

# Oleg Lazarev

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CONTACT INFORMATION	University of Massachusetts, Boston Wheatley W-03-154-07 100 William T. Morrissey Blvd. Boston, MA 02125 USA	<a href="mailto:oleg.lazarev@umb.edu">oleg.lazarev@umb.edu</a> <a href="https://www.math.umb.edu/~oleg/">https://www.math.umb.edu/~oleg/</a>
RESEARCH INTERESTS	Symplectic and contact topology, h-principles, Fukaya category and mirror symmetry, algebraic K-theory, stable homotopy theory.	
EMPLOYMENT	Assistant Professor, University of Massachusetts, Boston, Mathematics Department	2021- present
	Simons Postdoctoral Fellow, Harvard University, Mathematics Department	2020-2021
	NSF Postdoctoral Fellow, Columbia University, Mathematics Department	2017-2020
EDUCATION	<b>Stanford University</b> Ph.D. in Mathematics, September 2017 <ul style="list-style-type: none"><li>• Dissertation title: Flexible Weinstein domains and applications to symplectic and contact topology</li><li>• Advisor: Yakov Eliashberg</li></ul>	2012-2017
	<b>Independent University of Moscow</b> Math in Moscow	Spring 2010
	<b>Princeton University</b> A.B. in Mathematics, Summa cum Laude <ul style="list-style-type: none"><li>• Undergraduate thesis: A complex variable extension of the Hobby-Rice theorem</li><li>• Advisor: Elliott Lieb</li></ul>	2008-2012
FELLOWSHIPS AND AWARDS	<b>NSF Postdoctoral Research Fellowship</b>	2017-2020
	<b>NSF Graduate Research Fellowship</b>	2012-2017
	<b>Middleton Miller '29 Prize</b> , Princeton Mathematics Department, for independent work in mathematics	2012
	<b>Sigma Xi Book Award for Outstanding Research</b> , Princeton Mathematics Department	2012
	<b>AMS Math in Moscow Scholarship</b>	2009
PUBLICATIONS AND PREPRINTS	<b>Oleg Lazarev, Zach Sylvan, and Hiro Lee Tanaka.</b> The $\infty$ -category of stabilized Liouville sectors. 2021. arxiv:2110.11754. p. 1- 105. <b>Oleg Lazarev, Zach Sylvan, and Hiro Lee Tanaka.</b> Localization and flexibilization in symplectic geometry. 2021. arxiv:2109.06069. p.1-53. <b>Oleg Lazarev.</b> Symplectic flexibility and the Grothendieck group of the Fukaya category. To appear in <i>Journal of Topology</i> . arXiv:1910.01101. p.1-37.	

**Oleg Lazarev and Zach Sylvan.** Prime-localized Weinstein subdomains. To appear in *Geometry and Topology*. arxiv:2009.09490. p.1-29.

**Oleg Lazarev.** Maximal contact and symplectic structures. *Journal of Topology*, 13(3), 1058-1083 (2020).

**Oleg Lazarev.** H-principles for regular Lagrangians. *Journal of Symplectic Geometry*, 18(4), 1071- 1090 (2020). arXiv:1808.05993.

**Oleg Lazarev.** Simplifying Weinstein Morse functions. *Geometry and Topology*, 24, 2603 - 2646 (2020). arXiv:1808.03676.

**Oleg Lazarev.** Contact manifolds with flexible fillings. 2016. *Geometric and Functional Analysis*. 30, 188 - 254 (2020). arXiv:1610.04837.

**Yakov Eliashberg, Sheel Ganatra, and Oleg Lazarev.** Flexible Lagrangians. *International Mathematics Research Notices*, 2020(8), 2408 - 2435 (2020). arXiv:1510.01287.

**Oleg Lazarev and Elliott H. Lieb.** A smooth, complex generalization of the Hobby-Rice theorem. *Indiana University Mathematics Journal*, 62(4):1133–1141 (2013).

**Oleg Lazarev, Matt Mizuhara, Ben Reid, and Holly Swisher.** An Extension of a Proof of the Ramanujan Congruences for Multipartitions. *Ramanujan Journal*, 45(1), 1–20, (2018). arXiv:1601.05287.

**Levent Alpoge, Nadine Amersi, Geoffrey Iyer, Oleg Lazarev, Steven J. Miller, and Liyang Zhang.** Maass waveforms and low-lying zeros. *Analytic number theory*, 19–55. Springer, Cham, (2015).

**Geoffrey Iyer, Oleg Lazarev, Steven J. Miller, and Liyang Zhang.** Finding and counting MSTD sets. *Combinatorial and additive number theory—CANT 2011 and 2012*, volume 101 of *Springer Proc. Math. Stat.*, 79–98. Springer, New York, (2014).

**Oleg Lazarev, Steven J. Miller, and Kevin O’Byrant.** Distribution of missing sums in sumsets. *Experimental Mathematics*, 22(2), 132–156, (2013).

**Geoffrey Iyer, Oleg Lazarev, Steven J. Miller, and Liyang Zhang.** Generalized more sums than differences sets. *Journal of Number Theory*, 132(5), 1054–1073, (2012).

**Oleg Lazarev and Holly Swisher.** A combinatorial proof of a recursive formula for multipartitions. *Integers*, 12(1), 113–127, (2012).

INVITED TALKS	Symplectic 'N' Contact Topology, Early-Career Conference, mentor	August 2022
	Emmanuel Giroux birthday conference, Institut Henri Poincaré	July 2022
	Stony Brook Low-Dimensional Topology, Gauge Theory, and Symplectic Geometry Seminar	Spring 2022
	IAS/Princeton Symplectic seminar	Dec. 2021
	UMass Boston Colloquium	Nov. 2021
	IAS workshop, “The h-principle and beyond”	Nov. 2021

Symplectic semester conference at Institut Henri Poincaré	July 2021, Cancelled due to Covid-19
Boston University Geometry and Physics seminar	April 2021
Dutch Differential Topology and Geometry seminar, 2 talks	April 2021
Symplectic Zoominar, CRM-Montréal, Princeton/IAS, Tel Aviv, and Paris	March 2021
Western Hemisphere Symplectic Geometry seminar	May 2020
Stony Brook University Symplectic Geometry seminar	May 2020 Cancelled due to Covid-19
IAS Emerging Topics workshop on Hypersurfaces in Contact Geometry	March 2020 Cancelled due to Covid-19
University of Massachusetts, Boston, Colloquium	March 2020
University of South California, Colloquium	Feb. 2020
MIT Geometry and Topology seminar	Dec. 2019
Conference on homological algebra, microlocal analysis and symplectic geometry, CRM Montreal	June 2019
IAS/Princeton Symplectic Geometry Seminar	April 2019
Northwestern Geometry and Physics Seminar	Feb. 2019
PATCH Seminar Philadelphia area seminar: Bryn Mawr, Haverford, Penn, Temple	Feb. 2019
Georgia Tech Geometry Topology Seminar	Dec. 2018
Workshop on Legendrian submanifolds UQAM Montreal	Nov. 2018
Stony Brook topology and symplectic geometry seminar	Oct. 2018
Conference on geometric methods in symplectic and contact topology	Aug. 2018
Workshop on symplectic geometry and its interactions with low-dimensional topology, Princeton	June 2018
Gokova Geometry Topology Conference	May 2018
Nantes symplectic seminar	Jan. 2018
Berlin-Hamburg symplectic seminar	Jan. 2018

	XII Workshop on Symplectic Geometry, Contact Geometry, and Interactions, Uppsala	Jan. 2018
	Berkeley Topology Seminar	Nov. 2017
	MIT Geometry and Topology Seminar	May 2017
	Joint Los Angeles Topology Seminar	April 2017
	Columbia Symplectic Geometry, Gauge Theory, and Categorification Seminar	Dec. 2016
	IAS/Princeton Symplectic Geometry Seminar	Dec. 2016
	Stanford Symplectic Geometry Seminar	Nov. 2016
	Northern California Symplectic Geometry Seminar Joint between Berkeley and Stanford	Dec. 2015
	Combinatorial and Additive Number Theory Conference CUNY	May 2012
	Joint Mathematics Meetings Boston	Jan. 2012
	Maine/Quebec Number Theory Conference University of Maine	Nov. 2011
	Young Mathematicians Conference Ohio State University	Aug. 2011
	Shenandoah Undergraduate Mathematics and Statistics Conference James Madison University	Sept. 2010
TEACHING	General Topology (Math 440), Instructor, UMass Boston	Spring 2022
	Calculus 1 (Math 140), Instructor, UMass Boston	Fall 2021
	Undergraduate algebraic topology (Math 4053), Instructor, Columbia	Spring 2020
	Differential Equations (Math 2030), Instructor, Columbia	Fall 2018
	Honors Differential Equations (Math 53H), Teaching Assistant, Stanford	Spring 2016
	Introductory Calculus (Math 19), Course Assistant, Stanford	Fall 2015
	Differential Equations (Math 53), Teaching Assistant, Stanford	Spring 2014
	Graduate Complex Analysis (Math 215A), Course Assistant, Stanford	Fall 2013
	Honors Linear Algebra (Math 217), Course Assistant, Princeton	Spring 2011

SERVICE AND  
OUTREACH

**Conference organizing:**

Kylerec workshop co-organizer Spring 2017  
Five day graduate student workshop on symplectic fillings

**Seminar organizing:**

Harvard/MIT outdoor symplectic seminar, co-organizer Spring 2021

Columbia Symplectic Geometry, Gauge Theory, and Categorification Seminar, co-organizer 2017- 2020

Stanford Student Symplectic Seminar, organizer 2015-2016

Stanford Kiddie Seminar for first year graduate students, co-organizer 2013-2014

**Mentoring and outreach**

Symplectic and contact geometry Early-Career Conference August 2022  
Mentor for graduate students and postdocs for one day of conference; gave open problems and led afternoon research session.

UMass Boston undergraduate math club Sept. 2021-  
Co-organized meetings, worked on math problems and riddles with students, gave interview about life in mathematics

Columbia Undergraduate Math Society, 2 talks April, Oct. 2019

Columbia graduate student colloquium talk Feb. 2019

Stanford Math Directed Reading Program mentor Spring 2017  
Guided Stanford undergrad through Milnor's "Morse theory" during the spring quarter

Stanford Undergraduate Research in Mathematics, co-advisor Summer 2016  
Co-advised three Stanford undergrads for ten week research on "Mapping class groups and four-dimensional Lefschetz fibrations"

SPLASH talk for high-school students, Stanford April 2016

First year graduate student mentor 2014-2015

Summer Institute for Mathematics, University of Washington, counselor Summer 2009  
Math camp for high-school students

**Reviewing:**

Referee for *Geometry and Topology*, *Journal of Topology*, *Inventiones mathematicae*, *Journal of Symplectic Geometry*, *Compositio Mathematica*, *International Mathematics Research Notices*, *Communications in Analysis and Geometry*, *Advances in Mathematics*, *Mathematische Annalen*

Review writer for MathSciNet

**Department service:**

College of Sciences and Mathematics faculty senator, UMass Boston Nov. 2021-