

# ANDREW OBUS

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Newman Vertical Campus     Last Updated: January 22, 2024  
New York, NY 10010     Citizenship: USA

## Employment

2021 –             Associate Professor, CUNY Baruch College  
2019 –             Doctoral Faculty, CUNY Graduate Center  
2018 – 2021       Assistant Professor, CUNY Baruch College  
2013 – 2018       Assistant Professor, University of Virginia  
2009-11, 2012-13     NSF Postdoctoral Fellow, Columbia University (Supervisor: Aise Johan de Jong)  
2016 – 2017       Visiting faculty, NYU  
2011 – 2012       Visiting researcher, Max-Planck-Institut für Mathematik  
2003 – 2004       Quantitative Analyst, D. E. Shaw & Co.

## Education

2004 – 2009     Ph.D., Mathematics, University of Pennsylvania (Advisor: David Harbater. Thesis: *Ramification of primes in fields of moduli of three-point covers*)  
1999 – 2003     A.B., Mathematics, Harvard College, *magna cum laude*, Phi Beta Kappa (Advisor: Benedict Gross. Thesis: *The trace formula for  $\Gamma_0(N)$* )

## Federal/Foundational Funding

2021 – 2026     NSF DMS-2047638 “CAREER: Models of curves and non-archimedean geometry,” \$473,067  
2020 – 2023     Simons Collaboration Grant “Models of curves and valuation theory”, \$8,400  
2016 – 2020     NSF DMS-1602054, transferred as DMS-1900396: “Branched Galois covers of curves: lifting and reduction,” standard grant, \$128,500  
2013 – 2016     NSF DMS-1265290: “Lifting problems and Galois theory,” FRG with Ted Chinburg, Bob Guralnick, David Harbater, and Florian Pop, \$1,160,002  
2009 – 2013     NSF Mathematical Sciences Postdoctoral Research Fellowship, \$135,000  
2006 – 2009     NDSEG Graduate Research Fellowship, \$93,000  
2016             NSF DMS-1660462: “Elliptic curves, torsors, and  $L$ -functions,” conference grant with Andrei Rapinchuk and Lloyd West, \$15,000  
2016             NSA Young Investigators Grant, \$40,000 (declined in favor of NSF grant DMS-1602054 above)

## Honors and Awards

2020             Cycle 51 PSC-CUNY Traditional A Award, \$3,500  
2019             Cycle 50 PSC-CUNY Traditional A Award, \$3,500  
2019             Feliks Gross Award (for outstanding research by assistant professors), CUNY, \$500  
2015             All-University Teaching Award, University of Virginia, \$2,000  
2009             Carlitz-Zippin Prize (for an exceptional Ph. D. Thesis), University of Pennsylvania  
2006             Honorable Mention, Penn Prize for Excellence in Teaching by Graduate Students  
2005, 2007     Good Teaching Award, University of Pennsylvania  
2004 – 2009     Calabi Fellowship, University of Pennsylvania

- 2001, 2002 Certificate of Distinction in Teaching, Harvard University  
 1997 – 1999 United States of America Mathematical Olympiad, Qualifier (Honorable Mention for high score, 1998)

### Accepted publications<sup>1</sup>

1. (with Padmavathi Srinivasan) Conductor-discriminant inequality for hyperelliptic curves in odd residue characteristic.  
*Int. Math. Res. Notices*, to appear, 13 pp.
2. (with Huy Dang, Soumyadip Das, Kostas Karagiannis, and Vaidehee Thatte) Local Oort groups and the isolated differential data criterion.  
*J. Théor. Nombres Bordeaux*, **34** (2022) no. 1, 251–269.
3. (with Padmavathi Srinivasan) Explicit minimal embedded resolutions of divisors on models of the projective line.  
*Res. Number Theory*, **8** (2022) no. 2, Paper No. 27, 27 pp.
4. (with Tony Shaska) Superelliptic curves with many automorphisms and CM Jacobians.  
*Math. Comp.*, **90** (2021), 2951–2975.
5. (with Stefan Wewers) Explicit resolution of weak wild quotient singularities.  
*J. Algebraic Geom.*, **29** (2020) no. 4, 691–728.
6. Lifting of curves with automorphisms.  
*Advanced Lectures in Mathematics* **46**, Higher Education Press (chapter in *Open Problems in Arithmetic Algebraic Geometry*) (2019), 9–59.
7. (with John Doyle, Holly Krieger, Rachel Pries, Simon Rubinstein-Salzedo, and Lloyd West) Reduction of dynatomic curves.  
*Ergodic Theory Dynam. Systems*, **38** (2019), no. 10, 2717–2768
8. (with Hilaf Hasson) The *abc* conjecture implies the weak diversity conjecture.  
*Albanian J. Math.*, **12** (2018), no. 1, 8–14
9. (with David Harbater, Rachel Pries, and Kate Stevenson) Abhyankar’s conjectures in Galois theory: Current status and future directions.  
*Bull. Amer. Math. Soc.*, **55** (2018), no. 2, 239–287.
10. A generalization of the Oort conjecture.  
*Comment. Math. Helv.*, **92** (2017), no. 3, 551–620.
11. (with Colin Ingalls, Ekin Ozman, and Bianca Viray) Unramified Brauer classes on cyclic covers of the projective plane.  
*Progress in Mathematics* **320**, Birkhäuser (*Proceedings of the AIM conference “Brauer groups and obstruction problems”*) (2017), 115–153.
12. Good reduction of three-point Galois covers.  
*Algebr. Geom.*, **4** (2017), no. 2, 247–262.
13. The local lifting problem for  $A_4$ .  
*Algebra Number Theory*, **10** (2016), no. 8, 1683–1693.
14. (with Stefan Wewers) Wild ramification kinks.  
*Res. Math. Sci.*, **3:21** (2016), 27 pp.

<sup>1</sup>All papers available on arxiv and linked from the web address above

15. (with Stefan Wewers) Cyclic extensions and the local lifting problem.  
*Ann. of Math.*, **180** (2014), no. 1, 233–284.
16. Conductors of wild extensions of local fields, especially in mixed characteristic  $(0, 2)$ .  
*Proc. Amer. Math. Soc.*, **142** (2014) no. 5, 1485–1495.
17. Fields of moduli of three-point  $G$ -covers with cyclic  $p$ -Sylow, II.  
*J. Théor. Nombres Bordeaux*, **25** (2013), no. 3, 579–633.
18. Toward Abhyankar’s inertia conjecture for  $PSL_2(\ell)$ .  
*Séminaires et Congrès 27*, Soc. Math. France (*Proceedings of the Luminy Meeting “Groupes de Galois géométriques et différentiels”*) (2013), 191–202.
19. On Colmez’s product formula for periods of CM-abelian varieties.  
*Math. Ann.*, **356** (2013), no. 2, 401–418.
20. The (local) lifting problem for curves.  
*Advanced Studies in Pure Mathematics 63*, Math. Soc. Japan (*Proceedings for Conferences in Kyoto “Galois-Teichmüller theory and Arithmetic Geometry”*) (2012), 359–412.
21. Fields of moduli of three-point  $G$ -covers with cyclic  $p$ -Sylow, I.  
*Algebra Number Theory*, Vol. 6 (2012), no. 5, 833–883.
22. Vanishing cycles and wild monodromy.  
*Int. Math. Res. Notices*, Vol. 2012, No. 2, 299–338.
23. (with Rachel Pries) Wild tame-by-cyclic extensions.  
*J. Pure Appl. Algebra* **214** (2010), no. 6, 565–573.

### Submitted papers

1. (with Daniele Turchetti) Stability indices of Mumford curves.  
arxiv:2112.14728, 33 pp.

### Other Writings

1. Preparing for the Tenure-Track Job Market.  
*Notices Amer. Math. Soc.* **67** (2020), no. 6, 807–809.

### Ph. D. Students

2026	Connor Stewart (expected), CUNY Graduate Center
2025	James Myer (expected), CUNY Graduate Center
2024	Colette LaPointe (expected), CUNY Graduate Center
2022	George Mitchell, CUNY Graduate Center
2020	Andrew Kobin, University of Virginia
2020	Huy Dang, University of Virginia
2019	Jim Phillips, University of Virginia
2018	Bradley Weaver, University of Virginia

### Undergraduate Research Students

2023 – 2025 Cedrica Samuels, honors thesis, Hunter College<sup>2</sup>

<sup>2</sup>McNulty Scholars Program

- 2019 – 2020 Asimina Hamakiotes, honors thesis, Baruch College<sup>3</sup>  
 2014 Tahseen Rabbani, undergraduate summer research, University of Virginia<sup>4</sup>  
 2012 – 2013 Daniel Kang, honors thesis, Columbia University

### Talks

- 2023 Dec. vaNTAGe Seminar, online  
 2022 Nov. Wesleyan University, Algebra Seminar  
 Oct. Columbia University, Automorphic Forms and Arithmetic Geometry Seminar  
 Jun. RISAT, Recent Trends in Algebra, Geometry, and Arithmetic  
 2021 Nov. CUNY Graduate Center, GC MathFest  
 Nov. VIASM, Algebraic Geometry Seminar  
 Feb. University of Bristol, Heilbronn Number Theory Seminar  
 Jan. Online, AMS/MAA Joint Meetings Special Session “Branching Out: Ramification Invariants in Algebra and Geometry”  
 Jan. Online, AMS/MAA Joint Meetings Special Session “Algebraic and Arithmetic Geometry”  
 2020 Mar. Charlottesville, AMS Special Session “Curves, Jacobians, and Abelian Varieties” (cancelled due to Covid-19)  
 Feb. CUNY Graduate Center, Colloquium  
 Feb. Dartmouth College, Algebra and Number Theory Seminar  
 Jan. University of Georgia, Number Theory Seminar  
 2019 Nov. University of Pennsylvania, Galois Seminar  
 Jun. Whispering Pines, RI, AMS MRC “Explicit methods in arithmetic geometry in characteristic  $p$ ”  
 May Stony Brook University, Algebraic Geometry Seminar  
 Apr. University of Virginia, Algebra Seminar  
 Apr. Hartford, AMS Special Session “Algebraic Number Theory”  
 Apr. Dalhousie University, Colloquium  
 Feb. Emory University, Algebra Seminar  
 Feb. Georgia Institute of Technology, Algebra Seminar  
 2018 Nov. Binghamton University, Arithmetic Seminar  
 Oct. Ann Arbor, AMS Special Session “From hyperelliptic to superelliptic curves”  
 Sep. University of Virginia, Algebra Seminar  
 Apr. IDA/CCS Bowie, Colloquium  
 Mar. Columbus, AMS Special Session “Algebraic Curves and Their Applications”  
 Mar. Ohio State University, Number Theory Seminar  
 Feb. Queens College (CUNY), Special Colloquium  
 Feb. Baruch College (CUNY), Special Colloquium  
 Jan. Bryn Mawr College, Special Colloquium  
 2017 Nov. Rice University, Algebraic Geometry and Number Theory Seminar  
 Sep. University of Virginia, Algebra Seminar  
 Jul. Athens, Conference on Aspects of the Algebraic and Analytic Theory of Quadratic Forms

<sup>3</sup>winner, Kanner Prize for outstanding thesis

<sup>4</sup>T. Rabbani, “Unique minimal forcing sets and forced representation of integers by quadratic forms” *Rose-Hulman Undergrad. Math. J.* **17** (2016), no. 1, 1–14.

- May Elmau, Simons Symposium on Non-Archimedean and Tropical Geometry  
 May Universität Ulm, Algebra Seminar  
 Apr. Yale University, Algebraic and Tropical Geometry Seminar  
 Apr. Brown University, Algebraic Geometry Seminar  
 Apr. University of Pennsylvania, Galois Seminar  
 Feb. Emory University, Algebra and Number Theory Seminar  
 Feb. Columbia University, Algebraic Geometry Seminar  
 Feb. NYU, Algebraic Geometry Seminar  
 Jan. Atlanta, AMS/MAA Joint Meetings Contributed Talk Session “Algebraic Geometry”  
 2016 Nov. Raleigh, AMS Special Session “Varieties, Their Fibrations, and Automorphisms in Mathematical Physics and Arithmetic Geometry.”  
 Sep. Columbia-CUNY-NYU, Joint Number Theory Seminar  
 Sep. NYU, Algebraic Geometry Seminar  
 Sep. Burlington, conference on Kummer Classes and Anabelian Geometry  
 Apr. Harrisonburg, SERMON XXIX  
 Jan. Georgia Southern University, Colloquium  
 2015 Dec. Bangalore, conference on Algebraic Geometry  
 Nov. University of Maryland, Algebra and Number Theory Seminar  
 Nov. New Brunswick, AMS Special Session “Advances in Valuation Theory”  
 Jul. Salt Lake City, AMS Summer Research Institute on Algebraic Geometry  
 Apr. University of Kentucky, Algebraic Geometry Seminar  
 Apr. Yale University, Algebraic Geometry Seminar  
 Mar. University of Chicago, Algebraic Geometry Seminar  
 Mar. University of Michigan, Group, Lie, and Number Theory Seminar  
 2014 Nov. Greensboro, AMS Special Session “Galois Theory and its Interactions with Algebra and Number Theory”  
 Oct. Oberwolfach, conference on Valuation Theory and Its Applications  
 Oct. CCR-Princeton, Colloquium  
 Jul. Universität Ulm, Algebra Seminar  
 Jun. Tel Aviv, ASM/IMU Joint Meetings Special Session “Field Arithmetic”  
 May University of Virginia, Galois Seminar (4 talk series)  
 Apr. University of Virginia, Algebra Seminar (3 talk series)  
 Mar. University of Pennsylvania, Galois Seminar (3 talk series)  
 Jan. Baltimore, AMS/MAA Joint Meetings Special Session “Algebraic Geometry”  
 2013 Nov. University of South Carolina, Algebraic Geometry, Commutative Algebra, and Number Theory Seminar  
 Nov. University of Georgia, Number Theory Seminar  
 Nov. Emory University, Algebra Seminar  
 Nov. Georgia Tech, Algebra Seminar  
 Oct. University of Pennsylvania, Algebra Seminar  
 Oct. Rice University, Colloquium  
 Aug. Fort Collins, SIAM Algebraic Geometry Meeting Special Session “Arithmetic Geometry”  
 Jun. Oberwolfach, conference on Arithmetic of Fields  
 May Wesleyan University, Algebra Seminar  
 May Stanford University, Number Theory Seminar

- Mar. Brown University, Number Theory Seminar  
 Mar. NYU, Algebraic Geometry Seminar  
 Feb. University of Virginia, Colloquium  
 Jan. University of Hawaii, Manoa, Colloquium  
 Jan. University of California, San Diego, Number Theory Seminar  
 Jan. University of California, San Diego, Special Colloquium  
 Jan. San Diego, AMS/MAA Joint Meetings Special Session “Witt Vectors, Lifting, and Descent”
- 2012 Nov. University of Pennsylvania, Galois Seminar  
 Jul. Universität Konstanz, Real Geometry and Algebra Seminar  
 Jul. Universität Ulm, Algebra Seminar  
 Jul. Max-Planck-Institut Für Mathematik, Number Theory Lunch Seminar  
 Jun. Bordeaux, conference on Galois Covers and Deformations (plenary series with Stefan Wewers, as well as additional standard talk)  
 Jun. Utrecht, Dutch Intercity Number Theory Seminar  
 Feb. Luxembourg, Winter School on Galois Theory  
 Feb. U.S. Naval Academy, Colloquium  
 Jan. RWTH Aachen University, Constructive and Experimental Algebra Colloquium
- 2011 Dec. Universität Heidelberg, Algebra and Number Theory Seminar  
 Nov. Max-Planck-Institut Für Mathematik, Number Theory Lunch Seminar  
 Apr. Columbia University, Algebraic Geometry Seminar  
 Mar. University of Wisconsin-Madison, Number Theory Seminar  
 Mar. University of Pennsylvania, Galois Seminar  
 Feb. Wesleyan University, Algebra Seminar
- 2010 Nov. Haverford and Bryn Mawr Colleges, Bi-Co Colloquium  
 Oct. Harvard University, Number Theory Seminar  
 Oct. IIAS Kyoto, conference on Galois Theory and Arithmetic Geometry  
 Jul. Universität Ulm, Algebra Seminar  
 Jun. Leibniz Universität Hannover, Algebraic Geometry Seminar  
 Apr. University of Pennsylvania, Galois Seminar  
 Mar. CIRM, Luminy, conference on Geometric and Differential Galois Theory  
 Mar. CUNY Graduate Center, Number Theory Seminar  
 Feb. Colorado State University, Colloquium  
 Feb. Colorado State University, Algebra Seminar
- 2009 Oct. Boca Raton, AMS Special Session “Arithmetic Geometry”  
 Oct. Columbia University, Algebraic Geometry Seminar  
 Jul. Journées de Géométrie Arithmétique de Rennes (poster)  
 Feb. Oberwolfach, conference on Arithmetic of Fields  
 Jan. University of Georgia, Number Theory/Arithmetic Geometry Seminar  
 Jan. Washington, DC, AMS/MAA Joint Meetings Special Session “Group Actions on Curves”
- 2008 Nov. University of Pennsylvania, Galois Seminar  
 2007 Mar. Arizona Winter School Project Group, “Berkovich Spaces”  
 2005 – 2008 University of Pennsylvania, various seminars, 15 expository talks

**Teaching (as instructor of record)**<sup>5</sup><sup>5</sup>Anonymous student comments from Columbia University available at <http://culpa.info/professors/9790>.

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2024 Spring	Baruch College, Mathematical Analysis I
2024 Spring	Baruch College, Vector Calculus
2023 Fall	Baruch College, Mathematical Analysis I
2022 Fall	CUNY Graduate Center, Introduction to Algebraic Geometry
2022 Fall	Baruch College, Linear Algebra and Matrix Methods
2022 Spring	Baruch College, Vector Calculus
2022 Spring	Baruch College, Mathematical Analysis I
2020 Fall	Baruch College, Elements of Calculus II
2020 Spring	Baruch College, Bridge to Advanced Mathematics
2020 Spring	Baruch College, Proof Writing for Mathematical Analysis
2019 Fall	Baruch College, Analytic Geometry and Calculus II
2019 Fall	Baruch College, Intermediate Calculus
2019 Spring	Baruch College, Bridge to Advanced Mathematics
2018 Fall	Baruch College, Introductory Financial Mathematics
2018 Fall	Baruch College, Applied Calculus
2018 Spring	University of Virginia, Linear Algebra
2018 Spring	University of Virginia, Advanced Calculus and Linear Algebra II
2017 Fall	University of Virginia, Advanced Calculus and Linear Algebra I
2016 Summer	University of Virginia, Calculus II
2016 Spring	University of Virginia, Calculus III
2016 Spring	University of Virginia, Algebraic Number Theory
2015 Fall	University of Virginia, Bilinear Forms and Representation Theory
2015 Spring	University of Virginia, Linear Algebra
2014 Fall	University of Virginia, Algebraic Geometry
2014 Fall	University of Virginia, Galois Theory
2014 Spring	University of Virginia, Commutative Algebra
2013 Fall	University of Virginia, Linear Algebra
2011 Spring	Columbia University, Linear Algebra
2011 Spring	Columbia University, Introduction to Higher Mathematics
2009 Fall	Columbia University, Calculus II
2007 Summer	University of Pennsylvania, Calculus I
2005 Summer	University of Pennsylvania, Advanced Linear Algebra

**Service (Profession Level)**

2023	External appraiser, Ph.D. Thesis, University of Toronto
2022	Grant Proposal Reviewer, National Science Academy, Poland
2020	With Tony Shaska and Padmavathi Srinivasan, co-organized AMS Special Session “Curves, Jacobians, and Abelian Varieties” (cancelled due to COVID-19)
2019	Senior advisor-in-residence at AMS MRC “Explicit methods in arithmetic geometry in characteristic $p$ ”
2017	With Andrei Rapinchuk and Lloyd West, co-organized conference on “Elliptic Curves, Torsors, and $L$ -Functions,” University of Virginia
2016	NSF Panelist
2015	With Frauke Bleher, Ted Chinburg, and Rachel Pries, co-organized conference on “Lifting Problems and Galois Theory,” BIRS (Banff)

- 2010 – Referee for *Advances in Mathematics*, *Albanian Journal of Mathematics*, *Algebra and Number Theory*, *Annales de l'Institut Fourier*, *Annales Scientifiques de l'École Normale Supérieure*, *Bulletin of the LMS*, *Compositio Mathematica*, *Duke Mathematical Journal*, *European Journal of Mathematics*, *Forum of Mathematics Sigma*, *Glasgow Mathematical Journal*, *International Journal of Number Theory*, *International Mathematics Research Notices*, *Inventiones Mathematicae*, *Israel Journal of Mathematics*, *Journal de Théorie des Nombres de Bordeaux*, *Journal of Algebra*, *Journal of Algebraic Geometry*, *Journal of the AMS*, *Journal of the EMS*, *Journal of Number Theory*, *Journal of Pure and Applied Algebra*, *Manuscripta Mathematica*, *Mathematical Journal of Okayama University*, *Mathematische Annalen*, *Mathematische Nachrichten*, *Mathematische Zeitschrift*, *Osaka Journal of Mathematics*, *Proceedings of the AMS*, *Research in Number Theory*, *Royal Society of Edinburgh: Proceedings A*, *Selecta Mathematica*, *Transactions of the AMS*, various conference proceedings.
- 2010 – 2015 Reviewer, *Zentralblatt*
- 2012 Assistant at Arizona Winter School (organized and ran problem sessions)
- 2009 – 2010 Columnist, AMS Graduate Student Blog
- 2009 Compiler of *Oberwolfach Reports* for the conference “The Arithmetic Of Fields”

### Service (University Level)

- 2023 – Baruch College, New faculty “pod” mentor
- 2021 – Reviewer, PSC-CUNY award applications
- 2019 – Baruch College, Final exam committee
- 2019 – Baruch College, Undergraduate advisor (majors and non-majors)
- 2017 – 2018 University of Virginia, Undergraduate advisor (majors and non-majors)
- 2014 – 2018 University of Virginia, Galois-Grothendieck seminar co-organizer (sole organizer 2017-8)
- 2014 – University of Virginia, NYU, and CUNY Grad Center, various thesis defense/oral exam committees
- 2013 – 2018 University of Virginia, Undergraduate math club co-chair
- 2014, 2017 University of Virginia, Postdoc hiring committee
- 2014 University of Virginia, Graduate admission committee
- 2008 University of Pennsylvania, spearheaded the development of Math 116/260 (along with Asher Auel and Shea Vela-Vick), a rigorous introduction to calculus, first offered in Fall 2008.

### Service (K-12 Level)

- 2021 – Running weekly remote training workshop for Liberian mathematics teachers
- 2019 Ran independent study in number theory with Jeremy Kim and Jonathan Zhang (students at Hunter College High School)
- 2018 Chaired the writing of the Liberian Math Olympics.
- 2017 Along with Heidi Baumgartner, DaNel Hogan, Nancy Spillane, and Margaret Wilch, organized and ran two-week workshop in Liberia for science and math teachers.
- 2015 Wrote mathematics questions for Liberian Science Bowl.
- 2013 Along with Heidi Baumgartner, Eric Mannes, Sindy Tan, and Lynn Yi, organized and ran two-week workshop in Liberia for science and math teachers.



- 2011            Along with Michael Frank and Alison Kamhi, organized and ran two-week workshop in Liberia for science and math teachers.
- 2011            Mentored high school math student, supervised expository paper.
- 2010 – 2011    Mentored 5th grade student with strong interest in math.
- 2010 – 2011    Spoke to each of the 5th grade classes at Hunter College Elementary School about open problems in mathematics.
- 2010            Lectured to New York Math Circle (high school) on the life and mathematics of Évariste Galois.