CURRICULUM VITAE

Rareş Răsdeaconu

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CONTACT INFORMATION

Vanderbilt University
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EDUCATION

PhD:	August 2005, Stony Brook University
Thesis:	*On the topology and differential geometry of Kähler threefolds*
Thesis Advisor:	C. LeBrun
BSc:	June 1997, University of Bucharest, Romania
Thesis:	*The cohomology of holomorphic line bundles on complex tori*
Thesis Advisor:	V. Brînzănescu

EMPLOYMENT

Research Associate Professor of Mathematics, Vanderbilt University	08/16/2018 - present
Assistant Professor (NTT), Vanderbilt University	08/16/2010-08/15/2018
Postdoctoral fellow, Hebrew University, Jerusalem	10/01/2008-08/14/2010
Scientific mentor: J. Solomon	
Postdoctoral fellow, IRMA, Université Louis Pasteur, Strasbourg	09/01/2006-08/31/2008
Scientific mentors: V. Kharlamov and J. Y. Welschinger	

Visiting positions

IHP (Paris), "Research in Paris" Program	07/03/2023-07/14/2023
IRMA (Strasbourg)	06/19/2022-06/26/2022
IRMA (Strasbourg)	06/30/2019-07/07/2019
MFO (Oberwolfach), "Research in Pairs" Program	06/16/2019-06/29/2019
IRMA (Strasbourg)	08/07/2017-08/15/2017
IRMA (Strasbourg)	06/04/2015-06/18/2015
EPFL (Lausanne)	06/01/2014-06/06/2014
Institute des Hautes Études Scientifique (Bures-sur-Yvette)	05/15/2014-05/31/2014
IRMA (Strasbourg)	07/01/2013-07/08/2013
Institute des Hautes Études Scientifique (Bures-sur-Yvette)	05/15/2013-07/01/2013
University of Michigan (Ann Arbor)	01/01/2006-04/30/2006
IMADA, Univ. of Southern Denmark (Odense)	09/01/2005-12/31/2005

HONORS AND AWARDS

- NTT Professional Travel Grant, Vanderbilt University	2023
- Course Development Summer Salary Grant, Vanderbilt University	2023
- NTT Professional Travel Grant, Vanderbilt University	2022

- Nominated for the Madison Sarratt Prize for Excellence in Teaching and	2022
the Ellen Gregg Ingalls Award for Excellence in Classroom Teaching	
- Shanks Workshop Award, Vanderbilt University	2021
- NSF DMS - 2002974, conference grant, PI	2020-2022
- Shanks Workshop Award, Vanderbilt University	2019-2020
- NSF DMS - 1804586, conference grant, co-PI	2018-2022
- Shanks Workshop Award, Vanderbilt University	2017-2018
- NSF DMS - 1711567, conference grant, PI	2017-2019
- Shanks Workshop Award, Vanderbilt University	2016-2017
- Simons Foundation Collaboration Grant, award number: #281266, PI	2013-2019
- Teaching Fellowship of the Learning Communities Program, SUNY at Stony Brook	1999
- Team Award in Math Quiz 2000, a research level interactive competition	
organized by the Centre de Recerca Matemàtica, Barcelona as part of the	
World Mathematics Year activities.	2000
- Departmental Fellowship Award, SUNY at Stony Brook	2004

RESEARCH

Research Interest

Primary: Differential Geometry, Algebraic Geometry
Secondary: Differential Topology, Symplectic Geometry

Publications

In mathematics it is customary that co-authors are listed in alphabetical order. All of my publications are published with author names listed in alphabetical order.

Articles in peer-reviewed journals

- I. Chiose, R. Răsdeaconu, *Remarks on astheno-Kähler manifolds, Bott-Chern and Aeppli cohomology groups.*
  Ann Glob Anal Geom 63, (2023) no.3, Paper No. 24, 23 pp.
  https://doi.org/10.1007/s10455-023-09903-2; arXiv:2210.14126 [math.DG].
  - all authors contributed equally.
- I. Chiose, R. Răsdeaconu, I. Şuvaina, *Balanced manifolds and SKT metrics*,
  Annali di Matematica Pura ed Applicata (4) 201 (2022), no. 5, 2505–2517;
  https://doi.org/10.1007/s10231-022-01207-9, arXiv:1608.08721[math.CV].
  - all authors contributed equally.
- H. J. Hein, R. Răsdeaconu, I. Şuvaina *On the classification of ALE Kähler manifolds*,
  International Mathematics Research Notices 2021, no. 14, 10957–10980;
  https://doi.org/10.1093/imrn/rnz376; arXiv:1610.05239 [math.DG].
  - all authors contributed equally.
- I. Chiose, R. Răsdeaconu, I. Şuvaina, *Balanced metrics on uniruled threefolds*,
  Communications in Analysis and Geometry, Vol. 27, No. 2 (2019), pp. 329–355;
  arXiv: 1408.4769 [mathDG].
  - all authors contributed equally.
- V. Kharlamov, R. Răsdeaconu, *Qualitative aspects of counting real rational curves on real K3 surfaces*,
  Geometry & Topology 21 (2017) 585–601;
  arXiv:1506.03050 [math.AG].
  - all authors contributed equally.
- R. Răsdeaconu, I. Şuvaina, *ALE Ricci-flat Kähler surfaces and weighted projective spaces*,
  Annals of Global Analysis and Geometry, 47 (2015), no. 2, 117–134;
  arXiv:1301.4727 [math.DG].
  - all authors contributed equally.

- V. Kharlamov, R. Răsdeaconu, *Counting real rational curves on K3 surfaces*,
    International Mathematics Research Notices 2015, no. 14, 5436–5455;
      https://doi.org/10.1093/imrn/rnu091; arXiv:1311.7621 [math.AG].
    - all authors contributed equally.
- M. Ishida , R. Răsdeaconu, I. Şuvaina, *On normalized Ricci flow and smooth structures on four-manifolds with $b^+ = 1$*,
    Archiv der Mathematik (Basel) 92 (2009), no. 4, 355 – 365;
      arXiv:0810.2465 [math.DG].
    - all authors contributed equally.
- R. Răsdeaconu, I. Şuvaina, *Smooth structures and Einstein metrics on $\mathbb{CP}^2 \# 5, 6, 7\overline{\mathbb{CP}^2}$*,
    Mathematical Proceedings of Cambridge Philosophical Society 147 (2009), no. 2;
      arXiv:0806.1424 [math.DG].
    - all authors contributed equally.
- R. Răsdeaconu, *On the Kodaira dimension of diffeomorphic Kähler threefolds*,
    Proceedings of the American Mathematical Society 134 (2006), no. 12;
      arXiv:math/0411139 [math.DG].

Unrefereed Conference Proceedings

- R. Răsdeaconu. J. Solomon, *Relative open Gromov-Witten invariants*,
    Oberwolfach Reports, "Real enumerative questions in complex and tropical geometry,"
    Editors: G. Mikhalkin, E. Shustin, J. Walcher, J.-Y. Welschinger, Volume 8, issue 2, 2011,
    - all authors contributed equally.
    The article is based on a conference talk delivered by R. Răsdeaconu

PhD Dissertation

- *On the topology and differential geometry of Kähler threefolds.*
    State University of New York at Stony Brook 2005, 100 pp. ISBN: 978-0542-35807-4.

Preprints

- V. Kharlamov, R. Răsdeaconu, *Unexpected loss of maximality: the case of Hilbert squares of real surfaces.*
    arXiv:2303.02796 [math.AG], submitted.
    - all authors contributed equally.
- V. Kharlamov, R. Răsdeaconu, *On the Smith-Thom deficiency of Hilbert squares.*
    arXiv:2310.19120 [math.AG], submitted.
    - all authors contributed equally.

Invited talks

- "On the Crossroad of Topology and Enumerative Geometry", Conference, Hebrew University, Jerusalem, Israel (postponed)	Fall	2022
- "Séminaire Géométrie et Applications," IRMA, Strasbourg, France	Summer	2022
- "On the Crossroad of Topology and Enumerative Geometry", Conference, Leonhard Euler International Mathematical Institute, Saint Petersburg, Russia cancelled	Summer	2022
- "Facets of Real Algebraic Geometry," Conference, Nantes, France	Summer	2021
- The Topology and Singularities Seminar, University of Wisconsin-Madison, Madison, USA, Zoom meeting	Spring	2021
- "Facets of Real Algebraic Geometry," Conference, CIRM, Luminy, France rescheduled due to Covid -19	Spring	2020
- "Singularities in the Midwest, VII," Workshop, University of Wisconsin-Madison, Madison, WI, USA cancelled due to Covid 19	Spring	2020

- AMS Sectional Meeting, *Special Session on Motivic Aspects of Topology and Geometry*, University of Virginia, Charlottesville, USA cancelled due to Covid 19	Spring	2020
- AMS Sectional Meeting, *Special Session on Geometry and Topology of Singularities*, University of Wisconsin-Madison, Madison, USA I was unable to attend the conference due to an emergency.	Fall	2019
- "Séminaire Géométrie et Applications," IRMA, Strasbourg, France	Summer	2019
- "Differential Geometry Seminar," University of California at Irvine, Irvine, USA	Spring	2018
- AMS Sectional Meeting, *Special Session on Recent Progress and New Directions in Homotopy Theory*, Vanderbilt University, Nashville, USA	Spring	2018
- "PDE Seminar," Vanderbilt University, Nashville, USA	Fall	2017
- "Séminaire Géométrie et Applications," IRMA, Strasbourg, France	Summer	2017
- "Geometric Analysis Seminar," CUNY, New York, USA	Fall	2016
- "Geometry Seminar", Vanderbilt University, Nashville, USA	Fall	2016
- "Topology and Group Theory Seminar," Vanderbilt University, Nashville, USA	Fall	2015
- "The VIIIth Congress of Romanian Mathematicians," Braşov, Romania	Summer	2015
- "Séminaire Géométrie et Applications," IRMA, Strasbourg, France	Summer	2015
- "Subfactors Seminar," Vanderbilt University, Nashville, USA	Spring	2015
- "Moduli spaces of real and complex varieties," Conference, Angers, France	Summer	2014
- "Geometry Seminar," Vanderbilt University, Nashville, USA	Fall	2014
- "Symplectix," Institut "Henri Poincaré," Paris, France	Spring	2014
- "Algebraic Geometry Seminar," University of Wisconsin-Madison, Madison, USA	Spring	2014
- "Topology and Group Theory Seminar," Vanderbilt University, Nashville, USA	Fall	2013
- "Séminaire Géométrie Algébrique," Université Lille 1, France	Spring	2013
- "Séminaire Géométrie et Applications," IRMA, Strasbourg, France	Spring	2013
- "Geometry Seminar," Vanderbilt University, Nashville, USA	Spring	2013
- "Geometry and Topology," Conference, Lehigh University, Bethlehem, USA	Spring	2012
- "Symplectic and Differential Geometry Seminar," Vanderbilt University, Nashville, USA	Spring	2012
- "M-Center Seminar," Kansas State University, Manhattan, USA	Fall	2011
- "The VIIth Congress of Romanian Mathematicians," Braşov, Romania	Summer	2011
- "Real enumerative questions in complex and tropical geometry," Workshop, Oberwolfach, Germany	Spring	2011
- "M-Center Seminar," Kansas State University, Manhattan, USA	Fall	2010
- Special lecture, Kansas State University, Manhattan, USA	Fall	2010
- "Topology and Group Theory Seminar," Vanderbilt University, Nashville, USA	Spring	2010
- "Seminar in Real & Complex Geometry," Tel Aviv University, Tel Aviv, Israel	Spring	2010
- "Tropical Structures in Geometry and Physics," Workshop, MSRI, Berkeley, USA	Fall	2009
- "Seminar in Real & Complex Geometry," Tel Aviv University, Tel Aviv, Israel	Fall	2008
- "Symplectic and Real Algebraic Geometry," Summer School, École Polytechnique, Paris, France	Spring	2008
- "Topology Seminar," LMU, Munich, Germany	Spring	2008
- "Séminaire Géométrie et Applications," IRMA, Strasbourg, France	Spring	2008
- "Tropical and symplectic aspects of real geometry," Workshop, EPFL Lausanne, Switzerland	Spring	2008
- "Algebraic Geometry Seminar," University of Zürich, Zürich, Switzerland	Spring	2008
-"Séminaire Géométrie et Applications," IRMA, Strasbourg, France	Fall	2006
- "Algebraic Geometry Seminar," University of Michigan, Ann Arbor, USA	Spring	2006
- "Differential Geometry and Global Analysis Seminar," Humboldt Institut für Matematik, Berlin, Germany	Fall	2005
- "Topology Seminar," Århus University, Århus, Denmark	Fall	2005
- "Math Colloquium," IMADA, Univ. of Southern Denmark, Odense, Denmark	Fall	2005

Invited Participant

- "Workshop on Differential Geometry and Global Analysis (online),"
  organized by CIRGET, CRM and Université de Montréal, Canada.   Spring   2021
- "Bridging the Gap between Kähler and non-Kähler Complex Geometry,"
  Workshop, BIRS, Banff, Canada,   Fall   2019
- "Real Structures on complex varieties: results and perspectives,"
  Conference, CIRM, Marseille, France.   Spring   2010
- "Algebraic Structures in the Theory of Holomorphic Curves," Workshop,
  MSRI, Berkeley, USA.   Fall   2009
- "Real and Tropical Algebraic Geometry," Conference,
  Bernoulli Center, Lausanne, Switzerland.   Spring   2008
- "Real, Tropical and Complex Enumerative Geometry," Workshop,
  CRM, Université de Montréal, Canada.   Spring   2007

Undergraduate research projects supervised

Independent study in Algebraic Geometry II at Vanderbilt University,   Spring   2022
  Student: Connor Lehmacher.
Independent study in Algebraic Geometry I at Vanderbilt University,   Spring   2021
  Student: Connor Lehmacher.
Research Project Adviser at Vanderbilt University   Summer   2020
  Students: Jeffrey Chang and Dominick Xu
    Project: *Maxwell's Conjecture*

Undergraduate Honors Thesis

Honors Thesis Adviser, Vanderbilt University
  - Student: Tim Zaklama   2019 - 2020
    Project: *Einstein Metrics on 4-Manifolds*,
    unfinished due to the Covid 19 outbreak

Honors Thesis Committee Member, Vanderbilt University
  - Students: Elijah Sheridan, Jeffrey Cheng   2022
  - Student: Shivam Mohite   2023

Graduate research projects supervised

Advanced independent study in Algebraic Geometry at Vanderbilt University,   Fall   2021
  - Student: Sam Rizzo
Independent study in Algebraic Geometry at Vanderbilt University,   Fall   2018
  - Student: Zack Tripp.

Member of the Graduate Qualifying Exam Committee

Mathematics Department, Vanderbilt University   Spring   2021
  - Student: Samuel A. Rizzo (advisor: Ioana Suvaina).

Postdocs mentored

Mitchell Faulk, Vanderbilt University, co-mentor (main mentor I. Şuvaina)   2019 - 2021

Organizer of Seminars

Co-organizer of the "Geometry and Topology Seminar", Vanderbilt University   2013 - present

   - host and administrator of the website of the Geometry Seminar
   - website: https://math.vanderbilt.edu/rasdear/public_html/seminar/index.html

Organizer and Co-organizer of Workshops and Conferences

- Co-organizer of the Shanks Workshop "Interactions in Complex Geometry",
   Vanderbilt University,   Dec 11-12, 2021
- Main organizer of the Shanks Workshop "Real Enumerative Geometry and Beyond",
   Vanderbilt University,   Mar 6 - 7, 2020
- Co-organizer of AMS Special Session on Advances in Hermitian Geometry,
   Vanderbilt University,   Apr 14-15, 2018
- Co-organizer of the Shanks Workshop "Complex Differential Geometry",
   Vanderbilt University,   Mar 2 - 3, 2018
- Main organizer of the Shanks Workshop "The Topology of Real Algebraic Varieties:
   Deterministic and Random Aspects", Vanderbilt University,   Mar 10-11, 2017
- Co-organizer of the conference "Recent Advances in Kähler Geometry"
   in conjunction to the 30th annual Shanks Lecture, Vanderbilt University   May 18-22, 2015
- Co-organizer of the Shanks Workshop "Kähler Metrics on the Edge",
   Vanderbilt University,   Mar 22-23, 2013
- Co-organizer of the Shanks Workshop "Kähler and Differential Geometry",
   Vanderbilt University,   Sep 25-26, 2010.

Refereeing

- Served as anonymous referee for several journals
- Reviewer for MathSciNet

Professional Memberships

- American Mathematical Society   2018 - present
- Member of the Mathematics Institute of the Romanian Academy   2006 - present

Outreach Activities

- Reader at Waverly-Belmont Elementary School, Nashville, TN   Fall 2019
- Invited lecturer at the Math. Circle, Vanderbilt University   Fall 2015, 2016
   a faculty organized two hours weekly advanced problem session for
   highly motivated high-school students from Nashville area