

## Rahul Pandharipande

### Curriculum Vitae

#### Educational History

A.B. Mathematics, Princeton University, 1990, *summa cum laude*  
Ph.D. Mathematics, Harvard University, 1994

#### Professional History

1994-96 L. E. Dickson Instructor, University of Chicago  
1996-97 Fellow, Institut Mittag-Leffler (Stockholm)  
1997-98 Assistant Professor, University of Chicago  
1998-00 Associate Professor, California Institute of Technology  
2001-02 Professor, California Institute of Technology  
2001-02 Visiting Professor, Princeton University  
2002-11 Professor, Princeton University  
2010-11 Visiting Professor, IST Lisbon  
2011- Professor, ETH Zürich  
2019- Director, ITS-ETH Zürich

#### Honors

Frontiers of Science Award 2024  
Research Prize of the Alexander von Humboldt Foundation 2023  
Honorary Doctor of Science 2022, Univ. of Illinois Urbana-Champaign  
Academia Europaea 2020  
Invited speaker [plenary] ICM 2018 (Rio de Janeiro)  
ERC Advanced Grants 2013-2018 & 2018-2023  
Einstein visiting fellow (Berlin) 2015-2019  
Infosys Prize for Mathematics 2013  
Clay Research Prize 2013  
Compositio Prize 2010  
Gulbenkian Foundation Fellowship (Lisbon), 2010-2011  
Invited speaker [section] ICM 2002 (Beijing)  
David and Lucile Packard Foundation Fellowship, 2000-2005  
A. P. Sloan Foundation Research Fellowship, 1999-2003

### Graduate students

|                          |   |
|--------------------------|---|
| T. Graber, Ph.D. 1998    | (Professor, Caltech)                                |
| D. Maulik, Ph.D. 2007    | (Professor, MIT)                                    |
| B. Bakker, Ph.D. 2010    | (Associate Prof., Univ. of Illinois Chicago)        |
| V. Shende, Ph.D. 2011    | (Associate Prof., UC Berkeley)                      |
| I. Setayesh, Ph.D. 2011  | (SoundHound, Toronto)                               |
| Y. Cooper, Ph.D. 2013    | (Consultant)  |
| A. Pixton, Ph.D. 2013    | (Associate Prof., Univ. of Michigan)                |
| G. Oberdieck, Ph.D. 2015 | (Professor, Univ. of Heidelberg)                    |
| F. Janda, Ph.D. 2015     | (Assistant Prof., Univ. of Illinois U-C)            |
| C. Schiessl, Ph.D. 2017  | (Physician)   |
| J. Shen, Ph.D. 2018      | (Assistant Prof., Yale)                             |
| I. Barros, Ph.D. 2018    | (Assistant Prof., Antwerp)                          |
| J. Schmitt, Ph.D. 2019   | (SwissMap post-doc, ETHZ)                           |
| T. Bülles, Ph.D. 2022    | (Pythia Labs, Los Angeles)                          |
| Y. Bae, Ph.D. 2023       | (Lewis Research Assistant Prof., Univ. of Michigan) |
| M. Moreira, Ph.D. 2023   | (Moore Instructor, MIT)                             |
| A. Cela, Ph.D. 2024      | (SNF post-doc, Cambridge Univ.)                     |

### Current

L. Drakengren  
J. Feusi  
A. Iribar López

Post-docs associated to my research group

S. Canning  
A. Giacchetto  
D. Nesterov  
F. Rezaee  
J. Schmitt  
Y. Schuler

Past post-docs

|                                  |                                      |
|----------------------------------|--------------------------------------|
| G. Bérczi (Aarhus Univ.),        | A. Bojko (Academia Sinica Taipei),   |
| P. Bousseau (Georgia and CNRS),  | A. Buryak (HSE Moscow),              |
| E. Clader (San Francisco SU),    | H. Fan (Univ. of Geneva),            |
| J. Fresan (Jussieu),             | J. Guéré (Univ. of Grenoble),        |
| D. Johnson (BYU),                | H. Lho (CNU Korea),                  |
| W. Lim (Yonsei Univ. Seoul),     | S. Molcho (Sapienza Univ. Rome),     |
| A. Morrison,                     | A. Oblomkov (UMass Amherst),         |
| D. Petersen (Stockholm Univ.),   | M. Polito (Google),                  |
| U. Riess,                        | E. Scheidegger (Beijing Univ.),      |
| I. Schwarz (KPMG),               | J. Solomon (Hebrew Univ. Jerusalem), |
| K. Slavov (ETHZ),                | S. Stark,                            |
| R. Tessler (Weizmann Institute), | L. Wu (SUST Shenzhen),               |
| M. Yakerson (Jussieu and CNRS),  | Q. Yin (Beijing Univ.),              |
| F. You (Nottingham),             | J. van Zelm (Scandio).               |

## Journals

Editorial board, *Portugaliae Mathematica* (2010-)  
Editorial board, *Algebraic Geometry* (2013-)  
Editorial board, *Peking Mathematical Journal* (2018-)  
Editorial board, *Inventiones Mathematicae* (2012-18)  
Editorial board, *Journal of the Math Society of Japan* (2013-18)

## Service

SwissMAP group leader for GTP (2014-)  
Advisory board, *Forchungsinstitut für Mathematik*, ETHZ (2013-)  
Advisory board, *Institute for Theoretical Studies*, ETHZ (2013-2019)  
Abel prize committee (2014-16)  
EMS prize committee (7th ECM, Berlin 2016)  
Hopf prize committee (2015-17)  
Fields medal committee (ICM 2022)

## Bibliography

- (1) W. Fulton and R. Pandharipande, *Notes on stable maps and quantum cohomology*, in Proceedings of Algebraic Geometry – Santa Cruz 1995, Proc. Sympos. Pure Math. **62**, Part 2, 45–96.
- (2) R. Pandharipande, *A compactification over  $\overline{M}_g$  of the universal moduli space of slope-semistable vector bundles*, JAMS **9** (1996), 425–471.
- (3) R. Pandharipande, *The symmetric function  $H^0(\overline{M}_{0,n}, L_1^{x_1} \otimes \cdots \otimes L_n^{x_n})$* , J. Alg. Geom. **6** (1997), 721–731.
- (4) R. Pandharipande, *The canonical class of  $\overline{M}_{0,n}(\mathbb{P}^r, d)$  and enumerative geometry*, IMRN (1997), 173–186.
- (5) R. Pandharipande, *Counting elliptic plane curves with fixed  $j$ -invariant*, Proc. AMS. **125** (1997), 3471–3479.
- (6) J. Harris, B. Mazur, and R. Pandharipande, *Unirationality of smooth hypersurfaces*, Duke J. Math. **95** (1998), 125–160.

- (7) R. Pandharipande, *The Chow ring of the non-linear Grassmannian*, J. Alg. Geom. **7** (1998), 123–140.
- (8) R. Pandharipande, *The equivariant Chow rings of  $O(k)$ ,  $SO(2k + 1)$ , and  $SO(4)$* , J. Reine Angew. Math. **496** (1998), 131–148.
- (9) L. Göttsche and R. Pandharipande, *The quantum cohomology of blow-ups of  $\mathbb{P}^2$  and enumerative geometry*, J. Diff. Geom. **48** (1998), 61–90.
- (10) R. Pandharipande, *Rational curves on hypersurfaces [after A. Givental]*, Séminaire Bourbaki **848**, 50ème année, 1997–1998.
- (11) E. Getzler and R. Pandharipande, *Virasoro constraints and Chern classes of the Hodge bundle*, Nuclear Phys. **B530** (1998), 701–714.
- (12) R. Pandharipande, *Intersections of  $\mathbb{Q}$ -divisors on Kontsevich’s moduli space  $\overline{M}_{0,n}(\mathbb{P}^r, d)$  and enumerative geometry*, Trans. AMS. **4** (1999), 1481–1505.
- (13) R. Pandharipande, *A geometric construction of Getzler’s elliptic relation*, Math. Ann. **313** (1999), 715–729.
- (14) T. Graber and R. Pandharipande, *Localization of virtual classes*, Invent. Math. **135** (1999), 487–518.
- (15) R. Pandharipande, *Hodge integrals and degenerate contributions*, Comm. Math. Phys. **208** (1999), 489–506.
- (16) P. Belorousski and R. Pandharipande, *A descendent relation in genus 2*, Ann. Scuola Norm. Sup. Pisa Cl. Sci. **29** (2000), 171–191.
- (17) C. Faber and R. Pandharipande, *Hodge integrals and Gromov-Witten theory*, Invent. Math. **139** (2000), 173–199.
- (18) R. Pandharipande, *The Toda equation and the Gromov-Witten theory of the Riemann sphere*, Lett. Math. Phys. **53** (2000), 59–74.
- (19) C. Faber and R. Pandharipande (with an appendix by D. Zagier), *Logarithmic series and Hodge integrals in the tautological ring*, Michigan Math. J. **48** (2000), 215–252.
- (20) B. Kim and R. Pandharipande, *The connectedness of the moduli space of maps to homogeneous spaces*, in Proceedings of Symplectic geometry and mirror symmetry, KIAS 2000, F. Fukaya,

- Y.-G. Oh, K. Ono, G.Tian Eds., World Scientific (2001), 187–203.
- (21) J. Bryan and R. Pandharipande, *BPS states of curves in Calabi-Yau 3-folds*, *Geom. Topol.* **5** (2001), 287–318.
  - (22) B. Fantechi and R. Pandharipande, *Stable maps and branch divisors*, *Compositio Math.* **130** (2002), 345–364.
  - (23) T. Graber, J. Kock, and R. Pandharipande, *Descendent invariants and characteristic numbers*, *Amer. J. Math.* **124** (2002), 611–647.
  - (24) E. Getzler, A. Okounkov, and R. Pandharipande, *Multipoint series of Gromov-Witten invariants of  $\mathbf{P}^1$* , *Lett. Math. Phys.* **62** (2002), 159–170.
  - (25) R. Pandharipande, *Three questions in Gromov-Witten theory*, *Proceedings of the ICM (Beijing 2002)*, Vol. II, 503–512.
  - (26) T. Graber and R. Pandharipande, *Constructions of nontautological classes on moduli spaces of curves*, *Michigan Math J.* **51** (2003), 93–109.
  - (27) C. Faber and R. Pandharipande, *Hodge integrals, partition matrices, and the  $\lambda_g$  conjecture*, *Ann. of Math.* **157** (2003), 97–124.
  - (28) K. Hori, S. Katz, A. Klemm, R. Pandharipande, R. Thomas, C. Vafa, R. Vakil, and E. Zaslow, *Mirror Symmetry*, AMS: Providence, R.I., 2003.
  - (29) Y.-P. Lee and R. Pandharipande, *A reconstruction theorem in quantum cohomology and quantum K-theory*, *Amer. J. Math* **126** (2004), 1367–1379.
  - (30) N. Katz and R. Pandharipande, *Inequalities related to Lefschetz pencils and integrals of Chern classes*, in *Geometric aspects of Dwork theory*, A. Adolphson, F. Baldassarri, P. Berthelot, N. Katz, F. Loeser Eds., de Gruyter (2004), 805–819.
  - (31) A. Okounkov and R. Pandharipande, *Hodge integrals and invariants of the unknot*, *Geom. Topol.* **8** (2004), 675–699.
  - (32) C. Faber and R. Pandharipande, *Relative maps and tautological classes*, *JEMS* **7** (2005), 13–49.
  - (33) J. Bryan and R. Pandharipande, *Curves in Calabi-Yau threefolds and TQFT*, *Duke J. Math.* **126** (2005), 369–396.

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- (36) A. Okounkov and R. Pandharipande, *The equivariant Gromov-Witten theory of  $\mathbf{P}^1$* , *Ann. of Math.* **163** (2006), 561–605.
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- (38) D. Maulik and R. Pandharipande, *A topological view of Gromov-Witten theory*, *Topology* **45** (2006), 887–918.
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- (40) D. Maulik, N. Nekrasov, A. Okounkov, and R. Pandharipande, *Gromov-Witten theory and Donaldson-Thomas theory I*, *Compositio Math.* **142** (2006), 1263–1285.
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- (55) D. Maulik, R. Pandharipande, and R. Thomas, *Curves on K3 surfaces and modular forms*, J. of Topology **3** (2010), 937–996.
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- (58) A. Okounkov and R. Pandharipande, *The local Donaldson-Thomas theory of curves*, Geom. Topol. **14** (2010), 1503–1567.
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- (63) D. Maulik, A. Oblomkov, A. Okounkov, and R. Pandharipande, *Gromov-Witten/Donaldson-Thomas correspondence for toric 3-folds*, Invent. Math. **186** (2011), 435–479.
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- (66) R. Pandharipande, *Descendent bounds for effective divisors on the moduli space of curves*, J. Alg. Geom. **21** (2012), 299–303.
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- (73) R. Pandharipande and R. Thomas, *Almost closed 1-forms*, Glasgow Math. J. **56** (2013), 169–182.
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- (82) R. Pandharipande and R. Thomas, *The Katz-Klemm-Vafa conjecture for K3 surfaces*, Forum of Mathematics Pi **4** (2016).
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- (84) R. Pandharipande, *Maps, sheaves, and K3 surfaces* in *Lectures on geometry*, N. M. J. Woodhouse, ed., Oxford Univ. Press, (2017), 159–185.
- (85) R. Pandharipande and A. Pixton, *GW/P correspondence for the quintic 3-fold*, JAMS **30** (2017), 389–449.
- (86) Y. Cooper and R. Pandharipande, *A Fock space approach to Severi degrees*, Proc. London Math. Soc. **114** (2017), 476–494.
- (87) A. Marian, D. Oprea, and R. Pandharipande, *Segre classes and Hilbert schemes of points*, Ann. Sci. de l’ENS **50** (2017), 239–267.

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- (90) G. Farkas and R. Pandharipande, *The moduli space of twisted canonical divisors*, J. Institute Math. Jussieu **17** (2018), 615–672.
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- (95) R. Pandharipande, *Cohomological field theory calculations*, Proceedings of the ICM – Rio de Janeiro 2018, Vol. 1, Plenary lectures, 869–898, World Sci. Publications: Hackensack, NJ, 2018.
- (96) A. Marian, D. Oprea, and R. Pandharipande, *The combinatorics of Lehn’s conjecture*, Jour. Math. Soc. Japan **1** (2019), 299–308.
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- (99) R. Pandharipande, A. Pixton, and D. Zvonkine, *Tautological relations via  $r$ -spin structures*, J. Alg. Geom. **28** (2019), 439–496.
- (100) H. Lho and R. Pandharipande, *Crepant resolution and the holomorphic anomaly equation for  $\mathbb{C}^3/\mathbb{Z}_3$* , Proc. London Math. Soc. **119** (2019), 781–813.
- (101) R. Pandharipande and H.-H. Tseng, *Higher genus Gromov-Witten theory of  $\text{Hilb}^n(\mathbb{C}^2)$  and CohFTs associated to local curves*, Forum of Mathematics Pi **7** (2019).
- (102) R. Pandharipande and H.-H. Tseng, *The Hilb/Sym correspondence for  $\mathbb{C}^2$ : descendents and Fourier-Mukai*, Math. Annalen **375** (2019), 509–540.
- (103) R. Pandharipande and Q. Yin, *Relations in the tautological ring of K3 surfaces*, JEMS **22** (2020), 213–252.
- (104) A. Oblomkov, A. Okounkov, and R. Pandharipande, *GW/PT descendent correspondence via vertex operators*, Comm. Math. Phys. **374** (2020), 1321–1359.
- (105) R. Pandharipande and J. Schmitt, *Zero cycles on the moduli space of curves*, EPIGA **4** (2020), Art 12, 26 pp.
- (106) F. Janda, R. Pandharipande, A. Pixton, and D. Zvonkine, *Double ramification cycles for target varieties*, J. of Topology **13** (2020), 1725–1766.
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- (2) S. Canning, S. Molcho, D. Oprea, R. Pandharipande, *Tautological projection for cycles on the moduli space of abelian varieties*, preprint 2024.
- (3) G. Farkas, R. Pandharipande, A. Sammartano, *Irrational components of the Hilbert scheme of points*, preprint 2024.
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