CURRICULUM VITAE

Name: **Rupam Barman**

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Personal Details:

- Date of birth : 1st March, 1979.
- Sex : Male
- Marital Status : Married.
- Nationality : Indian.

PhD Thesis: Iwasawa Invariants of Elliptic Curves and p-adic Measures.
Supervisor: Dr. Anupam Saikia, Department of Mathematics, IIT Guwahati.

Academic Qualifications:

PhD	April 2010, Department of Mathematics, IIT Guwahati.
Post doctoral research	Mathematical Institute, University of Heidelberg, Germany during 2011.
Master of Science (M. Sc)	Mathematics, May 2001 (with 8.113 Commulative Grade Point Average). IIT Delhi, Haus Khaz, New Delhi, India.
MSc Dissertation:	Axiom of Choice, Zorn's Lemma, and Their Applications. **Supervisor:** Dr. Subiman Kundu, Associate Professor, Department of Mathematics, IIT Delhi.
Bachelor of Science (B. Sc.)	Mathematics (Honors), Physics and Statistics, 1999 (with 1st class and distinction, 74 percentage). Cotton College, Under Gauhati University, Guwahati, India.

Professional Experience:

10 years of teaching and research experience at Tezpur University.

1. Associate Professor, Department of Mathematical Sciences, Tezpur University from 13th August 2010 till date.
2. Assistant Professor, Department of Mathematical Sciences, Tezpur University from 1st January 2006 to 12th August 2010.
3. Lecturer, Department of Mathematical Sciences, Tezpur University from 31st October 2002 to 31st December 2005.

Research Interests:

Iwasawa Theory, p-Adic Measures, Elliptic Curves, Hypergeometric series, and Modular Forms.

PhD student:

1. **Gautam Kalita (DST INSPIRE Fellow)**: **Joined in January 2011**: Working on Hypergeometric functions over finite fields and their connections to Algebraic curves.

2. **Neelam Saikia**: Joined in July 2012: Currently doing PhD course work.

Research Publications in Referred Journals:

1. **Rupam Barman**, *Another look at Iwasawa λ-invariants of p-adic measures on $\mathbb{Z}_p^n$ and Γ-transforms*, **International Journal of Number Theory** (accepted) .

2. **Rupam Barman** & Anupam Saikia, *Iwasawa λ-invariants of p-adic measures on $\mathbb{Z}_p^n$ and their Γ-transforms*, **Journal of Number Theory 132** (10), 2258–2266 (2012).

3. **Rupam Barman** & G. Kalita, *Hypergeometric functions over $\mathbb{F}_q$ and traces of Frobenius for elliptic curves*, **Proceedings of American Mathematical Society** (in press).

4. **Rupam Barman** & G. Kalita, *Certain values of Gaussian hypergeometric series and a family of algebraic curves*, **International Journal of Number Theory 8** (4), 945–961 (2012).

5. **Rupam Barman** & G. Kalita, *Hypergeometric functions and a family of algebraic curves*, **The Ramanujan Journal 28** (2), 175–185 (2012).

6. **Rupam Barman**, *On p-adic Properties of Certain Mahler Coefficients*, **J. Ramanujan Math. Soc. 26** (3), 195–202 (2011).

7. **Rupam Barman** & Anupam Saikia, *Iwasawa λ-invariants and Γ-transforms of p-adic measures on $\mathbb{Z}_p^n$*, **International Journal of Number Theory 6** (8), 1819–1829 (2010).

8. **Rupam Barman** & Anupam Saikia, *A note on Iwasawa μ-invariants of Elliptic curves*, **Bulletin of Brazilian Math Soc, New Series 41** (3), 399–407 (2010).

9. **Rupam Barman** & Anupam Saikia, *Coefficients of a p-adic measure on $\mathbb{Z}_p^n$ and Iwasawa λ-invariant of its Γ-transform*, **Asian Eur. J. Mathematics 3** (4), 545–554 (2010).

10. **Rupam Barman** & Anupam Saikia, *Iwasawa λ-invariants and Γ-transforms*, **J. Ramanujan Math. Soc. 24** (2), 199–209 (2009).

11. **Rupam Barman** & N. Deka Baruah, *Theta Function Identities Associated with Ramanujan's Modular Equations of Degree 15*, **Proc. Indian Acad. Sci. (Math. Sci.) 120** (3), 267–284 (2010).

12. **Rupam Barman** & N. Deka Baruah, *Certain Theta-function Identities and Ramanujan's Modular Equations of Degree 3*, **Indian Journal of Mathematics 48** (1), 113–133 (2006).

13. **Rupam Barman** & G. Kalita, *Elliptic Curves and Special Values of Gaussian hypergeometric series* (submitted).

14. **Rupam Barman** & G. Kalita, **On the polynomial $x^d + ax + b$ over $\mathbb{F}_q$ and Gaussian hypergeometric series** (submitted).

15. **Rupam Barman**, **On the μ-invariants of Γ-transforms of p-adic measures on $\mathbb{Z}_p^n$** (under preparation).

List of Papers Published/Presented in Conference/ Proceedings:

1. **Rupam Barman**, **Ramanujan's Modular Equations of Degree 15 and Associated Theta-function Identities**, *21st Annual Conference of Ramanujan's Math. Soc.*, Department of Mathematics and Statistics, University of Hyderabad, July 3-8, 2006.

2. **Rupam Barman**, **Iwasawa μ-invariants of elliptic curves**, International Congress of Mathematicians (ICM), Hyderabad, August 19-27, 2010.

List of books and popular articles published:

1. *Business Mathematics and Statistics*, Published by Krishna Kanta Handique State Open University, 2008. This is a text book for Bachelor in Business Administration.

2. *Axiom of Choice and Zorn's Lemma*, Ganit Bikash, Published by Assam Academy of Mathematics, Vol. 32, January-June 2003.

3. *Ramanujan's Numbers*, The School Age, Vol. 10, October-November 2006.

4. *Divisibility, Modular Arithmetic, and International Standard Book Numbers*, Bigyan Jeuti, Published by Assam Science Society, Vol. 6, April-May 2004.

Projects:

1. Iwasawa Theory of Lubin-Tate division towers and a lemma of Coleman (UGC Minor Research project, 2010-2012), completed.

Awards and Recognitions:

1. Awarded Indo-Australlian (2012-2013) visiting fellowship by INSA to work at Newcastle University, Australlia.

2. Awarded Post doctoral fellowship by the Mathematics Center Heidelberg (MATCH), University of Heidelberg Germany for the period April 1 to July 31, 2011.

3. Post doctoral fellowship by ICTP Trieste Italy during 2011 (could not avail).

4. Awarded Teacher Fellowship by National Board for Higher Mathematics for a period of three years: 2008-2011.

5. Awarded Junior Research Fellowship by the Council of Scientific and Industrial Research (CSIR), New Delhi, India, December 2000.

6. GATE 2001 in Mathematics with a percentile score of 99.56 and *All India Rank:* 04.

7. Recipient of the Institute Merit-cum-Means scholarship at Indian Institute of Technology Delhi, New Delhi, India.

Conferences / Schools Attended:

A. International:

1. **Summer School in Iwasawa Theory** held at McMaster University, Ontario, Hamilton, Canada, from August 9 to August 13, 2007 and worked on a project entitled "*Q-sequences and Application to Elliptic Curves*" under the supervision of Prof. Robert Pollack.

2. **International Conference on Arithmetic Geometry** held at NCBS, Bangalore, organized by Tata Institute of Fundamental Research, Mumbai from March 23 to March 29, 2008.

3. **International Congress of Mathematicians (ICM)**, Hyderabad, August 19-27, 2010.

4. **International Summer School on BSD Conjecture**, Sardinia, Italy, June 26-July 3, 2011.

5. **Workshop on Bloch-Kato Conjectures** held at IISER Pune, organized by International Center for Theoretical Sciences(ICTS), July 17-21, 2012.

6. **Pan Asian Number Theory Conference** held at IISER Pune, organized by International Center for Theoretical Sciences(ICTS) July 23-27, 2012.

7. **Legacy of Ramanujan** held at the University of Delhi during Dec 17-22, 2012.

B. National:

1. **21st Annual Conference of Ramanujan's Mathematical Society** held at the Department of Mathematics and Statistics, University of Hyderabad from July 3 to July 8, 2006.

2. **Galois Representations and Modular Forms: Workshop in Arithmetic Geometry** held at Chennai Mathematical Institute, Chennai, India from September 24 to October 05, 2007.

3. **p-Adic Semester** at School of Mathematics, Tata Institute of Fundamental Research Mumbai from July 23 to August 30, 2008. During my stay at TIFR, I worked under the supervision of Prof. R. Sujatha.

4. **Advanced Training in Mathematics on "Arithmetic Geometry"** held at IIT Guwahati from September 22 to 30, 2008.

5. **Advances in Mathematics: Focus on Women in Mathematics** held at School of Physical Sciences, Jawaharlal Nehru University, New Delhi during October 5-7, 2009.

6. **Advanced Training in Mathematics for Teachers (ATML) in Linear Algebra** held at IIT Guwahati from July 3-17, 2010.

Workshop/Conference organized:

1. NBHM sponsored Winter School on Galois Theory during December 12-15, 2012.
   Organizers: Dr. Rupam Barman (Convener), Prof. Nayandeep Deka Baruah (Tezpur University, member), Dr. Anupam Saikia (IIT Guwahati, member)

2. NBHM and DST sponsored Winter School and Conference on Algebra and Number Theory during December 23-29, 2011.
   Organizers: Dr. Rupam Barman (Convener), Prof. Nayandeep Deka Baruah (Tezpur University, member), Dr. Anupam Saikia (IIT Guwahati, member)

3. NBHM and DST sponsored Workshop on Algebra and Number Theory during December 22-26, 2010.
   Organizers: Dr. Rupam Barman (Convener), Prof. Nayandeep Deka Baruah (Tezpur University, member), Dr. Anupam Saikia (IIT Guwahati, member)

Membership of Professional Bodies:

1. Life member of the Ramanujan Mathematical Society (RMS).

2. Life member of the Assam Academy of Mathematics (AAM).

Editorial Board

1. Advisor, Gonit Sora.

2. Editor, Journal of Assam Academy of Mathematics.

Reviewing Experience:

I have been serving as a Referee of research articles for **Journal of Number Theory** (Elsevier).

Invited Talks:

- Delivered a series of four lectures on various topics of "Number Theory" in the UGC sponsored Refresher Course in Mathematics for College/University Teachers organized by the Department of Mathematics, North Eastern Hill University (NEHU) during April 5-7, 2012.

- Delivered a talk on Iwasawa lambda invariants of p-adic measures and their Gamma-transforms at the Mathematical Institute, University of Heidelberg, Germany on 27th May 2011.

- Delivered a lecture at the training programme for Indian Mathematics Olympiad (IMO) organized by the Department of Mathematics, Gauhati University on January 23, 2011.
- Delivered two talks on "Sets and Functions" in a training programme for Mathematics Facilitators organized by Assam Science Technology Education Council, Assam on January 6, 2011.
- Invited as Resource person for UGC sponsored *Instructional School on Quantum Mechanics and Group Theory* organized by Jorhat Institute of Science and Technology, July 26, 2010.
- Invited as Teaching Assistant for the *Advanced Training in Mathematics for Teachers (ATML)* in Linear Algebra held at IIT Guwahati from July 3-17, 2010.
- Delivered a lecture on *Elliptic curves and congruent number problem* at the seminar series of School of Science and Technology, Tezpur University on December 11, 2009.
- Delivered a lecture *On the structure of Mordel Weil Group of Elliptic curves* at the Department of Mathematics, IIT Guwahati on September 20, 2007.
- Delivered a lecture on *Rational Points on Elliptic Curves* at the Department of Mathematical Sciences, Tezpur University on the occasion of National Science Day 2006.
- Delivered a lecture on *Axiom of Choice, Zorn's Lemma and Their Applications* at the Department of Mathematical Sciences, Tezpur University on the occasion of National Science Day 2003.
- Delivered a lecture on *Congruence* at the Department of Mathematics, Gauhati University, Guwahati, in the Training Programme of Assam Academy of Mathematics for High School Students on March 12, 2002.

List of Referees:

Dr. Anupam Saikia(Thesis supervisor)
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