

MOVERS

Colin Masters, executive director, Mental Health Research Institute of Victoria, Australia



1989–2006: Consultant, chief of neuropathology laboratory, and chair, senior scientists' council, Mental Health Research Institute of Victoria

1989–2006: Consultant, Royal Melbourne Hospital

1999–2005: Associate dean (research), faculty of medicine, dentistry and health sciences, University of Melbourne

While a medical school student at the University of Western Australia, Colin Masters became fascinated by brain diseases above all else. He focused specifically on 'slow virus diseases' of the brain, including those with a delayed clinical onset such as prion diseases.

Masters first looked at prions to study the deposition of protein aggregates called amyloids. Seeing a possible link, he turned that work into a project studying the nature of amyloid deposits in Alzheimer's patients. He says the decision to research neurodegenerative diseases was the first pivotal moment of his career. At the time, the field adhered to a more descriptive study of neuropathology. With his collaborators, Masters capitalized on the newly available power of protein purification, identification and sequencing. Together, they sequenced the amyloid protein and began a fruitful decade of discoveries.

Having championed the amyloid theory of Alzheimer's, which holds that the accumulation of toxic amyloid protein impairs cognition, Masters is most proud of sparking an explosion of interest in the field. The amyloid protein is one of the most highly studied proteins in the whole of cell biology, boasting more than 800 papers annually.

In 2000, after running a laboratory at the Mental Health Research Institute of Victoria (MHRI) in Melbourne since the late 1980s, Masters turned his focus to the environmental and genetic contributors to Alzheimer's. His shift coincided with industry collaborations geared towards developing therapies for the disease, and the co-founding of a small biotech company called Prana Biotechnology. With one potential therapy currently undergoing early phase II drug trials in Sweden, Masters has turned his attention back to research.

As executive director of the MHRI, Masters plans to use his Alzheimer's experience to address psychoses and mood disorders. The synergy between the MHRI and the nearby Howard Florey Institute at the University of Melbourne should help.

"Colin Masters coming to Melbourne gives us the opportunity to bring molecular imaging and genetic techniques to psychiatric disorders, such as schizophrenia and bipolar disorder," says Fred Mendelsohn, director of the Howard Florey Institute.

Says Masters: "Clearly understanding how the brain and mind work are the biggest challenges for the next 10–20 years — and I want to be there as it is unfolding." ■

Virginia Gewin

NETWORKS & SUPPORT

Torn between two ladders

Much has been said about the pyramidal structure in academic science. But what if budding scientists discover halfway into their PhD that they're climbing the wrong career ladder? I was fortunate enough to find a way to change the focus of my career without having to compromise.

I believe that established scientists generally share a passion for science. Like Archimedes making his most famous discovery while bathing, their research questions stay with them even outside the lab. Near the end of my master's studies I worked in the cell-biology lab of one such scientist. His endless enthusiasm fostered a great lab environment. I accepted an offer to stay for my PhD. I don't regret this decision; my PhD was exciting and successful. But towards the end I struggled with what to do next.

Up to that point, I hadn't had moments of crisis like many PhD students who fear they'll never publish. From the start we formed exciting, successful collaborations. Still, I did not have the passion for cell biology that I saw in my supervisor on a daily basis. Then I started to develop an interest in programming. Along with a friend and fellow PhD student, I developed several scientific applications to help molecular biologists analyse and construct DNA

sequences. It became my passion. Outside the lab, I stopped thinking about cell biology and started thinking about my programs.

What to do next? I considered a hybrid subject, such as electron microscopy, but had difficulty devising a grant proposal. My rescue came in the form of the annual postdoc retreat organized by the Netherlands Cancer Institute. A break from the lab bench and stimulating lectures helped me think about my options. A talk about community-based software that might lead to a more open discussion and valuation of scientific articles sparked lots of research ideas.

Two months ago, I started at the text mining group at the European Bioinformatics Institute in Hinxton near Cambridge, UK. I already feel right at home in this completely different field. I now realize that pursuing some 'hybrid' postdoc would have been a mistake. My creativity and passion lie with computers and bioinformatics. If I'd compromised rather than making the leap to a new field, I would have been unhappy and less enthusiastic. When I discovered I was climbing the wrong ladder I had to make the jump to one that suited me more. ■

Alexander Griekspoor is a Marie Curie postdoctoral fellow at the EMBL European Bioinformatics Institute.

POSTDOC JOURNAL

Smart moves

'Work smarter, not harder.' This is my mantra. I'm a postdoc in a meiotic recombination lab at Cornell University and the mother of 1.5 children. I've found that balancing work and family takes more coordination, organization and time-management skill than I ever needed before starting a family.

Sounds awful, right? Actually it's been the best thing to happen to me. It has made me a better scientist because I carefully plan experiments and maximize output with minimal input. After my son was born, I completed my graduate work, wrote a thesis, graduated, wrote a grant (awarded), wrote a manuscript (accepted), and got a postdoc position. That's not bad for 20 months' work.

With that said, this year brings many new challenges: a new project in an unfamiliar field, several technically difficult project goals and a new baby on the way. Can I still be productive and competitive with all this on my plate? Is the tenured professor track the right career path for me, or should I look to industry?

This year, through conferences and Cornell University's postdoc advisory resources, I plan to talk to women in industry, in faculty and in postdoc positions, and to women scientists who have left science, to hear all sides and garner advice. I'll ask my spouse for more flexibility and support to ease my home life. As for managing research and life, I will rely on my mantra to work smarter, not harder, in all that I do. ■

Moir Sheehan is a postdoc in plant breeding and genetics at Cornell University.