

Atul Dixit

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Education

- **Ph.D. Mathematics** *August 2012*
University of Illinois at Urbana-Champaign
Thesis Advisor: Bruce C. Berndt
- **M.S Mathematics** *2004-2006*
Texas Tech University
- **B.E. Computer Engineering, *First class*** *2000-2004*
University of Mumbai, India

Research Interests

- Analytic number theory
- q-series, theory of partitions, theta functions
- Special functions

Publications

1. Orthopoles and the Pappus theorem (with D. Grinberg), *Forum Geom.*, 4 (2004), 53-59.
2. Monotonicity of quotients of theta functions related to an extremal problem on harmonic measure (with A.Yu. Solynin), *J. Math. Anal. Appl.*, 336, No. 2 (2007), 1042-1053.
3. The Laplace Transform of the psi function, *Proc. Amer. Math. Soc.*, 138, No. 2 (2010), 593-603.
4. Series transformations and integrals involving the Riemann Ξ -function, *J. Math. Anal. Appl.*, 368 (2010), 358-373.
5. A transformation formula involving the Gamma and Riemann zeta functions in Ramanujan's Lost Notebook (with B.C. Berndt), *The legacy of Alladi Ramakrishnan in the mathematical sciences*, K. Alladi, J. Klauter, C. R. Rao, Eds, Springer, New York, 2010, pp. 199-210.
6. Character analogues of theorems of Ramanujan, Koshliakov and Guinand (with B.C. Berndt and J. Sohn), *Adv. Appl. Math.*, 46, (2011), 54-70. (Special issue in honor of Dennis Stanton).
7. Analogues of a transformation formula of Ramanujan, *Int. J. Number Theory*, 7, No. 5 (2011), 1151-1172.
8. Transformation formulas associated with integrals involving the Riemann Ξ -function, *Monatsh. Math.*, 164, No. 2 (2011), 133-156.
9. Convexity of quotients of theta functions (with A. Roy and A. Zaharescu), *J. Math. Anal. Appl.*, 386, No. 1 (2012), 319-331.
10. Character analogues of Ramanujan type integrals involving the Riemann Ξ -function, *Pacific J. Math.*, 255, No. 2, (2012), 317-348.
11. Rank-Crank type PDEs and generalized Lambert series identities (with S.H. Chan and F.G.

- Garvan), to appear in *Ramanujan Journal* (Special issue in honor of Mourad Ismail and Dennis Stanton)
12. Analogues of the general theta transformation formula, to appear in *Proceedings of the Royal Society of Edinburgh, Series A*.
 13. Generalized higher order spt-functions (with A. J. Yee), submitted for publication.
 14. Ramanujan-Hardy-Littlewood type results for primitive Hecke forms (with A. Roy and A. Zaharescu), submitted for publication.
 15. Transformation formulas and Riesz type criteria for the Riemann zeta function and Dirichlet L-functions (with A. Roy and A. Zaharescu), in preparation.

Honors and Awards

- Bateman Prize in Number Theory
University of Illinois at Urbana-Champaign 2011
- Bateman Fellowship in Number Theory
University of Illinois at Urbana-Champaign 2011
- Trjitzinsky Fellowship
University of Illinois at Urbana-Champaign 2010
- Research Experience for Graduate Students (REGS)
University of Illinois at Urbana-Champaign 2007
Advisor: Bruce C. Berndt

Invited Talks

- A hypergeometric proof of a Rank-Crank type PDE, q-series, partitions and special functions conference, Georgia Southern University 2011
 - Character analogues of Ramanujan type integrals involving the Riemann Ξ -function 2011
2011 AMS Joint Mathematics Meeting, New Orleans, LA
 - Transformation formulas associated with integrals involving the Riemann Ξ -function 2010
Focused week on Quadratic Forms and Theta functions
University of Florida at Gainesville
 - Transformation formulas associated with integrals involving The Riemann Ξ -function 2009
AMS Fall central sectional meeting, Baylor University
 - Analogues of a transformation formula of Ramanujan 2009
Quadratic Forms, Sums of squares, Theta functions and Integral Lattices
University of Florida at Gainesville
 - A transformation formula involving the Gamma and Riemann zeta functions in Ramanujan's Lost Notebook, *Combinatory Analysis 2008*, Penn State University. 2008
 - Generalizing theorems of Ramanujan, Koshliakov and Guinand for even, periodic and completely multiplicative sequences, *Illinois Number Theory Fest*, UIUC 2007
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Contributed Talks

- Rank-Crank type PDEs through the identities of Jackson and Chan 2011
Midwest Number Theory Conference for Graduate Students 2011
University of Wisconsin at Madison
- Transformation formulas associated with integrals involving the Riemann Ξ -function 2009
Midwest Number Theory Conference for Graduate Students VI
University of Wisconsin at Madison
- Character analogues of formulas of Ramanujan, Koshliakov and Guinand 2007
Midwest Number Theory Conference for Graduate Students V
University of Wisconsin at Madison

Teaching Experience

University of Illinois at Urbana-Champaign

Full Instructor

- Calculus for Business I Spring 2012
- Calculus I with *Mathematica* Fall 2011
- Calculus III with *Mathematica* Fall 2009, Fall 2010 †
- Calculus II Summer 2010 †
- A Mathematical World Fall 2008, Summer 2009
- Precalculus Summer 2008

Teaching Assistant

- Calculus 2 Spring 2008, Spring 2009
- Calculus 1 Fall 2007

Texas Tech University

Full Instructor

- Precalculus Fall 2005, Spring 2006

Professional involvement

- Member of the American Mathematical Society and the Mathematical Association of America.
- Coach for teaching geometry to the Indian students appearing at the regional, national (Indian) and International Mathematics Olympiad camps in Oct. 2001, Dec. 2002 and June 2004 respectively.
- Member of *Hyacinthos* group on Yahoo groups devoted to research in triangle geometry (where I have done some research in finding new triangle centers, for example the center X(3590) in <http://faculty.evansville.edu/ck6/encyclopedia/ETC.html>).

References

Available upon request.

† Named in the 'List of Teachers Ranked as Excellent by their students'.