



COMMENT

Transitions: navigating career choices throughout the lifespan

The American Pediatric Society and Society for Pediatric Research Virtual Chat Series

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INTRODUCTION

The American Pediatric Society (APS) and the Society for Pediatric Research are delighted to welcome Dr. Philip Pizzo, David and Susan Heckerman Professor of Pediatrics and of Microbiology and Immunology and past Dean of the Stanford University School of Medicine, and Dr. Norman Rosenblum, Professor of Pediatrics from the University of Toronto and Toronto Sick Children's Hospital, as our inaugural speakers to launch this new series on topics in academic pediatric medicine. Dr. Pizzo has extensive experience as an academic leader from his past roles as Chief of Pediatrics at the National Cancer Institute, Chair of Pediatrics at Harvard Medical School, Dean of Stanford University School of Medicine, past recipient of the 2012 APS John Howland Award, and currently, as founder and Director of the Stanford Distinguished Careers Institute. A highly successful laboratory scientist, Dr. Rosenblum has been especially active as a leader of research and career development as Associate Dean of Physician Scientist Training Programs at the University of Toronto, Founder and Director of the Canadian Child Health Clinician Scientist Program, advisor for training fellowship programs, and launching the career support mission as part of the APS Strategic Plan.

Both speakers are highly accomplished leaders in their pediatric subspecialties, but most importantly, they have unique insights into career development and how to enrich one's medical career beyond the traditional scope of such issues, as well as how to handle many personal challenges at early, mid, and late stages of one's career. We are excited to have Dr. Pizzo and Dr. Rosenblum provide their personal stories, insights, and wisdom to lead this inaugural session entitled, "Transitions: navigating career choices across the lifespan."

Dr. Phil Pizzo (PP): First of all, thank you so very much Stephanie and Steve, for inviting me to participate in today's discussion about navigating careers. We each have a story to tell. For some of us it's an early stage of our career development and for others at midcareer, and for me, at a later stage of career development. For the most part, I think it's easier to look back and witness how the threads of our lives have intersected in formulating our career, personally and professionally, but it's also important to look forward and anticipate what we wish to evolve towards and why we wish to do so.

I think it's very important to start by acknowledging that I don't want to imply to you in any way that my own personal or professional journey is special or unique. To the contrary it's really just mine, filled with uncertainties and hopefully some lessons. But we all learn from each other and I'll try to share some reflections with you, and in doing so, I recognize that are each guided by our internal compass, as well as the external forces that impact our aspirations as we look forward.

So, a little background information about me. First I was born to a first-generation immigrant family in New York, the first to graduate from high school, and I've always valued the impact of education and the opportunities that it creates. It makes me sad to witness how immigrants in this country are being treated and viewed today, something that I hope will change in the years ahead with greater compassion and the recognition of what immigrants have brought to our nation in so many important ways. Like many of you, I was only able to attend college and medical school because of scholarships, and my horizons were pretty narrow at the beginning. My heroes and role models mostly came from books and most of them focused on individuals who were discoverers or inventors and that meant that research became a very important from my life, really from the very beginning. From my early teenage years, I was always experimenting at home, often in my aunt's garage, and trying to do experiments based upon readings from *Scientific American* and books.

I also think it's important to say that in my career I've really never been guided by any sense of need for position or title, it's always really been driven, just like my research, from a sense of mission as compared to the job. Some of that has been influenced by the fact that I'm a product, as you can see, of coming to age in 1960s, where the ability or opportunity to change the world was something that resonated with me and that I believed was possible. In addition, I've always welcomed change and felt that the best things that can happen are sometimes completely unexpected, and that they can change the direction of one's life.

I've also learned along the way that mistakes or failures can provide a positive wellspring for change, even though they can be painful, and I'll try to illustrate a couple of those for you. But the willingness to take risks, to gamble, and see things in different ways is often very, very important.

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Let me give you a couple of examples. I got into trouble early in my life, in fact in elementary school and that led me to make a very positive change. I realized early on that if I was going to have a life different from the people around me in the working-class environment I was part of, then I really needed to dedicate myself to learning, and thus education became the way of accomplishing that for me. I wound up starting out at a Jesuit college in New York, where I concentrated on philosophy more than biology, in part because biology faculty were not very good, but philosophy was really interesting. The pursuit of philosophy also exposed me to broader thinking which leads me to basically give up religion at an early stage in my life, but with the caveat that I've always tried to live an ethical life. I have come back to this later in my life by embracing and converting to Judaism.

I found a pathway forward through integrating critical thinking and research as part of my chosen way of life. I wound up going to medical school at the University of Rochester thanks to a scholarship, and even though I didn't know very much about Rochester before I went there, attending it was a life transforming event.

I came to Rochester at a time when the bio-psycho-social model was being developed by Dr. George Engel and I was also very much influenced by the Chair of Pediatrics, Dr. Bob Haggerty, who some of you will recognize as one of the major leaders in primary care. I was also married after my first year of medical school. My wife was an educator and child advocate and taught me a lot about the importance of advocacy on behalf of children. We actually celebrated our 53rd anniversary last week and we have stayed connected over issues about advocacy and social justice. And I would say Peggy was also the first person in my life, who told me that I was actually intelligent, which was something I deeply doubted, sometimes even to this day.

While I was in medical school, I was actively involved in doing research in the field of what's now thought of as psychoneuroimmunology, but I had some other encounters as well. For example, I nearly got expelled from medical school in the very last months, because with a colleague of mine who was equally committed to social justice we took up the cause of hospital employees, who were being, we felt, mistreated by the President of the hospital who was berating them about trying to become part of the workers union. We took that cause on so, claiming that the President was a member of union—which turned out not to be true. That led to the security guards escorting us out of the hospital, summoned the next morning to the President's office and told that our actions could be grounds for dismissal. This became the source of grievance against us that nearly led university to expel us.

Thankfully Dr. Haggerty and a few others rescued us, but this taught me a lesson which I've never forgotten. This is the importance of always checking the facts, of maintaining integrity when one is taking on important challenges, something that has proven to be very valuable in of the very difficult issues that I have had to deal with in the course of my career.

I went from Rochester to the Children's Hospital in Boston where a couple of things happened in important ways. One is I went there planning to have a career in primary care, serving the underserved and going back to work with Dr. Haggerty. But I was influenced by other advisors and mentors and actually wound up with two specialty areas: one in hematology oncology, and the second in infectious disease.

My research continued even while I was a resident. At that time we were in the hospital for 135 hours a week, and I did two studies during my residency: one focusing on the sources of education and learning during internship, and the second a review of unexplained fevers in children, both of which led to publications. I didn't realize it then, but both of these study areas would be connected to topics that I would continue to focus on throughout my career.

I also witnessed at that time individuals at this extraordinary institution who were later in their careers and who didn't see the roadsides of when they should step out or step aside. Witnessing individuals who were luminaries but who were being disrespected and discarded by members of their community had a huge impact on me early in my career. Thus, even before I knew what my primary career was going to be, I decided on an alternate career plan which meant that at some point I was going to go back to school and start at a new and completely different area so that I could avoid making a similar mistake later in my own career. I decided that was going to be the study of history. Over time I wound up combining learning history with long distance running thanks to audible books, and that has maintained me through my career to the point where it relates to the very project I am working on now and I'll comment on that later very briefly.

But I'll tell you also that plans can change in unanticipated ways. For example, I was planning to start a fellowship in Boston in hematology, oncology and infectious disease, but one month before that was to start, I had a call from chief of hematology telling me that I needed to go to the Bethesda, to the NIH. Why? Because there was an 11-year-old youngster who was in a Laminar Airflow Room (or "protected environment"), who had been diagnosed with aplastic anemia, and who became one of the two boys in the bubble in the US (the other being at the Texas Children's Hospital). The NIH needed someone trained in pediatrics and I became that person. And that really changed my whole career path.

I wound up going to the Bethesda initially thinking it was going to be 2 years, but it turned out to be 23 years and it really changed the direction of my work and research. First was of course the opportunity to be on the ground floor of pediatric oncology and to witness the extraordinary changes that were taking place through research in bringing an incurable illness to a treatable one in children. The second was to be in the early days of understanding immunocompromised hosts and the infections that occurred in them. To that regard, Teddy—the "boy in the bubble" I mentioned earlier—taught me much about that, and that changed my research interests to focus on immunology and host defense mechanisms. Teddy also taught me lessons in human resilience and the ability to overcome limitations and constraints, and those insights have become central to my own life and career. This also underscores the importance of learning from our patients and their families, which has also proven deeply impactful and meaningful throughout my career. And those experiences, without any anticipation of what lied ahead, led to a major change of career direction just a decade later when a new disease HIV/AIDS came on the scene. At that time, I had been appointed to serve as the chief of the Pediatric Branch at the NCI and I decided that we needed to develop a research protocol for this new disease and study it as part of our overall activities. Initially this was not a well-received idea by my colleagues, but we proceeded and even though there was some disagreement about it, it totally changed the course of that disease in our direction—thanks to the efforts of my colleagues who also redirected some of their research to this important initiative. Because of this I also had the opportunity to learn from the parent of a child with AIDS, who had been infected herself because of a contaminated blood transfusion she had received because of a placenta previa following the birth of her daughter Ariel. Elizabeth Glaser responded to her infection by committing her life to help others who were suffering from HIV/AIDS by developing, with two friends, the Pediatric AIDS Foundation. I had the privilege of joining with Elizabeth, the foundation and countless scientists, physicians and leaders to help drive the research and treatment agenda for children and their families. Elizabeth became one of the most important and successful advocates for children I have ever known and taught us all to never give up and to never accept

now for an answer. She called us all to a higher order and that made a major difference in the fight against pediatric AIDS.

So, in addition to pediatric oncology I added pediatric AIDS to my research portfolio, and this galvanized a lot of the things that have followed since. At that time my focus was on research and I was not interested in pursuing any activities that would serve as a distraction. Indeed, through the early 1990s, I had decided that I did not want an administrative position beyond my lab, the Pediatric Branch and the colleagues who were part of it, even though I was getting calls from different academic institutes asking whether I wanted to be a department chair. My answer was always no. And then a light switch went off in the mid-1990s that surprised me. Specifically, I had become increasingly concerned by the growing lack of pediatric physician scientists, and I felt that I needed to do something about that.

That's when I actually raised my hand and decided I think it's time that I go move to a children's hospital or academic medical center. There were a number of opportunities that came along and the one that I wound up pursuing was the one at the Boston Children's Hospital. For me it was driven again by a sense of mission, not a job per se, but how do I use a platform to really change the direction of pediatrics education. And the same thing happened completely without expectation when I was asked to interview at Stanford for the role of dean in 2000. Initially I had no interest in that role. In fact, I didn't really know what the dean of a Medical School was. But as I looked at Stanford and observed a medical center on the same campus as the university, the opportunity for interdisciplinary research and education and a platform that would allow even greater focus on the training of physician scientists, became kind of a calling for me that I would have never otherwise anticipated. Thus, I moved to Stanford and really loved the role of dean of the School of Medicine.

I served as dean for 12 years, which is three normal life spans for deans, but I decided that I was going to step out of that role by 12 years. I didn't want to continue beyond that time, and at year 10, I announced that to the community. That was also when I had an epiphany that led to the work that I am now doing. I realized that my own plan of converting from a career as a physician scientist and academic leader, to go back to grad school and pursue the degree in history that I had been preparing for during my long distance runs for the past decades was actually generalizable. And that led me to think about ways of impacting on the changing demographic of individuals worldwide who are living longer.

That led to the formation of the Stanford Distinguished Careers Institute which is really founded on three pillars: the importance of renewing purpose, of building community and of recalibrating wellness. These are critical components of trying to compress morbidity and change the arc of the direction of people's lives. The DCI has been enormously successful, and I've served as the director of this institute now for 8 years. When I began this new journey in 2013, I stated from the outset that I would take on this new role for 10 years and then step down. That will happen at the end of 2022 and I am now at the exploratory phase of ascertaining what I will do next. No matter what it will be it will combine purpose with community and wellness—which I see as a prescription for a positive life.

I am thinking now in ways that are a little different than I did before. I want it to be a completely different area. I want to be cognizant of the fact that as I proceed forward over the next decade or more, there may be more physical constraints than I've not had in the past. Even though I am still an active runner I'm still doing marathons, at some point that's going to change, and I want the opportunity for my life to be meaningful, purposeful, community driven and based on wellness for as long as I can. And think those are the variables that I would underscore for each of us in this meeting today.

Wherever we are on this arc of our life course, it's always important to step back and ask am I being purposeful, do I really

value what I'm doing, do I have a community around me that nurtures and values me, and am I paying attention to my wellness form a physical, emotional and spiritual perspective. And I think that is the prescription for positive longevity and for a career that can cross over for many years. Again, thank you so much for having me with you today and I turn it back to you Stephanie and welcome to hearing from Norm.

Stephanie Davis (SD): Thank you, Dr. Pizzo, that was fantastic. We are now going to hear from Dr. Rosenblum, which will be followed by group discussion.

Dr. Norman Rosenblum (NR): Thank you very much, Stephanie and Steve, for the invitation to speak with everyone today. I must say it is an honor to be on a panel with our colleague and friend, Phil Pizzo.

I would like to do three things—First, I would like to sketch out my personal history, very briefly. Because we are talking about things that are about people—not just formulas or algorithms—I think it's important that ideas be considered in the context of who is speaking and that person's experiences. The second thing I'll do is try to extract some personal themes from my own experience that will include 4 themes. And third, I'll try to express 10 lessons, or "Norms top 10" (because David Letterman is not on TV anymore), lessons that might be helpful to other people.

My own story is, of course, *only my story*, but there are some things that could be helpful. I was born in Glace Bay, Nova Scotia, in a mining town where resources were less than you might find in an urban center, but education was highly valued and certainly students were supported to excel, particularly self-starting students. Frankly, I was a bit of geek. As a student, I wanted to be an MD from the time of my earliest memories and I never seriously considered any other career path.

I was always interested in how things worked. Of course, that took on some rather funny things, like dissecting frogs in summer camp and things of that nature, but that's the kind of person that I was: a questioning and curious sort and a bit of a sceptic. With a view of medicine as a vehicle, by the time I got to undergraduate school I was quite taken by molecular biology and developmental biology. We need to remember that developmental biology was a different science in the 1970s. That was before we understood genomics or recombinant DNA or could recreate animals with genetic mutations the way we can now. But I was very entertained by this but not so entertained that I resisted in any way moving forward to get into medical school, where I was quite bored actually because the style of learning was very different.

I became really ignited in medical school when I took my first course in kidney physiology and disease. And it was a nephrologist who taught this subject that noted my interest, took my under his wing, encouraged me, and became my first major professional mentor. [Of course, I don't have to tell you all why the kidney is so interesting. Clearly, it's the most interesting organ in the human body. You know we won't go on...I think there is another webinar in which I'll be speaking for a couple of hours about that.]

I thought I was going to go into internal medicine, and I actually matched to an internal medicine residency. I then realized that it was not the right choice, that I was actually really entertained by kids, and that my heart told me I belonged in pediatrics even though my brain initially told me I belonged in medicine. Lucky for me, the Chiefs of Medicine and Pediatrics allowed me to construct an internship with my preference of medicine and pediatric rotations. Seeking a residency in Pediatrics in which I could be inspired and learn to be an excellent clinician but also how to address gaps in our knowledge, I was counseled that I should apply to a small subset of residency programs in the United States. After all was said and done, I ended up training at the Boston Children's Hospital. At Boston Children's, I was so inspired by the sophistication and engagement of the training program environment, the range of children I looked after and their families, and

the outstanding quality of my peers. The faculty, of course, who were well known for their own observations and contributions, were role models in many ways. After extensive training, I embarked on a very heavy program of research training after having had very small experiences in research raining up to that point.

Referencing back to my enthusiasm for molecular and developmental biology, I note that my research training occurred at the time when genomics and developmental genetics became revolutionized. In fact, after training in extracellular matrix biology in a very well-known research lab at Harvard Medical School, I went to a dinner just before I was recruited to The Hospital for Sick Children. The after-dinner speaker was Oliver Smithies, who would subsequently be awarded a Nobel Prize for having been one of the people who described the mechanics of creating recombinant DNA for creating knock out mice. In my mind's eye, I can see myself sitting at that dinner, listening, and saying to myself that the world would never be the same given what Dr. Smithies was accomplishing. I decided to leave the field of research I was in, which I found to be rather descriptive, to develop a lab in developmental genetics of kidney disease. When I told the person who recruited me to Toronto that I was going to leave the field that I was trained in and to create a lab that addressed this, he was, I would say shocked and incredulous, because he thought this is an ingredient for my failure. My view was that I'm either going to do something I love or I'm going to get out of research. I realized what it took to succeed in research because of what I had learned at Harvard and Boston Children's Hospital—passion, a love of the subject, know-how, and determination.

So, during the years following my move to Toronto Sick Kids, I established my career in developmental nephrology, and thereafter, undertook several roles which were all part time. These included Associate Chair of Research in the Department of Pediatrics for 7 years, leader of clinician scientist training programs institutionally as well as across Canada and in connection with the pediatric scientist development program in the United States, and then became an Associate Dean at the University of Toronto, which has very large physician scientist training programs. Now, I hold the position of scientific director at the Canadian Institutes of Health Research Institute of Nutrition, Metabolism and Diabetes. For me, this has been a way to address the bigger picture of science, to address gaps that I saw in the system and to make contributions that went beyond my own individual research program. And I think the key issues is that all of these were part-time, they allowed me to continue my research which I have been completely unwilling to let go of.

So that brings me to what I think are *four themes* from my own personal story. One is dedication to my perhaps irrational passion for nephrology, but it is my passion, and my complete unwillingness to let go of that over a very sustained period of time. I've been never willing to let go of the direction of my lab in terms of my own personal connection.

The second theme is a wish to work outside the confines of that research program in a limited way but in a way that I could affect the environment around me with colleagues who have similar ways of thinking and similar interests.

The third theme is a love for my work—I've enjoyed it immensely. I love what I'm doing now, and I've been unwilling to give it away. And every time I saw an opportunity I said, "am I really willing to let go of the thing I love the most; will I see it threatened?" And, of course, I had to make my own evaluation of whether it would be threatened and how focused I would be on that.

And the 4th theme, which I haven't talked about yet, is my private life. My personal life has been aligned for 45 years with my professional life and that is principally because my wife of 40 plus years has the same set of values and visions that I have even though she's not in medicine but in her own universe of

linguistics, deaf culture, and diversity. We share fundamentally a way of looking at the world. And we have been able to be on side with each other in supporting each other through the particular stresses of a life as a clinician scientist—the demands for the currency of production—grants, papers, etc. Such demands are not unique to my career but without that alignment with the people that I love I really doubt whether I could have pursued my career in the same dedicated fashion.

And the second ingredient in my "personal life" that has been so important to me is music. I have been playing the cello since the age of 14 years, piano before that, and despite some interruptions during my clinical training, I have been hard at it since my research fellowship. And I have made it a part of my life—twice a week I play formally—pre-COVID at least—with others in the classical scene, Just a few months ago, I began studying cello privately—a new page in my musical life.

For me, music is a great stabilizer; my experience informs me to say is the whole self needs to be developed, not just the professional self. And the private self feeds the professional self and vice versa. I experience this all the time that when I sit down to play; my emotional set comes back onto how I'm thinking and how creative I'm being when I'm thinking about my professional work.

At this point in my remarks, we move to *my top ten lessons*, which could be of some value to other people. The first lesson is *know thy passions*, whatever they are. I realize that not everybody wants to be a nephrologist! People are excited about other things and I say, great. We all are best off if we understand the basis for our professional passions and to grab hold of that, particularly when it's threatened. We all have times when because of the nature of clinical practice or the stress of that practice or the nature of research that these things are threatened. So, I think knowing and being in touch with the passion that surrounds our work is key.

The second lesson is *know thyself*. To me, this is absolutely key. What makes one tick? For me it's been, I'm a mechanistic sort of guy, I like to know how things work, I thrive on that, and I need personal freedom to be able to pursue things. I always say about my own career, I'm lucky to walk in the door every morning and I get to do what I want. I pay the price—it means I've got to have the grants, I've got to publish, I've got to do work that's seen as value, and that's the price, but what I get for it is the freedom to direct. And not be told "here's the slate of what you're doing today." And I've been very fortunate in that regard.

The third lesson is that the *future is constructed by an unexpected combination of planned events, unexpected events, awakenings—personal awakenings—opportunities, investments, and choices*. And these key elements come together in very different ways at different times. Personal reflection and analysis of what these events are and how they fit is key.

The fourth lesson is to *accumulate experience*, as experience is so very helpful. And I have. For example, I was Acting Division Head for six months, which helped me to decide that I never wanted to be a permanent Division Head. I was acting head of the MD program at the University of Toronto—it was an acting position for a vice-dean who was taking a leave. I realized that I did not want to pursue deanship as a full-time endeavor. These types of experiences gave me a deep understanding of these types of positions. Experience provides a layer that's far deeper than how things are described; that is informative.

The fifth lesson is to be willing to *go outside of the box*. I have younger people say to me, the expectation is that as a successful clinician scientist I'm going to be a division head, I'm going to be a department head. My response is, that is great, we need leaders in these roles, and really good leaders, but is that what you want to do? Let's talk about why it is you want to do those things, and will taking on these roles really serve what you are really striving to attain? And if yes, great, and if not then let's look at the wider research ecosystem or medical ecosystem and think about things

that you might think about doing that really are a bit outside of the box.

The sixth lesson is the *importance of mentors*. I say this because mentors can serve not only as guides but, I think for me, several people have been my safe place where I can have conversations and be really open and honest about myself and not fear the consequences of being honest. When one is talking to someone to whom you are accountable, you may not feel comfortable doing that. But to me several people have served that role and have really enabled me to make the decisions that I needed to make.

The seventh lesson is to *be patient and to wait for the right fit*. And sometimes it does require patience because what you're looking for isn't really present at that time. But I have confidence that things will develop as one works at it. And so, patience is important.

The eighth lesson for me is to *aspire to great heights*. I chose to apply for training at Boston Children's Hospital, as I saw that as one of the finest places one could train. Then, I undertook research training at the Harvard medical school, in a lab that was world leading. It's hard to understand the very best if one has not rubbed shoulders with the very best.

The ninth lesson for me is to *take risks and learn from failure*. I've had lots of failure. Plenty of experiments that haven't worked, papers that have been sent back telling me that I should consider publishing this on another planet. These are the failures that we all endure; we need to learn from these experiences to become resilient, to critically analyze our ongoing path, and so on.

And finally, the tenth lesson is to *nurture one's whole self*. Not just your professional self but the whole self, and then use that as a support for everything one is doing in one's life.

So, now I conclude and thank you again for the opportunity to comment. I look forward to the discussion.

DISCUSSION SESSION

SD: Wonderful presentations! I've received several compliments about your insights and requests to share this webinar with medical students and trainees, as well as faculty. The first question is for both of you: Could you please reflect on how strategic career planning and career transitions may be different for women, women with intersectionality and those from underrepresented groups?

PP: Stephanie, of course I will be interested in your thoughts about this. It is a really, really important issue. I have two daughters, one who has actually trained in Boston at the Children's Hospital at the time when I was Chair of the Department of Pediatrics. I watched the choices that were being made by her colleagues, which were not the same that Norm or I spoke about. For many, there were more constraints and compromises, often focused around questions of balancing life more successfully than I likely did. In some cases, this meant not necessarily spending personal resources and time in moving through the fellowship and taking on the academic path. For our academic community that is unfortunate and even tragedy. I've tried to devote a lot of my professional time to fostering career development in women. I've been the beneficiary during my entire research time of having extraordinary women in my lab or as part of the research team or advisors along the way. At the same time, I have been cognizant that the burdens are still very significant for women in science and medicine, and I suspect Stephanie you know those better than the three of us on this panel. For many women this requires support, mentoring, and the resources to address many of the domestic demands that impact on career development. As dean I put a number of programs in place to help address these challenges, including changes in recruitment, appointment, promotion review, the time to achieve tenure and the resources needed to support and academic career and life. I'll be blunt, we need more women in leadership roles in

medicine and science, and quite honestly, we need more women in leadership roles in this country if we're going to have a future.

SD: I agree! Norm?

NR: Well I wouldn't want to overstate my own personal impact on this very important problem. Looking back perhaps 20 years ago, as I suggested the idea of forming a Canadian Child Health Clinician Scientist Program, one of the pivotal issues was what we call a sense of possibility, when people look into the ecosystem and don't see themselves, and, then, how can they have that sense of possibility?

So, I think that involves, one, being clear about what our problem is—we need to name it and describe it. And then we need to engage women in this case or underrepresented minorities in the solution. And I think in academia that means mentorship, and role models, who are women and underrepresented minorities, or racialized individuals as we say here in Canada. And we need to reform the social context in which people are being blocked outside the academic health center and then as well inside the academic health science center, so that they have pathways to succeed and be promoted with equal velocity to other people who are not like them.

And, of course, I live in a different society than many on this call. I have visited many academics in the United States where family leave is much shorter than the year-long period that exists in my society. Our period of family leave helps but at the same time can be a source of problem if women are not properly supported. For example, during family leaves research programs could fall apart, and so institutions need to take measures to seriously deal with that.

So I see multiple layers: policy, people, promotion systems that don't rely on criteria that are basically the criteria by which men have occupied the highest zones in academia, but also take into account a broader view of society and communities which haven't had the same opportunities that support "success," recognizing that society has evolved to reward only some kinds of talent and experiences.

SD: Overcoming the imposter syndrome is often challenging. Mentorship and leadership programs such as the Executive Leadership in Academic Medicine program (ELAM) are incredibly helpful. It is important to not be afraid to take a risk and push yourself to ensure that your voice is heard.

PP: Thank you for sharing that Stephanie.

SD: The next comment is for Dr. Pizzo. Specifically, this is an observation from Dr. Krugman who worries about advising that 12 years in position is enough. He states that as one who has been a Dean for 6 lifespans, I would just observe that the last 12 years were more rewarding and productive than the first 12 years. Dr. Pizzo, could you comment on this?

PP: Sure. Let's start by saying that the average duration for a dean in a medical school in the US is about 4 and a half years. And I think this begins to speak to the question in what's the right time or the right duration for any of us to serve in a role. And there's obviously different opinions. I know Dr. Krugman and he was one of the longest surviving deans and most successful deans.

The question of how long one stays in a role is a balance between the individual and the institution she serves. In my own case I really believe that it's good to transition on a regular basis—ideally not much longer than a decade. When I announced my decision to step down as dean and start in a new direction, many of my colleagues were surprised and even horrified that I was not sticking with a more traditional role in academic medicine. But for me a new direction and the opportunity to renew, to develop new ideas, to move in different directions, to create new pathways has always been really important. And also, coming back to the example that I gave early in my own career, to not overstay the time in any one role.

I love the fact that Norm loves what he's doing—I really value that and it resonated tremendously with me—but every one of us

at some point runs the risk of overstaying our time, and I think the trick is I've always seen it is to make those transitions on the ascent rather than the peak, so that you still have time for flexibility. So, for me it was going to be somewhere around 10–12 years in the role, and I felt that even though I loved the role of dean, and people said to me why am I transitioning from this role, it was still important to do so. I felt it was good for the institution and good for me to move into a completely different area, and that has proven to be the case.

SD: The next question is "I was wondering with the various changes in career directions, how did you know you were making the right choices or decisions? Were they calculated risks or gut instincts that they were the right move?"

NR: Well I think, in truth, I really didn't know if they were the right decisions, but as a much younger person, I had this naïve view that the world was a place where possibilities could happen. During the formative stages of my education in training, I said to myself if I don't try it, I won't have a chance to experience it and I won't be able to build on it. I'm sure that was, that sense of confidence, if you will, was undoubtedly based on the fact that I was already a graduate physician and what's the worst that could happen? The worst that could happen was I would have to practice medicine in some way. That's a pretty good foundation to land on. I wasn't looking at the specter of unemployment.

Also, I was a child of the later part of the 60s. I grew up with a sense of exploration and excitement for the future. Probably my riskiest decisions were made by the time I was in my mid-thirties. After that it was either—within the next few years I was going to collapse, for example, the choice about my research program or it would get going and I would reap the attendant benefits. But I can't honestly say that I had figured it out and had a calculus for the probability that I was going to be successful. It would be dishonest for me to suggest otherwise.

PP: Thank you Norm. I would just add to that, and to what I said earlier, that it's a matter of looking back as well as forward, since you don't know how things will turn out until you take the risk. I have actually found in my own career that in virtually every area that I decided to work on, someone more senior than me said "that's never going to work, it's a waste of your time why are you doing it?" That was true when I began my work in studying immunocompromised children and adults, and senior colleagues said this is kind of a waste land for you, and it turned out to be really powerfully productive. Moving into AIDS meant leaving behind a lot of other things but it was driven by a sense of mission.

And then fast forwarding as I alluded to earlier, when I announced I was going to step out of my leadership role in Stanford and start this new program, most of my colleagues came to me and said "what a waste, why are you thinking of doing that when you have had all these other opportunities before you?" But deep down I basically decided I really do not want to cast the same shadow, rather create a different one. Maybe it's a smaller shadow but it afforded the opportunity to start over in a completely different way. Now that is not for everybody, some of us are constructed by the belief that we are more comfortable in a zone that we know. I have been more comfortable in the zone where I don't know, where there's an opportunity to create something new, and that's what I'm hoping to do in my next career as well.

SD: The next question is, "Particularly in the earliest parts of your career, did you ever have to work on projects or research areas that were not your true passion, hoping that it would eventually lead to work in areas that you were interested in, and do you have any advice for those starting off in their clinical academic career that have less control in the research they are doing?"

PP: I can start. You know, on a personal level at the risk of challenging others, I've always kind of stayed true to what I thought was important to work on. That was a huge benefit of

being at the NIH for first phase of my career as compared to in an academic setting where my research was going to be guided by the next grant. At the NIH and the intramural program specifically, you basically chose what you were going to work on and then you were intensively reviewed every 5 years. That kind of flexibility created a pathway towards choosing things in areas that were really very personally and professionally meaningful.

My advice to the people who were with me as younger trainees was the importance of beginning, even if they were going to shift to a different area later, of really understanding the fundamental principles of research. Because there's a lot of translatability in the areas of research, once you have an analytical mind, and you're approaching things in that way, I think it improves your career path both in terms of new opportunities you take on and also the work that you do in a clinical setting as well.

Ideally no one should work in an area that she or he is not inspired about. That is not going to be a prescription for success, only frustrating and diminishing. Most research that happens is kind of incremental and marginally. You need to be in areas that allow you to expand into new paradigms if you're doing to make a difference.

SD: Great, we have a lot of questions, so the next question is specifically for Dr. Pizzo: "you mentioned the possibility of physical and mental decline. How does one as an individual or health/academic system adequately monitor for that possibility, especially if it's not always recognized by the individual?"

PP: I think this is a really important issue. First of all we know the following things: in the last 100 years the average life expectancy has increased by 30 years which means there are many physicians who are working longer. If I understand the intent of your question, it's whether we should have some sort of monitoring of physicians in terms of their cognitive and physical capabilities as they move through the life cycle. I've used that metric on myself and when I was in my deans role, I actually put a number of policies in place at Stanford that required individuals as they got into their 70s and beyond to go through a 360 evaluation in order to be able to assure from a credentialing point of view that things were still functioning well.

I used to have people say to me "look you know I will be fine; I've got a close colleague of mine and if I'm declining, he or she will tell me." My response to that is "what if you're both declining, how will we know that." Changes in our abilities are inevitable and I think it's important to be cognizant of that. Now with that I think there are things we can proactively do about that, we could for individuals and indeed for our healthcare system pay much more attention to the things that make a difference.

If you ask, what is the single most important factor that contributes to a decline in the risk for developing dementia, the single most important factor is exercise. Exercise makes a tremendous difference, so encouraging people to assume healthy lifestyles physically, emotionally, and spiritually can have a big impact on how they traverse the life journey. But we all need pause signs, and some stop signs in order to make sure it's not just about us, that were doing the very best we can for those that were serving.

SD: Unfortunately, we are near the end of the webinar. I am going to ask one more question. This one is specifically for Dr. Rosenblum: Is what you share prone to survivorship bias? Like an $N = 1$ experiment, leading to a successful life and career?

NR: Well of course it's prone to personal interpretation, biases and self-centeredness. The only counter I would give to that is that of the lessons I have suggested—the last part of my talk that I talked about—I think there are strategies that I have seen tested out much more systemically in a variety of career development programs that I have been involved with both in my own country and internationally. And I have seen the power of these lessons converted into programmatic approaches. So, in that sense I would say I'm hopeful that I haven't just been self-centered and

part of a survivor story, but the itinerary of my career and that of many other people has informed a way forward that is helpful.

SD: We have several other questions but unfortunately we are going to have to close. There are many wonderful comments about how much everyone enjoyed what you've learned from your own life lessons and your challenges along the way. I personally have learned a great deal. You both provided such wise insights into navigating academic careers and certainly highlighted that the road is not a straight path, but one where you should be open to possibility. We look forward to our next virtual chat in July. We are truly grateful to Dr. Pizzo and Dr. Rosenblum for their excellent presentations.

Steven Abman (SA): I simply want to support Stephanie's comments that your personal stories, reflections and insights have been both helpful and inspirational. You've so nicely expressed much advice across the "ages," or the "academic lifespan," including ideas of making career choices that will sustain a sense of self and maintain the highest values and thrill of being in

academic medicine, despite facing major challenges. Further advice on how to be creative and bold and to be yourself while "doing the right thing" was stirring, and crosses disciplines, stage of career development and diverse personal backgrounds, so our deepest thanks to both of you.

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