
Prof EDWARD RICHARD CORNELL DRAPER

Curriculum Vitae

Twickenham, Middlesex TW1 3EX, UK

Mobile: 07714 396321

Web: www.EdwardDraper.Online

LinkedIn: [EdwardRCDraper](#)

ORCID: 0000-0002-9357-8455

Nationality: British

Email: Edward@EdwardDraper.Online

Twitter: [@DrEdwardDraper](#)

ResearchGate: [Edward_Draper](#)

PROFESSIONAL BACKGROUND

EDUCATION

Degrees:

1994 PhD, Bioengineering Unit, University of Strathclyde

1979 BSc, Engineering Science, University of Edinburgh, Honours

Other Qualifications:

2002 Certificate in Advanced Studies of Learning and Teaching, CASLAT,
Imperial College

PhD THESIS:

“Biomechanical Factors Affecting Fracture Healing”

Supervisors: Dr AC Nicol (internal) and Dr CB Meadows (external)

Examiners: Professor JP Paul (internal), Professor AE Goodship (external)

ACADEMIC AND ENGINEERING BACKGROUND

Industry Posts – Bioengineering / Biomedical Engineering

CURRENT POSTS

Jun 2017 – to date **Ortheia Ltd (Micro-SME MedTech Start-up)**

CEO and Founder

Duties: Strategic translation of new key, implantable, orthopaedic MedTech technologies (including regenerative medicine and cell-based therapies), creating tax-effective and attractive investment opportunities, efficient routes through global regulations to clinic and market launches including: design control and technical documentation

Achievements:

- ✦ First Major Grant Awarded (IUK8625 **£894,565**) 2019 (transferred from JRI Orthopaedics)
- ✦ First Patent (WO2019138249A1) Published 2019
- ✦ Offer of first round of investment funding in first 9 months
- ✦ Close relationships with UK Business Angel community, especially UK Business Angels Association, UKBAA
- ✦ Working with key Russell Group Universities, including: Universities of Cambridge, Leeds, Newcastle and Nottingham

CURRENT ACADEMIC POSTS

May 2021 – to date Visiting Professor, University of Sheffield, Sheffield UK

- ✦ Support discussions on developments and regulations associated with commercialisation of the launch on complex biomaterials with:
 - Regulatory Authorities: including FDA and MHRA)
 - Potential commercial purchasers of the technologies.
- ✦ Advise on publication strategies that will minimise adverse effects on the value of the University's intellectual property
- ✦ Lecturing on Advanced Biomaterials and their Commercialisation
- ✦ Set up and Run BioTech Entrepreneurs Club for Students and Staff

Apr 2012 – Mar 2018 Visiting Professor, UCL, London UK

PREVIOUS INDUSTRY POSTS

Jan 2016 – Jun 2019 JRI Orthopaedics

Technology Research Business Manager

Duties: Strategic development of the key MedTech technologies, build high-value Consortia with leading UK and EU Universities and hi-tech SMEs, raise R&D grant funding from UK and EU

Achievements:

- ✦ £5M of grant-funding in 18 months
- ✦ Establishment of MedTech Start-up Company, Ortheia

Jan 2011 – Dec 2015 JRI Orthopaedics

Executive Innovation Manager

Duties: Leading three departments: New Product Development, Technology Research and Compliance, involving designing new implants, co-developing new implant related technologies and achieving CE mark and FDA approval for international launch

Achievements:

- ✦ Co-development programme in regenerative medicine
- ✦ FDA approval of new shoulder system

Oct 2008 – Dec 2010 Finsbury Orthopaedics / DePuy Orthopaedics

Principal Design Engineer

Duties: Leading team of up to six engineers designing a new knee replacement system that extends from partial unicompartamental replacement, through total knee replacement to a new revision system.

Design Achievements:

- ✦ A new world-class cemented total knee replacement with medial ball rotation
- ✦ CE Mark

2007 – 2008

Sabbatical (funded by patent royalties)

Duties: Leading team across three Universities to design and manufacture a device for early assessment of osteoarthritis – first patent filed in May 2008

Design Achievements:

- ✦ Hand-held device for arthroscopic assessment of cartilage of the knee
- ✦ Prince II accreditation

2005 – 2007

UCL (RNOH) and Royal Veterinary College
Orthopaedic Engineering Fellow (**Hospital-based**)

Achievements:

- ✦ Established research collaboration between UCL, University of Cambridge, Hospital for Special Surgery, New York
- ✦ Project management under Good Laboratory Practice and Good Research Practice

Design Achievements:

- ✦ Novel methods of measuring the physical properties of skeletal tissues

1997 – 2005

Imperial College, Orthopaedic Surgery

Orthopaedic Engineering Fellow (**Hospital-based**)

Achievements:

- ✦ Co-applicant on £1.3m grants, 24 papers in peer-reviewed journals, five research awards, 41 conference presentations, four book chapters, and seven patents (five as sole inventor)
- ✦ Project management under ISO 9001 and ISO 13485

Design Achievements:

- ✦ Blood pump that controlled pulse and volumetric flow independently. Robotic lighting system for the operating theatre. Orthopaedic implant instrumentation

1997 – 2004

Imperial College, Surgery

Finance Officer (**Hospital-based**)

Achievements:

- ✦ Part of the management team that established new Medical School from 6 previous medical schools. Requiring delicate relationship management and leadership with all the major stakeholders with extensive and continuous consultation

1990 – 1997

Royal Postgraduate Medical School, Orthopaedic Surgery

Orthopaedic Fellow (**Hospital-based**)

Duties: detailed analysis, timely writing of report, preparation of grant application and research papers

Achievements:

- ✦ Royal Postgraduate Medical School Annual Research Prize

Design Achievements:

- ✦ Several devices for holding broken bones while measuring the stiffness of the healing fracture

1980 – 1990

NHS Bioengineering Centre

Principal Bioengineer (**Orthopaedic Hospital-based**)

Duties: lead on team of 8, the design and manufacture of one-off devices for the disabled, day-to-day running of the service, and writing reports

Design Achievements:

Over 1,000 individual devices for patients, including: beds, chairs, general support surfaces and transfer devices

RESEARCH

ACADEMIC PRIZES AND AWARDS

AWARDS

2006 Meggers Award, Society for Applied Spectroscopy 2006
For the paper:
Matousek,P., Clark,I.P., **Draper,E.R.C.**, Morris,M.D., Goodship,A.E.,
Everall,N., Towrie,M, Finney,W.F. and Parker,A.W. (2005) *Subsurface
probing in diffusely scattering media using spatially offset Raman
spectroscopy*. Appl Spectrosc., 59, 393-400

PRIZES

2005 Draper, E.R.C., Morris, M.D., Camacho, N.P., Matousek, P., Towrie, M.,
Parker, A.W. and Goodship, A.E. *A new concept in non-invasive, site-
specific bone quality assessment*. British Orthopaedic Research Society,
Stanmore.
2nd Prize

1994 Draper, E. R. C., Strachan, R. K., McCarthy, I. D., and Hughes, S. P. F.
Early biomechanical detection of delayed bone union in an animal model.
Royal Postgraduate Medical School Annual Research Prize.
1st Prize

1990 Strachan, R. K., **Draper, E. R. C.**, and Wallace, A. L. *Quantification of
the mechanical environments in an externally fixed ovine tibial osteotomy
and the effect of devascularisation upon healing*. Richard's Symposium
for Orthopaedic Registrars Research and Travel Awards 1990. London.
2nd Prize

1990 Wallace, A. L., **Draper, E. R. C.**, Strachan, R. K., and Hughes, S. P. F.
*The effect of devascularisation upon early bone healing in dynamic
external fixation*. Princess Margaret Rose Orthopaedic Hospital.
Proxime Accessit

COMMERCIAL AWARDS

**2015 Business of the Year, North of England Excellence Awards – Winning
Team**

2014 Early Stage Impact Award University of Sheffield – Winning Team

2012 **KTP Best of the Best 2012 Technology Strategy Board – for VAIOS
shoulder
Finalist**

2011 **Design Futures at Sheffield Hallam University Innovation Award
Medilink Healthcare Business Awards 2011 – for VAIOS shoulder
Winner**

EXTERNAL COMMITTEES AND REVIEW PANELS:

GOVERNMENTAL ADVICE

2017 *Secretary of State for Health SME Roundtable (20 Delegates)*
Jeremy Hunt Secretary of State for Health and Lord O’Shaughnessy
Parliamentary Under Secretary of State for Health

PARLIAMENTARY ADVICE

2017 *Life Sciences Sector Parliamentary Reception* Lord O’Shaughnessy
Parliamentary Under Secretary of State for Health and Nicola
Blackwood, Parliamentary Under Secretary of State for Public
Research and Innovation

GRANT FUNDING AWARDS COMMITTEES

2020 Transformative Healthcare Technologies 2nd Call – Peer Review
Committee **EPSRC**

2019 Major Award Committee – Biomedical Catalyst **Innovate UK**

2019 Healthcare Technologies – Healthcare Impact Partnerships Awards
Committee **EPSRC**

2019 Transformative Healthcare Technologies for 2050 – Expert Panel
EPSRC

UNIVERSITY ASDVISORY BOARDS

2016 – to date HIT Board (University-funded Awards), Selection Panel and Board
Member, University of Sheffield

2016 – to date Translate Advisory Board (HEFCE funded project), University of
Leeds

2015 – to date MultiSim: Scientific Advisory Board (In-silico Research),
University of Sheffield

2014 – to date Confidence in Confidence (MRC-funded Awards), Selection Panel.
University of Sheffield

2013 – to date Industry Advisory Board (IAB) for the Bioengineering programme,
University of Sheffield

MAJOR GRANT FUNDING

Innovate UK (2018) *AM Porous Layer Implant Design with Bioactive Layer of Glass Coating – APLID BioLOGIC* Innovate UK Reference: IUK8625 **£894,565**
Transferred from JRI Orthopaedics to Ortheia (2019)

Innovate UK (2017) *SWIFT: Innovative Arthroscopic Approach for Regenerative Treatment of the Hip* Innovate UK Reference: IUK555239 **£911,574**

Innovate UK (2017) *ADROIT – Arthroscopically-Deliverable Regenerative Osteochondral Implant Technology* Innovate UK Reference: IUK510243 **£780,956**

Innovate UK (2017) *Co-Investigator SEAMLESS - Digitally-Enabled, Automated Post-Processing for AM* Innovate UK Reference: IUK453201 **£375,776**

Innovate UK (2017) *Principal Investigator OrthoSculpt* Innovate UK Reference: IUK501248 **£190,177**

Innovate UK (2016) *Principal Investigator Porous Implant Bioactive Coating (PIBaC)* Innovate UK Reference: IUK487229 **£149,894**

Innovate UK (2016) *Co-Investigator Flexible and automated finishing and post-processing cell for high value AM components - FlexiFinish* TSB Reference: 453201 **£870,323**

EU H2020-SMEInst-2016-2017 (2016) *Principal Investigator ARMOURY* Proposal number: 736269 **€71,428**

EU FP7-SME-2011-286577 (2014) *Principal Investigator ImplantDirect* **€1,258,245**

Innovate UK (2014) *Principal Investigator FASTIC – Femtosecond-pulsed-laser Augment/bioglass Sintering Technique for Implant Customisation.* TSB Reference: 228147 **£690,188**

Technology Strategy Board (2014) *Principal Investigator Early Stage Regenerative Intervention in Hip OA* TSB Reference: 222150 **£625,159**

Technology Strategy Board (2014) *Co-Investigator Forging the standards which will shape the UK's AM sector (ANVIL)* TSB Reference: 195260 **£892,065**

Technology Strategy Board (2013) *Principal Investigator Novel 3D coating of bioactive glass and metallic composites* TSB Reference: 195219 **£795,108**

Imperial College PhD Studentship Award (2013) Industrial Partner, *Shoulder Malalignment* **£64,584**

Knowledge Transfer Partnership (2012) Industrial Partner with University of Sheffield No. 129118 *ULTRAVIT* TSB **£127,128**

EU FP7 Grant NMP.2011.2.1-1 (2012) *Co-Investigator* Principal Investigator Prof K Dalgarno, Newcastle University, Resorbable Ceramic Biocomposites for Orthopaedics and Maxillofacial Applications RESTORATION €3,828,359

BBSRC Collaborative Award in Engineering and Science (2011) *Co-Investigator* Principal Investigator Dr P Murray, Dr O Mayans, University of Liverpool *The development of culture conditions to promote the differentiation of hyaline chondrocytes from mesenchymal stem cells* £91,932

Co-funded PhD with UCL (2011) *Co-Investigator* Principal Investigator Prof M Edrisinghe, *Automated Patterning of Bioactive Deposits on Advanced Materials* £66,000

Co-funded PhD with Imperial College London (2011) *Co-Investigator* Principal Investigator Prof A Bull *Investigations into Anatomical Shoulder Joint Replacements* £64,584.00

Knowledge Transfer Partnership, Technology Strategy Board (2011) *Co-Investigator* Principal Investigator Prof J Haycock, University of Sheffield *KTP – Ultravit Project* £135,218

Heptagon Fund (2008) *Principal Researcher*. Co-Investigators Dr J Dudhia, Dr S Firth and Prof P McMillan *Raman spectroscopic assessment of early osteoarthritic changes* £25,000 construction of demonstrator

UCL Business (2008) *Principal Researcher*. Co-Investigators Dr J Dudhia, Dr S Firth and Prof P McMillan *Raman spectroscopic assessment of early osteoarthritic changes* £25,000 construction of demonstrator

EPSRC (2006) *Recognised Researcher*. Co-Investigators Dr P Matousek (PI), Prof A Parker, Prof A Goodship, Dr M Towrie and Dr I Clark *Development of a novel approach for non-invasive probing of bone tissue using Raman spectroscopy* £185,663 over two years

CCLRC (2005) *Principal Investigator*. Co-Investigators Prof. A Goodship, Prof M Morris. *Raman spectroscopy of bone through living tissue* (Beam time equivalent to £40,000)

CCLRC (2005) *Principal Investigator* Co- Investigators Prof. A Goodship, Prof M Morris, Dr A Parker, Dr P Matousek *In-vivo non-invasive assessment of bone tissue quality using Raman spectroscopy* £63,448 over three years

Hammersmith Hospitals Trustees' Research Committee (2004) *Principal Investigator* Co- Investigators Prof. S Hughes, and Prof. P Froguel
Genetic polymorphisms of collagen in and degenerative disease of the intervertebral disc
£9,650

CCLRC (2004) *Principal Investigator* Co- Investigators **Prof. A Goodship, Prof M Morris.** *Transcutaneous Raman photon migration of bone tissue*
(Beam time equivalent to **£20,000**)

Horsrace Betting Levy Board HBLB-700 (2003) Co- Investigators **Dr H Birch, Prof. A Bailey and Prof. A Goodship. *Is the inherent strength or weakness of bone and tendon mediated by collagen?*
£151,612 over three years**

DePuy International Ltd (2000) Co- Investigator **Prof. SPF Hughes. *Clinical Outcome of Total Hip Replacement (1 year)*
£35,000**

Smith & Nephew Ltd (1999) Co- Investigator **Prof. SPF Hughes. *Trauma Fellow (2 years)* **£60,000****

MedLink (1998) Co- Investigator **Mr R Coombs. *Semi-automated theatre lighting system (3 years)*
£730,070**

Action Research A/P/0451 (1995) *Principal Investigator* Co- Investigator **Prof. SPF Hughes.** *The Early Biomechanical Detection of Delayed Union of Open Fractures of the Midshaft of the Tibia (2 years)*
£70,167

Action Research A/P/0451 (1994) Co- Investigator **Prof. SPF Hughes. *The Early Biomechanical Detection of Delayed Union of Open Fractures of the Midshaft of the Tibia (1 year)*
£43,733**

Johnson & Johnson Orthopaedics Ltd (1994) Co- Investigator **Prof. SPF Hughes *Clinical Investigations of Hip and Knee Replacements (5 years)*
£162,500**

Aircast Ltd (1993) Co- Investigator **Mr. A Forester. *A Prospective Randomised Trial Comparing a Removable Ankle Brace with Conservative Treatment for Lateral Ligament Injuries of the Ankle*
£18,000**

FH Muirhead Trusts (1992) Co- Investigator **Prof. SPF Hughes. *Measurement of Movement of the Lumbar Spine in the Diagnosis and Treatment of Low Back Pain*
£6,500**

PUBLICATIONS IN PEER-REVIEWED JOURNALS

- 2021** Gaifulina, R., **Draper, E.R.C.**, Nunn, A.D.G., Strachan, R.K., Blake, N., Firth, S., Thomas, G.M.H., McMillan, P.F. and Dudhia, J.
- Microbeam Raman spectrometry and mapping for assessment of clinically-significant human cartilage degradation*
- Analytical and Bioanalytical Chemistry (Submitted)
- Impact Factor 3.637*
- 2015** Stevenson, G., Rehman, S., **Draper, E.R.C.**, Hernandez-Nava, E., Hunt, J., Haycock, J. W.
- Combining 3D human in vitro methods for a 3Rs evaluation of novel titanium surfaces in orthopaedic applications*
- Biotechnology and Bioengineering 113, 586-1599
- Impact Factor 2.431*
- 2015** Bah, M. T., Shi, J., Heller, M. O., Suchier, Y., Lefebvre, F., Young, P., King, L., Dunlop, D. G., Boettcher, M., **Draper, E.R.C.**, Browne, M.
- Inter-subject variability effects on the primary stability of a short cementless femoral stem*
- J.Biomech. 48, 1032-1042.
- Impact Factor 2.431*
- 2014** Nithyanandan A., Mahalingam S., Huang J., Rehman S., **Draper E.R.C.**, Edirisinghe M.
- Bioinspired electrohydrodynamic ceramic patterning of curved metallic substrates*
- Bioinspired, Biomimetic and Nanobiomaterials. 4(1), 59-67
- Impact Factor 0.523*
- 2013** Nithyanandan, A., Mahalingam, S., Huang, J., Rehman, S., **Draper, E.R.C.**, Edirisinghe, M.
- Template-assisted electrohydrodynamic atomization of polycaprolactone for orthopedic patterning applications*
- Mater.Sci.Eng C.Mater.Biol.Appl. 33, 4608-4615.

- 2011** de la Puerta B., Parsons K.J., **Draper E.R.C.**, Moores A.L., Moores A.P.,
In vitro comparison of mechanical and degradation properties of equivalent absorbable suture materials from two different manufacturers.
Vet.Surg. 40, 223-227
Impact Factor 1.295
- 2010** Naylor R.J., Perkins J.D., Allen S., Aldred J., **Draper E.R.C.**, Patterson-Kane J., Piercy R.J.
Histopathology and computed tomography of age-associated degeneration of the equine temporohyoid joint.
Equine Veterinary Journal 42, 425 - 430
Impact Factor 2.475
- 2009** Rumian, A. P., **Draper, E. R.C.**, Wallace, A. L., Goodship, A. E.
The influence of the mechanical environment on remodelling of the patellar tendon
J Bone Joint Surg.Br. 91, 557-564.
Impact Factor 3.309
- 2008** Loveridge, N., Power, J., **Draper, E.R.C.**, Warren, M., Reeve, J., Goodship, A.
Mechanical Underloading of the Sheep Calcaneus: A Model for Hip Fracture.
Journal of Bone and Mineral Research 23, S497
Impact Factor 6.655
- 2007** Dudhia, J., Scott, C. M., **Draper, E. R.C.**, Heinegard, D., Pitsillides, A. A., Smith, R. K.,
Aging enhances a mechanically-induced reduction in tendon strength by an active process involving matrix metalloproteinase activity
Aging Cell 6, 547-556.
Impact Factor 6.276

- 2007** Moores, A. L., Moores, A. P., Brodbelt, D. C., Owen, M. R., **Draper, E. R.C.**,
Regional load bearing of the canine acetabulum
J Biomech.
Impact Factor 2.542
- 2006** Feltrer, Y., **Draper, E.R.C.**, Perkins, M., Cunningham, A.A.
Skeletal deformities and mortality in grey heron chicks (Ardea cinerea) at Besthorpe heronry
Veterinary Record 159, 514-521.
Impact Factor 1.017
- 2006** Matousek, P., **Draper, E.R.C.**, Goodship, A.E., Clark, IP., Ronayne, K.L., Parker, A.W.,
Non-invasive Raman spectroscopy of human tissue in vivo
Appl Spectrosc 60, 758-763.
Impact Factor 4.617
- 2006** Birch, H. L., Smith, T. J., **Draper, E. R.C.**, Bailey, A. J., Avery, N. C., Goodship, A. E.,
Collagen crosslink profile relates to tendon material properties
Matrix Biology 25, S74.
Impact Factor 4.47
- 2005** **Draper E.R.C.**; Morris M.D.; Camacho N.P.; Matousek P.; Towrie M.; Parker A.W.; Goodship A E.
A Novel Assessment of Bone using Time-Resolved Transcutaneous Raman Spectroscopy
JBMR 20: 1968-1972
Impact Factor 6.655

- 2005** Morris,M.D., Matousek,P., Towrie,M., Parker,A.W., Goodship,A.E. and **Draper,E.R.C.**
Kerr-gated time-resolved Raman spectroscopy of equine cortical bone tissue
J Biomed.Opt., 10:14014.
Impact Factor 2.870
- 2005** Matousek,P., Clark,I.P., **Draper,E.R.C.**, Morris,M.D., Goodship,A.E.,
Everall,N., Towrie,M, Finney,W.F. and Parker,A.W.
*Subsurface probing in diffusely scattering media using spatially offset
Raman spectroscopy*
Appl Spectrosc., 59, 393-400
Impact Factor 1.879
- 2005** Edwards M-B., **Draper E.R.C.**, Hand J.F., Taylor K.M., Young I.R.
*Mechanical Testing of Human Cardiac Tissue: Some Implications for MRI
Safety* J. Cardio. Mag. Reson., 7: 835-840.
Impact Factor 2.076
- 2005** Dudhia, J., Scott, C. M., **Draper, E.R.C.**, Pitsillides, A., Smith, R.K.W.,
*Loss of tendon tensile strength induced by mechanical strain is an active
process involving matrix metalloproteinase activity*
Int J Exp Path 86, A80-A81.
Impact Factor 1.942
- 2005** Matousek, P., Morris, M. D., Everall, N., Clark, I. P., Towrie, M., **Draper,
E.R.C.**, Goodship, A., Parker, A.W.
*Numerical simulations of subsurface probing in diffusely scattering media
using spatially offset Raman spectroscopy*
Applied Spectroscopy 59, 1485-1492.
Impact Factor 1.879

- 2005** Beck,A., **Draper,E.R.C.** and Pead,M.
Regional load bearing of the feline acetabulum

J Biomech. 38, 427-432.

Impact Factor 2.542
- 2003** **Draper,E.R.C.** and Goodship,A.E.
A novel technique for four-point bending of small bone samples with semi-automatic analysis

J Biomech, 36, 1497-1502.

Impact Factor 2.542
- 2002** Gourlay,T., Ballaux,P.K., **Draper,E.R.C.** and Taylor,K.M.

Early experience with a new technique and technology designed for the study of pulsatile cardiopulmonary bypass in the rat

Perfusion, 17, 191-198.

Impact Factor 0.91
- 2000** Walker,R.W., **Draper,E.R.C.** and Cable,J.M.

Evaluation of pressure beneath a split above elbow plaster cast

Ann R Coll Surg Engl, 82, 307-310.

Impact Factor 0.652
- 2000** **Draper,E.R.C.**, Cable,J.M., Sanchez-Ballester,J., Hunt,N., Robinson,J.R. and Strachan,R.K.

Improvement in function after valgus bracing of the knee. An analysis of gait symmetry

J. Bone Joint Surg. Br., 82, 1001-1005.

Impact Factor 1.790
- 2000** **Draper,E.R.C.**

A treadmill-based system for measuring symmetry of gait

Med. Eng Phys., 22, 215-222.

Impact Factor 1.179

- 1997** Lee,S.W., **Draper,E.R.C.**, and Hughes,S.P.F.,
Instantaneous center of rotation and instability of the cervical spine. A clinical study
Spine, 22, 641-647.
Impact Factor 2.439
- 1997** **Draper,E.R.C.**, Strachan,R.K., Hughes,S.P., Nicol,A.C. and Paul,J.P.
The design and performance of an experimental external fixator with variable axial stiffness and a compressive force transducer
Med. Eng Phys., 19, 690-695.
Impact Factor 1.179
- 1995** **Draper,E.R.C.**, Wallace,A.L., Strachan,R.K., Hughes,S.P., Nicol,A.C. and Paul,J.P.
The design and performance of an experimental external fixation device with load transducers
Med. Eng Phys., 17, 618-624.
Impact Factor 1.179
- 1994** Wallace,A.L., **Draper,E.R.C.**, Strachan,R.K., McCarthy,I.D. and Hughes,S.P
The vascular response to fracture micromovement
Clin. Orthop., 281-290.
Impact Factor 2.351
- 1994** McGregor,A.H., McCarthy,I.D., **Draper,E.R.C.** and Hughes,S.P.F.
Differences in the flexibility and velocity characteristics of the thorax relative to the pelvis during a simple flexion-extension test
Physiotherapy, 80, 481.
Impact Factor 1.814

- 1993** MacNicol,M.N., Krishnan,J. and **Draper,E.R.C.**
Epiphyseodesis using a cannulated tube saw - comparison with the phemister technique
J Pediatr Orthop B, 1, 70-74.
Impact Factor 0.897
- 1991** Wallace,A.L., **Draper,E.R.C.**, Strachan,R.K., McCarthy,I.D. and Hughes,S.P.F.
Biomechanical environment of experimental fractures: haemodynamics and interfragmentary strain
Surg J Roy Coll Surg Edin, 36, 415-416.
Impact Factor 0.447
- 1991** Wallace,A.L., **Draper,E.R.C.**, Strachan,R.K., McCarthy,I.D. and Hughes,S.P.F.
The effect of devascularisation upon early bone healing in dynamic external fixation
J. Bone Joint Surg. Br., 73, 819-825.
Impact Factor 1.565
- 1991** Hullin,M.G., McMaster,M.J., **Draper,E.R.C.** and Duff,E.S.
The effect of Luque segmental sublaminae instrumentation on the rib hump in idiopathic scoliosis
Spine, 16, 402-408.
Impact Factor 2.187

CONFERENCE PAPERS (REFEREED)

- 2017** Ahmed, S., Buttle, D. J., Rehman, S., **Draper, E. R. C.**, Crawford, A.
Hello! Is it mesenchymal stem cells you're looking for?
International Journal of Experimental Pathology 98, A2-A3
The British Society for Matrix Biology Spring 2017 meeting “Matrix Proteoglycans: active participants in cell-extracellular matrix communication”

- 2016** Ahmed, S., Buttle, D. J., Rehman, S., **Draper, E. R. C.**, Crawford, A.,
Investigating the potential repair mechanism of injured cartilage using mesenchymal stem cells.
International Journal of Experimental Pathology 97, A20.
The British Society for Matrix Biology Spring 2016 meeting “The Grey Area: Age and the Extracellular Matrix”
- 2016** Ahmed, S., Buttle, D. J., Rehman, S., **Draper, E. R. C.**, Crawford, A.
Investigating the potential repair mechanism of injured cartilage using mesenchymal stem cells
International Journal of Experimental Pathology 97, A20.
- 2013** Nunn, A. D. G., Strachan, R. K., Firth, S., **Draper, E. R. C.**, McMillan, P. F., Dudhia, J.,
Intra-operative mapping of articular cartilage degeneration with Raman arthroscopy
International Journal of Experimental Pathology 94, A19-A20.
British Society for Matrix Biology – Spring 2012
- 2010** Dudhia, J., Firth, S., McMillan, P. F., **Draper, E. R. C.**,
Imaging early molecular alterations in articular cartilage degeneration by Raman spectroscopy: diagnostic applications
International Journal of Experimental Pathology 91, A32-A33.
Second Joint Meeting of the British Society for Matrix Biology and Bone Research Society: June 2009
- 2009** Dudhia, J., Firth, S., McMillan, P. F., **Draper, E. R. C.**
Assessment of early osteoarthritis by Raman spectroscopy.
In ORS 55th Annual Meeting, San Diego, USA

- 2008** Smith, R. K. W., Dudhia, J., Scott, C. M., **Draper, E.R.C.**, May, S. A., Pitsillides, A. A.
The influence of ageing in tendon homeostasis and the risk of tendon injury

Autumn Meeting of the British Society for Matrix Biology
- 2006** Goodship A.E., **Draper E.R.C.**, Swinburne R., Morris M.D., Matousek P., Parker A.W.,

Novel Assessments of Bone using Transcutaneous Raman spectroscopy

ISFR International Symposium “Assessment of Mechanical Properties of Callus and Bone” Kyoto Japan
- 2006** Birch, H. L., Smith, T. J., **Draper, E. R. C.**, Bailey, A. J., Avery, N. C., Goodship, A. E.,

Collagen crosslink profile relates to tendon material properties

American Society for Matrix Biology
- 2005** Parker, A.W., Morris, M.D., Everall, N., Clark, I.P., Towrie, M., **Draper, E.R.C.**, Goodship, A.E., Finney, W.F. and Matousek, P.

Obtaining Raman spectra from beneath diffusely scattering materials using Kerr-gated Raman and spatially offset Raman spectroscopy

11th European Conference on the Spectroscopy of Biological Molecules. Aschaffenburg, Germany.
- 2005** Morris, M.D., **Draper, E.R.C.**, Goodship, A.E., Matousek, P., Towrie, M., Parker, A.W., and Camacho N.P.

Picosecond time-gated Raman spectroscopy for transcutaneous evaluation of bone composition

SPIE Photonics West 2005. San Jose, California.
- 2005** Matousek, P., Morris, M.D., Everall, N., Clark, I.P., Towrie, M. Ward, A.D., **Draper, E.R.C.**, Goodship, A.E., Finney, W.F., Devonshire, R. and Parker, A.W.

Using Raman spectroscopy to characterise surfaces and sub surfaces of diffusely scattering media

New Horizons in Biological Imaging, Sensing and Labelling:- Emerging Technologies for the 21st Century, Oxford

- 2005** **Draper, E.R.C.**, Morris, M.D., Camacho, N.P., Matousek, P., Towrie, M., Parker, A.W. and Goodship, A.E.
- A new concept in non-invasive, site-specific bone quality assessment*
- British Orthopaedic Research Society, Stanmore. **2nd Prize**
- 2005** **Draper, E.R.C.**, Morris, M.D., Camacho, N.P., Goodship, A.E., Matousek, P., Towrie, M., and Parker, A.W.
- Transcutaneous time-gated Raman spectroscopy of bone*
- 51st Annual Meeting, Orthopaedic Research Society. Washington DC.
- 2004** Singer, E.R., Parkin, T.D. H., Hurtig, M.B., **Draper, E.R.C.**, and Goodship, A.E.
- Correlation of speed of sound and bone mineral density at three sites along the dorsal cortex of the equine third metacarpal bone*
- 31st Annual Veterinary Orthopaedic Society Meeting. Montana
- 2004** Morris, M.D., Goodship, A.E., **Draper, E.R.C.**, Matousek, P., Towrie, M., and Parker, A.W.
- Kerr-gated picosecond Raman spectroscopy and Raman photon migration of equine bone tissue with 400-nm excitation*
- SPIE Photonics West 2004. San Jose, California.
- 2004** **Draper, E.R.C.**, Birch, H.E., and Goodship, A.E.
- Is overall skeletal tissue strength predetermined by type I collagen quality?*
- 50th Annual Meeting, Orthopaedic Research Society. San Francisco.
- 2004** Beck, A., Pead, M., and Draper, **E.R.C.**
- In vitro evaluation of regional load bearing in the feline acetabulum*
- 31st Annual Veterinary Orthopaedic Society Meeting. Montana.
- 2000** **Draper, E.R.C.** and Cable, J.M.
- Knee braces engineered for better human performance*
- International Society for Prosthetics and Orthotics. Zwolle, Netherlands.

- 1999** Sanchez-Ballester, J., Hunt, N., Thomas, R., Strachan, R.K., and **Draper, E.R.C.**
- The improvement in function from wearing a valgizing knee brace as measured by multistep analysis (MSA)*
- European Federation of National Associations of Orthopaedics and Traumatology. Brussels
- 1999** **Draper, E.R.C.** and Cable, J.M.
- Gait symmetry analysis (GSA) as an objective outcome measure after injury*
- 3rd International Course Sports Rehabilitation and Biomechanics.
- 1999** Cable, J.M., Strachan, R.K., and **Draper, E.R.C.**
- Objectively measured immediate improvement of medial compartment osteoarthritic symptoms following knee bracing in the elderly athlete*
- 1st World Conference Sports Braces.
- 1998** Reichert, I.L.H, **Draper, E.R.C.**, McCarthy, I.D., and Hughes, S.P.F.
- The muscular contribution to normal periosteal blood flow*
- 44th Annual Meeting, Orthopaedic Research Society. New Orleans.
- 1998** Reichert, I.L.H, **Draper, E.R.C.**, McCarthy, I.D., and Hughes, S.P.F.
- Intramedullary reaming does not reduce blood flow in unmineralised callus*
- ARCO
- 1998** Reichert, I.L.H, **Draper, E.R.C.**, McCarthy, I.D., and Hughes, S.P.F.
- The design and mechanical assessment of two intramedullary nails - 'reamed' and 'unreamed'*
- British Orthopaedic Research Society. Oxford.
- 1998** Reichert, I. L. H, **Draper, E.R.C.**, McCarthy, I.D., and Hughes, S.P.F.
- The effect of intramedullary reaming on blood flow and mechanical properties of callus at six weeks in the ovine tibia*
- 44th Annual Meeting, Orthopaedic Research Society. New Orleans.

- 1998** Hunt, N., **Draper, E.R.C.**, Cable, J.M., and Strachan, R.K.
The improvement in function as measured with force MSA
British Orthopaedic Association. Dublin.
- 1998** **Draper, E.R.C.**, Jones, J.W.M., Barry, M., and Pearse, M.F.
Fracture healing in the tibia following intramedullary nailing: the role of gait symmetry analysis. Dublin
1st Joint Conference of the British Orthopaedic Research Society and the Royal Academy of Medicine in Ireland. Dublin.
- 1997** Reichert, I.L.H, **Draper, E.R.C.**, McCarthy, I.D., and Hughes, S.P.F.
Blood flow in the cartilaginous callus of an experimental osteotomy - 6 weeks following fixation with reamed and unreamed nails: interim results
British Orthopaedic Research Society. Cardiff
- 1997** Hitchings, A.E., Redfern, D.R.M., Hughes, S.P.F., Potamianos, P., **Draper, E.R.C.**, Amis, A.A., and Forester, A.
Rapid prototyping in the management of complex upper limb trauma.
SECEC.
- 1997** **Draper, E.R.C.**
The analysing of consecutive steps during gait: the advantage of an instrumented treadmill
British Orthopaedic Research Society. Cardiff
- 1996** Reichert, I.L.H, **Draper, E.R.C.**, McCarthy, I.D., and Hughes, S.P.F.
A comparison of reamed and unreamed intramedullary nailing. A mechanical assessment of fracture healing in the ovine tibia
British Orthopaedic Research Society. Oswestry.
- 1994** McGregor, A.H., McCarthy, I.D., **Draper, E.R.C.**, and Hughes, S.P.F.
Differences in the flexibility and velocity characteristics of the thorax relative to the pelvis during a simple flexion-extension test
Chartered Society of Physiotherapy Annual Congress. . Birmingham.

- 1994** **Draper, E.R.C.**, Strachan, R.K., McCarthy, I.D., and Hughes, S.P.F.
The early biomechanical detection of delayed union in experimental fractures
40th Annual Meeting, Orthopaedic Research Society New Orleans.
- 1993** **Draper, E.R.C.**, Strachan, R.K., McCarthy, I.D., and Hughes, S.P.F.
Early biomechanical detection of delayed bone union in an animal model
British Orthopaedic Research Society. Oxford
- 1993** **Draper, E.R.C.**, Strachan, R.K., and Hughes, S.P.F.
The immediate biomechanical consequences of axial micromovement at a fracture site and a possible mechanism by which they are sensed
British Orthopaedic Research Society. Oxford.
- 1993** **Draper, E.R.C.**, Strachan, R.K., and Hughes, S.P.F.
The estimation of the displacements at an osteotomy in the diaphysis of an ovine tibia
British Orthopaedic Society. Leeds.
- 1992** Wallace, A.L., **Draper, E.R.C.**, Strachan, R.K., Fleming, R.H., Wyatt, B.C., McCarthy, I.D., and Hughes, S.P.F.
Inter-relationship of haemodynamics and interfragmentary strain in the osteotomised ovine tibia
38th Annual Meeting, Orthopaedic Research Society. . Washington DC.
- 1991** Wallace, A.L., **Draper, E.R.C.**, Strachan, R.K., and Hughes, S.P.F.
The effect of periosteal devascularisation on early biomechanical environment of experimental fractures
British Orthopaedic Research Society. Guildford, Surrey.
- 1991** Strachan, R.K., Wallace, A.L., **Draper, E.R.C.**, Fleming, R.H., Wyatt, B.C., and Hughes, S.P.F.
Quantification of the mechanical environment in an ovine tibial osteotomy and the effect of devascularisation
37th Annual Meeting, Orthopaedic Research Society. Anaheim, California

- 1991** McQueen, M.M, Fleming, R.H., and **Draper, E.R.C.**
The effect of raised intra-compartmental pressure on bone union
37th Annual Meeting, Orthopaedic Research Society. Anaheim, California.
- 1990** Wallace, A.L., **Draper, E.R.C.**, Strachan, R.K., Fleming, R.H., Wyatt, B.C., McCarthy, I.D., and Hughes, S.P.F.
The biomechanical environment of a tibial osteotomy: the role of medullary supply in early healing
2nd Scientific Meeting of International Society for Fracture. Mayo Clinic, Rochester, Minnesota.
- 1990** Wallace, A.L., **Draper, E.R.C.**, Strachan, R.K., Fleming, R.H., Wyatt, B.C., McCarthy, I.D., and Hughes, S.P.F.
Quantification of the biomechanical environment of a healing ovine tibial osteotomy
Evolution of external fixation and Orthofix. Montpelier
- 1990** **Draper, E.R.C.**, Wallace, A.L., Strachan, R.K., and Hughes, S.P.F.
Fracture stiffness of healing experimental fractures of the ovine tibia.
Bioengineering Measurements, British Society of Strain Measurements. Glasgow.
- 1989** **Draper, E.R.C.** and Strachan, R.K.
Fracture stiffness of healing experimental fractures of the ovine tibia.
Bioengineering Measurements, British Society of Strain Measurements. Edinburgh.
- 1987** **Draper, E.R.C.** and Strachan, R.K.
A machine for the torsional testing of long bones
Ulster Biomedical Engineering Society. Belfast
- 1987** **Draper, E.R.C.** and Duff, E.S.
Factors affecting lateral asymmetry (ISIS)
ISIS Users' Group Meeting. Princess Margaret Rose Orthopaedic Hospital, Edinburgh.

- 1986** Duff, E.S. and **Draper, E.R.C.**
Survey of Normal Adolescent Back Shape as Measured by ISIS
4th International Symposium on Surface Topography and Spinal Deformity. Mont Ste Marie, Quebec.
- 1983** Gow, D.J., Dick, T.D., **Draper, E.R.C.**, and Loudon, I.R.
Physiologically appropriate control of an electrically powered hand prosthesis

IV ISPO World Conference. London.

POSTERS

- 2016** Ahmed, S., Rehman, S., **Draper E.R.C.**, Crawford A.
Potential cartilage repair mechanisms using mesenchymal stem cells

Tissue Engineering and Regenerative Medicine International Society (TERMIS), **Uppsala, Sweden**
- 2015** Ahmed, S., Rehman, S., **Draper E.R.C.**, Crawford A.
Repairing injured articular cartilage: Investigation of potential repair mechanisms using mesenchymal stem cells

British Society for Matrix Biology, **Edinburgh**
- 2013** Stevenson, G., Haycock, J.W., Rehman S., **Draper, E.R.C.**
Effect of Surface Roughness on Bone-Cell Response to Coatings for Orthopaedic Application

European Society for Biomaterials, **Barcelona**
- 2012** Stevenson, G., Haycock, J.W., Rehman S., Czenkusz, A., **Draper, E.R.C.**
ULTRAVIT® - The Next Generation Orthopaedic Coating That's Made In Sheffield

SET for Britain, **London**
- 2012** Stevenson, G., Haycock, J.W., Czenkusz, A., **Draper, E.R.C.**
ULTRAVIT® - The Next Generation Orthopaedic Coating

UK Society of Biomaterials, **Nottingham**

- 2012** Fuller, C., Murray, P., Mayans, O., **Draper, E.R.C.**
Developing Novel Biomimetic Protein Scaffolds for Mesenchymal Stem Cell Differentiation.
IIB University of Sheffield, **Sheffield.**

CONFERENCE PAPERS (NOT REFEREED)

INVITED LECTURES

- 2005** *Genetic polymorphisms affecting the biomechanics of collagen I rich tissues*
Black Forest Forum, **Germany**
- 2004** *Competence of Bone: Biomechanics, Biochemistry, Spectroscopy and Genetics*
Hospital for Special Surgery, **New York, USA**
- 2004** *Mechanical Competence of Bone*
University of Michigan, **Ann Arbour, USA**
- 1994** *Biomechanical factors affecting fractures*
University of **San Francisco, USA.**

COMMERCIAL TALKS

INVITED LECTURES (Single Author)

- 2018** *Translation of Biomaterials Innovation in the UK*
Materials Accelerator Forum, Henry Royce Institute. **University of Manchester**
- 2018** *Responsible Innovation in MedTech: The Industrial Perspective.*
EPSRC Centre for Innovative Manufacturing in Medical Devices, **University of Sheffield**
- 2015** *Next Generation of Coatings for Orthopaedic Implants*
KTP@40, Sheffield Universities' The Managing Directors' Club. **Sheffield**
- 2015** *UK and Academic-led Innovation*
University of Sheffield. **Sheffield**

- 2014** *Innovation in Joint Replacement Technology: to Replace or Regrow*
Liddiard Memorial Lecture 2014, Institute of Materials, Minerals and Mining.
London
- 2014** *Driving Innovation: Bioactive Glass in Joint Replacement*
British Glass Annual Conference, **London**
- 2014** *Innovation through Collaboration*
Keynote Speech WMG, Warwick Manufacturing Group. **Warwick**
- 2014** *A UK Implant Manufacturer's Perspective on the Future of Hip Surgery.*
Bristol Hip Conference. **Bristol**
- 2014** *Additive Manufacture in Medical Sector*
AILU, Association of Industrial Laser Users. **Sheffield**
- 2013** *Custom-made implants for human joints. Why 3D printing is not the answer...yet*
University of Sheffield. **Sheffield**
- 2013** *Innovating to meet unseen needs: Constraints in medical device manufacturing*
Opening Ceremony, EPSRC Opening Ceremony, MeDe, Centre for Innovate
Manufacture of Medical Devices. **Leeds**
- 2013** *Future Growth – The path of orthopaedics in the 21st century*
Med-Tech Innovation Expo 2013. **Birmingham**
- 2013** *Knowledge Transfer: Fostering Links between your HEI and Another Organisation*
Knowledge Transfer, Westminster Forum. **London**
- 2013** *Innovation in Joint Replacement Technology*
Sheffield Metallurgical and Engineering Association (SMEA), **Sheffield**
- 2012** *JRI Research Highlights*
Opening of the Mercury Centre, University of Sheffield, **Sheffield**

- 2012** *Human Joint Disease - Replace or Regrow?*
Institution of Mechanical Engineers **Yorkshire Region**
- 2012** *Innovation in Practice*
Global Manufacturing Festival 2012, Sheffield Chamber of Commerce,
Sheffield
- 2012** *Thriving through technical changes*
Innovate to Grow Conference 2012, Future factory Series, The Manufacturer,
Birmingham
- 2012** *Innovation in Action*
MACH 2012, Manufacturing Technologies Association (MTA), **Birmingham**

OTHER PUBLICATIONS

BOOK CHAPTERS

- 1997** **Draper E.R.C.**
Basic Biomechanics. In: Sciences Basic to Orthopaedics. In: Hughes S.P.F.
McCarthy I.D. (Eds.), WB Saunders, London.
- 1997** Forester A., **Draper E.R.C.**
Applied biomechanics of prosthetic joint replacement. In: Sciences Basic to
Orthopaedics. Hughes S.P.F. McCarthy I.D. (Eds.), WB Saunders, London.
- 1993** Wallace A.L. **Draper E.R.C.** Strachan R.K. Hughes S.P.F.
The vascular response to micromovement in experimental fractures. In:
Turner-Smith, A.R. (Ed.), Micromovement in Orthopaedics. Clarendon Press,
Oxford.
- 1987** Duff E.S. **Draper E.R.C.**
Survey of Normal Adolescent Back Shape as Measured by ISIS. In: Stokes,
I.A.F. Pekelsky J.R. Moreland M.S. (Eds.), Surface Topography and Spinal
Deformity. Gustav Fischer Verlag, Stuttgart.

PATENTS

Current Commercial Value \$1,410,000

66 Patents in 9 Families, 35 Patents as Sole Inventor

Inventors: Draper, E.R.C., Glendenning, M., Marshall, M. (Filing March 2021)

Bioactive Glass Composition

Assignment: Ortheia

Inventors: Draper, E.R.C., Glendenning, M., Rehman, S., Ireson, R. (2019)

Method for Processing Glass

Assignment: Ortheia and Glass Technology Services [WO2019138249A1: 3 Patent Family]

Sole Inventor: Draper, E. R. C. (2018)

Bone fixated, articulated joint load control device.

Assignment: Moximed, California, USA. [US9943336: 23 Patent Family].

Commercial Value **\$1,270,000**

Inventors: Draper, E.R.C., Proffitt, G.F.M., Carver, K., Flatters, I.J. (2017)

Surgical Instrument (for Hip Arthroscopy)

Assignment: JRI Orthopaedics and Surgical Innovations [: 5 Patent Family]

Inventors: Draper, E.R.C., Firth, S., Dudhia, J. McMillan, P. F. (2014)

Tissue Assessment using Raman spectroscopy

Assignment: UCL Business and Royal Veterinary College [US8688199: 6 Patent Family] Commercial Value **\$140,000**

Sole Inventor: Draper, E. R. C. (2004)

Lighting system for controlled illumination of a region of interest.

Assignment: Imperial College Innovations. [WO2004068167A1: 2 Patent Family]

Inventors: Draper, E. R. C., Birch H. and Goodship, A. E. (2004)

Musculoskeletal Assay.

Assignment: Royal Veterinary College. UK. [WO2004079345A2: 3 Patent Family]

Inventors: Darzi, A. W., Edwards, L. D., Mackay, S., Yang, G-Z., and **Draper, E. R. C.** (2003)

A system for real time data encryption

Assignment: ORBB Ltd. [WO2003028025A1: 4 Patent Family]

Inventors: Darzi, A. W., Edwards, L. D., Mackay, S., and **Draper, E. R. C.** (2002)

Data Recorder

Assignment: ORBB Ltd. [WO2002017640A1: 10 Patent Family]

Sole Inventor: **Draper, E. R. C.** (1999)

Assessing the state of union in a bone fracture.

Assignment: British Technology Group. [WO1995022282A1: 10 Patent Family]

Sole Inventor: **Draper, E. R. C.** (1995)

Medical Apparatus - Healing Status Fixator

Assignment: British Technology Group. [GB 94 03158.0]

Sole Inventor: **Draper, E. R. C.** (1979)

A Toy with the External Form of a Regular Polyhedron.

Assignment: Draper E.R.C. 8202509

PATHWAYS TO IMPACT / COMMERCIAL ROADMAPPING REPORTS

2015 – today **8 Commercially-Sensitive Reports** (details not given here)

2015 **COREP, Turin, Italy** – commercial route and impact report, *spinal implant*

2015 **Sagetis Biotech SRL, Barcelona, Spain** – commercial route and impact report, *spinal implant*

2015 **Newcastle University, UK** – commercial route and impact report, *osteocondral implant*

2015 **Arthritis Research UK, Newcastle University, University of Cambridge UK** – commercial route and impact report, *osteoarthritis regenerative implant*

- 2015** Newcastle University, UK – commercial route and impact report, *maxillofacial fixation plate*
- 2015** University of Leeds, UK – commercial route and impact report, *spinal implant*
- 2015** University of Liverpool, UK commercial route and impact report, *self-assembling proteins for chondrogenesis*
- 2015** University of Sheffield, UK – commercial route and impact report, *regenerative medicine product for osteoarthritis*
- 2015** Newcastle University, JRI Orthopaedics, UK – commercial route and impact report, *osteocondral implant*
- 2016** University of Sheffield, JRI Orthopaedics, Glass Technology Services and Ceramisys, Sheffield, UK – commercial route and impact report, *protein-enhanced coatings for orthopaedic implants*
- 2016** UCL, London, UK – commercial route and impact report, *novel coating for orthopaedic implants*
- 2016** University of Nottingham, UK – commercial route and impact report, *osteocondral implant*
- 2017** JRI Orthopaedics, Glass Technology Services, Sheffield, UK – commercial route and impact report, *orthopaedic implants containing bioactive glass*

TEACHING & EXAMINATION

PhD External Supervision

- 2015 - 18** PhD Industrial Supervisor, *Shoulder Stability and the Contribution of the Labrum to Joint Stability: Implementation of the UK National Shoulder Model*. Klimt, C., Imperial College
- 2014 - 17** PhD Industrial Supervisor, *Novel Biomaterial Combinations for Use in Artificial Joints* Hunt, B., Newcastle University
- 2014 - 17** PhD Industrial Supervisor, *Novel Protein-enhancements for Hydroxyapatite Coatings* Atkinson, J., University of Sheffield
- 2013 - 16** PhD Industrial Supervisor, *Template-assisted electrohydrodynamic atomization – hydroxyapatite coatings*. Nithyanandan, A., UCL
- 2013 - 16** PhD Industrial Supervisor, *Development of Engineered Proteins that can Assist the Differentiation of Hyaline Chondrocytes from Mesenchymal Stem Cells* Hill, C., University of Liverpool

- 2013 - 16 PhD Industrial Supervisor, *Characterisation of Cartilage Injury Response Mechanisms and Opportunities for Bio-Functionalised Biomaterial Implants*. Ahmed, S., University of Sheffield
- 2012 - 15 PhD Industrial Supervisor, *Acetabular and Femoral Bone Modelling in Integrative Hip Implants*. Ionescu, F., University of Surrey
- 2012 - 15 PhD Industrial Supervisor, *Investigations into Anatomical Shoulder Joint Replacements* Bhuta, A., Imperial College

EngD External Supervision

- 2015 - 18 EngD Industrial Supervisor, *Electron Beam Texturing of Orthopaedic Implants using SurfSculpt®*. Pinto, T., University of Warwick

PhD EXAMINER

- 2017 PhD External Examiner, *Development of Optimal Total Hip Joint Replacement*. Rabbani M., Birmingham City University
- 2017 PhD External Examiner, *Investigating heterotopic bone behaviour through the development of a finite element model*. Rosenberg, N., Imperial College of Science, Technology and Medicine

FORMAL TEACHING QUALIFICATION

- 2002 Certificate in Advanced Studies of Learning and Teaching, CASLAT, Imperial College

TEACHING SUMMARY

- 2004 – 2006 **Module Coordinator:** Bioengineering Advances Module, BSc in Surgery and Anaesthesia – three-week course: including biomaterials
- 2001 – 2006 **MSc in Surgical Sciences.** Teaching and supervision of research projects
- 1997 – to date **BSc** – Biomechanics and bioengineering in several courses at UCL, Royal Veterinary College and Imperial College

PROFESSIONAL BODIES

Fellowship of Professional Bodies

- 2017 – to date **Fellow**, Institute of Biomedical Science (IBMS)
- 2005 – to date **Fellow**, Institution of Mechanical Engineers
- 2010 – 2016 **Member** South Yorkshire Area Committee
- 2012 – 2015 **Member** Yorkshire Regional Committee
- 2012 – 2013 **Chairman** South Yorkshire Area Committee
- 2009 – 2010 **Founder Member and Chairman** Greater London Branch: South Western Panel
- 2009 – 2010 **Member** Greater London Regional Committee

Memberships of Professional Bodies

- 2000 – 2005** Member of Institution of Mechanical Engineers
2005 – to date Member of the Orthopaedic Research Society
2001 – 2010 Member of International Society for Fracture Repair
2000 – to date Member, Engineering Council
2000 – to date Membre, FEANI, Fédération Européenne d'Associations Nationales d'Ingénieurs
1997 – to date Member of the British Orthopaedic Research Society
1996 – 2006 Member, Institute Physics and Engineering in Medicine (IPEM)

Chartered Status

- 2004** CSci, Chartered Scientist (transfer from IPEM to IBMS 2020)
1995 CEng, Chartered Engineer

BOARD OF DIRECTORS

- 2016 – to date** **Ortheia**
CEO and Founder
- 1997 – 2004** **National Society of Epilepsy**
Member of Board of Trustees (Director)
Chairman Nursing, Medical and Clinical Governance Committee
Member Finance Committee
Member Review Committee

EXTERNAL COMMITTEES & FORUMS

- 2003 – to date** EPSRC Peer Review College
2017 – to date Association of British Healthcare Industries, ABHI,
Medical and Clinical Forum

EDITORIAL BOARDS

- 2004 – to date** Expert Review of Medical Devices

EXTERNAL INTERESTS AND HOBBIES

Visual Art Photography

I have had several of my photographs in London-based exhibitions, including the **London Salon of Photography** 2019, and have won several competitions. I am currently a member of the **Royal Photographic Society** (with distinction, Licentiate of the Royal Photographic Society) and the **Richmond and Twickenham Photographic Society** (ex-President and Lifelong Member)