

July 5, 2020

CURRICULUM VITAE

Pavel Mnev

Contact information

Name: Pavel Mnev
Office address: University of Notre Dame
255 Hurley, Notre Dame, IN 46556, USA
Office telephone: +1-574-631-6288
Email: pmnev@nd.edu

Research Interests

Topological quantum field theory, gauge theory, algebraic topology, supergeometry, homotopy algebra, moduli spaces

1. HIGHER EDUCATION

- 1998–2002: Bachelor in physics
 - St.Petersburg State University
 - Advisor: Prof. Yu. M. Pismak
 - Thesis: “Undeveloped turbulence”
- 2002–2005: Master in physics
 - St.Petersburg State University
 - Advisor: Acad. L. D. Faddeev
 - Thesis: “On one-loop functional determinants arising in the background field method in gauge theories”
- 2005–2008: Ph.D. in mathematical physics
 - St.Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences
 - Advisor: Acad. L. D. Faddeev
 - Thesis: “Discrete BF -theory”
 - Defense date: 24.03.2008

2. PREVIOUS POSITIONS

- 09.2014 – 07.2016 : W2 professor (advanced researcher), Max Planck Institute for Mathematics, Bonn.
- 09.2013 – 01.2014 : Research fellow, Chebyshev Laboratory, Department of Mathematics and Mechanics, St. Petersburg State University.
- 02.2011 – 08.2014: Lecturer, Mathematical Institute, University of Zurich (leave of absence for family reasons, for the period 09.2013–01.2014).
- 04.2008 – 10.2008, 2009 – 2010, 01.2011: Postdoc, Mathematical Institute, University of Zurich (mentor: Prof. Alberto Cattaneo).

- 03.2008– : Research fellow, St.Petersburg department of Steklov Mathematical Institute, Russian Academy of Sciences (courtesy appointment).
- 08.2007–11.2007: Academic Guest, Department of Mathematics, ETH Zurich (host: Prof. Giovanni Felder).

3. SCHOLARSHIPS AND FELLOWSHIPS

- Forschungskredit grant, University of Zurich, 08.2011 – 07.2012.
- Grant by the Science Support Foundation, Moscow, 2007–2008.

4. DISTINCTIONS, HONORS, AWARDS

- André Lichnerowicz prize in Poisson geometry, 2016.
- Award of the Russian Academy of Sciences, 2011.
- “Young Mathematician” prize of the St. Petersburg Mathematical Society, 2010.
- Second prize in the Moebius Contest, Independent University of Moscow, 2006.

5. BOOKS AND MONOGRAPHS

- Pavel Mnev, “Lectures on Batalin-Vilkovisky formalism and its applications in topological quantum field theory,” AMS University Lecture Series, Vol. 72 (2019).

6. REFEREED PUBLICATIONS

Published.

- (1) Pavel Mnev, *On the simplicial BF model*, J. Math. Sci. 141, 4 (2007) 1429–1431.
- (2) Pavel Mnev, *Discrete path integral approach to the trace formula for regular graphs*, Comm. Math. Phys. 274 (2007) 233–241.
- (3) Pavel Mnev, *On simplicial BF theory*, Russian Academy of Sciences, Doklady Mathematics 77.1 (2008) 59–63.
- (4) Pavel Mnev, *Notes on simplicial BF theory*, Moscow Mathematical Journal 9.2 (2009) 371–410.
- (5) Alberto S. Cattaneo, Pavel Mnev, *Remarks on Chern-Simons invariants*, Comm. Math. Phys. 293.3 (2010) 803–836.
- (6) Francesco Bonechi, Pavel Mnev, Maxim Zabzine, *Finite dimensional AKSZ-BV theories*, Lett. Math. Phys. 94.2 (2010) 197–228.
- (7) Anton Alekseev, Pavel Mnev, *One-dimensional Chern-Simons theory*, Comm. Math. Phys. 307.1 (2011) 185–227.
- (8) Alberto S. Cattaneo, Pavel Mnev, Nicolai Reshetikhin, *Classical and quantum Lagrangian field theories with boundary*, PoS (CORFU2011) 044.
- (9) Francesco Bonechi, Alberto S. Cattaneo, Pavel Mnev, *The Poisson sigma model on closed surfaces*, JHEP 99.1 (2012) 1–27.
- (10) Anton Alekseev, Yves Barmaz, Pavel Mnev, *Chern-Simons theory with Wilson lines and boundary in the BV-BFV formalism*, J. Geom. and Phys. 67 (2013) 1–15.
- (11) Alberto S. Cattaneo, Pavel Mnev, Nicolai Reshetikhin, *Classical BV theories on manifolds with boundary*, Comm. Math. Phys. 332.2 (2014) 535–603.
- (12) Alberto S. Cattaneo, Pavel Mnev, *Wave relations*, Comm. Math. Phys. 332.3 (2014) 1083–1111.

- (13) Pavel Mnev, *A construction of observables for AKSZ sigma models*, Lett. Math. Phys. 105.12 (2015) 1735–1783.
- (14) Alberto S. Cattaneo, Pavel Mnev, Nicolai Reshetikhin, *Semiclassical quantization of classical field theories*, in “Mathematical Aspects of Quantum Field Theories” (eds. D. Calaque, T. Strobl), Springer series “Mathematical Physics Studies” XXIII (2015).
- (15) Anton Alekseev, Olga Chekeres, Pavel Mnev, *Wilson surface observables from equivariant cohomology*, JHEP 93.11 (2015).
- (16) Alberto S. Cattaneo, Pavel Mnev, Konstantin Wernli, *Split Chern-Simons theory in the BV-BFV formalism*, in “Quantization, Geometry and Noncommutative Structures in Mathematics and Physics,” Springer, Cham (2017) 293–324.
- (17) Alberto S. Cattaneo, Pavel Mnev, Nicolai Reshetikhin, *Perturbative quantum gauge theories on manifolds with boundary*, Comm. Math. Phys. 357.2 (2018) 631–730.
- (18) Andrey S. Losev, Pavel Mnev, Donald R. Youmans, *Two-dimensional abelian BF theory in Lorenz gauge as a twisted $N=(2,2)$ superconformal field theory*, J. Geom. Phys. 131C (2018) 122–137.
- (19) Alberto S. Cattaneo, Pavel Mnev, Nicolai Reshetikhin, *Poisson sigma model and semiclassical quantization of integrable systems*, Rev. Math. Phys. 30.06 (2018) 1840004.
- (20) Riccardo Iraso, Pavel Mnev, *Two-dimensional Yang-Mills theory on surfaces with corners in Batalin-Vilkovisky formalism*, Commun. Math. Phys. 370.2 (2019) 637–702.
- (21) Andrey S. Losev, Pavel Mnev, Donald R. Youmans, *Two-dimensional non-abelian BF theory in Lorenz gauge as a solvable logarithmic TCFT*, Commun. Math. Phys. 1–60 (Online First, 2019),
<http://link.springer.com/article/10.1007/s00220-019-03638-7>
- (22) Michele Schiavina, Pavel Mnev, Konstantin Wernli, *Towards holography in the BV-BFV setting*, Annales Henri Poincaré 21.3 (2020) 993–1044.
- (23) Alberto S. Cattaneo, Pavel Mnev, Nicolai Reshetikhin, *A cellular topological field theory*, Commun. Math. Phys. 374.2 (2020) 1229–1320.

In-press.

- Alberto S. Cattaneo, Pavel Mnev, Nicolai Reshetikhin, *Perturbative BV theories with Segal-like gluing*, arXiv:1602.00741(math-ph), to appear in Proceedings of the International Congress in Mathematical Physics 2015.
- Alberto S. Cattaneo, Pavel Mnev, Konstantin Wernli, *Theta invariants of lens spaces via the BV-BFV formalism*, arXiv:1810.06663 (math.AT), to appear in Progress in Mathematics, Reshetikhin 60 volume.

Submitted.

- Santosh Kandel, Pavel Mnev, Konstantin Wernli, *Two-dimensional perturbative scalar QFT and Atiyah-Segal gluing*, arXiv:1912.11202 (math-ph), submitted to Commun. Math. Phys.

7. UNREFEREED PUBLICATIONS

- Pavel Mnev, *Quantenmechanik auf Graphen*, contribution to Max Planck Society Year Book 2016,

www.mpg.de/10680624/21_mathematik_bonn_mnev.pdf. (In German, translation by Christian Kaiser.)

8. OTHER PUBLICATIONS

Preprints.

- (1) Pavel Mnev, *Towards simplicial Chern-Simons theory, I*, unpublished draft (2005), available at
http://www3.nd.edu/~pmnev/Towards_simplicial_CS.pdf
- (2) Pavel Mnev, *Discrete BF theory*, arXiv:0809.1160 (hep-th). [English translation of my doctoral thesis.]
- (3) Pavel Mnev, *Lecture notes on torsions*, arXiv:1406.3705 (math.AT).

9. INVITED LECTURES AND ADDRESSES

9.1. Mini-courses.

- 18–21.03.2019: mini-course (3 lectures) “BF theory on cell complexes”, workshop “Deformation quantization and index”, University of Geneva, Switzerland.
- 12–16.10.2015: mini-course (3 lectures) “Quantum BV theories on manifolds with boundary”, Higher Structures 2015, MPIM Bonn, Germany
- 1,8.12.2014: mini-course (2 lectures) “Introduction to quantum electrodynamics”, MPIM Bonn, Germany
- 28–30.04.2014: mini-course (3 lectures) “Combinatorial and analytic torsions”, Chebyshev Laboratory, St. Petersburg State University, Russia
- 07–09.10.2013: mini-course (3 lectures) “Around moduli spaces of flat connections”, program “Geometry of strings and fields”, Galileo Galilei Institute, Florence, Italy
- 28–31.05.2013: mini-course (3 lectures) “Around moduli spaces of flat connections”, Chebyshev Laboratory, St. Petersburg State University, Russia
- 29.03, 12.04.2012: mini-course (two 2-hour lectures) “Classical and quantum Lagrangian field theories with boundary”, Northwestern University, Chicago, USA (with A. Cattaneo)
- 29.01–03.02.2012: mini-course (3 lectures) “On semiclassical topological field theories” (with A. Cattaneo), winter school in mathematical physics, Les Houches, France.
- 19–20.11.2011: mini-course (2 lectures) “Topological field theory on a triangulation and homotopy transfer of algebraic structures”, Steklov Institute, St. Petersburg, Russia
- Spring 2007: mini-course (4 lectures) “Simplicial BF -theory”, City University, New York, USA

9.2. Invited talks.

- 12.06.2020: online talk “Two-dimensional perturbative scalar field theory with polynomial potential and cutting-gluing,” Zoom Seminar: Differential Geometry and Mathematical Physics.
<https://sites.google.com/view/zoomseminardiffgeoandmathphysi/home>
- 23.04.2020: “Two-dimensional perturbative scalar field theory with polynomial potential and cutting-gluing,” colloquium talk (over Zoom) at the Chebyshev Laboratory, St. Petersburg.

- 09.01.2020: talk “Two-dimensional perturbative scalar field theory with polynomial potential and cutting-gluing,” math physics seminar, ETH Zurich, Switzerland.
- 06.01.2020: talk “Two-dimensional perturbative scalar field theory with a polynomial potential and gluing,” QFT seminar, Steklov Institute, St. Petersburg, Russia.
- 12.11.2019: talk “Discretization of the algebra of differential forms and fiber Batalin-Vilkovisky integrals,” GAP seminar, PennState.
- 08.11.2019: colloquium talk “Batalin-Vilkovisky formalism: an example,” math colloquium, University of Toledo, Ohio.
- 08.08.2019: talk “Towards holography in the BV-BFV formalism,” QFT seminar, Steklov Institute, St. Petersburg, Russia.
- 04.07.2019: talk “Two-dimensional BF theory as a conformal field theory,” math physics seminar, ETH Zurich, Switzerland.
- 03.07.2019: talk “Two-dimensional Yang-Mills theory on surfaces with corners in Batalin-Vilkovisky formalism,” University of Zurich, Switzerland.
- 27.05.2019: talk “Two-dimensional BF theory as a conformal field theory,” at Faddeev 85 memorial conference “The art of quantization,” Steklov Institute, St. Petersburg, Russia.
- 21.05.2019: talk “Two-dimensional BF theory as a conformal field theory,” at the workshop “String field theory, BV quantization and moduli spaces,” Simons Center for Geometry and Physics, Stony Brook NY.
- 26.04.2019: talk “Two-dimensional BF theory as a conformal field theory,” Boston University.
- 10.01.2019: talk “Two-dimensional Yang-Mills theory on surfaces with corners in Batalin-Vilkovisky formalism,” QFT seminar, Steklov Institute, St. Petersburg, Russia.
- 19.12.2018: talk “Two-dimensional Yang-Mills theory on surfaces with corners in Batalin-Vilkovisky formalism,” representation theory seminar, University of Massachusetts, Amherst.
- 25.05.2018: talk “2D Yang-Mills on surfaces with corners in BV formalism” at the QMAP seminar, UC Davis.
- 15.03.2018: talk “Two-dimensional abelian BF theory in Lorenz gauge as a twisted $(2,2)$ -superconformal field theory,” QFT seminar, Steklov Institute, St. Petersburg, Russia.
- 14.12.2017: talk “Abelian 2-dimensional BF theory as a twisted $N=(2,2)$ superconformal field theory,” mathematical physics seminar, ETH Zurich.
- 05.12.2017: talk “Two-dimensional abelian BF theory in Lorenz gauge as a B-twisted $(2,2)$ -superconformal field theory,” mathematical physics seminar, Northwestern University.
- 09.11.2017: talk “Abelian and non-abelian BF theory on cobordisms endowed with cellular decomposition,” mathematical physics seminar, University of Illinois at Urbana-Champaign.
- 08.09.2017: talk “Cellular BV-BFV-BF theory” at the meeting “100e rencontre entre mathématiciens et physiciens théoriciens: Géométrie, dynamique et physique,” Institut de Recherche Mathématique Avancée, Strasbourg, France.

- 06.06.2017: talk “Cellular BV-BFV-BF theory” at the conference “Field theories and higher structures in mathematics and physics,” Banff International Research Station, Oaxaca, Mexico.
- 19.04.2017: video conference talk “Torsion as an integral” at the seminar on mirror symmetry, Poncelet Laboratory, Moscow.
- 01.04.2017: talk “Abelian and non-abelian BF theory on cobordisms endowed with cellular decomposition,” AMS sectional meeting in Bloomington, IN, USA, at the section on representation theory and integrable models.
- 10.02.2017: talk “Abelian and non-abelian BF theory on cobordisms endowed with cellular decomposition,” mathematical physics seminar, Columbia University, New York, USA.
- 21.12.2016: talk “Abelian and non-abelian BF theory on cobordisms endowed with cellular decomposition,” mini-workshop “New interactions between homotopical algebra and quantum field theory,” Oberwolfach, Germany.
- 16.12.2016: “Towards derived Wilson’s RG flow along the poset of CW complexes: case of cellular non-abelian BF theory,” mathematical physics seminar, University of Zurich, Switzerland.
- 02.11.2016: “Abelian and non-abelian BF theory on cobordisms endowed with cellular decomposition,” mathematical physics seminar, Purdue University.
- 28.10.2016: talk “Perturbative BV theories with Segal-like gluing” at the AMS sectional meeting on Topology and Physics, Minneapolis, USA
- 08.07.2016: talk “BF theory on cobordisms endowed with cellular decomposition”, conference “Interfaces between geometric analysis and mathematical physics”, Mittag-Leffler Institute, Stockholm, Sweden
- 04.07.2016: “BF theory on cobordisms endowed with cellular decomposition”, opening talk at the Poisson 2016 conference, ETH Zürich, Switzerland
- 09.06.2016: talk “BF theory on cobordisms endowed with cellular decomposition”, GQT (Geometry and quantum theory cluster) colloquium, Utrecht, Netherlands
- 17.05.2016: talk “A field theory on cobordisms endowed with cellular decomposition”, seminar “Algebra, Geometry and Quantization”, University of Luxembourg
- 29.02.2016: Antrittsvorlesung (inauguration talk associated with the habilitation at the University of Zurich) “BV pushforwards and exact discretizations in topological field theory”, University of Zurich
- 07.02.2016: talk “Perturbative BV theories with Segal-like gluing”, workshop “Quantum Spacetime 2016”, Zakopane, Poland
- 11.01.2016: talk “Cellular BV-BFV-BF theory”, workshop “Homotopy methods in quantum field theory”, IBS CGP, Pohang, Korea
- 31.12.2015: talk “Wilson surfaces”, QFT seminar, Steklov Institute, St. Petersburg, Russia
- 15.11.2015: talk “Cellular BV-BFV-BF theory”, QGM retreat, Sandbjerg manor, Sønderborg, Denmark
- 29.10.2015: talk “Quantum BV theories on manifolds with boundary”, Northwestern University, Chicago, USA
- 04.09.2015: talk “Cellular BV-BFV-BF theory”, Joint Meetings on Noncommutative Geometry and Higher Structures, Università Sapienza di Roma, Italy

- 13.08.2015: talk “BV-BFV formalism”, workshop on mathematics of quantum field theory and strings, University of Science and Technology of China, Hefei, China
- 27.07.2015: talk “Perturbative topological field theory with Segal-like gluing” at the International Congress of Mathematical Physics, Santiago, Chile
- 06.11.2014: habilitation lecture “Combinatorial quantum mechanics on a graph”, University of Zurich, Switzerland
- 31.10.2014: talk “Cellular BF theory in BV-BFV formalism with Segal-like gluing”, Higher Structures 2014, Geneva, Switzerland
- 21.10.2014: talk “Around cellular BV theories with Atiyah-Segal gluing”, seminar on algebra, geometry and physics, MPIM Bonn
- 17.10.2014: talk “A perturbative cellular TQFT with Segal-like gluing”, Séminaire de Physique Mathématique, Lyon, France
- 14.10.2014: talk “Hidden algebraic structure on cohomology of simplicial complexes, and TFT”, University of Uppsala, Sweden
- 06.10.2014: mini-talk “EL moduli spaces”, Topology seminar, MPIM Bonn
- 03.10.2014: talk “An example of a cellular topological quantum field theory in BV-BFV formalism, with Segal-like gluing”, at the workshop “Homological methods in quantum field theory”, Simons Center, Stony Brook, USA
- 17.07.2014: talk “Cellular abelian BF theory with Segal-like gluing”, QFT seminar, Steklov Institute, St. Petersburg, Russia
- 10.04.2014: talk “Classical free boson on Lorentzian surfaces with boundary”, mathematical physics seminar, ETH, Zurich, Switzerland
- 30.03.2014: talk “Fiber BV integrals and the Reidemeister torsion”, conference “Mathematical physics: past, present and future”, Euler Institute, St. Petersburg, Russia
- 23.01.2014: talk “Classical free boson on Lorentzian surfaces with boundary”, QFT seminar, Steklov Institute, St. Petersburg, Russia
- 16.12.2013: talk “Topological quantum field theory: definition and examples”, topology seminar, Steklov Institute, St. Petersburg, Russia
- 13.11.2013: talk “Unimodular L_∞ algebra of a simplicial complex, and topological field theory”, Max Planck Institute for Mathematics, Bonn, Germany
- 01.11.2013: talk “Chern-Simons theory on 3-manifolds with boundary”, low-dimensional topology seminar, Steklov Institute, St. Petersburg, Russia
- 12.03.2013: talk “Towards perturbative topological field theory on manifolds with boundary”, Centre for Quantum Geometry of Moduli Spaces, Aarhus University, Denmark
- 26.02.2013: talk “Towards perturbative topological field theory on manifolds with boundary”, University of Hong Kong
- 04.02.2013: talk “Hidden algebraic structure on cohomology of simplicial complexes, and TFT”, Trinity College Dublin, Ireland
- 07.12.2012: talk “Topological field theory on manifolds with boundary”, Hausdorff Center for Mathematics, Bonn, Germany
- 13.09.2012: talk “On BV-BFV formalism for topological field theories on manifolds with boundary”, workshop “From Poisson to String Geometry”, Erlangen, Germany
- 19.07.2012: talk “A construction of observables in topological field theories”, QFT seminar, Steklov Institute, St. Petersburg, Russia

- 12.06.2012: talk “Topological quantum field theory on triangulated manifolds coming from BV integrals”, UC Davis, USA
- 09.12.2011: talk “BV-BFV formalism for classical gauge theories on manifolds with boundary”, Séminaire de Physique Mathématique, Lyon, France
- 29.11.2011: talk “One-dimensional Chern-Simons theory and its deformations”, conference “Higher structures 2011”, Göttingen, Germany
- 14.11.2011: talk “On BV-BFV formalism for topological field theories on manifolds with boundary”, conference “Geometry of strings and fields”, Nordita, Stockholm, Sweden
- 18.10.2011: talk “What is a discrete differential form?”, Zurich Graduate Colloquium, Zurich, Switzerland
- 29.08.2011: talk “Classical gauge theories on manifolds with boundary”, QFT seminar, Steklov Institute, St. Petersburg, Russia
- 07.07.2011: talk “One-dimensional simplicial Chern-Simons theory”, summer school “Topology, geometry and quantum field theory”, Villa de Leyva, Columbia
- 02.02.2011: talk “One-dimensional Chern-Simons theory”, winter school in mathematical physics, Les Diablerets, Switzerland
- 18.01.2011: talk “Discrete topological quantum field theory”, St. Petersburg Mathematical Society meeting
- 10.2010: talk “Towards discrete topological quantum field theory”, “Symposium about pure mathematics”, University of Zurich, Switzerland
- 04.2010: talk “One-dimensional simplicial Chern-Simons theory”, workshop “Gauge theories, supersymmetry and mathematical physics”, Lyon, France
- 01.2010: talk “One-dimensional simplicial Chern-Simons theory”, conference “Representation theory and quantization”, ETH Zurich, Switzerland
- 08.2009: talk “Toy Chern-Simons theory from dg Frobenius algebras”, workshop “Théorie de Chern-Simons classique et quantique”, Lyon, France
- 06.2009: talk “Toy Chern-Simons theory from dg Frobenius algebras”, conference “Groupes de Lie et espaces des modules”, Geneva, Switzerland
- 03.2009: talk “Discrete BF theory”, conference and workshop “Mathematical Physics: from XX to XXI century” (in honor of the 75th birthday of Ludwig Faddeev), EPFL Lausanne/University of Geneva, Switzerland
- 11.2008: talk “ BF theory on discretized space-time”, workshop “Geometrical aspects of string theory”, Nordita, Stockholm, Sweden
- 08.2007: talk “Simplicial BF theory”, conference on Poisson geometry, ESI, Vienna, Austria
- 07.2007: talk “Simplicial BF theory”, Séminaire de Physique Mathématique, Lyon, France
- 03.2007: talk “Simplicial BF theory”, Northwestern University, Evanston, USA
- 03.2007: talk “Gauge-fixing constructions: Faddeev-Popov to BRST to BV”, SUNY Stonybrook, New York, USA
- 01.2007: talk “Simplicial BF theory”, mathematical physics seminar, University of Zurich, Switzerland

9.3. Invited talks at Notre Dame.

- 23.09.2019: talk “Discretization of the de Rham algebra of the interval and effective Batalin-Vilkovisky actions,” math graduate student seminar.

- 02.08.2018: talk “Moduli spaces of flat connections” at Geometry&Topology RTG workshop.
- 26.03.2018: talk “From the algebra of discrete differential forms on an interval to topological field theory,” math graduate student seminar.
- 24.03.2018: “Counting coverings on a surface (Dijkgraaf-Witten model – a simple case),” expository 20-minute talk for prospective PhD students.
- 04.05.2017: talk “Around AKSZ sigma models” at the “Gone Fishing” Poisson geometry conference.
- 04.11.2016: “Quantum mechanics on graphs,” a talk for undergraduate students within the Math Research at Notre Dame series.
- 28.10.2015: talk “Quantum BV theories on manifolds with boundary”, colloquium talk.
- Mini-series of 3 talks 22–25.04.2014
 - “Towards perturbative topological field theory on manifolds with boundary” (colloquium),
 - “Fiber Batalin-Vilkovisky integrals and discrete BF theory” (seminar talk),
 - “The BV formalism on manifolds with boundary” (seminar talk).

10. GRANTS AND SPONSORED PROGRAMS

- NSF conference grant DMS 1711110 for the Poisson geometry conference “Gone Fishing 2017,” co-PI.
- SNF travel funds grant 200021_137595, 11.2011 – 10.2014, PI.

11. MASTER’S THESES DIRECTED

- ETH master thesis (physics), Simone del Vecchio, “Path sum formulae for propagators on graphs, gluing and continuum limit,” degree awarded in November 2012.

12. DOCTORAL THESES DIRECTED

- (Completed) Riccardo Iraso was awarded doctorate degree cum laude at SISSA, Trieste, on 19.09.2018. Thesis title: “Two-dimensional gauge theories in BV formalism and gluing-cutting.”
- (Completed) Donald Youmans, co-advised with Anton Alekseev, was awarded doctorate degree at the University of Geneva on 14.05.2020. Thesis title: “Topological conformal field theories from gauge-fixed topological gauge theories: a case study.”

13. PROFESSIONAL MEMBERSHIPS

- Member of St. Petersburg Mathematical Society.

14. OTHER NOTABLE CONTRIBUTIONS

- Habilitation (docentship). Awarded on 06.11.2014 at the University of Zurich. Habilitation thesis “Batalin-Vilkovisky formalism in topological field theory”, test lecture “Combinatorial quantum mechanics on graphs”.
- Supervising interns at Max Planck Institute for Mathematics, Bonn.
 - Lucas Mann, project: “Ergodic distribution of coefficients in a continued fraction and Arnold’s sails,” September 2014.

- Fabian Burghart, Jan Steinebrunner, project: “Magnus expansion via homological perturbation theory,” September 2015.
- Advising first year graduate students at Notre Dame:
 - Patrick Heslin (2016–17), co-advised with Mark Behrens.
 - David Meretzky (2019-20).
 - Justin Beck (2020-21).
- Mentoring postdocs at Notre Dame.
 - Philippe Mathieu (2018–).
 - Konstantin Wernli (2019–).
- Conference organization.
 - Co-organizer of the “Gone Fishing” Poisson geometry conference, May 4-7, 2017, University of Notre Dame, IN, USA.
 - Co-organizer of the conference “Quantum field theory on manifolds with boundary and the BV formalism” held on May 8-12, 2017, Perimeter Institute, Waterloo, ON, Canada.
 - Co-organizer of the conference “A Gauge Summer with BV” in Scalea, Italy, September 6-10, 2021. Also, of its online counterpart “A Gauge Summer with BV: Online,” June 24 and 26, 2020. Link: <https://sites.google.com/view/gaugesummerwithbv/home>
- Service on committees.
 - Scientific committee (Wissenschaftlicher Ausschuss) at Max Planck Institute for Mathematics, 2014–2016.
 - Scientific advisory committee for the “Poisson 2018” conference.
 - AoV search committee at Notre Dame, 2016–.
 - Undergraduate committee at Notre Dame, 2017–.
 - Graduate admissions committee at Notre Dame, 2017–2018, 2020.
- Service on doctoral dissertation committees (excluding my own Ph.D. students).
 - 17.12.2018 Konstantin Wernli (University of Zurich, Ph.D. student of A. S. Cattaneo).
 - 26.06.2019 Danny Orton (Notre Dame, Ph.D. student of M. Gekhtman).
 - 18.11.2019 Jeremy Mann (Notre Dame, Ph.D. student of S. Stolz).
 - 25.03.2020 Laura Murray (Notre Dame, Ph.D. student of S. Stolz).
 - 06.07.2020 Nima Moshayedi (University of Zurich, Ph.D. student of A. S. Cattaneo).
 - ?.07.2020 Lyda Urresta (Notre Dame, Ph.D. student of K. Barron).
- Service as a referee: regularly asked to referee papers for Commun. Math. Phys., Lett. Math. Phys., also Annales Henri Poincaré, J. Geom. Phys. and other journals in mathematics and mathematical physics.