



Eric Topol—Beyond the hype: AI's impact on medicine and science

Lauren Fish ([00:07](#)):

Welcome back to Science Changing Life. I'm your host, Lauren Fish. Artificial intelligence is surrounded by so much hype and fear these days, making it a constant challenge to separate fact from fiction. Joining us to help make that distinction is Dr. Eric Topol, a renowned physician scientist, author, and executive vice president here at Scripps Research, as well as the founder of the Scripps Research Translational Institute. In this episode today, Dr. Topol dives into the promises and perils of AI and science and medicine, as well as the tips for communicating these complex topics to the public. He starts off by explaining one of his seemingly paradoxical viewpoints that AI can actually help us be more human.

Eric Topol ([00:45](#)):

Whereas most people are thinking AI can help with tasks. The bigger picture is that it could make medicine human again, which it has eroded. The patient doctor relationship has gone south, and it's really over the course of the decades that I've been in medicine, I've watched this where very little face-to-face contact because you're trying to do data clerk work and looking at a screen instead of looking at the patient and a variety of other things that have changed medicine for the worse. And what's interesting is by virtue of the potency of AI, not just for clinicians, but also for patients, it could actually bring back that relationship, the trust, the presence, the intimacy that we used to see prior to, let's say, 1980s way back, because it's been a steady demise over this period of time. Now, there are many ways that we can get there, but I'm confident that if we make that our key goal rather than just the task per se, we have a shot at restoring the essential feature. What makes medicine is of the bond that the patient knows a doctor is really caring for them, and the doc realizes that that's their mission, not to pick away at a keyboard. And all the other unfortunate things like pre-authorization and things that are not why you go to medical school or become a physician or a nurse.

Lauren Fish ([02:22](#)):

I know you've talked a lot about how the keyboard, even just distracting from that patient doctor eye contact just makes it such a less empathetic field. So what are some of the ways that AI is currently changing the face of healthcare? I know it's an endless list, but maybe some of the top points that you find really exciting today.

Eric Topol ([02:41](#)):

Well, when I wrote the book, it is actually written in 2018, published in 2019. So now it's like ancient history to me

Lauren Fish ([02:48](#)):

In the field of AI at least.

Eric Topol ([02:50](#)):

Yeah, but what was the big difference then and now back then in 2017 was the beginning, the of large language models and what was called the transformer model, which was this multi-headed tension where it could take data in a unique way and integrate it from multiple paths. And that evolved to the famous November, 2023 chatGPT release, which has now led to many large language models or the field of generative ai, which relies on this same transformer model. Now, back in when I wrote the book, this was theoretical, we were going to have a model that could take text speech or RDO and video images and be able to work with all that data, which we can now. And so back when I wrote the book, it was envisioning that there would be this time, and in fact, it happened quicker than was suspected because we didn't have those models developed back then. But the whole idea was are we going to be able to take the data from every layer of a person of a human being and integrate that to know how to forecast their medical future? But one of the biggest surprise things was on, you mentioned empathy. So what is surprising? I wrote in the book, the last chapter is called Deep Empathy,

[\(04:24\)](#):

And I said, well, AI is never going to help that because that's a human feature, right? Well, it turns out AI has been shown study after study to promote human empathy. So for example, if a doctor does a synthetic note where they have the conversation with a patient, it's automated, and the doc asks for the AI to review the note, it will say, well, Dr. Jones, you were not showing much sensitivity to the patient. You didn't listen about this or that. Why didn't you ask her about this? And basically gives all this advice coaching, particularly doctors and nurses as well, other clinicians, how do be better, more compassionate communicators? And this is something I never had envisioned. So now what we're seeing are these generative AI capabilities that are extraordinary, and I wouldn't be surprised at all if in the future physicians are required to have their conversation. The synthetic notes reviewed X number just to get a critique. Now, the AI doesn't know what empathy is, but because of its training, it has a good way to promote this. And that I think is exciting. And it's something most things I knew where we were headed, but I didn't expect that one. And that I think is terrific because there can never be enough empathy.

Lauren Fish ([05:53](#)):

Absolutely. Well, and it's nice that it's kind of in real time where it's checking doctors. So they're getting that real time feedback where hopefully in the future they could actually integrate that approach when they're speaking with their patients. It's in the back of their minds. I guess one question I have, are doctors receptive to that kind of feedback from AI and they don't feel like it's kind of competitive or a nuisance that with their own biases where it's like, oh, is AI really telling me how to be more human? Are they receptive to that kind of feedback?

Eric Topol ([06:23](#)):

We'll see, it's still in the early days and there will be many who are resistant. Usually it breaks down by age where the digital natives understand that this is the future, and the older ones are not so willing to accept AI in general, no less for this feature. I should also mention that when there's been comparisons with patients to use a AI chatbot or the doctor, the responses that they get just from the chatbot are deemed more empathetic, no less. Wow, that's sad. So there's a lot of room to improve empathy, and I'm hoping that physicians will be receptive, but we don't know yet because it's still early. There's probably more now than 10 studies that have shown this. It's a new feature that I think hasn't yet gotten a full realization of where we're headed. When I say to a room full of physicians that we're all going to be required to do this, they look at me

Lauren Fish ([07:26](#)):

Really? Do we have to

Eric Topol ([07:27](#)):

Some side eye. So we're not there yet.

Lauren Fish ([07:31](#)):

Yeah, that makes sense. Well, especially because I know as we've mentioned, even in this episode work-life balance for physicians is still not as ideal as it can be and for others in the healthcare field. So I can imagine just kind of another task that they might have to deal with, even if hopefully it makes their lives easier, can be kind of difficult to comprehend.

Eric Topol ([07:51](#)):

Resistant.

Lauren Fish ([07:52](#)):

Yeah,

Eric Topol ([07:52](#)):

It's worth mentioning that some of these synthetic note AI scribes, if you will, but it's much bigger than just taking that conversation and making into text with audio links.

Speaker 3 ([08:03](#)):

It's

Eric Topol ([08:03](#)):

Also doing all these functions like coding and prescriptions and repeat visits and tests, and it ranges everything including pre-authorization and dealing with insurance companies. Now that's saving about three hours a day in some health systems that are adopting this widely of what's called pajama time or after hours, having to deal with all these electronic records, no less during hours. So we're already seeing now this reshaping of the potential relationship with patients because not having to be burdened as a data clerk just relying on the automated use of AI.

Lauren Fish ([08:47](#)):

Yeah, that's amazing because people you would think go into the medical field to help patients and have that human connection. So if they can relieve some of that administrative burden, you would hope that more people would be interested in going to this field. There would be less burnout and patient outcomes would be that much better.

Eric Topol ([09:03](#)):

Well, I think that we're well on our way for that one. The next thing, of course, is bringing down the error rate,

Speaker 3 ([09:10](#)):

Which

Eric Topol ([09:11](#)):

There we have some amazing advantages of AI by the fact that the machine eyes are digitalized, are so much better than human eyes. They can see things that we'll never see. And so whether it's scans or whether it's pulling together data from electronic records and other layers of data, making the correct diagnosis, which is often missed, is a feature that we're going to see much more of with the help of AI always with the human in the loop of oversight. So the AI is not the only party to it, but it's going to be a big shakeup because medical diagnosis is not where it should be, and this is going to be a big improvement

Lauren Fish ([09:56](#)):

I think in 2018 or 2019. You had said 12 million people in the US alone were misdiagnosed per year. Has that number changed at all in the last five years? Has it gotten better with some of these AI technologies be more implemented or

Eric Topol ([10:11](#)):

It hasn't gotten better? There was a more recent study that mainly confirmed that, but added that 800,000 Americans are getting seriously disabled or dying from annual medical errors. 800,000. That's enormous. That was from Johns Hopkins. So no, it hasn't gotten better because there's very little implementation of ai. It's mainly been a focus of research studies startup companies that don't do a very good job of doing clinical research so that their data, it's not transparent. They get FDA authorizations, but they're not trusted by the medical community. So we're still in the very early phase. There's some examples that are showing the way, but for the most part, we're just getting barely to first base here as to where AI is going to have an effect on error rates, where it's too related.

Lauren Fish ([11:09](#)):

It's too

Eric Topol ([11:10](#)):

Be able to say, I am confident it will, but medicine moves slowly, and so it'll take time.

Lauren Fish ([11:17](#)):

It'll take some time. So you mentioned that in the last five years, one of the more surprising things was the large language models and how much we've been able to advance there. Are there any other big surprises that you weren't necessarily thinking would happen over the course of these five years?

Eric Topol ([11:32](#)):

No, I think everything else is pretty much as expected. The

([11:36](#)):

Issues like bias, the concerns about worsening health inequities, the lack of transparency, I think all of that is anticipated. I think the tech titans that are kind of commanding this space, like Google and Microsoft and OpenAI and meta, they're just gotten stronger over the years. But you might've anticipated that one of the greatest things that happened during the book for me was learning about nvidia. So back in 2017, I'm reading, wow, everybody's going to be using these GPUs of Nvidia graphic processing unit. So I did a cold call to Jensen Huang, who was the CEO and his team at Nvidia. I just flew up there to San Jose and Ubered over there and met with,

and that was eyeopening because I could see years before that they were going to become this, maybe not the only supplier of GPUs, but they were going to

Lauren Fish ([12:41](#)):

Significant,

Eric Topol ([12:41](#)):

They were going to be big. And what's fascinating is Jensen is such a humble guy, and they planned this company 20 years ago in a Dennys.

Lauren Fish ([12:51](#)):

Oh my gosh.

Eric Topol ([12:52](#)):

Having breakfast

Lauren Fish ([12:53](#)):

On some napkins. Yeah,

Eric Topol ([12:54](#)):

Yeah, some napkins. And I learned about Nvidia and we developed a collaboration, a center of excellence for genomics and biosensors with them. And it wasn't a surprise, but the fact they got so big that it got to be the main entity, and it wasn't just hardware, it got into everything else. Whereas that company got started with video games. Look what's happened because of the large language models. So that I wouldn't put it necessarily in any shock category, but it was one of the outgrowths of the book and knowing that they were going to be a major force,

Lauren Fish ([13:38](#)):

It is encouraging that you mentioned medicine move slow, but hopefully with these other industries that have the luxury of moving a little bit faster, that it can kind of bolster medicine in this area and hopefully, as you mentioned before, yeah, translate over so we can use some of these advancements and propel the field forward.

Eric Topol ([13:56](#)):

I hope so. I mean, these companies don't do well dealing with things like the FDA and health systems and data

Lauren Fish ([14:04](#)):

Different. It's too different.

Eric Topol ([14:05](#)):

It's a different, so the first company that seriously tried to transform medicine of the tech titans was Apple, and they've had some impact, but it's still, you'd have to regard as fairly minimal, and we'll have to see whether this new direction that leverages extraordinary models in AI will make a difference.

Lauren Fish ([14:29](#)):

So you mentioned some of the things that you're not surprised that are concerns in the field, like biases, underrepresentation. Are there things that people or organizations should be doing now to ensure that that is as limited as possible?

Eric Topol ([14:44](#)):

Well, the people that build the models have to make sure they have diverse data sets, not just representing one ancestry and not just one health system, ideally very large and very diverse, and then screen for potential biases that are embedded in our culture. I mean, it's just a mirror of our society. If they're not probed systematically, the chances of them showing up as outputs is going to be there. So when these are used, there has to be considerations about data security and privacy, making the data as much as possible, explainable and transparent. These are ideal objectives. So those were all known before and they're still just as important now. They're still, yeah.

Lauren Fish ([15:37](#)):

And yeah, hopefully people are taking the time to do that, right, because the AI is only, it's what we build it to be, as you're mentioning. So

Eric Topol ([15:46](#)):

Any issues, it's a human product of inputs, and then using the outputs and everything in the middle depend on those

Lauren Fish ([15:52](#)):

Inputs.

Eric Topol ([15:53](#)):

And that's one of the main issues we have today is that the data sets that are used are not ideal. They're often not large and diverse, and so not enough attention is ever put on the data itself and how rich and multimodal that it is because we can deal with that. Now. We couldn't beforehand, only in recent times, but our problem now is we have the models and not the data commonly.

Lauren Fish ([16:22](#)):

Interesting. Are there any organizations where you feel like they are doing a good job in this area?

Eric Topol ([16:28](#)):

I think the same problem exists

Lauren Fish ([16:30](#)):

Everywhere. Yeah.

Eric Topol ([16:32](#)):

Yeah. I mean, it's easier in life science because you might have hundreds of thousands of genomes and maybe other omics, and that's an advantage in the life science side, also in the

drug discovery of AI. But in the medical side, our data sets are relatively limited. And once you have something that's great where you have multimodal data, if we're all dressed up to handle that, but finding those data sets are few and far between, oftentimes because it's just inadequate numbers, and so you're trying to extrapolate and extract messages that are not necessarily

Lauren Fish ([17:16](#)):

Interesting.

Eric Topol ([17:16](#)):

True. So it's a work in progress, but we will get there.

Lauren Fish ([17:21](#)):

Yeah. I imagine too, obviously one of the unique components of the medical field is that a lot of this information is private or inaccessible, so needing to make sure that yeah, we're operating within the medical field and inpatient privacy and all of that, which other fields do not have to deal with,

Eric Topol ([17:40](#)):

Right? No, exactly. And I think this makes it more challenging, but obviously it's hard to imagine something more important in your health. So we'll get there. I'm confident it always takes longer than it should. That's one of the lessons I've learned over extended period of time.

Lauren Fish ([17:58](#)):

But it's amazing that people like you are pushing this forward and are such a spokesperson for the field and kind of bringing all of these people from different areas that are all working in ai, but hopefully can help medicine as well. Dr. Topol is also an expert science communicator with hundreds of thousands of people following his social media accounts and his podcast Ground Truths. He's authored three bestseller books on the future of medicine with another one shortly on the way. I had to ask him what strategies has he found in making these very complex topics like AI engaging and also trustworthy to the public?

Eric Topol ([18:34](#)):

I like to translate stuff to put it in more common or lay terms. I found over the years that I give the same talk with the same slides to a lay audience as I do to peers just because there's no reason to try to impress anybody with fancy jargon

Speaker 3 ([18:52](#)):

And

Eric Topol ([18:53](#)):

Boiling it down to how anyone could understand it is the goal and doing it in a way that is accurate. And also most of the public has this intrinsic or embedded interest in science and medicine, and especially if it pertains to their health.

Lauren Fish ([19:11](#)):

I was going to say, yeah,

Eric Topol ([19:12](#)):

It's very personal. If we talk about your or our body, whatever, just that alone gets people that's about, that's something of interest there. But knowing the topics too that are the ones that will garner most interest, these are things that are really important because we need to crowd out all the bad stuff that's out there. And that's a challenge too, is all the toxicity

Lauren Fish ([19:36](#)):

Information,

Eric Topol ([19:36](#)):

The and credible amount of strident organized, funded going on right now. So it wasn't as difficult to do this pre covid, but that's brought out not just loony, but brought out these really ridiculous type of views that are, whether it's conspiracy theories or baseless people that do their own research. I'm into democratizing all information, but the fact that there's, I can put something out which is well-grounded and unquestionably true facts, and people will say, this is all bogus. So being a communicator these days is challenging, and that's why I've much enjoyed the ground true substack, because those people are not the loonie and the difficult ones. They're people that are truly come to that to learn to get the latest info or whatever. But if you work through X or Twitter and some of these other channels, you don't know what's going to happen. You

Lauren Fish ([20:45](#)):

Have all of the general public, and it's just so unfortunate that science has become so politicized. I mean, I think traditionally in a pre-covid world, science was this haven that people trusted the experts and people were coming with curiosity, and they weren't trying to one up another person or disprove someone

Eric Topol ([21:04](#)):

Because

Lauren Fish ([21:04](#)):

They were like, oh, I want to learn from the real clinicians, the real scientists, the real experts. So one thing you mentioned is you use the same slides for experts in the field as you do for lay audiences. I think one thing I struggle with is I never want to sound condescending to someone who might actually have this information. So how do you grapple with that where you don't want to be condescending to the people who might already be super knowledgeable in this area? How do you find that middle ground?

Eric Topol ([21:31](#)):

I don't worry about that at all because I think I'm not often going over really basic stuff. I'm trying to lay out a vision for where we're headed. So I don't see that often come up. I certainly don't ever want to be condescending. I think it's much more the choice of language and how it's positioned, but it isn't really, I think, an issue of talking down anyone. I think that we don't do as enough in all of biomedicine, which is communicating without the jargon and the inside baseball type stuff. And so I think it's healthy. So there are people that object to this. I wrote invited paper

for science on a topic, and when the reviews came back, one of them wrote, this is written at the sixth grade level,

Lauren Fish ([22:23](#)):

And you're like, it should be written at the sixth grade level. That's the whole point.

Eric Topol ([22:27](#)):

So I sent that review to my friend Alan Alda, and he says, this is the nicest compliment we've ever had. I

Lauren Fish ([22:33](#)):

Was going to say, that's amazing.

Eric Topol ([22:34](#)):

So it doesn't have to be the sixth grade level, but obviously that's the point, is that so people can understand it. What are the problems we have is if you look at any science journal, medical journal, and you look at the articles, they're written in arcane ways that only that person in that niche of the field could try to fully understand it,

Lauren Fish ([22:55](#)):

Of course, out

Eric Topol ([22:56](#)):

And isn't good. I mean, if the only people that are going to read the paper are this very rarefied group, that's not what it's intended for. So we have to do better in general, this is all a publishing, but also gearing things more so that anybody could, people today they talk about, oh, it's not open access, but if you gave them the article, open access, they wouldn't be able to understand

Lauren Fish ([23:23](#)):

It anyway, don't understand it.

Eric Topol ([23:23](#)):

So we need to change the basic communication, the words and the figures and the way we get the points across. Now, sometimes you have to admit it's hard to get it into simple terms, and you just say, this is the best I can do.

Lauren Fish ([23:39](#)):

This is incredibly complicated. This is how I can simplify it as much as I can.

Eric Topol ([23:44](#)):

And just say, you know what? It's complicated. Folks

Lauren Fish ([23:47](#)):

Like AI, just explaining how the actual operations of it,

Eric Topol ([23:52](#)):

And you just either say, don't read this part. If it gets to you, it won't change the overall, basically say there's certain things that is very hard to get into very elemental language.

Lauren Fish ([24:05](#)):

Well, and as we're trying to garner more public trust too, the more that we can communicate this information a way that they can actually understand it, there's much less room for things to be translated improperly or incorrectly. Hopefully, that would help the public understand that the actual science behind things

Eric Topol ([24:23](#)):

Right

Lauren Fish ([24:24](#)):

There wouldn't be anything lost in translation. Then

Eric Topol ([24:26](#)):

That is the hope,

Lauren Fish ([24:28](#)):

That's the goal. So I also want to touch on your path to eventually what led you to Scripps Health and Scripps Research, but what prompted you to want to go into cardiology in the first place?

Eric Topol ([24:40](#)):

Well, that wasn't my initial plan. It was in college. I was at University of Virginia, and I actually was a genetics major. That was my biggest interest. And I planned to do that for a career somehow or other. And what happened was I was working part-time, night shift as a respiratory technician. It was a job that I could get that it paid well, and it was interesting, and I was changing the equipment. And during that, I started to get familiar with in the intensive care unit when I was changing the ventilator equipment that some of these people I thought were going to die. It was like a Lazarus. They were just resurrected and able to get back to health. And I said, this medicine thing is really interesting. So that's how I got into medicine. I switched everything to then get all the free course needs to apply.

([25:40](#)):

And then what happened after that is I then decided I would work in diabetes because my father was an insulin independent diabetic and had every complication known to mankind. So I said I went to medical school and residency to become an endocrinologist, and then I had a mentor kind of chatterjee who told me I have to be a cardiologist. I was meant to be that. So that's how I did that, and forever grateful to him for his influence. And then later as a cardiologist, I was able to get back to genetics. And then after being at Cleveland Clinic, having started a medical school overseeing all their academics as well as the heart center work, I then said, well, what am I going to do next? And this was the place I came, Scripps Research and Scripps Health, because I thought we could get a whole new institute started based on not just human genomics, but as it turned out digital. And so we became the first academic digital medicine entity in the country, and we're trying to bring together these different layers of data about people to understand our individuality. So that's basically the short story of the work that led to

where we are now. And now it's been almost, well, 17 years of Scripps Research Translational. Yeah,

Lauren Fish ([27:04](#)):

It's amazing. Well, and also with the two all of us grants that you've received is amazing too, to really push forward this individualized medicine approach and really hammer in on the specific drivers of individual disease and how we can actually intervene at a very personal level.

Eric Topol ([27:19](#)):

Right, exactly.

Lauren Fish ([27:21](#)):

So for your mentor that said you had to go into cardiology, what was it about cardiology specifically that he's like, you have to go into this?

Eric Topol ([27:29](#)):

Well, he could see how on rounds and all our interactions, how I was really into it and gleaming and excited, and he nurtured that passion that I had. And again, it was a replay of what I had seen in college, which was these patients got better. We had all these things we could do for them. We could open up their arteries, we could fix their heart rhythm problems. There was just so much we could do. We could dissolve clots.

Speaker 3 ([27:58](#)):

And

Eric Topol ([27:59](#)):

It was such a unique time. This is now the early eighties and the feel of cardiology was going through a revolution, and I just happened to be at the right time and the right place and the right mentor. So yeah, a lot of great things were happening. I was excited. I never wanted to leave the hospital. It was just I didn't ever want to miss anything, reading everything I could.

Lauren Fish ([28:22](#)):

It's just so exhilarating, and I can imagine where it's like you can change people's lives, and especially in a field where it felt very, you could intervene, you could actually change the course of how someone was doing. So I can imagine that would be very

Eric Topol ([28:34](#)):

Addictive. Yes, definitely.

Lauren Fish ([28:37](#)):

So today, I guess looking out across cardiology and doing so much of your translational work in digital work here, what would you say is the most rewarding aspect of your work?

Eric Topol ([28:47](#)):

Well, it's the impact on patients when we have come up with ideas that it really helped to improve, promote human health. So we did one of the very first, even though the first large

digital clinical trial cyclists, some people call it decentralized, and now everybody's doing these, but it changed medical research. There was this contraption known as the Holter monitor, and it was invented 50 years ago with all these leads to get a person's heart rhythm. And we were able to validate a little patch that you could just like a bandaid you could put on your chest and it could take your heart rhythm for up to a couple of weeks, every single beat. And we've done a lot of these things to advance the field chip away at ways to, whether it's genomics or digital or now with AI to promote human health. And that's gratifying because I still in clinic, get to see patients one-to-one and try to help them, and that is great. But when you can do that at a scale at a much higher level of impact, that's what makes everything exciting

Lauren Fish ([29:58](#)):

And hopefully change the course of the field, especially as you see it veering more towards technologically enabled. How can we ensure, yeah, there's still the human component alongside. So it's awesome that you're more on the research side and then also the clinical side where you're really seeing the direct impact too.

Eric Topol ([30:15](#)):

Yeah.

Lauren Fish ([30:16](#)):

So what would you say is the most challenging? I know we talked about some of the difficulties in being patient and having to wait for these things to be implemented.

Eric Topol ([30:26](#)):

Yeah, I mean that challenging is the part of the incubation phase. Seems like forever. I'm going to give you an example. Early on we saw the telemedicine was going to have great promise because you didn't have to go to a physical building and you could get a lot of things. But for years, we said this was important and it took a pandemic. And so you hate to see that you have to have some mega crisis for advances to be made. So that's certainly one of the real challenges. And then dealing with the anti-science and the lack of collegiality and that whole spectrum.

Lauren Fish ([31:06](#)):

Well, and it's crazy that that's been such a dramatic shift within the last five years too, that, I mean, you spent so much of your career not having to handle or deal with that, and then now it's really just been such a rapid evolution in that direction.

Eric Topol ([31:18](#)):

Exactly. And there's just not enough being done to try to titrate it or mitigate it, and it just seems to be getting worse all the time. And so that is worrisome. I hope that something is going to change the arc of that problem. It's serious.

Lauren Fish ([31:35](#)):

Yeah, I feel like as science communicators, that's our number one job too. So when you're not in the lab or in the clinic, what are you working on? What are you doing? What are you reading?

Eric Topol ([31:48](#)):

I do a lot of reading, whether it's books or journals every day. I mean, that's a hobby in a way. I mean, I enjoy it, information junkie, if you will. But otherwise, I love to hike. I hang out a lot with our grandkids, help them with their homework, do stuff with 'em, play chess with my 10-year-old who's like a prodigy.

Lauren Fish ([32:09](#)):

Oh my gosh.

Eric Topol ([32:10](#)):

And stuff like that. But yeah, I love what I do, and it's never a day that I don't feel lucky to have a place where you have ideas and you can help inspire others to do things that are big, not just little things, and really enjoy that.

Lauren Fish ([32:30](#)):

Well, yeah, your work is such a place where you can be creative and you can make these huge, massive changes. So many people don't necessarily have that in their day to day, so it's so amazing that you can have that hopefully big influence.

Eric Topol ([32:44](#)):

Yeah, it's having been other jobs. I've had three jobs in my career, University of Michigan on the faculty running the cath lab there, and then Cleveland Clinic and here. And this is unique because this is a haven for ideas and crosstalk with cross disciplines for trying to go from an idea to a project to an impact. And so this is the most fun I've ever had because I don't have a lot of this administrative

Lauren Fish ([33:15](#)):

Burden. Yeah, that's true.

Eric Topol ([33:17](#)):

I have the mix of seeing patients, but also having a pulse on their needs and their unmet issues, but also being able to come up with solutions

Lauren Fish ([33:26](#)):

That's

Eric Topol ([33:27](#)):

Really the best of both worlds.

Lauren Fish ([33:29](#)):

I wish that was more possible in the healthcare versus science spaces. I feel like I've talked to both people on either side of the spectrum that it just seems so difficult to be able to merge the two like you have where people feel forced to either go the medical route or the more scientific bench side research route. So I feel like to be able to combine them, that's what we need more of in the future. And it's just unfortunate that

Eric Topol ([33:53](#)):

It really is the physician scientists, that species is not extinct, but it's hanging by a thread. Then on the other side, the scientists who are truly engaged in translation and medicine, we don't do enough to nurture that. So you're right. I mean, I think we've learned so many times, again, it's like the pandemic that our best ways to innovate is when we have transdisciplinary coalesced efforts. And so I wish we had even more of that, but we're lucky here. This is a unique campus and a unique place in the country where we can do this. So it's unrivaled in many ways

Lauren Fish ([34:39](#)):

And have so many of these resources all in one place. I think every person I've talked to at Scripps on the faculty side has just echoed that it's so unique to be able to actually collaborate across departments that even other institutions aren't necessarily like that. But here, Scripps actually stands by that.

Eric Topol ([34:55](#)):

Yeah, there's no question about that. And we don't have the problem of typical universities with many other competing interests, and so that gives us a lot of agility. So you say, I think we should do this, and then next thing,

Speaker 3 ([35:09](#)):

Let's do it.

Eric Topol ([35:09](#)):

You're doing

Speaker 3 ([35:10](#)):

It

Eric Topol ([35:10](#)):

And getting stuff done is critical. If you have an idea, it's really good. You got to actualize it as soon as you can. That's where we have a real edge, I think.

Lauren Fish ([35:20](#)):

Yeah, and move fast. Final roundup question that we ask all of our guests. If you could give one piece of advice or wisdom to any up and coming scientist or clinician, what would it be?

Eric Topol ([35:32](#)):

Well, it's hard to come up with just one, but I think the idea that you'd like to not just follow something that excites you in your career, a path, but be open to change, be open to, I moved across different areas, whether it's genetics, then the idea of digital or whether it's regular cardiology to much more research based and working with induced pl potent stem cells that I never thought I'd be doing that and various things. So the idea is you start something that really gets you intrigued and revved up, and then you don't necessarily have to lock into that. In fact, you may get more excited that you don't ever have to give up that first area. But diversify is okay. Some people say you just should just stay on it and become the world authority on this

Lauren Fish ([36:27](#)):

Particular

Eric Topol ([36:27](#)):

Time. I get restless and I get bored. If I did that, I could never do that. So I think one major point is that there's a little too much of this laser focus

([36:41](#)):

That it's okay to have more than one interest, and you're never really giving up. The one that you had is that you're adding on, and you need to have lots of, at least for me, the stimulation that it provides than its challenges. And it makes you, I think, even more into your work and hopefully the success of what you're going to get out of it. The other one we mentioned though, just as a second high order, is communication. I always try to talk to all the folks I work with, particularly the young folks, about how critical it is that you are communicating at a level that anyone can understand. If I can explain it to my 10-year-old grandson, no less the younger grandkids, I feel like I'm doing that, but we don't practice that enough and we don't emphasize it enough. So hopefully that's going to be something. It took me into late forties and fifties to realize how important that

([37:47](#)):

I hope people start to realize that in their twenties because if you want to get grant support, public support, you have to be able to really make the clarity of your efforts and the importance that it's obvious that it's something that anybody, the little boy on the street would know, Hey, what that person's working on is really great, and we're not there yet by any means. Young people still don't get that. All you have to do is open up a journal and look at the titles of the article, and you already

Lauren Fish ([38:20](#)):

Lost see enough sensitive,

Eric Topol ([38:20](#)):

You haven't even gone into the papers.

Lauren Fish ([38:22](#)):

Right.

Eric Topol ([38:23](#)):

So we have to simplify and make it readily understandable. So that one I think is a wisdom that it took me too long. I didn't have a mentor to tell me how important it was.

([38:34](#)):

Just found out by accident that, and that's why I've written another book and we'll continue to write, whether it's op-eds or essays or substack because I enjoy it. But I also know I get the positive responses from people that like reading it and learning from it

Lauren Fish ([38:51](#)):

How we communicate. The methods of communication have changed so drastically over the last 20 years. And so I think it's of paramount importance now even. It's always been important, but I think even more so now as we ingest so much more content and as we're communicating

in ways we never have before to just, we need good science communication. That's just what it comes down to.

Eric Topol ([39:12](#)):

We can do it.

Lauren Fish ([39:13](#)):

You

Eric Topol ([39:13](#)):

Have to go after it. Absolutely.

Lauren Fish ([39:15](#)):

And that wraps up today's fascinating conversation with Dr. Topol from the transformative role of AI in medicine to the evolving landscape of science communication. We've covered so much ground here today. A huge thank you to Dr. Topol for sharing his incredible journey and expertise with us. Please subscribe to stay up to date with future episodes where we continue to explore the frontiers of science with the brightest minds here at Scripps. Thanks for listening in and catch you next time on Science Changing Life, where listeners come curious and leave informed.