
THE 2016 GAINESVILLE NUMBER THEORY
CONFERENCE

ALLADI 60

March 17 – 21, 2016

University of Florida, Gainesville, FL 32611

Organizers: **George Andrews** (The Pennsylvania State University) and **Frank Garvan** (University of Florida)

PROGRAM

Locations. On Thursday, Friday and Monday lectures will be in the Straughn Center. On Saturday and Sunday lectures will be in Little Hall.

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Thursday, March 17, 2016

8:00AM - 8:25AM

BREAKFAST AND SIGN-IN

8:25AM - 8:30AM

WELCOME by Department Chair, **Doug Cenzer**

OPENING REMARKS by **CLAS Associate Dean Ata Sarajedini**

8:30AM - 9:20AM

Manjul Bhargava, Princeton University

Squarefree values of polynomial discriminants

9:25AM - 9:55AM

Ron Graham, University of California San Diego

Monochromatic solutions to linear equations

9:55AM - 10:15AM

BREAK

10:15AM - 10:45AM

Aleksandar Ivic, Serbian Academy of Sciences

Hardy's function $Z(t)$ - results and problems

10:50AM - 11:20AM

Roger Baker, Brigham Young University

Limit points and long gaps between primes

11:25AM - 11:55AM

Dan Goldston, San Jose State University
Sums and Differences of Pairs of Primes

11:55AM - 1:15PM

LUNCH

1:15PM - 1:45PM

Helmut Maier, Universität Ulm
Recent Results on Gaps between Primes (joint with Michael Th. Rassias)

1:50PM - 2:20PM

Janos Pintz, MTA Rényi Institute, Budapest, Hungary
On some old conjectures of Paul Erdős on the difference of consecutive primes

2:25PM - 2:55PM

Gérald Tenenbaum, Université de Lorraine
Effective mean-value estimates for complex multiplicative functions

2:55PM - 3:15PM

BREAK

3:15PM - 3:45PM

Cameron Stewart, University of Waterloo
On the abc conjecture

3:50PM - 4:20PM

Winnie Li, Pennsylvania State University
Combinatorial zeta and L-functions

5:10PM - 6:00PM (PUGH HALL)

OPENING REMARKS by **Dean David Richardson**, CLAS
RAMANUJAN COLLOQUIUM

James Maynard, University of Oxford
Linear equations in primes

6:00PM - 7:00PM

REFRESHMENTS AT PUGH HALL

7:00PM - 9:30PM

RECEPTION AT KEENE CENTER

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Friday, March 18, 2016

8:00AM - 8:30AM

BREAKFAST

8:30AM - 9:10AM

James Maynard, University of Oxford

Talk 2: Prime values of polynomials

9:15AM - 9:45AM

Wadim Zudilin, University of Newcastle, Australia

On certain irrational values of the logarithm: beyond the 1979 limitations

9:45AM - 10:05AM

BREAK

10:05AM - 10:35AM

Doron Zeilberger, Rutgers University

Krishna Alladi's Early Love: Irrationality Measures of Famous Constants

10:40AM - 11:10AM

Kevin Ford, University of Illinois

Large gaps between primes and related problems

11:10AM - 11:25AM

BREAK

11:25AM - 11:55AM

Kathrin Bringman, University of Cologne

Ramanujan and meromorphic modular forms

12:00PM - 12:30PM

Ken Ono, Emory University

Riemann Hypothesis for Period Polynomials of Modular Forms

12:30PM - 1:40PM

LUNCH

1:40PM - 2:10PM

Mourad Ismail, University of Central Florida

Identities related to the Rogers-Ramanujan identities

2:15PM - 2:45PM

Jim Lepowsky, Rutgers University

"Motivated proofs" of generalized Rogers-Ramanujan identities as stimuli for new ideas in vertex operator algebra theory

2:50PM - 3:20PM

Christian Krattenthaler, University of Vienna

Discrete analogues of Macdonald-Mehta integrals

3:20PM - 4:00PM

BREAK

4:05PM - 4:55PM

OPENING REMARKS

by **Dr. David P. Norton**, Vice-President of Research

ERDOS COLLOQUIUM

Hugh Montgomery, University of Michigan

Littlewood polynomials

7:30PM - 10:00PM

ALLADI DINNER PARTY

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Saturday, March 19, 2016

Main lectures will be held in LIT 101

8:00AM - 8:30AM

BREAKFAST

8:30AM - 9:10AM

James Maynard, University of Oxford

Talk 3: Primes with restricted digits

9:15AM - 9:45AM

Kannan Soundararajan, Stanford University

Distribution of consecutive primes in residue classes

9:45AM - 10:00AM

BREAK

10:00AM - 10:30AM

Dorian Goldfeld, Columbia University

On an additive prime counting function of Alladi and Erdős

10:35AM - 11:05AM

Peter Paule, RISC, J. Kepler University, Linz

Alladi, Goellnitz-Gordon, and Computer Algebra

11:10AM - 11:40AM

Mel Nathanson, Lehman College, CUNY

Sums of sets of lattice points

11:40AM - 12:20PM

LUNCH AT LITTLE HALL

12:20PM - 2:20PM

MOVIE IN LIT 101

- 2:30PM - 2:50PM (ROOM: LIT 101)
Hédi Daboussi, Université de Picardie, Amiens, France
On arithmetic functions
- 2:30PM - 2:50PM (ROOM: LIT 113)
Scott Ahlgren, University of Illinois
Kloosterman sums and Maass cusp forms of half integral weight for the modular group
- 2:30PM - 2:50PM (ROOM: LIT 125)
Kagan Kursungoz, Sabanci University, Istanbul
An Open Question of Corteel, Lovejoy and Mallet
- 2:30PM - 2:50PM (ROOM: LIT 127)
Christophe Vignat, Tulane University
Narayana polynomials and random walks in space
- 3:00PM - 3:20PM (ROOM: LIT 101)
Harold Diamond, University of Illinois
PNT Equivalences and Nonequivalences for Beurling primes
- 3:00PM - 3:20PM (ROOM: LIT 113)
Amanda Folsom, Amherst College
Zeros of modular forms of half integral weight
- 3:00PM - 3:20PM (ROOM: LIT 125)
Jaebum Sohn, Yonsei University, Seoul
Hyper m -ary partition and hyper m -ary overpartition trees
- 3:00PM - 3:20PM (ROOM: LIT 127)
Frank Patane, Samford University
An Identity Connecting Theta Series Associated with Binary Quadratic Forms of Discriminant Δ and Δp^2
- 3:30PM - 3:50PM (ROOM: LIT 101)
Michael Mossinghoff, Davidson College
Oscillations in sums involving the Liouville function
- 3:30PM - 3:50PM (ROOM: LIT 113)
Abhas Kuma Jha, NISER, Bhubaneswar, India
Rankin-Cohen brackets on Siegel modular forms and special values of certain Dirichlet series
- 3:30PM - 3:50PM (ROOM: LIT 125)
Armin Straub, University of South Alabama
Core partitions into distinct parts and an analog of Euler's theorem
- 3:30PM - 3:50PM (ROOM: LIT 127)
James Sellers, Pennsylvania State University
Infinitely Many Congruences Modulo 5 for 4-Colored Frobenius Partitions

4:00PM - 4:20PM (ROOM: LIT 101)

Paul Pollack, University of Georgia

Phi-nomenology and torsion subgroups of CM elliptic curves

4:00PM - 4:20PM (ROOM: LIT 113)

Bibekananda Maji, Harish-Chandra Research Institute, Allahabad

Modular type relations associated to the Rankin-Selberg L-function

4:00PM - 4:20PM (ROOM: LIT 125)

Brandt Kronholm, University Of Texas Rio Grande Valley

Quasipolynomials, Polyhedral Geometry, Divisibility Patterns and Combinatorial Witnesses for Partitions

4:00PM - 4:20PM (ROOM: LIT 127)

Andrew Sills, Georgia Southern University

A classical q -hypergeometric approach to the $A_2^{(2)}$ standard modules

4:30PM - 4:50PM (ROOM: LIT 101)

Robert Lemke Oliver, Stanford University

Consecutive primes modulo q

4:30PM - 4:50PM (ROOM: LIT 113)

Larry Rolen, Pennsylvania State University

Indefinite theta functions, higher depth mock modular forms, and quantum modular forms

4:30PM - 4:50PM (ROOM: LIT 125)

Neil Calkin, Clemson University

What Moser Could Have Asked: Hamilton Cycles in Tournaments

4:30PM - 4:50PM (ROOM: LIT 127)

Ali-Bulent Ekin, Ankara University

Some relations among the components of the partition generating function

6:30PM - 10:00PM

BANQUET AT WYNDHAM GARDEN HOTEL

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Sunday, March 20, 2016

8:00AM - 8:30AM

BREAKFAST

8:30AM - 9:00AM

Robert Vaughan, Pennsylvania State University

The asymptotic formula in Waring's problem: Higher order expansions

9:05AM - 9:35AM

Hershel Farkas, The Hebrew University of Jerusalem

The Schottky Relation in arbitrary genus

9:40AM - 10:10AM

Richard Stanley, University of Miami
Smith Normal Form and Combinatorics

10:10AM - 10:35AM

BREAK

10:35AM - 11:05AM

Richard Askey, University of Wisconsin
Some inequalities for symmetric polynomials

11:10AM - 11:40AM

Alexander Berkovich, University of Florida
Taking a trip down memory lane

11:45AM - 12:15PM

Ole Warnaar, The University of Queensland, Australia
Virtual Koornwinder integrals

12:15PM - 1:45PM

LUNCH

1:45PM - 2:05PM (ROOM: LIT 101)

Edward Bertram, University of Hawaii at Manoa
Recent progress on an old unsolved problem in finite group theory

1:45PM - 2:05PM (ROOM: LIT 223)

Karl Mahlburg, Louisiana State University
Alladi, Schur's second partition theorem, and universal mock theta functions

1:45PM - 2:05PM (ROOM: LIT 201)

Ben Kane, University of Hong Kong
Inner products of meromorphic modular forms

1:45PM - 2:05PM (ROOM: LIT 127)

Atul Dixit, Indian Institute of Technology, Gandhinagar
Overpartition analogues of partitions associated with the Ramanujan/Watson mock theta function $\omega(q)$

2:15PM - 2:35PM (ROOM: LIT 101)

Alexandre Turull, University of Florida
Measures of the complexity of finite groups and their bounds

2:15PM - 2:35PM (ROOM: LIT 223)

Marie Jameson, University of Tennessee
On p -adic modular forms and the Bloch-Okounkov theorem

2:15PM - 2:35PM (ROOM: LIT 201)

Ae Ja Yee, Pennsylvania State University
Legendre Theorems for subclasses of partitions/overpartitions

2:15PM - 2:35PM (ROOM: LIT 127)
Ali Uncu, University of Florida
Some Weighted Partition Identities and Dyson Crank

2:45PM - 3:05PM (ROOM: LIT 101)
Kevin Keating, University of Florida
Extensions of local fields and elementary symmetric polynomials

2:45PM - 3:05PM (ROOM: LIT 223)
Steffen Loebrich, University of Cologne
Poincaré Series and Traces of Singular Moduli

2:45PM - 3:05PM (ROOM: LIT 127)
Min-Joo Jang, University of Cologne
On spt-crank type functions

3:15PM - 3:35PM (ROOM: LIT 101)
Sinai Robins, Brown University and ICERM
Polyhedral Gauss sums, and polytopes with symmetry

3:15PM - 3:35PM (ROOM: LIT 223)
Michael Woodbury, University of Cologne
Generalized Frobenius partitions and powers of the Jacobi theta function

3:15PM - 3:35PM (ROOM: LIT 201)
Dale Brownawell, Pennsylvania State University
Divided Derivatives of the Carlitz Period

3:15PM - 3:35PM (ROOM: LIT 127)
Sun Kim, University of Illinois
Bressoud's Conjecture

3:45PM - 4:05PM (ROOM: LIT 101)
Sarah Trebat-Leder, Emory University
A new moonshine for the Mathieu group M_{23}

3:45PM - 4:05PM (ROOM: LIT 223)
Nickolas Andersen, University of Illinois
Algebraic and transcendental formulas for the smallest parts function

3:45PM - 4:05PM (ROOM: LIT 201)
Lisa Lorentzen, Norwegian University of Science and Technology
Convergence of random continued fractions

3:45PM - 4:05PM (ROOM: LIT 127)
Jim McLaughlin, West Chester University of Pennsylvania
Mock Theta Function Identities Deriving from Bilateral Basic Hypergeometric Series

4:15PM - 4:35PM (ROOM: LIT 101)
Peter Sin, University of Florida
The critical groups of Paley graphs

4:15PM - 4:35PM (ROOM: LIT 223)

Pavel Guerzhoy, University of Hawaii

Half-integral weigh p -adic coupling

4:15PM - 4:35PM (ROOM: LIT 201)

Robert P. Schneider, Emory University

Arithmetic of partitions

4:15PM - 4:35PM (ROOM: LIT 127)

Song Heng Chan, Nanyang Technological University, Singapore

Truncated series from the Quintuple Product Identity

4:45PM - 5:05PM (ROOM: LIT 101)

Carla Savage, North Carolina State University

An Overview of Lecture Hall Partitions

4:45PM - 5:05PM (ROOM: LIT 223)

Michael Griffin, Princeton University

p -adic harmonic Maass forms

4:45PM - 5:05PM (ROOM: LIT 201)

Amita Malik, University of Illinois

Partitions into k th powers of terms in an arithmetic progression

4:45PM - 5:05PM (ROOM: LIT 127)

Jehanne Dousse, Universität Zürich

The method of weighted words and a refinement of Siladić's theorem

5:15PM

GROUPS TO GAINESVILLE RESTAURANTS

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Monday, March 21, 2016

All lectures will be in the Straughn Center. The main lectures will be Room C.

7:45AM - 8:15AM

BREAKFAST

8:15AM - 8:45AM

George Andrews, Pennsylvania State University

On the Alladi-Schur Theorem

8:50AM - 9:20AM

Peter Elliott, University of Colorado, Boulder

From Ramanujan to the theory of groups, a particular history of multiplicative functions

9:25AM - 9:55AM

Jean-Marc Deshouillers, Bordeaux INP
Sarnak's conjecture and automatic sequences

9:55AM - 10:20AM

BREAK

10:20AM - 10:50AM

Bruce Berndt, University of Illinois
Integrals Associated with Ramanujan and Elliptic Functions

10:55AM - 11:25AM

Michael Schlosser, University of Vienna
Elliptic extension of rook theory

11:30AM - 12:00PM

Sergei Suslov, Arizona State University
Symmetry in Physics: a Way from Poincare Group Representations to Relativistic Wave Equations

12:00PM - 1:00PM

LUNCH

1:00PM - 1:20PM (ROOM: C)

Shaun Cooper, Massey University, New Zealand
Holonomic Alchemy and Series for $1/\pi$

1:00PM - 1:20PM (ROOM: B)

S. D. Adhikari, Harish-Chandra Institute
Some weighted zero-sum results

1:00PM - 1:20PM (ROOM: A)

Zhi Guo Liu, East China Normal University, Shanghai
A system of q -partial differential equations and q -polynomials

1:30PM - 1:50PM (ROOM: C)

Tim Huber, University of Texas - Rio Grande Valley
Higher level Ramanujan-Sato series for $1/\pi$

1:30PM - 1:50PM (ROOM: B)

K. Kannan, SASTRA University
Development of Gravitational Search Algorithm for solving a class of Ternary Diophantine Equations

1:30PM - 1:50PM (ROOM: A)

Chris Jennings-Shaffer, Oregon State University
Partition Rank Functions Transforming Like Their Partition Functions

2:00PM - 2:20PM (ROOM: C)

Dennis Eichhorn, University of California, Irvine
A New Decomposition of Partitions and its Arithmetic Implications

2:00PM - 2:20PM (ROOM: B)

Susie Kimport, Stanford University

The asymptotics of partial theta functions

2:00PM - 2:20PM (ROOM: A)

Mike Hirschhorn, University of New South Wales, Australia

Ramanujan's tau function

2:30PM - 2:50PM (ROOM: C)

Stephen C Milne, Ohio State University

A nonterminating q -Dougall summation theorem for hypergeometric series in $U(n)$

2:30PM - 2:50PM (ROOM: B)

Kamel Mazhouda, Universite de Monastir, Tunisia

Relations equivalent to the generalized Riemann hypothesis for a class of L -functions

2:30PM - 2:50PM (ROOM: A)

Byungchan Kim, Seoul National University of Science and Technology

Partial theta functions and partial indefinite theta series

3:00PM - 3:20PM (ROOM: C)

Richard McIntosh, University of Regina

A relation between the universal mock theta function g_2 and Zwegers' mu -function

3:00PM - 3:50PM (ROOM: B)

B. Ramakrishnan, Harish-Chandra Institute

Representation numbers for certain class of quadratic forms and some applications.

3:00PM - 3:20PM (ROOM: A)

Gaurav Bhatnagar, University of Vienna

Heine's method and A_n generalisations of Ramanujan's transformation formulas

3:30PM - 4:00PM

COLLOQUIUM TEA

4:05PM - 4:55PM

OPENING REMARKS by **Frank Garvan**

SPECIAL COLLOQUIUM

Wadim Zudilin, University of Newcastle, Australia

Short random walks and Mahler measures