Dr Rayfield has been the Bishop of Swindon since 2005. Before ordination he was a post-doctoral research fellow at St Mary's Hospital Medical School (now part of Imperial College) and then Lecturer in Immunology at the United Medical & Dental Schools of Guy's & St Thomas's Hospitals (now part of King's College London).

Since ordination Dr Rayfield has sought to build understanding between the worlds of science and Christian faith, both in the Church and wider society. He served on the UK Gene Therapy Advisory Committee from 2000-09, and has been a Member of the Human Fertilisation & Embryology Authority since 2012. He was a member of the Oversight Group convened by the HFEA and given responsibility for public consultation on the controversial subject of Mitochondrial Replacement Transfer.

Having published over 30 papers in the field of immunology Dr Rayfield's research interests now centre on medical/bioethics and issues related to the public understanding of science, particularly with respect to the interface with religious perspectives.