

Christopher Jankowski

PERSONAL INFORMATION

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RESEARCH INTERESTS

Functional analysis, operator algebras, E_0 -semigroups, completely positive maps.

EDUCATION

University of Pennsylvania, Philadelphia, PA

Ph.D. in Mathematics, May 2009.
Thesis Advisor: Robert Powers.

University of Notre Dame, Notre Dame, IN

B.S. in Mathematics (honors concentration), *summa cum laude*, 2004.

EMPLOYMENT

Lecturer, University of Pennsylvania

September 2011-

Postdoctoral Fellow, Ben-Gurion University, Be'er Sheva, Israel

September 2009-July 2011

HONORS AND AWARDS

Moez Alimohamed Graduate Student Teaching Award, Department of Mathematics, University of Pennsylvania, Spring 2007.

KUDOS Penn TA Prize, University of Pennsylvania, Spring 2007.

Good Teaching Award, Department of Mathematics, University of Pennsylvania, Spring 2006.

First Year Fellowship, Department of Mathematics, University of Pennsylvania, 2004.

General Electric Prize for Mathematics, University of Notre Dame, 2004.

PAPERS AND PUBLICATIONS

Aligned CP-semigroups, with Daniel Markiewicz and Robert T. Powers,
<http://arxiv.org/abs/1107.2053>, submitted.

Unital q -positive maps on $M_2(\mathbf{C})$ and cocycle conjugacy of E_0 -semigroups,
Houston J. Math., to appear. preprint <http://arxiv.org/abs/1005.4404>.

A family of non-cocycle conjugate E_0 -semigroups obtained from boundary weight doubles,
J. Operator Theory, to appear. preprint <http://arxiv.org/abs/1007.4459>.

E_0 -semigroups and q -purity: boundary weight maps of range rank one and two, with Daniel Markiewicz
and Robert T. Powers, J. Funct. Anal. **262** (2012), no. 7, 3006-3061.

Gauge groups of E_0 -semigroups obtained from Powers weights, with Daniel Markiewicz,
Int. Math. Res. Not. IMRN (2011), doi: 10.1093/imrn/rnr142, in press.

On type II_0 E_0 -semigroups induced by boundary weight doubles,
J. Funct. Anal. **258** (2010), no. 10, 3413-3451.

On K_ -ultrahomogeneous graphs*, with Daniel Isaksen and Stephanie Proctor,
Ars Combin. **82** (2007), 83-96.

TEACHING
EXPERIENCE AND
POSITIONS

University of Pennsylvania, Philadelphia, PA

Faculty Organizer, TA Training Program

Fall 2011

Participated in the TA Training Program. Observed trainees and later observed an instructor during the semester in order to give feedback.

Mentoring

Spring 2009

Met individually over the course of the semester with two students in the Penn Undergraduate Mathematics Society, guiding them through introductory analysis material. Each student gave a talk in the society's Undergraduate Seminar. The titles were "Understanding the Cantor Set: Cardinality and Lebesgue Measure" and "A Study of Convergence In Functional Analysis."

Master Teaching Assistant

Fall 2007-Spring 2009

Took part in organizing and conducting the TA Training Program. Went to recitations of other teaching assistants and gave advice and constructive criticism. Met individually with teaching assistants to view videotapes of recitations, discussing their teaching style and giving input.

Instructor

Summer 2007, Summer 2008, Fall 2011

Responsible for every aspect of the class aside of the syllabus (and responsible for the syllabus in the case of Math 320): giving lectures, assigning homework, holding office hours, creating and grading quizzes and exams, assigning final grades.

- *Computer Methods in Mathematical Science (Math 320)*, Fall 2011.
- *Calculus IV (Math 241)*, Summer 2008.
- *Calculus III (Math 240)*, Summer 2007 and Fall 2011.

Teaching Assistant

Summer 2005 - Spring 2007, Spring 2009 - Summer 2009

Responsible for conducting recitation, grading homework and (at times) quizzes, helping to grade exams, holding office hours and occasional review sessions, maintaining a web page with necessary information regarding the course, and, as a teaching assistant for Math 360, typing solutions to selected homework problems.

- *Calculus II (Math 114), Online TA*, Summer 2009.
- *Calculus IV (Math 241), part-time TA*, Summer 2009.
- *Calculus I (Math 103, Math 104)*, Fall 2005-Fall 2006, Spring 2009.
- *Advanced Calculus (Math 360)*, Spring 2007.
- *Prefreshman Program Math 103*, Summer 2005.

Grader

Fall 2008

Graded homework for a graduate course.

- *Real Analysis (Math 608)*, Fall 2008.

University of Notre Dame, Notre Dame, IN

Grader

Fall 2002

Graded homework for undergraduate calculus.

- *Calculus III (Math 265)*, Fall 2002.

TALKS AND
PRESENTATIONS

Invited Talks

To infinity and beyond: what they didn't teach us in linear algebra
Mathematics Colloquium, Manhattan College

Spring 2012

Gauge groups of E_0 -semigroups

Function Theory and Operator Theory: Infinite Dimensional and
Free Settings, Ben-Gurion University

Spring 2011

<i>The realm of positivity in linear algebra</i> Mathematics Colloquium, Bryn Mawr College	Spring 2011
<i>Completely positive maps and noncommutative dynamics</i> Analysis Seminar, Drexel University	Spring 2011
<i>E_0-semigroups and boundary weight doubles</i> Mathematics Colloquium, United States Naval Academy.	Fall 2010
<i>Properties of q-positive maps and their relation to E_0-semigroups</i> Mini-Conference in Operator Algebras, Ben-Gurion University.	Spring 2010
<i>Type II_0 E_0-semigroups obtained from boundary weight doubles</i> Trilateral Operator Algebras and Operator Theory Seminar, Ben-Gurion University.	Fall 2009

Other Talks

<i>A family of non-cocycle conjugate E_0-semigroups obtained from boundary weight doubles</i> AMS Special Session on Noncommutative Harmonic Analysis and Dynamic Systems, Joint AMS / MAA Meetings, New Orleans, LA.	Spring 2011
<i>On q-positive maps and related results for E_0-semigroups</i> Great Plains Operator Theory Symposium, University of Denver.	Summer 2010
<i>Local cocycles of certain E_0-semigroups of type II_0, after Alevras, Powers and Price (parts 1 and 2)</i> Operator Algebras Seminar, Ben-Gurion University.	Fall 2009
<i>E_0-semigroups induced by q-pure maps on $M_n(\mathbf{C})$</i> Great Plains Operator Theory Symposium, University of Colorado at Boulder.	Summer 2009
<i>On Type II_0 E_0-semigroups induced by completely positive maps on $M_n(\mathbf{C})$</i> Great Plains Operator Theory Symposium, University of Cincinnati.	Summer 2008
<i>Completely Positive Maps and Why We Need Them</i> Graduate Student Pizza Seminar, University of Pennsylvania.	Spring 2008
<i>The Mathematical Formulation of Quantum Mechanics</i> Graduate Student Pizza Seminar, University of Pennsylvania.	Fall 2007
<i>The Cut Locus of the Torus of Revolution</i> Graduate Student Geometry-Topology Seminar, University of Pennsylvania.	Spring 2006
<i>Tetrahedral Tilings of 3-space, and More</i> Graduate Student Pizza Seminar, University of Pennsylvania.	Spring 2005
<i>Rooted Lower Subtractivity and Frobenius Graphs</i> Indiana Research Experience for Undergraduates Conference, University of Indiana.	Summer 2003
<i>On K_*-ultrahomogeneous graphs</i> Joint AMS / MAA Meetings, Baltimore, MD.	Spring 2003

CONFERENCES ATTENDED

Joint AMS / MAA Meetings, New Orleans, LA. New Orleans, LA.	Spring 2011
Great Plains Operator Theory Symposium University of Denver, Denver, CO.	Summer 2010
Great Plains Operator Theory Symposium University of Colorado at Boulder, Boulder, CO.	Summer 2009
Joint AMS / MAA Meetings Washington, D.C.	Spring 2009
East Coast Operator Algebras Symposium, Penn State University.	Fall 2008

Great Plains Operator Theory Symposium, University of Cincinnati, Cincinnati, OH.	Summer 2008
Indiana Research Experience for Undergraduates Conference Indiana University, Bloomington, IN.	Summer 2003
Joint AMS / MAA Meetings Baltimore, MD.	Spring 2003
Indiana Research Experience for Undergraduates Conference Indiana University, Bloomington, IN.	Summer 2002

PROFESSIONAL MEMBERSHIPS	Mathematical Association of America	2008
	American Mathematical Society	2004-2008, 2010-2011
	Phi Beta Kappa, University of Notre Dame	2004

REFERENCES	Robert Powers University of Pennsylvania, Philadelphia, PA.	Research Reference
	Geoffrey Price United States Naval Academy, Annapolis, MD.	Research Reference
	Daniel Markiewicz Ben-Gurion University, Be'er Sheva, Israel.	Research Reference
	Robin Pemantle University of Pennsylvania, Philadelphia, PA.	Teaching Reference
	Herman Gluck University of Pennsylvania, Philadelphia, PA.	Teaching Reference