ANTON M. ZEITLIN

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Citizenship	USA
Current position	Assistant Professor (tenure-track), Louisiana State University, August 21, 2017–
Previous Employment	J.F. Ritt Assistant Professor, Department of Mathematics, Columbia University: July 1, 2012–July 1, 2017 On leave 2013-2014 academic year as EPDI fellow: September 1, 2013 - February 28, 2014, Max Planck Institute for Mathematics, Bonn, March 1, 2014 - August 31, 2014, Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette.
Research Interests	Representation theory with applications to geometry, topology and mathematical physics. In particular: Enumerative geometry, Higher Teichmüller theory, Supergeometry, Quantum groups, Kac-Moody algebras, Loop groups, Homotopy algebras, Conformal field theory, Integrable systems, Algebraic and Geometric structures of Quantum field theory and Gravity
Education	**Yale University**, Ph.D. in Mathematics, 2012; Advisor: Igor Frenkel **St. Petersburg State University**, St. Petersburg, Russia, M.S., High Energy Physics, 2005
Grants and Awards	NSF Standard Grant (DMS-2203823): 2022-2025 Simons Collaboration Grant: 2018-2022 AMS Simons Travel Grant: 2016-2018 EPDI laureate (IHES): 2012-2014 Yale University: Sterling stipend, 2006-2008 Dynasty Foundation Stipend: 2003-2006 CRDF: Grant No. RUM1-2622-ST-04 (as a member of Group), 2005-2006 RFBR: grant 05-01-00922 (as a member of Group), 2005-2006
Co-advising Ph.D. students	Andrey V. Smirnov (currently a tenure-track Assistant Professor at UNC-Chapel Hill), Petr P. Pushkar (formerly a postdoc at the University of Toronto and the Institute of Science and Technology Austria)
Advising undergraduate students	Ty J. Brinson (LSU), graduated in 2022, Andrea Bourque (LSU), graduated in 2022

Publications

Preprints

52. Flat $GL(1|1)$-connections and fatgraphs (with A. Bourque), arXiv:2208.08033

51. The Zoo of Opers and Dualities (with P. Koroteev), arXiv:2208.08031

50. On Wronskians and qq-systems, arXiv:2208.08018

49. Opers on the projective line, Wronskian relations, and the Bethe Ansatz (with T.J. Brinson, D. S. Sage), arXiv:2112.02711

48. 3d Mirror Symmetry for Instanton Moduli Spaces (with P. Koroteev), arXiv:2105.00588

Published and accepted papers

47. q-Opers, QQ-systems, and Bethe Ansatz II: Generalized Minors (with P. Koroteev), to appear in: **Journal für die reine und angewandte Mathematik**, arXiv:2108.0418447

46. Toroidal q-Opers (with P. Koroteev), to appear in: **Journal of the Institute of Mathematics of Jussieu (JIMJ)**, arXiv:2007.11786

45. q-Opers, QQ-systems and Bethe Ansatz (with E. Frenkel, P. Koroteev, D.S. Sage), to appear in: **Journal of European Mathematical Society (JEMS)**, arXiv:2002.07344

44. Super McShane identity (with Y. Huang, R.C. Penner), to appear in: **Journal of Differential Geometry**, IHES: M-19-08, arXiv:1907.09978

43. Super-Teichmller spaces and related structures (with Ivan C.-H. Ip, Robert C. Penner), **Oberwolfach Report** (Report No. 40/2018), Volume 15, Issue 3, pp. 2486-2489, 2018, arXiv:1811.0993

42. $(SL(N), q)$-opers, the q-Langlands correspondence, and quantum/classical duality (with P. Koroteev, D.S. Sage), **Communications in Mathematical Physics**, Volume 381, Issue 2 (2021), pp. 641-672, arXiv:1811.09937

41. qKZ/tRS Duality via Quantum K-Theoretic Counts (with P. Koroteev), **Mathematical Research Letters**, Volume 28, Number 2, pp. 435-470, 2021, arXiv:1802.04463

40. Quantum K-theory of Quiver Varieties and Many-Body Systems (with P. Koroteev, P.P. Pushkar, A. Smirnov), **Selecta Mathematica New Series**, Volume 27, Issue 5, Article: 87, 2021, arXiv:1705.10419

39. Baxter Q-operator from Quantum K-theory (with P. Pushkar, A. Smirnov), **Advances in Mathematics**, Volume 360, (2020) 106919, arXiv:1612.08723

38. On Ramond decorations (with I. C.-H. Ip, R.C. Penner),
Communications in Mathematical Physics, Volume 371, Issue 1 (2019), pp. 145-157, arXiv:1709.06207

37. Decorated Super-Teichmüller Space (with R.C. Penner),
Journal of Differential Geometry, Volume 111, Number 3 (2019), 527-56, arXiv:1509.06302

36. $\mathcal{N} = 2$ Super-Teichmüller Theory (with I. C.-H. Ip, R.C. Penner),
Advances in Mathematics, Volume 336 (2018) pp. 409-454, arXiv:1605.08094

35. Homotopy Algebras of Differential (Super)forms in Three and Four Dimensions (with M. Rocek), **Letters in Mathematical Physics**, 108 (12) (2018) 2669-2694, arXiv:1702.03565

34. On the unitary representations of affine $ax + b$-group, $\hat{sl}(2, \mathbb{R})$ and their relatives,
AMS Proceedings of Symposia in Pure Mathematics, Volume 92 "Lie Algebras, Lie Superalgebras, Vertex Algebras and Related Topics", pp. 325-355, 2016, arXiv:1509.06072

33. Sigma-models and homotopy algebras, **Journal of Physics, Conference Series**, Volume 597, 012074, 2015, arXiv:1509.06067

32. Beltrami-Courant Differentials and G_∞-algebras,
Advances in Theoretical and Mathematical Physics, Volume 19, Number 6, pp. 1249-1275, 2015, arXiv:1404.3069, IHES: M-14-19

31. Q-operator and fusion relations for $C_q(2)^{(2)}$ (with I. C.-H. Ip),
Letters in Mathematical Physics, Volume 104, Issue 8, pp. 1019-1043, 2014, arXiv: 1312.4063, MPIM: 2014-8

30. Superopers on Supercurves, **Letters in Mathematical Physics**, Volume 105, Issue 2, 149-167, 2015, arXiv: 1311.5997, MPIM: 2014-7

29. Supersymmetry and the Modular Double (with Ivan Chi-Ho Ip),
Contemporary Mathematics, Volume 623, pp. 81-97, 2014, arXiv:1304.6787

28. On higher order Leibniz identities in TCFT, **Contemporary Mathematics**, Volume 623, pp. 267-280, 2014, arXiv:1301.6382

27. On the continuous series for $\widehat{sl}(2, R)$ (with I.B. Frenkel),
Communications in Mathematical Physics, Volume 326, Issue 1, pp. 145-165, 2014, arXiv:1210.2135

26. Quantum Group $GL_q(2)$ and Quantum Laplace Operator via Semi-infinite Cohomology (with I.B. Frenkel), **Journal of Noncommutative Geometry**, Volume 7, Issue 4, pp. 1007-1026, 2013, arXiv:1110.1696

25. Homotopy Relations for Topological VOA, **International Journal of Mathematics**, Volume 23, 1250012 (2012), arXiv:1104.5038

24. Unitary representations of a loop ax+b group, Wiener measure and Gamma-function, **Journal of Functional Analysis**, Volume 263, Issue 3, pp. 529-548, 2012, arXiv:1012.4826

23. Quasiclassical Lian-Zuckerman Homotopy Algebras, Courant Algebroids and Gauge Theory, **Communications in Mathematical Physics**, Volume 303, Number 2, pp. 331-359, 2011, arXiv:0910.3652

22. Quantum Group as Semi-infinite Cohomology (with I.B. Frenkel), **Communications in Mathematical Physics**, Volume 297, Number 3, pp. 687-732, 2010, arXiv:0812.1620

21. Beta-Gamma systems and the deformations of the BRST operator, **Journal of Physics A: Mathematical and Theoretical**, Volume 42, Number 35, 355401, 2009, arXiv:0904.2234

20. Conformal Field Theory and Algebraic Structure of Gauge Theory, **Journal of High Energy Physics**, JHEP03(2010)056, 2010, arXiv: 0812.1840

19. SFT-inspired Algebraic Structures in Gauge Theories, **Journal of Mathematical Physics** 50, Issue 6, 063501, 2009, arXiv:0711.3843

18. BV Yang-Mills as a Homotopy Chern-Simons via SFT, **International Journal of Modern Physics A** 24, Issue 7, 1309-1331, 2009, arXiv:0709.1411

17. Homotopy Lie Superalgebra in Yang-Mills Theory, **Journal of High Energy Physics**, JHEP09(2007)068, 2007, arXiv:0708.1773

16. Formal Maurer-Cartan Structures: from CFT to Classical Field Equations, **Journal of High Energy Physics**, JHEP12(2007)098, 2007, arXiv:0708.0955

15. Perturbed Beta-Gamma Systems and Complex Geometry, **Nuclear Physics B**, Volume 794, Issue 3[PM], pp. 381-401, 2008, arXiv:0708.0682

14. BRST, Generalized Maurer-Cartan Equations and CFT, **Nuclear Physics B**, Volume 759, Issue 3, pp. 370-398, 2006, hep-th/0610208

13. On First Order Formalism in String Theory (with A.S. Losev, A. Marshakov), **Physics Letters B**, Volume 633/2-3 pp. 375-381, 2006, hep-th/0510065

12. Quantization of N=2 supersymmetric KdV Hierarchy, **Theoretical and Mathematical Physics**, v. 147, n. 2, pp. 303-314, 2006 (in russian); Engl. transl.: Theoretical and Mathematical Physics, v. 147, n. 2, pp. 698-708, 2006, hep-th/0606129

11. Quantum supersymmetric Toda-mKdV hierarchies (with P. Kulish), **Nuclear Physics B**, Volume 720, Issue 3, pp. 289-306, 2005, hep-th/0506027

10. Quantization of N=1 and N=2 SUSY Korteweg-de Vries models (with P. Kulish), in: "Problems of Mathematical Physics and Applied Mathematics", **Ioffe Physico-Technical Institute**, pp. 80-100, St. Petersburg, 2005

9. Superconformal field theory and SUSY N=1 KdV hierarchy II: the Q-operator (with P. Kulish), **Nuclear Physics B**, Volume 709, Issue 3, pp. 578-591, 2005, hep-th/0501019

8. Integrability of Superconformal Field Theory and SUSY N=1 KdV, in String Theory: from Gauge Interactions to Cosmology, NATO Advanced Study Institute,
Proc. of Cargese Summer School, 2004, NATO Science Series II: Mathematics, Physics and Chemistry, v. 208, 393-396, Springer, 2005, hep-th/0501150

7. Quantum inverse scattering method and (super)conformal field theory (with P. Kulish),
Theoretical and Mathematical Physics, v. 142, n. 2, pp. 252-264, 2005 (in russian); Engl. transl.: Theoretical and Mathematical Physics, v. 142, n. 2, pp. 211-221, 2005, hep-th/0501018

6. Superconformal Field Theory and SUSY N=1 KdV Hierarchy I: Vertex Operators and Yang-Baxter Equation (with P. Kulish), **Physics Letters B**, Volume 597, Issue 2, pp. 229-236, 2004, hep-th/0407154

5. Quantization of integrable models with hidden symmetries: super-KdV equation (with P. Kulish), **Journal of Modern Optics**, Volume 51, Numbers 6-7, pp. 1107 - 1108, 2004

4. Super-KdV equation: classical solutions and quantization (with P. Kulish),
Proceedings in Applied Mathematics and Mechanics (PAMM), Volume 4, Issue 1, pp. 576 - 577, Wiley InterScience, 2004

3. Integrable Structure of Superconformal Field Theory and Quantum super-KdV Theory (with P. Kulish), **Physics Letters B**, Volume 581, Issues 1-2, pp. 125-132, 2004, hep-th/0312159

2. Superconformal field theory and quantum inverse scattering method (with P. Kulish), in: Symmetries in Gravity and Field Theory (eds. by V. Aldaya, J.M. Cervero, Y.P. Garcia), **Salamanca University Press**, pp. 435-447, 2004

1. Group Theoretical Structure and Inverse Scattering Method for super-KdV Equation (with P. Kulish), Zapiski Nauchnih Seminarov POMI (Steklov Institute), vol. 291, 185-205, 2002 (in russian); Engl. transl. : **Journal of Mathematical Sciences** (Springer/Kluwer), v. 125, n. 2, 203-214, 2005, hep-th/0312158

CONFERENCE/ SEMINAR ORGANIZATION

Co-organizer of "Representation Theory and Mathematical Physics Seminar" at LSU;
Co-organiser of the Programs and Workshops at Simons Center of Geometry and Physics:
"From Representation Theory to Mathematical Physics and Back", May 31-June 4, 2022;
"Geometric and Representation-Theoretic Aspects of Quantum Integrability",
August 29 - October 21, 2022;
"Geometric Representation Theory, Integrability, and Supersymmetric Gauge Theories",
September 26 - September 30, 2022.

Invited Talks: Conferences

"$\hbar$-opers and the geometric approach to the Bethe ansatz", Workshop "From Representation Theory to Mathematical Physics and Back", Simons Center for Geometry and Physics, USA, May 31 - June 4, 2022.

"Hyperbolic supergeometry and super-Teichmueller spaces", "Workshop on Supergeometry and Bracket Structures in Mathematics and Physics", Fields Institute, Toronto, Canada, March 21, 2022.

"On q-Langlands correspondence, Bethe equations, and Applications", AMS Special Session on Integrability, Symmetry and Physics, Purdue University, USA, March 27, 2022.

"q-opers and the geometric approach to the Bethe ansatz equations", Conference "Quantum Curves, Integrability and Cluster Algebras", MATRIX Institute, The University of Melbourne, Australia, December 17, 2021.

"q-Opers and Applications", AMS Special Session on Geometric and Algebraic Aspects of Quantum Groups and Related Topics, University of South Alabama, USA, November 20, 2021.

"Hyperbolic supergeometry, super-Teichmueller spaces, and applications" , Conference "Teichmueller Theory: Classical, Higher, Super and Quantum", Centre International de Rencontres Mathematiques –Marseille Luminy, Marseille, France, October 8, 2020.

Lectures: "Introduction to the theory of super Riemann surfaces", "N = 1 and N = 2 super-Teichmueller theory", "Super-Teichmueller theory: some recent results"; Workshop "Super-Riemann surfaces and related topics", University of Tokyo, Japan, December 2-4, 2019.

"The geometric meaning of Bethe equations", Special Session on Geometric Methods in Representation Theory, AMS Fall Western Sectional Meeting, University of California, Riverside, USA, November 9, 2019.

"Decorated super-Teichmueller spaces and super-Ptolemy relations", Special Session on Canonical Bases, Cluster Structures and Non-commutative Birational Geometry; AMS Fall Western Sectional Meeting, University of California, Riverside, USA, November 9, 2019.

'Super-Teichmueller spaces and related structures", Oberwolfach workshop: New Trends in Teichmller Theory and Mapping Class Groups, 2 September - 8 September, 2018.

"Towards the continuous analogue of Kazhdan-Lusztig correspondence", Conference "Vertex Algebras and Quantum Groups", Banff International Research Station, Alberta, Canada, February 7-12, 2016.

"Superopers and supercurves", Conference "Representation Theory and Related Topics", University of Connecticut, USA, May 11-12, 2015.

"Beltrami-Courant Differentials and Homotopy Gerstenhaber algebras", The 30th International Colloquium on Group Theoretical Methods in Physics Ghent University in Ghent, Belgium, 14-18 July, 2014.

"Superopers on Supercurves", 567th WE-Heraeus Seminar "Integrable Lattice Models and Quantum Field Theories" Physikzentrum Bad Honnef, Germany, June 28 - July 2, 2014.

"Conformal invariance for sigma models, Courant algebroids and homotopy algebras", Higher Geometric Structures along the Lower Rhine III October 17-18, 2013; Utrecht University, The Netherlands

"On the continuous series for $\widehat{sl}(2,R)$ "Algebraic structures of stringy sigma models and homotopy algebras" AMS Sectional Meeting October 13-14, 2012; Tulane University, New Orleans, LA;
Session on Geometric and Algebraic Aspects of Representation Theory, Session on Quantum Groups and Noncommutative Algebraic Geometry

"Homotopy Relations for Topological VOA", AMS Sectional Meeting, Cornell University, Ithaca, NY, September 10-11, 2011 ;
Special Session on Kac-Moody Lie Algebras, Vertex Algebras, and Related Topics.

"Homotopy BV algebras, Courant algebroids and String Field Theory", AMS Sectional Meeting, Richmond, VA, November 6-7, 2010; Special Session on Kac-Moody Algebras, Vertex (Operator) Algebras, and Applications.

Invited Talks: Seminars & Colloquia

"Super-Teichmueller spaces and Penner coordinates", Colloquium, University of Toledo, USA, April 8, 2022.

"Spin chains and geometric structures", "Integrable Probability, Classical and Quantum Integrability" (PIICQ), France, February 28, 2022.

"q-Opers, QQ-Systems, and Bethe Ansatz", Informal Mathematical Physics Seminar, Columbia University in the city of New York, USA, November 17, 2020.

"Super-Teichmueller spaces: an introduction and some results", Moduli Spaces seminar, School of Mathematics and Statistics at the University of Melbourne, Australia, September 23, 2020.

"Geometry of Bethe Equations and q-Opers", Informal string-math seminar, University of California, Berkeley, USA, June 8, 2020.

"Super-Teichmueller spaces: old and new results", University of Virginia, Geometry seminar, USA, February 25, 2020.

"Super-Teichmueller spaces and all that", Department of High Energy and Particles Physics, St. Petersburg State University, Russia, December 24, 2019.

"The Bethe ansatz from geometry" MS Seminar (Mathematics - String Theory), Kavli Institute for the Physics and Mathematics of the Universe (IPMU), Tokyo, Japan, December 5, 2019.

"Homotopy Gerstenhaber algebras, Courant algebroids, and Field Equations", Tuesday Seminar on Topology, University of Tokyo, Japan, December 3, 2019.

"q-opers, QQ-systems, and q-Langlands correspondence", Physically inspired mathematics seminar, The University of North Carolina at Chapel Hill, USA, November 15, 2019.

"Super-Teichmueller spaces and related structures", Subfactor Seminar, Vanderbilt University, Nashville, USA, October 4, 2019.

"Super Teichmller Space and the McShane Identity", Séminaire de Mathématiques, IHES, France, July 17, 2019.

"Field Equations, Homotopy Gerstenhaber Algebras and Courant Algebroids", Representation Theory and Mathematical Physics Seminar, UC Berkeley, April 16, 2019.

"Quantum integrable systems via quantum K-theory", Math-Physics Joint Seminar, University of Pennsylvania, USA, March 14, 2019.

"Hidden Homotopy Symmetries of Einstein Field Equations", Informal Geometry and Topology Seminar, Louisiana State University, USA, February 6, 2019.

"Super-Teichmller Spaces, Spin Structures, Penner Coordinates, and Applications", Special Seminar, Columbia University in the city of New York, USA, February 1, 2019.

"Thoughts on Supermoduli", Harmonic Analysis Seminar, Louisiana State University, November 8, 2018.

"Super-Teichmueller spaces and related structures", Thematic Program on Teichmller Theory and its Connections to Geometry, Topology and Dynamics, The Fields Institute for Research in Mathematical Sciences, July 17, 2018.

"Super-Teichmueller Theory", University of California, Davis, QMAP Seminar, April 6, 2018.

"Quantum integrable systems and Enumerative Geometry", Colloquium, Michigan State University, February 5, 2018.

'Quantum integrable systems and Enumerative Geometry", Harmonic Analysis Seminar, Louisiana State University, December 6, 2017.

"Quantum equivariant K-theory and integrability", Enumerative Geometry Seminar, Columbia University, May 8, 2017.

"Quantum Equivariant K-theory and Quantum Spin Chains", University of California, Davis, QMAP Seminar, March 17, 2017.

"Generalized Teichmueller Spaces, Spin Structures and Ptolemy Transformations", Louisiana State University, February 6, 2017.

"Generalized Teichmüller Spaces, Spin Structures and Ptolemy Transformations", Special Mathematics Colloquium, University of Arizona, February 2, 2017.

"Generalizations of Teichmüller space", Department Mathematics and Statistics, University of Massachusetts Amherst, December 15, 2016.

"Generalizations of Teichmüller Space", Special Department of Mathematics Colloquium, Purdue University, December 6, 2016.

"Super-Teichmüller spaces and new cluster transformations", Northeastern University, December 1, 2016.

"Penner coordinates on super-Teichmueller spaces", Cluster Algebras Seminar, University of Notre-Dame, November 7, 2016.

"Penner coordinates on super-Teichmueller spaces", UC Berkeley, October 28, 2016.

"N=1 and N=2 Super-Teichmüller spaces", University of Connecticut, October 7, 2016.

"Decorated super-Teichmüller space", "Einstein field equations, Courant algebroids and Homotopy algebras", Symplectic Seminar, University of Toronto, September 26-27, 2016.

"Super-Teichmüller Theory", "Homotopy Gerstenhaber algebra as a hidden structure within Einstein equations, Centre for Quantum Geometry of Moduli Spaces, Aarhus University, June 28-30, 2016.

"Einstein equations, Beltrami-Courant differentials and Homotopy Gerstenhaber algebras", University of Nottingham, May 25-27, 2016.

"Coordinates on the decorated super-Teichmüller spaces", Algebra and Combinatorics Seminar, North Carolina State University, April 18, 2016.

"New cluster transformations and super-Teichmüller spaces, Physically Inspired Mathematics Seminar", The University of North Carolina at Chapell Hill, April 15, 2016.

"Sigma Models and Beltrami-Courant Differentials", Mathematics Colloquia and Seminars, String Theory, University of California, Davis, USA, May 27, 2014.

"Towards the unitary representations of affine sl(2,R)", Symplectic Geometry, Gauge Theory, and Categorification Seminar, Columbia University in the city of New York, USA, April 25, 2014.

"Continuous series of affine sl(2,R), modular double of quantum group and all that ", Institut des Hautes Etudes Scientifiques, Sminaire de Mathmatiques, Serie de "Courts Exposes", Mardi 1er avril 2014.

"Generalized Beltrami differentials, homotopy Gerstenhaber algebras and sigma-models", Symplectic Geometry, Gauge Theory, and Categorification Seminar, Columbia University in the City of New York, USA, February 21, 2014.

"On the continuous series for affine sl(2,R)", Emmy-Noether-Seminar, Emmy-Noether Zentrum, Department Mathematik, Friedrich-Alexander Universität Erlangen-Nrnberg, Germany, February 7, 2014.

"Continuous series of affine sl(2,R) and beyond", Institute for Theoretical Physics, University of Cologne, Germany, January 16, 2014.

"Generalized Beltrami differentials and homotopy Gerstenhaber algebras", Higher Differential Geometry Seminar, Max Planck Institute for Mathematics, Bonn, Germany, December 11, 2013.

"Superopers on Supercurves", Working Group Algebra, Geometry and Quantization, University of Luxembourg, December 3, 2013.

"On the construction of the continuous series of affine sl(2,R)", MPI-Oberseminar, Max Planck Institute for Mathematics, Bonn, Germany, November 7, 2013.

"Classical Field Equations, Courant Algebroids and Vertex Algebras", Algebra Seminar, Temple University, Philadelphia, November 19, 2012.

"Continuous series of affine sl(2,R) and its close friends", Lie Group/Quantum Mathematics Seminar, Rutgers University, November 9, 2012.

"On the continuous series for affine sl(2,R)", New York Applied Algebra Colloquium, CUNY Graduate Center, New York, October 19, 2012.

"Lian-Zuckerman homotopy algebras, Courant/Vertex algebroids and beta-functions of string theory", Columbia Symplectic Geometry, Gauge Theory, and Categorification Seminar, Columbia University, New York, October 28, 2011.

"Loop ax+b group, gamma-function and modular double", Columbia Informal Categorification and Representation Theory Seminar, Columbia University, New York, October 27, 2011.

"Quantum group as semi-infinite cohomology", Columbia Informal Categorification and Representation Theory Seminar, Columbia University, New York, October 25, 2011.

"Introduction to Vertex Operator Algebras", Lectures at Columbia University, New York, July 6-9, 2011.

"Homotopy relations for topological vertex operator algebras", Seminar "Infinite Dimensional Algebraic Geometry", Yale University, New Haven, CT, June 9, June 16, 2011.

"From Lian-Zuckerman Algebras to the Algebraic Structure of Classical Field Equations", Lie Group/Quantum Mathematics Seminar, Rutgers University, January 29, 2010.

"Twistor formalism for 10d super Yang-Mills and the Berkovits complex", Seminar "Infinite Dimensional Algebraic Geometry", Yale University, New Haven, CT, May 27, 2009.

"The Berkovits complex and super-Yang-Mills", Seminar "Infinite Dimensional Algebraic Geometry", Yale University, New Haven, CT, May 21, 2009.

"Algebraic structures related to D=10 N=1 SUSY Yang-Mills theory", Seminar "Infinite Dimensional Algebraic Geometry", Yale University, New Haven, CT, April 23, 2009.

"Field Equations from Homotopy Algebras of CFT",
"Braided Vertex Algebras, Semi-infinite Cohomology and Quantum Group",
Session on Homotopical Algebra with Applications to Mathematical Physics, Session on Kac-Moody Algebras, Vertex Algebras, Quantum Groups, and Applications,
AMS Sectional Meeting, Raleigh, NC, April 4-5, 2009.

Special Minicourse "Homotopy Structure of Gauge Theory", Simons Center For Geometry And Physics, Stony Brook University, Stony Brook, NY, March 20-21, 2008.

"BRST, CFT and Classical Field Equations", Math-Physics Joint Seminar, University of Pennsylvania, Philadelphia, PA, February 29, 2008.

"Gauge Theory and Homotopy Lie Algebras", Deformation Theory Seminar, University of Pennsylvania, Philadelphia, PA, February 27, 2008.

"Gauge Theories and Homotopy Lie Algebras", Seminar "Infinite Dimensional Algebraic Geometry", Yale University, New Haven, CT, January 31, 2008.

"BV Yang-Mills as a Homotopy Chern-Simons", informal lunch seminar of Particle Theory Group, Yale University, New Haven, CT, December 6, 2007.

"Representations of quantum superalgebras and integrable structures of superconformal field theory", Seminar on Department of High Energy and Elementary Particles Physics, Physics Faculty, St. Petersburg State University, Russia, May 22, 2007.

"CFT and representations of quantum (super)algebras: quantization of (super)KdV hierarchies", Seminar "Geometry, Symmetry and Physics", Yale University, New Haven, CT, November 30, 2006.

"Quantum Toda-mKdV Hierarchies Based on Lie Superalgebras & On the First Order Formalism in String Theory", High energy theory special seminar, Weizmann Institute of Science, Israel, May 18, 2005.