

Anthony Unsworth

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Tony Unsworth has had a long and distinguished career in bioengineering, studying the tribology of joints – this is the science of lubrication, friction and wear. In his doctoral work, on a Fellowship at Leeds, he investigated tribological reasons for the onset of osteoarthritis. After his PhD, he took a lectureship at Leeds jointly in Mechanical Engineering and Medicine. Four years later, he joined Durham University as a lecturer in Engineering.

42 years and over 300 papers later, we celebrate his career and his significant contributions in orthopaedics, studying the behaviour of human and artificial joints: hips, knees and fingers. A visitor to his laboratories would have seen an array of oscillating test rigs, from pin-on-plate rigs to investigate wear rates to sophisticated hip and knee joint simulators. He found the key to extending the life of joints to be the improvement of lubrication. His rigorous scientific methods, accurately measuring mass lost, led to landmark papers and commissions from manufacturers of artificial joints to test new products.

He later proposed artificial joints made from compliant materials used in artificial hearts, materials which offer low wear and friction. Prostheses based on his approach have gone to clinical trials; we have yet to hear the outcome, but the potential global impact is enormous.