

NIGEL HIGSON
CURRICULUM VITAE

Contact Information

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Personal

Married to Yvonne M. Gaudelius

One child, Julia M. Higson

US citizen

Education

1986 PhD, Dalhousie University, Halifax Nova Scotia
Supervisor: Dr. P.A. Fillmore
Thesis Title: Algebraic K-theory of stable C^* -algebras

1983 MSc, Dalhousie University, Halifax Nova Scotia
Supervisor: Dr. P.A. Fillmore
Thesis Title: On Kasparov theory

1982 BA, Dalhousie University, Halifax Nova Scotia

Positions Held

2006- Evan Pugh University Professor in Mathematics, Penn State University

2003-06 Head of the Department of Mathematics, Penn State University

2000-06 Distinguished Professor of Mathematics, Penn State University

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- 1996 Stanislaw Ulam Visiting Professor, The University of Colorado
- 1994-99 Professor of Mathematics, Penn State University
- 1990-94 Associate Professor of Mathematics, Penn State University
- 1989-90 Assistant Professor of Mathematics, Penn State University
- 1986-90 Assistant Professor of Mathematics, The University of Pennsylvania
- 1986 Postdoctoral Fellow, Dalhousie University

Visiting positions at The University of Warwick, Odense Universitet, The University of Victoria, Université Aix-Marseille II, Université Louis Pasteur, Strasbourg and The University of Chicago

Honors and Awards

- 2014 Plücker Lecturer, Bonn International Graduate School
- 2012 Appointed Fellow of the American Mathematical Society
- 2011 Invitation to address the American Mathematical Society, Ithaca Sectional Meeting
- 2008 Namboodiri Lecturer, University of Chicago
- 2008 Plenary Address, EMS Joint Mathematical Weekend, Copenhagen
- 2006 Named Evan Pugh Professor, Penn State University
- 2006 Plenary Address to the British Mathematical Colloquium
- 2002 Plenary Address to the Australian Mathematical Society Annual Meeting, Newcastle
- 2001 Atherton Award for Excellence in Teaching, Penn State University
- 2000 Named Distinguished Professor, Penn State University
- 2000 Elected Fellow, Royal Society of Canada
- 1999 DeLong Lecturer, The University of Colorado

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- 1999 Clay Mathematics Institute Prize Fellowship
- 1999 C.I. Noll Teaching Award, Eberly College of Science, Penn State University
- 1998 Invited Lecturer, International Congress of Mathematicians, Berlin
- 1998 Plenary Address to the American Mathematical Society, State College Sectional Meeting
- 1996 Coxeter James Prize of the Canadian Mathematical Society
- 1995 Israel Halperin Prize of the Canadian Operator Symposium
- 1995 André Aisenstadt Prize of the Centre de Recherches Mathématiques, Montreal
- 1994 Plenary Address to the Canadian Mathematical Society Summer Meeting, Edmonton
- 1992 Sloan Foundation Fellowship
- 1990 Penn State University Research Initiation Grant
- 1989 University of Pennsylvania Natural Sciences Association Young Faculty Award
- 1989 University of Pennsylvania Department of Mathematics Good Teaching Award

Current Research Funding

- 2011-15 National Science Foundation DMS-1101382. Total Funding: \$291,000 over four years

Other Funding

- 2006 National Science Foundation DMS-0611653 (with J. Roe) Conference support grant (Newton Institute program, 2006)
Total Funding: \$19,380

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- 2005 National Science Foundation DMS-0502205 (with George Andrews, Anatole Katok, Svetlana Katok and Serge Tabachnikov) MCTP Grant: Penn State MASS program
Total Funding: \$1,246,603 (five years)
- 2005 National Science Foundation DMS-0100464 supplement (with J. Roe) Conference support grant (Fields Institute Summer Program, 2005)
Total Funding: \$9,774
- 2004 Fields Institute conference grant (with B. Tsygan and M. Khalkali)
Total funding: CA\$10,000
- 2004 National Science Foundation DMS-0436183 (with G. Andrews, A. Katok, J. Roe and S. Tabachnikov) MASS program
Total Funding: \$75,000 (one year)
- 2000 National Science Foundation DMS-0074062 Focussed Research Group
Total Funding: \$207,303 (four years)
- 1999 National Science Foundation DMS-9810759 VIGRE program (with G. Mullen, D. Arnold and A. Katok)
Total Funding: \$2,286,472 (six years)
- 2000 American Mathematical Society conference grant, Joint Summer Research Conference, June 2000 (with A. Connes, J. Roe and G. Yu)
Total AMS Funding: \$70,000. Additional funding was made available by the Clay Mathematics Institute, which sponsored an instructional symposium during the conference.
- 1999 Clay Mathematics Institute Prize Fellowship
Total Funding: \$24,940 (one year)
- 1992 Sloan Foundation Research Fellowship
Total Funding: \$30,000 (three years)
- 1992 National Science Foundation INT 91-13392 (With Paul Baum)
Total Funding: \$15,226 (three years)
- 1990 Penn State University Research Initiation Grant
Total funding: \$6,810
- 1989 University of Pennsylvania Natural Sciences Association Young Faculty Award
Total funding: \$30,000 (declined)

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Teaching

Courses at all levels from calculus to advanced graduate seminars. Typical load is two courses per year (6 credit hours per year). In addition, I run a weekly noncommutative geometry seminar that is oriented towards graduate student training.

Graduate-level courses or lecture series delivered in Odense, Denmark (1996), Boulder (1996), Les Diablerets, Switzerland (1998), Strasbourg (2000), Mount Holyoke (2000), Martina Franca, Italy (2000), Vanderbilt University (2003, 2004 and 2006), University of Oslo (2004), Fudan University, Shanghai (2004), Marseille (2004), Ottawa (2005), Canberra (2005), Madrid (2008), Vienna (2008), Austin (2010), Cardiff (2010), Scalea (2010), Orsay (2010), Shanghai (2012), Sde Boker, Israel (2013), Toronto (2013), Adelaide (2013), Copenhagen (2015).

Current PhD Students

Qijun Tan, expected to graduate in 2017.
Alok Bakshi, expected to graduate in 2017.
Angel Roman, expected to graduate in 2018.
Zelin Yi, expected to graduate in 2019.
Michael Francis, expected to graduate in 2020.
Ahmad Reza Haj Saeedi Sadegh, expected to graduate in 2020.

Past PhD Students

Ehssan Kanmohammadi
PhD 2015, Penn State
Visiting Assistant Professor, Franklin and Marshall College

Guangzhong Peng
PhD 2015, Penn State
Analyst-Programmer, Bank of America, New York

Pichkitti Bannangkoon
PhD 2015, Penn State
Lecturer, Department of Mathematics, Mahidol University, Bangkok

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Shilin Yu

PhD 2013, Penn State

Hans Rademacher Instructor, University of Pennsylvania, 2013-2016

Yanli Song

PhD 2013, Penn State

Postdoctoral Fellow, University of Toronto, 2013-2016

Allan Yashinski

PhD 2013, Penn State

Postdoctoral Fellow, University of Hawaii, 2013-2016

Seunghun Hong

PhD 2012, Penn State

Tenure-track Assistant Professor, Northwestern College

Tyrone Crisp

PhD 2012, Penn State

Postdoctoral Fellow, Max Planck Institute, Bonn, 2015-2016

John Skukalek

PhD 2010, Penn State

Professor, La Universidad de San Francisco de Quito

Chris George

PhD 2009, Penn State

Assistant Professor, Nazareth College

Uuye Otgonbayar

PhD 2009, Penn State

Institute of Mathematics, National University of Mongolia

Robert Yuncken

PhD 2006, Penn State

Maître de conférences, Université Blaise Pascal, Clermont-Ferrand, France

Erik van Erp

PhD 2005, Penn State

Tenure Track Assistant Professor, Dartmouth College

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Dmitri Matsnev
PhD 2005, Penn State
Software Engineer, Google, Zurich

Dmitri Gerenrot
PhD 2004, Penn State
Senior Mathematician, Bally Technologies, Nevada

Eli Hawkins
PhD 2002, Penn State
Lecturer, University of York

Dorin Dumitrascu
PhD 2001, Penn State
Assistant Professor, Adrian College

Heath Emerson
PhD 2001, Penn State
Associate Professor, University of Victoria

Rachel Hall
PhD 1999, Penn State
Associate Professor, Saint Joseph's University

Navin Keswani
PhD 1998, University of Maryland
Software Developer, Blake Education, Sydney, Australia

John Golden
PhD 1996, Penn State
Associate Professor, Grand Valley State University

John D. Trout
PhD 1995, Penn State (jointly advised with P. Baum)
Associate Professor, Dartmouth College

Erik Guentner
PhD 1994, Penn State
Professor and Chair, University of Hawaii

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MSc and MA Students

Tian-Yu Tan, MA 2011

Beatrice Riviere, MSc 1995

Rebecca Hai, MSc 1995

Postdoctoral Advisees

Eyal Subag
2015-2018

Pierre Clare
2011-2013

Calder Daenzer
2011-2014

Yi-Jun Yao
2008-2010
Currently Associate Professor, Fudan University

Diarmuid Crowley
2001-2004
Research Postdoc, Max Planck Institute for Mathematics
and Scientific Administrator of the Manifold Atlas Project

Florin Dumitrescu
2006-2009
Jointly advised with John Roe

Dan Farley
1999-2002
Jointly advised with John Roe
Currently Assistant Professor at Miami University of Ohio

Raphael Ponge
2001-2002
Jointly advised with John Roe
Currently Assistant Professor, Seoul National University

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Thomas Schick
1998-2000
Jointly advised with John Roe
Currently Professor at Universität Göttingen

PhD Thesis Committees (Since 2000)

Kurt Vinhage (Mathematics, Penn State)
Nick Early (Mathematics, Penn State)
Suddhasattwa Brahma (Physics, Penn State)
David Simpson (Physics, Penn State)
Aleksy Zelenberg (Mathematics, Penn State)
Karan Govril (Physics, Penn State)
Umut Buyukcam (Physics, Penn State)
Qingjun Jin (Physics, Penn State)
Chong Ai (Mathematics, Penn State)
Olaf Tang Engelund, (PhD 2014, Physics, Penn State)
Casey Tomlin (PhD 2013, Physics, Penn State)
Wei Hong (PhD 2013, Mathematics, Penn State)
Xiang Xi (PhD 2013, Mathematics, Penn State)
Susan Feeley (PhD 2013, Mathematics Education, Penn State)
Paul Siegel (PhD 2012 Mathematics, Penn State)
Miguel Campiglia (PhD 2012, Physics, Penn State)
Michael Tseng (PhD 2012, Mathematics, Penn State)
Jan Willem de Jong (Phd 2011, Mathematics, Utrecht)
David Sloan (PhD 2010, Physics, Penn State)
Michael Whittaker (PhD 2010, Mathematics, University of Victoria)
Farzad Fathi Zadeh (PhD 2010, Mathematics, University of Western Ontario)
Edward Wilson-Ewing (PhD 2010, Physics, Penn State)
Steve Hair (PhD 2010, Mathematics, Penn State)
Zhenqi Wang (PhD 2010, Mathematics, Penn State)
Victor Manuel Taveras (PhD 2010, Physics, Penn State)
Shaun Wood (PhD 2009, Physics, Penn State)
Victor Manuel Taveras (PhD 2009, Physics, Penn State)
Rufus Willet (PhD 2009 Mathematics, Penn State)
Viet-Trung Luu (PhD 2005, Mathematics, Penn State)
Shantanu Dave (PhD 2005, Mathematics, Penn State)
Hyun Jeong Kim (PhD 2005, Mathematics, Penn State)

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Jeff Raven (PhD 2004, Mathematics, Penn State)
Ben Chacon (PhD 2004, Mathematics, Penn State)
Bahram Rangipour (PhD 2003, Mathematics, University of Western Ontario)
Jacek Wisniewski (PhD 2002, Physics, Penn State)
Nick Wright (PhD 2002, Mathematics, Penn State)
Marco Zagermann (PhD 2000, Physics, Penn State)
Michel Matthey (PhD 2000, Mathematics, Université de Neuchatel)

Service to the Profession

- 2013-15 AMS Committee on Committees

- 2012 Organizing Committee, Isaac Newton Institute/Wales Institute of Mathematical and Computational Sciences Meeting on Noncommutative Geometry, Cardiff University

- 2011- Organizing Committee, PSU-Cornell Biannual Symplectic Seminar

- 2010- Editorial board, Comptes Rendus Acad. Sci. Canada

- 2008-10 Sectional Panel, International Congress of Mathematicians (Panel on Functional Analysis and Applications)

- 2007- Editorial Committee, Journal of Topology and Analysis

- 2007-13 Editorial Committee, Analysis & PDE

- 2006- Editorial Committee, Journal of Noncommutative Geometry

- 2005 External Review Committee, Department of Mathematics, IUPUI

- 2005 Organizing Committee, Workshop on K-theory and the Geometry of Groups, University of Hawaii, Manoa

- 2005 Advisory Committee, Fields Institute Summer School in Operator Algebras

- 2005 Coorganizer, Fields Institute Mini-conference on Noncommutative Geometry, the Local Index Formula and Hopf Algebras

- 2004-10 AMS University Lecture Series Editorial Committee

- 2003- Scientific Advisory Committee, East Coast Operator Algebra Symposia

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- 2001 Coorganizer, Penn State-NSF workshop on Nonpositive Curvature and Analysis
- 2001 Program Committee, Mathematical Sciences Research Institute
Conference on Noncommutative Geometry
- 2000 Organizing Committee, American Mathematical Society/Scandinavian
Mathematical Society Special Session on C^* -algebras and K -theory
- 2000 Organizing Committee, American Mathematical Society Joint Summer Research
Conference/Clay Mathematics Institute Instructional Symposium on Noncommutative
geometry
- 1999 Organizer, NSF-funded Penn State Workshop on
Uniformly bounded representations and K -theory
- 1998 Organizing Committee, American Mathematical Society Special Session on
Applications of C^* -algebras to geometry and topology
- 1996 Organizing Committee, Perspectives in K -Homology, NSF-supported
conference in honor of P. Baum
- 1995 Organizing Committee, Canadian Operator Symposium
- 1995–00 Associate Editor, Canadian Mathematical Society Journals
- 1994 Organizer, Fields Institute Workshop on The Baum-Connes Conjectures
- 1993-95 Program Committee, Fields Institute Special Year on Operator Algebras
- 1990 Organizer, Penn State Workshop on Operator Algebras and Index Theory
- 1988 Organizing Committee, 1988 US–USSR Symposium on Mathematics and
Mathematical Physics University of Pennsylvania

Referee for multiple journals.

Frequent proposal reviewer and panelist for the National Science Foundation and several other national and private foundations.

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Service to the University

Department Head, 2003-2006.

Other past department-level duties: VIGRE Committee, Computer Committee, Space Committee, Operator Algebras Subject Area Committee, Graduate Qualifying Examination Committees, Freshman advising, Course coordination, Student Awards Committee, Graduate Qualifying Examination Committees (analysis and geometry/topology), Shapiro Fund Committee, Policy Committee, Promotion and Tenure Committee, Personnel Committee, Graduate Committee, Associate Head of the Department.

Past college-level duties: College Faculty Scholar Medal Selection Committee, College Promotion and Tenure Committee, College Sabbatical Review Committee, Chemerda Lecture Committee, Headship Search Committees.