Jon P. Bannon

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Education

Ph.D. Mathematics, the University of New Hampshire, 2005.
Burnside factors, amenability defects and transitive families of projections in factors of type II_1

B.S. Mathematics, the University of New Hampshire, 1999.

Professional Positions Held

Professor, Siena College, effective September 2017.

Associate Professor, Siena College, 2011-present.

Assistant Professor, Siena College, 2005-2011.

Research Interests

Operator algebras, noncommutative geometry and applications to physics and other areas of mathematics. Rigidity, amenability and mixing phenomena for groups, dynamical systems and operator algebras. Correspondences, completely positive maps, positive definite kernels and quantum information theory. Multivariable spectra in the theory of Banach algebras.

Grants and Awards

2018 - 2019 Fulbright Scholar Award: Lancaster University, United Kingdom

2013 - Academy of Inquiry-Based Learning Grant: "IBL Materials for a Course in Knot Theory" (2013)

2009 - Co-PI for NSF S-STEM Grant (DUE-0728452)

Refereed Publications

J. Bannon, J. Cameron and K. Mukherjee. *On noncommutative joinings.* Int Math Res Notices. (2017) rnx024.doi:10.1093/imrn/rnx024

J. Bannon, J. Cameron and K. Mukherjee. *The modular symmetry of Markov maps.* J. Math. Anal. Appl. 439 (2016), no. 2, 701-708.

J. Bannon, E. Bashwinger* and M. Javaheri. *The correlation numerical range and trace-positive complex polynomials.* Oper. Matrices. 10 (2016), no. 3, 625-630.

J. Bannon, P. Cade and R. Yang. *On the spectrum of Banach algebra-valued entire functions.* Illinois J. Math. 55 (2011), no. 4, 1455-1465.

J. Bannon and J. Fang. *Some remarks on Haagerup's approximation property.* J. Oper. Theory 65 (2011), no. 2, 403-417.

J. Bannon. *A non-residually solvable hyperlinear one-relator group.* Proc. Amer. Math. Soc. 139 (2011), 1409-1410.

J. Bannon, D. Hadwin and M. Jeffery*. *A note on moments in finite von Neumann algebras.* Involve 4 (2011), no. 1, 65-74.

J. Bannon and N. Noblett*. *A note on non-residually solvable hyperlinear one-relator groups.* Involve 3 (2010), no. 3, 345-347.

J. Bannon and M. Ravichandran. *A Følner invariant for type II_1 factors.* Expo. Math. 25 (2007), no. 2, 117-130.

J. Bannon. *Transitive families of projections in factors of type II_1.* Proc. Amer. Math. Soc. 133 (2005), 835-840.

(* indicates undergraduate coauthor)

Work in Preparation

J. Bannon, J. Cameron and S. White. *Weakly mixing correspondences and property (T) for II_1 factors*.

J. Bannon, J. Cameron and K. Mukherjee. *Noncommutative joinings II*.

J. Bannon, J. Cameron and K. Mukherjee. *On co-amenable inclusions of finite von Neumann algebras and property* Γ.

Professional Activities

Invited Research Talks

Quantum entanglement and the correlation numerical range

Oct. 2015 - Union College Mathematics Seminar, Union College, Schenectady, New York.

Joinings and correspondences

Jun. 2014 - Operator Algebras and Number Theory Seminar, Morningside Institute, Chinese Academy of Sciences, Beijing, China-PRC.

Sept. 2013 - University of Michigan at Dearborn Analysis Seminar, Dearborn, Michigan.

Jun. 2012 - International Conference on Operator Theory and Operator Algebras, East China University of Science and Technology, Shanghai, China-PRC.

Apr. 2012 - University of Virginia Operator Algebras and Operator Theory Seminar, Charlottesville, Virginia.

Nov. 2011 - New Hampshire Operator Theory Symposium, Dartmouth College, Hanover, New Hampshire.

Generic weak mixing and the negation of property (T)

Jun. 2014 - Operator Algebras Seminar, Morningside Institute, Chinese Academy of Sciences, Beijing, China-PRC.

Nov. 2013 - University of Waterloo Operator Algebras Seminar, Waterloo, Ontario, Canada.

Operator algebras and quantum entanglement

Feb. 2013 - Vassar College Mathematics Colloquium, Poughkeepsie, New York.

Nov. 2012 - Skidmore College Mathematics Colloquium, Saratoga Springs, New York.

On the closability of certain L^2 derivations (w/ Jesse Peterson)

Mar. 2009 - Vanderbilt University Operator Algebra and Subfactor Seminar, Nashville, Tennessee.

The Haagerup property and relative amenability

Apr. 2007 - Texas A&M University Operator Algebra Seminar, College Station, Texas.

Transitive families of projections in factor von Neumann algebras

Nov. 2004 - Vanderbilt University Operator Algebra and Subfactor Seminar, Nashville, Tennessee.

Contributed Research Talks and Seminar Lectures

The Kadison-Singer problem

Nov. 2013 - SUNY Albany Analysis Seminar, the State University of New York at Albany, Albany, NY.

The Haagerup property and relative amenability

Jun. 2008 - Great Plains Operator Theory Symposium, the University of Cincinnati, Cincinnati, Ohio.

Mar. 2008 - SUNY Albany Analysis Seminar, the State University of New York at Albany, Albany, NY.

Hyperlinearity and one-relator groups

Mar. 2010 - SUNY Albany Analysis Seminar, the State University of New York at Albany, Albany, NY.

Rigidity and finite von Neumann algebras

Feb.-Apr. 2010 - SUNY Albany Analysis Seminar, the State University of New York at Albany, Albany, NY.

An introduction to free probability

Oct. 2008 - SUNY Albany Analysis Seminar, the State University of New York at Albany, Albany, NY.

A Følner invariant for type II_1 Factors

May 2006 - Great Plains Operator Theory Symposium, the University of Iowa, Iowa City, Iowa.

Dec. 2005 - Capital Region Algebra and Number Theory Seminar, SUNY Albany, Albany, New York.

Transitive families of projections in factor von Neumann algebras

Oct. 2005 - Capital Region Algebra and Number Theory Seminar, SUNY Albany, Albany, New York.

Undergraduate Research Students

2015 - Eli Bashwinger: *The correlation numerical range and trace positive complex polynomials* Oper. Matrices. 10 (2016), no. 3, 625-630.

2012 - Francesca Romano: *Explicit formulas for multivariable Euler and Bernoulli Numbers* Involve 8 (2015), no. 2, 275-284.

2010 - Maureen Jeffery: *A note on moments in finite von Neumann algebras.* Involve 4 (2011), no. 1, 65-74.

2009 - Nicholas Noblett: *A note on non-residually solvable hyperlinear one-relator groups.* Involve 3 (2010), no. 3, 345-347.

2007 - Matthew Farrelly: *The Burnside group $B(3,2)$ as a two-relator quotient of $C_2 * C_2$* Rose Hulman Undergraduate Math. J. 8 (2007), no. 2.

2006 - Andrew Warner: Orthogonal pairs of masas in matrix algebras

2005 - Ryan Decker: Existence and uniqueness in differential equations with doubling

Service to the Mathematics Community

2011-present - Reviewer for *Mathematical Reviews*

2014 - Served on NSF Virtual Panel

2012 - Referee for *Expositiones Mathematicae*

2006 - Co-organizer for the Hudson River Undergraduate Mathematics Colloquium

2004 - Referee for *Science in China*

2001 - Co-organizer for Great Plains Operator Theory Symposium

Major Departmental and College Service

2016-present - School of Science representative on the Faculty Handbook Committee.

2013-present - Initiated and now helping lead the design and implementation of a new data science major in response to strategic needs of Siena College. Requires coordinating the resources of diverse departments, outreach to industry partners, and positioning the program with respect to competitors.

2012-2013 - One of three faculty members on a (college-) presidential task force charged with strategically positioning Siena College in response to recent economic challenges facing small colleges in the Northeast. Worked with top administrators to analyze Siena's position and then make recommendations to the Board of Trustees.

2013 - School of Science representative for the Nominating Committee for the Jerome Walton Teaching Award.

2012-2013 - School of Science representative for the Committee on Teaching and Faculty Development. This committee provides programming for faculty enrichment, as well as awarding internal research, pedagogy and international travel grants.

2009-2012 - Designed and taught the *Tech Valley Scholars Career Seminar*. This seminar provided general career education, outreach and orientation for science undergraduates in our NSF S-STEM cohort.

2008-2011 - School of Science representative for the College Planning and Finance Committee.

2005-2011 - Co-organizer of the Siena College Mathematics Colloquium.

Courses Taught

Complex Analysis, Real Analysis, Modern Algebra, Intro. to Applied Mathematics, Linear Algebra, Differential Equations, Multivariable Calculus, Calculus II, Calculus I, Finite Mathematics

Last updated: September 5, 2018
`http://www.sos.siena.edu/~jbannon/index.htm`