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<b>Department</b>	<b>Mechanical and Industrial Engineering</b>
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<b>Research Interest</b>	<p>My main research interests are in the area of soft tissue mechanics. In particular, I develop instrumentation and computational models to characterise the mechanical behaviour of biological soft tissues.</p> <p>I have a particular interest in characterising human skin. I develop constitutive models that simulate the non-linear, time-dependent, and directional-dependent properties of skin.</p> <p>This work has been applied in several diverse areas including modelling the diabetic foot, develop realistic models of the human face, and measuring the sharpness of surgical scalpels. Other applications include examining skin meshing techniques used in the treatment of burns.</p>
<b>Publications</b>	<ul style="list-style-type: none"> <li>• FLYNN, C., 2019. Experimental Characterisation: Rich Deformations. In Skin Biophysics. Editor: Limbert G., Springer, Cham, 215-234.</li> <li>• FLYNN, C., TABERNER, A., NIELSEN, P. and FELS, S., 2018. Comparison of anisotropic models to simulate the mechanical response of facial skin. Computer Methods in Biomechanics and Biomedical Engineering, Springer, 43-55.</li> <li>• CAPEK, L., FLYNN, C., MOLITOR, CHONG, S., HENYS, P., 2018. Graft orientation influences meshing ratio, Burns, 44(6), pp. 1439-1445</li> <li>• FLYNN C., NAZARI M., FLYNN C., PERRIER P., FELS S, NIELSEN P. AND PAYAN Y., 2017. Computational modelling of the passive and active components of the face. In Biomechanics of Living Organs, Editors: Ohayon, J. and Payan Y., Elsevier USA.</li> <li>• KOVAR, M., FLYNN, C., SOBOTKA, J. and CAPEK, L., 2017. Validation of breast implant finite element model. Computer methods in biomechanics and biomedical engineering, 20, 109.</li> <li>• FLYNN C. AND RUBIN M.B., 2016. Undesirable anisotropy in a discrete fiber bundle model of fibrous tissues. In Structure-Based Mechanics of Tissues and Organs, Editors: Ghassan S. Kassab and Michael S. Sacks, Springer US, pp. 329-345.</li> <li>• FLYNN, C., TABERNER, A., NIELSEN, P. and FELS, S., 2016. Comparison of anisotropic models to simulate the mechanical response of facial skin, 14th International Symposium for Computer Methods in Biomechanics and Biomedical Engineering, Tel Aviv, Israel, 20th-22nd September 2016.</li> <li>• FLYNN, C., STAVNESS, I., LLOYD, J. and FELS, S., 2015. A finite element model of the face including an orthotropic skin model under in vivo tension. Computer Methods in Biomechanics and Biomedical Engineering, 18(6), pp. 571-582</li> <li>• FLYNN, C. and RUBIN, M. B., 2014. An anisotropic discrete fiber model with dissipation for soft biological tissues. Mechanics of Materials, 68, pp. 217-227</li> </ul>

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