Sudeshna Basu

Department of Mathematics and Statistics
Loyola University
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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:

- Teaching 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 – June2022

- 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 (since 2019)

Publications:

1. S. Basu S. Seal, " Small diameter properties in ideals of Banach Spaces " *Journal of Convex Analysis Volume 30 (2023) J* Math Archive link, https://doi.org/10.48550/arXiv.2109.04963, 2022.

2. 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.

3. 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.

4. S. Basu S. Seal, "Two aspects of small diameter properties", To appear in *The proceedings of IWOTA 2022,Operator Theory: Advances and Appliations,* 2023.

5. J. B. Guerrero, S. Basu, S. Seal and J. M. V. Yeguas, "Non-rough norms in operator spaces", (To appear in Mediterranean Journal of Mathematics), 2023.

6. 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.

7. 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.

8. 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.

9. S. Basu, "On Span of Small Combination of Slices Point in Banach Spaces" *Contemp. Math, AMS*, Volume (687), pages 45–53, 2017.

10. S. Basu, T. S. S. R. K. Rao,"On Small Combination of Slices in Banach Spaces", *Extracta Mathematcae*, Volume (31) No.1, pages 1–10, https://publicaciones.unex.es/index.php/EM/article/view/2605-5686.31.1.1 2016.

11. S. Basu T. Gill, V. Steadman, Z. Zachary, "On Natural adjoint operators in Banach Spaces", *Proceedings of American Mathematical Society*, Vol ume (132), pgs 1429-1434, https://www.jstor.org/stable/4097221, 2004.

12. S. Basu, T. Diagana, F. Ramarosan, "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).

13. P. Bandyopadhaya, 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.

14. S. Basu, "The Ball Generated Property in Operator Spaces", *Indagtiones Mathematicae*, N. S. 13 (2), pages 169–175, https://doi.org/10.1016/S0019-3577(02)80002-7, 2002.

15. P. Bandyopadhaya, S. Basu, "On Nicely Smooth Banach Spaces", *Extracta Mathematicae*, Volume(16), No. 1, pages 27–45, 2001.

16. P. Bandyopadhaya, S. Basu, "On a New Asymptotic Norming Property" , *Indagotiones Mathematicae*, NS 10, No.1, pages 15–23, https://doi.org/10.1016/S0019-3577(99)80002-0, 1999.

17. 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.

18. S. Basu , L. K . Dey S. Seal, S. Som, "Farthest Point Problem for I-M Compact Sets", arXiv:2008.08491 [math.FA], (In preparation), 2021.

Professional Activities:

- 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), SanFrancisco, 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

- 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:

- 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, 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, Precalculus, College Algebra, Differential Equations, Probability, Introductory Statistics, Linear Algebra, Introduction to proof:Discrete mathematics.
- Special Courses Taught: Finite Mathematics for the Social and Management Sciences, Mathematics and Politics, Mathematical Ideas.

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.
- Recipient of Travel Grant,Loyola University, 2022,2023.
- 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 :

- Developed Mathematics and Politics Course as part of departmental diversity and justice course jointly with Professor Timothy Clarke

- Appointed Faculty in charge of Colloquium, Department of Mathematics and Statistics Loyola University, Fall 2023.

- Member of Calculus Committee, Department of Mathematics and Statistics Loyola University, since Fall 2022.

- Developing a course addressing Diversity and Inclusion , Department of Mathematics and Statistics Loyola University, Spring 2023.

- 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 SRMInstitute 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.

- Organisor 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