Daniella Rylander’s thesis wins 100,000 SEK prize

Congratulations on the award!
Thank you very much.

Where you surprised?
Yes, I was very surprised and very happy. Of course I was hoping for it, I think everyone is, but I thought it would be too hard to get.

What is the essence of your thesis?
I have studied the complications that occur after L-DOPA medication for Parkinson’s disease; L-DOPA-induced dyskinesia. My thesis has focused on two systems in the brain that play a major role for the dyskinesias, i.e. glutamate and serotonin. My thesis shows that modulators to a specific glutamate receptor effectively reduces L-DOPA-induced dyskinesia. The antagonists for mGluR5 are now being tested in clinical trials.
I also showed for the first time that L-DOPA-induced dyskinesia is coupled to specific changes of the serotonin system. The new knowledge of pathological alterations in this system can now be used to adjust the individual treatment for Parkinson patients.

What will the prize mean to your research?
This prize means a lot for my future research. In research, money is always an issue. I am planning to use the money in my current post-doctoral project where I will study the effects of cell transplantation in the parkinsonian brain. My goal is to prevent any pathological changes after transplantations and thereby eliminating the graft-induced dyskinesias. This would improve and develop a promising therapy for Parkinson’s disease.

What are your long term aspirations?
Oh, that’s a big question. My goal is to make a change for Parkinson’s disease research. I would like my research to develop treatments for the better and to unravel the underlying mechanisms to the pathology. I also want the research to become better at communicating with the society and the health care system. For these goals, the prize of Elsa and Inge Andersson is an excellent start.
Rewriting the playbook – the Michael J Fox Foundation

When Michael J Fox started his foundation for Parkinson’s research in 2000 it is safe to say that parts of the scientific community viewed the actor’s endeavor with a grain of skepticism. Was this yet another act of self-involved Hollywood philanthropy? Ten years down the line we know the answer to that question being a resounding nay.

On the foundation’s journey towards becoming the world’s number one funder of Parkinson research outside the U.S. government it has upended old conventions on how scientific research is done. The MJFF works closely with its scientists, constantly evaluating and reprioritizing the research projects in its vast portfolio. Information sharing is key and the organization doesn’t view itself as a passive partner just signing checks.

An unusual funding partner

What sets the Fox foundation apart from traditional funding sources are their direct methods of collaboration with scientists. Instead of the traditional five-year government grants the foundation normally gives grants over a one or two-year period. They are an active partner in the scientific process, accelerating a certain mission when needed or simply changing direction if the project hits a roadblock.

The MJFF funding model has set a new standard for how targeted research is driven forward today. The method is pro-active, characterized by keeping closer tabs on scientists, expecting them to share information and set short-term goals that give transparency to the research process. The approach has been welcomed by most, but not by all.

Bringing the drug industry to the table

Another important part of the Michael J Fox Foundation’s overall strategy is its pioneering work with the pharmaceutical industry. The Fox team realized at an early stage that the goals for academic research and industry research really didn’t match up, and the communication between the two were all but non-existent. So the MJFF took it upon themselves to put representatives of academia and industry in the same room and start asking the basic questions.

As the Michael J Fox Foundation embarks on its second decade in existence the organization finds itself one of the world’s key players in Parkinson research. Sometimes viewed a naïve optimist during its first years the foundation is today regarded as one of the most credible voices in the Parkinson’s science arena. With an unwavering ability to bring all parties to the table it has established itself as an impartial actor putting science first. When dealing with the Michael J Fox foundation, it is best to leave prestige and pretense at the door. They’re all about getting results to the clinic - results that benefit the actual patients.

MJFF - The Numbers

- In 2010 the MJFF grant application review team viewed more than 800 applications.
- At the end of 2010 the foundation had over 200 active grants in its portfolio.
- During the year of 2010 the MJFF funded Parkinson research for a total sum of 50 million dollars.
- A decade of fundraising has resulted in circa 220 million dollars benefitting the Parkinson research community.
Katie Hood, CEO of The Michael J Fox Foundation, doesn’t quite fit the standard description of a leader in the non-profit world. With a background finance and business, she heads the Foundation in a business-like way, trying to get “more money faster” to the most promising areas in Parkinson’s research. Ms. Hood joined the Foundation in 2002, and, since stepping into the role of CEO in 2007, has strengthened the in-house research team.

What brought you to the Foundation?
- What I found appealing about the Foundation was that it was an unusual kind of non-profit, one that behaved more like a business. I loved what the Foundation was going to try to do - they had one goal and it was to cure Parkinson’s disease. They said “We have no idea how we’re going to get there or how we’re going to play a role in that, but we need good people on board to help try to figure that out.” To me, that was a very compelling invitation.
- They also told me that when a cure was achieved they were going to go out of business. I thought to myself, that is a really unusual approach, and it tells me something about how seriously they’re taking this. I also loved the fact that the organization wasn’t going to have an endowment, it was going to spend every dollar it could raise as quickly as possible. That really reinforced some of the values they were telling me about – if you’re in the business of finding a cure, it makes no sense to sit on dollars, we should spend every dollar we can, now, on the most promising research we can find. It all just seemed like a really good fit for me from a cultural and values perspective.

Once you got on board, did the organization meet your expectations?
- Definitely. I think it’s an organization that changes fairly rapidly. There are a lot of bright people here who are pure of heart. Clearly we know a lot more today than we did in 2002, but we are an organization that learns, and learns quickly, and then we try to adapt our approach based on what we’ve learned. That has been true from the very beginning.

The MJFF has gone through a remarkable evolution during these ten years.

How would you describe that journey?
- The first phase of the organization was really about getting to know what was going on in Parkinson’s disease research around the world, working very closely with academic researchers and funding work that we thought was very important towards progress.
- Then there was a period of time...
when we felt we knew academics but we really didn’t know anybody else. So we started thinking about how we could work with more of an eye to the other players in drug development, which is primarily industry. During the middle section of the Foundation’s history we really started exploring those opportunities.

- The last few years have been characterized a lot by the development of our research team. We now have seven PhDs on staff, as well as five project managers, and they work together to manage a very large portfolio, over 200 active grants. During my time as CEO, our revenues have increased significantly and therefore so has our grant making. In 2008 we funded 32 million dollars of research. In 2010 we funded almost 50 million dollars. I also believe we’re going deeper and our expertise has grown so that we can help in non-financial ways. Increasingly we’re also developing solid partnerships with industry and really bringing them to the table, letting them see why Parkinson’s is a good bet.

**What is your funding strategy?**
- We manage our grants a bit more aggressively than most. We work with the researchers we fund as collaborative partners, and I think our scientists see us not only as a financial resource and working partner, but also as scientific experts in our own right. The sort of broad expertise represented by the Fox Foundation research team is proving very important to progress.

**How have your funding strategies been received by the scientists that you fund?**
- Most players realize that translational research – taking something from discovery and moving it methodically through the different stages to the point were you can start developing a drug - benefits when they work with us to set milestones and then evaluate those milestones trying to figure out what the next step should be. It’s a more managed process and I think many researchers have come to appreciate that. I also think that people have come to value my team’s expertise. Last year, we reviewed 800 grant applications. We know who’s doing what kind of work where and we can help bring people together, they can help share information that will help everyone go faster and move better.
- For every grant we fund my team sits down with the grantee and asks about their goals at 6 months or sometimes at a year or two years, and the goals are always lined up towards pushing this idea closer to the clinic. Because we do a lot of pro-active goal setting it’s actually much easier to see at one year or two years if we’re on track.
- You’re always going to have failure when you fund research because it’s a high-risk endeavor. But we very rarely have failure because somebody has totally gone in a different direction, we have failure because science is hard. But we’re very clear with the people we partner with that it’s really important to sit together, set the goals and be on the same page about what we’re trying to achieve.

**Do you feel that the role the MJFF is now playing is something new in the science arena?**
- Well yes, it’s clearly just not the way the system has been set up before. The real test going forward is whether our sort of expertise is really going to help everything move faster, and we’ll only prove that point when we’ve actually developed meaningful new therapies for Parkinson’s. My hunch right now though is that it does help. We’re seeing that we have a real added value to provide beyond our grants, which is direction and...
advice. Because of that I think people today are wasting a lot less time trying things that other people have tried before that have failed systematically in many labs.

**How do you see medical science being driven forward today globally?**

- My view is that it’s all changing right now. There are so many more players in the field today, many more researchers, many more biotech companies. What has happened in the past is that we’ve had irregular information flows, people haven’t communicated enough. Many scientists have been in their own little pocket of the world - that’s all changing now. I think that pharmaceutical companies around the world are realizing that collaboration is critical to their paths forward. I also think academic researchers are recognizing that sharing both data and resources is the way the world is going, so they might as well get on board.

- However, I don’t think this shift in attitudes and routines is going to happen overnight. There are still cultural issues that prevent it from happening more quickly. As long as tenure is based on publications and new discoveries, that’s going to be a problem, because it leads to hoarding information. But I’m more optimistic than I have been that people are seeing the benefits of collaboration and the sharing of their own work.

**What is your relation to the Parkinson’s research at Lund University?**

- We’ve funded a lot of research in Sweden over the years. Sweden has a history of excellent Parkinson’s research and neuroscience research in general. At Lund, we have worked extensively with Anders Björklund, Olle Lindvall and Angela Cenci Nilsson, who serve on our scientific advisory board, and also of course Patrik Brundin and Deniz Kirik. The crew at Lund is just outstanding. I believe that one of the reasons they’ve been disproportionately successful in our grant applications has to do with the fact that they’re very patient-focused. When they write grant applications it is always with a therapeutic outcome in mind and that is basically what we’re trying to get all our scientists to do.

- However, they still have to compete like everyone else. Like we always say, we’re institution agnostic, we’re investigator agnostic, we’re country agnostic. When we put a grant call out there all we want to do is find the best people, project and plan for our goals. So when they walk in the door they have an equal chance to everybody else, but they have been more successful than most over time and I think it’s because of their therapeutic focus and the general excellence of their work.

- I actually think that Lund has played a very important role in a couple of different areas. One I would point to in particular is Angela Cenci Nilsson’s role in developing a rodent model for dyskinesia several years ago. The creation of that model gave industry and others a new tool that could be used to screen drugs. Today, there are eight dyskinesia trials in progress in the field, and that has much to do with Angela’s original discovery.

- To move from a situation in dyskinesia, which is a side effect of the existing medicine, where in 2002-2003 the field was scattered, to a place eight years later where there are multiple clinical trials going on is pretty amazing and Lund has played a very specific role in that development.

**How do you work towards getting the pharmaceutical industry and academic scientists to cooperate better?**

- We need those players engaged and our goal as a foundation is to make Parkinson’s a more palatable investment for them. We tell them that we’ll help them with information, we’ll even help them with funding, in some cases we fund big pharma- or biotech-companies because we want them to get started on Parkinson’s. So we’re basically open to any kind of collaboration, at least in trying to find out how we can work together.

- Another thing we do is that we have industry researchers as part of our grant review committees and our advisory committees. So, our academic and industry advisors get to know each other in a collaborative setting. We also actively go out to meet with companies all around the world. We spent a good deal of time in Europe over the last year meeting with various companies, talking to them about Parkinson’s disease and what we think Parkinson’s patients’ needs are, trying to identify the roadblocks to progress.

**Is the industry’s attitude starting to change in your opinion?**

- Yes, without a doubt. What’s interesting is that by the time we really started proactively reaching out to industry, the academic world already knew that the Foundation was much more than just celebrity philanthropy, but it wasn’t clear that industry knew this. So, we had to spend some time showing them that we could be a real asset to them from an information perspective and that we were a serious player. Once they realized that, I think what helped us was our neutrality. All we care about is what patients care about, which is moving forward as many things as possible in the hope of getting to new therapies and a cure.