

Alan Wiggins

Curriculum Vitae

Personal Information

Citizenship: • US.

Languages: • English, conversational Serbo-Croatian, French (reading).

Education

Graduate

- **Ph.D, Mathematics**, Texas A&M University, College Station, TX, 2007.
Advisor: Roger Smith.
- University of Texas, Austin, TX, 1999-2004.
Advisor: Haskell Rosenthal (retired due to ill health).

Undergraduate

- **B.A, Mathematics & Philosophy**, Indiana University, Bloomington, IN, 1999.

Research Interests

- I study von Neumann algebras, which can be thought of as the proper setting for “noncommutative” measure theory. In particular, I study factors, those algebras with trivial multiplicative center. These include the $n \times n$ matrices as well as the bounded linear operators on a Hilbert space, but also additional objects known as type II_1 factors. Type II_1 factors are infinite dimensional but possess a tracial state like the normalized trace on the $n \times n$ matrices. I analyze normalizing algebras of von Neumann subalgebras of factors, with emphasis on the situations where the normalizing algebras are trivial (equal to the subalgebra) and when the center of the algebra in question is either as large or as small as possible.

Papers

- **Strong Singularity of Singular Masas in II_1 Factors**, with Allan Sinclair, Roger Smith and Stuart White.
Illinois Journal of Mathematics, 51(4):1077-1084, 2007.

Papers (continued)

- **Semi-Regular Masas of Transfinite Length**, with Stuart White.
International Journal of Mathematics, 18(9):995–1007, 2007.
- **Normalizers of Irreducible Subfactors**, with Roger Smith and Stuart White.
Accepted, *Journal of Mathematical Analysis and Applications*.
- **Groupoid Normalizers of Tensor Products**, with Junsheng Fang, Roger Smith, and Stuart White.
Submitted for publication.
- **Strong Singularity for Subfactors**, with Pinhas Grossman.
Submitted for publication.

Awards

Texas A&M University, College Station

- **NSF VIGRE Scholarship**, 2004-05.

University of Texas, Austin

- **NSF VIGRE Scholarship**, 2002-03.
- **Outstanding Assistant Instructor in the Department of Mathematics**, 2002.
- **Frank Gerth III Excellence in Teaching Award**, 2000-01.

Research and Professional Development

Invited talks

- **Magic Computers**, Vanderbilt University Undergraduate Mathematics Seminar, 2008
- **Strong Singularity For Subfactors**, Shanks Workshop on Subfactors and Planar Algebras, Vanderbilt University, 2008.
- **Applications of Intertwining Techniques to Subfactors of II_1 Factors**, Subfactor Seminar, Vanderbilt University, 2007.
- **Singularity and Strong Singularity for Subfactors**, Linear Analysis Seminar, Texas A&M University, 2007.

Research and Professional Development (continued)

- **Constructing Angles with Straightedge and Compass**, Mathematics Colloquium, Siena College, 2006.
- **Strong Singularity and Singularity for Subfactors of II_1 Factors**, Analysis Seminar, University of Glasgow, Scotland, UK, 2006.
- **The Equivalence of Singularity and Strong Singularity for Masas in II_1 Factors**, Linear Analysis Seminar, Texas A&M University, 2006.
- **Monotone FDD's for Hyperfinite Type III_λ Factor Preduals**, Functional Analysis Seminar, University of Texas, Austin, 2003.

Contributed talks

- **Strong Singularity Constants for Subfactors of II_1 Factors**, Great Plains Operator Theory Symposium, University of Cincinnati, 2008.
- **A Singular Subfactor That is Not Strongly Singular**, Wabash Miniconference, Indiana University-Purdue University Indianapolis, 2008.
- **Normalizers of Subalgebras of II_1 Factors**, Joint AMS and MAA meeting, San Diego, CA, 2008.
- **Equivalence of Singularity and Strong Singularity for Masas in II_1 Factors**, Great Plains Operator Theory Symposium, University of Iowa, 2006.

Selected Conferences attended

- Wabash Miniconference, Indiana University-Purdue University Indianapolis, 2008.
- Workshop on Operator Algebras, Dynamics, and Classification, Texas A&M University, 2008.
- Great Plains Operator Theory Symposium, University of Cincinnati, 2008.
- Shanks Workshop on Subfactors and Planar Algebras, Vanderbilt University, 2008.
- Joint AMS and MAA National Meeting, San Diego, CA, 2008.
- Workshop on Free Probability, Random Matrices, and Planar Algebras, Fields Institute, Toronto, Ontario, CA, 2007.
- 4th Annual East Coast Operator Algebras, Symposium, Georgia Institute of Technology, 2007.
- Operator Algebras and Applications, University of Southern Denmark, Odense, DK, 2006.
- 3rd Spring Institute on Noncommutative Geometry and Operator Algebras, Vanderbilt University, 2005.
- Workshop in Linear Analysis and Probability, Texas A&M University, 2002.

Organizational Duties

- Research and Training Group (RTG) Seminar, attended by graduate and postdoctoral students, 2007.
- Informal Seminar on Index Theory for Subfactors, attended by graduate students and faculty, 2005.

Research and Professional Development (continued)

- Joint Applied Mathematics and Analysis Seminar, attended by undergraduate, graduate, and postdoctoral students, 2002.

Teaching Experience, Instructor

Vanderbilt University

- **Multivariable Calculus**- responsible for lectures, grading and designing exams and quizzes, office hours.
- **Accelerated First Year Calculus II**- responsible for lectures, grading and designing exams, office hours.
- **First Year Calculus I**- responsible for lectures, grading exams, grading and designing quizzes, office hours.

Texas A&M University

- **Matrix Analysis and Wavelets REU**- responsible for posing problems, supervising research projects.
- **Engineering Mathematics II**- responsible for lectures, grading and designing exams, office hours.

University of Texas

- **Emerging Scholars Seminar**- responsible for designing in-class worksheet, supervising projects, grading exams, office hours.
- **College Algebra**- responsible for lectures, grading and designing exams and homework, office hours.
- **Elementary Functions and Coordinate Geometry**- responsible for lectures, grading and designing exams and homework, office hours.

Teaching Experience, TA or AI

Texas A&M University

- **Engineering Mathematics II**- responsible for recitations, grading exams, grading and designing quizzes.

Teaching Experience, TA or AI (continued)

- **Engineering Mathematics I-** responsible for recitations, grading exams, grading and designing quizzes.

University of Texas

- **Sequences, Series, and Multivariate Calculus-** responsible for recitations, grading exams, office hours.
- **Multivariate Calculus-AP-Engineering Honors-** responsible for grading homework, office hours.
- **Differential and Integral Calculus-** responsible for recitations, grading exams, office hours.

Indiana University

- **Mathematics for Elementary Teachers Via Problem Solving-** responsible for assisting with in-class projects and group learning.
- **Finite Mathematics-** responsible for recitations, grading exams and quizzes.

Computer Skills

- **Computer Algebra Systems:** Maple, Mathematica
- **Web and Web Design:** HTML, Blackboard
- **Operating Systems:** Windows, OSX, Unix
- **Programming:** Some C++

Professional Societies

- American Mathematical Society
- Mathematical Association of America

Contact Information

Contact Information (continued)

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References

Research

- **Prof. Roger Smith**
Department of Mathematics, Texas A&M University, Mailstop 3368, College Station, TX 77843-3368, USA, (979)-845-2129.
rsmith@math.tamu.edu

- **Prof. Ken Dykema**
Department of Mathematics, Texas A&M University, Mailstop 3368, College Station, TX 77843-3368, USA, (979)-845-7138.
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- **Prof. Gilles Pisier**
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- **Prof. Dietmar Bisch**
Department of Mathematics, Vanderbilt University, 1326 Stevenson Center, Nashville, TN 37240, USA, (615)-322-1999.
dietmar.bisch@vanderbilt.edu

Teaching

- **Prof. Jo Ann Staples** Department of Mathematics, Vanderbilt University, 1326 Stevenson Center, Nashville, TN 37240, USA, (615)-322-2802.
jo.a.staples@vanderbilt.edu

- **Prof. Pamela Pigg** Department of Mathematics, Vanderbilt University, 1326 Stevenson Center, Nashville, TN 37240, USA, (615)-322-2808.
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