



research microbial ecology and engineered biological systems

The University of Newcastle's Faculty of Science, Agriculture and Engineering (SAGE) and Institute for Research in Environment and Sustainability (IRES) have an international reputation for their work on the application of recent advances in microbial ecology to diverse and economically important areas including: wastewater treatment, mine pollution, soils, the deep biosphere, oil reservoirs, oil pollution and sediments.

Crucially there is strength in depth. State of art capabilities in the quantitative analysis of the number, diversity and activity of naturally occurring assemblages of microorganisms are complemented by decades of experience of research in geology, soil science and environmental engineering, ensuring that cutting edge research is undertaken and communicated in a manner of direct relevance to practitioners in the relevant problem domains. For example, the School of Civil Engineering and Geosciences has the greatest concentration of Life Scientists of any comparable School or Department in the UK and the Engineers exploiting this skills base represent some of the leading academic engineers in their field.

Moreover, intellectual foundations of the new methods are firmly supported by staff at the forefront of the study of microbial evolution and ecological theory. Key members of staff are clustered in and around the Devonshire building, centrepiece of the IRES, where they enjoy outstanding research facilities.

life mineral interactions

SAGE and the School of Civil Engineering and Geosciences is unique in its ability to address biological processes in environments where minerals, water and living systems coexist. We characterise biological products and their fate in microbial systems from soils through sediments to the deep biosphere represented by petroleum reservoirs. Research carried out by the School includes the development of novel instrumentation and procedures to determine the stability of carbon compounds in soil systems, which relates to land management and changes in farming practices. We also undertake research into the fundamental controls of living systems in extreme environments, establishing the limits to the biosphere. This has relevance to the search for life on Mars or other extraterrestrial systems.

The strength of activity in the Life Sciences in the School of Civil Engineering and Geosciences has attracted a spin-out company from Manchester, Mineral Solutions Ltd (www.mineralsolutions.co.uk) to establish a base in Newcastle, creating local employment for Newcastle graduates and income for the University. Professor Manning in CeG is a founding director of this company.

