

# Sucharit Sarkar

## Curriculum Vitae

### Contact

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### Interests

Low dimensional topology, symplectic geometry, and algebraic topology, with particular interest in knot theory, Heegaard Floer homology, and Khovanov homology.

### Education

Ph.D. in Mathematics, Princeton University. 2005 – 2009  
Bachelor of Mathematics, Indian Statistical Institute. 2002 – 2005

### Employment

Professor, University of California at Los Angeles. 2021 –  
Associate Professor, University of California at Los Angeles. 2016 – 2021  
Assistant Professor, Princeton University. 2012 – 2016  
Clay Research Fellow, Clay Mathematics Institute. 2009 – 2013  
Ritt Assistant Professor, Columbia Univeristy. 2009 – 2012

### Visiting positions

Simons Center for Geometry and Physics. November, 2012  
Mathematical Sciences Research Institute. Spring, 2010

### Awards and honors

Sorgenfrey Distinguished Teaching Award, UCLA. 2020  
Invited talk at International Congress of Mathematics, Brazil. 2018  
Clay Research Fellowship, Clay Mathematics Institute. 2009 – 2013  
Honorific Fellowship, Princeton University. 2008 – 2009  
Centennial Fellowship, Princeton University. 2005 – 2009  
S. H. Aravind Gold Medal, Indian Statistical Institute. 2005  
KVPY scholarship, Govt. of India. 2002 – 2005  
Gold and silver medals, International Mathematical Olympiads. 2001 – 2002

### NSF grants

PI of Research Training Group (RTG) grant. 2022 – 2027  
PI of Research grants. 2019 – 2028  
Co-PI of Focused Research Group (FRG) grant. 2016 – 2020  
PI of CAREER grant. 2014 – 2020

### Journals

Editor, *Pacific Journal of Mathematics*. 2025 –  
Secretary, *Pacific Journal of Mathematics*. 2024 –  
Editor, *Selecta Mathematica*. 2020 –  
Board member, *Pacific Journal of Mathematics*. 2018 –

## Selected papers

1. (Lipshitz-Sarkar) *Spatial refinements and Khovanov homology*. Proc. of the ICM (2018)
2. (Lipshitz-Sarkar) *A Khovanov stable homotopy type*. J. Amer. Math. Soc. (2014)
3. (Sarkar-Wang) *An algorithm for computing some Heegaard Floer homologies*. Ann. of Math. (2010)
4. (Manolescu-Ozsvath-Sarkar) *A combinatorial description of knot Floer homology*. Ann. of Math. (2009)

## Other publications

5. (Cheng-Hedden-Sarkar) *Murasugi sum and extremal knot Floer homology*. Quantum Topol. (2025)
6. (Marengon-Sarkar-Stipsicz) *Spectra in Khovanov and knot Floer theories*. Bolyai Soc. Math. Stud. (2024)
7. (Lipshitz-Sarkar) *Khovanov homology of strongly invertible knots and their quotients*. Proc. Sympos. Pure Math. (2024)
8. (Manolescu-Marengon-Sarkar-Willis) *A generalization of Rasmussen's invariant, with applications to surfaces in some four-manifolds*. Duke Math. J. (2023)
9. (Lawson-Lipshitz-Sarkar) *Khovanov spectra for tangles*. J. Inst. Math. Jussieu (2023)
10. (Lipshitz-Sarkar) *A mixed invariant of non-orientable surfaces in equivariant Khovanov homology*. Trans. Amer. Math. Soc. (2022)
11. (Lawson-Lipshitz-Sarkar) *Homotopy functoriality for Khovanov spectra*. J. Topol. (2022)
12. (Lipshitz-Sarkar) *Khovanov homology detects split links*. Amer. J. Math. (2022)
13. (Lawson-Lipshitz-Sarkar) *Chen-Khovanov spectra for tangles*. Michigan Math. J. (2022)
14. (Sarkar) *Ribbon distance and Khovanov homology*. Algebr. Geom. Topol. (2020)
15. (Hendricks-Lipshitz-Sarkar) *Correction to the paper "A flexible construction of equivariant Floer homology and applications"*. J. Topol. (2020)
16. (Sarkar-Scaduto-Stoffregen) *An odd Khovanov homotopy type*. Adv. Math. (2020)
17. (Hendricks-Lipshitz-Sarkar) *A simplicial construction of G-equivariant Floer homology*. Proc. London Math. Soc. (2020)
18. (Lawson-Lipshitz-Sarkar) *Khovanov homotopy type, Burnside category, and products*. Geom. Topol. (2020)
19. (Sarkar) *Phutball draws*. Games of No Chance 5 (2019)
20. (Baldwin-Levine-Sarkar) *Khovanov homology and knot Floer homology for pointed links*. J. Knot Theory Ramifications (2017)
21. (Lawson-Lipshitz-Sarkar) *The cube and the Burnside category*. Contemp. Math. (2017)
22. (Sarkar-Seed-Szabo) *A perturbation of the geometric spectral sequence in Khovanov homology*. Quantum Topol. (2017)
23. (Hendricks-Lipshitz-Sarkar) *A flexible construction of equivariant Floer homology and applications*. J. Topol. (2016)
24. (Everitt-Lipshitz-Sarkar-Turner) *Khovanov homotopy types and the Dold-Thom functor*. Homology Homotopy Appl. (2016)
25. (Lipshitz-Ng-Sarkar) *On transverse invariants from Khovanov homology*. Quantum Topol. (2015)
26. (Sarkar) *Moving basepoints and the induced automorphisms of link Floer homology*. Algebr. Geom. Topol. (2015)
27. (Lipshitz-Sarkar) *A refinement of Rasmussen's s-invariant*. Duke Math. J. (2014)
28. (Lipshitz-Sarkar) *A Steenrod square on Khovanov homology*. J. Topol. (2014)
29. (Hedden-Juhász-Sarkar) *On sutured Floer homology and the equivalence of Seifert surfaces*. Algebr. Geom. Topol. (2013)
30. (Sarkar) *Grid diagrams and shellability*. Homology Homotopy Appl. (2012)
31. (Sarkar) *Grid diagrams and the Ozsvath-Szabo tau-invariant*. Math. Res. Lett. (2011)

- 32. (Sarkar) *A note on sign conventions in link Floer homology.* Quantum Topol. (2011)
- 33. (Sarkar) *Maslov index formulas for Whitney  $n$ -gons.* J. Symplectic Geom. (2011)
- 34. (Sarkar) *Commutators and squares in free groups.* Algebr. Geom. Topol. (2004)

**Preprints and ongoing works**

- 35. (Lipshitz-Ng-Sarkar) *A stable homotopy refinement of Legendrian contact homology.*
- 36. (Manolescu-Sarkar) *A knot Floer stable homotopy type.*

**Organizing conferences and workshops**

Geometry and Topology in Low Dimensions Conference, Renyi Institute, Budapest.	2026
Geometry and Topology Workshop, UCLA.	2024
Floer Homotopical Methods Workshop, Simons Laufer Mathematical Sciences Institute.	2022
Geometry and Topology Workshop, UCLA.	2020
Floer Homotopy Theory and Low-dimensional Topology Conference, University of Oregon.	2019
Symplectic Geometry and Homotopy Theory Conference, UCLA.	2018
Low-dimensional Topology Workshop, UCLA.	2018
Floer Homology and Homotopy Theory Conference, UCLA.	2017
Low-dimensional Topology Workshop, Princeton University.	2015

**Other activities**

UCLA-CSU Math Summer Bridge program for Cal State University students.	2024 –
Research Experience for Undergrads (REU).	2023
Training UCLA students for the Putnam mathematical competition.	2019 –
Joint Los Angeles Topology Seminar (with Caltech and USC).	2016 –