PRIYANGA GANESAN

Curriculum Vitae

Contact information

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Employment & Education

2022 - 2024 **UC President's Postdoctoral Fellow**
Department of Mathematics, University of California San Diego (UCSD), USA.
Supervisor: Dr. Todd Kemp

2017 - 2022 **Ph.D in Mathematics**   4.0/4.0
Texas A&M University (TAMU), USA.
Dissertation: *Quantum coloring of quantum graphs*
Supervisor: Dr. Michael Brannan

2012 - 2017 **M.Sc in Mathematics** (integrated bachelors & masters program)   9.4/10
National Institute of Science Education and Research, India.
Thesis: *Spectral theory for ordered spaces*
Supervisor: Dr. Anil Karn

Research Interests: Functional analysis, operator algebras and quantum information theory.

Publications

1. **Spectral bounds for the quantum chromatic number of quantum graphs** (26 pages), Priyanga Ganesan, *Linear Algebra and its Applications*, 674:351376, 2023. [arXiv:2112.01726].

2. **The quantum-to-classical graph homomorphism game** (34 pages), Michael Brannan, Priyanga Ganesan and Samuel Harris, *Journal of Mathematical Physics*, 63(11), 2022. [arXiv:2009.07229].

3. **Quantum majorization on semifinite von Neumann algebras** (49 pages), Priyanga Ganesan, Li Gao, Satish Pandey & Sarah Plosker, *Journal of Functional Analysis*, 279(7), 2020. [arXiv:1909.10038].

4. **Operator Algebras Mentor Network: supporting early-career women researchers**, Anna Duwenig, Kari Eifler, Priyanga Ganesan, Lara Ismert, Sarah Plosker and Karen Strung, *European Women in Mathematics Newsletter*, Issue No. 35 (Feb 2022). [Online link]

Selected Grants (total: 9)

1. **Presidential Postdoctoral Fellowship**, University of California, 2022 - 2024.

2. **NSF Grant - DMS-2247448** (co-PI): Conference grant - *Young Mathematicians in C*-Algebras 2023*, jointly with B. Nelson, L. Hall & M. Lorentz, $50,000 USD, 2023 - 2024.

3. **Women in Research (WiRe) Fellowship**, University of Münster, Jan - Aug 2023.

4. **Texas A&M College of Science Diversity and Equity Small Grant**: for organizing diversity and mentoring programs, jointly with A. Shiu and M. Bezbaruah, $2,000 USD, 2021- 2022.

5. **MAA Tensor Women and Mathematics Grant**: Conference grant - *Texas Women in Math symposium*, jointly with L. Matusevich, N. Obatake, A. Sobieska & E. Walker, $6,000 USD, 2019-20.

Selected Awards (total: 30)

1. **Young Research Fellow**: for outstanding early-career visiting researchers at the Mathematics Münster - Cluster of Excellence, University of Münster, Summer 2023.
2. **US Junior Oberwolfach Fellow**: travel award for outstanding junior US researchers, Aug 2022.
3. **2022 Distinguished Graduate Student Award**: for outstanding academic record and excellence in teaching (awarded to 20 among 14,000 graduate students), Texas A&M University, April 2022.
4. **2021 Buck Weirus Spirit Award**: for high involvement and positively impacting student life (awarded to 55 among 70,000 every year), Texas A&M University, Mar 2021.
5. **Carter, AFS, Hutson Scholarships**: academic excellence awards, Texas A&M, 2019, 2020, 2021.
6. **Southerland Aggie Leader Scholarship**: university level award for outstanding leadership and service, Texas A&M University, 2020, 2021, 2022.
7. **2020 Aggie Core Values Award**: (awarded to 1 in 14,000) for exemplifying the Aggie qualities of excellence, integrity, leadership, loyalty, respect, and selfless service, Texas A&M, Apr 2020.
8. **N.W Naugle Fellow in Mathematics**, Graduate Fellowship, Texas A&M, 2017-19.
9. **INSPIRE-DST Scholarship**: for undergraduate education, Government of India, 2012 - 2017.
10. **S.N. Bose Fellowship**: India-US fellowship for summer research, 2015.

Conference Organization

1. **AMS Fall Eastern Sectional Meeting**: Special session on *Recent developments in operator algebras and quantum information theory*, University at Buffalo (SUNY), New York, Sep 2023.
2. **Young Mathematicians in C*-Algebras**, external co-organizer, K.U Leuven, Aug 2023.
3. **Joint Math Meetings**: Special session on *Advances in Operator Algebras*, Boston, Jan 2023.
4. **Texas Women in Math Symposium**, Texas A&M University, Feb 2020.

Selected Research Visits (total: 11)

1. **University of Münster**, Germany, May - Aug 2023.
2. **International Center for Mathematical Sciences**, Edinburgh, UK, July 2023.
3. **Purdue University**, West Lafayette, USA, Apr 2023, Nov 2022.
4. **Institute for Quantum Computing**, University of Waterloo, Canada, Sep - Oct 2021.
5. **Institue de Mathématiques de Bordeaux**, Université de Bordeaux, France, May - July 2016.

Invited Research Presentations (total: 17 conferences, 2 colloquia, 24 seminars)

1. **International Workshop on Operator Theory & Applications**: Finland, Aug 2023.
2. **Institut Mittag-Leffler, Sweden**: Workshop on Non-commutative harmonic analysis and quantum information, Jun 2023.
3. **University of California Los Angeles**: Modern Trends in Operator Algebras Conf., Mar 2023.
4. **ICSOAA2023**: 5th International Conference of Settat on Operator Algebras and Applications, Plenary speaker, Morocco, Jan 2023.
5. **Wabash Miniconference**, Plenary speaker, Indianapolis, Nov 2022.
6. **University of California Berkeley**, Probabilistic Operator Algebra Seminar, Nov 2022.
7. **Oberwolfach Research Institute for Mathematics**: C*-algebras workshop, Aug 2022.
8. **Groundwork for Operator Algebras Lecture Series**: University of Montana, July 2022.
9. **Joint Math Meetings**: Interplay of Matrix Analysis & Operator Theory session, Apr 2022.
10. **American Mathematical Society Sectional Meeting**: Special session on Recent Developments in Operator Algebras, Purdue University, Mar 2022.
11. **California State University, Long Beach**: Colloquium, Jan 2022.

Invited workshop participation (total: 16)

1. **International Center for Mathematical Sciences (ICMS), Edinburgh**: Analytical and Combinatorial Aspects of Quantum Information Theory, July 2023, Sep 2019.
2. **Banff International Research Station**: Women in Operator Algebras, Jun 2023, Dec 2021.
3. **Oberwolfach Research Institute for Mathematics**: C*-algebras workshop, Aug 2022.
4. **American Institute of Mathematics**: Non-local games in QIT, May 2021.
5. **Instituto de Ciencias Matemáticas (ICMAT), Madrid**: Thematic program on Operator Algebras, Groups and Applications to Quantum Information, May 2019.

Leadership & Service (total: 21 leadership, 2 seminars, 7 committees, 25 outreach)

1. **Vice Chair of Wellness and Sustainability**, UCSD Postdoctoral Association, 2023-2024.
2. **Co-organizer**, Functional analysis seminar, UCSD, 2022-2024.
3. **Board member**, Operator Algebras Mentor Network (international non-profit org.), 2020 - 2022.
4. **Co-founder & Co-organizer**, Math IDP workshop series, TAMU, 2021-2022.
5. **President**, TAMU Association for Women in Mathematics Graduate Student Chapter, 2020 - 2021.
6. **Senator**, Graduate & Professional Student Government Senate, TAMU 2019 - 2021.
7. **Graduate Instructional Committee**, delegate for College of Science, TAMU, 2021-2022.
8. **Dean's Graduate Advisory Council**, representative for math department, TAMU, 2019 - 2022.
9. **Math Graduate Student Diversity Committee**, member, TAMU, Fall 2020.
10. **Math Circle**, Session facilitator and volunteer, Texas A&M 2017-2022.

Teaching and Mentoring (at Texas A&M University)

1. **Instructor of Record**: responsible for all aspects of the course including preparing course notes, delivering lectures, writing exams and quizzes, holding office hours and managing course grades.
    - *Math 168: Finite Mathematics*, Spring 2021, Fall 2020 (online)
    - *Math 142: Business Calculus*, Summer 2019

2. **Recitation's & Lab Instructor**: conducted weekly computer lab sessions in Python, taught recitation (tutorial) classes, and graded lab reports and quizzes.
    - *Math 151: Engineering Calculus I*, Spring 2020
    - *Math 150: Functions, Trigonometry & Linear systems*, Fall 2019, Fall 2018
    - *Math 152: Engineering Mathematics II*, Spring 2019

3. **Graduate Mentor**: supervised 5 undergrad students on directed reading projects, 2019 - 2021.

4. **Teaching certifications:**
    - CIRTL Practitioner Certificate: *Teaching-as-Research Fellow*, 2020 - 2021.
    - CIRTL Associate-Fellow: *Academy for Future Faculty*, April 2021.

Academic References

- **Dr. Michael Brannan**
  Associate Professor,
  Department of Mathematics,
  University of Waterloo, Canada.
  Email: michael.brannan@uwaterloo.ca

- **Dr. Todd Kemp**
  Professor,
  Department of Mathematical Sciences,
  University of California San Diego, USA.
  Email: tkemp@ucsd.edu

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