

**Contact Information**

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**Education**

Ph.D. Mathematics	University of Cincinnati, USA	December 2012
M.Sc. Mathematics	Utkal University, Bhubaneswar, India	June 2004
B.Sc.-B.Ed.	Regional Institute of Education, Bhubaneswar, India	April 2002

**Dissertation Title**      Operator Theory: Ideals and Commutators of Operators  
**Dissertation Advisor**   Professor Gary Weiss

**Research Publications**

1. *Universal Block Tridiagonalization in  $B(H)$  and Beyond*, Patnaik, S., Petrovic, S. and Weiss, G., to appear in the *Special volume dedicated to "The mathematical legacy of Victor Lomonosov"* (2019).  
 (see also the arxiv link [Universal-Block-Tridiagonalization](#))
2. *Interplay of simple and selfadjoint-ideal semigroups in  $B(H)$* , Patnaik, S. and Weiss, G., submitted (2019).  
 (see also the arxiv link [SI-semigroups](#).)
3. *Commutators of Compact Operators and Sparsifying Arbitrary Matrices*, Patnaik, S., Petrovic, S., and Weiss, G., Preprint (2018).
4. *Cartan subalgebras of operator ideals*, Beltita, D., Patnaik, S., and Weiss, G., *Indiana University Mathematics Journal*, 65 (2016), no. 1, 1–37.
5. *Interplay between algebraic groups, Lie algebras, and operator ideals*, Beltita, D., Patnaik, S., and Weiss, G., *The varied landscape of operator theory*, 77–97, Theta Series Adv. Math., 17 (2014), Theta, Bucharest.
6.  *$B(H)$ -commutators: a historical survey II and recent advances on commutators of compact operators*, Beltita, D., Patnaik, S., and Weiss, G., *The varied landscape of operator theory*, 57–75, Theta Series Adv. Math., 17 (2014), Theta, Bucharest.

7. *Subideals of operators: a survey and introduction to subideal-traces*, Patnaik, S. and Weiss, G., *Operator theory in harmonic and non-commutative analysis*, 221–234, Operator Theory Adv. Appl., 240 (2014), Birkhuser/Springer, Cham.
8. *Subideals of operators*, Patnaik, S. and Weiss, G., *Journal of Operator Theory* 70 (2013), no. 2, 355–373.
9. *Subideals of operators II*, Patnaik, S. and Weiss, G., *Integral Equations Operator Theory* 74 (2012), no. 4, 587–600.

### Invited talks

- Analysis and Probability Research Group (APRG) seminar, Indian Institute of Science (IISc.), Bangalore, 26 June 2019.
- 47th Canadian Operator Symposium at the Department of Mathematics and Statistics, University of Regina, Canada, June 3-7, 2019 and Canadian Mathematical Society Summer Meeting, University of Regina, Regina, Saskatchewan, June 7-10, 2019 (could not attend)
- Symposium on Operator Theory, Indian Institute of Science (IISc.), Bangalore, February 2019
- International conference on Recent Advances in Operator Theory and Operator Algebras (OTOA), December 2018
- Conference on Functional Analysis at IIT Bombay, October 2017
- The Great Plains Operator Theory International Symposium, Texas Christian University Fort Worth, Texas, USA, May 2017
- Ramanujan Mathematical Society: 31st Annual Conference, India, June 2016
- Complex Geometry and Operator Theory Symposium at ISI Bangalore, December 2015
- The 43rd Canadian Operator Symposium on Operator Theory and Operator Algebras, University of Waterloo, Canada, June 2015
- Young Women and Mathematics Symposium, IISER Pune, India, July 2014
- 25th International Conference on Operator Theory, Timisoara, Romania, July 2014
- Institute of Mathematics of the Romanian Academy, Bucharest, Romania, June 2014

- Special Session on Progress in Noncommutative Analysis of the AMS Western Spring Sectional Meeting, University of New Mexico, Albuquerque, New Mexico, USA, April 2014
- Analysis seminar, Indian Institute of Technology, Kanpur, India, January 2014
- Thematic Session lecture, Multivariable Operator Theory, International Workshop on Operator Theory and its Applications (IWOTA), Indian Institute of Science, India, December 2013
- Mathematics Department Seminar, Indian Institute of Science Education and Research, Bhopal, India, September 2013
- Workshop in Analysis and Probability, Texas A&M University, USA, July 2012
- Special session lecture, Great Plains Operator Theory International Symposium, University of Houston, USA, May 2012
- University of Cincinnati lectures
  - Taft Annual Research Symposium, May 2012
  - Graduate student mathematics seminar, January 2012
- Lecture series, University of Cincinnati
  - Functional Analysis seminar, January-February 2013
  - Functional Analysis seminar, April-May 2012
  - Functional Analysis seminar, April-May 2011
- Presenter, Graduate Student Poster Forum, University of Cincinnati, USA, March 2012

### **Professional Affiliations, Honors, Memberships**

- University of Cincinnati Awards
  - Charles Phelps Taft Dissertation Fellow, 2011-12
  - Taft Graduate Enrichment Award, May 2012
  - Maita Levine Research Grant, Summer 2011
  - Taft Graduate Enhancement Fellowship, 2007-08
  - University Graduate Scholarship, 2007-11
- Graduate student mathematics seminar: Panel member for discussion on grant writing, January 2012
- Memberships

- Association for Women in Mathematics (AWM), 2008-Present
- American Mathematical Society (AMS), 2007-Present

### Teaching Experience

- *Assistant Professor* Indian Institute of Science Education and Research, Bhopal, August-December 2013
- *Instructor* University of Cincinnati  
Applied Calculus II, Spring semester 2013 (35 students)  
Responsibilities: Preparing syllabus, all lectures, exams, weekly office hours and grading
- *Instructor* University of Cincinnati
  - Applied Calculus I, Fall 2012 (40 students)  
Responsibilities: Preparing syllabus, all lectures, exams, weekly office hours and grading
  - Calculus I, Summer 2009 (40 students)  
Responsibilities: Lectured, prepared exams, graded tests, weekly office hours
- *Recitation leader/Teaching assistant* University of Cincinnati  
Responsibilities: Prepared weekly quizzes, graded tests, weekly office hours, and conducted problem-solving sessions for
  - Ordinary Differential Equations, 2010-11 (80 students)
  - Topics in Math, 2009-10 (75 students)
  - Calculus III, Spring 2008 (80 students)
  - Calculus II, Winter 2008 (80 students)
  - Calculus I, Fall 2007 (40 students)
- *Tutor*  
Mathematics Learning Center, University of Cincinnati, 2007-11  
Responsibilities: Tutored undergraduate students in all mathematics courses including tutoring on assignments and test reviews.
- Teaching internship, High school, India, 2001

### Conferences and Workshops

- Symposium on Operator Theory, Indian Institute of Science (IISc.), Bangalore, February 2019

- International conference on Recent Advances in Operator Theory and Operator Algebras (OTOA), December 2018
- International workshop *Women in Operator Algebras* at BIRS (Banff International Research Station) November 4-9, Canada, 2018
- The Great Plains Operator Theory International Symposium, Texas Christian University Fort Worth, Texas, USA, May 2017
- Ramanujan Mathematical Society: 31st Annual Conference, India, June 2016
- Complex Geometry and Operator Theory Symposium at ISI Bangalore, December 2015
- The 43rd Canadian Operator Symposium on Operator Theory and Operator Algebras, University of Waterloo, Canada, June 2015
- Young Women and Mathematics Symposium, IISER Pune, India, July 2014
- 25th International Conference on Operator Theory, Timisoara, Romania, July 2014
- AMS Western Spring Sectional Meeting, University of New Mexico, Albuquerque, New Mexico, USA, April 2014
- International Workshop on Operator Theory and its Applications (IWOTA), Indian Institute of Science, Bangalore, India, December 2013
- Current Trends in Algebra, Indian Institute of Science Education and Research, Bhopal, India, August 2013
- Seminar at Wabash College in Crawfordsville, USA, April 2013
- East Coast Operator Algebra Symposium, University of Tennessee, Tennessee, USA, October 2012
- WABASH Extramural Modern Analysis International Conference, IUPUI, Indianapolis, September 2012
- Concentration week on recent advances in harmonic analysis and spectral theory, Texas A&M University, USA, August 2012
- Concentration week on frame theory and maps between operator algebras, Texas A&M University, USA, July 2012
- Workshop in Analysis and Probability, Texas A&M University, USA, July–August 2012

- Great Plains Operator Theory International Symposium (GPOTS), University of Houston, Houston, USA, June 2012
- Tenth Annual Spring Institute on Noncommutative Geometry and Operator Algebras (NCGOA)-Conformal Field Theory and Operator Algebras, Vanderbilt University, Nashville, Tennessee, USA, May 2012
- East Coast Operator Algebra Symposium, Purdue University, Indiana, USA, October 2011
- WABASH Extramural Modern Analysis International Conference, IUPUI, Indianapolis, Indiana, USA, October 2010
- International Congress of Mathematicians (ICM)-Satellite Conference on Operator Theory and Operator Algebras, Indian Statistical Institute, Bangalore, Karnataka, India, August 2010
- International Workshop on Operator Theory and Applications (IWOTA), Berlin, Germany, July 2010
- 26th South Eastern Analysis Meeting (SEAM), Georgia Institute of Technology, Atlanta, USA, March 2010
- Foundations/Logic Annual Seminar, Miami University, Oxford, Ohio, USA, January 2010
- Advanced Instructional School (AIS)-Differential and Algebraic topology, Indian Statistical Institute, Kolkata, India, December 2005
- Annual Foundation School II (AFS-II), Harish-Chandra Research Institute, Allahabad, India, December 2004
- Annual Foundation School I (AFS-I), Indian Institute of Technology, Bombay, India, June 2004
- Mathematics Training and Talent Search (MTTS), Regional Institute of Education, Mysore, India, June 2003

### International Conference Travel Grants

- DST International Travel Support, 2015
- NBHM International Travel Support, 2014
- GPOTS 2012, National Science Foundation (NSF), University of Houston
- NCGOA 2012, NSF, Vanderbilt University

- Taft travel grant 2012, University of Cincinnati

**Research visits**

- Invited at the international workshop *Women in Operator Algebras* at BIRS (Banff International Research Station) November 4-9, Canada, 2018
- Research visit at University of Cincinnati, Ohio, USA, 2017
- Short research visit at University of Edwardsville, Illinois, USA, 2017
- Short research visit at the Indian Institute of Science, Bangalore, 2016
- One week of research visit at the University of Waterloo, Canada, 2015
- One week of research visit at the Institute of Mathematics of the Romanian Academy, Bucharest, Romania, 2014

**Research Interests**

Problems in operator theory and applications of operator theory to operator algebras