

Joint Math Colloquium

Millersville University and Franklin & Marshall College

Speaker: **Dr. Andrew Gehman** (Millersville University '11)
Principal Statistician
Target Sciences
GlaxoSmithKline (GSK)

Title: **The Effects of Spatial Aggregation on Spatial Time Series Models**

Date: **March 22, 2018 (Thursday)**

Time: **4:00 pm – 5:00 pm**

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

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Abstract:

Statistical analysis of spatio-temporal data involves modeling a variable measured at different locations over time. Examples of this type of data include monthly crime counts from city neighborhoods and annual state-level labor force totals. A key component of space-time modeling is the spatial scale and zoning, which can often be arbitrary or abused (as with gerrymandering). This talk investigates the impact of spatial aggregation on the model's parameter estimates and seeks an aggregation scheme which produces accurate forecasts of future observations in the context of the space-time auto-regressive (STAR) model. A simulation study and two data examples illustrate the findings.

