

# Curriculum Vitae of Ken Dykema

November 1, 2019

## Biographical Information

### Address

- Department of Mathematics, Texas A&M University, College Station TX 77843-3368, USA.
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### Education

- Ph.D. University of California, Berkeley, 1993 (Dan-Virgil Voiculescu, advisor).
- B.A. in Mathematics, Oxford University, 1987, (first class honors).
- B.S. in Mathematics & Chemistry, University of Wisconsin — Eau Claire, 1985, (summa cum laude, named the outstanding senior in Arts and Sciences) .

### Position

Professor of Mathematics, Texas A&M University (beginning September 2003)

### Previous Positions and Fellowships

- Associate Professor of Mathematics, Texas A&M University (September 2001 — August 2003).
- Assistant Professor of Mathematics, Texas A&M University (August 1999 — August 2001).
- Lektor, Odense University, Odense, Denmark (January 1999 — June 1999).
- Adjunkt, Odense University (January 1996 — December 1999).
- Fields Institute Research Fellow, Waterloo, Ontario (August 1994 — June 1995).
- NSF Postdoctoral Fellow at UC-Berkeley and the Fields Institute (August 1993 — December 1995).
- Teaching Assistant, UC-Berkeley, (September 1992 — December 1992).
- Hertz Foundation Fellow, UC-Berkeley, (September 1987 — May 1993, except fall 1992).
- Marshall Scholarship, St. John's College, Oxford, (October 1985 — June 1987).
- Lando-SOHIO summer research student in theoretical chemistry with D.G. Truhlar, University of Minnesota, Minneapolis, (Summer 1984).
- Computational chemistry research student with M.S. Gordon, North Dakota State University, Fargo, (Summer 1983).
- National Merit Scholar (one of my undergraduate years, though I forget which one).
- Theoretical chemistry research student with F.W. King, University of Wisconsin — Eau Claire, (Summer 1982 and part time during September 1982 — September 1985).

### Awards and Honors

- Fellow of the American Mathematical Society, class of 2020.
- Simons-CRM Professor, Centre de Recherches Mathematiques, Montreal, March 2019
- Simons Visiting Professorship, Oberwolfach and University of Saarbrücken, March 2017
- NSF Postdoctoral Fellowship, 1993-1995
- NSF graduate fellowship (declined)
- Hertz Foundation Fellowship, 1987-1993
- Marshal Scholarship, 1985-1987.

### Visiting Positions

- Development leave from Texas A&M University taken at various places, principally the Erwin Schrödinger Institute in Vienna, Austria, (January 2011 - May 2011).
- Visit to University of Göttingen, Germany, partially funded by the Alexander-von-Humboldt Foundation, (30 days in June/July 2009).
- Development leave from Texas A&M University taken at the University of Münster, Germany, partially funded by the Alexander-von-Humboldt Foundation, (September 2004 - July 2005).

- Researcher at MSRI, (January - May 2001)
- SDU-Odense University, (June 2000)
- Institut de Mathematiques de Luminy, France, October–December 1998.

**Languages:** English (native); German (very good), Danish (fair), French (fair).

## Scholarly Publications

### Papers on Mathematics (peer reviewed)

100. “Joint spectral distributions and invariant subspaces for commuting operators in a finite von Neumann algebra,” *Canad. J. Math.* published online, to appear in print, 58 pages, (with Ian Charlesworth, Fedor Sukochev and Dmitriy Zanin).
99. “Non-closure of the set of quantum correlations via graphs,” *Comm. Math. Phys.* **365** (2019), 1125-1142, (with Vern Paulsen and Jitendra Prakash).
98. “The delta game,” *Quantum Inf. Comput.* **18** (2018), 599-616, (with Vern Paulsen and Jitendra Prakash).
97. “Decomposability and norm convergence properties in finite von Neumann algebras,” *Integral Equations Operator Theory* **90**:54 (2018), 32 pages, (with Joseph Noles and Dmitriy Zanin).
96. “Nilpotent elements of operator ideals as single commutators,” *Proc. Amer. Math. Soc.* **146** (2018), 3031-3037 (with Amudhan Krishnaswamy-Usha)
95. “Numerical Ranges in  $II_1$  Factors,” *Proc. Edinburgh Math. Soc.* **61** (2018), 31-55 (with Paul Skoufranis)
94. “On algebra-valued R-diagonal elements,” *Houston J. Math.* **44** (2018), 209-252 (with March Boedihardjo)
93. “An upper triangular decomposition theorem for some unbounded operators affiliated to  $II_1$ -factors,” *Israel J. Math.* **222** (2017), 645-709 (with Fedor Sukochev and Dmitriy Zanin)
92. “Asymptotic \*-moments of some random Vandermonde matrices,” *Adv. Math.* **318** (2017), 1-45 (plus Mathematica Notebook file, with March Boedihardjo).
91. “Determinants associated to traces on operator bimodules,” *J. Operator Theory* **78** (2017), 119-134 (with Fedor Sukochev and Dmitriy Zanin).
90. “KMS quantum symmetric states,” *J. Math. Phys.* **58** (2017), 012103, 12 pp (with Kunal Mukherjee).
89. “Quantum symmetric states on free product C\*-algebras,” *Trans. Amer. Math. Soc.* **369** (2017), 645-679 (with Claus Köstler and John Williams).
88. “On reduction theory and Brown measure for closed unbounded operators,” *J. Funct. Anal.* **371** (2016), 3403-3422 (with Joseph Noles, Fedor Sukochev and Dmitriy Zanin).
87. “Algebras of log-integrable functions and operators,” *Complex Anal. Oper. Theory* **10** (2016), 1775-1787 (with Fedor Sukochev and Dmitriy Zanin).
86. “Generating functions for purely crossing partitions,” *Australas. J. Comb.* **66** (2016), 276-287.
85. “Instances of the Kaplansky-Lvov multilinear conjecture for polynomials of degree three,” *Linear Algebra Appl.* **508** (2016), 272-288 (with Igor Klep).
84. “Principal functions for bi-free central limit distributions,” *Integral Equations Operator Theory* **85** (2016), 91-108 (with Wonhee Na).

83. “Synchronous correlation matrices and Connes’ embedding conjecture,” *J. Math. Phys.* **57** (2016), 015214, 12pp (with Vern Paulsen).
82. “Holomorphic functional calculus on upper triangular forms in finite von Neumann algebras,” *Illinois J. Math.* **59** (2015), 819-824 (with Fedor Sukochev and Dmitriy Zanin).
81. “A decomposition theorem in  $\text{II}_1$ -factors,” *J. reine angew. Math.* **708** (2015), 97-114 (with Fedor Sukochev and Dmitriy Zanin).
80. “Holder’s inequality for roots of symmetric operator spaces,” *Studia Math.* **228** (2015), 47-54, (with Anna Skripka),
79. “On stable finiteness of group rings,” *Alg. Discrete Math.* **19** (2015), 44-47, (with Kate Juschenko).
78. “Finitely presented groups related to Kaplansky’s direct finiteness conjecture,” *Exp. Math.* **24** (2015), 326338, (with Timo Heister and Kate Juschenko).
77. “Characterization of singular numbers of products of operators in matrix algebras and finite von Neumann algebras,” *Bull. Sci. math.* **139** (2015), 400419, (with Hari Bercovici, Benoit Collins and Wing Suet Li).
76. “The simplex of tracial quantum symmetric states,” *Studia Math.* **255** (2014), 203-218, (with Yoann Dabrowski and Kunal Mukherjee)
75. “Primitivity of unital full free products of residually finite dimensional  $C^*$ -algebras,” *J. Funct. Anal.* **267** (2014), 4519-4558, (with Francisco Torres-Ayala).
74. “Tail algebras of quantum exchangeable random variables,” *Proc. Amer. Math. Soc.* **142** (2014), 3853-3863, (with Claus Köstler).
73. “Upper triangular Toeplitz matrices and real parts of quasinilpotent operators,” *Indiana Univ. Math. J.* **63** (2014), 53-75, (with Junsheng Fang and Anna Skripka).
72. “Sofic dimension for discrete measured groupoids,” *Trans. Amer. Math. Soc.* **366** (2014), 707-748, (with David Kerr and Mikael Pichot).
71. “Perturbation formulas for traces on normed ideals,” *Commun. Math. Phys.* **325** (2014), 1107-1138, (with Anna Skripka).
70. “Addendum to “Connes’ embedding conjecture and sums of hermitian squares”,” *Adv. Math.* **252** (2014), 805-811, (with Sabine Burgdorf, Igor Klep and Markus Schweighofer).
69. “The amalgamated free product of hyperfinite von Neumann algebras over finite dimensional subalgebras,” *Houston J. Math.* **39** (2013), 1313-1339, (with Daniel Redelmeier).
68. “The Horn inequalities for submodules,” *Acta Sci. Math. (Szeged)* **79** (2013), 17-30, (with Hari Bercovici and Wing Suet Li).
67. “Correction of proofs in ‘Purely infinite simple  $C^*$ -algebras arising from free product constructions’ and a subsequent paper,” *Canad. J. Math.* **65** (2013), 481-484, (with Pere Ara and Mikael Rørdam).
66. “Measure-multiplicity of the Laplacian masa,” *Glasgow Math. J.* **55** (2013), 285-292, (with Kunal Mukherjee).
65. “The carpenter and Schur–Horn problems for masas in finite factors ,” *Illinois J. Math.* **56** (2012), 1313-1329, (with Junsheng Fang, Don Hadwin and Roger Smith).
64. “On single commutators in  $\text{II}_1$ -factors,” *Proc. Amer. Math. Soc.* **140** (2012) 931–940, (with Anna Skripka).
63. “Free products of sofic groups with amalgamation over monotileably amenable groups,” *Münster J. Math.* **4** (2011), 101–118, (with Benoît Collins).

62. “Matrices of unitary moments,” *Math. Scand.* **109** (2011), 225–239 (with Kate Juschenko).
61. “A description of amalgamated free products of finite von Neumann algebras over finite dimensional subalgebras,” *Bull. London Math. Soc.* **43** (2011), 63–74.
60. “A non-convex asymptotic quantum Horn body,” *New York J. Math.* **17** (2011), 437–444, (with Benoit Collins).
59. “Sums-of-squares results for polynomials related to the Bessis-Moussa-Villani conjecture,” *J. Stat. Phys.* **139** (2010), 779–799, (with Benoit Collins and Francisco Torres–Ayala).
58. “Intersections of Schubert varieties and eigenvalue inequalities in an arbitrary finite factor,” *J. Funct. Anal.* **258** (2010), 1579–1627, (with Hari Bercovici, Benoit Collins, Wing Suet Li and Dan Timotin).
57. “Unique mixing of the shift on the  $C^*$ -algebras generated by the  $q$ -canonical commutation relations,” *Houston Math. J.* **36** (2010), 275–281, (with Francesco Fidaleo).
56. “Brown measure and iterates of the Aluthge transform for some operators arising from measurable actions,” *Trans. Amer. Math. Soc.* **361** (2009), 6583–6593, (with Hanne Schultz).
55. “Higher order spectral shift,” *J. Funct. Anal.* **257** (2009), 1092–1132, (with Anna Skripka).
54. “Unique ergodicity of free shifts,” *J. Operator Theory* **61** (2009), 279–294 (with Beatriz Abadie).
53. “On a reduction procedure for Horn inequalities in finite von Neumann algebras,” *Oper. Matrices* **3** (2009), 1–40, (with Benoit Collins).
52. “Free entropy dimension in amalgamated free products,” *Proc. London Math. Soc.* **97** (2008), 339–367, (with Nathaniel Brown and Kenley Jung, and with an appendix by Wolfgang Lück).
51. “Generators of  $\text{II}_1$  factors,” *Oper. Matrices* **2** (2008), 555–582, (with Allan Sinclair, Roger Smith and Stuart White).
50. “A linearization of Connes’ embedding problem,” *New York J. Math.* **14** (2008), 617–641, (with Benoit Collins).
49. “Non-conjugate  $\mathbf{Z}_{p^2}$ -actions on free product factors,” *J. Operator Theory* **57** (2007), 267–301, (with Maria Grazia Viola).
48. “The free entropy dimension of some  $L^\infty[0, 1]$ -circular operators,” *Internat. J. Math.* **18** (2007), 613–631, (with Gabriel Tucci).
47. “Multilinear function series and transforms in free probability theory,” *Adv. Math.* **208** (2007), 351–407.
46. “Manifold structure of spaces of spherical tight frames,” *Int. J. Pure Appl. Math.* **28** (2006), 217–256, (with Nate Strawn).
45. “Isomorphisms of Cayley graphs of surface groups,” *Algebra Discrete Math.* **2006**, 18–37, (with Marek Bozejko and Franz Lehner).
44. “Values of the Pukanszky invariant in free group factors and the hyperfinite factor,” *J. Funct. Anal.* **240** (2006), 373–398, (with Allan Sinclair and Roger Smith).
43. “On the  $S$ -transform over a Banach algebra,” *J. Funct. Anal.* **231** (2006), 90–110.
42. “Symmetric random walks on certain amalgamated free product groups,” in *Topological and Asymptotic Aspects of Group Theory*, R. Grigorchuk, M. Mihalik, M. Sapir and Z. Sunik, (eds.), Proceedings in Contemporary Mathematics, vol. 394, American Math. Soc., Providence, 2006, pp. 87–99.

41. “Hyperinvariant subspaces for some B-circular operators,” *Math. Ann.* **333** (2005), 485–523, (with an appendix by Gabriel Tucci).
40. “The microstates free entropy dimension of any DT-operator is 2,” *Documenta Math.* **10** (2005), 247–261, (with Kenley Jung and Dimitri Shlyakhtenko).
39. “The completely bounded approximation property for extended Cuntz–Pimsner algebras,” *Houston J. Math.* **39** (2005), 829–840, (with Roger Smith).
38. “Sums of commutators in ideals and modules of type II factors,” *Ann. Inst. Fourier (Grenoble)* **55** (2005), 931–971, (with Nigel Kalton).
37. “Popa algebras with free group factor representations,” *J. reine angew. Math.* **573** (2004), 157–180, (with Nathaniel Brown).
36. “Ellipsoidal tight frames and projection decompositions of operators,” *Illinois J. Math.* **48** (2004), 477–489 (with Dan Freeman, Keri Kornelson, David Larson, Marc Ordower and Eric Weber).
35. “Commutator structure of operator ideals” *Adv. Math.* **185** (2004), 1–79, (with Tadeusz Figiel, Gary Weiss and Mariusz Wodzicki).
34. “Subfactors of free products of rescalings of a  $\text{II}_1$ -factor,” *Math. Proc. Cambridge Philos. Soc.* **136** (2004), 643–656.
33. “On embeddings of full amalgamated free product  $C^*$ -algebras,” *Proc. Amer. Math. Soc.* **132** (2004), 2019–2030, (with Scott Armstrong, Ruy Exel and Hanfeng Li).
32. “Invariant subspaces of the quasinilpotent DT-operator,” *J. Funct. Anal.* **209** (2004), 332–366, (with Uffe Haagerup).
31. “DT-operators and decomposability of Voiculescu’s circular operator,” *Amer. J. Math.* **162** (2004), 121–189, (with Uffe Haagerup).
30. “Exactness of reduced amalgamated free product  $C^*$ -algebras,” *Forum Math.* **16** (2004), 161–180.
29. “Generating functions for moments of the quasi-nilpotent DT-operator,” *Adv. Appl. Math.* **30** (2003), 545–561, (with Catherine Yan).
28. “Rescalings of free products of  $\text{II}_1$ -factors,” *Proc. Amer. Math. Soc.* **131** (2003), 1813–1816, (with Florin Radulescu).
27. “Free subproducts and free scaled products of  $\text{II}_1$ -factors,” *J. Funct. Anal.* **194** (2002), 142–180.
26. “Topological entropy of free product automorphisms,” *Acta Math.* **189** (2002), 1–35, (with Nathaniel Brown and Dimitri Shlyakhtenko).
25. “Purely infinite, simple  $C^*$ -algebras arising from free product constructions, II,” *Math. Scand.* **90** (2002), 73–86.
24. “Embeddings of reduced free products of operator algebras,” *Pacific J. Math.* **199** (2001), 1–19, (with Etienne Blanchard).
23. “Exactness of Cuntz–Pimsner  $C^*$ -algebras,” *Proc. Edinburgh Math. Soc.* **44** (2001), 425–444, (with Dimitri Shlyakhtenko).
22. “Invariant subspaces of Voiculescu’s circular operator,” *Geom. Funct. Anal.* **11** (2001), 693–741, (with Uffe Haagerup).
21. “Topological entropy of some automorphisms of reduced amalgamated free product  $C^*$ -algebras,” *Ergodic Theory Dynam. Systems* **21** (2001), 1683–1693.
20. “Projections in free product  $C^*$ -algebras, II,” *Math. Z.* **234** (2000), 103–113 (with Mikael Rørdam).

19. “Purely infinite, simple  $C^*$ -algebras arising from free product constructions, III,” *Proc. Amer. Math. Soc.* **128** (2000), 3269–3273, (with Marie Choda).
18. “Compressions of free products of von Neumann algebras,” *Math. Ann.* **316** (2000), 61–82 (with Florin Rădulescu).
17. “Some groups whose reduced  $C^*$ -algebras have stable rank one,” *J. Math. Pures Appl.* **78** (1999), 591–608 (with Pierre de la Harpe).
16. “The stable rank of tensor products of free product  $C^*$ -algebras,” *J. Operator Theory* **41** (1999), 139–149.
15. “Simplicity and the stable rank of some free product  $C^*$ -algebras,” *Trans. Amer. Math. Soc.* **351** (1999), 1–40.
14. “Spectral characterization of sums of commutators II,” *J. reine angew. Math.* **504** (1998), 127–137 (with N.J. Kalton).
13. “Purely infinite simple  $C^*$ -algebras arising from free product constructions,” *Canad. J. Math.* **50** (1998), 323–341 (with Mikael Rørdam).
12. “Faithfulness of free product states,” *J. Funct. Anal.* **154** (1998), 223–229.
11. “Projections in free product  $C^*$ -algebras,” *Geom. Funct. Anal.* **8** (1998), 1–16 (with Mikael Rørdam).
10. “The stable rank of some free product  $C^*$ -algebras,” *Duke Math. J.* **90** (1997), 95–121, “correction,” **94** (1998), 213 (with Uffe Haagerup and Mikael Rørdam).
9. “Two applications of free entropy,” *Math. Ann.* **308** (1997), 547–558.
8. “Free products of finite dimensional and other von Neumann algebras with respect to non-tracial states,” *Fields Inst. Commun.* **12** (1997), D. Voiculescu ed., pp. 41–88.
7. “Amalgamated free products of multi-matrix algebras and a construction of subfactors of a free group factor,” *American J. Math.* **117** (1995), 1555–1602.
6. “Crossed product decompositions of a purely infinite von Neumann algebra with faithful, almost periodic weight,” *Indiana Univ. Math. J.* **44** (1995), 433–450.
5. “Factoriality and Connes’ invariant  $T(M)$  for free products of von Neumann algebras,” *J. reine. angew. Math.* **450** (1994), 159–180.
4. “Interpolated free group factors,” *Pacific J. Math.* **163** (1994), 123–135.
3. “On the Fock representation of the  $q$ -commutation relations,” *J. reine. angew. Math.* **440** (1993), 201–212 (with Alexandru Nica).
2. “Free products of hyperfinite von Neumann algebras and free dimension,” *Duke Math. J.* **69** (1993), 97–119.
1. “On certain free product factors via an extended matrix model,” *J. Funct. Anal.* **112** (1993), 31–60.

**Preprint submitted for publication** (in peer reviewed journal; available on the arXiv)

101. “Angles between Haagerup-Schultz projections and spectrality of operators,” (23 pages, with Amudahn Krishnaswamy-Usha).

## Book

D.V. Voiculescu, K.J. Dykema, A. Nica, *Free Random Variables*, CRM Monographs **1**, American Mathematical Society, 1992.

## Articles in Conference Proceedings (not peer reviewed)

- “Unitarily invariant trace extensions beyond the trace class,” in *Operator Theory: Adv. Appl.* **114**, Birkhäuser Verlag, 2000, pp. 59-65 (with Gary Weiss and Mariusz Wodzicki).
- “Free products of exact groups,” in *Proceedings of the Workshop in C\*-algebras, Münster, Germany, March 1999*, J. Cuntz and S. Echterhoff (Eds.), Springer-Verlag, 2000, pp. 61–70.

## Papers on Chemistry

- Frederick W. King, Kenneth J. Dykema, “Bounds for the atomic Hartree–Fock electronic density,” *J. Phys. B: At. Mol. Phys.* **16** (1983), 2071-2077.
- Krishnan Raghavachari, Jayaramman Chandrasekhar, Mark S. Gordon, Kenneth J. Dykema, “Theoretical study of silylene insertion into N–H, O–H, F–H, P–H, S–H and Cl–H Bonds,” *J. Am. Chem. Soc.* **106** (1984), 5853-5859.
- Kenneth J. Dykema, Tranh N. Truong, Mark S. Gordon, “Studies of Silicon–Phosphorus Bonding,” *J. Am. Chem. Soc.* **107** (1985), 4535-4541.
- Rozeanne Steckler, Kenneth J. Dykema, Franklin B. Brown, Gene C. Hancock, Donald G. Truhlar, Trina Valencich, “A comparative study of potential energy surfaces for methyl + molecular hydrogen  $\rightarrow$  methane + atomic hydrogen,” *J. Chem. Phys.* **87** (1987), 7024-7035.
- Frederick W. King, Kenneth J. Dykema, Alan D. Lund, “Calculation of some integrals for the atomic three–electron problem,” *Phys. Rev. A* **46** (1992), 5406-5416.
- Frederick W. King, Kenneth J. Dykema, Brian D. Dalke, “Nonlinear programming approach to locally constrained variational calculations: He and H- in the Hartree–Fock approximation,” *J. Chem. Phys.* **96** (1992), 2889-2894.

## Talks

### Research level lecture series and short courses

- “Upper Triangular forms in finite von Neumann algebras,” Southern Ontario Operator Algebras Seminar, University of Waterloo, Ontario, February 2018, (2 hours).
- “Brown measure and invariant subspaces,” (main speaker) Short Course of the Simnario Interinstitucional del Matrices Aletoirias (SIMA), UNAM (National Autonomous University of Mexico), Mexico City, September 2015, (4.5 hours)
- “Free Group Factors,” (one of five speakers), Master Class on Free Probability Theory, University of Münster, Germany, September 2013, (3 hours).
- “Free Probability,” (one of two speakers; also Roland Speicher held lectures); lectures associated with the program Bialgebras and free probability, Erwin Schroedinger Institute, Vienna Austria, February/March 2011 (10.5 hours each).
- “Free Probability Theory,” Chennai, India, July/August 2010, jointly with Roland Speicher, (15 hours each).
- “On matrix approximants of operators in finite von Neumann algebras,” annual Korean Winter School, the mountains near Daegu, South Korea, December 2009 (5.5 hours).
- “Random matrices, free probability and invariant subspaces,” Operator Algebras and Random Matrices, Ambleside, England, U.K., July 2004 (4 hours).
- “Free products of C\*-algebras,” ICMS, Edinburgh, Scotland, April 2000 (three hours).
- “Von Neumann algebras related to free groups and free products,” Institut Henri Poincaré, Paris, January 2000 (6 hours).

- “Free probability theory and operator algebras,” Summer School in Operator Algebras, Odense University, August 1996 (6 hours).
- “Free products of von Neumann algebras,” Odense University, November/December, 1995 (8 hours).
- “Free probability and von Neumann algebras,” Seoul National University, Seoul, Korea, February 1995 (9 hours).

### As plenary or distinguished speaker at conferences (selected)

- Noncommutative Calculus and the Spectral Action, University of New South Wales (Australia), August, 2019, (40 minutes).
- Workshop on Applications to Random Matrices and Free Probability of Noncommutative Functions, Fields Institute, Toronto, June, 2019, (45 minutes).
- Operator Algebras Conference in Memory of Etienne Blanchard, Paris, April, 2019 (50 minutes).
- Free Probability: the theory, its extensions; CRM program on Free Probability, Centre de Recherches Mathematiques, Montreal, March, 2019 (40 minutes).
- Nebraska-Iowa Functional Analysis Seminar, University of Nebraska, Lincoln, November, 2018, (45 minutes).
- Shanks workshop on Free Probability and Applications, Vanderbilt University, Nashville, TN, September, 2018, (50 minutes).
- Operator Theory 27, Timisoara, Romania, July, 2018 (two talks, each of 40 minutes).
- Interactions between Operator Space Theory and Quantum Probability with Applications to Quantum Information, Oberwolfach, May, 2018, (60 minutes).
- Brazos Analysis Seminar, Baylor University, March, 2018, (60 minutes).
- Seminar Interinstitucional de Matrices Aleatorias, CIMAT, Guanajuato, Mexico, November, 2017 (60 minutes).
- Wabash Miniconference, IUPUI, Indianapolis, September 2017 (50 minutes).
- $C^*$ -algebras, Oberwolfach, August 2016, (40 minutes).
- Von Neumann Algebras, Hausdorff Institute, Bonn, Germany July 2016, (50 minutes).
- Symposium in Honor of Uffe Haagerup, University of Copenhagen June 2016, (45 minutes).
- Workshop on Noncommutative Analysis, University of Iowa June 2016, (45 minutes).
- GPOTS (Great Plains Operator Theory Symposium), University of Illinois, Urbana-Champaign, May 2016, (30 minutes).
- Free Probability and Large N Limit, V, Berkeley, March 2016, (40 minutes).
- From Commutators to BCP operators, (workshop in honor of Carl Pearcy), Texas A&M University, July 2015, (50 minutes).
- Canadian Operator Symposium, (in honor of George Elliott), Waterloo, Ontario, June 2015, (50 minutes).
- Multivariate Operator Theory, Banff International Research Station, April 2015, (50 minutes).
- Operator Spaces, Quantum Probability and Applications, Besancon, France, December 2014,(50 minutes).
- Real Algebraic Geometry With A View Toward Systems Control and Free Positivity, Oberwolfach, April 2014 (40 minutes).
- Free Probability and Large N Limit, IV, Berkeley, March 2014 (45 minutes).
- IWOTA (International Workshop on Operator Theory and Applications), Bangalore, India, December 2013 (60 minutes).
- Danish/Norwegian Operator Algebra Workshop, Copenhagen, December 2013 (30 minutes).
- East Coast Operator Algebra Symposium, Cincinnati, October 2013 (50 minutes).
- Noncommutative Geometry, Mathematisches Forschungszentrum Oberwolfach (MFO), September 2013 (50 minutes).
- Stochastic, and Operator Algebraic Aspects of Noncommutative Distributions and Free Probability, Fields Institute, Toronto, July 2013 (50 minutes).



- Operator spaces, harmonic analysis and quantum probability, Madrid, June 2013 (50 minutes).
- College of Sciences colloquium, University of New South Wales (UNSW), Sydney, Australia, November 2013, (50 minutes).
- 24th International Conference on Operator Theory, Timisoara, Romania, July 2012 (40 minutes).
- Workshop on Connes' embedding problem, Neuchatel, Switzerland, April 2012 (50 minutes).
- Free Probability and Large N Limit III, UC-Berkeley, March 2012 (45 minutes).
- Conference on von Neumann algebras and related topics, RIMS, Kyoto, Japan, January 2012 (50 minutes).
- Finite-dimensional approximations of discrete groups, Mathematisches Forschungszentrum Oberwolfach, May 2011, (45 minutes).
- 4th EU-Noncommutative Geometry Conference, IMAR, Bucharest Romania, April 2011, (45 minutes).
- Groups acting on measured spaces, Texas A&M, March 2011, (45 minutes).
- Bialgebras and free probability, Erwin Schroedinger Institute, Vienna, February 2011, (45 minutes).
- West Coast Operator Algebras Symposium, Pachuca, Mexico, September 2010, (50 minutes).
- ICM satellite conference on Operator Algebras, Chennai, India, August 2010 (45 minutes).
- Non-commutative Harmonic Analysis, Bedlewo, Poland, July 2010 (two talks, 45 minutes and 1 hour).
- Noncommutative Geometry and Operator Algebras, Vanderbilt University, Nashville TN, May 2010 (50 minutes).
- Danish-Norwegian Operator Algebras meeting, Copenhagen, Denmark, April 2010 (45 minutes).
- $C^*$ -algebras, Oberwolfach, Germany, March 2010 (40 minutes).
- Free Probability and Large N Limit II, Inst. of Pure and Applied Math., Los Angeles, February 2010 (45 minutes).
- Noncommutative  $L_p$ -spaces, Operator Spaces and Applications, CIRM, Luminy, France, June 2009 (45 minutes).
- North British Functional Analysis Seminar, Belfast, UK, November, 2008 ( $2 \times 50$  minutes).
- $C^*$ -algebras, Oberwolfach, Germany, August, 2008 (50 minutes).
- GPOTS (The 28th Annual Great Plains Operator Theory Symposium), University of Cincinnati, May 2008 (50 minutes).
- Fields Institute Workshop around Connes' Embedding Problem, Ottawa, Ontario, May, 2008 (60 minutes).
- Von Neumann Algebras and Applications, Banff International Research Station, March, 2008 (50 minutes).
- Free Probability, Extensions and Applications, Banff International Research Station, January, 2008, (40 minutes).
- CRM-University of Ottawa Distinguished Lecture, November, 2007 (50 minutes).
- Von Neumann algebra workshop, Fields Institute, Toronto, November, 2007 (50 minutes).
- 28th Quantum Probability conference, CIMAT, Guanajuato, Mexico, September, 2007 (40 minutes).
- 5th annual ECOAS (East Coast Operator Algebras Symposium), Wellesley, MA, September, 2007 (55 minutes).
- Operator spaces and group algebras, Banff International Research Station, Banff, Canada, August, 2007 (50 minutes).
- Operator spaces, noncommutative  $L_p$ -spaces and applications, CIRM, Luminy, France, June 2007, (45 minutes).
- Free probability, operator spaces and von Neumann algebras, Sibiu, Romania, June 2007 (45 minutes).
- Free probability and large N limit, UC-Berkeley, March 2007 (45 minutes).
- Recent advances in von Neumann algebras, La Sapienza, Rome, Italy, November 2006, (50 minutes).

- Von Neumann algebras, Banff International Research Station, Banff, Canada, September 2006, (30 minutes).
- 21st International Conference in Operator Theory, Timisoara, Romania, July 2006 (40 minutes).
- Beyond Amenability, UCLA, May, 2006, (30 minutes).
- Operator Algebras and Applications, Odense, Denmark, April, 2006, (40 minutes).
- $C^*$ -algebras, Oberwolfach workshop, September, 2005, (40 minutes).
- Wabash Mini-conference, Indianapolis, September, 2005, (50 minutes).
- Invariant Subspaces, Old and New, conference in honor of Carl Pearcy's 70th birthday, College Station, Texas, August 2005, (50 minutes).
- Operator Algebras and Applications, Cork, Ireland, June, 2005 ( $2 \times$  one hour).
- Noncommutative Geometry and Operator Algebras Conference, Vanderbilt University, Nashville, May, 2005, (50 minutes).
- Free Probability Workshop, Oberwolfach, Germany, March, 2005, (50 minutes).
- Free Probability, Banff International Research Station, October, 2004, (30 minutes).
- The Abel Symposium, Oslo, Norway, September 2004 (45 minutes).
- Canadian Operator Symposium, Waterloo, Ontario, May 2004 (50 minutes).
- Von Neumann algebras conference, CIRM, Luminy, France, February 2004, (45 minutes).
- Free Probability Workshop, University of California, Berkeley, August 2003, (60 minutes).
- Recent applications of von Neumann algebras, UCLA, May 2003 (30 minutes)
- GPOTS (The 23rd Annual Great Plains Operator Theory Symposium), University of Illinois, May 2003 (50 minutes).
- Random Matrices and Related Topics, Sandbjerg Manor, Denmark, January 2003 (45 minutes).
- SUMIRFAS, Texas A&M University, July 2002, (50 minutes).
- Entropy in Operator Algebras workshop, Inst. of Pure and Applied Math., Los Angeles, July 2002, (60 minutes).
- Workshop on Linear Analysis and Probability, Texas A&M University, June 2002, (60 minutes).
- $C^*$ -algebras workshop, Oberwolfach, Germany, December 2001, (45 minutes).
- Free Probability Workshop, Fields Institute, Toronto, Canada, December 2001, (50 minutes).
- Operator Algebras and Mathematical Physics, Constanța, Romania, July 2001, (45 minutes)
- Free probability and noncommutative Banach spaces workshop, MSRI, Berkeley, January 2001, (50 minutes).
- Wabash miniconference, Indianapolis, October 2000, (50 minutes).
- Operator Theory Conference, OT18, Timisoara, Romania, June 2000, (45 minutes).
- Free Probability Theory and Random Matrices workshop, Sandbjerg Castle, Denmark, June 2000, (45 minutes).
- Workshop on Free Probability, Institut Henri Poincaré, Paris, January 2000, (one hour).
- SUMIRFAS, Texas A&M University, August 1999 (principal speaker,  $2 \times$  one hour).
- Operator Theory on the Prairie, Regina, Saskatchewan, August 1999 ( $2 \times$  one hour).
- Workshop in  $C^*$ -algebras, Münster, Germany, March 1999, (one hour).
- Workshop at the Erwin Schrödinger Institute, Vienna, January 1999, ( $2 \times$  45 minutes).
- Noncommutative Geometry Conference, Copenhagen, Denmark, August 1998, (30 minutes).
- $C^*$ -algebras Conference, Mathematisches Forschungsinstitut, Oberwolfach, February 1998, (50 minutes).
- Free Probability and Operator Spaces Conference, CIRM, Luminy, France, January 1998 (60 minutes).
- Von Neumann Algebras and Dynamical Systems Conference, Nordfjordeid, Norway, August 1997 (45 minutes).
- North British Functional Analysis Seminar, Edinburgh, April 1996, ( $2 \times$  one hour).
- Operator Algebra Free Products and Random Matrices Workshop, Fields Institute, Waterloo, Ontario, March 1995 (80 minutes).

- Informal Regional Functional Analysis Seminar, San Antonio, Texas, November 1994 (one hour).
- West Coast Operator Algebra Symposium, Los Angeles, September 1994 (one hour).
- ICM Sattelite Conference in Operator Algebras, Geneva, July 1994 (30 minutes).
- Quantum Probability Conference, Nottingham, England, March 1993 (30 minutes).
- Quantenstochastic Conference, Mathematisches Forschungsinstitut, Oberwolfach, December 1991 (45 minutes).

### Other invited research conference and seminar talks (selected)

- Univesity of Rome II, February 2019, (55 minutes).
- University of California — Berkeley, April 2018 (100 minutes).
- University of Delaware, March 2018 (50 minutes).
- University of Saarland, Saarbrücken, Germany, March 2017 (60 minutes).
- Analysis seminar, University of Waterloo (Ontario, Canada) January 2017, (50 minutes).
- Analysis seminar, University of New South Wales October 2016, (50 minutes).
- Mathematics Seminar, University College Cork (Ireland) January 2016 (50 minutes).
- Analytic versus Combinatorial in Free Probability Theory, Banff International Research Station (BIRS), December 2016, (25 minutes).
- IWOTA (International Workshop on Operator Theory and Applications), Washington University in St. Louis, July 2016, (20 minutes).
- Free Probability Theory, Oberwolfach, June 2015, (25 minutes).
- Analysis Seminar, University of Houston, January 2014, (50 minutes).
- Functional Analysis seminar, Copenhagen University, December 2013, (50 minutes).
- IWOTA (International Workshop on Operator Theory and Applications), Sydney, Australia, July 2012 (two talks of 30 minutes each).
- Seminar talks, Dalian University of Technology, Dalian, China, January 2012 (2 seminars, each 50 minutes).
- Analysis Seminar, University of Houston, October 2011 (50 minutes).
- Wolfgang Woess' seminar, Techincal University of Graz, Austria, March 2011, (50 minutes).
- Probabilistic Operator Algebras Seminar, UC–Berkeley, February 2010 (120 minutes).
- Analysis Seminar, Queens University (Kingston, Ontario), January 2010 (55 minutes).
- Analysis Seminar, University of Glasgow (U.K.), November 2008 (55 minutes).
- Analysis Seminar, University of Oxford (U.K.), October 2008 (55 minutes).
- Analysis Seminar, University of Houston, October 2008 (55 minutes).
- $C^*$ -Algebras Seminar, University of Münster, Germany, June 2007 (90 minutes).
- Analysis Seminar, SUNY - Buffalo, April 2007 (60 minutes).
- Probability Seminar, University of Lyon 1, France, July 2006 (60 minutes).
- $C^*$ -algebras Seminar, University of Münster, Germany, July 2005 (90 minutes).
- Schrohe's Seminar, University of Hannover, June 2005, (90 minutes).
- Operator Algebras Seminar, University of Southern Denmark, Odense, April, 2005, (90 minutes).
- Analysis Seminar, University of Edinburgh, U.K., March, 2005, (60 minutes).
- Structure Theory Seminar, Technical University of Graz, Austria, January, 2005, (60 minutes).
- Analysis Seminar, University of Münster, Germany, December, 2004, (45 minutes).
- Analysis Seminar, University of Wroclaw, Poland, November, 2004, (90 minutes).
- Operator Algebras Seminar, University of Southern Denmark in Odense, October, 2004, (75 minutes).
- Operator Algebras Seminar, University of Copenhagen, October, 2004, (75 minutes).
- Operator Algebras Seminar, University of Southern Denmark, January 2003 (90 minutes).
- Geometric Operator Algebras Seminar, Pennsylvania State University, November 2002, (90 minutes).
- Operator Algebras Seminar, University of Southern Denmark, May 2002, (90 minutes).

- Seminar, Sonderforschungsbereich “Geometrische Strukturen in der Mathematik”, Münster, Germany, July 2001, (75 minutes).
- Dietmar Bisch’s seminar, UC–Santa Barbara, May 2001 (90 minutes).
- Sorin Popa’s seminar, UCLA, May 2001, (60 minutes).
- MSRI weekly seminar, Berkeley, CA, April 2001, (60 minutes).
- Voiculescu’s seminar, Probabilistic Operator Algebras, UC–Berkeley, February 2001, (90 minutes).
- Noncommutative dynamical systems and simple  $C^*$ -algebras workshop, MSRI, September 2000, (30 minutes).
- Danish-Norwegian Operator Algebras Conference, Schaeffergaarden, Copenhagen, August 2000, (25 minutes).
- International Colloquium on Operator Algebras, Landschloss Ort, Austria, February 1999, (30 minutes).
- Collège de France, December 1998, (90 minutes).
- Aarhus Univeristy, Analysis Seminar, March 1997 (90 minutes)
- University of Copenhagen Operator Algebra Seminar, November 1996, (90 minutes).
- $C^*$ -algebras Conference, Mathematisches Forschungsinstitut, Oberwolfach, April 1996 (30 minutes).
- Seminar Talk, Oslo University, March 1996 (90 minutes).
- Functional Analysis Colloquium, University of California at Berkeley, September, 1995 (one hour).
- Seminar Talk, University of Kyushu, February 1995 (one hour).
- Seminar Talk, University of Tokyo, February 1995 (two hours).
- Seminar Talks in Hiedelberg, Germany, January 1993, January 1992 and August 1991.

### Invited colloquium talks

University of Konstanz, Germany (06/2017); University of New South Wales, Australia (10/2016); Universtiy of Saarland, Germany (07/2016); Baylor University (11/2015); Univeristy of Iowa (01/2015); University of Münster, Germany (01/2012); Texas Christian University (11/2011); University of Konstanz, Germany, (07/2011); University of Konstanz (07/2010); University of Münster (06/2010); University of Waterloo (03/2010); University of Göttingen (07/2009); University of Texas — San Antonio (04/2008); Indiana University (10/2007); Vanderbilt University (03/2007); University of Waterloo (10/2003); Ohio State University (02/2002); University of Houston (03/2000); Purdue University (09/1999); University of Missouri, Columbia (09/1999); Texas A&M University (10/1999); University of Texas, Austin (10/1999); Oslo University (3/1996); Odense University (11/1995 and many times thereafter); University of Tokyo (02/1995); University of Houston (11/1994); University of Oregon (05/1993).

### Other talks at conferences

- AMS Sectional, National or International meeting invited special session talks (20 minutes unless otherwise indicated): San Diego, 2018; Memphis, 2015 (45 minutes); Chicago, 2015 (45 minutes); San Antonio, 2015; Balitmore, 2014 (45 minutes + 45 minutes); Knoxville, 2014 (45 minutes); Albuquerque, 2014; Alba Iulia, Romaina, 2013 (50 minutes + 50 minutes); Seoul, Korea, 2009; Bloomington, IN, 2008; Athens, OH, 2004; Bloomington, IN, 2003 (40 minutes). Irvine, CA, 2001; Odense, Denmark, 2000, (45 minutes); Austin, Texas, 1999; Eugene, Oregon, 1994.
- GPOTS (Great Plains Operator Theory Symposia): Fort Worth, 2017; Manhattan, KS, 2014; Berkeley, 2013; Houston, 2012; Iowa City, 2006; Cincinnatti, 1995; Lincoln, NE 1994; Boulder, 1993; Iowa City, 1992.
- Wabash: Bloomington, IN, 2001.
- Canadian Operator Symposia: Waterloo, Ontario, 1995; Victoria, British Columbia, 1993; Montreal, Quebec, 1991.

## Funding

### Research Grants

- NSF DMS–1800335, (sole investigator, 8/01/2018 – 7/31/2021), \$180,000.
- Simons Foundation Collaboration Grant (524187, K.D., 9/01/2017-8/31/2022), \$42,000, took only one year (for \$8,500) and declined the remainder.
- NSF DMS–1202660, (sole investigator, 9/01/2012 – 8/31/2016), \$177,000.
- NSF DMS–0901220, (sole investigator, 7/01/2009 – 6/30/2012), \$245,223.
- NSF DMS–0600814, (sole investigator, 7/01/2006 - 6/30/2009), \$178,350.
- NSF DMS–0300336, (sole investigator, 7/15/2003 - 6/30/2006), \$120,000.
- NSF DMS–0070558, (sole investigator, 8/15/2000 - 7/31/2003), \$87,171.
- while working in Odense, travel was supported by different grants that were shared by several operator algebraists in Denmark.

### Conference Grants

- NSF DMS–1900745, Great Plains Operator Theory Symposium 2019 (PI, with co-PIs M. Anshelevich, M. Brannan, D. Kerr, Z. Xie), \$49,999.
- NSF DMS–1900856, Travel Support For Us Participants In Focus Program “New Developments In Free Probabiloity” at the Centre de Recherches Mathematiques, Montreal, PI, \$25,000.
- NSF DMS–0855328, (co-PI, with M. Anshelevich, D. Kerr, R. Smith), \$27,160.

## Teaching

### Graduate students supervised (at Texas A&M University, unless otherwise noted):

- John Griffin, (current Ph.D. student)
- Amudhan Krishnaswamy–Usha, (current Ph.D. student)
- Wonhee Na, (Ph.D. 2018 (Dec.))
- Joseph Noles, (Ph.D. 2017 (Dec.))
- Daniel Redelmeier (Ph.D. 2012)
- Francisco Torres–Ayala (Ph.D. 2012)
- Gabriel Tucci (Ph.D. 2009)
- Kunal Mukherjee (Ph.D. 2009)
- Nikolay Ivanov (Ph.D. 2007)
- Nate Strawn (M.S. 2007)
- Mette Jensen (Cand. Scient., Odense University, 1998)

### Member of thesis committee or defense panel (in Mathematics at Texas A&M University unless otherwise noted):

- John Weeks (current Ph.D. student; advisor Mike Brannan).
- Priyanga Ganesan (current Ph.D. student; advisor Mike Brannan).
- Jacob Mashburn (current Ph.D. student; advisor Michael Anshelevich).
- Kari Eifler (current Ph.D. student; advisor Mike Brannan).
- Xin Ma (Ph.D. 2019; advisor David Kerr).
- David Buzinski, (M.S. 2018; advisor Michael Anshelevich).
- Yi Wang, (Ph.D. 2018; advisor Ron Douglas and Emil Straube).
- Zhichao Wang, (M.S. 2018; advisor Michael Anshelevich).
- Brian Huslar, (M.S. 2018; Statistics Dept., advisor Michael Longnecker).
- Sam Scholze, (Ph.D. 2017; advisor David Larson).
- Yeong Chyuan Chung, (Ph.D. 2017; advisor Guoliang Yu).

- Minh Kha (Ph.D. 2017, advisor Peter Kuchment)
- Christopher Ostertag, (M.A. 2016; Philosophy Dept., advisor Robert Garcia).
- Carlos Ortiz (University of Houston Ph.D. 2015(Dec.), advisor Vern Paulsen)
- Timothy Rainone (Ph.D. 2015, advisor David Kerr)
- Wai Kit Chan (Ph.D. 2015, advisor Roger Smith)
- Patrick Orchard, (M.S. 2015; advisor David Kerr)
- Amy Johnson, (M.A. 2013; Philosophy Dept., advisor Chris Menzel)
- Kate Juschenko (Ph.D. 2011, advisor Gilles Pisier)
- Sabine Burgdorf (University of Konstanz, Ph.D. 2011, advisor Markus Schweighofer)
- Liviu Paunescu (University of Rome II, Ph.D. 2011, advisor Florin Rădulescu)
- James Hitchcock (Ph.D. 2010, advisor David Kerr)
- Jan Cameron (Ph.D. 2009, advisor Roger Smith)
- Detelin Dosev (Ph.D. 2009, advisor Bill Johnson)
- Charlie Siu, (M.A. Philosophy 2008, advisor Chris Menzel)
- Pratyush Proddutur, (M.S. Electrical Engineering 2007)
- Allan Wiggins (Ph.D. 2007, advisor Roger Smith)
- Samangi Munasinghe, (Ph.D. 2006, advisor Emil Straube)
- Mihael Neagu, (University of Waterloo, Ph.D. 2006, advisor Alexandru Nica)
- Sangshin Kwak, (Ph.D. Electrical Engineering, 2004)
- Lars Aagaard, (University of Southern Denmark, Ph.D. 2004, advisor Uffe Haagerup)

**Courses taught** (at Texas A&M University unless otherwise specified).

- Graduate Courses: Free Probability Theory; Free Probability Theory (Münster); Functional Analysis II; Methods of Applied Mathematics (a service course for engineers); Noncommutative Real Algebra; Operators on Hilbert Space II (Odense); Real Analysis I and II; various reading courses.
- Undergraduate Courses: Advanced Calculus I; Advanced Calculus II; Complex Function Theory; Complex Function Theory (Odense); Differential Equations; Elements of Topology (Odense); Engineering Calculus I; Engineering Calculus III; Frames, Group Representations and Wavelets; Introduction to Probability; Linear Algebra (Odense); Linear Algebra for Engineers.

## Service

### Editing

- Editor of special issue in honor of Dan Voiculescu's 70th birthday (jointly with H. Bercovici and A. Nica), *J. Operator Theory*, 2019-2020.
- Cooperating Editor, *J. Operator Theory*, starting 2011
- Editorial Advisory Board member, *London Math. Soc.*, (for the *Bulletin*, *Journal* and *Proceedings of the LMS*), January 2013 – December 2018.

### Organization of meetings conferences and seminars

- Special Session at IWOTA (International Workshop on Operator Theory and Applications), Lancaster, U.K., August, 2020 (with Jani Virtanen).
- GPOTS (Great Plains Operator Theory Symposium), Texas A&M University, May, 2019 (with Michael Anshelevich, Michael Brannan, David Kerr, David Larson, Roger Smith, Zhizhang Xie, Guoliang Yu).
- Special Session on Von Neumann Algebras and Related Fields, AMS Sectional Meeting, Eau Claire, Wisconsin, September 2014, (with Steve Avsec).

- Concentration Week in Free Probability, Texas A&M University, July 2014, (with Michael Anshelevich and John Williams).
- Special session of Free Probability and Free Analysis, AMS/MAA joint meeting, San Diego, January 2013, (with Scott McCullough)
- Special session on Operator Theory and Operator Algebras, KMS/AMS joint meeting, Seoul, Korea, December 2009, (with Ja A. Jeong, Il Bong Jung, George Exner).
- ECOAS 2009 (the 7th Annual East Coast Operator Algebras Symposium, Texas A&M, October, 2009 (with Michael Anshelevich, David Kerr and Roger Smith).
- Free probability, operator spaces and von Neumann algebras, Sibiu, Romania, June 2007 (member of scientific committee, with Florin Rădulescu).
- Concentration Week in Free Probability, Texas A&M, July, 2007 (with Michael Anshelevich).
- Concentration Week in Free Probability and Noncommutative Lp Spaces, Texas A&M University, August 2004, (with Gilles Pisier).
- GPOTS 2004 (the 24th annual Great Plains Operator Theory Symposium), Texas A&M University, May 2004 (with David Larson, Roger Smith, Ron Douglas, Nico Spronk, Carl Pearcy),.
- Linear Analysis Seminar (Texas A&M), 2000–2008, except for Fall 2004, Spring 2005, Fall 2007.
- MaPhySto conference on Free Probability and Random Matrices, Sandbjerg Castle, Denmark, June 2000, (with U. Haagerup).
- MaPhySto meeting on Free Probability, Odense University, May 1999, (with U. Haagerup).

#### **Committees** (Mathematics Department at Texas A&M University, for two year terms)

- Executive Committee (thrice), Graduate Committee (twice), Subcommittee P (for promotions to full professor), Subcommittee P&T, for promotion and tenure, (twice, one year as chair), Postdoctoral Committee (chair)

#### **Refereeing**

- Refereed papers for the following journals: Adv. Math.; AMS Contemp. Math.; Ann. Prob.; Arch. Math.; Banach J. Math. Anal.; Bull. London Math. Soc.; Canadian J. Math.; Duke Math. J.; Forum Math.; Geom. Funct. Anal.; Glasgow Math. J.; Houston J. Math.; Illinois J. Math.; Inf. Dim. Anal. Quantum Prob.; Integral Equations Op. Th.; Internat. J. Math. Math. Sci.; Internat. Math. Research Notices; Invent. Math.; J. Amer. Math. Soc.; J. Comb. Th. A; J. Funct. Anal.; J. Funct. Anal. Appl.; J. Operator Theory; J. Phys. A; J. reine angew. Math.; Math. Ann.; Math Proc. Cambridge Philos. Soc.; Math. Scand.; Operator Algebras Appl. (series); Operators and Matrices; Operator Theory (series); Pacific J. Math.; Prob. Theory Related Fields; Proc. Amer. Math. Soc.; Proc. Edinburgh Math. Soc.; Proc. London Math. Soc.; Publ. I.H.E.S.; Rev. Roumaine Math. Pures Appl.; Studia Math.; Tohoku Math. J.; Trans. Amer. Math. Soc.
- Refereed books for various publishers.
- Refereed grant applications for NSF (USA) on panels and individually, and for agencies of other countries.