategic planning process, really started about a year before I arrived. There were a number of initiatives that were established in that strategic planning process, including research initiatives. So when I came I was asked to partner with George Gittes, our surgeon-in-chief, to lead strategic planning around discovery at Children's Hospital. That's been an incredibly exciting endeavor.

We focused on three main initiatives. Around healthy minds, healthy bodies, and healthy families. The healthy minds initiative we've called the Children's Neuroscience Institute. That will be headed by Hulya Bayir. Hulya is a physician scientist in critical care medicine. The healthy body initiative we've been calling the Institute for Infection, Inflammation, and Immunity. I like the alliteration on the I's, so it's the I4. And of course it will be based here at Children's Hospital, so we're calling it the I 4 Kids. And the I 4 Kids will be led by John Williams, who is our Director of Pediatric Infectious Diseases. And then the healthy families initiative is our Children's Community Health Collaborative, to try and understand better what the social determinants are of health, and how we can implement new ways of caring for families and communities that lead to the improvement of children's health. That initiative, the Children's Community Health Collaborative, is led by Liz Miller. Dr. Miller is the Director of our Adolescent and Young Adult Medicine Division.

And from those initiatives, one of the aspects our discovery mission that excites me the most is a brand new epidemiological study that we've been calling The Pittsburgh Study. Now in The Pittsburgh Study we aim to follow children in Pittsburgh, truly in Allegheny County, from birth to the completion of high school because the questions that we'd like to answer are what determines health.

See, it seems to us that victory for a pediatrician is a healthy high school graduate, fit and thriving, and ready to make a good decision about what the next step in their career, life journey will be. Whether to go to college, enter the military, join the family business, or hike the Appalachian Trail, they're ready to

move into their adulthood. And all of us focus, appropriately so I would say, so narrowly on disease, what are the determinants of disease, that sometimes we lose sight of victory, the determinants of health.

So The Pittsburgh Study, very much like the Framingham Heart Study, which taught us the words cholesterol as a risk for heart disease, we think The Pittsburgh Study will teach us the words that correlate with children's health. In that way we think the kids of Pittsburgh are going to be able to teach a broader world about childhood health, and maybe enable us to introduce some solutions that might not be traditional medical solutions that increase the number of kids who graduate from high school healthy, thriving, and ready to emerge into their adulthood.

Carolyn Coyne: What are the aspects or qualities of Pittsburgh as a city that you think really will impact that, that might be unique about our city in comparison to some others, that would allow you to take such a large initiative and really implement it successfully?

Terry Dermody: You know I've been here for two years Carolyn and those who have spent a lot of time here know the phrase Pittsburgh Proud. I encounter that sense or feeling in virtually every person who I meet from Pittsburgh. Pittsburgh is very proud of Pittsburgh, and Pittsburgh is very proud of those who live here.

I think little engenders more pride than the children of this city. Pittsburgh citizens care deeply about families and children. And the support that comes from lots of organizations around the city, our large foundations, our universities, the intense interest in healthcare, and just this civic pride that we can do this. We're a city that believes so strongly that the future is our kids that we can do a study like The Pittsburgh Study.

It will involve virtually every group in Pittsburgh that you can think of, from the mayor's office, to the schools, to our universities, those who deliver care and those who support various initiatives. Food and parks and so forth. All will be involved in planning and conducting The Pittsburgh Study.

Brian Martin: I'd like to hear your thoughts about who would we in our community do you think will be good mentors to others as we enter into this, into a little bit of a new posture for hospitals and health systems in regards to how we are going to address social determinants and other groups, both within our walls and outside of our walls, which we'll need to engage?

Terry Dermody: You know Brian, I went to medical school because I wanted to be a teacher. Of course my parents were teachers as I mentioned. But my Mount Rushmore of most influential people in my life are all teachers, every single one of them. I think that to look for mentors we look for those who have lots of contact with our kids, are role models for our kids, and are equipping our kids with the skills that they need to be successful in their adulthood.

And I think partnering as closely as we can with educators at all levels, pre-K educators, elementary educators, middle school and high school educators, right through the progression into college and beyond for those who pursue that, is vitally important for the health of our kids. Now I'm stating that as a fact and I'm hoping that The Pittsburgh Study will allow us to define what those determinants are and provide evidence to support this construct.

But walking into this, what are we likely to find? My mom was a fourth grade teacher. I don't know. I wouldn't underestimate the power of fourth grade teachers to help with the development of young people so that they reach for the stars and have the tools to get there.

Brian Martin: It's a wonderful point, Terry. If I think back on my own fourth grade teacher, Sister Floretta, certainly gently guided me along my way in what likely was a case of under- or non-diagnosed ADHD in my own case. The fourth grade teacher I think they can either keep you on the rails, or that might be a pivotal moment in life. So your mom I'm sure helped a lot of kids stay on the right track.

Terry Dermody: Brian we share a lot in common. Mrs. Clark was my fourth grade teacher. She only put me in a row by myself one time during the fourth grade. I remember it. But the undiagnosed ADHD pretty common amongst those of us who have a Y chromosome.

Carolyn Coyne: Mine was Ms. Davies and I, just for the record, was a straight A student who did no wrong. It was really later in life that I developed some of my ADHD issues.

Brian Martin: Carolyn, you were never asked to sit outside of a classroom?

Carolyn Coyne: No. Never in my life.

Brian Martin: I saw a fair amount of hallway in my fourth grade year.

Carolyn Coyne: Never in my life. My son spends a lot of time there so it's clearly genetically ...

Well this has been great, Terry. You've been a wonderful guest. We really appreciate your insights and your thoughts. I personally as a parent of a young child who's actually about to enter fourth grade next year, so let's hope his teacher has the same impact, I take great pride in working for CHP. I have really great excitement for things like The Pittsburgh Study because I think about how it will impact in my life. But then also the lives of my children so that means a great deal to me both professionally and personally.

Terry Dermody: Well, thank you Carolyn and thank you Brian. A pleasure to visit with you today, and I'd be more than happy to come back and tell you about some research on viruses at another time.

Carolyn Coyne: We'd love to have you.

Terry Dermody: The pleasure is ours. We'd love to have you. Thanks Terry.