CONTACT INFORMATION	Dept. of Mathematics Hylan Building University of Rochester Rochester, NY 14627	*Voice:* (585) 275-9428 *E-mail:* chaessig@math.rochester.edu

RESEARCH INTERESTS

Number theory, p-adic cohomology, exponential sums, Dwork theory

EDUCATION

2005	Ph.D. Mathematics, Univ. of California, Irvine
1998	BS. Mathematics. College of Creative Studies, Univ. of California, Santa Barbara

APPOINTMENTS

2010 – present	Assistant Professor. Dept. of Mathematics, Univ. of Rochester, NY.
2006 – 2010	Visiting Assist. Professor. Dept. of Mathematics, Univ. of Rochester, NY.
2000 – 2006	Instructor. University of California, Irvine.

RESEARCH GRANTS

2015 – 2019	NSF Collaborative grant. DMS-1506706. *Upstate New York Number Theory Conference* (P.I. C. Douglas Haessig, co-PI's Alexander Borisov, Joseph Hundley, James Ricci, Nicolas Templier, David Zywina)
2014 – 2019	Simons Foundation grant. #314961. *p-adic analysis in families of exponential sums.* (P.I. C. Douglas Haessig)
2009 – 2011	NSF Grant. DMS-0901542. *p-adic Analysis in Algebraic Geometry over finite fields.* (P.I. C. Douglas Haessig)

AWARDS

2005	James M. Connelly award for excellence in research and teaching. UC Irvine
2005	Outstanding Contributions to the Mathematics Dept. award. UC Irvine
2005	Dissertation Fellowship. UC Irvine
2003 – 2004	Harbur Fellowship
2000 – 2002	ARCS Foundation Scholar.
1999 – 2000	La Verne Noyes Scholarship.

PUBLICATIONS

1. C.D. Haessig and S. Sperber. *Symmetric power L-functions for families of generalized Kloosterman.* Transactions of the AMS (2015). Reference: TRAN6720

2. C.D. Haessig. *Meromorphy of the rank one unit root L-function revisited.* Finite Fields Appl. 30 (2014), pp. 191 – 202.

3. C.D. Haessig and S. Sperber. *L-functions associated with families of toric exponential sums.* J. Number Theory 144 (2014), pp. 422 – 473.

4. C.D. Haessig and A. Rojas-León. *L-functions of symmetric powers of the generalized Airy family of exponential sums: ℓ-adic and p-adic methods.* International J. of Number Theory, Volume 7 (2011) Issue 8, pp. 2019 – 2064.

5. C.D. Haessig. *On the zeta function of divisors of projective varieties with large rank divisor class group.* J. Number Theory 129 (2009), No. 5, pp. 1161 – 1177.

6. C.D. Haessig. *L-functions of symmetric powers of cubic exponential sums.* J. Reine Angew. Math. 631 (2009), pp. 1 – 57.

7. C.D. Haessig. *On the p-adic meromorphy of the function field height zeta function.* J. Number Theory (2007) Vol. 128/7, pp. 2063 – 2069.

8. C.D. Haessig. Appendix to D. Wan's *Mirror symmetry for zeta functions.* Mirror Symmetry V, AMS/IP Studies in Advanced Mathematics, Vol. 38, (2007) pp. 159–184.

9. C.D. Haessig and D. Wan. *On the p-adic Riemann hypothesis for the zeta function of divisors.* J. of Number Theory. Vol. 104 (2004) pp. 335 – 352.

ARTICLES IN REVIEW
· C.D. Haessig. *L-functions of symmetric powers of Kloosterman sums (unit root L-functions and p-adic estimates).* Submitted to Mathematische Annalen.
· C.D. Haessig, A. Iosevich, J. Pakianathan, S. Robins and L. Vaicunas. *Tiling, circle packing and exponential sums over finite fields.* Submitted to Mathematische Annalen.
· C.D. Haessig. *p-adic unit roots of L-functions over finite fields.* Submitted to Finite Fields and Applications.

ARTICLE NEAR SUBMISSION
· C.D. Haessig and S. Sperber. *p-adic variation of unit root L-functions.*

PROFESSIONAL SERVICES

2015 – present	Science and Engineering Quadrangle Design Advisory Committee
2008 – present	Undergraduate Research committee and BA Honors committee
2014 – present	Faculty Senate
2013 – present	Web and computing
2008 – present.	Major advisor
2010 – 2014	Colloquium organizer.
2012 – 2014	Wing lecture organizer
2007 – 2008	Workshop Taskforce member (teaching initiative)
2007 – 2008	Internal Colloquium organizer
2004 – present	Math Reviews reviewer
2006 – 2008	Math competition organizer, proctor, and grader
2002 – 2006	Number Theory Seminar organizer (UC Irvine)
2001 – 2003	Graduate Seminar organizer (UC Irvine)
2001 – 2002	Topology Atlas, Editor of Education

TEACHING

University of Rochester, New York
· *Graduate Complex analysis*, Spring 2014
· *Graduate Algebra sequence*, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2015
· *Ordinary differential equations*, Fall 2009
· *Topics in Number theory*, Fall 2009, Spring 2010, Spring 2015
· *Linear Algebra*, Spring 2009
· *Transitions to higher mathematics*, Spring 2009

- *Introduction to Cryptography and Coding theory*, Fall 2008
- *Complex analysis*, Spring 2008.
- *Number theory with applications*, Fall 2007 and Fall 2006.
- *Abstract algebra*, Spring 2006, (honors) Spring 2014.
- *Excursions in mathematics*, Spring 2010 and Spring 2011
- *Various calculus courses*, Fall/Spring 2006 - 2015.

University of California, Irvine USA
- *Introduction to abstract mathematics.* Winter 2006.
- *Linear Algebra.* Winter 2006.
- *Non-linear programming.* Summer 2005.
- *Various calculus and precalculus courses.* Six courses between 2000 to 2004.
- Teaching Assistant. Fall 1998 – June 2004.

SYNERGISTIC ACTIVITIES (SCIENCE EDUCATION AND OUTREACH)	
2015	Univ of Rochester, π-day faculty participant.
2014	Univ of Rochester, π-day faculty participant and presentation.
2013	CETL interview. Invited to talk with Stu Jordan and Jenny Hadingham about my work as a teacher at the University and how CETL might be able to support that work
2013	Univ of Rochester, π-day talk. "The transcendence of Pi"
2012	Summer Math Institute at Cornell. "Counting points and diff equations". I was invited to give a presentation to the summer school students. I then went to dinner with them and discussed mathematics, research, and a career in mathematics.
2012	π-day with Kearns center at Univ. of Rochester. Helped to organize and help high school students with calculating Pi using the Buffon needle result. Approx. 100 students.
2011	CUNY Geneseo. "An introduction to number theory, from a p-adic point-of-view". Discussion with undergraduates about mathematics and research.
2010	Summer school "p-adic cohomologies and arithmetic applications", University of Sevilla, Spain. Gave week long lecture series along with numerous outside discussions.
2007	Univ. of Rochester Problem Solving seminar: Putnam Seminar Number theory (Two talk series)
2003	FIGS/Math club. Invited to serve on panel to discuss graduate school and mathematics.
2001	ARCS Scholars annual meeting. Invited to give presentation on research
2001	Invited to serve on panel to discuss graduate school and mathematics. (Arroyo Vista, CA)
2001	UCI math department. Asked to give talk to incoming graduate students.

INVITED TALKS

- UC Irvine, CA. " Unit root L-functions coming from families of exponential sums", March 8 – 11, 2015.
- Fields Institute, Toronto. "Zeta functions and L-functions on complements", November 15 – 16, 2014.
- CUNY Buffalo, New York. "Dworks unit root L-function in the rank one case", April 26–27, 2014.

- Fields Institute, Toronto. "Dworks unit root L-function in the rank one case", March 15–16, 2014.
- Université de Rennes, France. "On some results of Chevalley-Warning type ", September 26, 2013
- AMS sectional, Boulder CO. "Some recents results on Dwork's unit root L-function", April 13 - 14, 2013
- Upstate NY number theory. Binghamton. "Some recents results on Dwork's unit root L-function", April 27-28, 2013
- Fields Institute, Toronto. "L-functions of families of exponential sums", April 14 - 15, 2012.
- Fields institute, Canada "Unit roots everywhere", Nov 19 - 20, 2011
- Special session, Univ of Nebraska. "L-functions of families of toric exponential sums.", October 15 - 16, 2011
- Univ. of Waterloo, Canada. "On some results of Chevalley-Warning type", March 31, 2011
- Fields Institute, Canada. "On some results of Chevalley-Warning type", March 19, 2011
- Midwest Number Theory Day 2010, "On the evolution of the Chevalley-Warning theorem". November 12, 2010.
- Summer school "p-adic cohomologies and arithmetic applications", University of Sevilla, Spain. June 14-18, 2010.
- Mathematical Institute, University of Oxford. "Effective methods in p-adic cohomology." March 15-19, 2010.
- Fields Institute, Toronto, Canada. "Variation of zeta functions and σ-modules." March 6-7, 2010.
- Fields Institute, Toronto, Canada. "Mirror symmetry and quotients of zeta functions." March 7, 2009.
- Queens University, Canada. "Zeta function of divisors for projective varieties with higher rank divisor class group." March 27, 2008.
- Centre Interfacultaire Bernouilli, Lausanne. Plenary lecture. Mirror symmetry, modular forms and p-adic aspects of differential equations. November 2007.
- AMS sectional meeting, UC Santa Barbara. "Symmetric powers of families of L-functions." April 16-17, 2005.
- McMaster's University, Canada. Number theory seminar. January, 2005.
- AMS Special Sessions. San Francisco State University. "Zeta functions of Algebraic Cycles: Conjectures and Results." May 4, 2003.
- California State University, San Marcos. "Introduction to Zeta functions of finite type over $\mathbf{Z}$." April, 2003.
- Morningside Center of Mathematics. Beijing, China. "On the zeta function of divisors for Hirzebruch surfaces." July, 2002.

VISITS	· Université de Rennes, France. Invited by Bernard Le Stum. Sept. 15 – Oct. 2, 2013.

UR GRADUATE STUDENTS	Expected 2016	Malcolm Kotok. Topic: Computational aspects of zeta functions and L-functions of hypersurfaces over finite fields using p-adic cohomology.

UR Undergraduate Students	2013 – 2014	Josh Liu. Research on Goldbach conjecture in polynomial rings. Research led to article in J. of Undergrad Research.
	2010 – 2012	James Haley. Research on recursive formulas for prime numbers related to Dirichlet series. Research led to article in UR's J. of Undergrad Research.
	2008 – 2009	Erica Kaminski. Take-five program advisor. Emphasis on the interplay between quantum mechanics, mathematics, and cosmology.
	2008	Alex Halperin. Senior thesis advisor. Kronecker's Jugendtraum, complex multiplication, and Galois representations.
	2008 – 2009	Mary Whitmore, Eric Merenstein, Rivka Polykov. Study of p-adic integration and Kubota-Leopoldt's p-adic L-function.
	2008 – 2009	Kevin Tang. Game theory independent research.
	2007 – 2009	Elizabeth Munch. Ihara zeta function of graphs. Emphasis on p-adic limits of the zeta function of self-similar maps. Research led to article in J. of Undergrad Research.