CURRICULUM VITAE

Name Peter Louis Clark (professionally: Pete L. Clark)

Date and Place of Birth June 28, 1976; Philadelphia, Pennsylvania

Professional Preparation

1998–2003	HARVARD UNIVERSITY, Mathematics PhD 2003
1994–1998	UNIVERSITY OF CHICAGO, Mathematics BA, MS 1998

Appointments

2019–	PROFESSOR, University of Georgia
2016–2019	PROFESSOR AND GRADUATE COORDINATOR, University of Georgia
2011–2016	ASSOCIATE PROFESSOR, University of Georgia
2009	VISITING SCHOLAR, Université de Bordeaux I
2006–2011	ASSISTANT PROFESSOR, University of Georgia
2006	POSTDOCTORAL FELLOW, Mathematical Sciences Research Institute
2003-2005	POSTDOCTORAL FELLOW, McGill University
2003	VISITING SCHOLAR, University of Pennsylvania.

Publications

[1] P.L. Clark, *Period-index problems in WC-groups I: elliptic curves*, J. Number Theory 114 (2005), 193–208.

[2] G. Alon and P.L. Clark, *On the number of representations of an integer by a linear form*, Journal of Integer Sequences, Vol. 8 (2005), ARticle 05.5.2

[3] P.L. Clark, *On elementary equivalence, isomorphism and isogeny.* J. Théor. Nombres Bordeux 18 (2006), 29–58.

[4] P.L. Clark, *There are genus one curves of every index over every number field*, J. Reine Angew. Math. 594 (2006), 201–206.

[5] P.L. Clark, *Galois groups via Atkin-Lehner twists*, Proc. Amer. Math. Soc. 135 (2007), 617–624.

[6] P.L. Clark, *Abelian points on algebraic varieties*, Math. Research Letters 14 (2007), 731–743.

[7] P.L. Clark, *On the indices of curves over local fields*, Manuscripta Math. 124 (2007), 411–426.

[8] P.L. Clark and X. Xarles, *Local bounds for torsion points on abelian varieties*, Canad. J. Math. 60 (2008), 532–555.

Last updated: February 24, 2020.

[9] P.L. Clark, *An 'Anti-Hasse Principle' for prime twists*, Int. J. of Number Theory 4 (2008), 627–637.

[10] P.L. Clark, *On the Hasse Principle for Shimura curves*, Israel J. Math. 171 (2009), 349–365.

[11] P.L. Clark, *Elliptic Dedekind domains revisited*, Enseign. Math. (2) 55 (2009), 213–225.

[12] P.L. Clark and S. Sharif, *Period, index and potential Sha*, Algebra and Number Theory 4 (2010), 151–174.

[13] P.L. Clark, *The period-index problem in WC-groups IV: a local transition theorem*, J. Théor. Nombres Bordeaux 18 (2010), 583–606.

[14] P.L. Clark, *Covering numbers in linear algebra*, Amer. Math. Monthly 119 (2012), 65–67.

[15] P.L. Clark, *Euclidean quadratic forms and ADC-forms I*, Acta Arithmetica 154 (2012), 137–159.

[16] P.L. Clark, J. Hicks, K. Thompson and N. Walters, *GoNII: Universal quaternary quadratic forms*, Integers 12 (2012), A50, 16pp.

[17] P.L. Clark, B. Cook and J. Stankewicz, *Torsion points on elliptic curves with complex multiplication (with an appendix by Alex Rice)*, Int. J. of Number Theory 9 (2013), 447–479.

[18] P.L. Clark, J. Hicks, H. Parshall and K. Thompson *GoNI: Primes represented by binary quadratic forms.* Integers 13 (2013), A37, 18pp.

[19] P.L. Clark, *Graph Derangements*, Open Journal of Discrete Mathematics 3 (2013), 183–191.

[20] P.L. Clark and N. Diepeveen, *Absolute convergence versus convergence in ordered fields.* Amer. Math. Monthly 121 (2014), 909–916.

[21] P.L. Clark and W.C. Jagy, *Euclidean quadratic forms and ADC forms II: integral forms*, Acta Arithmetica 164 (2014), 265–308.

[22] P.L. Clark, P. Corn, A. Rice and J. Stankewicz, *Computation on elliptic curves with complex multiplication.* LMS Journal of Computation and Mathematics 17 (2014), 509–535.

[23] P.L. Clark, *The Combinatorial Nullstellensätze revisited*, Electronic Journal of Combinatorics. Volume 21, Issue 4 (2014). Paper #P4.15

[24] A. Brunyate and P.L. Clark, *Extending the Zolotarev-Frobenius approach to quadratic reciprocity*, Ramanujan J. 37 (2015), 25–50.

[25] P.L. Clark, *A note on Euclidean order types*, Order 32 (2015), 157–178.

[26] P.L. Clark, A. Forrow and J.R. Schmitt, *Warning's second theorem with restricted variables.* Combinatorica 37 (2017), 397–417.

[27] P.L. Clark and P. Pollack, *The truth about torsion in the CM case*, C.R. Math. Acad. Sci. Paris 353 (2015), 683–688.

[28] P.L. Clark and A. Lacy, *There are genus one curves of every index over every infinite, finitely generated field*, to appear in J. Reine Angew. Math.

[29] A. Bourdon, P.L. Clark and J. Stankewicz, *Torsion points on CM elliptic curves over real number fields.* Trans. Amer. Math. Soc. 369 (2017), 8457–8496.

[30] P.L. Clark, *The Euclidean criterion for irreducibles.* Amer. Math. Monthly 124 (2017), 198–216.

[31] A. Bourdon, P.L. Clark and P. Pollack, *Anatomy of torsion in the CM case.* Math. Z. 285 (2017), 795–820.

[32] P.L. Clark, *The cardinal Krull dimension of a ring of holomorphic functions.* Expo. Math. 35 (2017), 350–356.

[33] P.L. Clark and J. Voight, *Algebraic curves uniformized by congruence subgroups of triangle groups* Algebraic curves uniformized by congruence subgroups of triangle groups. Trans. Amer. Math. Soc. 371 (2019), 33–82.

[34] A. Bishnoi, P.L. Clark, A. Potukuchi and J.R. Schmitt, *On zeros of a polynomial in a finite grid.* Combin. Probab. Comput. 27 (2018), no. 3, 310–333.

[35] P.L. Clark, S. Gosavi and P. Pollack, *The number of atoms in a primefree atomic domain.* Comm. Algebra 45 (2017), 5431–5442.

[36] P.L. Clark and P. Pollack, *The truth about torsion in the CM case, II.* Q. J. Math. 68 (2017), 1313–1333.

[37] P.L. Clark, *A note on rings of finite rank.* Comm. Algebra 46 (2018), 4223–4232.

[38] P.L. Clark and P. Pollack, *Pursuing polynomial bounds on torsion.* Israel J. Math. 227 (2018), 889–909.

[39] P.L. Clark and L.D. Watson, *Varga's theorem in number fields* INTEGERS 18 (2018), A74, 11 pp.

[40] P.L. Clark and J. Stankewicz, *Hasse Principle violations for Atkin-Lehner twists of Shimura curves.* Proc. Amer. Math. Soc. 146 (2018), 2839–2851.

[41] P.L. Clark, M. Milosevic and P. Pollack, *Typically bounding torsion.* J. Number Theory 192 (2018), 150–167.

[42] P.L. Clark and L.D. Watson, *ABC and the Hasse principle for quadratic twists of hyperelliptic curves.* C. R. Math. Acad. Sci. Paris 356 (2018), 911–915.

[43] P.L. Clark, *Warning's Second Theorem with relaxed outputs.* (Previous title: "Fattening up Warning's Second Theorem.") J. Algebraic Combin. 48 (2018), 325–349.

[44] P.L. CLark, N. Lebowitz-Lockard and P. Pollack, *A Note on Golomb topologies.* Quaest. Math. 42 (2019), 73–86.

[45] I.N. Baoulina, A. Bishnoi and P.L. Clark, *A generalization of the Chevalley-Warning theorem.* Proc. Amer. Math. Soc. 146 (2018), 2839–2851.

[46] P.L. Clark, *Rabinowitsch times six.* Rocky Mountain J. Math. 49 (2019), 433–485.

[47] P.L. Clark, *The Instructor's Guide to Real Induction.* Math. Mag. 92 (2019), 136–150.

[48] P.L. Clark and P. Pollack, *Reciprocity by resultant in k[t].* To appear in Enseign. Math.

[49] A. Bourdon and P.L. Clark, *Torsion points and Galois representations on CM elliptic curves.* To appear in Pacific J. Math.

[50] A. Bourdon and P.L. Clark, *Torsion points and isogenies on CM elliptic curves.* To appear in Proceedings of the London Math. Society.

Submitted for Publication

[51] P.L. Clark, *Period-index problems in WC-groups II: abelian varieties.*
`http://alpha.math.uga.edu/~pete/wc2.pdf`

[52] P.L. Clark, *Curves over global fields violating the Hasse Principle.*
`http://alpha.math.uga.edu/~pete/HasseBjornODD.pdf`

[53] P.L. Clark, *Abstract geometry of numbers: linear forms.*
`http://alpha.math.uga.edu/~pete/GoN_Linear_Forms.pdf`

[54] P.L. Clark, *Solution to the inverse Mordell-Weil problem for elliptic curves.*
`http://alpha.math.uga.edu/~pete/inversemw.pdf`

[55] M. Chou, P.L. Clark and M. Milosevic, *Acyclotomy of torsion in the CM case.*
`http://alpha.math.uga.edu/~pete/acyclotomy.pdf`

[56] P.L. Clark, *A note on base size sets.*
`http://alpha.math.uga.edu/~pete/base_size_brief.pdf`

[57] P.L. Clark, T. Genao, P. Pollack and F. Saia, *The least degree of a CM point on a modular curve.*

In Preparation

[58] P.L. Clark, P. Pollack, J. Rouse and K. Thompson, *Densities of sets of integers represented by quadratic forms.*

[59] P.L. Clark and J. Hicks, *Abstract geometry of numbers: Hermite constants.*

[60] F. Breuer, P.L. Clark, P. Pollack and A. Rabenantoandro, *The truth about torsion in the CM case III: Drinfeld modules.*

[61] P.L. Clark, *CM elliptic curves: volcanoes, reality and applications.*

Books In Preparation

[B1] P.L. Clark, *Number Theory: A Contemporary Introduction.* Current draft: 272 pages. `http://alpha.math.uga.edu/~pete/4400FULL.pdf`

[B2] P.L. Clark, *Honors Calculus.* Current draft: 356 pages. `http://alpha.math.uga.edu/~pete/2400full.pdf`

[B3] P.L. Clark, *Commutative Algebra.* Current draft: 369 pages. `http://alpha.math.uga.edu/~pete/integral2015.pdf`

[B4] P.L. Clark, *General Topology* Current draft: 225 pages. `http://alpha. math.uga.edu/~pete/pointset.pdf`

Grant Support

(1) Principal Investigator, NSF Research Grant DMS-0701771, 2007-2013.
(2) UGA Provost Summer Research Grant, 2013.
(3) Co-Principal Investigator, NSF "AGANT" Research Training Grant DMS–1344994, 2014–2018.
(4) Simons Grant, 2016–2021.

Administration

(1) 2014-2015 Academic Year Coordinator, AGANT RTG.
(2) 2015 Summer Coordinator, AGANT RTG.
(3) UGA Mathematics Department Graduate Coordinator, 2016–2019.

Teaching

2006–	**Tenure track / tenured professor**, University of Georgia
	Analytic Geometry and Calculus (Math 2200), Fall 2006, Fall 2009.
	Calculus II (Math 2260), Fall 2007, Fall 2013, Spring 2014, Fall 2014.
	Honors Calculus With Theory I (Math 2400), Fall 2011.
	Honors Calculus With Theory II (Math 2410), Spring 2012.
	Linear Algebra (Math 3000), Fall 2013.
	Sequences and Series (Math 3100), Spring 2011, Fall 2016.
	Intro. to Higher Math (Math 3200), Spring 2009, Fall 2009, Spring 2016.
	Complex Analysis (Math 4150), Fall 2017.
	General Topology (Math 4200/6200), Spring 2015.
	Number Theory (Math 4400/6400), Spring 2007, Spring 2009, Spring 2018.
	Foundations of Graduate Mathematics (Math 7900), Fall 2018, Fall 2019.
	Commutative Algebra (Math 8020), Spring 2011, Spring 2016, Spring 2020.
	Homological Algebra (Math 8030), Spring 2013.
	Geometry of Schemes (Math 8310), Spring 2017.
	Algebraic Curves (Math 8320), Fall 2008.
	Algebraic Number Theory I (Math 8400), Spring 2014.
	Algebraic Number Theory II (Math 8410), Spring 2010, Spring 2019.
	Complex Multiplication (Math 8410), Spring 2015.
	Primes of the Form $X^2 + nY^2$ (Math 8430), Spring 2008.
	Modular Curves [jointly with R. Varley] (Math 8430), Spring 2012.
	Zeta- and L-Functions [jointly with R. Varley] (Math 8430), Fall 2015.
	Elliptic Curves (Math 8430), Fall 2012.
	Topics in the Arithmetic of Abelian Varieties (Math 8430), Spring 2020.
	Model Theory (Math 8900), Summer 2010.
	Noncommutative Algebra (Math 8900), Summer 2011.
2003–2005	**Instructor**, McGill University
	Introduction to Shimura Varieties (Math 726), Fall 2005.
	Real Analysis II (Math 243), Winter 2005.
	Calculus I (Math 139), Winter 2005.
	Linear Algebra (Math 133), Fall 2004.

2004	**Instructor**, Concordia University
	Advanced Calculus (Engineering Math 233), Winter 2004.

Synergistic Activities

(1) Joint leader (with Paul Pollack) of a 2015–2016 vertical research group on the process of mathematical research. Participants: Kubra Benli, Jordan Clark, Saurabh Gosavi, Noah Lebowitz-Lockard, Robert Samalis, Lee Troupe, Lori Watson (graduate students).

(2) Leader of a 2011–2012 VIGRE research group on Geometry of Numbers and applications to number theory. Participants: Chris Drupieski (postdoc), Brian Bonsignore, Harrison Chapman, Jacob Hicks, Lauren Huckaba, David Krumm, Allan Lacy, Nham Ngo, Hans Parshall, Alex Rice, Jim Stankewicz, Kate Thompson, Lee Troupe, Nathan Walters and Jun Zhang (graduate students).

(3) Leader of a 2007–2008 VIGRE research group on torsion points on CM elliptic curves. Participants: Patrick K. Corn (postdoc), Steve Lane, Jim Stankewicz, Nathan Walters, Steve Winburn, Ben Wyser (graduate students), Alex Rice (undergraduate).

(4) Leader of a 2009 working seminar on a paper of Mazur and Rubin, *Ranks of twists of elliptic curves and Hilbert's 10th problem.*

(5) Leader of a 2005 summer research project for undergraduates at McGill University, funded by the Institut Scientifique des Mathématiques (ISM).
Topic: "Almost sure limit sets of vector-valued Rademacher series."

Students

(1) Laura Nunley, MS. UGA, 2010.

(2) James Henry Stankewicz, PhD. UGA, 2012.

(3) Allan Gerardo Lacy, PhD. UGA, 2015.

(4) Jacob Hicks, PhD. UGA, 2016.

(5) Marko Milosevic, PhD. UGA, 2018.

(6) Lori D. Watson, PhD student. UGA, 2019.

(7) Tyler Genao, PhD student. UGA.

(8) Frederick Saia, PhD student. UGA.

Other Service

(1) UGA Math Department Executive Committee: 2019–

21) UGA Math Department Head Review Committe: 2018.

(3) UGA Math Department Personnel Committee: 2013–2016. Chair: 2014–2016.

(4) UGA Math Department Graduate Committee (includes admissions): 2009–2013, 2016– (chair 2016-2019 *ex officio*).

(5) UGA Math Department Colloquium Committee: 2008–2010.

(6) UGA Qualifying Exam Committees: Algebra, Complex Analysis, Topology.

(7) On the Oral Exam/Thesis Committee for: Steve Winburn, Nathan Walters, Jim Stankewicz, Lev Konstantinovsky, Matt Mastin, David Krumm, Kate Thompson, John Doyle, Joe Tenini, Adrian Brunyate, Jacob Hicks, Allan Lacy, Hans Parshall, Ken Jacobs, Lee Troupe, Patrick McFaddin, Abraham Varghese, Marko Milosevic, Lori Watson, Ernest Guico, Saurabh Gosavi, Riley Ellis, Mentzelos Melistas, Arvind Suresh, Makoto Suwama, Ben Tighe, Tyler Genao, Frederick Saia.

(8) Co-organizer (with Daniel Krashen, Patrick McFaddin and Katherine Thompson), Workshop and Symposium on Quadratic Forms, UGA, July 2017.

(8) Co-organizer (with Abbey Bourdon), special session on the arithmetic of elliptic curves, AMS Sectional Meeting, Athens, GA, March 2016.

(9) Co-organizer (with Dino Lorenzini), special session on arithmetic geometry, AMS Sectional Meeting, Boca Raton, FL, October/November 2009.

Selected Talks

- AMS Sectional Meeting in Riverside, CA 11/19
Title: "The truth about torsion in the CM case"

- AMS Sectional Meeting in Honolulu, HI 3/19
Title: "Asymptotics of torsion on elliptic curves over number fields"

- Algebra Seminar, University of Pennsylvania, 9/18
Title: "Reciprocity by resultant in $k[t]$."

- Number Theory seminar, University of South Carolina, 4/18
Title: "Densities of sets of integers represented by quadratic forms."

- AGeNTS seminar, Tufts, 3/18
Title: "Densities of sets of integers represented by quadratic forms."

- Number Theory Seminar, MIT, 11/16
Title: "Torsion points and Galois representations on elliptic curves."

- Algebra Seminar, Clemson, 4/16
Title: "The number of atoms in an atomic domain."

- Colloquium, Middlebury College, VT, 11/15.
Title: "A new proof of the generalized Wilson's theorem."

- AMS Sectional Meeting in Huntsville, AL, 3/15, Special Session on Quadratic Forms in Arithmetic and Geometry
Title: "Quadratic forms and the Geometry of Numbers"

- Colloquium, Dartmouth Carollege, 10/14.
Title: "From number theory to combinatorics via polynomial functions."

- Number Theory Seminar, Dartmouth College, 10/14.
Title: "Torsion points on CM elliptic curves over real number fields."

- Discrete Mathematics Days of the Northeast, 9/14.
Title: "Around the Chevalley-Warning Theorem."

- Joint Meetings of the AMS and MAA, 1/13, Special Session on Arithmetic Theory of Quadratic Forms and Lattices.
Title: "Euclidean ideals and quadratic forms."

- Algebra Seminar, University of Georgia, 8/12.
Title: "Classical invariant theory and the (regular) inverse Galois problem."

- Number Theory Seminar, University of Georgia, 8/12.
Title: "Geometry of Numbers Debriefing: Part I."

- Number Theory Seminar, University of Texas, 4/12.
Title: "Arithmetic on a family of non-arithmetic curves."

- Number Theory Seminar, University of Georgia, 1/12.
Title: "Quadratic recipocity in abstract number rings."

- Joint Meetings of the AMS and MAA, 1/12, Special Session on Rational Points on Algebraic Varieties.
Title: "Euclidean quadratic forms and ADC-forms."

- Algebra Seminar, Wesleyan University, 10/11
Title: "Euclidean quadratic forms and ADC-forms."

- Mathematics Colloquium, Wesleyan University, 10/11
Title: "Overview of the local-global principle in number theory."

- Number Theory Seminar, MIT, 3/10.

Title: "The period-index problem for torsors under abelian varieties."

- Number Theory Seminar, University of Georgia, 9/09.

Title: "Algebraic curves uniformized by congruence subgroups of hyperbolic triangle groups."

- Arithmetic Geometry Seminar, Université de Bordeaux I, 6/09.

Title: "Algebraic curves violating the Hasse principle."

- Number Theory Seminar, University of Georgia, 2/09.

Title: "Biconic Curves, Part I."

- Number Theory Seminar, University of Georgia, 11/08.

Title: "Probabilistic ideas and methods in analytic number theory."

- Number Theory Seminar, University of Georgia, 9/08.

Title: "Quadratic twists, modular curves and the inverse Galois problem."

- VIGRE Graduate Seminar, University of Georgia, 9/08.

Title: "Things to do with a conditionally convergent series."

- Number Theory Seminar, University of Georgia, 12/07.

Title: "Torsion points on elliptic curves."

- Number Theory Seminar, University of Illinois at Chicago, 11/07.

Title: "On curves without rational points."

- Number Theory Seminar, University of Georgia, 10/07.

Title: "Existence of abelian varieties with prescribed endomorphism algebras."

- Algebraic Geometry Seminar, University of Georgia, 10/07.

Title: "Endomorphism algebras of abelian varieties."

- Number Theory Seminar, University of Georgia, 3/07.

Title: "Ramanujan graphs."

- VIGRE Research Group on Hodge Theory, University of Georgia, 11/06.

Title: "Mumford-Tate groups of abelian varieties."

- Number Theory Seminar, University of Georgia, 8/06-9/06.

Title: "Selections from the arithmetic geometry of modular curves and Shimura curves."

- Algebra Seminar, University of Pennsylvania, 7/06.

Title: "Rational points on Atkin-Lehner twists of modular curves."

- Seminar Talk, MSRI, 4/06.

Title: "Period-index problems in Galois cohomology and geometry."

- Colloquium, Arizona State University, 2/06.

Title: "Acquisition of rational points on algebraic curves."

- Colloquium, U.C. Santa Cruz, 2/06.

Title: "Acquisition of rational points on algebraic curves."

- Number Theory Sminar, U.C. Berkeley, 2/06.

Title: "Acquisition of rational points on algebraic curves."

- Number Theory Seminar, University of Georgia, 1/06.

Title: "The period-index problem in WC-groups."

- Colloquium, University of Georgia, 1/06.

Title: "Acquisition of rational points on algebraic curves."

- Québec-Vermont Number Theory Seminar, 4/05.
Title: "Arithmetic of algebraic curves with Galois Belyi maps."
- Canadian Mathematical Society Winter Meeting, 12/04.
Title: "One a question of Lang and Tate."
- Number Theory Seminar, McMaster University, 1/04.
Title: "The period-index problem in Weil-Châtelet groups."
- Québec-Vermont Number Theory Seminar, 1/04.
Title: "Period, index and potential Sha."
- Galois Seminar, University of Pennsylvania, 7/03.
Title: "Period-index problems in WC-groups."
- Number Theory Workshop, Brown University, 5/03.
Title: "Rational points on Atkin-Lehner quotients of Shimura curves."
- Number Theory Seminar, Harvard University, 5/03.
Title: "Rational points on Atkin-Lehner quotients of Shimura curves."
- Galois Actions on Fundamental Groups Seminar, Harvard, 4/02.
Title: "Fundamental groups in characteristic p."

Address
Department of Mathematics, University of Georgia, Athens, Georgia, 30602-7403.