



Professor Matthew Hall

Senior Research Fellow and Research Chair

Professor Matthew Hall is the Director of the GeoEnergy Research Centre (GERC), which is a joint initiative between the British Geological Survey (BGS) and the University of Nottingham. In 2014, he was awarded a Royal Academy of Engineering Senior Research Fellowship, supported by the BGS, for research into alternative hydrocarbons and CO₂ storage and associated technologies. In 2016, this was upgraded to a Royal Academy of Engineering Research Chair following a promotion.

“Being a Research Chair has completely altered the trajectory of my research career, while giving me the freedom and opportunity to transform my vision into reality.”

RESEARCH

Through this Fellowship, Professor Hall works with the BGS on a range of research challenges including enhanced oil and gas recovery and safe, permanent and economic CO₂ sequestration and utilisation. He also investigates how to effectively produce alternative hydrocarbons, such as shale gas and coal bed methane, with minimal environmental impact.

As the Director of GERC, Professor Hall is leading the development of the Geoenergy Test Bed (GTB) facility based at Nottingham. This is a multi-borehole test site for studying underground fluid movement in porous reservoir rocks. Equipped with permanently monitored sensors, both on the surface and down-hole, the site will provide valuable information on fluid-rock interaction. It is intended to become a UK national facility and platform for the development of novel sensors, monitoring technologies and simulation software.

IMPACT

Tackling the UK's energy challenges requires initiatives that bring together researchers and engineers across disciplines and sectors. The Fellowship has enabled Professor Hall to take a change to leading role in phase one of the GeoEnergy strand of the Energy Research Accelerator (ERA), a partnership of six universities and the BGS seeking to develop the research and technologies required to shape the UK's energy landscape over the next 40 years. ERA has received sizeable investment from industry and the UK government, among others.

Through his work with GERC and the GeoEnergy ERA, Professor Hall has also helped to secure a significant donation from Schlumberger (the world's largest oilfield services company) to develop software and sensor technologies using the GTB facility. “The strategic partnership with Schlumberger will enable support for student projects and specialist training in software and modelling for students and staff,” he explains.

FUTURE PLANS

Consolidating the work with GERC and the GeoEnergy ERA will provide the platform to support Professor Hall's research over the longer term, and the BGS is a partner in both initiatives. “Professor Hall's research is very important to BGS' strategic science into the next decade, which examines the uses of the subsurface in low carbon energy, including carbon capture and storage, geothermal, energy storage and aspects of unconventional hydrocarbons,” says Professor Michael Stephenson, Director of Science and Technology at BGS.

RESEARCH CHAIRS AND SENIOR RESEARCH FELLOWSHIPS SCHEME

The Research Chairs and Senior Research Fellowships scheme aims to strengthen the links between industry and academia by supporting exceptional academics in UK universities to undertake user-inspired research that meets the needs of industrial partners. Awards are co-funded by the Royal Academy of Engineering and the industry partner and last for five years.