

KIRAN SRIDHARA KEDLAYA  
CURRICULUM VITAE (OF 21 AUG 2023)

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**Degrees and other education:**

Ph.D. in Mathematics, Massachusetts Institute of Technology, June 2000.  
(Exchange Scholar, University of California, Berkeley, fall 1997.)  
M.A. in Mathematics, Princeton University, June 1997.  
A.B. *summa cum laude* in Mathematics and Physics, Harvard University, June 1996.  
(Attended Budapest Semesters in Mathematics, spring 1994.)

**Primary employment:**

UC San Diego: Associate Professor, 2009–2011; Professor, 2011–present.  
Massachusetts Institute of Technology: Assistant Professor, 2003–2007; Associate Professor without tenure, 2007–2009; Associate Professor with tenure, 2009–2012.  
University of California, Berkeley: NSF postdoctoral fellow, 2000–2003; Visiting Assistant Professor, fall 2001–fall 2002.

**Other appointments:**

Institute for Advanced Study: participant (member, on leave from UCSD) in program “*p*-adic Arithmetic Geometry”, fall 2023.  
Hausdorff Research Institute in Mathematics: participant (research member) in program “The Arithmetic of the Langlands Program”, summer 2023 (rescheduled from 2020).  
MSRI: participant (research member, on leave from UCSD) in program “Diophantine Geometry”, spring 2023.  
Institute for Advanced Study: Visiting Professor (on leave from UCSD), 2018–2019.  
ICERM: organizer and participant (Guggenheim Fellowship, on leave from UCSD) in program “Computational Aspects of the Langlands Program”, fall 2015.  
MSRI: participant (research professor, on leave from UCSD) in program “New Geometric Methods in Number Theory and Automorphism Forms”, fall 2014.  
IPAM: participant (unfunded) in program “Algebraic Techniques for Combinatorial and Computational Geometry”, spring 2014.  
MSRI: participant (on leave from MIT/UCSD) in program “Arithmetic Statistics”, spring 2011.  
Institute for Advanced Study: Member (on leave from MIT/UCSD), 2009–2010.  
Institute for Advanced Study: Postdoctoral member (on leave from MIT), fall 2003.  
MSRI: Postdoctoral fellow (unfunded) in program “Algorithmic Number Theory”, fall 2000.

**Awards, honors, and plenary lectures:**

MAA George Pólya Award (with Gordon Hamilton and Henri Picciotto), 2016.  
AMS invited speaker (Western section), fall 2014.  
Guggenheim Fellowship, 2014.  
AMS Fellow, 2012.  
ICM invited speaker (number theory section), 2010.  
UCSD Stefan E. Warschawski Professorship, 2009–2019.  
MIT Cecil and Ida B. Green Career Development Professorship, 2008–2011.  
Presidential Early Career Award for Scientists and Engineers (PECASE), 2006.  
NSF Faculty Early Career award, 2006–2011.

Alfred P. Sloan Foundation: Research Fellowship, 2006–2008.  
NSF: Postdoctoral Research Fellowship DMS-0071597, 2000–2003.  
Clay Mathematics Institute: Liftoffs fellowship, 2000.

**Ph.D. students supervised:**

Liu, Ruochuan: “On the slope filtration of  $\phi$ -modules over the Robba ring”, MIT 2008, associate professor at Beijing International Center for Mathematical Research.  
Davis, Chris: “The overconvergent de Rham-Witt complex”, MIT 2009, teaching professor at UC Irvine.  
Xiao, Liang: “Nonarchimedean differential modules and ramification theory”, MIT 2009, associate professor at Beijing International Center for Mathematical Research.  
Balakrishnan, Jennifer: “Coleman integration for hyperelliptic curves: algorithms and applications”, MIT 2011, associate professor at Boston University.  
Tan, Fucheng (joint supervision with Barry Mazur): “Families of  $p$ -adic Galois representations”, MIT 2011, RIMS (Kyoto University).  
Rodriguez, Ryan: “Preperfectoid algebras”, UCSD 2014, US Department of Defense.  
Das, Shaunak: “Vector bundles on perfectoid spaces”, UCSD 2016, DataStax.  
Jiang, Zonglin: “Non-archimedean geometry and GAGA”, UCSD 2019, ByteDance.  
Wear, Peter: “Perfectoid spaces and the weight-monodromy conjecture”, UCSD 2020, University of Utah.  
Tong, Xin: “Geometric and representation theoretic aspects of  $p$ -adic motives”, UCSD 2021.  
Chen, Mingjie: “Arithmetic of algebraic curves”, UCSD 2022, University of Birmingham (UK).  
Grubb, Thomas, “Structural and statistical consequences of the closed point sieve”, Coupang.  
Lau, Jun Bo, “ $p$ -adic integration on modular curves and code-based cryptography”, Boston University.  
Garzella, Jack (JJ): UCSD, in progress.  
Huang, Yongyuan (Steve): UCSD, in progress.  
Liu, Zeyu: UCSD, in progress.  
Liu, Zongze: UCSD, in progress.  
Mathers, Alexander: UCSD, in progress.  
Qiao, Baiming: UCSD, in progress.  
Sahai, Shubhankar: UCSD, in progress.  
Wenger, Nathan: UCSD, in progress.  
Xu, Chris: UCSD, in progress.  
Yi, Richard: UCSD, in progress.

**Postdoctoral researchers supervised:**

Sutherland, Andrew: MIT, 2007–2010 (as Research Affiliate; currently Principal Research Scientist).  
Suh, Junehee: MIT, 2007–2010 (as C.L.E. Moore Instructor; currently Assistant Professor at UC Santa Cruz).  
Diao, Hansheng: MSRI, fall 2014 (as postdoctoral fellow; currently Instructor at Princeton).  
Carter, Anne Toulson: UCSD, 2015–2018 (as NSF RTG postdoctoral fellow), 2021–2022 (grant-funded).  
Harron, Piper (Piper H): UCSD, fall 2020 (grant-funded; co-advisor with Ila Varma; currently postdoc at Toronto).  
Alberts, Brandon: UCSD, 2020–2022 (as SEW postdoc; co-advisor with Alina Bucur; currently Assistant Professor at Eastern Michigan).  
Upton, James: UCSD, 2020–2023 (as Chancellor’s Postdoctoral Fellow).  
Agrawal, Shishir: UCSD, 2022–2025.  
Klevdal, Christian: UCSD, 2022–2025.

### Undergraduate student researchers supervised (at MIT):

Kim, Kyungmin: spring 2005 (currently: unknown).  
Abbott, Tim: summer 2005 (currently: lead developer at Zulip).  
Roe, David: summer 2005 (currently: researcher at MIT).  
Wibisono, Andre: spring 2006 (currently: postdoc in Computer Science, Wisconsin).  
Chen, Po-Ning: spring 2006 (currently: assistant professor in Mathematics, UC Riverside).  
Gulotta, Daniel: summer 2006 (currently: postdoc in Mathematics, Oxford).  
Deopurkar, Anand: summer 2006 (currently: lecturer in Mathematics, Australian National U.).  
Shao, Xuancheng: fall 2007 (currently: postdoc in Mathematics, Oxford).  
Diao, Hansheng: summer 2008 (currently: postdoc in Mathematics, Princeton).  
Tynan, Philip: summer 2008 (currently: quantitative analyst, State Street).  
Sankar, Krishanu: summer 2009 (currently: postdoc in Mathematics, U. British Columbia).

### University service (at MIT):

Department colloquium co-organizer: 2005–2009.  
Harvard/MIT algebraic geometry seminar co-organizer: 2005–2009.  
STAGE (Seminar on Topics in Arithmetic, Geometry, Etc.) founder and organizer: 2004–2009.  
MIT number theory seminar founder and co-organizer: 2007–2008.  
Boston College-MIT number theory seminar founder and co-organizer: 2008–2009.  
Graduate admissions reader: 2005–2009.  
Freshman advising seminar 18.S34 (Mathematical Problem Solving): 2007–2009.  
Undergraduate advising: 2007–2009.  
Graduate registration advising: 2004–2009.  
Putnam competition co-organizer: 2007–2009.  
IAP Mathematics Lecture series lecturer: 2006.

### University service (at UCSD):

Department hiring committee, 2012–2014, 2016–2017, 2019–2020 (chair in 2013–2014).  
Qualifying exam syllabus committee, 2013–2014.  
Qualifying exam and appeals committee, 2014–2017.  
Course assignment coordinator for algebra/number theory, 2014–2016, 2017–2018.  
Math-CS faculty advisor, 2019–2022.  
Number theory seminar organizer, 2021–2022.  
EDI (Equity, Diversity, Inclusion) committee, 2021–2022.  
Various *ad hoc* committees for academic reviews.  
Various dissertation committees for math PhD students.

### Research conferences and programs organized:

UC San Diego, conference “Southern California Number Theory Day”, organizer (with Alina Bucur, Aaron Pollack, Cristian Popescu, Claus Sorensen), February 2022. Previous editions held in 2011–12, 2015–17, 2020.  
CIRM (Luminy), conference “Arithmetic Statistics”, scientific committee (with Chantal David, Tim Dokchitser, David Farmer, Hendrik Lenstra, and Melanie Matchett Wood), May 2023.  
CIRM (Luminy), conference “SAGA: Symposium on Arithmetic Geometry and its Applications”, scientific committee, February 2023.  
University of Padova, conference “Around  $p$ -adic cohomologies”, scientific committee (with Yves André, Francesco Baldassarri, Andrea D’Agnolo, Lucia Di Vizio, Atsushi Shiho, and Nobuo Tsuzuki), September 2022.  
University of Arizona, Virtual School in Number Theory, organizer (with Alina Bucur, Bryden Cais, and David Zureick-Brown), January–April 2021.

University of Arizona, Arizona Winter School “Nonabelian Chabauty”, organizer (with Brandon Levin and David Zureick-Brown), March 2020.

Université de Rennes, conference “ $p$ -adic Langlands correspondence: a constructive and algorithmic approach”, scientific committee (chair: Xavier Caruso), September 2019.

American Institute of Mathematics, conference “L-Functions and Modular Forms Database” (hosted by Institute for Advanced Study), organizer (with Alina Bucur), March 2019.

University of Arizona, Arizona Winter School “Topology and arithmetic”, organizer (with Hang Xue and David Zureick-Brown), March 2019.

Universidade Federal do Rio de Janeiro, conference “2018 ICM satellite conference in Number Theory”, organizer (with Henri Darmon, Fred Diamond, Aftab Pande, Richard Taylor, Marie-France Vigneras), July 2018.

University of Vermont, conference “Witt vectors, deformations, and absolute geometry”, organizer (with Taylor Dupuy, Lars Hesselholt, Thomas Scanlon, Christelle Vincent), July 2018.

Banff International Research Station, conference “ $p$ -adic cohomology and arithmetic applications” (with Tomoyuki Abe, Ambrus Pál, Christopher Lazda), October 2017.

Université de Caen, conference “Journées Arithmétiques”, scientific committee (chair: Philippe Michel), July 2017.

Banff International Research Station, conference “Arithmetic aspects of explicit moduli problems” (with Nils Bruin, Samir Siksek, John Voight), May–June 2017.

University of Arizona, Arizona Winter School “Perfectoid spaces”, organizer (with Bryden Cais), March 2017.

MFO (Oberwolfach), graduate seminar “Perfectoid spaces”, organizer (with Rebecca Bellovin, Brian Conrad, Jared Weinstein), October 2016.

ICERM, semester program “Computational aspects of the Langlands program”, organizer (with Alina Bucur, Brian Conrey, David Farmer, John Jones, Michael Rubinstein, Holly Swisher, John Voight), fall 2015.

ICERM, conference “Modular forms and curves of low genus: computational aspects”, organizer (with John Cremona, Kristin Lauter, Ralf Schmidt, Joe Silverman), September 2015.

AMS Summer Research Institute in Algebraic Geometry, session ( $p$ -adic Hodge theory) organizer, July 2015.

UC Berkeley, conference “ $p$ -adic methods in arithmetic geometry” (with Matt Baker, Emiliano Gomez, Ken McMurdy, Ken Ribet, Richard Taylor, and Annette Werner), May 2015.

UC Berkeley, conference “Arithmetic and algebraic differentiation: Witt vectors, number theory and differential algebra” (with Jim Borger, Taylor Dupuy, and Tom Scanlon), May 2015.

UC San Diego, conference “Stark’s Conjecture and Related Topics”, organizer (with Alina Bucur, Cristian Popescu), September 2013.

AMS Joint Meetings, special session “Arithmetic geometry and  $L$ -functions”, organizer (with Alina Bucur), January 2013.

University of New Mexico, conference “Witt vectors in arithmetic, geometry, and topology”, May 2012 (with Jim Borger, Alexandru Buium, Lars Hesselholt, Lance Miller).

UC San Diego, workshop “Algorithmic Number Theory Symposium (ANTS 10)”, chair of scientific committee, July 2012.

University of Valladolid, workshop “Second international conference and workshop on valuation theory”, scientific committee (chair: Bernard Teissier), July 2011.

Nagoya University, workshop “Witt vectors, foliations, and absolute de Rham cohomology”, chair of organizing committee (with Jim Borger, Lars Hesselholt), November 2010.

Indian Institute of Technology-Bombay, workshop “Sage Days 25”, organizer (with Prabhu Ramachandran, William Stein), August 2010.

Centre de Recherches Mathématiques (Montréal) workshop “Counting points: theory, algorithms, and practice”, organizer (with Jean-François Mestre), April 2010.

Oxford University workshop “Effective methods in  $p$ -adic cohomology”, organizer (with Alan

Lauder), March 2010.  
 Clay Mathematics Institute workshop “Computational Arithmetic Geometry (SAGE Days 5)”, organizer (with David Harvey and William Stein), September-October 2007.  
 American Institute of Mathematics workshop “ $L$ -functions and modular forms”, co-organizer (with Nathan Ryan, Michael Rubinstein, Nils-Peter Skoruppa, William Stein), July-August 2007.  
 American Institute of Mathematics workshop “ $p$ -adic representations, modularity, and beyond”, organizer (with David Savitt), February 2006.  
 AMS Summer Research Institute in Algebraic Geometry, session (arithmetic geometry) co-organizer, July/August 2005.

**Other external service:**

Guggenheim Foundation: fellowship reviewer in mathematics, 2017–2022.  
 MSRI: MSRI-Simons postdoctoral fellowship committee, 2021–2022.  
 American Mathematical Society: Council (elected), 2021–2024; Committee on Publications, 2021–2024 (cochair 2022–2023); search committee for Bulletin of the AMS chief editor, 2021; AMS book review subcommittee, 2022; search committee for Notices of the AMS chief editor, 2022–2023.  
 Cyberspace Mathematical Competition: coordinator (grader), 2020.  
*Algebra and Number Theory*: associate editor, 2015–2019.  
 American Mathematics Competitions, advisory panel, 1994–1996, 2002–2004; USAMO subcommittee, 1998–2001, 2005–2008, 2015–2017; AMS representative to the CAMC, 2008–2011. Also served as deputy leader of USA IMO team in 1996 and 1999. Participated in USAMO grading on numerous occasions.  
*Nagoya Mathematical Journal*: associate editor, 2014–present.  
 Pro Mathematica Arte (Budapest Semesters in Mathematics): board of directors, 2013–present (chair 2017–present).  
 Boston University: Department of Mathematics external review committee, 2013.  
 L-Functions and Modular Forms Database: managing editor, 2012–present.  
*International Mathematics Research Notices*: corresponding editor, 2004–2015.  
 Art of Problem Solving Initiative: board of directors member, 2004–present.  
 NSF panelist: 2007, 2009, 2011, 2016, 2018.  
 Cogito.org (Johns Hopkins), advisory board member, 2005–2007.  
 MAA Problem Books series, American Mathematics Competitions subseries: editorial board, 2004–2007.  
 MAA 2006 Joint Meetings program committee member, 2004–2005.  
 Budapest Semesters in Mathematics 2005 reunion conference, program committee, 2004–2005.  
*American Mathematical Monthly*: Problems section, collaborating editor, 1999–2005.  
 IMO (International Mathematical Olympiad) 2001 USA, executive committee member-at-large, 1998–2002. Also served as Assistant Chief Coordinator, and member of Problem Committee.

**Research contracts and grants:**

Simons Foundation: Simons Fellowship in Mathematics, 2023–2024, \$162 000.  
 NSF: grant “Pomona Research in Mathematics Experience”, 2022–2024, \$548 786 (DMS-2113782; advisory board; lead PI Edray Goins).  
 NSF: grant “ $p$ -adic Computation of  $L$ -functions at Scale”, 2021–2024, \$350 000 (DMS-2053473).  
 NSF: grant “ANTS XIV: Algorithmic Number Theory Symposium”, 2020–2023, \$34 800 (DMS-1946311; co-PI; lead PI John Voight).  
 NSF: grant “Arizona Winter School in Arithmetic Geometry”, 2019–2022, \$550 000 (DMS-1903892; advisory board; lead PI Bryden Cais).  
 NSF: grant “Local-Global Principles in Arithmetic”, 2018–2021, \$150 000 (DMS-1844206; transferred from Ila Varma).

NSF: grant “Undergraduate Teaching and Learning in Mathematics With Open Software and Textbooks”, 2018–2022, \$1 696 102 (DMS-1821706 et al.; advisory board; lead PI Robert Beezer).

NSF: grant “Nonarchimedean Analysis, Geometry, and Computation”, 2018–2021, \$330 000 (DMS-1802161).

IAS: Visiting Professorship, 2018–2019, \$180 000.

Simons Foundation: grant “Arithmetic Geometry, Number Theory, and Computation”, 2017–2024, \$14 000 000 (associated scientist; lead PI Brendan Hassett).

UCSD: Course Development and Instructional Improvement Program grant, 2017–2018, \$4250.

NSF: grant “UTMOST: Undergraduate Teaching in Mathematics with Open Software and Textbooks”, 2016–2018, \$700 000 (DMS-1626455 et al.; advisory board; lead PI Robert Beezer).

NSF: grant “RTG: Research Training Group in Algebra, Algebraic Geometry, and Number Theory”, 2015–2020, \$1 200 000 (DMS-1502651; with Elham Izadi, Cristian Popescu, James McKernan, Efim Zelmanov).

NSF: grant “Applications and extensions of  $p$ -adic Hodge theory”, 2015–2018, \$170 000 (DMS-1501214).

Guggenheim Fellowship, 2014–15, \$45 000.

Clay Math Institute Research Scholarship, 2013–2014, \$40 000.

Various grants for ANTS-X (Algorithmic Number Theory Symposium): NSF, NSA, Microsoft Research, Number Theory Foundation, 2012, \$70 000.

NSF: grant “Between ordinary and  $p$ -adic Hodge theory”, 2011–2014, \$360 000.

DARPA: grant “Absolute algebraic geometry, arithmetic cohomology, and the Riemann hypothesis”, 2009–2014, \$800 000.

NSF: CCLI Type 2 grant “UTMOST: Undergraduate Teaching in Mathematics with Open Software and Textbooks” (with Rob Beezer, Jason Grout, Tom Judson, William Stein), 2010–2013, \$600 000.

MIT: Research Support Committee grant (NEC fund) grant “PACMAN: Project on Algorithms and Computational Methods in Algebra and Number Theory”, 2008–2010, \$50 000.

NSF: Faculty Early Career (CAREER) grant DMS-0545904 “Cohomological methods in algebraic geometry and number theory”, 2006–2011, \$400 000.

Sloan Research Fellowship, 2006–2008, \$45 000.

NSF: grant DMS-0400747 “ $p$ -adic cohomology and applications”, 2004–2007, \$127 400.

#### Other skills and relevant experience:

Programming experience: C, C++, Julia, Perl, Python, Cython, Magma. Development experience (including `git`) as part of the Sage computer algebra project (<http://www.sagemath.org>) and the L-Functions and Modular Forms Database (<http://www.lmfdb.org>). I also teach a course using Jupyter notebooks: <https://github.com/kedlaya/math157>.