

MATHEMATICS DEPARTMENT SEMINAR SCHEDULE
November 19 – November 20, 2001

All seminars are held in Boyd Graduate Studies unless otherwise noted.

MONDAY, November 19, 2001

Group Representation & Cohomology

2:30 - 3:30 p.m., Room 410

Speaker: Graham Matthews, University of Georgia

Title of talk: “*Representations of the Symmetric Group*”

Faculty and Graduate Social

3:00 p.m., Room 409

Coffee, Tea, Cookies

Colloquium

3:30 p.m., Room 304

Speaker: Ken Ono, University of Wisconsin at Madison

Title of talk: ‘*Values of modular functions and divisors of modular forms*’

Abstract: The values and the coefficients of the modular function $j(z)$ play a variety of important roles in number theory and representation theory. For example, its values generate class fields in algebraic number theory, and its coefficients are the degrees of the graded representation of the Monster group. In this lecture I will describe recent work with Jan Bruinier and Winfried Kohnen. I will introduce a specific sequence of modular functions j_n whose arithmetic literally dictates the behavior of all modular forms on $SL_2(\mathbb{Z})$. The corollaries include:

- Borcher’s type infinite products for generic forms,
- Universal recursions for Fourier expansions of all forms,
- p -adic class number formulas.

Topology

3:00 p.m., Room 303

Speaker: Paolo Lisca, University of Georgia

Title: “*Symplectic fillings of Lens Spaces*”

Abstract: I will describe some new results on symplectic fillings of Lens Spaces.

4:00 p.m., Room 303

Speaker: Robert Ghrist, Georgia Technical Institute

Title: “*Dynamical trading of tight contact structures*”

Abstract: The problem of existence and classification of tight contact structures on 3-manifolds is quite delicate. I will detail ways of generating some tight structures by certain surgery and branched cover operations which use dynamical criteria to ensure tightness (as opposed to the usual fillability criteria). This represents joint work with J. Etnyre.

TUESDAY, November 20, 2001

VIGRE Seminar

Room 302, 2:00 p.m.-3:15 p.m.

Speaker: Nathan Ng, University of Georgia

Title of talk: *'Chebyshev's Bias, Galois Groups, and L-functions'*

Abstract: Chebyshev investigated prime numbers modulo four. He noticed the strange phenomenon that there seem to be more primes congruent to three mod four than to one mod four. The idea of counting prime numbers in different congruence classes and comparing the size of each class is called a prime number race. In this talk I will consider generalizations of the prime number races to classes of prime numbers other than residue classes. For example, take a polynomial and reduce it modulo a prime number. We can ask how often various factorizations of the polynomial occur modulo different primes and whether certain factorizations occur more frequently than others. I will give a rough description of the connection between these prime numbers and zeros of L-functions. The method used to study this problem is based on recent ideas of Mike Rubinstein and Peter Sarnak.

Algebraic Geometry

3:30 p.m., Room 326

Speaker: Bill Graham, University of Georgia

Title of talk: *"Equivariant K-theory and Schubert varieties", continued*

Student Number Theory

3:30 p.m., Room 303

No Meeting this week

WEDNESDAY, November 21, 2001

University Holiday

THURSDAY, November 22, 2001

University Holiday

FRIDAY, November 23, 2001

University Holiday

Upcoming Seminars

WEDNESDAY, November 28, 2001

Teacher Education Seminar

3:30-4:30 pm, Room 328 Boyd

Speakers: Panel Members: Sandy Bouldin, Marc Lewis, Clint McCrory, Elliot Gootman, Nicholas Oppong, Pat Wilson

Title of talk: *"Teacher Preparation & High School Mathematics: A Good Fit??"*

Abstract: A panel consisting of high school teachers and professors from the Departments of Mathematics and Mathematics Education will discuss the high school mathematics curriculum in Georgia and the curriculum for the preparation of teachers at UGA. We wish to raise issues about both curricula and methods of instruction. Bring your comments and questions!