**Advanced Statistical Analysis of Biomechanical Time Series: PCA, FDA & SPM**

**Date and Time**: Sat 7 July 2018, 13:30 – 16:30 IST

**Location**: Stanley Quek Lecture Theatre, Trinity Biomedical Sciences Institute, 152 - 160 Pearse Street, D02 R590 Dublin 2, Ireland

**Seminar speakers**: Todd Pataky (Kyoto University, Japan), Mark Robinson (Liverpool John Moores University, UK), Jos Vanrenterghem (KU Leuven), Drew Harrison (University of Limerick, Ireland), John Warmenhoven (University of Sydney and Australian Institute of Sport, Australia)

**Seminar description**: Traditional biomechanical analysis focusing on discrete points, such as local minima or maxima, can result in elimination of much data which is still relevant to understanding the mechanics of an individual or group. Full-trajectory analysis techniques are being increasingly applied to healthy and patient population kinematic, kinetic, and neuromuscular data as they include all of the original data acquired, but their correct application and interpretation can be challenging.

The purpose of this seminar is to present an overview of the theoretical underpinnings of the most commonly used full-trajectory analysis techniques in biomechanics (Principal Components Analysis, Functional Data Analysis, and Statistical Parameter Mapping), discuss the purpose, advantages and limitations of these techniques, and present applications of how these techniques can be applied to data from both healthy and clinical populations.

By the end of this seminar, audience members should be able to identify the most appropriate technique(s) for use with their dataset, and have a working knowledge of the strengths and limitations of the various techniques under consideration. The lecture theatre is fully equipped with 220 V power supply at each seat if attendees wish to bring laptops for use during the session.

**Attendance fee**: There is no charge for attendees registered for the World Congress of Biomechanics – please give your full name as used for your WCB registration when you book your ticket so we can verify this. For non-conference attendees, there is a nominal charge of €10 which will be collected at the registration desk on the day.