Project title: Self-controlled designs in epidemiology
Principal supervisor: Heather Whitaker
Second supervisor: Karen Vines
Discipline: Statistics
Research area/keywords: Medical statistics, epidemiology
Suitable for: Full time or part time applicants

Project background and description
Self-controlled study designs are being used increasingly to study the association between acute adverse events and transient exposures in epidemiology. Self-control offers clear advantages in that confounders that can be assumed to remain constant over the study period are automatically controlled for. However, use is limited by some strong methodological assumptions. There are a number of directions that a PhD relating to self-controlled designs could take, some examples are given.

1) One such design, the self-controlled case series method, is commonly used in vaccine safety assessment, but can it also validly be used to study vaccine effectiveness, or effectiveness more widely?

2) We now see self-controlled designs appearing in meta-analyses along with cohort / case-control studies, issues surrounding this could be explored.

3) Can surveillance methods based on self-controlled designs be improved upon?

Background reading/references
- Self-controlled case series website: http://sccs-studies.info/