

Professor Rachel Williams

**Leverhulme Trust Senior
Research Fellow**



The Leverhulme Trust

Professor Rachel Williams,

Professor of Eye and Vision Science at the University of Liverpool, held a Leverhulme Trust Senior Research Fellowship between 2012 and 2013 to look into the development of biomaterials for use in treating ophthalmic diseases.



“My Leverhulme Trust Senior Research Fellowship gave a huge boost to my research and provided a platform from which to build a substantial new research group.”

RESEARCH

Professor Williams researches how materials and their surfaces can be modified in ways that can help in the treatment of a range of conditions relating to vision loss. This Fellowship enabled her to make pivotal changes in her research.

“It provided me with an opportunity to dedicate a significant proportion of my time to re-energise my research,” she says. “I am passionate about my research but as I became a more senior academic, I found that my role required me to take on more administration.”

Taking a cross-disciplinary approach, Professor Williams used the time to develop several significant partnerships and collaborations. She worked with SpheriTech Ltd to learn about its technology in peptide gels and went on to use this in her laboratory. This enabled her group to develop an antimicrobial contact lens with the potential to address clinical needs globally in the treatment of corneal infections. She also held workshops with clinical ophthalmologists, scientists and engineers that further strengthened cross-disciplinary collaborations at the University of Liverpool.

IMPACT

A new area of research arising from the Fellowship relates to keratoconus, a complex disease resulting in the severe distortion of the cornea causing significant loss of visual acuity (and is a particular problem in the working age population). Professor Williams has developed a novel project, now funded by the Engineering and Physical Science Research Council (EPSRC),

to look at chemical cross-linking in the treatment of this disease in collaboration with the Aravind Eye Care System and Aurolab in India.

The Fellowship has enabled Professor Williams to work towards building a research group that can tackle a range of challenges: “I hope that we will be able to develop materials that can be used in cell transplantation strategies in the treatment of severe vision loss, including in the treatment of age-related macular degeneration, diabetic retinopathy, corneal diseases and conjunctival disorders.”

CAREER DEVELOPMENT

Professor Williams used the opportunities provided by this Fellowship to demonstrate the impact of her research and she credits this as supporting her promotion to professor. She continued to build on her research afterwards with an Engineering for Growth Fellowship from the EPSRC. “This is an enormous boost to my career and is supporting a substantial group over the next five years,” she explains.

The Fellowship also provided time for her to develop outreach activities that brought her research to new audiences.

LEVERHULME TRUST SENIOR RESEARCH FELLOWSHIPS

Royal Academy of Engineering Leverhulme Trust Senior Research Fellowships allow academics to concentrate on full-time research by covering the salary costs of a replacement academic who takes over the awardee’s teaching and administrative duties for up to one year.