



RESEARCH2REALITY

Shining a light on research & innovation.

Unlocking the Alzheimer's Mystery

An Interview with Professor David Westaway
Neuroscientist, University of Alberta

How does dementia affect society?

So my research concerns the molecules that go wrong in neurodegenerative diseases. The biggest one is the dementia problem, and this is just happening in all industrialized countries. That has impact on health care system, it has an impact on people who look after the family members who are unfortunate enough have the disease. Around each person, there's a cluster of people looking after them and they disappear out of the workforce – a number that's thought to triple in the next generation.

How does your research work?

A protein in a living cell is a bit like a verb in the sentence: it does the work. If there's no verb, the sentence doesn't make any sense, and the proteins get the work done. If it goes wrong, they can't get things done. But even worse, they could send other proteins into the wrong shape. These molecules wander around the body or they wander from one part of the brain to the other, and neuropathologists have known this for a long time, but they didn't know why it happened. Alzheimer's disease starts in a certain part of the brain and then it spreads out, and similar thing happens for Parkinson's disease. It wasn't quite known why it spreads in this way, but it's really the protein molecules in the wrong three dimensional shape are spreading out from a focus and gradually are colonizing more and more of the brain and consequently causing more and more damage.

What does the future look like for your research?

We would like to factor in this key missing component: why as we get older, does our risk for Alzheimer's disease go up so dramatically. So we hope to help the front part of the pipeline to address these increasingly worrying diseases.