

Research in the charity sector

Charities and foundations are having an increasing impact on therapeutic R&D. Our two interviewees this month discuss their different roles: identifying research priorities for Parkinson's disease and new targets for cancer therapies.



Todd Sherer, Ph.D.
Vice President of Research Programs, the Michael J. Fox Foundation for Parkinson's Research, New York, USA.

At the Michael J. Fox Foundation for Parkinson's Research, Todd Sherer leads a 16-member team — including people with Ph.D.s, project managers and grant administrators — that reviews approximately 800 grant proposals every year, in conjunction with the foundation's scientific advisors. "We fund about US\$35 million in Parkinson's disease research annually, with a strong focus on preclinical therapeutic development and clinical research," says Sherer.

Following his Ph.D. in neuroscience from the University of Virginia, USA, which focused on neurotrophins and cell death pathways in neurodegenerative disease, Sherer was partially funded by the Michael J. Fox Foundation as a postdoctoral fellow in the laboratory of Tim Greenamyre (one of the foundation's scientific

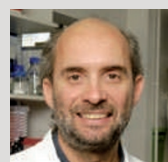
advisors) at Emory University, Georgia, USA. His work focused on understanding the role of environmental factors in Parkinson's disease and on the development of disease model systems, and led to Sherer being awarded a full postdoctoral fellowship by the foundation.

From his interactions as a grant awardee, Sherer was impressed by the foundation's plan, strategy and patient-oriented perspective. Although he enjoyed working at the bench, he knew he wanted a job that would help translate research into tangible results for people living with the disease. "I was interested in becoming a part of the foundation's model for accelerating progress toward breakthrough treatments and a cure," he says. In 2004, he was hired by the foundation as Associate Director of Research Programs. In 2006, he was promoted to Vice President.

With his team, Sherer works with both academic and industry scientists. "We stay in close touch with our awardees, helping troubleshoot when projects hit problems or strategizing next steps. Sometimes, we provide additional funding when the work shows promise to impact diagnosis or treatment," he says, adding that the foundation

is always focused on meeting patients' needs. "We can't just fund interesting or elegant science for its own sake. We need to answer the critical questions that will push discoveries toward the next stage of development, whatever that might be." Each award is therefore structured so that the research meets predetermined milestones, and awardees are required to present their progress to review committees at specific points in the project. In addition, the foundation hopes to engage researchers worldwide through a recently launched online research community (see <http://www.pdonlineresearch.org>).

The overall aim is to reward excellent scientists for doing patient-relevant research. "We are confident that we are inventing novel and successful ways to do that," says Sherer. "We're constantly fine-tuning and trying new things. It's possible in life to paralyse yourself looking for that one perfect approach to a problem. Everyone, from our staff to our board to Michael J. Fox himself, has a willingness to jump in, experiment, assess and learn as we go. Our model is new and unproven, so we have to approach things that way."



Spiros Linardopoulos, Ph.D. Team Leader, Breakthrough Breast Cancer Research Centre and the Centre for Cancer Therapeutics, the Institute of Cancer Research, London, UK.

Based at the Institute of Cancer Research (ICR) in London, UK, Spiros Linardopoulos leads the Cancer Drug Target Discovery team at the Breakthrough Breast Cancer Research Centre and the Target Discovery and Apoptosis team at the Cancer Research UK Centre for Cancer Therapeutics. "We aim to identify new molecular targets and develop drugs through the processes of hit generation, lead identification and optimization, and candidate selection. Furthermore, we wish to identify patient subgroups that would benefit from treatment," says Linardopoulos.

After receiving his Ph.D. in cellular and molecular biology from the Faculty of Biology at the University of Athens, Greece, Linardopoulos was awarded a 3-year Marie Curie postdoctoral research fellowship to study tumour suppressor genes. This was completed in the laboratory of Genetics and Chemical Carcinogenesis, led by Professor Allan Balmain, at the Beatson Institute in Glasgow, UK.

Following this, he moved to Onyx Pharmaceuticals in the United States, a company that was focusing on the development of mutant adenoviruses as a novel anticancer approach. In parallel, Onyx had a small-molecule programme in which he was involved in the development of inhibitors of oncogenic cell cycle kinases. From the experience he gained in anticancer drug development at Onyx, he was attracted to a different drug discovery model at the Centre for Cancer Therapeutics, led by Professor Paul Workman, and the Breakthrough Breast Cancer Research Centre, led by Professor Alan Ashworth at the ICR.

"The Centre for Cancer Therapeutics brings together the best of academic research, with a drug discovery infrastructure," he says. "Our recent successes include the development of abiraterone [an inhibitor of cytochrome P450 17 that is being developed by Cougar Biotechnology (a subsidiary of Johnson & Johnson) and is in Phase III trials to treat prostate cancer] and the discovery of small-molecule inhibitors of phosphoinositide 3-kinase and heat shock protein 90." The Breakthrough Breast Cancer Research Centre is also a unique, specialized model that combines basic and translational research laboratories, says Linardopoulos.

Although it is difficult to identify and understand the combination of features of a small molecule that could lead to a successful drug, he finds this aspect of his work, and the identification of new gene targets that initiate the drug discovery process, very rewarding. Also, despite the high attrition rate in drug discovery and development, he is not deterred. "I have experienced the amazing power of one successful experiment which keeps you going, despite numerous 'dead ends' along the way," he says.

Overall, Linardopoulos is inspired by "the incredible power and efficiency of team work and collaboration, both within the ICR and with external partners in different programmes." Throughout his career, he has felt lucky to meet inspirational people who have taught him the importance of collaboration, teamwork and innovative thinking. "Similarly, I have worked with people in the laboratory who are all inspired by the same dream — the cure for the disease — and with their efforts I have seen how we can put ideas into practice and make important things happen."

WEBSITE

Career snapshots: http://www.nature.com/drugdisc/nj/nj_dd_arch.html