# MATHEMATICS DEPARTMENT SEMINAR SCHEDULE
# September 17-21, 2001

## MONDAY, September 17, 2001

**Group Representation & Cohomology**
2:30 - 3:30 p.m., Room 410
**Speaker:** Dave Benson, University of Georgia
**Title of talk:** *"Homotopy Finite Group Theory", continued*

**Number Theory**
3:30 p.m., Room 304
**Speaker:** TBA
**Title of talk:** *"TBA"*

**Analysis**
2:30 p.m., Room 322
**Speaker:** Akos Magyar, University of Georgia
**Title of talk:** *"On polynomial ergodic theorems", Part 2*

## TUESDAY, September 18, 2001

**VIGRE**
Room 302, 2:00 p.m.-3:15 p.m.
**Speaker:** Marcus Hunziker, University of Georgia
**Title of talk:** *"Quantum games and quantum algorithms"*
**Abstract:** Captain Picard and Q are bored on starship Enterprise. So Q brings a coin and invites Picard to play the following game: Picard should take the coin and place it in a small box, head up. Q is then allowed to reach into the box and change the state of the coin or leave it as it is. After that, Picard is allowed to do the same: without looking at the coin he can either flip it or leave it in its current state. Finally, Q without peeking may reach into the box one more time and change the state of the coin or leave it as it is. Then the box is opened and Q wins if the coin is head up. Picard thinks for a moment and agrees to play the game. They repeat the game over and over again. Q always wins. How does he do it?

The purpose of this talk is to give an introduction to quantum computing and then to explain the mystery behind the game above (which is due to David Meyer from UC San Diego).

**Algebraic Geometry**
3:30 p.m., Room 326
**Speaker**: Jihun Park, University of Georgia
**Title of talk:** *"Birational maps of local Del Pezzo fibrations"*
**Abstract:** "We will show that if two del Pezzo fibrations of degree $d < 5$ over a discrete valuation ring have irreducible and reduced special fibers with mild singularities, then there is no birational map between them."

**Student Number Theory**
3:30 p.m., Room 303
**Speaker:** Paulo Almeida, University of Georgia
**Title of talk:** *"How wrong could Goldback be?"*

## WEDNESDAY, September 19, 2001

**Group Representation & Cohomology**
2:30 - 3:30 p.m., Room 410
**Speaker:** Dave Benson, University of Georgia
**Title of talk:** *"Homotopy Finite Group Theory", continued*

**Teacher Education Seminar**
2:30 - 3:30 pm, Room 303.
**Speaker:** Sybilla Beckmann
**Title:** Liping Ma's work *"Knowing and Teaching Elementary Mathematics"*
**Abstract:** In her 1999 study, "Knowing and Teaching Elementary Mathematics", Liping Ma found striking differences in the nature of Chinese and American elementary teachers' knowledge of elementary mathematics. The results of this study can inform how we prepare elementary teachers.

**Faculty and Graduate Social**
3:00 p.m., Room 409
Coffee, Tea, Cookies

**Arithmetic Geometry**
3:30 p.m., Room 304
*No meeting this week*

**Numerical Analysis**
3:30 - 4:30, Room 410
**Speaker:** Gerard Awanou, University of Georgia
**Title of talk:** "Numerical Solution of 3D Biharmonic Equations"
**Abstract:** We apply trivariate splines of any degree d and any smoothness r (with $r<d$) for numerically solving biharmonic equations over arbitrary polygonal domains.

**Representation Theory**
3:30 p.m., Room 524
**Speaker**: Bill Graham, University of Georgia
**Title of talk:** *Introduction to Kazhdan-Lusztig polynomials, continued"*

**CATS**
4:40pm, Rm. 306 Boyd Graduate Studies
**Speaker:** Rod Canfield Professor and Head, Computer Science Dept.
**Title of talk:** *" Stirling Numbers "*
**Abstract:** The Stirling number S(n,k) is defined to be the number of ways to partition an n-element set into k nonempty and disjoint subsets. Does it ever happen that S(n,k) = S(n,k+1) ? Only once that anyone knows of. I will report on a computation that searches for such (n,k) pairs for n <= 10^6.

This is part of a recently completed article co-authored with Carl Pomerance.

## THURSDAY, September 20, 2001

**VIGRE** Seminar
2:00 p.m., Room 302
*No Seminar today*

## FRIDAY, September 21, 2001

**Geometry**
2:30 p.m., Room 322
**Speaker:** Joe Fu, University of Georgia
**Title of talk:** *"Regularity and flow for Möbius energy of curves, after Z-x He"*