Noah, Joseph, and Convex Hulls.

Nick Watkins (BAS, Cambridge)

The idea of describing human and animal movement by mathematical models based on diffusion and Brownian motion has a long heritage, some of which I will review. It has thus been natural to account for those aspects of motion that depart from the Brownian by the use of models incorporating subdiffusion ("the Joseph effect") and/or superdiffusion ("the Noah effect"), though testing these hypotheses has sometimes been problematic. I will describe these effects, and some of simple mathematical models which combine them. I will also present some of our recent work on the convex hull of anomalously diffusing walkers, inspired by its possible relevance to the idea of home range in biology.

[Work done with, *inter alia*, Yu-Xi Chau, Mervyn Freeman, Eugene Murphy, Richard Phillips, Andy Edwards (now DFO), Sandra Chapman (Warwick), and Sam Rosenberg (now Barclays Capital)]