

Holly Krieger - Curriculum Vitae

Department of Pure Mathematics and Mathematical Statistics
University of Cambridge
Wilberforce Road
Cambridge, UK CB3 0WB

hkrieger@dpmms.cam.ac.uk
<https://www.dpmms.cam.ac.uk/~hk439/>

Research Arithmetic, algebraic, and complex dynamics.

Employment UNIVERSITY OF CAMBRIDGE
Lecturer, Oct 2016 - current.
Corfield Fellow, Murray Edwards College

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
NSF Postdoctoral Fellow and Instructor, Sept 2013 - July 2016.
NSF supervisor: Bjorn Poonen

Papers A spectral gap of Thurston eigenvalues for unbounded post-critically finite maps
In preparation.

Bounded height for unlikely intersections in algebraic dynamical systems
with L. DeMarco, D. Ghioca, K. Nguyen, T. Tucker, H. Ye
To appear in *International Math. Research Notices*.

Reduction of dynatomic curves
with J. Doyle, A. Obus, R. Pries, S. Rubenstein-Salzedo, L. West
To appear in *Ergodic Theory and Dynamical Systems*.

Cohomological conditions on endomorphisms of projective varieties
with P. Reschke,
to appear in *Bulletin de la SMF*, preprint at <http://arxiv.org/pdf/1505.07088.pdf>

The dynamical André-Oort conjecture for unicritical polynomials
with D. Ghioca, K. Nguyen, and H. Ye,
Duke Math. J. (2017) Vol. 166 No. 1, 1 - 25.

A case of the dynamical André-Oort conjecture
with D. Ghioca and K. Nguyen.
International Math. Research Notices (2016) Vol. 2016, 738-758.

Uniform boundedness of S -units in arithmetic dynamics,
with A. Levin, Z. Scherr, T. Tucker, Y. Yasufuku, M. Zieve.
Pacific Journal of Mathematics (2015) Vol. 274 No. 1, 97-106.

Primitive prime divisors in the critical orbit of $z^d + c$
International Math Research Notices (2013), no. 23, 5498-5525.

Some Consequences of Schanuel's Conjecture,
with C. Cheng, B. Dietel, M. Herblot, J. Huang, D. Marques, J. Mason, M. Mereb, S. R. Wilson.
J. Number Theory 129 (2009), no. 6, 1464-1467.

Education UNIVERSITY OF ILLINOIS AT CHICAGO
 Ph.D. in Mathematics, 2013.
 Thesis co-advisors: Laura DeMarco and Ramin Takloo-Bighash
 MS in Mathematics, 2008.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
 B.S. in Mathematics, 2006.

Awards Isaac Newton Early Career Support Scheme,
 University of Cambridge, Jan - Dec 2018.

NSF Mathematical Sciences Postdoctoral Research Fellowship,
 Massachusetts Institute of Technology, 2013-2016.

Postdoctoral fellow for semester in model theory, arithmetic geometry, and number theory,
 MSRI, Spring 2014.

Emily Mann Peck Scholarship in Mathematics,
 University of Illinois at Urbana-Champaign, 2005-2006.

Service and Outreach Talk for the John Adams Institute
 Amsterdam, October 2017.

Project leader for Women in Numbers 4
 Banff, August 2017.

Talk for LMS Girls in Mathematics Day
 Oxford, January 2017.

Panel member, film discussion for *The Man Who Knew Infinity*
 Massachusetts Institute of Technology, April 2016.

Numberphile videos for the public on the Mandelbrot set and complex dynamics,
 MSRI, Spring 2014 and MIT, Spring 2015. With over 2 million total views, available at:
<https://www.youtube.com/watch?v=NGMRB40922I>
https://www.youtube.com/watch?v=09Js1nY7W_k
<https://www.youtube.com/watch?v=oCkQ7WK7vuY>
<https://www.youtube.com/watch?v=4LQvjSf6SSw>

Selected recent and upcoming invited talks Diophantine approximation and transcendence
 Luminy, France, September 2018.

Canadian Number Theory Association Conference
 Montréal, Canada, June 2018.

British Mathematical Colloquium
 St Andrews, Scotland, June 2018.

Families of algebraic dynamical systems
 Rennes, France, June 2017.

Oxford Number Theory Seminar
 Oxford, England, May 2017.

RTG Workshop in Arithmetic Dynamics
 Ann Arbor, MI, December 2015.

Arithmetic 2015 in celebration of Joe Silverman
 Providence, RI, August 2015.

University of Cambridge colloquium
Cambridge, England, June 2015.

University of Chicago dynamics seminar
Chicago, IL, May 2015.

Harvard University dynamics seminar
Cambridge, MA, April 2015.

Model Theory, Difference/Differential Equations and Applications
Luminy, France, April 2015.

University of Rochester algebra and number theory seminar
Rochester, NY, April 2015.

SouthEast Regional Meeting On Numbers, plenary postdoctoral speaker
Rock Hill, SC, March 2015.

Northwestern University dynamics seminar
Evanston, IL February 2015.

**Selected
recent and
upcoming
conferences**

Arithmetic and complex dynamics
CMO, Oaxaca, Mexico, November 2017.

AIM square on the dynamical André-Oort conjecture
Palo Alto, CA, August 2017.

Women in Numbers 4
BIRS, Banff AB, August 2017.

Special session in dynamics, Mathematical Congress of Americas
Montreal, Canada, July 2017.

Specialization problems in Diophantine geometry
Cetraro, Italy, July 2017.

Diophantine approximation and algebraic curves
BIRS, Banff AB, Canada, July 2017.

Families of algebraic dynamical systems
Rennes, France, June 2017.

Anabelian geometry
Burlington, VT, September 2016.

AIM square on the dynamical André-Oort conjecture
Palo Alto CA, May 2016.

AIM workshop on Galois theory and arithmetic dynamics
Palo Alto CA, May 2016.

Diophantische Approximationen
Oberwolfach, Germany, April 2016.

Joint Math Meetings
Seattle WA, January 2016.

Arithmetic 2015 in celebration of Joe Silverman
Providence RI, August 2015.

Model theory, difference/differential equations and applications
Luminy, France, April 2015.

Vojta's Conjectures
BIRS, Banff AB, Canada, October 2014.

AIM workshop on postcritically finite maps in complex and arithmetic dynamics
Palo Alto CA, March 2014.

MRC in Complex Dynamics
Snowbird UT June 2013.

Teaching

Riemann surfaces, University of Cambridge, Lent 2017.
Complex analysis, MIT, Fall 2015.
Calculus 1, recitation, MIT, Fall 2015.
Multivariable Calculus, recitation, MIT, Fall 2013.
Introduction to Mathematical Reasoning, grader, UIC, Spring 2011, 2012.
Graduate Real Analysis, grader, UIC, Fall 2010.
Linear Algebra, grader, UIC, Fall 2010.
Calculus 1, teaching assistant, UIC, Fall 2010.
Beginning Algebra, teaching assistant, UIC, Spring 2009.
Graduate Number Theory, grader, UIC, Fall 2009.
Codes and Cryptography, grader, UIC, Fall 2009.
Calculus 1, teaching assistant, UIC, Spring 2009.
Calculus 2, teaching assistant, UIC, Fall 2008.
Number Theory, teaching assistant, UIC, Fall 2008.
Differential Equations, teaching assistant, UIC, Spring 2008.
Beginning Algebra, teaching assistant, UIC, Fall 2007.
Calculus 1, teaching assistant, UIUC, Fall 2005-Spring 2006.