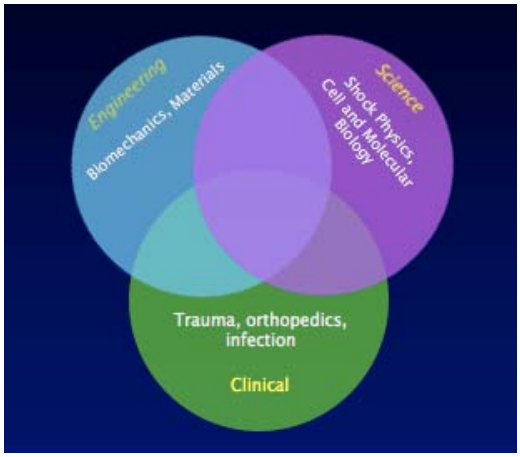
Imperial College London

Imperial Blast
BIOMECHANICS & BIOPHYSICS

www.imperialblast.org.uk

GROUP FOCUS

The imperial Blast Biomechanics and Biophysics Research Group, through the unique collaboration between Imperial College Researchers and the Academic Department of Military Surgery and Trauma is able to bring together experts from clinical, military, engineering and science fields in order to propose solutions on how we can best design, protect and educate against high impulse events to ultimately reduce casualties and improve surgical reconstruction.

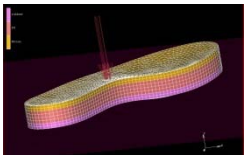


KEY AREAS OF INTEREST

Materials behaviour (shock wave transmission) in both hard and soft condensed matter subjected to blast exposure

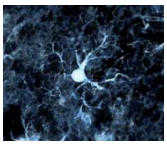
Computational modeling of shock physics phenomena in complex materials and biological systems

Molecular characterisation of shock-induced damage (e.g., protective devices and human tissue)

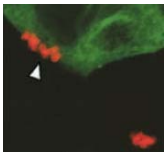


Strategic Plans for Studies of Shock-induced Damage of Human Tissues

1. Develop containment chambers for cell cultures relevant to human blast injury.



2. Induce physiologically relevant based shock using dynamic pressure chambers, Hopkinson bars and analyse for damage markers and ultrastructural effects using proteomics and microscopical methods.



3. Establish culture-based systems for understanding the molecular basis of shock-induced damage upon cells and tissues, infection susceptibility and assessment of new or novel therapeutic approaches.

Current Group Members include:
Prof. Anthony Bull, Prof. Jon Clasper, Prof. Steven Rose, Dr. Bill Proud, Dr. Katherine Brown, Dr. Adam Hill, Dr. Andrew Phillips, Dr. Arul Ramasamy, Dr. Spyros Masouros, Mr. Nicholas Newell

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