Robert F. Allen **curriculum vitæ**

CONTACT INFORMATION

Department of Mathematical Sciences
George Mason University
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RESEARCH INTERESTS

Operators Theory, Bloch Functions, Complex Function Theory, Potential Theory on Discrete Structures, Pattern Formation in Reaction-Diffusion Equations, Software Engineering of Mathematical Software.

EDUCATION

George Mason University, Fairfax, Virginia USA
Ph.D. Mathematics, expected May 2009; advisor: Flavia Colonna.
B.S. Mathematics with honors, magna cum laude, August 2003.

University of Virginia, Charlottesville, Virginia USA
M.S. Mathematics, January 2006.
B.S. Computer Science, May 1994.

GRANTS, FELLOWSHIPS & AWARDS

George Mason University

- Graduate Student Travel Fund award to attend the International Workshop of Operator Theory and its Application, Williamsburg, VA, 2008.
- Research Fellowship supported by National Science Foundation Grant (DMS-0406231), *Complex Transient Patterns in Phase-Field Models*, 2007-2008.
- Graduate Student Travel Fund award to attend the AMS Special Session on Banach Spaces of Analytic Functions, Durham, NH, 2006
- Mary K. Cabell Outstanding Mathematics Student Award, 2003.

University of Virginia

- Seven Society Outstanding Graduate Teaching Assistant Award semi-finalist, 2004.
- GAANN Summer Research Grant, 2004 and 2005.
- Edwin E. Floyd Graduate Fellowship, 2003.
- Computer Science Undergraduate Education Award, 1994.

ACADEMIC EXPERIENCE

George Mason University, Fairfax, Virginia
Instructor

- MATH 106 – Quantitative Reasoning (Spring 2006, Spring 2007, Summer 2007, Spring 2009).
- MATH 125 – Discrete Mathematics I (Summer 2006, Fall 2006, Summer 2007).
- MATH 213 – Analytic Geometry & Calculus III (Summer 2008)

Teaching Assitant

- MATH 113 – Analytic Geometry & Calculus I (Fall 2008)

University of Virginia, Charlottesville, Virginia
Instructor

- MATH 121 – Applied Calculus I (Fall 2004).
- MATH 122 – Applied Calculus II (Spring 2005).
- MATH 132 – Calculus II (Fall 2005).

Teaching Assistant

- MATH 132 – Calculus II (Fall 2003)
- MATH 231 – Calculus III (Spring 2004)

Northern Virginia Community College, Alexandria, Virginia
Adjunct Assistant Professor

- ITP 120 - JAVA Programming I (Spring 2000)
- ITP 132 - C++ Programming I (Fall 2000)
- ITP 251 - System Analysis and Design (Spring 2000)

Publications

Journal Articles

1. Isometries and spectra of multiplication operators on the Bloch space (with Flavia Colonna), Bulletin of the Australian Mathematical Society, to appear.

Submitted Manuscripts

2. On the isometric composition operators on the Bloch space in $\mathbb{C}^n$ (with Flavia Colonna).
3. Multiplication operators on the Bloch space of a bounded homogeneous domain (with Flavia Colonna).

Manuscripts In Preparation

4. Weighted composition operators on the Bloch space of bounded homogeneous domains (with Flavia Colonna).
5. Scalable visualization framework for computational mathematics (with Evelyn Sander and Thomas Wanner).

Theses & Dissertations

6. Operators Acting on the Bloch Space of a Bounded Homogeneous Domain, *Ph.D. Dissertation*, George Mason University, May 2009.
7. Turing Instabilities and Spatial Pattern Formation in One Dimension, *Undergraduate Honors Thesis*, George Mason University, August 2003.
8. The Design and Implementation of the C-- Programming Language, *Undergraduate Thesis*, University of Virginia, May 1994.

Invited Talks

National & International Conferences

1. "Multiplication Operators on the Bloch Space of a Bounded Homogeneous Domain", Joint AMS/MAA Mathematics Meeting, Special Session on Function Theoretic Operator Theory, Washington, DC, January 2009.
2. "Weighted Composition Operators on the Bloch Space on a Bounded Homogeneous Domain", International Workshop on Operator Theory and its Applications XIX, Special Session on Composition Operators, College of William & Mary, July 2008.
3. "On the Spectrum of an Isometric Composition Operator on the Bloch Space of the Polydisk", South Eastern Analysis Meeting XXIII, University of Richmond, March 2007.

Colloquia & Seminars

4. "An Introduction to Lie Algebras and their Cohomology", Combinatorics, Algebra and Geometry Seminar, George Mason University, November 2008.
5. "Turing Instabilities in Reaction-Diffusion Equations: A Model for the Formation of Mammalian Coat Patterns", Applied & Computational Math Seminar, George Mason University, September 2008.
6. "Isometries on the Bloch Space", Graduate Student Seminar, George Washington University, April 2008.
7. "Isometric Composition Operators on the Bloch Space of the Unit Disk", Complex Analysis & Potential Theory Seminar, George Mason University, November 2007.
8. "Embeddings of Trees in the Hyperbolic Disk", Graduate Seminar, University of Virginia, November 2004.

Other Talks

George Mason Graduate Seminar

1. "Multiplication Operators on the Bloch Space of the Unit Disk", September 2008.
2. "Interpolation of Bounded Analytic Function on the Unit Disk", February 2008.
3. "Weighted Composition Operators on the Bloch Space", September 2007.
4. "On the Spectrum of an Isometric Composition Operator on the Bloch Space of the Polydisk", March 2007.
5. "The Bloch Space: Function- & Operator-Theoretic Perspectives", September 2006.
6. "A Glimpse Into Operator Theory" (2 talks), February 2006.

Clubs & Organizations

7. "A Hitchhikers Guide to Graduate School", Math Club, George Mason University, March 2007.

Service

Department Service

- Organized the Fall Research Symposium, aimed to introduce graduate students to faculty research and help graduate students move towards getting an advisor.
- Lead the effort to expand the office space for graduate students in the department.

University Service

- Completed the Safe-Zone training.
- Tutor in the Mathematics Learning & Tutoring Center.

References

Dr. Flavia Colonna
Department of Mathematical Sciences
George Mason University
Fairfax, VA 22030

Dr. Rebecca Goldin (teaching)
Department of Mathematical Sciences
George Mason University
Fairfax, VA 22030

Dr. William Ross
Department of Mathematics and Computer Science
University of Richmond
Richmond, VA 23173

Dr. Evelyn Sander
Department of Mathematical Sciences
George Mason University
Fairfax, VA 22030