CCSU

DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, September 5
2:00 – 3:00 PM
Maria Sanford, Room 101

QUANTIFYING PROSODIC VARIABILITY IN MIDDLE ENGLISH ALLITERATIVE POEMS

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Abstract: Interest in the mathematical structure of poetry dates to at least to the 19th century: after retiring from his mathematics position, J. J. Sylvester wrote a book on prosody called *The Laws of Verse*. Today there is interest in the computer analysis of poems, and this talk discusses how a statistical approach can be applied to this task. We'll start with defining what Middle English alliteration is using examples from *Sir Gawain and the Green Knight* and William Langland's *Piers Plowman*. Then the idea of viewing a poem as a categorical time series is introduced, and by using a distance function on feature vectors, we'll be able to quantify their structural properties. Theory first developed for analyzing data from a Riemannian manifold turns out to be applicable to nonnumeric values allowing one to compute a mean and a numeric measure of variability. These first two moments are enough to create new test statistics that are analogs of the F test, Levene's test, and so forth. Finally, resampling allows p-values to be estimated for these, which provides a way to compare prosodic variability across two or more authors.

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