

Sudeshna Basu

Department of Mathematics and Statistics
Loyola University
Baltimore
Maryland USA
Email: sudeshnamelody@gmail.com

8040 Needwood Road, Unit 203 ,
Derwood
MD 20855,USA

Education:

- **Ph.D. in Mathematics,**
Indian Statistical Institute, India, 1998.
- Dissertation Title: The Asymptotic Norming Properties and Related Themes in Banach Spaces.
- Dissertation Advisor: A. K. Roy
- **M.Sc., University of Calcutta, India, 1991.**
- **B.Sc.(Honors), University of Calcutta, India, 1988.**

Professional Experience:

- Assistant Professor, Department of Mathematics and Statistics
Loyola University, Maryland, USA
July 2022- to date
- Associate Professor, Department of Mathematics
R. K. Vivekananda Education and Research Institute, Belur, India
July 2019 – June 2022
- Professorial Lecturer, Department of Mathematics
George Washington University, Washington, DC, USA
Jan. 2009 – June 2019
- Lecturer, Department of Mathematics
Morgan State University, Baltimore, USA
Sept. 2004 – July 2008
- Lecturer, Department of Mathematics
Howard University, Washington, DC, USA
Aug. 1998 – Aug. 2004
- Visiting Researcher, Department of Mathematics
University of California at Santa Barbara, Santa Barbara, USA
Feb. 1997 – Aug. 1997
- Research Fellow,
Stat-Math Division, Indian Statistical Institute, India.
Aug. 1992 – Feb. 1997

Teaching:

- Over two decades of experiences in teaching various courses at US and Indian universities.
- Initiated Active learning methods at Mathematics Department at George Washington University.
- Certificate holder of e-teaching Elluminate Live Virtual Class Room.
- Certificate holder of Course Design institute, George Washington University.
- Proficient in learning platforms like Blackboard, Canvas, Moodle, MyMathlab and Webassign.
- Graduate Courses Taught: Functional analysis, Real Analysis, Complex Analysis, Measure Theory.
- Undergraduate courses Taught : Calculus I, II, III, Calculus for Management Sciences, Applied Calculus, Precalculus, College Algebra, Differential Equations, Probability, Introductory Statistics, Linear Algebra.
- Special Courses Taught: Finite Mathematics for the Social and Management Sciences, Mathematics and Politics, Mathematical Ideas.

Research Interests Current :

- Geometry of Banach Spaces
- Convexity theory of Banach Spaces
- Operator Theory
- P-adic Functional Analysis

Masters Students (Thesis Supervisor) :

- Veronica Kwafo
- Sanajit Patra
- Bhaskar Paul
- Mustaq Ahamed
- Sayan Adhikari

Ph.D Students :

- Susmita Seal (2019-2024)

Post doctoral Students :

- Dr. Susmita Seal (since 2024)
- Priyanka Behera (since 2024)
- Dr. Deepak Gothwal (since 2026)

Hauber Research Advisor :

- Leilya Brent(2024)

- Jeymar Fernandez-Guirado (2025)

Undergraduate Math major Advisor :

- Elijah Cervantes

Publications:

1. S. Basu, S. Seal, "Ball separation characterization of ball dentability and related properties" *Journal of Mathematical Analysis and Applications*, Volume (557), <https://doi.org/10.1016/j.jmaa.2025.130329>, 2026.
2. S. Basu, S. Seal, "Two Aspects of Small Diameter Properties" *Springer Nature, Operator Theory: Advances and Applications ((OT, volume 295))IWOTA2022* <https://doi.org/10.1007/978-3-031-50613-0-2>, 2024.
3. S. Basu, J. B. Guerrero S. Seal and J. M. V. Yeguas, "Non-rough norms in operator spaces", *Mediterr. J. Math.* (2023) Volume(20) No.6 <https://doi.org/10.1007/s00009-023-02519-7> 1660-5446/23/060001-14, 2023.
4. S. Basu, S. Seal, "Small diameter properties in ideals of Banach Spaces" *Journal of Convex Analysis*, Volume (31), No. 1, pages 111–120. (<https://www.heldermann.de/JCA/JCA31/JCA311/jca31007.htm>), 2024.
5. S. Basu, S. Seal, "Small Combination of Slices, Dentability and Stability Results Of Small Diameter Properties In Banach Spaces", *Journal of Mathematical Analysis and Applications*, Volume (507), <https://doi.org/10.1016/j.jmaa.2021.125793>, 2022.
6. S. Basu, S. Som, L. K. Dey, "Farthest Point Problem and Partial Statistical Continuity in Normed Linear Spaces", *Quaestiones Mathematicae*, Volume (44), No.4, <https://doi.org/10.2989/16073606.2021.1886193>, 2021.
7. S. Basu, "On Ball dentable property in Banach Spaces" *Mathematical Analysis and its Applications in Modeling (ICMAAM 2018, Springer Proceedings in Mathematics and Statistics*, Volume (302), pages 144–149, <https://link.springer.com/conference/icmaam>, 2020.
8. S. Basu, A. I. Singh, "Linear Hahn Banach Type Extension Operators in Banach Algebras of Operators", *Mathematical Proceedings of the Royal Irish Academy* Volume (119A) No.1, pages 7–25, <https://doi.org/10.3318/pria.2019.119.02>, 2019.
9. S. Basu, "On Schatten Class Operators in p-adic Hilbert Spaces" *Contemp. Math, AMS*, Volume (704), pages 37–48, <https://doi.org/10.1090/conm/704>, 2018.
10. S. Basu, "On Span of Small Combination of Slices Point in Banach Spaces" *Contemp. Math, AMS*, Volume (687), pages 45–53, 2017.
11. S. Basu, T. S. S. R. K. Rao, "On Small Combination of Slices in Banach Spaces", *Extracta Mathematicae*, Volume (31) No.1, pages 1–10, <https://publicaciones.unex.es/index.php/EM/article/view/2605-5686.31.1.1> 2016.
12. S. Basu T. Gill, V. Steadman, Z. Zachary, "On Natural adjoint operators in Banach Spaces", *Proceedings of American Mathematical Society*, Volume (132), pages 1429–1434, <https://www.jstor.org/stable/4097221>, 2004.
13. S. Basu, T. Diagana, F. Ramaroson, "On P-adic Hilbert Schimdt Operators", *Journal of Analysis and Applications*, Volume (2), No. 3 (2004), pages 173–188, <http://sasip.net/jaa-index.html>, MR 2092641(2005e: 47153).
14. P. Bandyopadhyaya, P. Basu S. Dutta, B. L. Lin, "Very non-constrained subspaces of Banach Spaces", *Extracta Mathematicae*, Volume (18), No. 2, pages 161–185, <https://www.eweb.unex.es/eweb/extracta/Vol-18-2/18a2Band.pdf>, 2003.

15. S. Basu, "The Ball Generated Property in Operator Spaces", *Indagationes Mathematicae*, N. S. 13 (2), pages 169–175, [https://doi.org/10.1016/S0019-3577\(02\)80002-7](https://doi.org/10.1016/S0019-3577(02)80002-7), 2002.
16. P. Bandyopadhyaya, S. Basu, "On Nicely Smooth Banach Spaces", *Extracta Mathematicae*, Volume(16), No. 1, pages 27–45, 2001.
17. P. Bandyopadhyaya, S. Basu, "On a New Asymptotic Norming Property" , *Indagationes Mathematicae*, NS 10, No.1, pages 15–23, [https://doi.org/10.1016/S0019-3577\(99\)80002-0](https://doi.org/10.1016/S0019-3577(99)80002-0), 1999.
18. S. Basu, T. S. S. R. K. Rao, "Some Stability Results for Asymptotic Norming Properties in Banach Spaces" , *Colloquium Mathematicum*, Volume, (75), pages 271–284, 1998.
19. S. Basu , L. K . Dey S. Seal, S. Som, "Farthest Point Problem for I-M Compact Sets", arXiv:2008.08491 [math.FA], (In preparation), 2026.
20. S. Basu ,P. Behera, D. Gothwal , S. Seal "Semi denting points and related notions in Banach spaces" arXiv:2602.12699 [math.FA] <https://doi.org/10.48550/arXiv.2602.12699>, 2026.

Professional Activities:

- Speaker at the International Congress of Mathematicians Philadelphia, July 2026.
- Presented invited lecture at IIT Kanpur, India, August 2026.
- Presented invited lecture at SRM University Amaravati, India August 2026.
- Presented invited lecture at Industrial and Computational Mathematics: Interdisciplinary Approaches to Numerical Analysis and Scientific Computing Morgan State University, Baltimore, Maryland, June 2026.
- Invited Speaker and Advisory Committee Member 2nd International Conference on Recent Advances in Mathematics and its Applications (ICRAMA- 2027) Organized by Department of Mathematics, Tripura University, INDIA, February 2027.
- Invited speaker and Advisory Committee Member, 2nd International Conference on Applied Mathematics and Mechanics (ICAMM 2026), December 7-9, 2026, at the Indian Institute of Technology (IIT) Indore, India, December 2026.
- Invited speaker International Workshop "Recent trends in Mathematics, Mathematical Modeling and Fixed Point Theory".organized by Department of Mathematics of Dayanand Anglo-Vedic College, Kanpur, India, April 2026. (Online)
- Keynote Speaker, Frontiers in Mathematical Sciences: Theory, Applications and Innovations, An International Meet (FMSTAI-2025)", organized by the Department of Mathematics, University of North Bengal in collaboration with Calcutta Mathematical Society (CMS), Kolkata, WB, India, December 22-24, 2025
- Invited Speaker and Resource person Recent Advances on Mathematics, Mathematical Modelling and Banach Fixed Point Theory" organized by Department of Mathematics of Dayanand Anglo-Vedic College, Kanpur, India, December, 2025.
- Invited speaker and member of the advisory board, International Conference on Mathematics and Applications, University of Burdwan, India, March 2025.
- Invited speaker at 39th Annual Conference of the Ramanujan Mathematical Society (RMS 2024), Bengaluru, India December 2024.
- Keynote Speaker at Facets of basic science and applications, Bijoy Krishna Girls College, Howrah, India, January 2025.

- Invited Speaker Shiva Nadar University, Delhi, India, ,August 2024.
- Invited Speaker Jadavpur University Kolkata, India ,August2024.
- Invited Speaker at the APRG Seminar Indian Institute of Science,Bengaluru, India, August 2024.
- Colloquium Speaker at Indian Statistical Institute,Bengaluru India, August 2024.
- Speaker at the New perspectives in Banach Spaces and Banach Lattices Conference, Spain, July 2024.
- Speaker at the Thirteenth Ohio River Analysis Meeting, University of Kentucky, March 2024.
- Invited Speaker,International Conference on Mathematics and Applications, Burdwan University,Burdwan, India, March 2024.
- Invited Speaker at the International Seminar on Physical and Mathematical Sciences, Calcutta Mathematical Society, Salt Lake, Kolkata, India, March, 2024.
- Invited speaker at Sister Nivedita University, Kolkata, India, March 2024 .
- Invited as a resource person at for "National Lecture Series/ National Level Seminar on " Mathematical Modelling and Computational Techniques," St. Ann's College for women,Hyderabad, India January 2024.
- Invited to be the Thesis examiner at National Institute of Technology Tiruchirappalli,India ,September 2023.
- Invited Speaker, Department of Mathematics and Statistics, Concordia University, Montreal, Canada,October, 2023.
- Invited Visitor, Stat Math Division, Indian Statistical Institute, Bengaluru, India, August 2023.
- Invited presenter at the Workshop on Linear and Non Linear Analysis, Santander,Spain, July 2023
- Invited panelist at the Inaugural meeting of Asian-Oceanian Women in Mathematics (AOWM), April 2023.
- Invited speaker at the International Seminar on Physical and Mathematical Sciences to Commemorate the 130th Birthday of Prof. Satyendranath Bose, February,2023.
- Invited talk at the department of mathematics at Catholic University,February 2023.
- Invited Visitor at Calcutta University, Kolkata, India, December 2022–January 2023.
- Invited Speaker at Calcutta University, Kolkata, India, January 2023.
- Invited Speaker at Jadavpur University, Kolkata, India, January 2023.
- Invited Speaker a15th International Conference on p-Adic Analysis and Dynamical System, Poznan, Poland, July 2023.
- Invited speaker at International Workshop on Operator Theory and its Applications, Helsinki, Finland, July 2023.
- Invited speaker at Analysis Seminar, Catholic University,Washington DC, Spring 2023.
- Presented invited talk at International Workshop on Operator Theory and its Applications, Krakow, Poland, September 2022.
- Presented invited talk at Analysis Seminar, Catholic University,Washington DC, February 2022.
- Invited speaker at Workshop on "Geometry of Banach spaces and its applications", IIIT , Allahabad, India, January 2022.
- Invited Speaker at Special Session, Fall Sectional meeting of American Mathematical Society, California, USA , October 2021

- Invited Speaker at the Department of Mathematics and Statistics at the University of the West Indies, St. Augustine Campus, Trinidad and Tobago, September 2021.
- Presented invited talk at International (Virtual) Conference on Topological Algebras and their applications , Estonia, July 2021.
- Presented invited talk at “Advances in Functional Analysis and Operator Theory”, American Mathematical Society Meeting (Virtual), San Francisco, USA May 2021.
- Presented invited talk at Departmental Colloquium at Mathematics Department R. K. Vivekananda Education and Research Institute, May 2021.
- Presented invited talk at Departmental Colloquium at University of Maryland at Baltimore, March 2021.
- Presented invited talk at Analysis Seminar Series, Catholic University, April 2020.
- Presented Invited talk at Functional Analysis Conference, Indian Institute of Technology, Hyderabad, November 2019.
- Presented invited talk at Indian Institute of Technology, Mumbai, December 2019.
- Presented invited talk at Indian Institute of Science, Education and Research, Pune, India, January 2019.
- Presented invited talk at Savitri Bai Phule University, India, January 2019.
- Presented invited talk at Gallaudet University, USA, September 2018.
- Presented invited talk at Mathematics Colloquium, Indian Statistical Institute, Delhi, India, August 2018.
- Presented invited talk at Indian Institute of Technology, Bhuvaneshwar, August 2018.
- Presented invited talk at National Institute of Science, Education and Research, Bhuvaneshwar, India July 2018.
- Presented invited talk at Operator Theory Conference, Memphis University, USA, May 2018.
- Presented invited talk at International Conference on Mathematical Analysis and Modeling, Jadavpur University, Kolkata, January 2018.
- Presented invited talk at South Asian University, Delhi, India, January 2018.
- Presented invited talk at Maitrayee College, Delhi , India, January 2018.
- Presented invited talk at Semigroup Conference, University of Delhi, India, December 2017.
- Presented invited talk at Indraprastha College, Delhi, India, August 2017.
- Presented invited talk at Cluster Innovation Center, Delhi, India, August 2017.
- Presented invited talk at Banach Spaces and Operator Theory with Application, Adam Mickiewicz University, Poznan, Poland, July 2017.
- Presented invited talk at Indian Institute of Science, Education and Research, Kolkata, India, January 2017.
- Visitor, Department of Mathematics, Indian Institute of Technology, Kanpur, India, Summer 2016.
- Presented invited talk at Operator theory Conference at Indian Statistical Institute, Bangalore, India, December 2016.
- Presented invited talk at p-adic Functional Analysis Conference at Universite d’Auvergne, France, July 2016.

- Presented invited talk at Functional Analysis Conference of AMS Sectional Meeting, Memphis University, USA, October 2015.
- Presented invited talk at Ramanujan Society Conference, Indian Institute of Science, Education and Research, Mohali, India , May 2015.
- Presented invited talk at St.Stephens College, Delhi, India, April,2015.
- Presented invited talk at Mathematics Colloquium Indian Statistical Institute, Delhi, India, March 2015.
- Presented invited Talk at Women in Mathematics Conference, Delhi University, India, March 2015.
- Presented invited Talk at Functional Analysis Conference, Indian institute of Technology Kanpur, India, March 2015.
- Invited Speaker at Operator theory Conference at Indian Statistical Institute, Bangalore, India, December 2014.
- Presented seminar at the George Washington University, Washington DC, USA, September 2014.
- Presented invited talk at Free University, Berlin, Germany, June 2014.
- Presented invited talk at Vector Measure Conference at Bedlewo, Poland, June 2014.
- Presented invited talk at Banach Space Conference at Albacete, Spain, June 2014.
- Presented Invited talk at Lady Shriram College, Delhi, India, August 2013.
- Presented Invited talk at Hansraj college, Delhi India, August 2013.
- Presented invited talk at Delhi University, India, August 2013.
- Presented invited talk at Ambedkar University, Delhi, India, August 2013.
- Presented Invited talk at Kesav Mahavidyalaya, Delhi, India, August 2013.
- Presented invited talk at Chennai Mathematical Institute, India, March 2013.
- Presented invited talk at the Department of Mathematics, University of Western Ontario,London, Canada, October 2011.
- Presented Invited Seminar at Indian Statistical Institute, Bangalore, India, May 2009.
- Presented Invited Seminar at International Analysis Meeting, Ohio State University, Columbus, USA, May 2006.
- Presented paper at Joint Mathematics Meeting, San Antonio, Texas, USA, January 2006.
- Invited Speaker at The Analysis Conference, Miami University, USA, May 2006.
- Presented Seminar at Morgan State University,Baltimore, October 2004, February 2006.
- Presented invited talk at the International Operator theory Conference at Indian Statistical Institute, Kolkata, India, December 2004.
- Presented invited at Colloquium, at Stat-Math Division, Indian Statistical Institute, Kolkata, India, January 2005.
- Presented invited talk at American Mathematical Society Sectional Meeting at Ohio State University, Columbus, USA, 2004.
- Presented invited talk at Operator theory conference at Indian Statistical Institute, India, December 2004.
- Presented Seminar at Morgan State University, Baltimore February 2006.

- Visitor, Indian Statistical Institute, India, June- August, 2006
- Presented Seminar at the Joint Mathematics Meeting, Baltimore, USA, January 2003.
- Presented Invited Seminar at the American University, Washington DC November 2002.
- Presented Invited Seminar at the Catholic University of America, Washington DC , USA, April 2002.
- Invited at The Tenth Southeast Approximation Theory Conference, University of Georgia, Athens, USA, March 2002.
- Presented seminar at University of Maryland at College Park, USA, October 2002.
- Presented invited talk at the International conference on Banach spaces, Caceres, Spain, December 2000.
- Invited speaker for the International Functional analysis conference at Valencia, Spain during July 2000.
- Visited the department of Mathematics at the University of Iowa, February 2000.
- Visited the department of Mathematics at the University of Georgia, August 2001.
- Attended several summer and winter schools on Analysis.
- Presented seminar at the University of California at Santa Barbara, USA, March 1998.

Membership in Mathematical Societies :

- Member of The American Mathematical Society
- Member of Banach Bulletin Board

Teaching: Courses:

- Over two decades of experiences in teaching various courses at US and Indian universities.
- Initiated Active learning methods at Mathematics Department at George Washington University.
- Certificate holder of e-teaching Elluminate Live Virtual Class Room.
- Certificate holder of Course Design institute, George Washington University.
- Proficient in learning platforms like Moodle, Openmath, Blackboard, Canvas, MyMathlab and Webassign.
- Graduate Courses Taught: Functional analysis, Real Analysis, Complex Analysis, Measure Theory.
- Undergraduate courses Taught : Calculus I, II, III, Calculus for Management Sciences, Applied Calculus, Precalculus, College Algebra, Differential Equations, Probability, Introductory Statistics, Linear Algebra, Introduction to proof: Discrete mathematics, Analysis 1 and 2.
- Special Courses Taught: Finite Mathematics for the Social and Management Sciences, Mathematics and Politics, Mathematical Ideas, Fourier Analysis and Applications.

Advising :

- Thesis advisor to two doctoral students at the R. K. Vivekananda Education and Research Institute, Belur, India.
- Thesis advisor to three masters students at R. K. Vivekananda Education and Research Institute, Belur, India.
- Thesis Advisor to masters Students at Morgan State University.
- Served as Member of the Thesis advisory committee at Morgan State University.
- Served as Faculty mentor at Howard University.

Grants:

- Recipient of Dean's Supplemental Fund, Loyola University, 2023,2024,2025.
- Recipient of Travel Grant,Loyola University, 2022,2023,202,2025.
- Recipient of STEM grant George Washington University, 2016, 2017.
- Recipient of International Travel grant, George Washington University, 2014, 2015, 2016, 2017.
- Miller Visitor Grant at the University of Missouri-Columbia, Summer, 2005.
- Recipient of Fund for Academic excellence at Howard University, 2000, 2001.

Additional Professional Contributions :

- Thesis Examiner (External), Department of Mathematics, Morgan State University, Maryland,USA.
- Thesis examiner (External), Department of Mathematics , National Institute of Technology, Tiruchirappalli, Tamil Nadu, INDIA.
- Senator, Department of Mathematics and Statistics Loyola University
- Developed Fourier Analysis and applications Course jointly with Dr. Ethan Duckworth.
- Developed Mathematics and Politics Course as part of departmental diversity and justice course jointly with Dr. Timothy Clarke
- Appointed Faculty in charge of Colloquium, Department of Mathematics and Statistics Loyola University.
- Member of Calculus Committee, Department of Mathematics and Statistics Loyola University.
- Member of the Diversity and Justice Course Committee,Department of Mathematics and Statistics, Loyola University .
- Member and Chair of the Mathematics Assessment Committee,Department of Mathematics and Statistics, Loyola University.
- Member of the Diversity and Justice Course Committee,Department of Mathematics and Statistics, Loyola University.
- Awarded Faculty Author Award at Howard University, 2000, 2001, 2002, 2003, 2004.
- Invited to serve as external examiner, Department of Mathematics and Statistics at the University of the West Indies, St. Augustine Campus, Trinidad and Tobago.
- Invited to serve as external examiner, Department of Mathematics and Statistics at the University of the West Indies, MONA, Jamaica

- Member of Ph.D committee at Mathematics Department, R. K. Vivekananda Education and Research Institute, Belur, India.
- Member of Colloquium committee at Mathematics Department, R. K. Vivekananda Education and Research Institute, Belur, India.
- Invited to serve as an external examiner of Ph.D thesis at Manonmaniam Sundaranar University.
- Initiated and arranged virtual colloquiums by international speakers of repute.
- Created youtube channel for Department of Mathematics, R. K. Vivekananda Education and Research Institute, Belur, India.
- Designed new courses for Mathematics Department, R. K. Vivekananda Education and Research Institute, Belur, India.
- Served as a lecturer for MTTS program organised by NBHM, Amity University, India.
- Served as external examiner for comprehensive examination at National Institute of Science, Education and Research, India.
- Served as external examiner for comprehensive examination at Indian Statistical Institute, Bangalore, India.
- Served as Referee for Ph.D Thesis at National Institute of Technology, Durgapur, India.
- Served as Referee for Ph.D Thesis at SRM Institute of Science and Technology, India.
- Initiated Active learning methods at Mathematics Department at George Washington University.
- Organised Seminars by International Speakers at George Washington University.
- Served as a Referee for Internationally Reputed Journals
- Served as Member of Ph.D. Programme Committee at Morgan State University.
- Served as Member of Graduate and Research committee at Morgan State University.
- Served as a book reviewer for Prentice Hall.
- Organiser of Analysis Seminar at Morgan State University.
- Served and chaired several examination committees at Howard University.
- Served as a member of graduate evaluation committee at Howard University.

Other Distinctions:

- Indian Council for Cultural Relations Empanelled Artist
- Recipient of Several Government grants on Musical Projects
- Recording artist of Famous Labels
- Toured all over world