



**6th International Clinical  
Trials Methodology  
Conference.  
Harrogate, UK  
3 - 6 October**

### *Workshop 3.3 Overview*

#### **W3.3: Triangulating evidence from observational data and randomized controlled trials for precision medicine**

*Jack Bowden, Beverley Shields*

Precision medicine is the targeting of medical treatments based on the individual characteristics of a patient and is a major goal of modern medicine. Observational studies can be used for this purpose but are susceptible to confounding, whilst clinical trial evidence is often limited to a select patient group studied over a short duration. Triangulating evidence from these sources, whilst acknowledging and accounting for their various biases and limitations, is becoming a well-established research paradigm within precision medicine.

Using exemplar case studies in cardiovascular medicine, pharmacogenetics and type II diabetes:

- Part 1 will cover the use of causal inference methods in observational studies as part of the Triangulation Within a Study (TWIST) framework.
- Part 2 will cover the combined use of observational studies and clinical trial databases to build and validate models for treatment response.
- Part 3 will discuss the challenges and hurdles encountered in the design and analysis of a cutting edge multi-arm cross-over trial for precision medicine.