Kamran Reihani - Curriculum Vitae - January 2020

Contact Details

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Education Ph.D. in Mathematics, Tarbiat Modares University, January 2005
M.Sc. in Pure Mathematics, Sharif University of Technology, April 1998
B.Sc. in Civil Engineering, Sharif University of Technology, July 1995

PhD Dissertation C^*-algebras and representation theory of low-dimensional groups

PhD Advisor Professor Alireza Medghalchi, Tarbiat Moallem University

Research Interests Operator Algebras and Noncommutative Geometry

Positions Held
Instructional Assistant Professor, Texas A&M University, College Station Texas, August 2014 – present
NTT Assistant Professor, Vanderbilt University, Nashville, Tennessee, August 2013 – August 2014
Lecturer, Northern Arizona University, Flagstaff, Arizona, May 2012 – August 2013
Assistant Professor, University of Kansas, Lawrence, Kansas, Aug. 2008 – May 2012
Visiting Assistant Professor, Arizona State U., Tempe, Arizona, Aug. 2007 – July 2008
Visiting Assistant Professor, NTNU, Trondheim, Norway, Jan. 2007 – June 2007
Postdoctoral Fellow, University of Oslo, Norway, Dec. 2004 – Dec. 2006
Visiting Researcher, Max-Planck-Institut für Mathematik, Germany, Sep. 2004 – Dec. 2004

Industrial Employment Consultant Civil Engineer at several consulting engineering companies (SWES, SPI, and TNA), with expertise in mathematical modeling of rivers and canals, design of hydraulic structures and small dams, and ports management, Iran, 1997–2004.

Pre-doc visit Visiting PhD student, U. of Western Ontario, London, Canada, Mar. 2002–Oct. 2002.

Teaching Experience (US)
Advanced Engineering Mathematics (MATH 401), Texas A&M University, Spring 2020
Differential Equations (MATH 308), Texas A&M University, Spring 2020
Differential Equations (MATH 308), Texas A&M University, Fall 2019
Mathematical Probability (MATH 411), Texas A&M University, Summer 2019
Advanced Calculus (MATH 409), Texas A&M University, Summer 2019
Differential Equations (MATH 308), Texas A&M University, Spring 2019
Advanced Calculus II (MATH 410), Texas A&M University, Spring 2019
Engineering Mathematics - III (MATH 251), Texas A&M University, Fall 2018
Mathematical Probability (MATH 411), Texas A&M University, Summer 2018
Advanced Calculus (MATH 409), Texas A&M University, Summer 2018
Advanced Engineering Mathematics (MATH 401), Texas A&M University, Spring 2018
Differential Equations (MATH 308), Texas A&M University, Spring 2018

Honors Engineering Mathematics - I (Math 151H), Texas A&M University, Fall 2017
Mathematical Probability (MATH 411), Texas A&M University, Summer 2017
Advanced Calculus (MATH 409), Texas A&M University, Summer 2017
Advanced Engineering Mathematics (MATH 401), Texas A&M University, Spring 2017
Engineering Mathematics - II (MATH 152), Texas A&M University, Spring 2017
Engineering Mathematics - II (MATH 152), Texas A&M University, Fall 2016
Differential Equations (MATH 308), Texas A&M University, Summer 2016
Differential Equations (MATH 308), Texas A&M University, Spring 2016
Engineering Mathematics - III (MATH 251), Texas A&M University, Fall 2015
Business Mathematics - I (MATH 141), Texas A&M University, Summer 2015
Engineering Mathematics - II (MATH 152), Texas A&M University, Spring 2015
Business Mathematics - I (MATH 141), Texas A&M University, Fall 2014
Accelerated Calculus - II (MATH 155B), Vanderbilt University, Summer 2014
Accelerated Calculus - II (MATH 155B), Vanderbilt University, Spring 2014
Multivariable Calculus (MATH 175), Vanderbilt University, Fall 2013
Calculus - II (MAT137), Northern Arizona University, Summer 2013
Introduction to Linear Algebra (MAT316), Northern Arizona University, Summer 2013
Calculus - III (MAT238), Northern Arizona University, Spring 2013
Calculus - II (MAT137), Northern Arizona University, Spring 2013
Introduction to Analysis (MAT431), Northern Arizona University, Fall 2012
Calculus - II (MAT137), Northern Arizona University, Fall 2012
Calculus - I (MAT136), Northern Arizona University, Summer 2012
Finite Mathematics (MAT119), Northern Arizona University, Summer 2012
Elementary Linear Algebra (Math 290), University of Kansas, Spring 2012
Functional Analysis - I (Math 960), University of Kansas, Spring 2012
Functional Analysis - II (Math 961), University of Kansas, Fall 2011
Applied Differential Equations (Math 220), University of Kansas, Summer 2011
Functional Analysis - I (Math 960), University of Kansas, Spring 2011
Real Analysis and Measure Theory - I (Math 810), University of Kansas, Fall 2010
Vector Calculus (Math 223), University of Kansas, Fall 2010
Introduction to the Theory of Functions - II (Math 766), University of Kansas, Spring 2010
Introduction to the Theory of Functions - I (Math 765), University of Kansas, Fall 2009
Vector Calculus (Math 223), University of Kansas, Spring 2009
Elementary Linear Algebra (Math 290), University of Kansas, Fall 2008
Modern Differential Equations (MAT 275), Arizona State University, Summer 2008
Modern Differential Equations (MAT 275), Arizona State University, Spring 2008
Elementary Differential Equations (MAT 274), Arizona State University, Fall 2007

Teaching Experience (International)

Functional Analysis (TMA 4230), NTNU, Trondheim, Norway, Spring 2007
Functional Analysis (MAT 4350), University of Oslo, Norway, Spring 2006
T.A. for Engineering Mathematics, Sharif University of Technology, Iran, Fall 1997
T.A. for Mathematical Analysis II, Sharif University of Technology, Iran, Fall 1996

Pedagogical Opportunities

- Teaching Strategies to Improve Student Learning, Northern Arizona University, August 2012
- Faculty Annual Workshop: SCALE-UP, presented by Lisa Benson (Clemson) and Bob Beichner (North Carolina State) School of Engineering, University of Kansas, Jan. 2012
- Mathematics Department ambassador to CTE (Center for Teaching Excellence) at the University of Kansas (2008-2010).

Publications

1. (with H. Jooya and S-I. Chu) A graph-theoretical representation of multiphoton resonance processes in superconducting quantum circuits, Scientific Reports 6, Article number: 37544 (2016).
2. K-theory of Furstenberg transformation group C^*-algebras, Canadian Journal of Mathematics **65** (2013), no. 6, 1287-1319.
3. (with J. Bellissard and M. Marcolli) Dynamical systems on spectral metric spaces, arXiv: 1008.4617, submitted to J. Noncommutative Geometry (under revision), 47 pages.
4. (with G. Cornelissen, M. Marcolli and A. Vdovina) Noncommutative geometry on trees and buildings, Proceedings of the Max-Planck-Institute Workshop on Traces in Number theory, Geometry and Quantum Fields, Aspects of Mathematics, **E38**. Friedr. Vieweg & Sohn, Wiesbaden, 73–98, 2008. xiv+290 pp. ISBN: 978-3-528-03136-7.
5. (with P. Milnes), Analysis on discrete cocompact subgroups of the generic filiform Lie groups, Acta. Math. Hung. **112** (**1-2**) (2006), 157–179.
6. (with A. Medghalchi), Simple infinite-dimensional quotients of the group C^*-algebras of certain discrete 6-dimensional nilpotent groups, Indag. Math. **16** (1) (2005), 91–115.

Articles in Preparation

1. (with William Paschke) Bundles carrying invariant structures for dynamical systems and their operator algebras.
2. The local index formula for the $\mathbf{T}^2$-equivariant geometry of $SU_q(2)$.
3. The noncommutative geometry of Thompson's group F.

Selected Talks

1. "Reduction to type II in dynamical systems", Subfactor Seminar, Department of Mathematics, Vanderbilt University, October 18, 2013.
2. "Noncommutative metrics for dynamical systems", Invited Talk, Department of Mathematics, Vanderbilt University, May 5, 2013.
3. "Dynamical Systems on spectral metric spaces", Invited Talk, NCGOA 2013, Vanderbilt University, March 15, 2013.
4. "An invitation to noncommutative geometry", Colloquium Talk, Northern Arizona University, April 9, 2013.
5. "Bundles carrying invariant structures for dynamical systems and their operator algebras", Invited Special Session Talk at Central Section Meeting of the AMS (Special Session in Dynamical Systems and Operator Algebras), Lincoln, Nebraska, October 14-16, 2011.
6. "Spectral triples for equicontinuous actions and metrics on state spaces", Invited Special Session Talk at Central Section Meeting of the AMS (Recent Progress in Operator Algebras), Lincoln, Nebraska, October 14-16, 2011.
7. "Dynamical systems on spectral metric spaces", CIMPA-UNESCO-MICINN-THAILAND research school on Spectral Triples and Their Applications, Chulalongkorn University, Bangkok, Thailand, June 03, 2011.
8. "Spectral triples for crossed products", Great Plains Operator Theory Symposium (GPOTS), University of Denver, June 14–18, 2010.
9. "Noncommutative smooth structures for boundary actions on trees", Invited Colloquium Talk, Department of Mathematics, University of Kansas, Feb. 14, 2008.

10. "On K-groups of the crossed products associated with a class of transformations of tori", West Coast Operator Algebra Seminar 2007, February 2–3, 2008, California State University Long Beach.
11. "K-theoretic invariants for unipotent transformations on tori", Invited Talk, Department of Mathematics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, 2006.
12. "Pseudolattices and quantum tori III (after Y. Manin), Invited Talk, SUP-seminar, Department of Mathematics, University of Oslo, Norway, March 2005.
13. "A brief introduction to non-commutative geometry", Invited Talk, Mathematics Department Seminar, Alzahra University, Tehran, Iran, November 2003.

Advanced Research Schools

- Eleventh Annual Spring Institute on Noncommutative Geometry and Operator Algebras, "Index Theory and K-theory", Vanderbilt University, May 3-9, 2013
- CIMPA-UNESCO-MICINN-THAILAND research school on "Spectral Triples and Their Applications", Chulalongkorn University, Bangkok, Thailand, May 22– June 04, 2011
- "Advanced School and Conference on Non-Commutative Geometry", ICTP, Trieste, Italy, August 9–27, 2004
- Euro Summer School "Advanced course on group actions", Centre de Recerca Matemàtica (CRM), Bellaterra, Spain, September 18–22, 2001

Awards and Grants

2012 - Travel grant from the Center for Teaching Excellence (CTE) of the University of Kansas to observe SCALE-UP courses at Clemson University.
2011 - Travel Grants from the Center for Pure and Applied Mathematics (CIMPA) in France, KU College of Liberal Arts and Sciences, and KU International Programs to participate and give a talk at the research school on Spectral Triples and their Applications in Bangkok, Thailand.
2009 - New Faculty General Research Fund (NFGRF) from the KU Center for Research (KUCR), University of Kansas.
2006 - Travel grant from SUP (Strategic University Programs) to give a talk at NTNU, Norway.
2005 - Research grant from SUP (Strategic University Programs) to give a talk at University of Oslo, Norway.
2004 - Travel grant from the Max-Planck-Institute für Mathematik to attend the Workshop on Noncommutative Manifolds, SISSA, Trieste, Italy.
2004 - Research Fellowship, Max-Planck-Institut für Mathematik, Bonn, Germany.
2004 - Full grant from ICTP for the Advanced School and Conference on Noncommutative Geometry, Aug 9-27
2002 - Full grant from the Ministry of Science, Research and Technology of Iran to conduct an 8-month complimentary PhD research period at the Department of Mathematics, University of Western Ontario, Canada.
2001 - Travel Grants from Centre de Recerca Matemàtica (CRM) and the Ministry of Science, Research and Technology of Iran to attend the Summer School "Advanced course on group actions", Bellaterra, Spain.

Professional Service

Refereed for:
- Journal of K-theory
- Journal of Noncommutative Geometry
- Journal of Ergodic Theory and Dynamical systems
- Journal of Lie Theory

- Proceedings of the Max-Planck-Institute's workshop on "Traces in Geometry, Number Theory and Quantum Fields"