



## Optimization Program WISO Workshop February 8-10, 2017

**Lecture:** *Randomness in Coordinate Descent*

**Speaker:** Stephen Wright

**Abstract:**

Coordinate descent is a basic approach to nonlinear optimization that has become popular again because of its relevance in data analysis. Despite the simplicity of this approach, different variants show unexpected behavior even on the simplest problems. Here we examine three variants of coordinate descent, applied to convex quadratic programming, focusing on problems in which the cyclic variant is much slower than randomized cyclic and fully random variants. An analysis of the convergence behaviors of these variants, is surprisingly technical, though it uses only elementary mathematical tools. This talk will outline the results and survey related work.