Joint Math Colloquium

Millersville University and Franklin & Marshall College

Speaker: **Mervin Fansler** is a 2016 MU alumnus, graduating with a B.S. in Mathematics and Computer Science. Prior to his education at MU, he worked as a web and enterprise data visualization software developer, and consulted as a systems administrator. He is currently a PhD candidate in the Tri-Institutional Program in Computational Biology and Medicine in New York City, where he is a member of the Christine Mayr Lab at Sloan Kettering Institute (MSKCC). His research involves developing software and statistical models for the analysis of single-cell RNA-sequencing data, with a focus on quantification and differential expression of alternative 3' untranslated regions.

Title: **Getting Something from Nothing: Zero-Inflated Models in Transcriptomics**

Date: **March 28, 2019 (Thursday)**

Time: **4:00 pm – 5:00 pm**

Place: **Room 101, Wickersham Hall, Millersville University**

Contact: **Baoling Ma** **(717) 871-4263** **Baoling.Ma@millersville.edu**
Kevin S. Robinson **(717) 871-7313** **krobinson@millersville.edu**

Abstract:

Recent breakthroughs in sequencing technologies have enabled scientists to measure RNA expression at single-cell resolution, leading to major discoveries about tissue composition and embryonic development. However, the data generated from these technologies is extremely sparse - many genes appear as zeros - prompting researchers to resort to imputation techniques. I will discuss some of the approaches taken, with a particular focus on zero-inflated statistical models and the ongoing debate in the single-cell RNA-sequencing community as to their appropriateness. Finally, I will highlight how I am using sparsity analysis to explore a biological question about the transcription of alternative RNA isoforms.

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