

THE DEPARTMENT OF MATHEMATICAL SCIENCES PROUDLY PRESENTS

COLLOQUIUM/SIGMA XI

SPRING 2013

Lecture April 11, 2013 3:30 pm
Chemistry Building Abbott Room Q-123

Measuring Symmetries

by Dennis G. Collins, UPR Mayaguez

This talk covers some topics of the Author's attempt to unify symmetry studies via his 2011 patent. The discrete part of the talk starts from his 2012 MAA talk "Toward the max and min symmetry of order-24 groups" and the continuous part of the talk starts from his 2012 AMS talk "Approximating continuous symmetry of some surfaces and solids." In his AMS talk on the future of finite group theory Oct. 21, 2012, Ron Solomon expressed the need for a Darwinian approach. His work was based on subgroups. The author's work is based on individual group elements and is related to the Margulis theory of genomes. The discrete version of the circle theorem puts a lower bound on symmetry calculations SYM and UPED. The continuous version of the circle theorem puts perhaps over-simplified lower bounds of normalized continuous symmetry of DNA at 14 and human brain circuitry at 20 versus say continuous symmetry of a straight line of length 1 at .193 and continuous symmetry of a circle of circumference 1 at 1.28. Various partly-unsolved math problems encountered will be discussed.

