

CURRICULUM VITA

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Personal Information

Date of birth: March 19, 1973

Place of birth: Oradea, Romania

Citizen of Romania

Permanent Resident of the United States

Area of specialization

Algebraic geometry with connection to other fields especially physics and number theory.

Positions

From 2007: University of Texas at Austin, Associate Professor.

September 2004-2006: University of Texas at Austin, Assistant Professor (tenure-track).

September 2003-September 2004: Princeton University, Assistant Professor.

September 2000-August 2003: University of Michigan, Ann Arbor, Assistant Professor (postdoctoral position).

Education

- 1996-2000: Universiteit van Amsterdam.
Ph.D., June 2000. Research supported by N.W.O. (The Dutch Organization for Scientific Research).
Thesis: *The birational geometry of the moduli space of curves*
Adviser: Gerard van der Geer
- 1995-1996: Mathematical Research Institute in the Netherlands (Utrecht Univ).
Master of Science, specialization: algebraic K-theory, topology and algebraic number theory.
- 1991-1995: "Babes-Bolyai" University, Cluj-Napoca, Romania.
Bachelor of Science in Mathematics, specialization: geometry and topology;
graduated with average grade 10 out of 10.

Other professional experience

Harvard University: visitor, September-December 1998, October-December 1999.
 Isaac Newton Institute, Cambridge UK: invited visitor, June-July 2002.
 Korean Institute for Advanced Studies, Seoul: invited visitor, March 2005.
 Mittag-Leffler Institute Stockholm: invited visitor, April-June 2007.
 Instituto Nacional de Matematica Pura e Aplicada, Rio de Janeiro: invited visitor
 January-February 2007.

Awards

- *Alfred P. Sloan* Research Fellowship (2005-2007).
- National Science Foundation, research grant DMS-0500747, (2005-2008).
- National Science Foundation, research grant DMS-0140520, (2002-2005).
- Texas Summer Research Assignment 2006, Project: Geometry of moduli spaces.
- Rackham Faculty Fellowship, University of Michigan, June-August 2001.
- Special prize of the *Romanian Mathematical Society* at the Romanian Mathematics Olympiad, 1991.
- Winner of the "Traian Lalescu" Mathematics Contest for Romanian undergraduate students in 1992 and 1993.

Publications

- *The geometry of the moduli space of curves of genus 23*, *Mathematische Annalen* 318 (2000), no.1, 43-65.
- *Brill-Noether loci and the gonality stratification of \mathcal{M}_g* , *J. reine angewandte Mathematik* 539 (2001), 185-200.
- *Divisors on $\mathcal{M}_{g,g+1}$ and the minimal resolution conjecture for points on canonical curves*, (with M. Mustața and M. Popa), *Ann. Sci. École Normale Supérieure* 17 (2003), 553-581.
- *The Mori cones of moduli spaces of pointed curves of small genus*, (with A. Gibney), *Transactions American Math. Soc.* 355 (2003), no. 3, 1183-1199.
- *Effective divisors on $\overline{\mathcal{M}}_g$, curves on K3 surfaces and the Slope Conjecture*, (with M. Popa), *Journal of Algebraic Geometry* 14 (2005), 241-267.
- *Gaussian maps, Gieseker-Petri loci and large theta-characteristics*, *J. reine angewandte Mathematik* 581 (2005), 151-174.
- *Regular components of moduli spaces of stable maps*, *Proceedings American Math. Soc.* 131 (2003), no. 7, 2027-2036.
- *Syzygies of curves and the effective cone of $\overline{\mathcal{M}}_g$* , *Duke Math. Journal* 135 (2006), no. 1.
- *The global geometry of the moduli space of curves*, *Proceedings of the Summer Research Institute on Algebraic Geometry, Seattle* (2006).
- *A multiplicity theorem in equivariant setting*, *Mathematica* 38 (1996), 221-226.

- *On the completeness of Riemannian manifolds*, Studia Univ. Babeş-Bolyai Math., 37 (1992), no.4, 95-101.
- *Lusternik-Schnirelmann theory on closed subsets of C^1 -manifolds*, Studia Univ. Babeş-Bolyai Math., 38 (1993), no.2, 75-89.
- *The birational geometry of the moduli space of curves*, Ph.D. Thesis (book, 85 pages), Universiteit van Amsterdam (2000).
- *Effective divisors on $\overline{\mathcal{M}}_g$ and a counterexample to the Slope Conjecture*, (with M. Popa), math.AG/0209171 preprint.
- *$\mathcal{M}_{2,2}$ is of general type*, submitted preprint.
- *Koszul divisors on moduli spaces of curves*, submitted preprint.
- *Higher ramification and varieties of secant divisors on the generic curve*, submitted preprint.
- *The Kodaira dimension of the moduli space of Prym varieties*, preprint.
- *Notes on limit linear series for vector bundles*, (with M. Popa), unpublished preprint (2002).
- *The effective cone of the moduli spaces of curves and the Slope Conjecture*, Max Planck Institute for Mathematics preprint based on Arbeitstagung talk (2003).

Professional activities

- 2 Current Ph. D. Students (Brian Katz, Paul Larsen).
- Ph. D. Committees: Araujo (algebraic geometry-Princeton), Parker (algebraic geometry), Luxton (algebraic geometry), Meth (algebra), Zhenhua Qu (algebraic geometry), Jensen (algebraic geometry).
- I am one of the co-organizers of the Warwick Algebraic Geometry Symposium (2007-2008).
- I am one of the editors of the journal *Mathematica (Cluj)*.
- *Speaker and mentor* "Moduli spaces and arcs in algebraic geometry", Cologne, August 2006.
- *Mentor* "Warm-Up Workshop for AMS Summer Institute in Algebraic Geometry", Seattle, July 2005.
- *Mentor* "Algebraic Geometry: Presentations by Young Researchers" Snowbird, Utah, July 2004.
- I was the organizer of the Princeton Algebraic Geometry Seminar during 2003-2004.
- I am a coorganizer of the Texas Algebraic Geometry Seminar.
- I organized a conference on "Curves and their moduli" at the University of Michigan, Ann Arbor in March 2002.
- I have refereed over 60 research papers for a variety of journals including *Inventiones Math.*, *Journal of Amer. Math. Soc.*, *Compositio Math.*, *Duke*

Math. Journal, Transactions Amer. Math. Soc., J. reine angew. Mathematik, American Journal of Math., J. of Algebraic Geometry, J. of Topology, Comm. Math. Helvetici, Proceedings London Math. Soc., IMRN, Mathematische Zeitschrift, Documenta Math.

- On behalf of the AMS I have reviewed proposals submitted to the National Security Agency Mathematical Sciences Program.
- I am a reviewer for *Mathematical Reviews*.

Selected talks

- “Modular forms and moduli spaces” St. Petersburg, Russia, July 2007.
- “Linear series and subschemes” Ghent, Belgium, April 2007.
- “Moduli spaces” Mittag-Leffler Institute Djursholm, May 2007.
- Winterschool on Algebraic Curves, National Institute for Mathematical Sciences, Daejeon (Korea)-series of lectures, January 2007.
- Workshop on Algebraic Geometry and its Applications, Sogang University, Seoul, January 2007.
- Workshop on Vector Bundles, Clay Mathematics Institute, Cambridge, Massachusetts, October 2006.
- “Meetkunde in de Herfsttij” (Geometry in autumn) Workshop, Leiden, The Netherlands, September 2006.
- “Moduli spaces and combinatorics” Banff, Canada, July 2006.
- Cambridge-Oxford-Warwick Seminar, Oxford, June 2006.
- Invited Speaker, “Topics de geometria algebraica y temas afines” Zacatecas, Mexico, June 2006.
- “Classical Algebraic Geometry” Meeting, Mathematisches Forschungsinstitut Oberwolfach, June 2006.
- Algebraic Geometry Seminar, University of Chicago, January 2006.
- Michigan-Ohio State Algebraic Geometry Meeting, Columbus, April 2006.
- “Recent Trends in Higher Dimensional Algebraic Geometry”, Banff, Canada, April 2006.
- Invited Speaker at the AMS Summer Institute in Algebraic Geometry, Seattle, July 2005.
- Invited Speaker at the AMS/Taiwan Joint International Meeting, Taichung, Taiwan, December 2005.
- Berkeley Algebraic Geometry Seminar, December 2005.
- “Higher Dimensional Algebraic Varieties”, KIAS Workshop, Seoul, March 2005.
- “Western Algebraic Geometry Seminar”, Seattle, March 2005.
- “Texas Algebraic Geometry” Conference, Houston, May 2005.
- “Cohomology of the Moduli Space of Curves” Conference, American Institute of Mathematics, March 2005.

- “Compact Moduli Spaces” Conference, American Institute of Mathematics, December 2004.
- “Classical Algebraic Geometry” Meeting, Mathematisches Forschungsinstitut Oberwolfach, July 2004.
- European Conference on Gromow-Witten invariants, Trieste, June 2004.
- Third Ibero-American Congress of Geometry, Salamanca, June 2004.
- Harvard-MIT Algebraic Geometry Seminar, March 2004.
- “Higher Dimensional Algebraic Geometry” Conference, Taipei, March 2004.
- Western Algebraic Seminar, Vancouver, September 2003.
- Mathematische Arbeitstagung, Bonn 2003.
- Conference “Geometry of Moduli Spaces”, Lille, June 2003.
- Euroconference “Vector Bundles on Algebraic Curves”, Porto, July 2003.
- Princeton Algebraic Geometry Seminar, April 2003.
- Conference on K-theory and Algebraic Cycles, Miami University, Ohio, April 2003.
- Euroconference “Vector Bundles on Algebraic Curves”, Luminy, Marseille, July 2002.
- Euroconference “Higher Dimensional Complex Geometry”, Newton Institute, Cambridge, June 2002.
- “Classical Algebraic Geometry” Meeting, Mathematisches Forschungsinstitut Oberwolfach, May 2002.
- Newton Institute, Cambridge, Program on Higher Dimensional Complex Geometry, June 2002.
- Harvard-MIT Algebraic Geometry Seminar, February 2002.
- Invited Special Session Talk at the AMS Sectional Meeting Ohio State University, Columbus, September 2001.
- European Algebraic Geometry Conference 2001, Norfjordeid, Norway, June 2001.
- Europroj Annual Conference 1999, Kibutz Ma’agan, Israel, September 1999.
- Bayreuth Conference “Free Resolutions and Linear Systems”, July 1999.
- Harvard-MIT Algebraic Geometry Seminar, November 1998.
- European Summer School “Spaces with Singularities and Monopoles”, Cluj-Napoca, Romania, July 1998.
- Colloquium talks:
 Yale University, University of British Columbia, Indiana University, University of California-Irvine, Penn State University, University of Illinois at Urbana-Champaign, Rice University, University of Georgia, University of Zürich, Humboldt University of Berlin, University of Warwick, University of Linnköping, New Mexico State University, Trinity University.
- Seminar talks:

University of Chicago, University of Pennsylvania, Texas A&M, Stanford University, University of Georgia, University of Texas at Austin, University of Utrecht, Max Planck Institute of Mathematics Bonn, University of British Columbia, University of Illinois at Urbana-Champaign, Rice University, Yale University, University of Massachusetts at Amherst, Columbia University, Johns Hopkins University.

Teaching

- **University of Amsterdam:** Analysis (Spring 1997), Algebraic Topology (Spring 1998 and Spring 1999), Group Theory (Spring 2000).
- **University of Michigan:** Multivariable Calculus (Fall 2000, Fall 2001, Spring 2002), Linear Algebra (Spring 2001), Moduli of Abelian Varieties (graduate course- Spring 2002).
- **Princeton University:** Analysis (Fall 2003).
- **University of Texas:** Algebraic Geometry (graduate course- Spring 2005), Multivariable Calculus (Fall 2005), Abelian Varieties (graduate course - Spring 2006), Classical Algebraic Geometry (graduate course- Fall 2006).