Curriculum Vitae

Email: adlevin@math.msu.edu

Education:

- University of California, Berkeley
  Ph.D. in mathematics (May 2005)
  Thesis: Generalizations of Siegel's and Picard's Theorems
  Advisor: Paul Vojta
- University of California, San Diego
  B.A. in mathematics (June 1999)

Research Interests: Rational and Integral Points on Varieties, Diophantine Approximation, Nevanlinna Theory, Arithmetic Dynamics

Professional Appointments:

- Associate Professor, Michigan State University (Fall 2016–)
- Assistant Professor, Michigan State University (Fall 2010–Spring 2016)
- Visiting Professor, University of Toulouse (Fall 2016)
- Member, Institute for Advanced Study (Fall 2009–Spring 2010)
- CariLucca Postdoctoral Fellowship, Centro di Ricerca Matematica Ennio De Giorgi, Scuola Normale Superiore di Pisa (Fall 2007–Summer 2009)
- National Science Foundation (NSF) Postdoctoral Research Fellowship, Brown University (Fall 2005–Spring 2007)
- Mathematical Sciences Research Institute (MSRI) Postdoctoral Fellow (Spring 2006)
- Visiting Researcher, Center for Communications Research, Institute for Defense Analyses (IDA), Princeton, NJ (Summers 2003, 2004, 2005, 2010, 2014)

Grants:

- NSF Grant DMS-1904332, Conference grant with co-PIs Nathan Grieve and Min Ru (2019, $15,000. Title: Diophantine Approximation and Value Distribution Theory at the interface of Arithmetic and Complex Hyperbolic Geometry: A research workshop with minicourse)
- NSF CAREER Grant DMS-1352407 (2014-, $401,725. Title: Integral Points on Varieties and Related Tools and Topics)
- NSF Grant DMS-1102563 (2011-2014, $120,530. Title: Diophantine approximation, Nevanlinna theory, and integral points and holomorphic curves in higher-dimensional varieties)

Awards:

- Herb Alexander Prize (UC Berkeley Mathematics Department Dissertation Award)

Teaching:

- Michigan State University (Fall 2010–): Transitions (proof techniques), Linear Algebra, Calculus II, Graduate Algebra Sequence, Undergraduate Algebra Sequence, Graduate Number Theory, Graduate Topics Courses (Diophantine Geometry, Arithmetic Dynamics)

Advising:

- **Graduate students**:
  - Sebastian Troncoso, (PhD 2017).
  - Thomas Plante, PhD student (current).
  - Zheng Xiao, PhD student (current)
- **Undergraduate students**:
  - Yan Shengkuan and Luke Wiljanen, undergraduate research project (Spring 2019).
  - Connor Johnson, undergraduate research project (Fall 2015-Spring 2017).
  - Armstrong Guan and Kellie Stilson, undergraduate research project (Spring 2015).
  - Wang Wei, undergraduate research project (with Rajesh Kulkarni) (Fall 2013).
  - Zishen Yang, undergraduate research project (with Rajesh Kulkarni) (Spring 2012).

Publications:

36. *Quadratic fields with a class group of large* 3*-rank*, arXiv:1910.12276 (submitted) (with Yan Shengkuan and Luke Wiljanen)
35. *Intersections in subvarieties of* $\mathbb{G}_{\mathrm{m}}^l$ *and applications to lacunary polynomials*, (submitted) (with Pietro Corvaja and Umberto Zannier)
34. *On the degeneracy of integral points and entire curves in the complement of nef effective divisors*, arXiv:1907.00896 (submitted) (with Gordon Heier)
33. *Descent on elliptic surfaces and arithmetic bounds for the Mordell-Weil rank*, arXiv:1808.08938 (submitted) (with Jean Gillibert)
32. *A geometric approach to large class groups: a survey*, arXiv:0805.1361 (submitted) (with Jean Gillibert)
31. *Greatest common divisors of analytic functions and Nevanlinna theory on algebraic tori*, J. Reine Angew. Math. (Crelle's Journal) (accepted) (with Julie Wang)
30. *A generalized Schmidt subspace theorem for closed subschemes*, Amer. J. Math. (accepted) (with Gordon Heier)

29. *Elliptic surfaces over $\mathbb{P}^1$ and large class groups of number fields*, Int. J. Number Theory (accepted) (with Jean Gillibert)

28. *Greatest common divisors and Vojta's conjecture for blowups of algebraic tori*, Invent. Math. **215** (2019), no. 2, 493–533.

27. *Integral points and orbits of endomorphisms on the projective plane*, Trans. Amer. Math. Soc. **371** (2019), no. 2, 971–1002 (with Yu Yasufuku).

26. *Extending Runge's method for integral points*, Higher genus curves in mathematical physics and arithmetic geometry, Contemp. Math. **703** (2018), 171–188.

25. *On non-Archimedean curves omitting few components and their arithmetic analogues*, Canad. J. Math. **69** (2017), no. 1, 130–142 (with Julie Wang)

24. *Integral points of bounded degree on affine curves*, Compos. Math., **152** (2016), no. 4, 754–768.

23. *The Nagell-Ljunggren equation via Runge's method*, Monatsh. Math. **177** (2015), no. 1, 15–31 (with Mike Bennett)

22. *Uniform boundedness of S-units in arithmetic dynamics*, Pacific J. Math. **274** (2015), no. 1, 97–106 (with Holly Krieger, Zach Scherr, Tom Tucker, Yu Yasufuku, Mike Zieve)

21. *On the p-adic Second Main Theorem*, Proc. Amer. Math. Soc. **143** (2015), no. 2, 633–640.

20. *Wirsing-type inequalities*, Bull. Inst. Math. Acad. Sin. (N.S.) **9** (2014), no. 4, 685–710.

19. *On the Schmidt Subspace Theorem for algebraic points*, Duke Math. J. **163** (2014), no. 15, 2841–2885.

18. *Linear forms in logarithms and integral points on higher-dimensional varieties*, Algebra Number Theory **8** (2014), no. 3, 647–687.

17. *Pulling back torsion line bundles to ideal classes*, Math. Res. Lett. **19** (2012), no. 6, 1171–1184 (with Jean Gillibert).

16. *Siegel's Theorem and the Shafarevich Conjecture*, J. Théor. Nombres Bordeaux **24** (2012), no. 3, p. 705–727.

15. *Rational preimages in families of dynamical systems*, Monatsh. Math. **168** (2012), no. 3–4, 473–501.

14. *Primes of degree one contribute most of the height*, Algebra Number Theory **6** (2012), no. 6, 1223–1238 (with David McKinnon).

13. *The exceptional set in Vojta's conjecture for algebraic points of bounded degree*, Proc. Amer. Math. Soc. **140** (2012), no. 7, 2267–2277.

12. *A p-adic Nevanlinna-Diophantine correspondence*, Acta Arith. **146** (2011), 379-397. (with Ta Thi Hoai An and Julie Wang).

11. *Integral points on threefolds and other varieties*, Tohoku Math. J. (2) **61** (2009), no. 4, 589–601 (with Pietro Corvaja and Umberto Zannier).
10. *Generalizations of Siegel's and Picard's theorems*, Ann. of Math. (2) **170** (2009), no. 2, 609–655.
9. *Variations on a theme of Runge: effective determination of integral points on certain varieties*, J. Théor. Nombres Bordeaux **20** (2008), no. 2, 385–417.
8. *On the error terms and exceptional sets in conjectural second main theorems*, Q. J. Math. **59** (2008), no. 4, 487–498 (with David McKinnon and Jörg Winkelmann).
7. *The dimensions of integral points and holomorphic curves on the complements of hyperplanes*, Acta Arith. **134** (2008), no. 3, 259–270.
6. *On the Zariski-density of integral points on a complement of hyperplanes in* $\mathbb{P}^n$, J. Number Theory **128** (2008), no. 1, 96–104.
5. *Ideal class groups, Hilbert's irreducibility theorem, and integral points of bounded degree on curves*, J. Théor. Nombres Bordeaux **19** (2007), no. 2, 485–499.
4. *Vojta's inequality and rational and integral points of bounded degree on curves*, Compos. Math. **143** (2007), no. 1, 73–81.
3. *One-parameter families of unit equations*, Math. Res. Lett. **13** (2006), no. 5-6, 935–945.
2. *A geometric interpretation of an infinite product for the lemniscate constant*, Amer. Math. Monthly **113** (2006), no. 6, 510–520.
1. *A new class of infinite products generalizing Viète's product formula for* π, Ramanujan J. **10** (2005), no. 3, 305–324.

Recent Mathematical Talks:

- First JNT Biennial conference, Cetraro, Italy (Summer 2019)
- TIMS Taipei Number Theory Seminar, National Taiwan University, Taipei (Summer 2019)
- Diophantine Approximation and Value Distribution Theory at the interface of Arithmetic and Complex Hyperbolic Geometry, Université du Québec à Montréal (Spring 2019)
- Workshop on Dynamical systems, Galois representations, Integral points, Period maps, Unlikely intersections (3-lecture minicourse), Johannes Gutenberg University Mainz (Spring 2019)
- AMS Sectional Meeting, University of Hawaii at Manoa, Special Session on Algebraic Points (Spring 2019)
- AMS Sectional Meeting, University of Hawaii at Manoa, Special Session on Arithmetic Geometry and Its Connections (Spring 2019)
- 2018 CMS Winter Meeting, Session on Recent Advances in Arithmetic and Hyperbolic Geometry, Vancouver (Fall 2018)

- 2017 CMS Winter Meeting, Session on Explicit Finiteness of Integral Points on Hyperbolic Curves, University of Waterloo (Fall 2017)
- AMS Fall 2017 Central Section Meeting, Special Session on Numbers, Functions, Transcendence, and Geometry, University of North Texas (Fall 2017)
- Conference on Rational Points and Zariski Density, University of Copenhagen, Denmark (Fall 2017)
- Number Theory Seminar, University of Washington (Spring 2017)
- Colloquium, Western Michigan University (Spring 2017)
- Number Theory Seminar, University of Bordeaux 1 (Fall 2016)
- Géométrie algébrique, champs et homotopie, Institut de Mathématiques de Toulouse (Fall 2016)
- Workshop, Diophantische Approximationen, Mathematisches Forschungsinstitut Oberwolfach, Germany (Spring 2016)
- 2016 Joint Mathematics Meetings, Seattle (Spring 2016)
- Number Theory/Representation Theory Seminar, University of Wisconsin - Madison (Fall 2015)
- Final ERC Meeting in Diophantine Geometry, Accademia dei Lincei, Rome (Summer 2015)
- AMS Spring Western Sectional Meeting, Special Session on Arithmetic Geometry, UNLV (Spring 2015)
- AMS Central Spring Sectional Meeting, Special Session on Arithmetic of Hyperelliptic Curves, East Lansing (Spring 2015)
- New York Joint Number Theory Seminar, CUNY Graduate Center (Spring 2015)
- Group, Lie, and Number Theory Seminar, University of Michigan (Fall 2014)
- Workshop on Vojta's conjectures, BIRS, Banff, Canada (Fall 2014)
- Conference on Diophantine Approximation and Transcendence, CIRM, Luminy, France (Fall 2014)
- Second ERC Research Period on Diophantine Geometry, Cetraro, Italy (Summer 2014)
- Winter School: Autour des conjectures de Lang et Vojta, CIRM, Luminy, France (Spring 2014)
- Colloquium, University of Illinois at Urbana-Champaign (Spring 2014)
- AMS Western Fall Sectional Meeting, Special Session on Diophantine Geometry and Nevanlinna, UC Riverside (Fall 2013)

Professional Service:

- **Reviewer**: NSF panels, NSA Grant Proposals, Algebra & Number Theory, American Journal of Mathematics, International Mathematics Research Notices, Annales Scientifiques de l'École Normale Supérieure, Proceedings of the LMS, Advances in Mathematics, Acta Arithmetica, Israel Journal of Mathematics, Journal of the European Mathematical Society, Inventiones Mathematicae, Journal für die reine und angewandte Mathematik, Journal of Algebraic Geometry, Mathematische Annalen, Duke Mathematical Journal, Compositio Mathematica, Bulletin of the LMS, Journal de Théorie des Nombres de Bordeaux,

Journal of Number Theory, Monatshefte für Mathematik, International Journal of Number Theory, Canadian Mathematical Bulletin, Involve, Mathematics of Computation, Journal of Mathematical Analysis and Applications

- **Conference organization**:
  - Co-organized a 5-day workshop at the Université du Québec à Montréal *Diophantine Approximation and Value Distribution Theory at the interface of Arithmetic and Complex Hyperbolic Geometry: A research workshop with minicourse* (May 2019, with Carlo Gasbarri, Nathan Grieve, Steven Lu, Marc-Hubert Nicole, Erwan Rousseau, and Min Ru)
  - Co-organized a 5-day workshop in Banff (BIRS) on *Diophantine Approximation and Algebraic Curves* (July 2017, with Mike Bennett and Jeff Thunder).
  - Co-organized a 5-day workshop in Banff (BIRS) on *Vojta's Conjectures* (September 2014, with David McKinnon, Paul Vojta, and Umberto Zannier).
  - Co-organized an AMS special session *Diophantine geometry and Nevanlinna theory* at UC Riverside (November 2013, with David McKinnon and Paul Vojta)