



PIMS-UCalgary Operations Research & Analytics Series: Dr. Mariel Lavieri

February 24, 2017

10:45 AM

Location: SH310, RBC Room

University of Calgary

Personalizing Management of Glaucoma Patients

This talk discusses work of a multidisciplinary collaboration between the Department of Industrial and Operations Engineering and the Kellogg Eye Institute at the University of Michigan to develop a forecasting tool that assists eye doctors by (a) helping to identify which patients will experience worsening of existing glaucoma, and at what pace, (b) recommending when the patient should next be assessed for possible disease worsening as well as which test to take, and (c) calculating the patient's optimal intraocular pressure. Using novel extensions of linear quadratic Gaussian (LQG) control and Kalman filtering, the forecasts and controls are calculated by incorporating detailed longitudinal testing information from two landmark clinical trials and data on the specific patient for whom the forecasts and recommendations are being made. This tool has the potential to really inform doctors' decisions on who, when, and how to treat glaucoma patients in a personalized manner. The objective is to avoid overtreatment and unnecessary treatment, while giving the patients at highest risk for blindness their best possible chance at preserving their sight in the long term.

This lecture is sponsored jointly by PIMS, UC Math Department, Haskayne School of Business and the Schulich School of Engineering.

Website and Speaker Biography: <http://www.pims.math.ca/scientific-event/170224-puorassdml>

