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**Department of Mathematics and Statistics**

**COLLOQUIUM**

**Tuesday, February 28th, 2017**

4:00 – 5:00 pm, Adel Mathematics Bldg., Room 164

(refreshments at 3:45)

Dr. Brent Burch

NAU

Comparing sampling strategies to estimate

the age characteristics of a forest

Abstract:  We investigate the use of different sampling strategies to estimate the age characteristics of a forest.  The sampling units are selected from a grid structure overlaying a 100 hectare simulated forest where the location of each tree and the diameter at breast height (dbh) of each tree are known.  The model-based tree ages are determined by an age-dbh relationship where the variability in age increases as dbh increases.  The choice of the particular model is based on actual age-size data from trees in the vicinity.  The trees in the sample are determined by considering either fixed-radius plot sampling, k-tree sampling, or variable-radius plot sampling. The properties of the estimators are determined using design-based and model-based approaches. Simulation results suggest that the estimator associated with the easy-to-implement k-tree sampling method, with a few extra trees per plot, may be preferred.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar meets every Tuesday, 12:45 – 1:45 pm, AMB 146.

* *Ryan Wood will present this Tuesday*.

Applied Math Seminar (AMS) meets every Thursday, 12:45 – 1:45 pm, AMB 146.

Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Fridays, 3pm, AMB 164.