

# Show me the Data! Empowering medical decision making through personal data collection.

Professor Talithia Williams  
Harvey Mudd College

Thursday February 13, 2013  
4:00pm  
Deady 106

## **Abstract**

Doctors often make gross assumptions when statistical data can be used to uniquely characterize your body. Data from waking body temperatures, pulse rates and blood pressure can tell a story about your life which can empower you to make better decisions about your personal health. For instance, a womans waking body temperature data can be used to understand a womens body and her fertility. This talk will explore how each of us can begin to collect data about ourselves that can provide insight into our personal health. It will conclude with a group discussion of the benefits of mentoring women and underrepresented minorities in the mathematical sciences.

# Do you see what I see: Modeling Cataract Surgical Rates for developing countries

Professor Talithia Williams  
Harvey Mudd College

Friday February 14, 2013  
4:00pm  
Deady 208

## **Abstract**

Cataract remains the leading cause of blindness in Africa and planning for its treatment is a priority of the World Health Organization. The cataract surgical rate (CSR), the number of operations done per million population, is a convenient indicator for planning and monitoring. However, estimating what the CSR needs to be to eliminate blindness requires one to take into account a number of factors and assumptions. The recently developed Rapid Assessment of Avoidable Blindness (RAAB) survey uses a population-proportional-to-size sampling technique to select a representative group of people over 50 years old to receive a standard eye exam. We use current data from RAAB surveys in Africa to model the epidemiology of cataract and to estimate cataract incidence at different age levels. In this talk, I describe our method of estimating incidence from prevalence and how this information can be used to help set target CSR's for various geographical locations in Africa, taking into account important differences among populations.