

Marie: Hello and welcome to *The Parkinson's Research podcast: New Discoveries in Neuroscience*. I'm your host, Dr. Marie McNeely, and I've partnered with The Michael J. Fox Foundation for Parkinson's Research to bring you to the forefront of the field of neuroscience to discuss the latest advances in discoveries with leading experts.

The Michael J. Fox Foundation created this podcast for researchers, clinicians, and industry professionals with the hope that these conversations and the resources we share will advance your efforts and partnerships to improve brain health. We're welcoming guests with a range of experiences and viewpoints. The views expressed belong to the guests themselves. And today we are thrilled to be welcoming to the show Dr. Rachel Dolhun.

Listeners, Rachel is Senior Vice President of Medical Communications at The Michael J. Fox Foundation for Parkinson's Research. And today we are going to be talking more about her work, as well as a fellowship program to train movement disorder specialists developed in partnership with the Edmond J. Safra Foundation. So, Rachel, welcome to the show today. How are you?

Rachel: I'm great. Thanks so much for having me.

Marie: Well, we are excited to have you with us and excited to learn more about you and the work that you do. So, perhaps we can start with learning a little bit more about your background, Rachel. How did you find your way to your current position and what was your academic background?

Rachel: So, it's a little traditional and a little nontraditional. I went to college not certain of what I would do and there became a pre-med major, and, of course, then went to med school at Wake Forest in Winston-Salem, North Carolina. And that was my first introduction to the brain. The first time I saw a brain, held a brain, and became, like many, fascinated with the brain. And so it was there that I decided I wanted to pursue neurology. So, I went on to a neurology residency.

And again, I was really just so fascinated by the different disease states that can happen in neurology — that you can be an expert, but still see such a variety of patients, you know, an 18-year-old with seizures all the way to an 80-year-old with Alzheimer's. And I, during that time, really fell in love with my patients and families who lived with Parkinson's. I loved how they came to the disease. I loved how they managed the disease. And I really loved that I was able to develop a long term relationship with them and really help them through a complicated disease that evolves over the years.

So, after I was done with my neurology residency, that was at Vanderbilt in Nashville, Tennessee. And I decided to stay for an extra year and do what's

called a Movement Disorders Fellowship, where you focus primarily on movement disorders like Parkinson's and related conditions. So, really learning all the nuances of how to diagnose, how to treat, how to manage these complicated conditions. And after that, I went into private practice back in North Carolina. I was there for a couple of years.

I loved seeing my patients on a daily basis, but I just really wanted to help on a bigger level. I wanted to help more people. I wanted to have more time to talk about the disease, to help people really navigate it, to connect them to research, which was limited because of the nature of medical practice. So, through a variety of steps that I'll save here, I kind of found my way to The Michael J. Fox Foundation. And I joined here in October of 2014, so almost 10 years ago, to lead medical communications, which was really a department that we didn't have before me. So, we're a research organization. We focus on improved therapies for people with Parkinson's, getting toward a cure.

But we didn't have as much on the navigating life, the filling in the gaps between doctors visits, the helping people really connect to and understand the research. So, that's been the primary focus of my work. And then additionally, in 2022, I sought an additional certification in lifestyle medicine. This grew out of personal and professional interest. So, in my work at The Michael J. Fox Foundation, I'm in conversation with people in families who have Parkinson's all the time.

And they're often asking, what's the best diet? What exercise should I be doing? What else can I be doing outside of medicines, and surgery, and the other treatment tools that we have? So, I really wanted to understand that more so that I could bring them better information and better tools. So, as I said, I sought this additional certification in lifestyle medicine, which essentially focuses on using these aspects of lifestyle, like exercise and diet, as primary treatment tools to manage, and prevent, and, where we can, to reverse disease.

Marie: Absolutely. And I think these lifestyle factors like exercise can have a tremendous impact on not just sort of your overall health, but the course of disease as well. So, I think that's fascinating. And now Rachel, we mentioned that you have this position, Senior Vice President of Medical Communications at The Michael J. Fox Foundation for Parkinson's Research. So, can you tell us a little bit more about your role and your responsibilities in everyday life in this position at MJFF?

Rachel: Well, what I love about it is that everyday is a little bit different, and that variety just keeps me on my toes and keeps me interested. I could be doing anything from writing a blog, to talking with an individual patient and family, to being in clinic. So, it's really fun to get to do so many different things, but essentially the buckets of my work — one, are medical communications, as you mentioned.

So, the focus there is to really create resources that help people and families navigate life with disease or even navigate living with a risk for disease, so that they can really understand and live as well as they possibly can. And then also, of course, connect to and understand the latest research, what it really means for them when we come out with some of these big breakthroughs or new drugs that get to market. So, I talk about that as, as I mentioned before, like really trying to fill in the gaps between doctors visits. So, I'll write blogs, do more detailed guides on a topic. I do videos, in-person events, one-on-one conversations, you name it. So, really working to create tools that people can access in a variety of different ways.

And then the second bucket, which is what we'll be focusing more on today, is what we call training the next generation. So, I lead training programs that help educate the next generation of Parkinson's doctors and researchers.

Marie: Very cool. I think these roles are tremendously important, both the sort of translation of research and making information accessible for people, as well as this idea of preparing for the future, thinking about training the next generation of clinicians and researchers. So, let's talk about these training opportunities. I know today our conversation is going to focus mostly on a fellowship program for movement disorders specialists. So, Rachel, can you tell me a little bit more, in general, what does a movement disorders specialist do, and how do they contribute specifically to care for people with Parkinson's disease?

Rachel: A movement disorder specialist is simply a neurologist who has undergone extra training in diagnosing and treating Parkinson's and related disorders. So, that's what I was describing in my past, where I completed a neurology residency, then I loved Parkinson's and related disorders so much that I wanted to delve into it further. So, I stayed for a fellowship. And these could be one to two years. They can be focused on clinical care or research or both, which is what our training program focuses on, both clinical care and research.

But why a movement disorder specialist is so important is because of the nature of Parkinson's disease. So, Parkinson's is what we call a clinical diagnosis, where we make the diagnosis based on our medical history, what we talk to the patient about, what they tell us about their symptoms, whether the disease runs in their families, how things have changed over time, and then on their physical exam. So, we're really looking closely for the nuances of if and how their movement has changed. And we're putting all of that together to make a diagnosis. So, you really need an expert who sees a lot of people with Parkinson's and related disorders day in, day out, who knows all the nuances and can recognize those.

Now I'll caveat that that some of that is hopefully changing. We've had some biomarkers that have been validated recently that will change how we diagnose and care for Parkinson's in the future, not quite yet. But for now, that's part of the reason it's so important to have movement disorder specialists is because they're the experts in diagnosing this condition.

They're also the experts in helping manage it. So, it can become very complex. There's a lot that's involved with Parkinson's, both motor and non-motor symptoms. It changes and changes to different extents and at different rates in different people over time. So, it's very unique to each individual. So, you need somebody who knows those subtleties and can help a person and their family really navigate the disease over the long haul. You're building a strong relationship with the patient and their family and helping them evolve care as their needs and their symptoms evolve. So, you're accurately diagnosing, you're recognizing all these nuances of Parkinson's, you're helping personalize what are sometimes complex treatment regimens, and you're rounding out the care team with other healthcare professionals who can help like speech, and occupational, and mental health therapy. So, you're really caring for a full person and a full family for decades.

Marie: Absolutely. I think this is a really fascinating and really important area of clinical care. And I know so many people's lives have been impacted by Parkinson's disease. And I think a lot of people are getting more involved in working towards a cure and working towards improved therapies. Can you give us a little bit of insight surrounding this partnership with the Edmond J. Safra Foundation and maybe how this partnership began initially?

Rachel: So, as you mentioned, we are a research organization through and through, founded in 2000 with a mission to get to a cure for Parkinson's, but also to develop improved therapies for people living with Parkinson's today. And one of our longest standing and strongest supporters has been, almost since the outset, the Edmond J. Safra Foundation.

And they've funded so much of our important work in this area. But about 10 years ago, together, we really realized there's a gap in the number of movement disorder specialists now, but we also really need a very highly trained workforce that can move all of this research forward and can deliver it into the hands of people who are living with Parkinson's.

So, to get into that shortage just a little bit further, we have about 1 million people we estimate in the United States who are living with Parkinson's, 10 million people worldwide, and experts are estimating that those numbers are going to double by 2040, so less than 20 years from now. And there aren't enough movement disorder specialists now or to care for that growing population. So, to

give a couple examples of that, in the United States, we estimate that there are a little bit under 700 movement disorder specialists. That translates to about one specialist per 1,000 Medicare beneficiaries. And some states don't even have a movement disorder specialist.

That's of course the case around the world too, in many low and middle income countries. Ireland, for example, there's only 11 movement disorder specialists, one of whom is one of our graduates from this training program. So, in that country, they similarly have about one movement disorder specialist for every 1,000 people. So, you can see the nature of this shortage, but also what that translates to on the patient and family end is long delays in getting to see a specialist.

Oftentimes people will say it's months to even up to a year to get an appointment, or it's long travel distances, which can be challenging for a variety of reasons in or outside of Parkinson's, but particularly with Parkinson's, if you have mobility issues or you have to take a day off work or your loved one has to take a day off work, it just creates a lot of logistical barriers and access challenges for people to get to these specialists who can deliver the most expert care in Parkinson's.

Marie: Absolutely. And I think in a lot of cases, movement disorder specialists may not be solely focused on clinical care. They might be these clinician-researchers where they're sort of dividing their time even further, trying to incorporate research to advance the field as well.

Rachel: And that's interesting that you mentioned that because that's part of the goal of our fellowship, which I know we'll delve into further, but the goal of our fellowship is really to train movement disorder specialists who are both clinician and researchers.

And of course, we want to balance their time. We want them to be out there delivering expert care, but importantly, they're taking those insights from delivering patient care to inform research. So, they're on the front line seeing what are the biggest unmet needs?

Where are the medications that we have still falling short? And they're using that to directly inform their research. And then vice versa, they're bringing the research directly back to their patients. So, that clinician-researcher, while you're right, there are some limitations. And you're splitting your time a little bit still. It's really beneficial for both care and research in the field at large.

Marie: Absolutely. I think the benefits go both ways, as you mentioned. And Rachel, you've painted a picture of just sort of the landscape of movement disorders neurology out there. Let's talk a little bit about the goals of this Edmond J. Safra

Fellowship Movement Disorders Program and how this program is maybe aiming to change that landscape.

Rachel: The Edmond J. Safra Fellowship, at its core, really aims to build a global network of movement disorder specialists who are, as I mentioned, both clinicians and researchers. And the reasons we want to build that are not just for that shortage. As we said, we want to increase access to this expert care around the world.

But we also want to fuel research momentum. We want people who can serve and work with their local communities. And then we want to see this fellowship extend the benefits far beyond just the immediate training of the graduates that leave this program. So, for example, we want these graduates or our trainees to be then training the next generation beyond them.

So, it's a ripple effect and sort of a self-fulfilling partnership where this continues in what we hope is perpetuity. So, every year, the program funds eight international academic medical centers. So, we're looking for centers that can provide the highest quality training in both clinical care and in research. But we also want centers that of course can greatly benefit from this funding and have opportunity because of needs for movement disorders care in their area. So, each center that's funded then trains one movement disorder clinician-researcher over a period of two years.

So, as I've said multiple times now, it's really important to underscore that the trainees are learning both the foundations of clinical care and research, so that they can be both a clinician and a researcher in tandem. And what's really unique about this program is that it's more than just the training. It's the network that we've built. So, this is what the graduates and the trainees really say is one of the most unique, and valuable, and distinguished features of this particular fellowship. So, when a trainee or a graduate is part of this network and this fellowship, they have access to this broad and diverse group of peers around the world, of fellowship directors around the world. So, it really extends the opportunities for partnership, education, networking, early career development far beyond what's available at one individual center. And then of course they have a lot of opportunity to engage with us at The Michael J. Fox Foundation and then to support field-wide efforts on research, education, and other activities.

Marie: Rachel, I love that you emphasize that this program is international. You're looking for organizations that you can fund from around the world. Is it difficult to navigate, perhaps, the training or sort of the cultural and social expectations for care and what research looks like in these different countries?

Rachel: It's a great question and it's one that we've worked to address a lot since inception of this program 10 years ago. So, we're celebrating and recognizing the 10th anniversary of this program, and we're celebrating the global nature of it.

It's really been incredible to see it grow, especially from my standpoint where I've been part of it from the beginning. But as far as the global nature is concerned, we funded 34 medical centers across four continents. And so, that includes 11 countries, 12 in the United States. And you're right, when we have this international reach, there's a lot of difference and diversity in how centers train individual candidates. So, what we're looking for particularly in this fellowship, there's a couple core criteria that can be adapted to suit the training opportunities that are available in each area.

We're really looking for, does the center have experience training a movement disorders clinician-researcher? So, have they done this formal training, whether they call it a quote unquote fellowship or not, have they done this kind of training where they're training a neurologist to become an expert in care and research? So, we're looking at their experience. We're looking at the opportunities then that they have in clinical care. Would the candidate have an opportunity to be trained across how to care for Parkinson's, atypical Parkinsonism, dystonia, ataxia, etc.? All of these movement conditions.

And then in tandem, do they have opportunities to learn the foundations of research and to participate in research? So, whether that's as a sub-investigator, as a primary investigator. Are they working on manuscripts? Are they submitting proposals? Are they learning all of those foundations of research so that they can take that forward in their career? And then some basics, of course, we want to make sure that the center has the structure to support a trainee, to mentor them, to help them in their early career development.

And then importantly, we're looking at opportunities to advance diversity, equity, and inclusion across movement disorders care and research. So, that will look very different in different areas of the world, of course. And we leave that intentionally very broad because we know that it's different in different areas, but it may be the population that a center serves. It may be the diversity of faculty. It could be didactics, and lectures, and informational sessions on implicit bias and things like that. It could be research into disparities on access or disparities in healthcare. But we really want to make sure that that is a strong focus of the training so that trainees are getting this comprehensive exposure to all these aspects of care and research.

Marie: Oh, very interesting. And you mentioned that this program is celebrating its 10-year anniversary. Congratulations, of course, to you and everybody involved.

But what have been some of the outcomes of this program that you've seen so far?

Rachel: Well, as I mentioned, it's been really neat, especially to see, you know, from The Michael J. Fox Foundation perspective, from my perspective, having trained as a movement disorders fellow myself. When we started this program, because of the nature of it, we were really sober about it and thought, this is a long-term investment. We may not see returns so soon, but in 10 years, we've already really seen some pretty huge impacts, not only on people and families living with Parkinson's, but also the fields of Parkinson's research and care. Now, this isn't, on its own, addressing that gap in movement disorder specialists that I mentioned, the shortage, but it's making a dent in it. So, we've got, as of this summer, we'll graduate 40 new movement disorder specialists around the world.

With current funding, we're on track to graduate 73 by the year 2028. And if you look at the impacts on a broad scale, so I mentioned, we want to increase access to expert care. If each graduate is seeing a couple hundred patients on average, that's extending care to tens of thousands of people who might not have otherwise had access.

And some of them are practicing in areas of real need where there are few or no other movement disorder specialists. And then they're fueling research advances in parallel. So, they're taking their learnings directly from their patients and their patients' unmet needs to fuel research. They're publishing, they're presenting at national and international conferences, they're leading their own research studies. They're contributing to international efforts like The Michael J. Fox Foundation's Parkinson's Progression Markers Initiative, the Global Parkinson's Genetics Program or GP2. So, they're doing all of this work. I don't know how they do all of it. I don't know how they have all the time. They're doing this care and this research in tandem.

And then they're also meeting needs of their local community. So, nearly two thirds of our network works with underrepresented groups, whether through research or education or other efforts. And then as I mentioned, they're training the next generation. So, 75% of our graduates actually work in some capacity to educate and mentor future neurologists or movement disorder specialists through educational courses. Some of them are even now leading fellowship programs themselves. And some have even established movement disorder fellowships in areas where they didn't previously exist.

Marie: Well, I think that is absolutely remarkable, Rachel. And I'm curious, have you gotten feedback or structured feedback, maybe with surveys or something like that, from some of the trainees who have participated in this program?

Rachel: We have. And that's where I pulled some of that data on the percentages of people who are working in underserved areas or are training the next generation. We work really hard and we've tried to build over 10 years more of an objective measure of success. But so much of the success is anecdotal or what we hear, both from the individuals who are part of the program and say, you know, this was an opportunity I might not have had otherwise to learn from the experts in the fields, the pioneers in the field, the who's who of movement disorders, but also have that protected time to learn research as well. And then we hear from patients all the time that seeing a movement disorder specialist can really be transformative in their care. That they feel better equipped to live life with Parkinson's, to manage their disease, to get engaged with research. So, it's really, we see benefits on both the side from the trainees and from the people and families who are benefiting from seeing these experts.

Marie: Absolutely. Are there any other major milestones, or impacts, or stories that you'd like to share about this program?

Rachel: Oh, gosh, there's so many. I think I'm always so impressed by not just the trainees and the graduates themselves. I mean, I always say, I feel a little bad about myself when I see all of their CVs come through because when they're applying for these positions, they're already so highly published. We also have feedback from our committee who reviews applications who says, gosh, I wish I could go back and do fellowship again myself because the training that's offered from these really high quality centers is just so excellent. The opportunities that they have through this training is just so high caliber. But some of our trainees have gone very quickly on, upon graduation, to establish new movement disorder centers. So, one of our trainees left Toronto Western and went back to his home country of Scotland and established a movement disorders care and research center where one previously didn't exist.

And others are doing very similar things. Another one of our graduates established a music and movement disorders program at her center. As I said, many of them are taking on lead as directors of their fellowship programs or building new fellowship programs where they didn't have one. So, the energy, the enthusiasm, the dedication, the passion, the innovation of this group is really incredibly impressive. And it's so heartening to know that this is our next generation of leaders for Parkinson's care and research.

Marie: Well, I think that's absolutely wonderful. Perhaps daunting for listeners out there who might be interested in applying. But let's talk about what it takes to apply. So, perhaps we can start with eligibility. So, Rachel, who is eligible to apply for this fellowship program?

Rachel: So, it's important to stress that it's the medical center who applies, not the actual fellow or trainee. So, the application is open to academic medical centers around the world. The idea that they have the infrastructure, the capacity, the expertise to train a new movement disorder, clinician-researcher. So, as I mentioned, they're evaluated on five core criteria, their experience in training, their clinical care environment, their research environment, the support they can give a trainee, and then opportunities and diversity, equity, and inclusion.

So, those are really the core criteria. The application is open now. It's due in December. Everybody waits until the last minute, which is fine. But it's open now if you want to get started or learn more about it. As I said, it's open to centers themselves, not to the individual fellows. When a center is selected, following a process that involves an external review committee of movement disorder specialists to review the individual applications and score them. Once the center is selected, they then identify a suitable candidate. So, it's the center that gets the funding, then they're tasked with finding and training a candidate over the course of two years. So, that's really high-level. There's more details than that. And the listeners who are interested can find all the details and start their application at michaeljfox.org/funding.

Marie: Oh, wonderful. And in thinking about the application process, what does the actual application consist of? Is this similar to like an NIH-type grant application or is it a little bit different?

Rachel: It's probably a little bit less involved, hopefully. We try to make it not too onerous on the applicant. It does consist of two main parts. So, one is filling out some of this objective data on how many movement disorder specialists or faculty do you have? How many patients do you see? What's the need in your area? You know, giving us some more objective measure and numbers that we can compare a little bit more easily as "apples to apples" across all of the centers. Then the bulk of the application is a narrative. Only three pages. We actually limited to three pages so that you can keep it short and sweet.

That's focused on those five core criteria upon which we evaluate all of the centers. So, most of it is focused on that narrative portion. So, as I said, we do try to keep it really focused on the specific aspects we think make a suitable center and a high quality and high capacity center. I will say we get a good number of applications that are all very highly competitive. We always have a real challenge in separating the excellent from the most excellent because we get such high quality applications. I always encourage applicants, especially those outside the United States, I say you got to sell yourself a little bit. You got to brag a little bit. I think the international centers are a little bit shyer, or maybe more humble. But, you know, really sell yourself, and tell us, and educate us about your program. Because as you mentioned earlier, it's so different around the world. So, it's really

helpful to get insight into what exactly the training looks like and how and why you think you're a suitable candidate for this kind of program.

Marie: I think that's really helpful to know. And you mentioned in terms of the timeline, applications are open now, listeners, and the deadline to apply is December. Don't wait till the last minute. But what happens after the applications are submitted? What's the timeline for the review process?

Rachel: So, we assemble an external review committee, as I mentioned, we really do work hard to make sure that that committee is diverse, both in career stage, geographic location, experience with the fellowship itself. And that committee then evaluates each application. So, there are a certain number of committee members who review each application and score each application based on those criteria I mentioned.

Then we take the top scoring applications and discuss them all together as a group in a teleconference. That usually happens around the maybe February timeframe so that we can make the decisions around the March timeframe. And then because contracting always takes some time, usually we make the announcement around this time — around May timeframe. So, you should be hearing in not too long the selection of our latest class, which will be training what we call the class of 2027.

And the reason it's such a long process is because once the center is selected and awarded, as I mentioned, which is around this time, they then work to identify a candidate. In the United States, the schedule goes, they are identifying a candidate now by the fall, and then that candidate starts the following summer. Again, because we're building on the infrastructure that we have in the United States. In international centers, we have flexibility. So, if they say we have a candidate now who can start within the coming months, doesn't have to wait until next summer, then they can start whenever it makes sense for all of us. It's just that from, you know, whenever they start, they'll then do two years of training.

Marie: Well, that makes sense. And in terms of applicants out there, people who might be considering applying, are there any particular callouts for centers from particular geographical regions you would like to see apply or centers with particular patient mixes? What are you particularly looking for, or have you seen as sort of a gap, or a group that's missing in the applications you typically receive?

Rachel: Well, we're looking for, as I said, centers that can offer high quality training in both clinical care and research, but we're also looking for centers that could really benefit from this type of funding and really have a need in movement disorders. So, we're always balancing, you know, we want really high quality centers who

will turn out high quality graduates, but we also want to extend into areas of need.

So, we've really been making a call, you know, we're very highly represented in the United States, in Europe. We have one Latin American center, but we want to continue to extend broadly. So, I'd encourage anybody who's interested, we're interested in hearing from you, even if you're not sure if you're suitable, reach out and ask us. You know, or ask us what you could do or how you could structure in a way that might make you eligible, because we really do want to continue to extend this global program and extend particularly into areas of most need.

Marie: Well, Rachel, this sounds like a phenomenal program and a growing program, as you've alluded to a few times now in our conversation. Can you tell us, what does the future look like for this fellowship program?

Rachel: Continued growth, as you mentioned. I think, as I said earlier, we have funding right now to train 73 new movement disorder specialists by 2028. But we hope to continue extending very far beyond that. You know, my dream would be that we can expand the fellowship, we can continue it for the duration because we see such beneficial impacts on both the care and research, but also that we build up our complimentary training programs. So, we have in tandem also with the Edmond J. Safra Foundation, and in partnership with the International Parkinson and Movement Disorder Society, we put on a course every year to educate neurology residents. So, we're getting people a step before fellowship when they might not even be sure that they're interested in movement disorders, or they might not have had exposure to movement disorders, based on where they're located or the center that they're training at.

So, we bring together neurology residents from around North and South America, as well as Latin America, for an immersion course one weekend every year where they learn from movement disorder specialists. They see patients. That's always the most popular part of the course. They network with other peers, they get the opportunity to present at that course as well. And not only are we really working to educate them about movement disorders, especially early on in their residency because we want them to have that exposure so that they can learn more about it. But we're also encouraging them to do exactly that, to consider careers in movement disorders, to consider a fellowship. So, there could be a lot of opportunity to expand that kind of training program, especially outside of the areas that we're currently in.

And that could be a really nice compliment to the training that we're doing with the fellowship. We also look at ways, you know, although there's 73 movement disorder specialists that are going to come out of this program by 2028. That's only 73 specialists, you know, one person, although, as I mentioned, they do a

lot. One person can still only do so much. So, how can we potentially amplify and leverage their efforts, extend their efforts in further ways?

Marie: I think that's wonderful. And can you maybe comment specifically on thinking about the future of research, now that you're training these, you know, 73 you mentioned people who are going to be impacting not only clinical care, but also advancing research. What do you see in the future on the research side of things in terms of the potential impacts?

Rachel: Well, we see so much happening in the research right now. I mean, it really is probably more robust than it's ever been and on many fronts. So, I mentioned we've got new biomarkers that have just been validated. So, these tools that eventually will be part of our clinical care and potentially transform how and when we can diagnose Parkinson's. So, you've got new biomarkers, new diagnostic tools.

You've got clinical trials changing. We're looking toward even doing trials to prevent Parkinson's. We've got more and more symptomatic therapies that are coming to market, including infusions that come with more questions and potential challenges on adoption and access. And then we're looking toward disease modifying therapies. There are many potential disease modifying therapies that are in the clinical trial pipeline right now that we could see come to market in the next couple of years to decade. So, we're thinking about all of this and how, again, our workforce, our network of movement disorder specialists can not only continue this momentum and build on this momentum to take us into this new era of Parkinson's, but also how they can deliver it directly to patients and families.

Marie: Absolutely. I think this fellowship will really prepare a large batch of early career clinician-researchers to tackle some of these really tough questions and challenges in Parkinson's disease on the research side, but also in clinical care. So, thinking about maybe the big picture, the unanswered questions, the gaps, the areas of opportunity that remain in Parkinson's disease. What do you see as some of the top priorities?

Rachel: Well, coming at it from the lens of what we're talking about, I think there's a lot that we can continue to advance on clinical care that propels the research. So, we're thinking about how to pilot efforts to better engage care providers and integrate their perspective across research, and drug development, and policy. So, maybe not so much the clinician-researchers who we have in our network, people like the Edmond J. Safra Fellowship graduates and fellowship directors, but the care providers who are in the community.

How can we complement what we know from our clinician-researchers with what the care-focused providers are seeing on the front lines as far as needs in research, and drug development, and policy. And then as I mentioned, we're really evaluating ways that we can extend training beyond the existing programs. You know, how can we amplify and magnify the benefits and impacts that we're seeing from this fellowship itself outside of continuing to train more and more movement disorder specialists. How can we build on what they're already doing and what they can do.

And then we're working to better understand disparities in care, whether that's access to medication, surgery, diagnosis. You know, we talked about access to specialists, understanding more about those disparities, especially in different populations and then finding ways to address those with our community and other partners. So, there's a lot of work to do on both the research and the care front, but we're committed to continuing it, and to learning as we go, and to addressing these needs where we can.

Marie: Absolutely. I think there are so many exciting directions right now in the world of Parkinson's disease. And I'd love to end by just thinking about the bright side and how the things going on there at The Michael J. Fox Foundation, including this fellowship that we talked about today, are really bringing us closer to finding a cure for Parkinson's or contributing to improved therapies for people who have Parkinson's today.

Rachel: We've been talking a lot at The Michael J. Fox Foundation and, you know, and communicating externally how we're really moving into a new era of Parkinson's research and care. A lot of that facilitated by the new biomarkers that have been validated, by efforts to look at the disease and define the disease in different ways from its biology and its pathology, in addition to its symptoms, not just on its symptoms. So, we're really in a tipping point, I would say, in Parkinson's research where we're moving into a whole new world of care and research that will hopefully change the lives of people who are living with Parkinson's and the doctors who are caring for them, how they actually deliver and implement that care. So, the time really is right to be thinking about how we put all these pieces together. You know, it's not just the tool, it's not just the medication, but it's how people are actually getting that, how they're getting to the doctor who can get them that tool or get them that medication. So, this fellowship and the complementary training opportunities are just an example of how there's so much work that surrounds the actual research to make sure that the research is as beneficial and as impactful as it can be for the broadest population of people.

Marie: Absolutely. I think making sure the research that's being done is relevant is a critical thing that scientists often have to think about, you know, taking a step

back from what is exciting from the scientific perspective to think about what is going to have the most impact in their community and across the world.

Rachel: And that's what we hope our fellows are doing. I feel like I'm just hammering this point home very hard, but that's exactly why a clinician-researcher is so important, not to discount those providers that are in the trenches caring for people all day long, all day every day, which I know is really tough because I did it. But having that perspective of both research and care, you're bringing that research or brain into every interaction, and then you're bringing that clinical care brain into your research. So, it really is very unique and very helpful to have people that have that dual perspective of both care and research that they're bringing to their patients and that they're bringing to the lab.

Marie: Absolutely. Well, Rachel, I know we've covered a lot of information today, and we appreciate you sharing your insights. If listeners want to learn more or people are interested in applying, can you remind them where they can go?

Rachel: It's michaeljfox.org/funding.

Marie: Excellent. Well, listeners, definitely check out The Michael J. Fox Foundation website. Learn more about this great opportunity. And Rachel, it's been such a pleasure to have you on the program today. We appreciate you sharing your time.

Rachel: Thank you for letting me share. I hope that people will learn more and consider applying to our program.

Marie: Wonderful. Well, Rachel, such a pleasure to have you here. And listeners, it's been great to have you here with us as well. If you want to know how The Michael J. Fox Foundation can help your research, please visit michaeljfox.org/researchresources. And you can find new episodes of this show each month on the MJFF website or on your favorite podcast platform. When you have a moment, please subscribe to our show to make sure you don't miss our outstanding lineup of upcoming episodes. We look forward to connecting with you again in our next episode of *The Parkinson's Research Podcast*.