Ajay C. Ramadoss

Curriculum Vitae
September 2008

Department of Mathematics
Cornell University
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Personal Born: Feb 6, 1979
Citizenship: India

Education

2000–2005 **The University of Chicago**, Chicago, IL
Ph.D. in Mathematics, August 2005.
Supervisor: Prof. Madhav V. Nori
M.S. in Mathematics, Dec 2001.

1997–2000 **Indian Institute of Technology**, Chennai, India
B.Tech. in Computer Science, July 2000

Positions held

Visiting Assistant Professor
Department of Mathematics
Cornell University
August 2008-present

Visiting Assistant Professor
Department of Mathematics
The University of Oklahoma
August 2005-July 2008

Future visiting positions

Visitor (Mathematics)
Institut des Hautes Études Scientifiques
May 2009-negotiable

Areas of research

Algebraic Geometry, Noncommutative Geometry and Homological Algebra

Publications and preprints

0. On the nonexistence of certain morphisms from Grassmannian to Grassmannian in characteristic 0. Ph.D thesis. University of Chicago (2005).

1. On the nonexistence of certain morphisms from Grassmannian to Grassmannian in characteristic 0. Preprint. Submitted to Documenta Mathematica.

2. The Big Chern classes and the Chern character.
International Journal of Mathematics Vol. 19, No. 6 (2008) 699-746.

3. The relative Riemann-Roch theorem from Hochschild homology.
Arxiv preprint math.AG/0603127. Submitted for publication.

4. Some notes on the Feigin-Losev-Shoikhet integral conjecture.
Journal of Noncommutative Geometry 2(2008), 405-448.

5. Integration over complex manifolds via Hochschild homology.
To appear in Journal of Noncommutative Geometry.

6. The Mukai pairing and integral transforms in Hochschild homology.
Arxiv preprint arxiv:0805.1760. Submitted for publication.

7. A generalized Hirzebruch Riemann-Roch theorem.
Arxiv preprint arxiv:0808.3265. Submitted for publication.

Seminars, talks and presentations

1. A Hochschild cocycle and a Lefschetz number theorem for differential operators.
Seminar: Lie groups seminar, Cornell University, September 26, 2008.

2. Hochschild homology of sheaves of differential operators and integration over complex manifolds.
Recorded colloquium talk for IIT Bombay, India delivered at the University of Oklahoma on June 11, 2008.

3. The Riemann-Roch theorem and $d(exp^{-1})$.
Short telephonic slide based presentation on June 5, 2008 while interviewing for an EPSRC postdoctoral position at Oxford University.

4. Hochschild homology of sheaves of differential operators and integration over complex manifolds.
Seminar: Lie groups seminar, Cornell University, March 7, 2008.

5. Hochschild homology of rings of differential operators and integration over complex manifolds.
Talk given on January 8, 2008 at the Indian Institute of Science, Bangalore, India.

6. On the integral conjecture of Feigin, Losev and Shoikhet.
Seminar: "Representation theory seminar, University of Oklahoma, February 2,2007.

7. On a conjecture of Feigin, Losev and Shoikhet.
Seminar: "Representation theory seminar, University of Oklahoma, November 17,2006.

8. Nonexistence of certain morphisms between Grassmannians
Talk given in August 2006 at the Indian Statistical Institute, Bangalore, India.

9. Nonexistence of certain morphisms between Grassmannians
Talk given on July 27, 2006 at the Indian Institute of Science, Bangalore, India.

10. Some applications of the Big Chern classes .
Seminar: "Representation theory seminar, University of Oklahoma, October 7,2005.

11. Introduction to the Big Chern classes II.
Seminar: "Representation theory seminar, University of Oklahoma, September 30,2005.

12. Introduction to the Big Chern classes I.
Seminar: "Representation theory seminar, University of Oklahoma, September 16,2005.

13. Nonexistence of certain morphisms between Grassmannians
Seminar: "Geometric methods in Representation Theory", University of North Carolina, Chapel Hill, April 15,2005.

Conferences attended

1. Invited to speak at a conference on "Quantization and Geometry" at FIM, ETH Zurich , to be held March 2-6, 2009.

2. Trends in Noncommutative Geometry . May 18-25, 2007 at Northwestern University, Evanston, IL.

3. Summer Institute in Algebraic Geometry. August 1-5, 2005 at the University of Washington, Seattle.

4. Joint India-AMS Mathematics meeting. December 17-20, 2003 at the Indian Institute of Science, Bangalore.

Teaching

2008–2009	**Lecturer** in Mathematics, Cornell University Fall: Math 1920 - Multivariable Calculus for Engineers (2 Sections)
2007–2008	**Lecturer** in Mathematics, University of Oklahoma Fall: Math 3113 - Introduction to Ordinary Differential Equations (2 Sections) Spring: Math 2443 - Calculus IV Summer: Math 2443 - Calculus IV (2 Sections)
2006–2007	**Lecturer** in Mathematics, University of Oklahoma Fall: Math 2433 - Calculus III Spring: Math 2433 - Calculus III (2 Sections) Summer: Math 2443 - Calculus IV

2005–2006 **Lecturer** in Mathematics, University of Oklahoma
Fall: Math 3113 - Introduction to Ordinary Differential Equations
Spring: Math 3333 - Linear Algebra I (2 Sections)

2004–2005 **Lecturer** in Mathematics, University of Chicago
Mathematics 151 : Calculus I
Mathematics 152 : Calculus II
Mathematics 153 : Calculus III

2003–2004 **Lecturer** in Mathematics, University of Chicago
Mathematics 151 : Calculus I
Mathematics 152 : Calculus II
Mathematics 153 : Calculus III

2002–2003 **Lecturer** in Mathematics, University of Chicago
Mathematics 151 : Calculus I
Mathematics 152 : Calculus II
Mathematics 153 : Calculus III

2001–2002 **College Fellow** in Mathematics, University of Chicago
Mathematics 207: Honors Analysis I, mentor: R. Fefferman
Mathematics 208: Honors Analysis II, mentor: P. Sally
Mathematics 209: Honors Analysis III, mentor: P. Sally

Programs Attended

[1] **Mehta Research Institute**, Allahabad, India
Nurture Program, Summers of 1997, 1998, 1999, 2000

[2] **Homi Bhabha Center for Science Education**, Mumbai, India
International Olympiad Training Camp, Summers of 1995 and 1996

Awards and Scholarships

[1] Mc Cormick Fellowship (from the University of Chicago), 2000-2002
[2] First Prize (Gold medal) , International Mathematical Olympiad, 1996
[3] National Talent Search Scholarship (from the NCERT), 1994-1996