

**University of Georgia
Department of Mathematics**

**Seminar Schedule
January 30, 2006 – February 3, 2006**

All Seminars are held in Boyd Graduate Studies Bldg. unless otherwise noted.

MONDAY, January 30, 2006

Topology/Geometry

2:30pm, Room 222

Speaker: Nathan Geer, Georgia Tech

Title of talk: *Knot invariants arising from Lie superalgebras.*

Abstract: The Jones, Kauffman, and HOMFLY knot invariants are examples of knot invariants arising from finite dimensional representations of Lie algebras. Invariants arising from Lie algebras can be extended to Lie superalgebras. These new invariants are more powerful than invariants arising from Lie algebras. In this talk, I will discuss some new developments involving invariants arising from Lie superalgebras. In particular, I will give the definitions of Vassiliev invariants and weight systems. Then I will explain the construction of the Reshetikhin-Turaev quantum invariant associated to a representation of a Lie superalgebra. Finally, I will discuss how the coefficients of such an invariant are Vassiliev invariants which can be studied via the Kontsevich integral and their corresponding weight systems.

Algebra

2:30pm, Room 410

No meeting this week

Ed Azoff® Tea Social

3:00pm, Room 409

Coffee, Cookies, Tea

Colloquium

3:30pm, Room 302

Speaker: Paul Balmer, ETH Zurich

Title of talk: *Triangular geometry and applications*

Abstract: We shall start with the concept of triangulated category, reviewing examples from Algebraic Geometry, Homotopy Theory, Modular Representation Theory, Motivic Theory and more. We will then introduce the basic ideas of how to do "geometry of triangulated categories". Finally, we will see how these techniques can be useful in some of the above examples.

TUESDAY, January 31, 2006

VIGRE-Graduate Student Seminar

2:00p.m., Room 304

Speaker: Tatyana Sorokina, University of Georgia

Title of talk: *Multivariate Polynomial Spline Approximation*

Abstract: The talk is designed to provide an overview of multivariate polynomial splines. We will discuss basic concepts, main research directions, open problems, and applications.

WEDNESDAY, February 1, 2006

Geometry in the Curriculum Seminar

1:25pm, Aderhold, Room 111

Speaker: Clint McCrory, University of Georgia

Title of talk: *Teaching Geometry with Geometer's Sketchpad*

Algebraic Geometry

2:30pm, Room 410

Speaker: Michel Brion (Institut Fourier, Grenoble, France)

Title of talk: *On the geometry of wonderful varieties*

Abstract : Wonderful varieties are smooth projective algebraic varieties where a semisimple group acts with finitely many orbits, such that the orbit closures look like the coordinate subspaces of a vector space. Examples include flag varieties, and compactifications of symmetric spaces. The classification of wonderful varieties is an open question, where many partial results are known. The talk will give an overview of these results, and present a geometric approach to the combinatorial invariants of wonderful varieties.

John Gosselin® Tea Social

3:00pm, Room 409

Cookies, Coffee, Tea

Arithmetic Geometry/Number Theory

3:30pm, Room 304

Speaker: Dino Lorenzini, University of Georgia

Title of talk: *Some remarks on rational points on certain curves related to rational distance sets.*

VIGRE- Algebra

3:45pm, Room 303

Speaker: Lenny Chastkofsky, University of Georgia

Title of talk: *Cohomology computations with MAGMA*

THURSDAY, February 2, 2006

VIGRE – Feynman Diagrams

2:00pm, Room 326

VIGRE – Cardiac Physiology

2:00pm, Room 640

VIGRE- Zeta Functions

2:15pm, Room 302

VIGRE-Algebraic Geometry

3:30pm, Room 324

FRIDAY, February 3, 2006

Probability Theory

2:30-3:30pm, Room 303

Speaker: Qing Zhang, University of Georgia

Title of talk: *Hybrid Filtering*