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Engineering & Scientific Consulting

Thomas Wyse Jackson, Ph.D.

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Professional Profile

Dr Wyse Jackson has a multidisciplinary background conducting research in physics, biomedical engineering, and biophysics. At Exponent, Dr Wyse Jackson addresses issues involving the biomechanics of human injury in a variety of events including, pedestrian accidents, slip, trip, and fall events, and motor vehicle collisions.

Before starting at Exponent, Dr Wyse Jackson obtained his Ph.D. in Physics, with a minor in Biomedical Engineering, from Cornell University, where he developed computational models to describe the mechanical properties of articular cartilage based on its composition and validated these models with mechanical and compositional testing.

Academic Credentials & Professional Honors

Ph.D., Physics, Cornell University, 2022

B.A., Theoretical Physics, Trinity College, Ireland, 2016

Scholar of Trinity College Dublin, 2014

Ireland Physics Olympiad, 2012

Prior Experience

Graduate Research Assistant, Cornell University, 2017 – 2022

Graduate Teaching Assistant, Cornell University, 2016 – 2017

Undergraduate Research Assistant, Trinity College Dublin, 2014 – 2016.

Publications

Wyse Jackson T, Michel J, Lwin P, Fortier LA, Das M, Bonassar LJ, Cohen I. Structural origins of cartilage shear mechanics. Science Advances 2022; Vol 8, Issue 6.

Zheng J, Wyse Jackson T, Fortier LA, Bonassar LJ, Delco ML, Cohen I. STRAINS: A big data method for classifying cellular response to stimuli at the tissue scale. PLOS One 2022; Vol 17, Issue 12.

Michel J, von Kessel G, Wyse Jackson T, Bonassar LJ, Cohen I, Das M. Reentrant rigidity percolation in structurally correlated filamentous networks. Physical Review Research 2022; Vol 4, Issue 4.

Lwin P, Sindermann A, Sutter L, Wyse Jackson T, Bonassar LJ, Cohen I, Das M. Rigidity and fracture of

biopolymer double networks. Soft Matter 2022; 18: 322-327.

Presentations

Wyse Jackson T, Michel J, Lwin P, Bartell L, Fortier LA, Das M, Bonassar LJ, Cohen I. A Rigidity Percolation Framework to Understand How Biologically Induced Changes in Constituent Composition Alter Cartilage Shear Mechanics. Podium presentation. APS March Meeting, Remote, 2021.

Wyse Jackson T, Szakiel E, Zheng J, Fortier LA, Bonassar LJ, Cohen I. Loss Of Articular Cartilage Surface Region Alters Stribeck Curve And Resulting Frictional Behavior. Poster presentation. ORS, Remote, 2021.

Wyse Jackson T, Das M, Bartell L, Bonassar LJ, Cohen I. A Rigidity Percolation Framework To Understand Articular Cartilage Shear Mechanics After Degradation. UMass Soft Matter Summer School. Presentation. Remote, 2020.

Wyse Jackson T, Das M, Bartell L, Bonassar LJ, Cohen I. Developing A Phenomenological Constituent Based Model To Predict The Shear Mechanics Of Articular Cartilage. Poster presentation. ORS, Phoenix, AZ, 2020.

Wyse Jackson T, Das M, Bartell L, Bonassar LJ, Cohen I. The shear mechanics of enzymatically degraded articular cartilage are predicted by a rigidity percolation model. Poster Presentation. OARSI, Toronto, 2019

Wyse Jackson T, Bartell L, Das M, Bonassar LJ, Cohen I. The Mechanics Of Enzymatically Degraded Articular Cartilage Are Predicted By A Rigidity Percolation Model. Poster Presentation. ORS, Austin, TX, 2019.

Wyse Jackson T, Bartell L, Das M, Bonassar LJ, Cohen I. Rigidity Percolation Model Predicts The Mechanical Behavior Of Enzymatically Degraded Articular Cartilage. Poster presentation. 8th World Congress of Biomechanics, Dublin, Ireland, 2018.

Wyse Jackson T, Bartell L, Fortier LA, Das M, Bonassar LJ, Cohen I. Testing Rigidity Percolation Models of Articular Cartilage via Enzymatic Degradation. APS March Meeting, Los Angeles, CA, 2018.