Curriculum Vitae for Connor Ahlbach

Contact Information	University of Washington, Seattle Seattle, WA, 98195-4350	*Mobile:* +1-650-636-3013 *E-mail:* ahlbach@uw.edu
Website	https://sites.math.washington.edu/~ahlbach/website/	
Citizenship	United States of America	

Education

Harvey Mudd College, Claremont, California USA

- B.S., Mathematics, May 2013
- Advisor: Professor Francis Su
- Thesis Title: *A Discrete Approach to the Poincare Miranda Theorem*

University of Washington, Seattle, Washington USA

- PhD progam in Mathematics: September 2013 - May 2019 (Expected)
- Advisor: Professor Sara Billey
- Thesis Title: Cyclic Sieving: Refinements, Applications, and Tableaux

Research Interests

Algebraic Combinatorics, Symmetric Functions, Young Tableaux, Representation Theory, Cyclic Sieving Phenomenon, Permutation Statistics, Coxeter Groups

Journal Publications

1. Ahlbach, Connor. Swanson, Joshua. *Cyclic sieving, necklaces, and branching rules related to Thall's problem*, Electronic Journal of Combinatorics, Volume 25, Issue 4, 2018, p.42.
2. Ahlbach, Connor; Swanson, Joshua. *Refined cyclic sieving on words for the major index atatistic*, European Journal of Combinatorics, Volume 73, October 2018, Pages 37-60.
3. Ahlbach, Connor; Usatine, Jeremy; Pippenger, Nicholas. *Barred preferential arrangements*, Electronic Journal of Combinatorics, Volume 20, Issue 2, 2013.
4. Ahlbach, Connor; Usatine, Jeremy; Frougny, Christiane; Pippenger, Nicholas. *Efficient algorithms for Zeckendorf arithmetic*, Fibonacci Quarterly, Volume 51, Number 3, August 2013, pg. 249 - 255.

Other Papers

1. Ahlbach, Connor. *Tableaux stabilization and rectangular tableaux fixed by promotion powers.* In Preparation.
2. Ahlbach, Connor; Swanson, Joshua; Rhoades, Brendon. *Euler-Mahonian refined cyclic sieving.* In Preparation.
3. Ahlbach, Connor; Usatine, Jeremy; Pippenger, Nicholas. *A combinatorial interpretation of the joint cumulant*. arXiv:1211.0652.
4. Ahlbach, Connor; Usatine, Jeremy; Pippenger, Nicholas. *Gap theorems for the delay of circuits simulating finite automata*. arXiv:1308.2970.

Teaching Experience

- Upward Bound Tutoring and other tutoring of high school students weekly during my undergraduate education (Sept. 2009 - May 2013)
- Teaching Assistant for Precalculus (6 quarters), Calculus (1 quarter)
- Instructor for Linear Algebra (9 quarters), Precalculus (1 quarter), Differential Equations (1 quarter)
- Apprentice Instructor at *MathILy*, Summer 2018
- Teaching Math Prep I and II at Washington Correction Center for Women through the Freedom Education Project Puget Sound, Autumn 2018
- Math Circle Volunteer weekly for Spring 2018 and Autumn 2018

Programming Skills

- Familiar with: LaTeX, Python, Sage/CoCalc, Matlab
- Some Experience with: Java, Racket, Prolog
- Wrote program for Type B RSK correspondence, submitted to Sage/CoCalc.

Other Professional Activities

- I am writing an introductory linear algebra textbook. You can view my current progress here: https://sites.math.washington.edu/ ahlbach/linaltextbook/
- Referee for FPSAC 2017
- Reviewed a submission to Discrete Mathematics
- Worked with Washington Experimental Mathematics Lab on research into *Rook placement games* with undergraduates, Spring 2018
- Working with Washington Experimental Mathematics Lab on research into *sandpile models* with another graduate student and an undergraduate, Autumn 2018

Awards

- Microsoft Scholar Award 2013 - 2017.

Invited Talks

- Ahlbach, Connor; Swanson, Joshua. *Refined Cyclic Sieving on Words for the Major Index Statistic.* Poster Presentation at Formal Power Series and Algebraic Combinatorics (FPSAC) Conference 2017.
- AMS Fall Sectional Meeting at Univeristy of California, Riverside: Combinatorial Representation Theory. *Refined Cyclic Sieving on Words for the Major Index Statistic.* November 4-5, 2017.
- *Sum and Intersection of Subspaces in Introductory Linear Algebra* in Innovative and Effective Ways to Teach Linear Algebra section at Joint Math Meetings 2019.
- *Cyclic Sieving, Necklaces, Branching Rules, an Thrall's Problem* in Combinatorics and Graph Theory section at Joint Math Meetings 2019.

Other Activities

- Mixed Martial Arts: 2000-2013,
- Aikido: 2013-Present.