

CCSU  
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, April 25

3:00 – 4:00 PM

Maria Sanford, Room 101

**TO LOGIT OR NOT TO LOGIT,  
THAT IS THE QUESTION**

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**Abstract:** This is a continuation of our adventure into building models for odds and probabilities. Logistic regression allows data analysts to estimate the odds (and odds ratio) of a binary outcome based on covariates using a logit link. In the 1980s, the log-binomial regression model was introduced to estimate the probability (and risk ratio) of a binary outcome based on covariates using the log link. Both regression models permit statements like ‘you are twice as likely to...’ However, this can lead to a potential misinterpretation of odds ratios as risk ratios. We note that the regression models can sometimes be used interchangeably but in general the odd ratio exaggerates the effect size compared to the risk ratio. As logistic regression and odd ratios are the preferred approach of many researchers, this talk will focus on a novel approach for assessing when the odds ratio and the risk ratio can be used somewhat interchangeably without the exaggerated effects. Leading us to an approach to address: to logit or not to logit?

This talk will start with an introduction to an odds ratio and risk ratio then move to linear models and bridge to generalized linear models for the estimation of odds and probabilities. The goal is to raise awareness of possible interpretation errors as well as when these issues are irrelevant. Several results presented are in collaboration with Dr. Gordon H. Fick (Emeritus) from the University of Calgary.

This talk is for an audience with an introductory understanding of probability and linear regression models. Attendance of the previous talks is not required.

To join us online use the following link: <https://ccsu.webex.com/meet/gotchev>  
For further information: [gotchevi@ccsu.edu](mailto:gotchevi@ccsu.edu); 860-832-2839; <http://mathcolloquium.sites.ccsu.edu/>