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# Marius Ionescu

## Curriculum Vitae

### Education

1999–2005 **Ph.D. in Mathematics**, *The University of Iowa*.

Thesis *Mauldin-Williams Graphs and  $C^*$ -algebras*

Thesis advisor Professor Paul S. Muhly

1997–1998 **M.S. in Mathematics, Probability and Statistics**, *The University of Transylvania*, Romania.

1992–1997 **B.S. in Mathematics and Computer Science**, *The University of Transylvania*, Romania.

### Research Interests

Functional analysis, analysis on fractals, operator algebras, dynamical systems, harmonic analysis, wavelets. See the enclosed research statement for details.

### Employment

2007 – present **Visiting Assistant Professor**, *Cornell University*.

2005–2007 **John Wesley Young Research Instructor**, *Dartmouth College*.

1999–2005 **Teaching Assistant**, *University of Iowa*.

1998–1999 **Assistant**, *University of Transylvania*, Brasov, Romania.

### Honors

- The 2006 D.C. Priestersbach Dissertation Prize for Mathematics, Physical Sciences, and Engineering, the University of Iowa
- Fulbright scholarships and grant, 1999 – 2004
- Catherine Wegner Outstanding TA Award, University of Iowa, Department of Mathematics, 2003

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## Publications

“On the generalized Effros-Hahn conjecture for groupoids”, (with Dana P. Williams), in preparation.

“Irreducible representations of groupoid  $C^*$ -algebras”, (with Dana P. Williams), submitted.

“Groupoid Methods in Wavelet Analysis”, (with Paul Muhly), Proceedings of the AMS Special Session Honoring the Memory of George W. Mackey, to appear.

“ $C^*$ -algebras associated with Mauldin-Williams graphs”, (with Y. Watatani), Can. Math. Bull, to appear.

“Operator algebras and Mauldin-Williams graphs”, Rocky Mountain J. Math., 37 (2007), no. 3, 829 – 849.

“Mauldin-Williams graphs, Morita Equivalence and isomorphisms”, Proc. Amer. Math. Soc. 134 (2006), no. 4, 1087–1097.

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## Teaching Experience

Cornell University *Measure Theory and Lebesgue Integration* (graduate course); *Introduction to Analysis*; *Functional Analysis* (Spring 2008); *Honours Introduction to Analysis* (Spring 2008)

Dartmouth College *Topics in Analysis* (graduate course); *Calculus of Functions of one and Several Variables*; *Probability* (Honor Section); *Functional Analysis* (graduate course); *Probability*; *Introduction to Calculus*

University of Iowa *PhD Comprehensive Exams Preparation Seminar* (Analysis); *Introduction to Analysis II* (graduate course); *Introduction to Analysis I* (graduate course); *MS Comprehensive Exams Preparation Seminar* (Algebra, Topology, and Analysis); *Introduction to Abstract Algebra I*; *Introduction to Analysis I* (graduate course); *Calculus I*; *Calculus II*; *Algebra I*; *Algebra II*; *Calculus and Matrix Algebra for Business*

University of Transylvania, Romania *Probability and Statistics* (graduate course); *Mathematics for Economists*; *Advanced Calculus for Engineers*; *Calculus for Engineers*; *Computational Analysis and Modeling for Engineers*

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## Grants, Awards, Memberships

- Research fellowship, University of Iowa, Summer 2003, 2002, 2001
- Grant from the Romanian Society for Academic Research, 1998 – 1999
- Undergraduate Research Awards, University of Transylvania, Romania, 1993, 1995, 1997
- Third prize at the “Traian Lalescu” national mathematics contest for colleges undergraduate students, Tg-Jiu, Romania, 1993
- Member of AMS, SIAM
- Member of the “Mathematical Recreations Society”, Romania

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## Selected Presentations

- *Irreducible representations of groupoid  $C^*$ -algebras*, Groupoidfest, University of Iowa, November 2007
- *Inducing wavelet and fractal representations*, The Annual Great Plains Operator Theory Symposium, University of Nebraska, Lincoln, May 2007
- *Wavelets and Fractals: a Groupoid Approach*, Department of Mathematics Colloquium, Dartmouth College, April 2007
- *Inducing representations from the isotropy group bundle*, plenary speaker, Groupoidfest, Arizona State University, November 2006
- *Wavelets, fractals, and representations of groupoid  $C^*$ -algebras*, invited speaker, The University of Central Florida, November 2006
- *Fractals, wavelets, and groupoids*, Special Session on Noncommutative Dynamical Systems, AMS 2006 Fall Western Section Meeting, University of Utah, Salt Lake City, UT, October 2006
- *Groupoids,  $C^*$ -correspondences, and wavelets*, The Annual Great Plains Operator Theory Symposium, University of Iowa, Iowa City, May 2006
- *Fractals and Endomorphisms*, plenary speaker, Groupoidfest, Iowa State University, November 2005
- *$C^*$ -Algebras Associated with Mauldin-Williams Graphs*, Special Session on Recent Progress in Operator Algebras, AMS meeting, University of Nebraska at Lincoln, October 2005
- *Operator algebras and dynamical systems*, invited speaker, Heartland Partnership grad student visitors, Cornell College, Iowa, January 2005
- *Iterated function systems and groupoids*, plenary speaker, Groupoidfest, University of Nevada, November 2004
- *Morita equivalence, iterated function systems and operator algebras*, The 24th Annual Great Plains Operator Theory Symposium, Texas A&M University, May 2004
- *On noncommutative iterated function systems*, The 23th Annual Great Plains Operator Theory Symposium, University of Illinois, Urbana-Champaign, May 2003

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## Other Work Experience

Computer analyst and software engineer, Silva-Soft Co, Romania, 1997 – 1999

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## Additional Activities and Skills

- Reviewer for Journal of Mathematical Analysis & Applications
- Research with undergraduate students as part of the REU program on “Analysis on Fractals”, Cornell University, Summer 2007
- Undergraduate research adviser, Dartmouth College
- Examination committee of Graduate Qualifying Exams, Dartmouth College

- Organizing committee of the Annual Mathematics High School Competition organized by Department of Mathematics, University of Iowa, 2001 – 2004

Computer skills Proficient in Matlab, Mathematica, Maple, C, C++, Pascal, Visual Basic, Latex, HTML, Linux, Windows, the fundamental of Java and Mac OS X

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## References

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