

## SPEAKERS BUREAU

### George Andrews



#### Number Theory

The theory of partitions  
Combinatorics  
Ramanujan

**Talk Titles:** 1. *The Story of Ramanujan and His Mathematical Surprises*  
2. *Partitions: From Leibniz to Liquid Helium*  
3. *The Death of Proof? Semi-Rigorous Mathematics? You've Got To Be Kidding!*

814-865-6642 (office)

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*Pi-Mu-Epsilon J.S. Frame Lecturer, 1993*

### Andrew Belmonte



#### Fluid Dynamics & Appl. Mathematics

Viscoelastic fluids  
Mechanics of flexible solids  
Vortex dynamics

#### Talk Titles

1. *The Snap and Wiggle of Elastic Fluids*  
2. *Motion of a Shaken Hanging Chain: Why Knot?*

3. *The Mathematics of Falling Paper*

814-865-2491 (office)

814-863-0516 (lab)

Email: belmonte@math.psu.edu

### Dmitri Burago



#### Geometry, Dynamics, Algorithmics

Geometry of periodic metrics  
Large-scale geometry  
Spaces of bounded curvature  
Finsler geometry  
Geodesic flows  
Entropy-type characteristics  
Algorithmic complexity

**Talk Titles:** 1. *Asymptotic geometry of periodic media*, and 2. *Hard ball gas models and spaces of bounded curvature*

814-865-7741 (office)

814-237-9618 (home)

Email: burago@math.psu.edu

### Mark Levi



#### Dynamical Systems & Appl. Mathematics

Applications of geometry to mechanics  
Deterministic chaos  
Differential equations

**Talk Titles:** 1. *Electromagnetic levitation, gyroscopes and other wonders.* (Physical demonstrations, mathematical explanations, and more demonstrations).

2. *Theorems: discovery and proof by physics.*

3. *The "Indian rope trick": why vibration can stabilize an upside-down pendulum.*

814-865-3661 (office)

814-235-0931 (home)

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## SPEAKERS BUREAU



### Gary L. Mullen

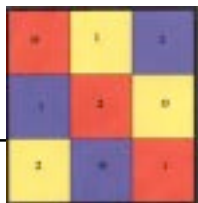
#### Number Theory & Combinatorics

Finite Fields

Talk Title: *A Candidate for the Next Fermat Problem*

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### John Roe

#### Geometric Analysis

Topology, Geometry, Operator Algebras,  
Partial Differential Equations

Talk Titles:

1. *Are Infinitely Many Dimensions Enough?*
2. *From Topography to Topology via Quantum Mechanics*
3. *Mathematics of Rock Climbing*
4. *The fourth dimension*

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Email: roe@math.psu.edu



### Yakov Pesin

#### Dynamical Systems & Math. Physics

Hyperbolicity Theory

Riemannian Geometry

Fractal Geometry

Partial Differential Equations

Talk Titles:

1. *Fractals in Nature and Science*
2. *Deterministic and Random Phenomena in Physics and Mathematics*

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### Stephen Simpson

#### Logic

Reverse Mathematics

Degrees of Unsolvability

Talk Title:

*Unprovable Theorems and Fast-Growing Functions*

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## SPEAKERS BUREAU

### James Sellers



#### Number Theory & Combinatorics

The theory of Partitions  
Enumerative Combinatorics

Talk Titles: 1. *Hunting for Partition Congruences (in the spirit of Ramanujan)*  
2. *Triangles: Geometric and Square*  
3. *Alternating Sign Matrices and Divisibility Properties*  
4. *Congruences Relating Two Families of Plane Partitions*  
5. *Arithmetic Properties of Basis Partitions with Specified Durfee Square Size*  
6. *How Many Odd, Nonunitary Abundant Numbers Are There?*  
7. *Combining Number Theory and Graph Theory: Enumerating Graphical Forest Partitions*

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“I thoroughly enjoy giving talks to undergraduate students!”

### Sergei Tabachnikov



#### Differential Topology

Symplectic Geometry  
Low Dimensional Topology  
Dynamical Systems  
Differential Geometry

Talk Titles: 1. *Distribution of First Digits in Sequences*

2. *Geometry of Polynomials*
3. *Equiareal Triangulations*
4. *A Tale of a Geometric Inequality*
5. *Conway's Tiling Groups*
6. *Fourth Hilbert Problem*
7. *Developable Moebius Bands*
8. *Knots and Knot Invariants*

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