CURRICULUM VITAE

Sergii Bezuglyi

Lecturer, Department of Mathematics
University of Iowa, Iowa City, 52242
https://math.uiowa.edu/people/sergii-bezuglyi
e-mail: sergii-bezuglyi@uiowa.edu   bezuglyi@gmail.com

Education and Degrees:

2007	Doctor of Sciences in Mathematics, D.Sc., National Academy of Sciences of Ukraine Thesis: "Dynamical systems on measurable, Borel, and Cantor spaces".
1982	Ph.D. in Mathematics, Kharkiv National University, Thesis: "Full groups of automorphisms of a measure space and their normalizers", adviser: Prof. V.A. Marchenko.
1976	Master Degree in Mathematics (with Highest Distinction), Kharkiv National University; Thesis: "Topological properties of full groups", adviser: Prof. V.Ya. Golodets.

Professional Experience:

2016 - present	Lecturer, University of Iowa, Iowa City, USA
1976 - 2016	Department of Mathematics, Institute for Low Temperature Physics (ILT NANU), Academy of Sciences of Ukraine, Kharkiv: Leading Research Fellow (2009 - 2016) Senior Research Fellow (1989 - 2009), Research Fellow (1985 - 1989), Junior Research Fellow (1982 - 1985), Graduate Student and Engineer (1976 - 1982).

Temporary Positions

Aug 2013 - May 2016	Visiting Professor, University of Iowa, Iowa City, USA
Sep 2011 - Dec 2011	Visiting Professor, University of Ottawa, Canada
Dec 2008 - Jun 2009	Visiting Professor, University of Oregon, Eugene, USA
Sep 2008 - Dec 2008	Visiting Professor, University of Washington, Seattle, USA
Sep 2007 - Dec 2007	Visiting Professor, University of Washington, Seattle, USA
Dec 2006 - March 2007	Visiting Professor, University of Washington, Seattle, USA
Nov 2001 - March 2003	Visiting Professor, University of New South Wales, Australia
Aug 2000 - May 2001	Visiting Professor, Indiana University Purdue University Indianapolis, USA
Sep 1999 - Dec 1999	Visiting Professor, Ohio State University, USA
Jan 1999 - Jun 1999	Visiting Associate Professor, Ohio State University, USA

1994 - 1997, 2005	Part-time Professor, Kharkiv National University, Ukraine
1982 - 1990	Part-time Associate Professor, Kharkiv Railway Engineering Institute, Ukraine

Awards: State Prize of Ukraine in Science and Technology, 2010.

International and National Grants:

International Science Foundation (Soros Fund) SFFI 1.4/12, 1994 (team member)
Grant of the European Union INTAS 1995-96 (team member)
Grant of the European Union INTAS 97-1843, 1998-2000 (team leader)
Grant of Ukrainian Scientific Foundation 1996, 1998 (team member)
NATO Linkage Grant 1999-2000 (team member)
CRDF Cooperative Grant-6316, 1999-2000 (team member)
CRDF grant UM1-2546-KH-03, 2003-2005 (team member)
State Prize of Ukraine in Science and Technology, 2010
First-prize winner of the research papers competition, ILT NANU, 1984, 2009

Professional Activities and Service:

Member of Topics Board: "Symmetry"
Member of Editorial Board: "The Austin Mathematics"
External expert of Polish Academy of Sciences
Member: American Mathematical Society, Kharkiv Mathematical Society

Co-organizer: Conference on Ergodic Theory and Dynamical Systems, August 2000, Crimea, Ukraine.
Co-organizer: US-Ukrainian workshop on Dynamical Systems, August 2000.
Refereeing: Advances in Mathematics; Israel Journal of Mathematics; Ergodic Theory and Dynamical Systems; Nonlinearity; Colloquium Mathematics; Contemporary Mathematics; Muenster Journal of Mathematics; Canadian Journal of Mathematics; Annals of Mathematics; Ukrainian Mathematical Journal; Mathematical Physics, Analysis, and Geometry; New York Journal of Mathematics; Discrete and Continuous Dynamical Systems; Acta Applicanda Mathematicae.

Research Directions and Fields of Publications:

Ergodic theory: Classification of measure preserving and non-singular actions of countable groups on a measure space; measurable cocycles of automorphism groups; orbit equivalence of countable automorphism groups; invariant measures for endomorphisms of a measure space.
Topological dynamics: Aperiodic and minimal homeomorphisms of a Cantor set, their invariant measures and orbit structure; Bratteli diagrams associated to homeomorphisms of a Cantor set; symbolic dynamics, substitution dynamical systems on finite and infinite alphabets; ergodic theory on a Cantor set.
Borel dynamics: Countable Borel equivalence relations; hyperfiniteness and orbit equivalence of countable groups of Borel automorphisms; endomorphisms of a standard Borel space; cocycles over hyperfinite countable Borel equivalence relation.

Bratteli diagrams Non-simple Bratteli diagrams, orderings, and Vershik maps; generalized Bratteli diagrams and Borel dynamics; Peron-Frobenius theory for infinite matrices; measurable Bratteli diagrams.

Measure theory on Cantor sets: Finite and infinite measures on the path space of a Bratteli diagram, Markov measures; classification of measures on a Cantor set up to a homeomorphism.

Dimension groups: Finite and infinite traces on dimension groups and their properties.

Topological groups: Topologies on groups of transformations of an underlying space.

Electrical networks: Random walks and harmonic analysis on weighted graphs represented by Bratteli diagrams.

Operator algebras: Mixing properties of automorphisms of operator algebras; entropy of non-commutative dynamical systems; crossed product C^*-algebras constructed by groups of homeomorphisms of a Cantor set; K-theory for crossed products C^*-algebras; representations of the Cuntz-Krieger algebras.

Functional analysis: Transfer operators acting on functional spaces; invariant measures for transfer operators and their dynamical properties; Markov and Laplace operators; measurable graph-Laplacians and symmetric measures.

Long-Term Visits:

April - August, 1991	Heidelberg University, Germany
February, 1993	Orleans University, France
October, 1993	Warwick University, United Kingdom
March - June, 1994	Erwin Schroedinger Institute in Vienna, Austria
April, 1997	Torun University, Poland
April, 1998	Ajou University and Korean Advanced Institute of Science and Technology, Korea
February - June, 2000	University of New South Wales, Australia
April - May, 2003	California Institute of Technology, USA
October - November, 2010	Fields Institute, Toronto, Canada
April - May, 2011	Torun University, Poland
June, 2013	Torun University, Poland
July - August, 2021	AGH University, Poland
June - July, 2023	Torun University, Poland

Short-Term Visits:

Leipzig University, Germany: 1990, 1992, 1994
Orleans University, France: 1993, 2005
Delft University, the Netherlands: 1994, 1997, 2004
Torun University, Poland: 1996 - 1999, 2001, 2002, 2004 - 2006, 2008 - 2010, 2018, 2021
Erwin Schroedinger Institute, Vienna, Austria: 1997
Norwegian University of Science and Technology, Trondheim, Norway: 1998
Brest University, France: 1998

Ottawa University, Canada: 1999, 2004, 2005, 2010, 2015
Ohio State University, Columbus, USA: 2000, 2002, 2004, 2005, 2010, 2015
Wesleyan University, USA: 2004
Marseilles University (Luminy), France: 2005
California Institute of Technology, USA: 2005, 2007
University of California Los Angeles, USA: 2005
University of Washington, Seattle, USA: 2010, 2012
University of Warmia and Mazury, Olsztyn, Poland: 2008, 2009
Northwestern University, Evanstone, USA: 2010
Texas A&M University, College Station, USA: 2007, 2010
McGill Univeristy, Montreal, Canada: 2010, 2011
University of Illinois at Chicago, USA: 2012
Montana State University, Bozeman, USA, 2012
University of Wyoming, Laramie, USA, 2013, 2018
University of Illinois at Urbana-Champaign, USA, 2013
AGH University of Science and Technology, Krakow, Poland, 2013
North Dakota State University, Fargo, USA, 2016
Wyoming University, Laramie, USA. 2018
Institute of Mathematics PAN, Warsaw, Poland, 2023

Selected Conferences:

Conference on Operator Algebras, Kraiova, Romania, 1989
Conference on Symbolic Dynamics, New Haven, U.S.A., 1991
Conference on $\mathbb{Z}^n$-actions, Coventry, England, 1993
International Congress of Mathematicians, Zurich, Switzerland, 1994
Conference on Ergodic Theory, Warsaw, Poland, 1995
Conference on Methods of Mathematical Physics, Rakhiv, Ukraine, 1995
Conference on Ergodic Theory and Symbolic Dynamics, Churanov, Czech Republic, 1996
Conference on Descriptive Set Theory and Ergodic Theory, Marseilles, France, 1996
Symposium on Probability Theory and Ergodic Theory, Delft, The Netherlands, 1997
Conference on Dynamical Systems: Sharkovsy's Seminar, Kiev, Ukraine, 1998
Conference on Dynamical Systems: from Crystal to Chaos, Marseilles-Luminy, 1998
International Congress of Mathematicians, Berlin, Germany, 1998
Conference on Dynamical Systems and Ergodic Theory, Penn State, USA, 1999
Conference on Ergodic Theory and Dynamical Systems, Katsiveli, Ukraine, 2000
Conference on Ergodic Theory and Dynamical Systems, Villetaneuse, France, 2001
Semiannual conference on Dynamical Systems, University of Maryland, USA, 2002, 2004, 2007, 2010
Conference on Algebraic and Topological Dynamics, Max-Plank Institute, Bonn, Germany, 2004
Workshop on Ergodic Theory and Dynamical Systems, Szklarska Poreba, Poland, 2006
Conference on Operator Algebra, Flagstaff, Arizona, USA, 2008
Dynamical Systems Meeting, Lower Silesia, Trzebieszowice, Poland, 2010
Pingree Park Dynamics Workshop, Pingree Park, Colorado, USA, 2010

Workshop on the Concentration Phenomenon, Transformation Groups and Ramsey Theory Fields Institute, Toronto, Canada, 2010

Conference on Groups, Geometry and Random Structures, Texas A&M, College Station, USA, 2012

Conference on Functional Analysis (INFAS), University of Iowa, Des Moines, USA, 2013, 2014, 2017, 2020

Joint AMS and MMA meeting, San Antonio, Texas, USA, 2015

Regional AMS conference, Huntsville, Alabama, USA 2015

Sectional AMS meeting, Fargo, North Dakota, USA 2016

NSF CBMS Conference, Iowa State University, Ames, Iowa, USA, 2018

AMS Spring Sectional Meeting, Nashville, Tennessee, USA, 2018

Conference on Ergodic Theory and Dynamical Systems, Bendlevo, Poland, 2018

Workshop on Dynamical Systems, Florianopolis, Brazil, 2019

International workshop on Operator Theory and its Applications (online), 2021

Visegrad Conference on Dynamical Systems, Lodz, Poland, 2023

Dynamics of (Semi-)Group Actions, Lodz, Poland, 2023

Teaching (University of Iowa):

Spring 2023	MATH:1350	Quantitative Reasoning for Business online	
Spring 2022	MATH:1350	Quantitative Reasoning for Business online	
Fall 2021-23	MATH:1350	Quantitative Reasoning for Business online	
Spring 2021	MATH:3770	Fundamental Properties of Spaces and Functions	(40 students)
	MATH:3550	Engineering Math V: Vector Calculus	(64 students)
Fall 2020	MATH:1460	Calculus for the Biological Sciences	(337 students)
Spring 2020	MATH:1340	Mathematics for Business	(82 studenst)
	MATH:1560	Engineering Math I: Single Variable Calculus	(111 students)
	MATH:3770	Fundamental Properties of Spaces and Functions	(14 students)
Fall 2019	MATH:1380	Calculus and Matrix Algebra for Business	(472 students)
	MATH:2560	Engineering Math IV: Differential Equations	(37 students)
Spring 2019	MATH:2550	Engineering Math III: Matrix Algebra	(174 students)
Fall 2018	MATH:2560	Engineering Math IV: Differential Equations	(76 students)
	MATH:2770	Introduction to Linear Algebra	(14 honors students)
Spring 2018	MATH:3770	Fundamental Properties of Spaces and Functions	(29 students)
	MATH:2560	Engineering Math IV: Differential Equations	(70 students)
Fall 2017	MATH:7250	Topics in Analysis	(7 students)
	MATH:3550	Engineering Math V: Vector Calculus	(64 students)
Summer 2017	MATH:2770	Introduction to Linear Algebra	(18 students)
	MATH:1860	Calculus II	(26 students)
Spring 2017	MATH:2770	Introduction to Linear Algebra	(36 students)
	MATH:1550	Engineering Math I: Single Variable Calculus	(110 students)
Fall 2016	MATH:6200	Analysis I	(5 students)
	MATH:2770	Introduction to Linear Algebra	(13 honors students)
	MATH:3550	Engineering Math V: Vector Calculus	(34 students)

Spring 2016	MATH:2850 Calculus III	(18 honors students)
Fall 2015	MATH:2560 Engineering Math IV: Differential Equations	(90 students)
Summer 2015	MATH:1440 Mathematics for the Biological Sciences	(8 students)
Spring 2015	MATH:3770 Fundamental Properties of Spaces and Functions	(32 students)
Fall 2014	MATH:1860 Calculus II	(44 students)
	MATH:2770 Introduction to Linear Algebra	(64 students)
Spring 2014	MATH:3770 Fundamental Properties of Spaces and Functions	(22 students)
Fall 2013	MATH:2560 Engineering Math IV: Differential Equations	(70 students)

Teaching experience in other universities

2008 - 2009   *University of Oregon*:
Introduction to Differential Equations (Math 256)
Elementary Linear Algebra (Math 341)

2006 - 2008   *University of Washington:*
Advanced Multivariable Calculus (Math 324)
Introduction to Differential Equations (Math 307)
Matrix Algebra with Applications (Math 308)

2005   *Kharkiv National University*:
Borel and Cantor dynamics (*course for graduate students*)

2002 - 2003   *University of New South Wales:*
Countable Borel equivalence relations (*course for graduate students*)

2000 - 2001   *Indiana University Purdue University Indianapolis:*
Calculus for Technology I (Math 221)
Algebra and Trigonometry II (Math 154)

1999   *Ohio State University:*
Introductory Linear Algebra (Math 568)

1994 - 1997   *Kharkiv National University:*
Ergodic Theory,
Operator Algebras in Mathematical Physics
Topological Dynamics (*all courses for graduate students*)

1982 - 1990   *Kharkiv Railway Engineering Institute:*
Mathematical Analysis (Calculus I, II, III)
Analytical Geometry and Linear Algebra
Probability Theory and Statistics,
Discrete Mathematics

Innovation in Teaching

1. I created and taught a course for graduate students in the theory of dynamical systems, MATH:7250 "Orbit equivalence in measurable, Cantor, and Borel dynamics". The course is an introduction to very active areas of research in modern theory of dynamical systems. It was published online.

2. In Spring 2021, I use a new textbook in the course MATH:3550 "Engineering Math V: Vector Calculus". In this course I use a new syllabus and new set of homework assignments.

3. I taught several courses for Honors students. These courses were based on advanced textbooks on the subject.

Service, University of Iowa:

1. I was a member of a Hiring committee whose goal was to hire an instructional-track faculty in the Department of Mathematics, 2019
2. I worked as a member of a epartmental committee for syllabi revising of all courses for undergraduate students, 2018-19.
3. I am currently a member of the Library Committee (2020 - present).
4. I am currently a member of the CLAS Faculty Assembly.
5. Course coordinator, MATH:2560, 2018, and MATH:2550, 2019.
6. I advise every year up to ten undergraduate students helping them with their program plan, choice of courses
7. I am an advisor of a graduate student, Shrey Sanadhya, who successfully finishes his work on the PhD thesis.

Students:

S. Sanadhya (PhD, 2021)
O.M. Karpel (PhD, 2012)
K.S. Medynets (PhD, 2008)
O.M. Karpel (MS, 2008)
K.S. Slutsky (MS, 2007)
K.S. Medynets (MS, 2003)
S. Shugarev (MS, 1995)
I.V. Voevoda (MS, 1990)