Ettore Aldrovandi

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Florida State University

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Homepage: http://www.math.fsu.edu/~ealdrov

Citizenship: US/Italian

Academic positions

2018–current *Professor,* Department of Mathematics, Florida State University.

2007–2018 *Associate Professor,* Department of Mathematics, Florida State University.

2001–2007 *Assistant Professor,* Department of Mathematics, Florida State University.

2000–2001 *Visiting professor,* Department of Mathematics, Florida State University.

1998–2001 *Distinguished Scientist in Algebraic Geometry and Physics,* International School for Advanced Studies, Trieste, Italy.[1]

Education and professional preparation

Postdoctoral, 1995–1997 Visiting Research Scholar, Department of Mathematics, SUNY at Stony Brook, Stony Brook, NY, USA.
Supervisors: Prof. L. Takhtajan and Prof. C.-H. Sah.

Postdoctoral, 1992–1994 Postdoc, Department of Mathematics, Aarhus Universitet, Århus, Denmark.
Supervisor: Prof. J. Dupont.

Graduate, 1992 Ph.D. in Mathematics, International School for Advanced Studies, Trieste, Italy.
Advisor: Prof. L. Bonora.

Graduate, 1990 M.Sc. in Mathematics, International School for Advanced Studies, Trieste, Italy.
Advisor: Prof. L. Bonora.

Undergraduate, 1986 B.Sc. in Physics, University of Rome I "La Sapienza," Rome, Italy.

Visiting Positions

January 8-February 6, 2018 International School for Advanced Studies (SISSA), Trieste, Italy

June 28-July 11, 2013 International School for Advanced Studies (SISSA), Trieste, Italy

July 6-July 25, 2011 International School for Advanced Studies (SISSA), Trieste, Italy

June 22-July 14, 2010 International School for Advanced Studies (SISSA), Trieste, Italy

[1] Six years appointment at the level of Assistant Professor, non tenure-track.

Oct. 26-Nov. 1, 2009 Department of Mathematics, University of Salamanca, Spain.
Program on "Derived Algebraic Geometry"

July 15-July 21, 2007 International School for Advanced Studies (SISSA), Trieste, Italy

June 25-June 30, 2006 International School for Advanced Studies (SISSA), Trieste, Italy

June 12-June 24, 2006 Erwin Schrödinger Institute, Vienna, Austria.
Program on "Gerbes, Groupoids and Quantum Field Theory"

July 4-July 17, 2004 International School for Advanced Studies (SISSA), Trieste, Italy

July 22-Aug. 3, 2003 Departamento de Matemática, Instituto Superior Técnico, Lisboa, Portugal

July 7-July 16, 2003 International School for Advanced Studies (SISSA), Trieste, Italy

Jun. 22-July 4, 2003 Department of Mathematics, Aarhus Universitet, Århus, Denmark

July 16-July 27, 2002 Departamento de Matemática, Instituto Superior Técnico, Lisboa, Portugal

Jun. 24-July 6, 2002 International School for Advanced Studies (SISSA), Trieste, Italy

Publications

In Preparation

Aldrovandi, Ettore and Cynthia Lester. "Determinant functors for Tensor Triangulated Categories". In preparation.

Aldrovandi, Ettore and Yaineli Valdes. "The 1-type of the Waldhausen K-Theory spectrum as a multifunctor". In preparation.

Accepted

Aldrovandi, Ettore and Niranjan Ramachandran. "Fiber integration of gerbes and Deligne line bundles". In: *Homology, Homotopy and Applications* (2022). arXiv: 2101.00044 [math.AG]. Accepted for publication.

Published

Aldrovandi, Ettore, Ugo Bruzzo, and Vladimir Rubtsov. "Lie algebroid cohomology and Lie algebroid extensions". In: *Journal of Algebra* 505 (2018), pp. 456–481. DOI: 10.1016/j.jalgebra.2018.03.018. arXiv: 1711.05156 [math.RA].

Aldrovandi, Ettore. "Biextensions, bimonoidal functors, multilinear functor calculus, and categorical rings". In: *Theory and Applications of Categories* 32.27 (2017), pp. 889–969. arXiv: 1501.04664 [math.CT]. URL: http://www.tac.mta.ca/tac/volumes/32/27/32-27abs.html.

Aldrovandi, Ettore and Ahmet Emin Tatar. "Notes on Weak Units of Picard 1- and 2-stacks". In: *Mathematical Proceedings of the Cambridge Philosophical Society* (2016). DOI: 10.1017/S0305004116000931. arXiv: 1108.1922 [math.AG].

Aldrovandi, Ettore and Niranjan Ramachandran. "Cup products, the Heisenberg group, and codimension two algebraic cycles". In: *Documenta Mathematica* 21 (2016), pp. 1313–1344. arXiv: 1510.01825 [math.AG]. URL: http://www.math.uiuc.edu/documenta/vol-21/35.html.

Aldrovandi, Ettore. "Stacks of Ann-Categories and their morphisms". In: *Theory and Applications of Categories* 30.39 (Sept. 21, 2015), pp. 1256–1286. arXiv: 1501.07592 [math.CT]. URL: http://www.tac.mta.ca/tac/volumes/30/39/30-39abs.html.

Aldrovandi, Ettore and Behrang Noohi. "Butterflies II: Torsors for 2-group stacks". In: *Advances in Mathematics* 225 (2010), pp. 922–976. DOI: doi:10.1016/j.aim.2010.03.011. arXiv: 0909.3350 [math.AT].

Aldrovandi, Ettore and Behrang Noohi. "Butterflies I: Morphisms of 2-group stacks". In: *Advances in Mathematics* 221 (2009), pp. 687–773. DOI: doi:10.1016/j.aim.2008.12.014. arXiv: 0808.3627 [math.CT].

Aldrovandi, Ettore. "2-Gerbes bound by complexes of gr-stacks, and cohomology". In: *Journal of Pure and Applied Algebra* 212.5 (2008), pp. 994–1038. DOI: 10.1016/j.jpaa.2007.07.020. arXiv: math.CT/0512453.

Aldrovandi, Ettore. "Hermitian-holomorphic Deligne cohomology, Deligne pairing for singular metrics, and hyperbolic metrics". In: *International Mathematics Research Notices* 17 (2005), pp. 1015–1046. arXiv: math.AG/0408118.

Aldrovandi, Ettore. "Hermitian-holomorphic (2)-gerbes and tame symbols". In: *Journal of Pure and Applied Algebra* 200 (2005), pp. 97–135. arXiv: math.CT/0310027.

Aldrovandi, Ettore. "On hermitian-holomorphic classes related to uniformization, the dilogarithm and the Liouville Action". In: *Communications in Mathematical Physics* 251 (2004), pp. 27–64. arXiv: math.CV/0211055.

Aldrovandi, Ettore. "Homological algebra of multivalued action functionals". In: *Lett. Math. Phys.* 60.1 (2002), pp. 47–58. ISSN: 0377-9017. arXiv: math-ph/0112031.

Aldrovandi, Ettore and Leon A. Takhtajan. "Generating functional in CFT on Riemann surfaces. II. Homological aspects". In: *Comm. Math. Phys.* 227.2 (2002), pp. 303–348. ISSN: 0010-3616. arXiv: math.AT/0006147.

Aldrovandi, Ettore and Leon A. Takhtajan. "Generating functional in CFT and effective action for two-dimensional quantum gravity on higher genus Riemann surfaces". In: *Comm. Math. Phys.* 188.1 (1997), pp. 29–67. ISSN: 0010-3616.

Aldrovandi, Ettore. "Toda fields on Riemann surfaces: remarks on the Miura transformation". In: *Lett. Math. Phys.* 38.4 (1996), pp. 365–375. ISSN: 0377-9017.

Aldrovandi, Ettore and Gregorio Falqui. "Toda field theory as a clue to the geometry of W_n-gravity". In: *11th Italian Conference on General Relativity and Gravitational Physics (Trieste, 1994)*. River Edge, NJ: World Sci. Publishing, 1996, pp. 155–171.

Aldrovandi, Ettore and Gregorio Falqui. "Geometry of Higgs and Toda fields on Riemann surfaces". In: *J. Geom. Phys.* 17.1 (1995), pp. 25–48. ISSN: 0393-0440.

Aldrovandi, E. and L. Bonora. "Liouville and Toda field theories on Riemann surfaces". In: *J. Geom. Phys.* 14.1 (1994), pp. 65–109. ISSN: 0393-0440.

Aldrovandi, E., L. Bonora, et al. "Free field representation of Toda field theories". In: *Internat. J. Modern Phys. A* 9.1 (1994), pp. 57–86. ISSN: 0217-751X.

Aldrovandi, Ettore, Daniela Dohrn, and Francesco Guerra. "The Lagrangian approach to stochastic variational principles on curved manifolds". In: *Acta Appl. Math.* 26.3 (1992). Application of statistical methods in theoretical physics and fluid mechanics (Calcutta, 1991), pp. 219–236. ISSN: 0167-8019.

Aldrovandi, Ettore, Daniela Dohrn, and Francesco Guerra. "Stochastic action of dynamical systems on curved manifolds. The geodesic interpolation". In: *J. Math. Phys.* 31.3 (1990), pp. 639–648. ISSN: 0022-2488.

Aldrovandi, Ettore, Daniela Dohrn, and Francesco Guerra. "Stochastic action of dynamical systems on curved manifolds. The isokinetic developing map on trajectories". In: *Stochastic processes, physics and geometry (Ascona and Locarno, 1988)*. Teaneck, NJ: World Sci. Publishing, 1990, pp. 87–96.

Aldrovandi, Ettore, Daniela Dohrn, and Francesco Guerra. "Stochastic Mechanics on Curved Manifolds: the problem of the Stochastic Action". In: *Creativity and Inspiration; perspective of collaboration in Mathematics and Physics between Italy and Japan*. Ed. by G. Cavallo et al. 1987.

Aldrovandi, Ettore. *Topological Aspects of 2D Actions constructed from Coadjoint Orbits*. SISSA Preprint Ref. 47/91/FM. 1991.

Seminar and conference talks

01/29/2021 *New invariants for algebraic cycles,* Colloquium Talk, Department of Mathematics, University of Toledo (OH).

11/11/2020 Workshop on categorical groups. Leading lecture. AMS Fall Southeastern Meeting, Oct 10–11, 2020.

10/10/2020 *Categorical groups, their morphisms, and higher algebraic structures.* AMS Fall Southeastern Meeting, Oct 10–11, 2020. (Invited talk.)

01/23/2018 *Cup products, the Heisenberg group, and codimension two algebraic cycles.* Geometry Seminar, International School for Advanced Studies (SISSA), Trieste, Italy.

11/11/2017 *Biextensions of stable modules and presentations of bimonoidal categories.* Invited talk, Lloyd Roeling Topology Conference– "Lloyd Roeling Mathematics Conference at the University of Louisiana at Lafayette, 2017."

10/28/2017 *Biextensions, ring-like stacks, and their classification.* Category Theory Octoberfest 2017, Carnegie Mellon University,.

4/21/2017 *Stacks and Homotopy Types: Intersections and Applications.* FSU Mathematics Department colloquium talk.

4/29/2016 *Cohomology of associative algebras, categorical rings, and their morphisms.* Dept. of Mathematical Sciences, West Point USMA.

11/18/2015 *Intersection theory and homotopy types with algebraic structure.* FSU Mathematics Department colloquium talk.

11/1/2015 *Stacks of categorical rings and their morphisms.* University of Ottawa. "Octoberfest 2015" conference on Category Theory.

7/2/2015 *Arithmetic aspects of Liouville.* International School for Advanced Studies (SISSA) Trieste. (Aspects of gauge and string theories: A conference in honour of the 70th birthday of Loriano Bonora.)

6/11/2015 *Nonabelian biextensions and bimonoidal functors.* Dept. of Mathematics, University of Maryland. Algebra and Number Theory Seminar.

5/16/2014 *Biextensions, biadditive morphisms, and categorical rings,* Université catholique de Louvain, Louvain-la-Neuve, Belgium. "Séminaire de théorie des Catégories" conference.

5/7/2014 *Biextensions and biadditive morphisms,* Department of Mathematics, University of Turin.

4/10/2014 *Biextensions and biadditive morphisms,* International School for Advanced Studies (SISSA), Trieste.

3/31/2014 *Biextensions and biadditive morphisms,* Department of Mathematics, University of Milan.

7/8/2013 *Postnikov invariants and morphisms of monoidal and bimonoidal stacks,* International School for Advanced Studies (SISSA), Trieste.

06/24/2013 *Butterflies and morphisms of monoidal and bimonoidal stacks,* Department of Mathematics, University of Milan. Category Theory Seminar (part of the Aurelio Carboni Conference).

10/26/2012 *Butterflies and morphisms of monoidal and bimonoidal stacks,* Concordia and McGill Universities. "Octoberfest 2012" conference on Category Theory.

7/14/2011 *Exact sequences and fibrations of classifying stacks,* International School for Advanced Studies (SISSA), Trieste.

7/12/2011 *Introduction to nonabelian cohomology towards nonabelian A- and B-fields,* International School for Advanced Studies (SISSA), Trieste. 4th Workshop on Geometric Methods in Theoretical Physics.

7/4/2011 *Mapping spaces of group-like stacks,* University of Padova, Italy. Invited talk at the miniconference on "Algebraic Analysis and Geometry, 2011."

4/19/2011 *Mapping spaces of group-like stacks,* Department of Mathematics, UC Riverside.

7/9/2010 *Cohomology for stacks and gerbes,* International School for Advanced Studies (SISSA), Trieste. 3rd Workshop on Geometric Methods in Theoretical Physics.

6/19/2010 *Stacks and non-abelian cohomology,* International School for Advanced Studies (SISSA), Trieste.

10/29/2009 *Stacks and non-abelian cohomology,* Department of Mathematics, University of Salamanca, Spain. Program on "Derived Algebraic Geometry."

7/8/2008 *Group-like stacks and the non-abelian derived category,* International School for Advanced Studies (SISSA), Trieste.

7/3/2008 *Liouville Action, 2-gerbes, and the determinant of cohomology,* MPI, Bonn. Workshop "The manifold geometries of Quantum Field Theory," MPIM Bonn/Hausdorff Center for Mathematics, June 30–July 4, 2008.

6/19/2008 *Butterflies, morphisms between gr-stacks, and non-abelian cohomology,* CRM, Barcelona. Workshop on Categorical Groups, June 16–20, 2008.

7/18,20/2007 *Group-like stacks and non-abelian cohomology, I and II,* International School for Advanced Studies (SISSA), Trieste.

6/28/2006 *Introduction to n-Gerbes, Cohomology, and Geometry,* International School for Advanced Studies (SISSA), Trieste. Workshop and editorial board meeting of "Journal of Geometry and Physics," June 27-29, 2006.

6/23/2006 *2-Gerbes bound by complexes of gr-stacks, and cohomology,* E. Schrödinger Institute, Vienna. Program on "Gerbes, Groupoids, and Quantum Field Theory,"

5/15/2006 *On certain motivic-like complexes, and the Hermitian geometry of algebraic curves and 2-gerbes,* Department of Mathematics, UNC Chapel Hill.

8/31/2005 *Curves, Holography, and the Liouville Action,* Lorentz Center, Leiden, Holland. Invited two hour review lecture at the meeting on "Arithmetic Geometry and High Energy Physics," Lorentz Center, Leiden, Aug 29 2005–Sep 2 2005.

9/10/2004 *Hermitian-Holomorphic 2-Gerbes and Tame Symbols,* Instituto Superior Técnico, Lisbon. "2004 Workshop on Algebraic Geometry and Physics," 7-12 September 2004.

7/13/2004 *Hermitian-Holomorphic 2-Gerbes and Tame symbols,* International School for Advanced Studies (SISSA), Trieste.

10/25/2003 *Cohomological variational principles and secondary classes,* Invited talk at the special session on "Homological Physics," AMS meeting, Chapel Hill, October 24-25, 2003.

7/2003 *Hermitian-holomorphic classes and tame symbols related to uniformization, the dilogarithm, and the Liouville Action,* Poster contribution at the session on "Strings and M Theory," International Congress in Mathematical Physics (ICMP 2003), University of Lisbon.

7/23/2003 *Abelian (2)-Gerbes, tame symbols, and hermitian structures,* Instituto Superior Técnico, Lisbon. Workshop "Categorification and Higher Order Geometry", July 23-24, 2003, Lisbon, Portugal.

7/17/2003 *Hermitian-holomorphic classes and tame symbols related to uniformization, the dilogarithm, and the Liouville Action,* University of Oporto, "XII Oporto meeting on Topology, Geometry and Physics", July 17-20, 2003, Oporto, Portugal.

7/10/2003 *Hermitian-holomorphic tame symbols and uniformization,* International School for Advanced Studies (SISSA), Trieste.

6/25/2003 *Hermitian-holomorphic Deligne cohomology, tame symbols, and uniformization,* Department of Mathematics, Aarhus University, Denmark.

1/16/2003 *On cohomology classes related to uniformization, the Liouville action, and the dilogarithm,* National meeting of the AMS, Baltimore, Jan. 16-18, 2003. Invited talk at the special session on "Computational Algebraic and Analytic Geometry for Low-Dimensional Varieties,"

7/24/2002 *On characteristic classes related to uniformization,* Departamento de Matemática, Instituto Superior Técnico, Lisboa, Portugal. Lisbon Geometry Seminar.

7/12/2002 *Gluing variational bicomplexes and homology of multivalued action functionals,* University of Oporto, "XI Oporto meeting on Topology, Geometry and Physics", July 12-15, 2002, Oporto, Portugal.

7/2/2002 *Uniformization, characteristic classes and Kleinian groups,* International School for Advanced Studies (SISSA), Trieste.

11/3/1999 *Projective structures, Conformal Field Theories, and higher algebraic structures,* Department of Mathematics, University of Milano II. Meeting on "Frobenius manifolds, Quantum Cohomology and related topics."

3/17/1999 *Quasi-conformal maps and higher algebraic structures from String Theory,* Department of Mathematics, University of Florida, Gainesville.

3/5/1999 *Higher algebraic structures from String Theory,* Department of Mathematics, FSU. Colloquium talk.

1/13/1999 *A functional for quasi-conformal maps from the Polyakov action,* International School for Advanced Studies (SISSA), Trieste. SISSA/ICTP Geometry and Mathematical Physics seminar.

11/18/1998 *From Teichmüller spaces to Conformal Field Theory (and back) through homology of nerves,* Department of Mathematics, Florida State University.

11/11/1998 *Teichmüller spaces, Conformal Field Theory and homology of nerves,* Department of Mathematics, SUNY at Stony Brook.

6/1998 *Simplicial methods, Characteristic Classes and applications in Mathematical Physics,* Department of Mathematics, Instituto Superior Técnico Lisbon. Invited course.

Awards

2015 Arts and Sciences faculty travel award

2015 Provost travel grant (Category Theory Octoberfest, 2015)

2012 Provost travel grant (Category Theory Octoberfest, 2012)

2011 *Categories and abstract structres in Algebra and Geometry,* FSU COFRS Grant.

2005 *From Complex Geometry to Arithmetic via distances and heights,* FSU COFRS Grant.

2001 *Quantum and modular geometry of Riemann surfaces,* First Year Assistant Professor Summer Award.

Mentoring

Faculty mentoring

- Research mentor for Tyler Foster (2018–2021)

Postdoctoral mentoring

- Research mentor for Cynthia Lester (2020–present)

Doctoral director

- Milind Gunjal—Candidate
- Michael Niemeier—PhD 2020
  Dissertation: *Central extensions of simplicial groups and presheaves of simplicial groups*
- Yaineli Valdes—PhD 2018
  Dissertation: *The 1-Type of K-Theory of Waldhausen categories as a multifunctor.*
- Gregory (Ivan) Dungan II—PhD 2014
  Dissertation: *n-Butterflies: Modeling Weak Morphisms of Strict n-Groups.*
- Selcan Aksoy—inactive
- A. Emin Tatar—PhD 2010
  Dissertation: *On Picard 2-Stacks and Length 3 Complexes of Abelian Sheaves.*

Honors in the major director

- Robed Beauvile—Defense Spring 2017
  Dissertation: *Homotopy Type Theory, Univalent Foundation, and Binary Trees*
- Daniel Fuentes-Keuthan—Defense Spring 2016
  Dissertation: *Triangulated Structures on Stable Derivators*
- Lawrence Dunn—Defense Spring 2014
  Dissertation: *An Overview of Homotopy Type Theory and Univalent Foundations of Mathematics*
- Vanessa Radzimski—Defense Spring 2012
  Dissertation: *Tame Symbols and Reciprocity Laws in Number Theory and Geometry*

Doctoral committee member

- Matthew Winters—Agashe
- Franquiz Caraballo-Alba—Aluffi
- Zhou Yi—van Hoeij
- Ben Prather—Nolder, PhD 2021
- Shayea Aldossari—van Hoeij, PhD 2020
- Lidya Eldredge—Petersen, PhD 2020
- Grayson Jorgenson—Aluffi, PhD 2020
- Xiping Zhang—Aluffi, PhD 2018
- Wen Xu—van Hoeij, PhD 2017
- Corey Harris—Aluffi, PhD 2017
- Erdal Imamoglu—van Hoeij, PhD 2017
- Brendon Ballenger—Nolder, PhD 2016
- William Adams—Aluffi, PhD 2015
- John Emanuello—Nolder, PhD 2015
- Joe Boor—Case, PhD 2012
- Quan Yuan—van Hoeij, PhD 2012
- Randy Heaton—Agashe and van Hoeij, PhD 2012
- J. Kyle Armstrong—Hironaka and Petersen, PhD 2011
- Dan Li—Marcolli, PhD 2012
- Xia Liao—Aluffi, PhD 2012
- Tingting Fang—van Hoeij, PhD 2012
- Saikat Biswas—Agashe, PhD 2011
- Judson Stryker—Aluffi, PhD 2011
- Yong Jae Cha—van Hoeij, PhD 2010
- Giles Levy—van Hoeij, PhD 2009
- Andy Novocin—van Hoeij, 2008
- Dimitre Tzigantchev—Aluffi, 2006
- Deborah Jones—Aluffi, 2003
- Yelena Meadows—Master

University representative

- Shameran Mahmud—Physics, K. Tobioka
- Lawrence Ng—Physics, S. Dobbs
- Jason Barlow—Physics, P. Eugenio
- Dan Le—Physics, D. Collins
- Pampa Ghose—Physics, A. Askew
- Luis Mendoza—Physics, N. Bonesteel, PhD 2020
- Johnatan Gross—Physics, S. Capstick, PhD 2020
- Brad Cannon—Physics, P. Eugenio, PhD 2019
- Yuhui Zhang—Physics, K. Yang, PhD 2014
- Andrew Westmark—Physics, J. Owens, PhD 2014
- Nabuo Sato—Physics, J. Owens, PhD 2014
- Hoang Thi Kieu Trang—Physics, S. Blessing, PhD 2012
- Jeff Haas—Physics, H. Prosper, PhD 2013
- Nathan Sparks—Physics, V. Crede, PhD 2013
- Anthony Kuchera—Physics, G. Rogachev, PhD 2013
- Naureen Ahsan—Physics, A. Volya, PhD 2011
- Georgios Zikos—Physics, N. Bonesteel, PhD 2009
- Alvin Kiswandhi—Physics, S. Capstick, PhD 2008
- Sang Jin Lee—Physics, S. Tabor, PhD 2008
- Jutri Taruna—Physics, J. Piekarewicz, PhD 2008
- Trisha Hinners—Physics, S. Tabor, PhD 2008
- Suharyo Sumowidagdo—Physics, T. Adams, PhD 2007
- Daekwang Kau—Physics, H. Prosper, PhD 2007
- Eun-Kyung Park—Physics, H. Baer, PhD 2007
- Akis Pipidis—Physics, M. Riley, PhD 2006
- Azar Mustafayev—Physics, H. Baer, PhD 2006
- Jorge O'Farril—Physics, H. Baer and H. Prosper, PhD 2004
- Tadas Krupovnickas—Physics, H. Baer, PhD 2004

Honors in the major, outside member

- Jared Ifland—Department of Philosophy, Defense Summer 2020
- Lara Zygala—Department of Physics, Defense Spring 2017
- John Norris—Department of Physics, Defense 2014
- Lauren Maynard—College of Engineering, Defense 2011
- Steven Helock—Department of Philosophy

Teaching

Spring 2022

- Groups, Rings and Vector Spaces II (MAS 5308)
- Introduction to Abstract Algebra II (MAS 4303)
- K-Theory (Directed Individual Study)

Fall 2021

- Groups, Rings and Vector Spaces I (MAS 5307)

Summer 2021

- Topics in Algebra—Homological Algebra (MAS 5932/MAS 4934)
  Summer C session

Spring 2021

- Complex Variables (MAA 4402)

Fall 2020

- Logic, Type Theory, and the Mechanization of Mathematics (Mas5932)
  Graduate topics course. New course development.

Summer 2020

- Complex Variables (MAA 4402)
  Summer C session

Spring 2020

- Introduction to Abstract Algebra II (MAS 4303)

Fall 2019

- Abstract Algebra I (MAS 5311) (also known as GRV III)
- Introduction to Abstract Algebra I (MAS 4302)

Spring 2019

- Groups, Rings and Vector Spaces II (MAS 5308)

Fall 2018

- Groups, Rings and Vector Spaces I (MAS 5307)

Spring 2018

Sabbatical

Fall 2017

- Homotopy Theory (MTG 5932)

Spring 2017

- Calculus III (honors) (MAC 2313)
- Algebra and its Applications Seminar (MAS6939)

Fall 2016

- Applied Linear Algebra I (MAS 3105)
- Algebra and its Applications Seminar (MAS6939)

Spring 2016

- Homological Algebra (MAS 5932)
- Introduction to Abstract Algebra II (MAS 4303)

Fall 2015

- Groups, Rings and Vector Spaces III (MAS 5311)
- Introduction to Abstract Algebra I (MAS 4302)

Spring 2015

- Groups, Rings and Vector Spaces II (MAS 5308)
- Applied Linear Algebra I (MAS 3105)

Fall 2014

- Groups, Rings and Vector Spaces I (MAS 5307)
- Algebra and its Applications Seminar (MAS6939)

Spring 2014

Innovative

Fall 2013

- Applied Linear Algebra I (MAS 3105), sections 0001 and 0003
- Complex Manifolds (Topics in Algebra), (MAS5932)

Spring 2013

- Introduction to Abstract Algebra II (MAS4303)

Fall 2012

- Algebra and its Applications Seminar (MAS6939)
- Groups, Rings and Vector Spaces III (MAS5311)
- Introduction to Abstract Algebra I (MAS4302)

Spring 2012

- Groups, Rings and Vector Spaces II (MAS5308)
- General Relativity (MTG5932)

Fall 2011

- Groups, Rings and Vector Spaces I (MAS5307)

Spring 2011

- Algebra and its Applications Seminar (MAS6939)
- Introduction to Abstract Algebra II (MAS4303)
- Introduction to Abstract Algebra I (MAS4302)

Fall 2010

- Introduction to Abstract Algebra I (MAS4302)

Spring 2010

- Theory of functions of a complex variable II (MAA5407)
- Algebra and its Applications Seminar (MAS6939)

Fall 2009

- Homological Algebra (MAS5932)
- Theory of functions of a complex variable I (MAA5406)
- Algebra and its Applications Seminar (MAS6939)

Spring 2009

Sabbatical

Fall 2008

Sabbatical

Spring 2008

- Calculus III (MAC2313), honors and section 05

Fall 2007

Innovative

Spring 2007

- Algebra and its Applications Seminar (MAS6939)
- Complex Algebraic Geometry (MAS5932)
- Homological Algebra (MAT4906), DIS for Kevin Meek

Fall 2006

- Algebra and its Applications Seminar (MAS6939)
- Calculus III (MAC2313)

Spring 2006

- Algebra and its Applications Seminar (MAS6939)
- Calculus II (MAC2312), sections 06 and 07

Fall 2005

- Algebraic Structures: Homological Algebra (MAS5331)
- Algebra and its Applications Seminar (MAS6939)

Spring 2005

- Theory of functions of a complex variable II (MAA5407)
- Complexes and Manifolds (MTG5376)
- Infinite Chain Mechanics (MAT6908), DIS for S. Rajagopalan
- Algebra and its Applications Seminar (MAS6939)
- Working Seminar in Mathematics (MAT6939)

Fall 2004

- Theory of functions of a complex variable I (MAA5406)
- Algebra and its Applications Seminar (MAS6939)

Summer 2004

- Advanced Lagrangian Mechanics
  DIS at the 5000 level for the graduate student S. Rajagopalan

Spring2004

- Algebra and its Applications Seminar (MAS6939)
- Algebraic Structures in Quantum Field Theory Seminar (MAT6939)
- Geometry and Physics (MAT4906) DIS
- Calculus II (MAC2312), sections 03 and 08

Fall 2003

- Algebra and its Applications Seminar (MAS6939)
- Calculus II (MAC2312)

Spring2003

- Theory of functions of a complex variable II (MAA5407)
- Calculus II (MAC2312)

Fall 2002

- Theory of functions of a complex variable I (MAA5406)

Spring 2002

- Calculus II (MAC2312)

Fall 2001

- Calculus III (MAC2313)

Spring 2001

- Calculus II (MAC2312)

Fall 2000

- Calculus III (MAC2313)
- Discrete Mathematics I (MAD2104)

Courses not taught at FSU

- (Fall 1999) Lie Algebras and their representations
  DIS graduate course, Int. School for Adv. Studies (SISSA), Trieste, Italy.
- (Spring 1999) Lie Algebras and their representations
  Graduate course, Int. School for Adv. Studies (SISSA), Trieste, Italy.
- (Spring 1998) Curvature and Characteristic Classes
  Graduate course, Int. School for Adv. Studies (SISSA), Trieste, Italy.
- (Spring 1994) Classical Mechanics
  Matematisk Institut, Aarhus Universitet, Denmark.

Talks in the Mathematics Department

Spring 2021: Algebra seminar

Feb. 11 Fiber integration in K-Theory and a construction of Deligne

Fall 2020: Algebra seminar

Oct. 1 Introduction to Homotopy Type Theory (II)

Sep. 24 Introduction to Homotopy Type Theory (I)

Spring 2019: Topology seminar

Jan. 29 Homotopy theoretic aspects of central extensions

Fall 2017: Algebra seminar

Sep. 21 Cohomology of Lie Algebroids and extensions

Spring 2017: Mathematics Colloquium

Apr. 21 Stacks and Homotopy Types: Intersections and Applications

Spring 2017: Algebra seminar

Feb. 2 Extensions of Lie Algebroids and generalized differential operators

Fall 2016: Algebra seminar

Sep. 15 The Heisenberg group and a geometric approach to cup products

Fall 2015: Mathematics colloquium

Nov. 18 Intersection theory and homotopy types with algebraic structure

Fall 2015: Algebra seminar

Sep. 24 Cup products, the Heisenberg group and codimension-two Cartier cycles

Fall 2014: Algebra seminar

Aug. 28 Multiextensions and the cohomology of rings, I

Sep. 4 Multiextensions and the cohomology of rings, II

Sep. 11 Multiextensions and the cohomology of rings, III

Spring 2013: Topology and Geometry seminar

Apr. 4 Multiplicative homotopy 2-types

Spring 2012: Algebra seminar

Mar. 29 Some questions related to the classification of generalized differential operators

Apr. 5 Some questions related to the classification of generalized differential operators, II

Fall 2011: Algebra seminar

Oct. 13 Lie Algebroids and Algebras of generalized differential operators

Dec. 1 Butterflies and connective ring spectra

Spring 2011: Topology and Geometry seminar

Mar. 22 Simplicial sets and homotopy theory

Spring 2010: Algebra seminar

Feb. 25 Categories, extensions, and Eilenberg-Mac Lane spaces

Mar. 16 Categories, extensions, and Eilenberg-Mac Lane spaces, II

Fall 2009: Topology and Geometry Seminar

Nov. 17 Categories and homotopy types

Spring 2009: Topology and Geometry seminar

Apr. 21 H^3 and Multi-extensions

Fall 2008: Topology and Geometry seminar

Sep. 16 Classifying group laws and homotopy types, I

Sep. 23 Classifying group laws and homotopy types, II

Sep. 30 Classifying group laws and homotopy types, III

Fall 2008: Algebra seminar

Nov. 13 Butterflies and Bats, I

Nov. 20 Butterflies and Bats, II

Fall 2007: Topology and Geometry seminar

Sep. 17 Interplays between Algebraic Curves and Hyperbolic Geometry: the Holographic Principle

Spring 2007: Algebra and its Applications seminar

Jan. 18 Aspects of Hermitian geometry of algebraic curves and Riemann surfaces, I

Jan. 25 Aspects of Hermitian geometry of algebraic curves and Riemann surfaces, II

Feb. 1 Introduction to Deligne cohomology, I

Feb. 15 Introduction to Deligne cohomology, II

Feb. 27 Introduction to Deligne cohomology, III

Mar. 15 Cup products and Hermitian Deligne cohomology

Apr. 5 Introduction to stacks and gerbes, I

Apr. 12 Introduction to stacks and gerbes, II

Apr. 19 Introduction to stacks and gerbes, III

Spring 2005: Working Seminar in Mathematics

A series of talks aimed of discussing current faculty research and devoted to technical issues.

Feb. 2 Points, Spaces, Functors, and Torsors I

Feb. 9 Points, Spaces, Functors, and Torsors II

Feb. 16 Points, Spaces, Functors, and Torsors III

Feb. 23 Torsors IV

Mar. 2 Torsors V: group extensions and beyond

Mar. 16 Torsors VI: Gerbes of lifts and non-abelian cohomology

Mar. 23 Torsors and fibered categories

Mar. 30 The gerbe of lifts of a torsor

Apr. 6 Fibered Categories, Stacks, Gerbes

Apr. 13 Stacks, Gerbes, Liens

Spring 2005: Algebra and its Applications seminar

Introductory talks to the theory of Modular Forms.

Feb. 3 Modular Forms I

Feb. 17 Modular Forms II

Feb. 24 Modular Forms III

Mar. 3 Modular Forms IV

Mar. 24 Modular Forms V

Apr. 7 Modular Forms VI

Apr. 14 Modular Forms VII

Apr. 21 Modular Forms VIII

Spring 2004: Seminar on Algebraic Structures in Quantum Field Theories

Jan. 30 Introduction to Hopf Algebras I

Feb. 6 Introduction to Hopf Algebras II

Feb. 13 Introduction to Hopf Algebras III

Feb. 20 The Hopf Algebra of rooted trees

Feb. 27 The Hopf Algebra of rooted trees II

Mar. 26 The Hopf Algebra of rooted trees III

Apr. 23 The Hopf Algebra of Polyzêtas

Spring 2004: Algebra and its Applications seminar

Jan. 29 Tame Symbols

Feb. 12 Tame Symbols II

Feb. 19 Tame Symbols III

Fall 2003: Algebra and its Applications seminar

Nov. 20 Taming Tame Symbols

Dec. 4 Taming Tame Symbols II

Spring 2003: Algebra and Topology seminar

Feb. 27 Dilogarithm III: Tame symbols, Heisenberg groups, and glimpses of K_2.

Mar. 6 More on Tame symbols and applications to curves

Mar. 27 Tame symbols, Beilinson-Deligne cohomology, and application to curves

Fall 2002: Algebra and Topology seminar

Nov. 26 Dilogarithms and the hyperbolic volume class

Dec. 2 Dilogarithms and the hyperbolic volume class II

Spring 2001: QUANTUM! Seminar

Mar. 01 Symmetries and Noether's Theorem

Mar. 08 Classical Field Theory and Noether's Theorem

Mar. 22 Classical Field Theory and Noether's Theorem (continued)

Mar. 29 Scalar Fields and Vertex Algebras

Apr. 12 More Vertex Algebras

Service

Department

Fall 2015–current Director of Pure Mathematics

Fall 2021–Spring 2022 Executive committee

Fall 2020–Spring 2021 Executive committee

Fall 2018 Chris B. Hunter Professorship nomination and selection committee

Fall 2018–current Equipment committee

Fall 2019 Selection committee for an Algebra postdoc position—Chair

Fall 2018–Spring 2020 Executive committee

Fall 2017 Hiring Commmittee for an Algebra position in Pure Mathematics—Chair

2016–2017 Faculty evaluation committee

Fall 2015–Spring 2016 Executive Committee

2012–2015 Doctoral Preliminary Examination committee—Chair

Fall 2012-Spring 2013 Hiring Committee (Analysis)

2011–2013 Faculty Evaluation Committee

2012–2013 Graduate Admissions Committee

2002–2003, 2005–2006, 2009–2012 Doctoral Preliminary Examination committee

2006–2007, 2009-2012, 2015–2017 Colloquium Committee

2003-2005, 2007-2008 Library Committee

2012–2013 Ad hoc committee dealing with the *Library materials withdrawal project*

University

2020–2023 Graduate Policy Committee

2020–2022 Faculty Sabbaticals

Spring 2019 Bio-engineering GPC subcommittee—Chair

2017–2019 Faculty Sabbaticals

2017 Academic Honor Policy hearing

2005–2007, 2011–2013, 2013–2018 Faculty Senate

Fall 2015 Physics GPC evaluation committee

2015–current Library Budget Crisis Task Force

Profession

- Refereed book proposals:
  - MIT Press
  - AMS Book Division
- Refereed papers for:
  - Compositio Mathematica
  - Journal of Algebra
  - Communications in Algebra
  - Annali di Matematica Pura e Applicata
  - Journal of High Energy Physics
  - Journal of Geometry and Physics
  - Mathematics Research Letters
  - Communication in Mathematical Physics
  - Acta Appl. Math.
  - AIMS Mathematics
  - SIGMA
- Builder of the TEX binaries for the Solaris x86 platform, see http://www.tug.org/texlive/doc/texlive-en/texlive-en.html
- Co-organized (with Profs. Aluffi and Hironaka) of the special session on *Algebraic Geometry and Topology,* AMS Meeting on March 12-13, 2004, Tallahassee, FL.

Computer experience

- System administration level experience with several UNIX flavors
- Languages:
  - Sh, Bash, sed, awk, perl, C.
  - Mathematica, Maple, Sage—user level
  - Markup languages: LATEX and XML, (X)HTML
  - Haskell and Agda