

# Parkinson's UK: fast-tracking change

Despite recent advances in research into Parkinson's disease, a cure has yet to be found. **Dr Arthur Roach**, Director of Research and Development at Parkinson's UK, believes an innovative new approach is the way forward. He recently discussed his role with *Research Features*, outlining his vision for the future.

**W**orldwide, an estimated 6.3 million people are currently affected by Parkinson's disease and that figure is rising. With a surge of new cases predicted in countries with an ageing population, such as the UK, the development of new and better treatments is vital. Dr Arthur Roach joined Parkinson's UK two years ago to spearhead the organisation's search for a cure. He brought with him over 25 years' experience in directing Parkinson's research at universities, hospitals, and pharmaceutical and biotechnology companies. While acknowledging the substantial challenges ahead, Dr Roach believes that new ways of slowing or stopping the progression of this debilitating condition are within reach.

*How would you define your role as Director of Research at Parkinson's UK?*

It's my responsibility to deliver on what people with Parkinson's want from research – that means new and better treatments, faster. It also means setting an ambitious strategy that makes maximum use of all the resources the charity has to offer – this includes money of course but also other important things such as our connection to thousands of people with the condition who are keen to be involved in research. It also means utilising our position as a trusted and authoritative organisation which means we're ideally placed to bring together the research community.

Parkinson's UK has put together an ambitious five-year strategy with a focus on research which will allow us to drive discoveries into meaningful changes for persons with Parkinson's. I have always been happiest when working at the interface between academic science and the business of drug discovery and development, and this role puts me in the middle of that.

*Could you tell us about Parkinson's UK's background and heritage, and give some examples of the important research it has been involved in over the years?*

Parkinson's UK has been funding groundbreaking research since it was founded almost 50 years ago. This research has been part of a world-wide effort by the Parkinson's research community that, in many ways, has completely revolutionised our understanding of Parkinson's. We are making tremendous progress towards understanding the causes of the condition – including what goes wrong inside the brain cells that are lost, such as mitochondrial dysfunction – and also helping to build a picture of the genes involved. Alongside this, we've funded a huge amount of work into understanding how Parkinson's affects everyday life for people with the condition, pioneering work into previously under-researched areas such as mood changes, sleep difficulties and dementia.

More info can be found here: [www.parkinsons.org.uk/content/our-achievements-so-far](http://www.parkinsons.org.uk/content/our-achievements-so-far)



*How do you think your earlier roles at pharmaceutical companies such as Merck Serono and the Geneva Pharma Network, have helped in your role as Director of Research at Parkinson's UK?*

I started out in academic neuroscience working at universities in the US and Canada. I then moved on to work in biotech and large pharma companies, where I worked for 15 years on discovering

and developing drugs for Parkinson's, Alzheimer's and multiple sclerosis primarily. I was responsible for the Parkinson's research strategy, and partnerships with university scientists, at Merck Serono in Switzerland, and recently worked on creating a start-up company addressing a rare, life-threatening neurological disease. These many years of experience working in various stages in the drug development process make me well

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prepared to deliver on Parkinson's UK's research strategy.

**What are the current research focuses for Parkinson's UK?**

We have an ambitious five year strategy which is focused on developing better treatments for Parkinson's. Every part of our research programme is geared towards delivering this for people with Parkinson's. We fund numerous excellent research projects at universities and hospitals including targeting exosomes to stop Parkinson's in its tracks, precision drugs for Parkinson's and protecting brain cells when energy levels run low. Our virtual biotech is geared towards developing the best ideas into treatments for people with Parkinson's and we are improving and speeding up clinical trials through our Critical Path for Parkinson's initiative.

*The Parkinson's UK website states that there have been no major advances in Parkinson's disease treatments in the last decade. Why do you think this is and how do Parkinson's UK hope to change that statistic?*

There have not yet been the approvals of game-changing treatments that can actually slow, stop or reverse the development of Parkinson's that are urgently needed by millions of people. In spite of this, the scientific advances that have been made in the last few years, particularly in genetics and molecular biology, mean that we have promising targets for new treatments to capitalise on. However, there is currently not enough investment in turning these insights and ideas into treatments – and that is a major gap that we are stepping in to fill with our virtual biotech.

**Are neurological disorders such as Parkinson's disease sufficiently recognised within research, or do you feel there is a need for them to receive further funding and attention?**

I think the need is recognised, but that has not always translated into investment on the same level as some other conditions. Part of our strategy is to encourage greater investment in Parkinson's research by other partners, in particular from industry for

drug development and clinical trials. We're really encouraged by the fact that major pharmaceutical companies have joined our Critical Path for Parkinson's project – bringing their data and expertise to help develop tools to improve clinical trials for the international Parkinson's community. Their commitment to this initiative demonstrates their interest in late-stage Parkinson's research. Our strategy of focusing on mid-stage projects will provide pharma companies with compelling opportunities to take into their late-stage pipelines.

**Since Parkinson's UK was first established, how great an influence has its work had on Parkinson's disease? Are there any personal achievements you are particularly proud of?**

When Parkinson's UK was founded there was almost no third-sector (charity) funding for Parkinson's research in the UK. Today we can look back at providing a great deal of money to leading research teams that have delivered fantastically important work on what is the current mainstay in treatment (dopamine replacement strategies), but also fundamental pathophysiology and genetic studies, growth factor trials, brain banks, and much more. My personal highlight is definitely having brought supporters, researchers and our organisation around to the idea that in the domain of delivering new treatments, we should think

and act more like a results-focused biotech and less like a traditional charity. This is not to say that we have by any means abandoned the successful charity approach we have taken to other areas of our work.

**Although your name (Parkinson's UK) has UK in its title, do you extend your research outreach to collaborate with other countries internationally as well? How important is having these collaborations within science?**

International collaboration is of course vital and one area in which we are doing this currently is through our Critical Path for Parkinson's initiative which is in partnership with the Critical Path Institute – an organisation based in the US. However, the entire business of scientific research, and creating better treatments, is a much-networked, international enterprise. So on the research side of the charity, it would be fair to say that we reach out into the global research community from a strong base in the UK.

**Parkinson's UK Brain Bank is one of your institution's brilliant initiatives. Could you tell us more about this and how people could get involved with it?**

The Parkinson's UK Brain Bank is the UK's largest brain bank dedicated to Parkinson's. We collect tissue from people with and without the condition and provide it to

researchers in the UK and around the world who are working towards a cure for Parkinson's. The Brain Bank is funded by Parkinson's UK in partnership with Imperial College London. If you are interested in getting involved, download or request an information pack from our website: [www.parkinsons.org.uk/content/parkinsons-uk-brain-bank](http://www.parkinsons.org.uk/content/parkinsons-uk-brain-bank)

**What is the future strategic direction of Parkinson's UK in its research? Do you think a cure for Parkinson's disease will be found within the next ten years?**

I am very excited about our new virtual biotech approach. Our approach means working like a biotech company and using the funding that our supporters give us to scout out promising leads for impactful new treatments, and then to bring together the best scientists, companies and investors to develop those leads into drugs. This is our major strategic innovation that will grow in size and influence in the coming years. In ten years' time, I hope that we will have a cure: a treatment that, combined with exercise and other approaches, will stop the progression of Parkinson's so that people can continue to enjoy their careers, families and leisure for many, many years without having to resort to higher and higher doses of dopaminergic medication.

**It's my responsibility to deliver what people with Parkinson's want from research – new and better treatments, faster**



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