

## Publications

Journal publications, book chapters, and details of conference contributions.

Last updated: 29-04-2021

### Journal Publications (Peer-Reviewed):

- S. Xie, **N. Conlisk**, D. Hamilton, C. Scott, R. Burnett, P. Pankaj, A finite element analysis of tibial tritanium cones without stems in varying bone defects. *Knee*. 2020; 27(3):656-666. doi: 10.1016/j.knee.2020.02.019.
- S. Xie, **N. Conlisk**, D. Hamilton, C. Scott, R. Burnett, P. Pankaj, “Metaphyseal cones in revision total knee arthroplasty: the role of stems”, *Bone Joint Res*. 2020; 9(4):162-172. doi: 10.1302/2046-3758.94.BJR-2019-0239.R1.
- B.J. Doyle, N. Bappoo, M.B.J Syed, R.O. Forsythe, J.T. Powell, **N. Conlisk**, P.R. Hoskins, O.M.B. McBride, A.S.V. Shah, P.E. Norman, D.E. Newby. Biomechanical Assessment Predicts Aneurysm Related Events in Patients with Abdominal Aortic Aneurysm. *Eur J Vasc Endovasc Surg*. 2020;60(3):365-373. doi: 10.1016/j.ejvs.2020.02.023.
- M. Chung, N. Radacsi, C. Robert, E. D. McCarthy, A. Callanan, **N. Conlisk**, P. R. Hoskins, V. Koutsos, “On the optimization of low-cost FDM 3D printers for accurate replication of patient-specific abdominal aortic aneurysm geometry”, *3D Printing in Medicine* (2018), 4, 1.
- **N. Conlisk**, R. Forsythe, L. Hollis, B.J. Doyle, O. Mc Bride, J. M. J. Robinson, C. Wang, C.D. Gray, S.I.K. Semple, T. MacGillivray, E.J.R. van Beek , D.E. Newby, and P.R. Hoskins. “Exploring the biological and mechanical properties of abdominal aortic aneurysms using USPIO MRI and peak tissue stress: a combined clinical and finite element study”, *Journal of Cardiovascular Translational Research*. 2017; 10(5): 489 – 498. doi: 10.1007/s12265-017-9766-9
- **N. Conlisk**, C.R. Howie, and P. Pankaj. “Quantification of Interfacial Motions Following Primary and Revision Total Knee Arthroplasty”, *J. Orthop. Res.* (2017). doi:10.1002/jor.23653.
- **N. Conlisk**, C.R. Howie, and P. Pankaj. “Computational Modelling of Motion at the Bone-Implant Interface after Total Knee Arthroplasty: The Role of Implant Design and Surgical Fit”, *The Knee* (2017). doi: 10.1016/j.knee.2017.07.003
- D.E. Newby, R. Forsythe, O. McBride, J.M.J. Robson, A. Vesey, R. Chalmers, P. Burns, O.J. Garden, S.I.K. Semple, M. Dweck, C.D. Gray, T. MacGillivray, C. Wang, Y.G. Koutraki, N. Mitchard, A. Cooper, E.J.R. van Beek, G. McKillop, W. Ho, L. Fraser, H. Cuthbert, P.R. Hoskins, B.J. Doyle, **N. Conlisk**, W. Stuart, C. Berry, G. Roditi, L. Murdoch, R. Holdsworth, E. Scott, L. Milne, F. Strachan, F. Wee, K. Oatey, C. Graham, G. Murray, G. Milne, M. Bucukoglu, K. Goodman, J. Kaczynski, A. Shah, A. Tambyraja, J. Brittenden, G. Houston, R. Lambie, J. Norrie. “Aortic Wall Inflammation Predicts Abdominal Aortic Aneurysm Expansion, Rupture and Need for Surgical Repair”, *Circulation*. 2017; 136:787-797. doi: 10.1161/CIRCULATIONAHA.117.028433
- L. Hollis, E. Barnhill, M. Perrins, P. Kennedy, **N. Conlisk**, C. Brown, P.R. Hoskins, P. Pankaj and N. Roberts. “Finite Element Analysis to Investigate Variability of MR Elastography in the Human Thigh”, *Magnetic Resonance Imaging* (2017). Doi:10.1016/j.mri.2017.06.008
- **N. Conlisk**, C.R. Howie, and P. Pankaj. “On the Optimum Stem Length for Mitigation of Periprosthetic Fracture Risk Following Primary Total Knee Arthroplasty: A Finite Element Study”, *Knee Surg Sports Traumatol Arthrosc* (2016). doi:10.1007/s00167-016-4367-8

- L. Hollis, **N. Conlisk**, L. Thomas-Seale, N. Roberts, P. Pankaj, and P.R. Hoskins. “Computational Simulations of MR Elastography in Idealised Abdominal Aortic Aneurysms”, *Biomed. Phys. Eng. Express.*, 2016; 2 045016. doi: 10.1088/2057-1976/2/4/045016
- **N. Conlisk**, C.R. Howie, and P. Pankaj. “An Efficient Method to Capture the Impact of Total Knee Replacement on a Variety of Simulated Patient Types: A Finite Element Study”, *Med Eng & Phys.*, 2016; 38(9): 959 – 968. doi: 10.1016/j.medengphy.2016.06.014
- L. Hollis, E. Barnhill, **N. Conlisk**, L. Thomas-Seale, N. Roberts, P. Pankaj, and P.R. Hoskins. “Finite Element Analysis to Compare the Accuracy of the Direct and MDEV Inversion Algorithms in MR Elastography”, *IAENG International Journal of Computer Science*. 2016; 43(2): 137-146.
- **N. Conlisk**, A.J. Geers, O. McBride, D.E. Newby, and P.R. Hoskins. “Patient-Specific Modelling of Abdominal Aortic Aneurysms: The Influence of Wall Thickness on Predicted Clinical Outcomes”, *Med Eng & Phys.*, 2016; 38(6): 526 – 537. doi: 10.1016/j.medengphy.2016.03.003
- **N. Conlisk**, C.R. Howie, and P. Pankaj. “The role of complex clinical scenarios in the failure of modular components following total knee arthroplasty: A finite element study”, *J. Orthop. Res.*, 2015; 33: 1134–1141. doi: 10.1002/jor.22894
- **N. Conlisk**, H. Gray, P. Pankaj and C.R. Howie. “The influence of stem length and fixation on initial femoral component stability in revision total knee replacement”, *Bone Joint Res.*, 2012; 1:281-288. doi: 10.1302/2046-3758.111.2000107
- Partridge R, **N. Conlisk**, Davies JA. “In-lab three-dimensional printing: An inexpensive tool for experimentation and visualization for the field of organogenesis”, *Organogenesis*. 2012; 8(1):12-1. doi: 10.4161/org.20173

### Book Chapters:

- L. Hollis, L. Thomas-Seale, **N. Conlisk**, N. Roberts, P. Pankaj, and P.R. Hoskins. “Investigation of Modelling Parameters for Finite Element Analysis of MR Elastography.”, *Computational Biomechanics for Medicine*. pp 75-84. G.R. Joldes, B.J. Doyle, and K. Miller (Eds.), Springer, 2016.
- P.R. Hoskins, **N. Conlisk**, A.J. Geers, B.J. Doyle. “Patient specific modelling”. In *Cardiovascular Biomechanics*. P.R. Hoskins, P. Lawford, B.J. Doyle (Eds.), Springer (2016).

### Conference Contributions:

#### *Invited Talks:*

- **N. Conlisk**, “Wall stress and USPIO uptake in Abdominal Aortic Aneurysms”, invited presentation, Vascular Ultrasound Meeting (2013), Royal Infirmary Edinburgh, UK.

### Cardiovascular Biomechanics:

- **N. Conlisk**, O. Mc Bride, J. M. Richards, R. Forsythe, B.J. Doyle, T. Mac Gilivrey, C.D. Gray, S.I.K. Semple, D.E. Newby, and P.R. Hoskins. “On the Role of Computational Modelling and Inflammation Imaging in the Prediction of Abdominal Aortic Aneurysm Rupture Risk: A 2 Year Longitudinal Study”, *Medical Physics and Engineering Conference (2016)*, Manchester, UK.
- **N. Conlisk**, O. Mc Bride, R. Forsythe, L. Hollis, J. M. Richards, B.J. Doyle, C.D. Gray, S.I.K. Semple, T. Mac Gilivrey, D.E. Newby, and P.R. Hoskins. “On the Correlation of USPIO

Uptake with Peak Wall Stress in Abdominal Aortic Aneurysms: A Combined Finite Element and Clinical Study”, 13th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (2015), Montreal, Canada.

- L. Hollis, **N. Conlisk**, N. Roberts, P. Pankaj, and P.R. Hoskins. “Computational Simulations of MR Elastography in Idealized Abdominal Aortic Aneurysms”, 13th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (2015), Montreal, Canada.
- L. Hollis, **N. Conlisk**, N. Roberts, P. Pankaj, and P.R. Hoskins. “Comparison of 2-D and 3-D Direct Inversion Algorithms in MR Elastography for Different Geometrical Structures”, 25th Congress of the International Society of Biomechanics (2015), Glasgow, UK.
- L. Hollis, L. Thomas-Seale, **N. Conlisk**, N. Roberts, P. Pankaj, and P.R. Hoskins. “The Impact of Loading and Boundary Conditions in Finite Element Analysis of MR Elastography”, 25th Congress of the International Society of Biomechanics (2015), Glasgow, UK.
- L. Hollis, L. Thomas-Seale, **N. Conlisk**, E. Barnhill, P. Kennedy, P. Pankaj, N. Roberts, and P.R. Hoskins. “Development of a Transient Simulation of Magnetic Resonance Elastography”, Annual Meeting of the British Chapter of ISMRM (2014), Edinburgh, UK.
- **N. Conlisk**, O. Mc Bride, J. M. Richards, R. Forsythe, B.J. Doyle, T. Mac Gilivrey, C.D. Gray, S.I.K. Semple, D.E. Newby, and P.R. Hoskins “Comparison of USPIO uptake and wall stress in abdominal aortic aneurysms”, Medical Engineering Centres Annual Meeting and Bioengineering14 (2014), London, UK.
- L. Hollis, L. E. J. Thomas-Seale, **N. Conlisk**, N. Roberts, P. Pankaj, and P.R. Hoskins. “Development of Computational Simulations of Magnetic Resonance Elastography for Abdominal Aortic Aneurysms”, 7th World Congress of Biomechanics (2014), Boston, USA.
- **N. Conlisk**, D.E. Newby and P.R. Hoskins. “Patient Specific Modelling of Abdominal Aortic Aneurysms: Influence of Wall Thickness on Stress Distribution”, 7th World Congress of Biomechanics (2014), Boston, USA.
- **N. Conlisk**, O. McBride, B.J. Doyle, J.M.J. Richards, S.I. Semple, T.J. MacGillivray, C.D. Gray, G. McKillop, E.J.R. van Beek, D.E. Newby and P.R. Hoskins. “Biomechanical Wall Stress and USPIO Uptake in Abdominal Aortic Aneurysms”, 7th World Congress of Biomechanics (2014), Boston, USA.
- L. Hollis, L. E. J. Thomas-Seale, **N. Conlisk**, N. Roberts, P. Pankaj, and P.R. Hoskins. “Comparison of Transient and Steady-state Simulations of Magnetic Resonance Elastography”, 2nd UK Patient Specific Modelling Meeting (2014), Edinburgh, UK.
- **N. Conlisk**, D.E. Newby and P.R. Hoskins. “The Influence of Wall Thickness on Stress Distribution in Patient Specific Modelling of Abdominal Aortic Aneurysms”, 2nd UK Patient Specific Modelling Meeting (2014), Edinburgh, UK.
- A. Callanan, N. Tallo, **N. Conlisk**, P.R. Hoskins, and B.J. Doyle. “Centroid-symmetry Correlations with Aneurysm Wall Stress”, 2nd UK Patient Specific Modelling Meeting (2014), Edinburgh, UK.
- L. Hollis, L. E. J. Thomas-Seale, **N. Conlisk**, N. Roberts, P. Pankaj, and P.R. Hoskins. “Development of Magnetic Resonance Elastography to Acquire Mechanical Properties of Abdominal Aortic Aneurysms”, 17th Scottish Cardiovascular Forum (2014), Aberdeen, UK.
- **N. Conlisk**, O. McBride, B.J. Doyle, J.M.J. Richards, S.I. Semple, T.J. MacGillivray, C.D. Gray, G. McKillop, E.J.R. van Beek, D.E. Newby and P.R. Hoskins. “Wall stress and USPIO

uptake in Abdominal Aortic Aneurysms”, poster, Centre for In Vivo Imaging Science Annual Scientific Meeting (2013), Edinburgh, UK.

## Orthopaedic Engineering:

- V. Salabi, **N. Conlisk**, B. Ilharreborde, and P. Pankaj. “Rôle des ligaments interosseux dans la stabilité transverse de l’articulation radio-ulnaire proximale. Étude d’un modèle validé en éléments finis”, *Journal of Hand Surgery and Rehabilitation* (2017). doi: 10.1016/j.hansur.2017.10.023
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Factors Affecting Stem Junction Stress in Modular Femoral Components following Revision Total Knee Arthroplasty: A Finite Element Study”, 7th World Congress of Biomechanics (2014), Boston, USA.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Influence of Ageing and Osteoporosis on the Mechanical Environment of the Distal Femur following Total Knee Arthroplasty: A Finite Element Study”, 7th World Congress of Biomechanics (2014), Boston, USA.
- **N. Conlisk**, H. Gray, P. Pankaj and C.R. Howie. “Evaluation Of Femoral Component Micromotion After Total Knee Arthroplasty: An Experimental Study”, 18th Congress of the European Society of Biomechanics (2012), Lisbon, Portugal.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “The Mechanical Environment In The Distal Femur: Influence of Boundary Conditions on FE Models”, 10th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (2012), Berlin, Germany.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Evaluation Of Femoral Component Micromotion After Total Knee Arthroplasty: An Experimental Study”, 10th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (2012), Berlin, Germany.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Modelling to Capture the Mechanical Environment in the Femur”, 2nd Meeting of the EPSRC Patient-Specific Modelling Network (2011), Edinburgh, UK.
- C. Kerr, Y. Wilkie, **N. Conlisk**, P. Pankaj and C.R. Howie. “How sophisticated does a model need to be to capture the mechanical environment in the femur”, 23rd Congress of the International Society of Biomechanics (2011), Brussels, Belgium.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Implant-bone micromotion after total knee arthroplasty”, 23rd Congress of the International Society of Biomechanics (2011), Brussels, Belgium.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Reduction in distal femoral bone stresses post total knee arthroplasty”, 23rd Congress of the International Society of Biomechanics (2011), Brussels, Belgium.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Micromotion of Uncemented Femoral Components after Primary and Revision Total Knee Arthroplasty”, 57th Annual Meeting of the Orthopaedic Research Society (2011), Long Beach, California, USA.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Stress Shielding in the Distal Femur after Total Knee Arthroplasty”, 57th Annual Meeting of the Orthopaedic Research Society (2011), Long Beach, California, USA.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “The distal femur: Mechanical environment and implant stability after TKA”, British Orthopaedic Research Society (2010), Cardiff, UK.

- **N. Conlisk**, P. Pankaj and C.R. Howie. “The mechanical environment in the femur: How sophisticated does a model need to be?”, British Orthopaedic Research Society (2010), Cardiff, UK.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Effect of femoral component design and fixation on the mechanical environment of the distal femur”, 17th Congress of the European Society of Biomechanics (2010), Edinburgh, UK.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Stability of uncemented implants after total knee arthroplasty”, 17th Congress of the European Society of Biomechanics (2010), Edinburgh, UK.
- **N. Conlisk**, P. Pankaj and C.R. Howie. “Mechanics and Stability after TKA”, 9th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (2010), Valencia, Spain.