Amy Wiebe

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Education

2019 **PhD in Mathematics**

University of Washington, Seattle
Advisor: Rekha Thomas
Thesis: *Realization spaces of polytopes and matroids*

2013 **MSc in Mathematics**

Simon Fraser University, Canada
Advisor: Jonathan Jedwab
Thesis: *Constructions of complex equiangular lines*

2010 **BSc in Mathematics**

Simon Fraser University, Canada
First Class Honours

Academic Positions

2019 – 2021 BMS Dirichlet Postdoctoral Fellowship, *Freie Universität*

Awards

2018	Douglas Lind Fellowship, University of Washington
2015	Excellence in Teaching award, University of Washington
2015 – 2017	NSERC Canada Graduate Scholarship - Doctoral (offered), NSERC Postgraduate scholarship - Doctoral (held)
2014 – 2016	McFarland Fellowship, University of Washington
2014	Dean's Convocation Medal, Simon Fraser University
2013	Graduate Fellowship, Simon Fraser University
2011 – 2012	CD Nelson Entrance Scholarship, Simon Fraser University
2011	Provost's Prize of Distinction, Simon Fraser University
2011	NSERC Canada Graduate Scholarship - Master's
2010, 2008, 2007	NSERC Undergraduate Student Research Award
2009	Ken & Su Jang Women in Science Scholarship, Simon Fraser University
2008	Goel Memorial Scholarship, Simon Fraser University
2007	Undergraduate Research Prize, Simon Fraser University

PUBLICATIONS

2020   "Combinatorial methods for Minkowski tensors of polytopes" (with N. Livchitz, and B. Sert), `arXiv.org/abs/2007.12893`.

2020   "Slack Ideals in Macaulay2" (with A. Macchia), *Submitted*, `arXiv.org/abs/2003.07382`.

2020   "Combining realization space models of polytopes" (with J. Gouveia, and A. Macchia), *Submitted*, `arXiv.org/abs/2001.11999`.

2020   "Projectively unique polytopes and toric slack ideals" (with J. Gouveia, A. Macchia, and R. R. Thomas), *J. Pure Appl. Algebra*, vol. 224, no. 5.

2019   "The slack realization space of a matroid" (with M. Brandt), *Algebraic Combinatorics*, vol. 2, no. 4, pp 663–681.

2019   "The slack realization space of a polytope" (with J. Gouveia, A. Macchia, and R. R. Thomas), *SIAM J. Discrete Math.*, vol. 33, no. 3, pp. 1637–1653.

2016   "Constructions of complex equiangular lines from mutually unbiased bases" (with J. Jedwab), *Des. Codes Cryptogr.*, vol. 80 pp. 73–89.

2015   "A simple construction for complex equiangular lines" (with J. Jedwab), *(Springer Proceedings in Mathematics and Statistics (PROMS): Algebraic Design Theory and Hadamard Matrices)*, pp. 159–169.

2015   "Large sets of complex and real equiangular lines" (with J. Jedwab), *J. Comb. Theory (Series A)* vol. 134 pp. 98–102.

2010   "A new source of seed pairs for Golay sequences of length 2^m" (with F. Fiedler and J. Jedwab) *J. Comb. Theory (Series A)*, vol. 117 pp. 589–597, 2010.

2009   "Yes or No to Clickers in a Large Calculus Course Based on Instructor and Student Feedback Analysis" (with P. Menz and V. Jungic), *Proceedings of Improving University Teaching 34th International Conference*.

TALKS

May 2020   (POSTPONED). **Chow Lectures**, Max Planck Institute, Leipzig, Germany.

April 2020   (POSTPONED). **Graduate Student Meeting on Applied Algebra and Combinatorics**, University of Copenhagen, Denmark.

February 2020   **Research Seminar on Discrete and Convex Geometry**, Technische Universität Berlin, Germany.

December 2019   **Women in Algebra and Symbolic Computations**, Bad Dürkheim, Germany.

October 2019   **Discrete Geometry Seminar**, Freie Universität Berlin, Germany.

May 2019   Session: Combinatorial Optimization, **CanaDAM**, Simon Fraser University, Vancouver, Canada.

July 2018   Session: Algebraic and Geometric Aspects of Semidefinite Programming, **ISMP**, Bordeaux, France.

June 2018   6th **Encuentro Colombiano de Combinatoria** (ECCO18), Universidad del Norte, Barranquilla, Colombia.

May 2018   **Discrete Math Seminar**, Simon Fraser University, Burnaby, Canada.

April 2018   Special Session: Commutative Algebra, **AMS Sectional Meeting**, Portland State University, Portland, Oregon.

March 2018   **Discrete Geometry Seminar**, Freie Universität Berlin, Germany.

Feb 2018	**Seminar on Nonlinear Algebra**, MPI, Leipzig, Germany.
July 2017	Minisymposium: Semidefinite Optimization and Convex Algebraic Geometry, **SIAM AG17**, Georgia Institute of Technology, Atlanta, Georgia.
February 2014	**Discrete Math Seminar**, Simon Fraser University, Burnaby, Canada.
June 2012	Special Session: Combinatorics, **CMS Summer Meeting**, Regina, Canada.
December 2010	Special Session: Theory and Application of Sequences and Arrays, **CMS Winter Meeting**, Vancouver, Canada.
July 2010	**Canadian Undergraduate Mathematics Conference**, University of Waterloo, Waterloo, Canada.

Posters

August 2014	**Symposium on Computation and Mathematics**, Simon Fraser University, Burnaby, Canada.
August 2010	**Computational Mathematics Day**, IRMACS, Simon Fraser University, Burnaby, Canada.
January 2009	MAA Poster Session on Research by Undergraduate Students, **AMS/MAA Joint Meetings**, Washington D.C.
August 2008	**Rising Stars of Research**, University of British Columbia, Vancouver, Canada.

Selected Conference Participation

March 2020	**Combinatorial Coworkspace** – a session in algebraic and geometric combinatorics, Kleinwalsertal, Austria.
December 2019	**Research Retreat** of the Thematic Einstein Semester *Algebraic Geometry - Varieties, Polyhedra, Computation*, Döllnsee, Germany.
December 2019	**Einstein Workshop on Polytopes and Algebraic Geometry**, Freie Universität, Berlin, Germany (*Organizer*).
July 2018	**International Symposium on Mathematical Programming (ISMP)**, University of Bordeaux, Bordeaux, France.
October 2017	**Geometric and topological combinatorics: Modern techniques and methods**, MSRI, Berkeley, California.
September 2017	**Introductory Workshop: Geometric and Topological Combinatorics**, MSRI, Berkeley, California.
August 2017	**Bridging Continuous and Discrete Optimization Boot Camp**, Simons Institute for the Theory of Computing, Berkeley, California.
July 2017	**Applied Macaulay2 Tutorials**, Georgia Institute of Technology, Atlanta, Georgia.
August 2016	**Summer School on Real Algebraic Geometry and Optimization**, Georgia Institute of Technology, Atlanta, Georgia.
January 2015	**Mathematics of Communications: Sequences, Codes and Designs Workshop**, BIRS, Banff, Canada.

Teaching

Instructor of Record

Summer 2016	Precalculus, Math 120, University of Washington.

Teaching Assistant

Spring 2019	Calculus II, Math 125, University of Washington (online).
Winter 2019	Discrete Optimization, Math 409, University of Washington (Grader).
Fall 2018	Linear Optimization, Math 407, University of Washington (Grader).
Spring 2017	Discrete Optimization, Math 409, University of Washington (Grader).
Winter 2017	Precalculus, Math 120, University of Washington.
Fall 2016	Calculus I, Math 124, University of Washington.
Spring 2016	Precalculus, Math 120, University of Washington.
Winter 2016	Precalculus, Math 120, University of Washington.
Fall 2015	Precalculus, Math 120, University of Washington.
Summer 2015	Precalculus, Math 120, University of Washington. Math Study Center, Math 120/124/125/126, University of Washington.
Spring 2015	Calculus II, Math 125, University of Washington.
Winter 2015	Precalculus, Math 120, University of Washington.
Fall 2014	Calculus II, Math 125, University of Washington.
Fall 2013	Cryptography, MACM 442, Simon Fraser University (Grader).
Fall 2012	Coding Theory, Math 447, Simon Fraser University (Grader). Principles of Mathematics for Teachers, Math 190, Q Workshop, Simon Fraser University.

Supplementary Teaching

2006 – 2011	Special Education Assistant, Pacific Academy High School, Vancouver, Canada.
2002 – 2011	Private Tutor, Math/Science, Vancouver, Canada.

Service

2019 –	Social media and communication team lead, Network of Women in Combinatorics.
2019	Organizing committee, Einstein Workshop on Polytopes and Algebraic Geometry, Freie Universität Berlin.
2018 – 2019	Organizer, Graduate student optimization seminar, University of Washington.
2017 – 2018	Undergraduate program committee member, University of Washington.
2017 – 2018	Leading teaching assistant, University of Washington. Trained and mentored all incoming math and applied math graduate students and new teaching assistants.
2016 – 2018	Elected secretary, Student Chapter of the AWM, University of Washington.
Fall 2016	Teaching assistant mentor, University of Washington. Mentored a group of new math graduate students in teaching.
2011 – 2013	Elected secretary, Mathematics Graduate Caucus, Simon Fraser University.
2010	Elected secretary, Mathematics Student Union, Simon Fraser University.