

Curriculum Vitae

CAMERON FRANC

Mailing Address: Department of Mathematics and Statistics
University of Saskatchewan
142 East Hall
Saskatoon SK Canada
S7N 5E6

Email: franc @ math.usask.ca
Homepage: <http://www.math.usask.ca/~ franc>
Citizenship: Canadian
Date of birth: December 20, 1983

Academic positions

2016 – University of Saskatchewan, Assistant Professor
2014 – 2016 University of Michigan, Postdoctoral Scholar
Mentor: Stephen DeBacker
2011 – 2014 University of California, Santa Cruz, Postdoctoral Scholar
Mentor: Samit Dasgupta

Education

2006 – 2011 McGill University, Ph.D. in Mathematics
Advisor: Henri Darmon
2002 – 2006 Queen's University at Kingston, B.Sc.H. in Mathematics

Research interests

Number theory with an emphasis on modular forms and L -functions.

Publications and preprints

- (9) *Generating weights for the Weil representation of cyclic quadratic modules of even order*, submitted 2016. (with Luca Candelori and Gene Kopp) [arXiv:1606.07844](https://arxiv.org/abs/1606.07844)
- (8) *On the structure of modules of vector valued modular forms*, submitted 2015. (with Geoff Mason) [arXiv:1509.07494](https://arxiv.org/abs/1509.07494)
- (7) *Vector valued modular forms and the modular orbifold of elliptic curves*. Accepted for publication in the International Journal of Number Theory, 2016. (with Luca Candelori) [arXiv:1506.09192](https://arxiv.org/abs/1506.09192)
- (6) *Three-dimensional imprimitive representations of the modular group and their associated modular forms*. Accepted for publication in the Journal of Number Theory, 2015. (with Geoff Mason) [arXiv:1503.05520](https://arxiv.org/abs/1503.05520)
- (5) *Hypergeometric series, modular linear differential equations, and vector-valued modular forms*, to appear in Ramanujan Journal, 2015. (with Geoff Mason) [arXiv:1503.05519](https://arxiv.org/abs/1503.05519)
- (4) *Fourier coefficients of vector-valued modular forms of degree 2*, Canad. Math. Bull. 57 (2014) no. 3, 485-494. (with Geoff Mason) [arXiv:1304.4288](https://arxiv.org/abs/1304.4288)
- (3) *Computing fundamental domains for the Bruhat-Tits tree for $GL_2(\mathbb{Q}_p)$, p -adic automorphic forms, and the canonical embedding of Shimura curves*, LMS J. Comput. Math. 17 (2014), no. 1, 1-23. (with Marc Masdeu) [arXiv:1201.0356](https://arxiv.org/abs/1201.0356)

- (2) *Nearly rigid analytic modular forms and their values at CM points*, Ph.D. thesis, McGill University, 2011. (supervised by Henri Darmon)
- (1) *On a generalization of Artin's conjecture*. Pure Appl. Math. Q. 4 (2008) no. 4. (with Ram Murty)

Selected awards and grants

- 2006–2010 NSERC CGSD graduate scholarship
- 2006 Prince of Wales prize, Queen's University.
- 2006 NSERC Undergraduate Student Research Award (supervised by Ram Murty at Queen's University).
- 2005 NSERC Undergraduate Student Research Award (supervised by Ernst Kani at Queen's University).

Talks and presentations

Invited talks

- 2016, April *Job talk*, University of Saskatchewan.
- 2015, Nov *Quebec-Vermont number theory seminar*, McGill University.
- 2015, Oct *AMS sectional meeting*, Loyola University.
- 2015, June *Number theory seminar*, UCSC.
- 2015, May *Workshop in honour of Noriko Yui*, LSU.
- 2015, March *Automorphic forms workshop*, U-M.
- 2014, Dec *Number theory seminar*, UCSC.
- 2013, Dec *Number theory seminar*, UCSC.
- 2013, Nov *Number theory seminar*, U-M.
- 2012, Feb *Sage Days 36*, UCSD.
- 2012, Jan *Departmental colloquium*, UCSC.
- 2011, Oct *Bay Area algebraic number theory and arithmetic geometry conference III*, UCSC.
- 2011, April *CRG number theory lecture*, University of Calgary.

Other talks and presentations

- 2011, April *Upstate number theory conference*, contributed talk, Cornell University.
- 2011, March *Arizona winter school*, report on group project, University of Arizona.

Talks for undergraduates

- 2014, Oct *Math club*, U-M
- 2011–2014 *Undergraduate Math club*, UCSC (several talks)

Advising

- 2015 Aleyah Dawkin and Aaditya Sharma. REU Project at U-M: *The unbounded denominator conjecture for the symmetric cube power of a two-dimensional representation of the modular group*.
- 2011-2014 Mitchell Owen. Helped advise his UCSC Ph.D. thesis, under direction of Samit Dasgupta.

Teaching

U-M

- 2014–2016 Coordinator for calculus III labs (vector calculus, Math 215).

UCSC

- 2014 Spring Instructor for graduate class field theory.
- 2014 Spring Instructor for third-year complex analysis.
- 2013 Winter Instructor for a second graduate course in algebraic geometry.
- 2012 Fall Instructor for second-year group theory.
- 2012 Winter Instructor for third-year complex analysis.

McGill University

- 2008 Fall Instructor for first year linear algebra

Course Development

U-M

- 2015 Developed new curriculum and materials for applied linear algebra. (Math 214)
- 2014 Developed new curriculum and materials for calculus III labs. (Math 215)

UCSC

- 2012 Developed an undergraduate combinatorics course. (Math 116)

Service

- 2015 Served on a panel at U-M discussing inquiry based learning in higher math education.
- 2015 Reviewed calculus placement procedure at U-M.
- 2015 Part of a team for redesigning applied linear algebra (Math 214) at U-M.
- 2014, 2015 Helped run summer training week for incoming postdocs and grad students at U-M.
- 2014–2015 Postdoc associated with the REBUILD project at U-M. The REBUILD project is an interdepartmental NSF-funded group of scientists working to improve STEM education.
- 2011–2014 Organized the algebra and number theory seminar at UCSC.
- Various Reviewed for Math. Comp., Trans. AMS, Can. Math. Jour., JTNB.
- Various Organized several topics seminars at UCSC for graduate students (on local fields, p -adic modular forms and the Beilinson conjectures).

Contributions to K-12 education

- 2014, Oct Led two sessions of the Michigan Math Circle for high school students.