TPWKY - Special Episode - Lawrence Ingrassia

EW: [00:00:00] Hi, I'm Erin Welsh and this is, this podcast Will Kill You. You are listening to the latest episode in our T-P-W-K-Y book Club series where I bring on authors of popular science and medicine books to chat about their work, the stories they cover, and the inspiration behind them. We have featured some wonderful books so far, this series, and if you'd like to check out the full list of book club books, you are in luck. Head on over to our website. This podcast will kill you.com. Find the extras tab and then click on bookshop. That will take you to our bookshop.org affiliate page, which has a bunch of podcast related lists. Including a book club list that has all the books from this season and past seasons, and if you have any book suggestions, episode topic suggestions, or just other thoughts you'd like to share with us, please reach out using the contact us form on our website. Two last things before moving on to this week's book, and that is to first please rate, review, and subscribe if you haven't already, it does help us out. And secondly, you can now find full video versions of most of our newest episodes on YouTube. Make sure you're subscribed to exactly Write Media's YouTube channel so you never miss a new episode Drop.

Stories of scientific progress and discovery often portray scientists armed with facts and data triumphing over death and disease. It's a forward march with a clear narrative arc from a place of ignorance to one of enlightenment. And as much as we love tidy stories like these, science rarely happens that way. More often than not, it's a battle with each hard one inch of progress contested and dismissed before it's accepted, or it's a promising hypothesis that turns into a wild goose chase after years of time and resources have been spent. Maybe it's simply making slow incremental headway on a puzzle. This zigzag two steps forward, one step back. Nature of scientific progress rarely makes it into the polished final product, nor does the human cost. Those whose lives ended prematurely because science didn't yet hold the answers and their grieving families who were left to mourn this painful loss. But these crucial elements are a feature of this week's book. A fatal inheritance. How a family misfortune revealed a deadly medical mystery by author Lawrence Ingrassia, part memoir and part medical thriller. A Fatal inheritance takes readers through the riveting story of how two doctors, Dr. Frederick Li and Dr. Joseph Fraumeni uncovered a key piece of the cancer puzzle. The P 53 gene when a family suffered heartbreaking loss after heartbreaking loss to cancer for Ingrassia, this is a deeply personal story as his own family has been tremendously impacted by cancer, losing his mother, two sisters, his brother and and nephew, to different forms of this disease. When faced with such devastating loss, it's natural to ask, why me? Why our family? But what if the answer brings you knowledge without a way to use it in a fatal inheritance? Ingrassia grapples with this question, and by doing so it. Illustrates that knowledge can be both a blessing and a curse, but with continued support for scientific research, we can turn that knowledge into interventions that save lives and prevent heartbreak. Through his meticulous research and compassionate writing, Ingrassia leaves readers with a deeper appreciation of the human experience of cancer research and how vital it is to not give up hope. I'm very excited to share this conversation with you all, so let's take a quick break and get into it.

Larry, thank you so much for joining me today.

LI: It's my pleasure, Erin.

EW: Your book, A [00:05:00] Fatal Inheritance, it strikes this really beautiful and delicate balance between medical mystery and memoir. With these two stories, ultimately converging as that mystery is unraveled, and not only do you showcase this truly transformative period in cancer research, but you also place it in a human context by discussing your family. What initially set you on the journey to write this book?

LI: You know, my brother died a few years ago, and when he died, he was the last surviving member of my family. And my mother had died of cancer, breast cancer when she was 42. I had two younger sisters die of cancer. One had an abdominal cancer, she died at 24. The other had lung cancer, died at 32. And my brother. Had a son who had his first cancer when he was just two years old, and he died of his third cancer at age 39 after a desperate attempt to save his life by amputating his leg and hip. So I just wanted to know more about this rare genetic condition that had wiped out my family. Uh, I knew very little about it. It's called Li-Fraumeni syndrome and all I knew. At the time my brother died was that it was caused by a mutation in a gene that normally prevents cancer from occurring. And that was kind of it. And so I just began this journey. I Googled and what I saw initially just piqued my interest, and that's how it began, not with a plan initially to write a book. In fact, I say this was not a book that I ever intended to write. But once I began, I knew I was meant to write.

EW: When you knew that this is a book, this is becoming a book, did the shape of that book or the outline sort of change shape as you put it together, or did you have this vision sort of all along?

LI: Once I finally decided, it took some months of research before I said, yeah, I think this is a book I had in my mind's eye. How this would intertwine that. It would be a story about my family and families like mine who had really been devastated by this hereditary cancer condition. Along with the story of the researchers, dedicated researchers who spent years, actually decades before they, they solved the mystery. And that actually was part of the thing that intrigued me about the book and, and the whole, uh, condition. It's just how long it took, figure this out. Uh, but initially it began actually, you know, kind of with this search and finding out that this was a rare condition. It was very pernicious families that had it. There were a lot of cancers at young ages. All different kinds of cancers too, which is a little bit different from a lot of, uh, cancer conditions. And I, uh, saw that one of the two researchers who this is named after, and who led the effort to solve this medical mystery, Joseph Fraumeni Jr. Was still alive. He was in his late eighties, and, uh, his colleague Frederick Li had died in 2015. And so I reached out to him and I got even further intrigued when I talked to him.

EW: Let's take a quick break and when we get back, there's still so much to discuss. Welcome back everyone. I've been chatting with Lawrence Ingrassia about his book, A Fatal Inheritance, how a Family Misfortune Revealed a Deadly Medical Mystery. Let's get back into things. You mentioned your journalist background, you're no stranger to investigating stories and putting these stories together, but this was a very personal story for you as well. How was that process different?

LI: Well, yeah, and first of all, I, I was a business journalist. I wasn't a science journalist, so I had never written about anything really personal about my family. I call this a journey of discovery and connection, and it was difficult at times, but also so rewarding. I think I learned more and I feel closer to my family now that I have done all this research and at the same time, I wore a different hat at different stages of the reporting where I would just. Trying to understand the science. Trying to make sure I got it right, the genetics, because it's so much about genetics, trying to understand the history and the evolution of the understanding of cancer and the causes of cancer, because that really has changed over the decades, uh, since my mother died. And [00:10:00] then trying to make it a compelling story instead of a dry textbook story, because in the end, this is. About families. It's about families like mine and it's about loss, but it's also about love. In fact, I call this, you know, the book is as much a love letter to my families and families like mine as it is a book.

EW: I mean, that shines through so, so very clearly. I felt like I knew some of your family members by the end. I, I really loved that aspect of it. And it's also so clear how much research went into this in terms of placing these discoveries in the broader context of what was happening in the history of medicine at the time. And I was wondering which sources you found to be particularly influential or helpful in this process.

LI: First of all, Dr. Fraumeni was exceptionally helpful. Uh, but Dr. Fraumeni had a lot of colleagues. One of the things I learned about science and scientific discovery is that there's really one person who does it all. It's often a, a team of scientists working together and sometimes working in competi. Who push knowledge forward. So there were a lot of his colleagues, former colleagues who were extraordinarily helpful. And also there were competitors who were, were working on some of the same efforts to try to identify these genes and what they were doing and what the mutations might be doing. But in parallel, I also was, uh, helped extraordinarily by. The family. That was the focus. A lot of, a lot of the early research, this family was so central and so helpful when I was finally able to reach them and they really opened up and I mean, to me that was critical to telling the story of the medical mystery because my family wasn't. A focus of the research we learned about the condition and the mutation in our family decades later. This family, you know, kind of was a focus on the research from the beginning of Li and Fraumeni.

EW: I wanna talk about this family and sort of their contributions that they made. Uh, but first I wanna take a step back and get this, this landscape bird's eye view of what cancer research was like at the time when this first family tree was being looked at, what was known about the cause of cancer and what were some of the prevailing hypotheses.

LI: Okay, so let's go back to the 1960s and you really have to go back to that period in time and cancer was not talked about a lot,

EW: right?

LI: Kind of hushed tones. And I think one of the reasons is that the prevailing theory at the time was that most cancers. Caused by viruses. And you think about that for a second. If cancers are caused by viruses, you maybe can catch cancer. Uh, so you don't really want to talk about it a lot that you have cancer in your family. Now, there were inklings that there might be environmental. Causes of some cancers and there were some thinking that maybe certain types of cancers, especially site specific cancers, like if you had a lot of breast cancer in your family, maybe. Maybe that might be hereditary in some way, although we don't really understand it. However, all the cancer experts believed that the vast majority of cancers were caused by viruses, and most of the government research money was actually. Targeted to efforts to identify viruses. Now, they weren't having any luck in doing that, but they kept spending and looking for that. And along come Lee and Fraumeni epidemiologists who are just curious about cases that are unexplained.

EW: Mm-hmm.

LI: They were young scientists at the National Cancer Institute. This is back in the, uh, mid to late sixties.

EW: When you say thieves, were epidemiologists, looking at patterns of cancer, what were they looking for and what were the cases that were catching their attention?

LI: Well, I think they were particularly interested in childhood cancers, but what happened was in 1967, they came across a very unusual case. There was a father who was then 20 year olds old who had leukemia, and much later, his 10 month old son developed a soft tissue rhabdo, myo sarcoma in his arm. Now, either of these cancers, the odds are very high against having. Having them father and son, the same family. I mean, it's astronomical. And so they were curious like, maybe we should take a look into this family. And when they began looking in this family with the help of some of the family members, it was difficult because this is a sprawling family. You know, as many families in the United States, they're all over the country. They found a history of cancer, all kinds of cancers at all ages, including other cancers among infants. Going back five or six generations. [00:15:00] And that was where they said, Hmm, let's see if we can find a cause. And, uh, they published a paper a couple years later. It actually took quite a while to, uh, put together this family tree because they had to write to medical centers and get medical records. And it just, it, it, it took an enormous amount of time there and they added a few more families to the study and they showed that there was a lot of cancers.

They didn't know exactly why. Mm-hmm. In fact, their first paper that they wrote about it ended in a question mark that said, is this a familial syndrome? There was skepticism. The cancer experts said, ah, must be a virus that you just haven't been able to identify, even though they had tested some tissues or viruses that hadn't been able to find anything. Or maybe it's an environmental factor that you haven't been able to identify, or you know what? Actually more likely. It probably is just chance. I mean, you know, there are a hundred million plus families in the United States. The odds are that our few are gonna have a lot of cancers. And this just happened to be one of them, you know, being from any like, said, okay, look, we can't prove it. And they actually acknowledged that it could be one of those things, although in their minds they were, Hmm, doesn't feel right. So they kind of said, we're not really so sure about that either.

EW: Eventually this work seemed to build momentum and there was more and more data that supported this, this hypothesis that maybe these cancers, there is, uh, some sort of genetic or hereditary link to it. So what else were they finding and how were they finding these other families?

LI: After their first paper was published, it got a little bit of attention and other doctors who were coming across families would send them this information. So Lee and Fini began tracking more and more families over time that were cancer prone, and every five to 10 years they would publish another paper saying, Hmm, we're finding more and more. Evidence that indeed these cancer pro families are continued to have a high rate of cancer. One of the things that puzzled everybody, including them, but definitely the experts, was the fact that just like my family, uh. There were all sorts of cancers, brain cancer, leukemia, you know, soft tissue cancer, lung cancer, breast cancer, bone cancer. And so the experts were like, these aren't related. How could that be hereditary? Again, it was, it was against whatever knowledge existed, you know, even in cancer prone families. Cancers occur sporadically. It's not like they occur at regular intervals. There was more than a decade between my mother dying of cancer and my youngest sister then getting cancer.

That was another thing that made it hard to speed up the research, but the understanding of genetics was increasing dramatically in the 1970s and the technology. That enabled scientists to look at individual genes and to study genes and find mutations. There also was an explosion in that equipment, and the combination of these things was critical and the fact that Li and Fraumeni kept studying families so they had a bigger pool of families and very smartly going back to the late 1960s. Family A, they collected tissue samples, so when they finally had the tools to examine the tissue samples to look at individual genes, they could spot something that a decade or two earlier, and certainly in the 1960s would've been impossible.

EW: There. So there was many steps that had to be taken between recognizing this pattern in this very first in family a all the way to this becoming a named syndrome. What kind of led to that, those final pieces being put into place that led to Li-Fraumeni syndrome being this clinical syndrome that can be defined and characterized.

LI: So in the late 1980s, they finally had the tools to look inside the genetic makeup of these cancer families. Of course, humans have more than 20,000 genes, you know, kind of where do we start looking? I mean, it's like, you know, kind of, it's, it's like saying, Hey, it's somewhere in Manhattan. But you have no idea where the address is. You know, kind of, there are millions of homes. So figuring that out, you know, where do we start looking? And this is a little bit where, where the knowledge of other scientists help them start focusing on where to start looking. So they had a few spots where in studies of, uh, mice that they had found a particular gene that seemed to be present. Many tumors. It's gene called P [00:20:00] 53 and they actually thought that, hmm, this P 53 must be a cancer causing gene because it is so common in cancer, it's not all cancer tumors, but in actually in more than half of cancer tumors, they found a mutation of P 53. They began focusing on P 53, and once they started looking at the tissue samples of these family members, after a couple of years of study, they had their Eureka moment. And the eureka moment was that in the tissues of the family members that had. Cancer. There was a mutation in P 53 and that in the tissue members of family members who did not have cancer and that same P 53 gene, there was no mutation.

The other aha moment was they realized that P 53 wasn't causing a cancer. P 53 is normally meant, and when it working properly. It stops cancer from occurring when we all have, our cells are dividing all the time, and most of those cell divisions are benign. Nothing happens occasionally. Some of them are potentially malignant. And the amazing thing about the human body is that over millions of years of evolution, we have developed. Genes called cancer suppressor. Genes that are kind of search and destroy genes, they sense potentially cancerous cells, and they go and either repair that cell or they kill it so you don't get cancer. But if you have this mutation, they realize it doesn't work properly and your propensity, your chances of getting cancer. Are much higher, and this explains so much when they finally realized it. First of all, when I talked about how pernicious this is by age 40, if you are born with this mutation, this inherited mutation, you have a 50% chance of getting cancer and often multiple cancers. If you survive your first. Versus 5% in the whole population as a whole, your risk is 10 times higher. But it also explained why you would get cancers throughout the body. This P 53, it turns out, was so important that it protected you from cancers throughout the body.

EW: Mm-hmm.

LI: Except when it was mutated, it didn't, and this is in contrast to most cancer genes. I mean, everybody, probably the best known cancer gene is the BRCA cancer gene, which helps you, prevent you from getting breast cancer and ovarian cancer and stuff. But it's really a site specific.

EW: Mm-hmm.

LI: P 53 is a much broader gene and protects your whole body. And actually since this discovery, and it was in late 1990 when it was announced, it was huge news, huge news in the scientific world, not in just in the scientific world. It was the front page, you know, of the New York Times. The Wall Street Journal had a big story. I mean, it was electrifying in the scientific. P 53 has become the single most studied gene in the human body, and it's called the Guardian. Of the genome because it regulates cell growth and kind of helps prevent you from getting cancer.

EW: Let's take a quick break here. We'll be back before you know it. Welcome back everyone. I'm here chatting with Lawrence Ingrassia about his book, A Fatal Inheritance. Let's get into some more questions. I mean the discovery, and you illustrate this so clearly in your book too, that this discovery was revolutionary for understanding the mechanism underlying so many different cancers. And it's fascinating to talk about how, okay, this guardian gene can get disrupted in our germline cells, but then also there can be disruptions later on. And so how did this sort of change our understanding or help us to formulate this two hit hypothesis?

LI: There are two kind of mutations. One is a germline mutation that is something that you're born with, you're inherited. Okay? So it's in every cell in my body. So also what's called a somatic mutation, it's like a sporadic mutation. Uh, so again, our, our cells are, uh, dividing constantly and mutating constantly. And even if you don't have an inherited mutation in P 53, if you have this sporadic, spontaneous mutation. Post-birth at P 53 that breaks down your body's ability to fight cancer, which explained why you've had so many cancers with P 53 mutations even in people who didn't have a hereditary syndrome. So, you know, the understanding of how [00:25:00] this mechanism works help doctors start saying, what can we do to try to target medicines? To help prevent cancers. Now, of course, that's turned out to be very difficult because fixing B 53 or any other mutation is very difficult, but you can have the ability to look for that mutation. This was one of the breakthroughs if you, if you know that you have that mutation. You can screen for cancers and try to catch them early. And the best defense against cancer is to catch it early. And so this was one of the great advantages of learning this. And it doesn't stop you from getting cancer, but you can identify it early on. If you know that it's in your family, it can help you live a much longer life.

EW: Right? Be be a little bit proactive in, in some respects, even though we may not have a direct treatment or cure for. The underlying cause.

LI: Right.

EW: When Li-Fraumeni syndrome was named and described, and when this P 53 discovery was made, I'm, I'm curious to know the impact of these developments on the families themselves that were involved in these, these early family trees, this early research. What did it mean to them to have this answer?

LI: I think the most important thing is that they. Finally knew the cause. I mean, for a long time the family members are dying. They figure something must be wrong. For a while they thought it might be environmental. Knowing they had, it was, wouldn't say a relief, but when you're looking for an explanation, knowing is something that is very helpful. But kind of go back to the nineties, especially the early nineties where they're saying, okay, now we know this. What can we do with this? Early on, there wasn't a lot they could do. We could do more research to try to figure out what we could do with this. And I think, so for the families, particularly family A, it was helpful to know this, but. It was like, you can't help us now that you know this. And they were like, well, no, but we are hoping that we'll be able to help you some point in the future. So I think it was, it was hard for them. In fact. So not long after the discovery of P 53 and kind of, this is the cause of Lee Armini syndrome, all these cancers in your family, one branch of family A, a father got brain cancer.

He was in his early thirties and within a year, his 10-year-old son also got brain cancer and they both died with an ear. Nothing could be done to help them. I think. So some of the family members felt maybe, I don't wanna know. I mean, some of them did wanna get tested to know that they had it and figure out what to do. But other family members were, you can't help me if I know it. So, you know, they kind of pulled back a little bit and that's, I think that's understandable. So the other thing is, if you have this mutation in your family. If there's a 50 50 chance of each child inheriting it. So you have branches of the family that are riddled with it because it was passed on. And then you have other branches of the family that are cancer free, which is also difficult and can cause pain and tension within families too. And I think that was part of the reason why some of the family members just felt. Come back to me and let me know when you can, you have information that this can help me, as opposed to just scare the daylights out of me and, you know, be worried all the time that I'm gonna have cancer.

EW: It is certainly a dilemma in, in many, in testing for many different genetic diseases and disorders. This, what do we do with that knowledge? What does that knowledge give us? And some people may feel empowered by that or like,

like you said, it can help with screening in, in preventative ways. But ultimately, does it change an outcome? Um, it's a hard thing to weigh.

LI: It's a very personal decision. And, and while I think that knowledge is power and you wanna know, I also understand why some people say, Hey, I think I'd prefer not to know.

EW: Yeah. I absolutely can understand both perspectives. And I, I'm curious to know, when did you first learn about Li-Fraumeni syndrome?

LI: Let's go back again to 1990 and this Discovery, big news. By that time, my brother and I were both senior editors at the Wall Street Journal. Our two sisters and mother died, and his son, you know, had had cancer. I don't think we ever talked about this discovery, and it was odd. We didn't say, oh my God, that must be us. The reason is, I think there were a couple of reasons. First of all, our father was a research chemist and we had this supposition. For a long time that he must be inadvertently coming home with tiny particles of chemicals on his clothing. We're ingesting it years later. This ends up being cancer. So we had our theory about what was causing the cancer, and the other thing is that doctors never suggested to us that it might be hereditary for a long time. Li-Fraumeni syndrome is so rare. All [00:30:00] the cancers are different. A lot of doctors weren't aware of it. They certainly wouldn't have suggested it. And another reason they wouldn't have suggested it to us is that our mother was the first in our family to have cancer. There wasn't a long history of cancer in our family the way that there was with family a so fast forward in 2014, my nephew had had his second cancer and my brother had had another couple of cancers.

Fortunately, they both had survived those and his doctor finally said, you know, you've got this pattern, it might be hereditary. I think you should get tested. My brother called me up and this was the first I'd ever heard of P 53 or Li-Fraumeni, although I didn't do anything about it. And he said, I'm gonna get tested for this mutation. And sure enough, a month later, 2015, he sent me a note saying I tested positive. And he said, you know, actually it's a relief now. I know, and he had caught all his cancers early, but then he started to do even more rigorous screening. I didn't immediately go out and get tested. I was at that point in my early sixties and I was figured I don't have anything to worry about. But my daughter, I've two children, my daughter finally prevailed on me. She says, dad, you really should get tested. I wanna know. So it turns out that there is a value of knowing. I didn't really realize this at the time, but if you have Li-Fraumeni syndrome, you have this inherited P 53 mutation, there's a 95% chance in your lifetime of getting cancer staggering. But there's a 5% chance that you won't. So I could have been a carrier, I could have the mutation, but being that 5% and still have passed it on. Mm-hmm. So the value in getting tested. Was having that certainty. So I got tested and tested negative for the mutation. So this also explained why I had been spared while my siblings had not, and I distinctly remembered, and it was just one of those moments that you never forget. It's etched in your memory. I sent an email to my brother and said I tested negative. And again, it can be hard for some family members to know that they have it. His son had cancer and that other family members don't have it. And I, I've seen it, it causes strain and it's understandable. That's not unusual or abnormal reaction. Actually. Uh, instead my brother sent me back, uh, a two word. Email response with exclamation points. Great news. He was happy for me. He never said, why me? Why not you? This is not fair. Um, you know, people ask me a little bit, do you feel survivor's guilt? And for whatever reason, I don't think I feel survivor's guilt, or at least it's not heavy on me. Uh, and I think there are two reasons. One, I guess I'm rational enough to say this is genetics. There was a 50 50 chance for me to get this. I didn't get it. And the other thing, I think I probably would've felt a bit more survivor if my brother had reacted in a different way. And so that was another, those ultimate brotherly love things that really kind of helped a lot in this journey.

EW: As you write about, you two had this really special and best friend relationship. I'd love to hear more about this, this relationship that you had with your brother.

LI: We were both journalists. Uh, he was at the Wall Street Journal many years. He went a pulitz surprise for his coverage of the auto industry. I've had a been lucky to have a great career too, and I think kind of the fact that we worked together and knew a lot of the same people. In fact, it's, it's funny, a lot of siblings have. Friends in childhood who are the same friends. We played different sports and we did different things. Even though we're two years apart, we didn't have a lot of friends in common in childhood, but in our adulthood we, we have a lot of friends in common. So, uh, I think that was one reason that we were particularly close and I think inevitably close because we lost our mother and both our sisters. Our father also died at pretty young. He was 59. Although he didn't have cancer, he had a heart condition. You know, when you're the last surviving member. Of your family, you've got those shared memories. So you think about it, your oldest memories, your longest memories are from childhood and growing up together. And so I think it's a combination of that are lost being in the same business. We're very close. In fact, I, I, I write in the book occasionally I'll come across people who say that they are estranged from their siblings. They haven't talked to their siblings for five or 10 years, or only see them on rare occasions. And I'm like. Do you know how lucky you are to have your siblings? I mean, most people I know have either all or most of their siblings. At my age, I don't have any of my siblings, and it just, it really kind of pains me. And, you know, I've had a couple of people after reading the book reach out to me and say, you know, I read that and I've reached out to my sibling, and yeah, I thought I was right and they were wrong, or whatever, but I, I realized that in the [00:35:00] end, that doesn't matter. What matters is that we reconnect. That's been one of the unexpected. But nice side effects of, of writing the book.

EW: You, you paint such a beautiful picture. It's such a clear picture of your siblings and of your mom as well and, and your experience with watching them and being witness to their illness and then ultimately them passing and it. I felt like I, I knew many of, of your siblings just from the beautiful way that you wrote about them, and I was wondering if you could tell me a bit more about your mom and your sisters, and there's one moment in particular in your book that really has stuck with me so much, which is when you were reaching out to your sisters, one of your sisters' doctors, and he remembered her right away.

LI: My sisters died in the 1980s. It's, you know, four decades ago. And I wanted to know more. Obviously I knew a lot about it, but I wanted to talk to their friends to figure out from their perspective. And one of my sisters had been married, she didn't have any kids, and this was, again, feeling of closeness. So one of my sisters, Gina, who died at 32, uh, kept a diary from the time that she learned about. Uh, having cancer till the times that she couldn't, uh, anymore, and she died within about six months. And reading about her hopes and fears initially starting out, very hopeful that this could be overcome if only she. Would fight it strongly enough if only she had enough willpower. I mean, that was hard to read because, you know, knowing what I know now, it's like it had nothing to do with whatever willpower sounds. She was putting it on herself to cure herself and it was like, oh my gosh, it doesn't have anything to do with that. You have inherited this mutation that is a deadly mutation. Uh, and I definitely was brought to tears and, but the moment, probably the, the single moment, most unexpected and most. Brought tears was what, what you mentioned about my sister Angela, who, who was 24 when she died again, I was hoping to talk to her doctor and I didn't know exactly who her doctor was. I had an idea.

I was talking to my sister-in-law, who's my brother's, uh, wife. Uh, she thought, you know, kind of, maybe this was his last name and I knew he was in Chicago. And so I sent a, a message, um, LinkedIn too. This doctor in Chicago and said, Hey, I don't know if you would remember, but my sister died of cancer in the early 1980s in Chicago. You were an oncologist then, and I think you might have, I'd like to talk to you if you were, but of course, I'm sure you've treated a lot of patients and may not remember her, and we're kind of going back decades. Within a couple of hours. I got an email from Dr. Locker. And the email subject line was, I have never forgotten your sister. And I can tell you, I just sat there and my eyes welled up. I was like, my breath was taken away. And so Angela, again, just 24 years old before she died, but knowing that she was dying, had arranged to have flowers. Sent to us, her siblings, to her friends, and to her caregivers after she died. And the flowers arrived with a one word message forward.

And Dr. Locker had never forgotten that. He said, I've never forgotten that. He says that to this day. I can remember her face and I can see her and I can see those flowers. And, and you know, I thought, what? An amazing young woman, what amazing woman she could have grown to be, to have fought to do that at that young age. I mean, it's just kind of remarkable. And you know, I talked to her friends and some of her other friends had received it and I said it was like, so. So like Angela, to do that, I encourage everybody to try to make these journeys of discovery. Talk to your relatives about important times in your life. Talk to your aunts and uncles, grandparents while you can while you're here. I wish I had done more of that before I wrote this book, but these memories are so precious. And I think they're precious to everybody. In fact, can I read just one paragraph from from the book,

EW: please. Please. Yeah.

LI: Because I think it explains a little bit. I wanted to tell the story about my family. It's important to tell the story about these other families. I wanted to honor the doctors who dedicated doctors who, again, against all odds and being discouraged to doing it. And I was writing the last chapter of the book. And you know, occasionally when you're writing, a lot of times you're thinking about every paragraph. Then you're writing and rewriting, and occasionally something just kind of. Flows out and this flows out when I had in the last chapter describing this interaction with Dr. Locker and the flowers. When we are gone, we live on in memories. [00:40:00] Those memories can remain surprisingly vivid for a long time through the people whose lives we have touched, however briefly. I was moved that Dr. Locker still treasured memories of Angela, but I know memories invariably can fade and even be lost when the people whose lives we touched are themselves gone. So while this is a book about scientific discovery begun by two tireless doctors, it is even more a love letter to my family, written to preserve memories for my children and their children and the children after them. Because I will be gone someday as well, and I don't want these memories to be gone with me.

EW: It's so beautiful. It's such an important message and a beautiful tribute to your family and it, it's so meaningful because what we don't do often enough, I think, in science, is to humanize these discoveries and show the direct impact that it has on people's lives and on their loved ones as well. And I think that is what you have done so wonderfully with, with your book.

LI: Thanks for those words, Erin. I think these doctors also, I mean, they wanted to make this great discovery, but I think they were driven by what can they do to help people too, and that was really, really important. And in the intervening years, many of the doctors who worked with. Dr. Li and Fraumeni have continued their work. You know, what more can we learn about P 53? And one of their colleagues, Dr. David Malkin, who was very young at the time, helped discover the P 53. Gene has created this protocol, this screening protocol that is very valuable in helping to prolong lives. And there's a association, the Li-Fraumeni syndrome association that helps families both cope with living with this. But also furthering research. And so, but it is about families. It centers on the families and the doctors who tirelessly, tirelessly kept after this. I don't think we can thank them enough. And you know, the other thing is that I learned that we tend to think that scientific discovery happens like that. It's slow, it's halting, it's often goes down a wrong path before it gets on the right path. It takes time, it takes money, it takes collaboration. And without that, where would we be? These families, there still is no cure, but they are a lot better off knowing and kinda having the, the screening protocol and all.

And you know, I've heard from so many people. One of the things unexpected reaching out to me, you know, saying Your family is my family. People feeling that they, they're isolated. Nobody understands what we are going through, and I've really been moved by that. Now we can give this book to friends or friends can read it and, and they get a sense of just. How devastating this syndrome has been for us. And again, it's not a matter if you have this mutation, it's not a matter of if you're going to get cancer, but it's when and how often you're gonna get cancer. And so to the extent that I can raise awareness and help these families, that's the most important thing for.

EW: Well, I, I have really, really enjoyed chatting with you today. It has been such a meaningful conversation and I re I appreciate so much you taking the time.

LI: Thank you. And to all the families. I hope you can persevere and love each other as you go through this difficult time.

EW: A big thank you again to Lawrence Ingrassia for taking the time to chat with me. This was such a moving conversation and so especially important in light of all the cuts to cancer research funding in this country. If you enjoyed today's episode and would like to learn more, check out our website. This podcast will kill you.com. Where I'll post a link to where you can find a fatal inheritance, how a family misfortune revealed a deadly medical mystery, as well as a link to Larry's website where you can find his other work. And don't forget, you can check out our website for all sorts of other cool things, including but not limited to transcripts, quarantini and placeborita recipes show notes and references for all of our episodes. Links to merch, our bookshop.org affiliate account, our Goodreads list of firsthand account form and music by Blood mobile. Speaking of which, thank you to Blood Mobile for providing the music for this episode and all of our episodes. Thank you to Lianna Squillache and Tom Breyfogle for our audio mixing. And thanks to you listeners for listening. I hope you liked this episode and are loving being part of the T-P-W-K-Y book Club. And a special thank you as always to our fantastic patrons. We appreciate your support so very much. Well, until [00:45:00] next time, keep washing those hands.