# Curriculum Vitae
Jay Daigle

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## Education

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| 2009 – 2014 | Ph.D in Mathematics at California Institute of Technology. |
| | Advisor: Matthias Flach. |
| | Thesis: "On the local Tamagawa number conjecture for Tate motives". |
| 2008 – 2009 | Master of Advanced Studies in Mathematics, Cambridge University, with Merit. |
| 2004 – 2008 | B.A. in Mathematics, Pomona College, cum laude. |
| | Advisor: Stephan Garcia. |

## Employment

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| 2014 – | Non Tenure Track Assistant Professor at Occidental College. |

## Academic Honors and Grants

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| 2009 – 2014 | NSF Graduate Research Fellowship. |
| 2007 | Inducted into Sigma Xi Honor Society. |

## Research Interests

Number Theory; monoids and factorization; Arithmetic geometry and algebraic number theory; $p$-adic Hodge Theory, $(\phi, \Gamma)$-modules, $L$-functions, and the Tamagawa number conjecture. Supercharacters and exponential sums.

I study the theory of non-unique factorization in numerical monoids, which is easily accessible to students with an undergraduate-level background and provides a foundation for an undergraduate research program.

I also use $(\phi, \Gamma)$-modules to study the equivariant Tamagawa number conjecture, a deep conjecture tying together much of arithmetic geometry and algebraic number theory.

## Papers

2016    Jay Daigle and Matthias Flach. On the local tamagawa number conjecture for tate motives over tamely ramified fields. *Algebra and Number Theory*, 10(6):1221–1275, 2016 arXiv:1508.06031

2014    Jay Daigle. *On the local Tamagawa number conjecture for Tate motives.* PhD thesis, California Institute of Technology, http://resolver.caltech.edu/CaltechTHESIS:05292014-153502602, May 2014

2010    S. T. Chapman, Jay Daigle, Rolf Hoyer, and Nathan Kaplan. Delta sets of numerical monoids using nonminimal sets of generators. *Comm. Algebra*, 38(7):2622–2634, 2010

2009    Adam Boocher, Jay Daigle, Jim Hoste, and Wenjing Zheng. Sampling Lissajous and Fourier knots. *Experiment. Math.*, 18(4):481–497, 2009 arXiv:0707.4210

## Teaching Experience

### Courses at Occidental College

- Junior Colloquium, Spring 2017

- Senior Seminar: Cryptology, Fall 2017

- Linear Algebra, Spring 2017

- Experienced Calculus I, Spring 2016, 2017 and Fall 2014, 2015, 2016, 2017

- Number Theory, Fall 2016, 2017

- Calculus I, spring 2016

- Advanced Calculus II, Fall 2015

- Calculus II, Spring 2015

### Courses at the California Institute of Technology

- Taught Sequences and Series, Winter 2014

- Head TA for Calculus of Several Variables, Practical Track, Spring 2011 and 2014

- TA for "Freshman Mathematics", Fall 2013

- Head TA for Linear Algebra, Analytical Track, Winter 2011

- TA for Calculus of One Variable, Fall 2010

### Other Teaching Experience

- Ballroom instructor for Caltech Ballroom Dance Club, 2010 – 2015

- Math Tutoring through Caltech Dean's Office, Fall 2013

- Math and Language Tutor for C2 Education Tutoring Service, Summer 2008

## Pedagogy and Professional Development

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| 2017 | Participated in workshop, Designing a New Course. |
| 2015 | Participated in workshop, Designing Student Polling Questions. |
| 2014 | Participated in Arizona Winter School on Arithmetic Statistics. |
| 2013 | Enrolled in Caltech class E110: Principles of University Teaching in STEM. |
| 2013 | Participated in Arizona Winter School on Modular Forms and Modular Curves. |
| 2011 | Gave talks for graduate seminar on étale cohomology. |
| 2007 | President of Pomona College Math Club. |

## Presentations and Talks

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| 2014 | "An Introduction to Special Values of $L$-functions" <br> Presentation to the Caltech Math Club |
| 2014 | "The Tamagawa number conjecture on motives, and $(\phi, \Gamma)$-modules" <br> at Claremont Colleges Algebra/Number Theory/Combinatorics Seminar. |
| 2008 | Meritorious Poster Award at Undergraduate Poster Session at annual AMS-MAA <br> joint meetings in San Diego. |
| 2007 | 20-minute talk at Young Mathematicians' Conference at The Ohio State University. |
| 2007 | Meritorious Poster Award at Undergraduate Poster Session at the Annual Meeting. <br> of the Southern California-Nevada section of the MAA. |
| 2007 | Undergraduate Poster Session at the 2007 annual AMS-MAA joint meetings in New Orleans. |