Anastasiia Tsvietkova

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Appointments

Continuing

Associate Professor, tenured, Rutgers University, Newark, NJ, USA	05/2023 – present
Assistant Professor, tenure-track, Rutgers University, Newark, NJ, USA	09/2016 – 05/2023

Temporary or Past

Member, Institute of Advanced Study, Princeton	Fall 2023
Visiting Researcher, Sydney Mathematical Research Institute, Australia	07/2023-09/2023
Von Neumann Fellow and member, Institute of Advanced Study, Princeton	09/2020 – 08/2021
Assistant Professor and Head of Geometry and Topology of Manifolds Unit, OIST (research institute), Japan	09/2017 – 08/2020
Krener Assistant Professor (non t.-track), University of California, Davis	01/2014 – 08/2016
Postdoctoral Fellow, ICERM, Brown University (Semester program in Low-dimensional Topology, Geometry, and Dynamics)	Fall 2013
NSF VIGRE Postdoctoral Researcher, Louisiana State University	08/2012 – 08/2013

Education

PhD in Mathematics, University of Tennessee, 05/2012, distinguished by Grad. Academic Achievement Award
Thesis: *Hyperbolic structures from link diagrams*. Advisor: Morwen Thistlethwaite.

Master's degree with Honors in Applied Mathematics, Kyiv National University, Ukraine, 07/2007
Thesis: *Decomposition of cellular balleans into direct products*. Advisor: Ihor Protasov.

Bachelor's degree with Honors in Applied Mathematics, Kyiv National University, Ukraine, 05/2005
Thesis: *Asymptotic Rays*. Advisor: Ihor Protasov. GPA 5.0/5.0

Research Interests: low-dimensional topology and geometry, computational topology, knot theory, hyperbolic geometry

Academic Honors, Grants and Other Funding

- Rutgers Board of Trustees Research Fellowship for Scholarly Excellence, 2023
- NSF CAREER grant *"CAREER: 3-manifolds with finite volume, their geometry, representations, and complexity"*, DMS-2142487, $467,237, 2022-present
- NSF grant (sole PI), *Geometry, Topology and Complexity of 3-manifolds*, DMS-2005496, $213,906, 2020-present
- NSF grant (sole PI), *Hyperbolic Structures from Link Diagrams*, DMS-1406588, $113,000, 2014-2019
- Okinawa Institute of Science and Technology research unit funding (sole PI), *Geometry and Topology of Manifolds unit*, ~$660,000, 2016-2019
- NSF conference grant (co-PI with Joel Hass), DMS-1758107, $17,000, 2017-2018
- Conference grants (x 2) from Okinawa Institute of Science and Technology (sole PI), ~$127 000, for a workshop and a mini-symposium, 2018
- NSF-AWM Mathematics Mentoring Travel Grant recipient (the grant funded research visits to the University of Oxford), $5,000, 2013
- Geometric Structures and Representation Varieties (GEAR) member. GEAR was funded by the NSF grant DMS-1107452, to bring together researchers from US, Canada, Europe and Asia. Individual subawards: 12/2012, research visit to Columbia University; 10/2015, research stay at Institute of Advanced Study, Princeton.
- USTARS Distinguished Graduate Student Award, 04/2012
- American Math. Society Travel Grants recipient, 10/2011 and 01/2012
- AWM Travel Grant recipient, 01/2012
- University of Tennessee Travel Awards, 01/2011 and 05/2011
- University of Tennessee Science Alliance Fellowship, 2006-2008, 2009-2011
- A winner of the Microsoft Imagine Cup competition, Software design category, Ukraine, 2006
- Presidential Fellowship for exceptional undergraduate students (full scholarship covering tuition, fees, housing and stipend; 100 per year are awarded throughout Ukraine), Ukraine, 2001-2005
- Placed 1st, 2nd and 3rd in Math Olympiads and Junior Academy of Sciences competitions in Ukraine in different years, 1998-2001

Papers and Preprints (all published ones are peer-reviewed; authors are listed in alphabetical order)

1. *On complexity of alternating link equivalence**, with Touseef Haideer, preprint, submitted, to appear on arxiv.org next week
2. *Polynomial bounds for surfaces in cusped 3-manifolds*, with Jessica Purcell, preprint, submitted to American Journal of Mathematics, https://arxiv.org/abs/2311.08567
3. *Standard position for surfaces in link complements in arbitrary 3-manifolds,* with Jessica Purcell, pending revisions in Algebraic & Geometric Topology, 27 pp., https://arxiv.org/abs/2205.06368
4. *Random meander model for links*, with Nicholas Owad, Discrete & Computational Geometry, published online June 2024, 20 p.
5. *NP-hard problems naturally arising in knot theory,* with Dale Koenig, Transactions of the American Mathematical Society, Ser. B 8 (2021), 420-441
6. *Tangle decompositions of alternating link complements*, with Joel Hass and Abigail Thompson, Illinois Journal of Mathematics 65 (2021), no. 3, 533–545
7. *Unlinking, splitting, and some other NP-hard problems in knot theory,* with Dale Koenig, Proceedings of the 2021 ACM-SIAM Symposium on Discrete Algorithms (SODA), SIAM (2021), 1496--1507
8. *Alternating links have at most polynomially many Seifert surfaces of fixed genus*, with Joel Hass and Abigail Thompson, Indiana University Mathematics Journal 70 (2021), no. 2, 525-534
9. *Simplicial volume of links from link diagrams,* with Oliver Dasbach, Mathematical Proceedings Cambridge Philosophical Society 166 (2019), no. 1, 75–81
10. *Determining isotopy classes of crossing arcs in alternating links*, Asian Journal of Mathematics, Vol. 22, No. 6 (2018), 1005-1024
11. *The number of surfaces of fixed genus in an alternating link complement,* with Joel Hass and Abigail Thompson, International Mathematics Research Notices 6 (2017), 1611-1622
12. *Intercusp geodesics and the invariant trace field of hyperbolic 3-manifolds,* with Walter Neumann, Proceedings of the American Mathematical Society 14 (2016), No. 2, 887-896
13. *A refined upper bound for the hyperbolic volume of alternating links and the colored Jones polynomial*, with Oliver Dasbach, Mathematical Research Letters 22 (2015), No. 4, 1047-1060
14. *Exact volume of hyperbolic 2-bridge links,* Communications in Analysis and Geometry 22 (2014), No. 5, 881-896
15. *An alternative approach to hyperbolic structures on link complements,* with Morwen Thistlethwaite, Algebraic & Geometric Topology 14 (2014), 1307-1337
16. PhD thesis: *Hyperbolic Structures from Link Diagrams*, University of Tennessee (2012), 77 pp.
17. *Decomposition of Cellular Balleans*, with Ihor Protasov, Topology Proceedings 36 (2010), 77-83
18. *Asymptotic Rays,* with Oleksii Kuchaiev, International Journal of Pure and Applied Math. 56, No. 3 (2009), 353-358

In Preparation (available upon request)

19. *PSL(2,C)-representations of knot groups from knot diagrams,* with Kathleen Petersen, preprint, 50 pp.
21. *Polynomially many surfaces in terms of hyperbolic volume in a 3-manifold,* with Marc Lackenby, preprint
22. *Unknotting number problem is NP-hard*, with Jaeyun Bae, preprint
23. *Bound on Pachner moves and crushing moves for a 3-manifold is NP-hard*, with Stephan Tillman, preprint
24. *On bit-computability and its extensions of DISCRETE-FREE SUBGROUP of PSL(2, R) problem*, with Jane Gilman, preprint

Selected Software

26. *Hyperbolic structures from link diagrams,* with D. Koenig and A. Lowen. A more general version of the above, for links with any region size, including non-alternating links. Written in Python, can be integrated with SnapPy, https://sites.rutgers.edu/anastasiia-tsvietkova/research/
27. *Hyperbolic structures from alternating link diagrams*. Implementation of an alternative method for computing hyperbolic structures of alternating links with small regions. Written in C++. https://sites.rutgers.edu/anastasiia-tsvietkova/research/
28. *Computing invariant trace field from a link diagram, with no approximation involved*. Worksheet that gives the polynomial for the invariant trace field of a hyperbolic 2-bridge link. Written in Mathematica. https://sites.rutgers.edu/anastasiia-tsvietkova/research/
29. *Footstep*, with O. Kuchaiev, P. Protsyk, P. Shelyazhenko. Software system written as part of Microsoft Imagine Cup competition, placed first in Ukraine in 2006.

Research Talks

Conference Talks

- CIRM workshop “Geometry and computing”, Luminy, Marseille, France, short talk in “Computational geometry” session, 10/2024
- BIRS workshop “Knots informed by random models and experimental data”, Banff, Canada, 04/2024
- Foundations of Computational Mathematics FoCM'23, Sorbonne Université, Paris, France, 06/2023
- Low-dimensional Topology workshop, MFO Oberwolfach, Germany, 01/2023
- Sage Days Duluth, University of Minnesota Duluth (I had to cancel the talk), 06/2022
- "Computational Aspects of Discrete Subgroups of Lie Groups" workshop (virtual), ICERM, Brown, 06/2021
- ACM-SIAM Symposium on Discrete Algorithms SODA (virtual), 01/2021
- Foundations of Computational Mathematics conference FoCM'20 (cancelled due to pandemic), Simon Fraser University, Canada, 06/2020
- Redbud Topology conference (an invited talk and a lecture for students), University of Arkansas, 3/2020
- Low-dimensional Topology workshop, MFO, Oberwolfach, Germany, 2/2020
- Computational Problems in Low-dimensional Topology II, OIST, Japan, 4/2019
- Low dimensional topology and number theory XI, Osaka University, Japan, 3/2019
- Classical and Quantum 3-Manifold Topology workshop, Monash University, Australia, 12/2018
- ThompScharby Fest, UC Berkeley, USA, 7/2018
- Redbud Topology Conference (cancelled by me due to sickness), Oklahoma State University, 4/2018
- Ryukyu Knot Theory workshop, Naha, Okinawa, Japan, 1/2018
- "New developments in Teichmuller space theory" mini-symposium, OIST, Japan, 11/2017
- 51st Spring Topology and Dynamic Conference, NJ, Session on Geometric Topology, 3/2017
- Redbud Triangulations conference, Oklahoma State University, OK, 11/2016
- Knots in Hellas, Ancient Olympia, Greece, 7/2016
- Chico Topology Conference, California State University, Chico, 5/2016
- Workshop on Geometric Structures on 3-Manifolds, IAS, Princeton, 10/2015
- The Thin Manifold conference, University of Iowa, 8/2014
- International Meeting RSME-SCM-SEMA-SIMAI-UMI, Bilbao, Spain, Session on Geometric Topology, 7/2014
- Low dimensional topology, knots, and orderable groups, CIRM, Luminy-Marseille, France, 7/2013
- Low-dimensional Topology and Geometry in Toulouse, Toulouse Mathematics Institute, 6/2013
- Knots in Washington XXXIV, session on Geometric Aspects of Knot Theory, GWU, 12/2012
- GEAR Network Retreat, University of Illinois, Urbana-Champaign, 8/2012
- Moab Topology Conference, Utah State University, Moab, 5/2012
- USTARS, University of Iowa, Distinguished Graduate Student talk, 4/2012
- 46th Spring Topology and Dynamics, Low-dimensional Topology Session, Universidad Nacional Autónoma de México, Mexico, 3/2012
- Knots in Washington XXXIII, George Washington University, 12/2011
- Geometric Topology of Knots Workshop, Centro di Ricerca Matematica, Pisa, Italy, 5/2011
- 12th Chico Topology Conference, California State University, Chico, 6/2010

Invited Talks at American Math. Soc. (AMS) or Joint Math. Meetings (JMM) *(SS is Special Session)*

- AMS meeting, the University of Albany, NY, SS Invariants of Knots, Links, and Low-dimensional Manifolds, 09/2024
- AMS meeting, University at Buffalo, SS From Classical to Quantum Low-Dimensional Topology (I had to cancel the talk), 09/2023
- JMM, Boston, SS on Unknotting Operations (I had to cancel the talk), 01/2023
- AMS Meeting (virtual), Purdue University, SS on Optimization, Complexity, and Real Algebraic Geometry, 03/2022
- AMS Meeting, University of Virginia, SS on Knots and Links in Low-Dimensional Topology, 03/2022 (meeting cancelled due to the pandemic)
- JMM (virtual), SS on Geometry and Topology in Dimensions 3 and 4, 01/2021
- AMS meeting (virtual), Penn State University, SS on Geometry of Groups and 3-manifolds, 10/2020
- AMS meeting (cancelled due to the pandemic), CSU Fresno, SS on Algorithms in the Study of Hyperbolic 3-manifolds, 05/2020
- AMS meeting (cancelled due to the pandemic), CSU Fresno, SS on Complexity in Low dimensional topology, 05/2020

- JMM, Denver, Colorado, SS Women in Topology, 1/2020
- AMS Meeting, Bowdoin College, Maine, SS on Decomposing 3-manifolds, 9/2016
- AMS Meeting, CSU Fullerton, SS on Algebraic and Combinatorial Structures in Knot Theory, 10/2015
- AMS Meeting, University of Nevada, Las Vegas, SS on Knots and 3-manifolds, 4/2015
- AMS Meeting, University of Tennessee, SS on Number Theory and Topology, 3/2014
- AMS Meeting, Washington University, St. Louis, SS on Geometric Aspects of 3-Manifold Invariants, 10/2013
- AMS Meeting, Temple University, PA, SS on Geometric topology of knots and 3-manifolds, 10/2013
- AMS Meeting, Tulane University, New Orleans, SS on Combinatorial Methods in Knot Theory, 10/2012

Invited Colloquia Talks

- University of Queensland (through Zoom), 2/2023
- University of South Florida, 1/2023
- University of Miami, 2/2021
- Math Conversations, Institute of Advanced Study, Princeton, 2/2021
- University of Melbourne, Australia, 2/2018
- University of Auckland, New Zealand, 11/2017
- Monash University, Melbourne, Australia, 4/2016
- University of Sydney, Australia, 3/2016
- University of Queensland, Brisbane, Australia, 2/2016
- Dartmouth College, New Hampshire, 2/2016
- Rutgers University, Newark, New Jersey, 2/2016
- Oklahoma State University, Oklahoma, 2/2016
- California State University, Chico, 2/2016
- Okinawa Institute and Science and Technology, Japan, 1/2016
- New College of Florida, Florida, 11/2015
- Brigham Young University, Utah, 10/2014
- Women Advancing Arizona Mathematics Colloquium, University of Arizona, 3/2014
- University of Louisiana, Lafayette, 1/2013

Invited Seminar Talks

CUNY Graduate Center, USA, 12/2024
IAS, "What is …?" seminar, 12/2023
University of Queensland, Australia 07/2023
University of Sydney, Australia 08/2023
Princeton University 04/2023
Michigan State University 11/2021 and 11/2015
University of Oklahoma 10/2021
IAS Member seminar, Princeton, 12/2020
Australian Geometric Topology Webinar 10/2020
CUNY Graduate Center 4/2020, 12/2016, and 12/2012
Rutgers New Brunswick 2/2020 and 10/2016
University of Tokyo, Japan, 2/2019
AIMR, Tohoku University, Japan, 4/2018
Monash University, Australia, 2/2018
University of Osaka, Japan, 12/2017
PATCH (Bryn Mawr, Haverford, Penn, and Temple) 03/2017
GEAR seminar at Rutgers, Newark, 1/2017
California Institute of Technology 12/2015
University at Buffalo (SUNY) 11/2015
University of California, Los Angeles, 10/2015
University of South California 10/2015
University of California, Davis, 10/2015, 6/2015, and 2/2014
Columbia University 10/2015 and 9/2011
Temple University topology seminar, 09/2015
Stanford University 10/2014
Brigham Young University 10/2014 and 11/2011
University of Texas, Austin 09/2014 and 10/2011
University of California, Santa Barbara 02/2014
Brown University topology seminar, 12/2013
ICERM 11/2013
LSU /U Iowa/UPenn /U Memphis/U Ark 09/2012
University of Virginia 01/2012
University of Tennessee 02/2011

Supervising postdocs

A postdoctoral mentor (sponsoring scientist) for an NSF Postdoctoral Fellowship application with Rutgers-Newark as a host institution for one future postdoc, 2024

A faculty mentor and contact for seven postdocs from different research areas working at IAS and Princeton Mathematics Department, 2020-2021:

Lisa Sauermann, IAS member (PhD from Stanford)
Vijay Bhattiprolu, Founders' Circle Member at IAS (PhD from Carnegie Mellon)
Tony Feng, Friends of the IAS Member (PhD from Stanford)

Francois Grier, IAS member (PhD from Stanford)
Linyuan Liu, Minerva Research Foundation Member at IAS (PhD from Sorbonne)
Salim Tayou, Giorgio and Elena Petronio Fellow (PhD from Université Paris-Sud)
Clark Butler, Veblen Research Instructor at IAS and Princeton Math. Dept. (PhD from University of Chicago)

Supervised five postdocs working in topology and geometry at OIST in my role as a Head of Geometry and Topology of Manifolds group, 2017-2019:
Dale Koenig, postdoctoral researcher (PhD from UC Davis 2017)
Nicholas Owad, postdoctoral researcher (PhD from University of Nebraska 2016)
Robert Tang, postdoctoral researcher (PhD from University of Warwick 2013)
Tirasan Khandawit, postdoctoral researcher (PhD from MIT 2013)
Linling Ru, postdoctoral visitor (PhD from University of Warwick 2014)

Supervising graduate students

- PhD thesis adviser for Touseef Haider and Jaeyun Bao at Rutgers-Newark, both expected to graduate in 2025
- Alex Lowen, research associate for a semester-long research and software project, tuition and salary paid from my NSF grant, Rutgers-Newark
- Serving on PhD thesis committees: Alex Lowen, Rutgers-Newark, 2023; Alex He, University of Queensland, Australia, 2023.
- Co-supervised Thomas Burns (neuroscience student) through lab rotation system, OIST, Japan, Spring 2018
- A faculty mentor for graduate student Lorinda Leshock from University of Delaware through AWM mentor network, Fall 2016-Spring 2017
- Joint research/mentoring through NSF Vertical Integration of Research and Education: Kimberly S. D'Souza, Daniel Guillot, Ying Hu, Jun Peng, Chris Penn at Louisiana State University, Fall 2012 and Spring 2013.

Supervising undergraduate students

- Mason Moran from Michigan Technological University, supervised his project through Summer Undergraduate Research Institute at Rutgers-Newark, summer 2024
- Xiao Chen, Rutgers University Newark, summer 2022
- Silvia Jaramillo-Regalado at Rutgers-Newark, summer 2020, served as a mentor through NSF-funded Garden State LS Alliance for Minority Participation, 2021
- Felipe Castellano-Macias, Northeastern University, supervised his internship at OIST, Japan, in Spring and Summer 2019
- Robert Hanson, University College London, supervised his internship at OIST, Japan, Summer and Fall 2018
- Ruying Bao, University of California, Davis, Winter, Spring and Fall 2014
  Currently a graduate student in Applied Mathematics, Princeton University.
- Sarah Seger at Louisiana State University, Fall 2012 and Spring 2013. Later completed PhD in Math at Rice.

Other Selected Professional Activities and Services

Conference co-organization

- Pending funding: one BIRS workshop, Canada, and one AIM workshop, USA
- BIRS workshop "Knot theory informed by random models and experimental data", Canada, 4/2024
- Two international workshops at Rutgers, Newark, NJ, sponsored by NSF CAREER grant:
  (1) Computational questions about 3-manifolds, associated groups and varieties, scheduled 10/2025
  (2) Computational Problems in Low-Dimensional Topology III, 4/2023
- Computational Problems in Low-dimensional Topology I and II mini-symposiums, 3/2018 and 4/2019, OIST, Japan
- Geometry and Topology of 3-manifolds workshop, 05/2018, OIST, Japan
- Invariants in Low-dimensional Topology Special Session at the AMS Meeting, New York, 05/2017
- Geometry, Topology and Complexity of Manifolds, and Applications to Biology (Joelfest), UC Berkeley 05/2016
- Knots and 3-manifolds Special Session at the AMS Meeting, Las Vegas, NV, 04/2015

Colloquia/seminar co-organization

- Distinguished Lectures in Topology and Geometry at Rutgers, Newark, sponsored by NSF CAREER grant, 2023-2027
- Geometry, Topology and Dynamics seminar at OIST, Japan, Fall 2017 – Spring 2019. (The seminar had many international as well as Japan-based speakers.)
- Faculty lunch seminar at OIST, Japan, 2018
- Mathematics Colloquium, Rutgers University, Newark, Fall 2016-Spring 2017
- GEAR seminar in Teichmuller theory at Rutgers University, Newark, Fall 2016-Spring 2017

- Low-dimensional topology and geometry reading seminar for graduate students, UC Davis, 2014

Reviewer/Referee/Panelist

- Served on NSF grant panels in different years, reviewer for NSF proposals, USA
- Reviewer for UKRI proposals, UK
- Referee for journals: Advances in Mathematics, Journal of the London Mathematical Society, Proceedings of American Mathematical Society, Algebraic and Geometric Topology (x7), Communications in Analysis and Geometry (x2), Geometriae Dedicata (x2), Journal of Differential Geometry, Tohoku Mathematics Journal, Journal of Knot Theory and Ramifications, Experimental Mathematics, Michigan Mathematics Journal, New York Journal of Mathematics
- Referee for Computer Science conferences: STOC 2021 (ACM Symposium on Theory of Computing), WG 2020 (International Workshop on Graph-Theoretic Concepts in Computer Science),
- Reviewer for MathSciNet

Selected University Committees/Initiatives

At Rutgers, Newark (2016-2022):

- a member of Rutgers-Newark Faculty Council, 2024
- a member of Executive Committee for Math and Computer Science Department, 2024
- Rutgers library committee, 2022-2023
- library liaison for the department; participated in the search for the Vice President of University Libraries and University Librarian, 2023
- participated in faculty hiring in mathematics over the years
- co-developed course curriculum for a new undergraduate course at the department, History of Mathematics.

At OIST, Japan (2017-2019)

- developed a proposal for the international visiting faculty program and oversaw the launch of the program
- mathematics hiring initiative aimed to create an international faculty group in mathematics (inviting external advisors, facilitating their communication with administration, working on attracting applicants, and later serving on the hiring committee)
- library committee
- conference and workshop committee (reviewing conference proposals and making funding recommendations)
- hiring committees: computer science, mathematics
- developed new graduate courses curricula, oversaw teaching by postdocs of mathematics graduate courses.

Work with high school students

- Helped to organize California State Summer School for Math and Science for talented high school students, Summer 2015 (included teaching a course)
- Helped to organize the UT Pro2Serve Math Contest for talented high school students, annually 2006-2011
- Helped to organize and conduct Math Olympiads for high school students in Ukraine, annually 2001-2006

Broadening participation of underrepresented groups

- Panelist/lunch discussion organizer for Women and Mathematics event for students and junior mathematicians at IAS, Princeton, 2021.
- A faculty mentor for students and junior mathematicians through Association for Women in Mathematics network and through Garden State Alliance for Minority Participation program at Rutgers.
- A third of students and postdocs I supervised (listed above) were from groups underrepresented in mathematics.
- Gave invited talks for broad mathematics audience at Association of Women in Mathematics events, Women Advancing Arizona Mathematics Colloquium, Underrepresented Students in Topology and Algebra Research symposium.
- One of the goals of Distinguished Lectures at Rutgers mentioned above (that I will organize) is to showcase the work of mathematicians from underrepresented groups

Teaching-related

- Mentor for a new graduate teaching assistant, University of Tennessee, Fall 2011
- Completed ``The Best Practices in Teaching" program, The University of Tennessee, Fall 2006

Teaching Experience

Rutgers University, Newark

- *Geometry*, undergraduate course (math seminar), scheduled Spring 2025
- *Topology*, undergraduate course, Fall 2024
- *Probability and Statistics for Engineers and Scientists*, undergraduate course, Spring 2023
- *The Shape of Space*, undergraduate course, Fall 2022

- *Hyperbolic Knot Theory*, graduate course, Fall 2022
- *Advanced Calculus II* (12 students), Spring 2022
- *Applied Calculus*, large (150 students) and small (30 students) lectures, Fall 2021
- *Geometry, Topology and Complexity of 3-manifolds* graduate course, Spring 2020
- *Foundations of Modern Mathematics* (25 students), Fall 2019
- *Knot Theory* (25 students), undergraduate course (math seminar), Spring 2017
- *Calculus II* (30 students), Fall 2016

OIST, Japan. Co-instructor (with postdocs) on graduate special topics courses:

- *Hyperbolic Geometry*, Spring 2018
- *Algebraic Topology II*, Spring 2018
- *Geometry and Topology Seminar II*, Spring 2018
- *Intro to Topology and Algebraic Topology*, Fall 2017
- *Geometry and Topology Seminar I*, Fall 2017

Additionally, co-instructor on 3 individual study courses for graduate students.

University of California, Davis

- *Geometric Topology (graduate course)*, Spring 2016
- *Topology*, Spring 2016
- *Euclidean and non-Euclidean geometry*, about 60 third and fourth-year students, Winter 2016
- *History of Mathematics*, about 65 third and fourth-year students, Winter 2016
- *Hyperbolic 3-manifolds*, graduate course, Spring 2015
- *Mini-course on hyperbolic geometry*, California State Summer School for Math and Science, 07/2015
- *Calculus III*, instructor (a large lecture, about 100 second and third-year students), Spring 2014
- *Calculus II*, instructor (a large lecture, about 100 first and second-year students), Spring 2014
- *Real Analysis III*, instructor, about 45 fourth-year students, Winter 2014

Louisiana State University

- *VIGRE Research Seminar: Algorithms in Knot Theory II*, co-instructor, Spring 2013
- *VIGRE Research Seminar: Algorithms in Knot Theory I*, co-instructor, Fall 2012
- *History of Mathematics*, Spring 2013
- *Calculus I and Analytic Geometry*, Fall 2012

University of Tennessee

- *Statistical Reasoning*, Spring 2012
- *Calculus II*, Fall 2011, Spring 2011 and Fall 2010
- *Matrix Algebra*, teaching assistant, Fall 2011
- *Calculus I*, Spring 2010 and Fall 2009
- *Finite Mathematics*, Spring 2009
- *Precalculus*, Fall 2008
- *Basic Calculus*, instructor in Spring 2008; teaching assistant in Spring and Fall 2007
- *College Algebra*, teaching assistant, Fall 2006

Personal Information: US citizen; previously a citizen/resident of Ukraine, Lithuania, Japan

Leaves: parental leaves in 2015 and 2020

References (in alphabetical order):

David Futer, Temple University, Professor, dfuter@temple.edu
David Gabai, Princeton University, Hughes-Rogers Professor of Mathematics, gabai@math.princeton.edu
Cameron Gordon, UT Austin, Professor and Sid W. Richardson Foundation Regents Chair, gordon@math.utexas.edu
Joel Hass, UC Davis, Distinguished Professor, hass@math.ucdavis.edu
Efstratia Kalfagianni, Michigan State University, Professor, kalfagia@math.msu.edu
Jessica Purcell, Monash University, Professor and Associate Dean of Research, jessica.purcell@monash.edu
Alan Reid, Rice University, Edgar Odell Lovett Professor and Department Chair, alan.reid@rice.edu
Jennifer Schultens, UC Davis, Professor (teaching reference), jcs@math.ucdavis.edu