

CURRICULUM VITAE: STEPHANIE VAN WILLIGENBURG

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EDUCATION

- 94-98 **PhD Pure Mathematics** University of St Andrews, Scotland
The descent algebras of Coxeter groups
Supervisor: M. Atkinson, co-supervisor: E. Robertson
- 91-94 **BSc Honours Pure Mathematics** University of St Andrews, Scotland
1st class honours
Arthur Hinton Read Memorial Prize for top student

EMPLOYMENT

- 12- **Full Professor** University of British Columbia, Canada
- 07-12 **Associate Professor** University of British Columbia, Canada
- 02-07 **Assistant Professor** University of British Columbia, Canada
- 00-02 **Visiting Assistant Professor** Cornell University, USA
- 98-00 **Post Doctoral Fellow** York University, Canada

SELECTED AWARDS FOR RESEARCH

- 2018 Appointed a *Simons-CRM Professor* at the Centre de Recherches Mathématiques (CRM) by the CRM, and the Simons Foundation, USA.
- 2017 Awarded the *Krieger-Nelson Prize* for outstanding research by a female mathematician, by the Canadian Mathematical Society (CMS), Canada.
- 2008 Awarded a global *Humboldt Research Fellowship for Experienced Researchers* by the Alexander von Humboldt Foundation, Germany (\$ 57,500).
- 2006 Appointed a *Distinguished Visiting Professor* at Bucknell University, USA.
- 2004 Awarded a *Peter Wall Institute for Advanced Study Early Career Scholarship* that brings 20 outstanding University of British Columbia (UBC) early-career researchers together to share ideas and research approaches (\$ 5,500).
- 02-07 Won a *University Faculty Award* from the Natural Sciences and Engineering Research Council of Canada (NSERC).
- 97-00 Awarded one of twenty national *Leverhulme Trust Scholarships* from the Leverhulme Trust, UK (\$ 60,000).

AWARD FOR TEACHING

2008 Won one of 20 *Killam Teaching Awards* for excellence in teaching at UBC.

COMPETITIVE GRANTS

20-25 NSERC Discovery Grant “Resolutions of positivity in Hopf algebras” (\$ 155,000).

15-20 NSERC Discovery Grant “Generalizations of Schur functions” (\$ 100,000).

10-15 NSERC Discovery Grant “Applications of quasisymmetric Schur functions” (\$ 120,000).

05-10 NSERC Discovery Grant “Equality of Littlewood-Richardson coefficients” (\$ 95,000).

02-07 NSERC University Faculty Award (\$ 200,000).

02-05 NSERC Discovery Grant “Enumeration in partially ordered sets” (\$ 54,000).

SELECTED PUBLICATIONS

1. Resolving Stanley’s e -positivity of claw-contractible-free graphs, S. Dahlberg, A. Foley and S. van Willigenburg, *J. Eur. Math. Soc. (JEMS)* 22:2673-2696 (2020).
2. The shuffle conjecture, S. van Willigenburg, *Bull. Amer. Math. Soc.* 57:77-89 (2020).
3. Chromatic symmetric functions in noncommuting variables revisited, S. Dahlberg and S. van Willigenburg, *Adv. in Appl. Math.* 112 25pp (2020).
4. Modules of the 0-Hecke algebra and quasisymmetric Schur functions, V. Tewari and S. van Willigenburg, *Adv. Math.* 285:1025-1065 (2015).
5. Skew quasisymmetric Schur functions and noncommutative Schur functions, C. Bessenrodt, K. Luoto and S. van Willigenburg, *Adv. Math.* 226:4492-4532 (2011).
6. Refinements of the Littlewood-Richardson rule, J. Haglund, K. Luoto, S. Mason and S. van Willigenburg, *Trans. Amer. Math. Soc.* 363:1665-1686 (2011).
7. Quasisymmetric Schur functions, J. Haglund, K. Luoto, S. Mason and S. van Willigenburg, *J. Combin. Theory Ser. A* 118:463-490 (2011).
8. Towards a combinatorial classification of skew Schur functions, P. McNamara and S. van Willigenburg, *Trans. Amer. Math. Soc.* 361:4437-4470 (2009).

9. Coincidences among skew Schur functions, V. Reiner, K. Shaw and S. van Willigenburg, *Adv. Math.* 216:118-152 (2007).
10. Decomposable compositions, symmetric quasisymmetric functions and equality of ribbon Schur functions, L. Billera, H. Thomas and S. van Willigenburg, *Adv. Math.* 204:204-240 (2006).
11. Peak quasisymmetric functions and Eulerian enumeration, L. Billera, S. Hsaio and S. van Willigenburg, *Adv. Math.* 176:248-276 (2003).
12. Non-commutative Pieri operators on posets, N. Bergeron, S. Mykytiuk, F. Sottile and S. van Willigenburg, *J. Combin. Theory Ser. A* 91:84-110 (2000). Volume in memory of GC Rota.

Additionally published over 40 further articles, a book with Luoto and Mykytiuk on quasisymmetric Schur functions, and 10 refereed conference proceeding articles.

SELECTED PLENARY TALKS AND SUMMER SCHOOLS

- 2020 Plenary Combinatorial Algebra meets Algebraic Combinatorics 2020, Halifax, Canada.
- 2019 Plenary Alberta Mathematics Dialogue, Camrose, Canada.
- 2019 Summer School on quasisymmetric Schur functions, Korea Institute for Advanced Studies, S. Korea.
- 2019 Plenary (Current Events Bulletin) Joint Mathematics Meetings, Baltimore, USA.
- 2017 Krieger-Nelson Prize Lecture, Montreal, Canada.
- 2017 Summer School on Enumerative and Algebraic Combinatorics, Coimbra University, Portugal.
- 2017 Plenary Algebra, Geometry and Combinatorics 15, Urbana-Champaign, USA.
- 2016 Plenary AMS Spring Western Sectional Meeting, Salt Lake City, USA.
- 2015 Plenary Formal Power Series and Algebraic Combinatorics 2015, Korea Advanced Institute of Science and Technology, S. Korea.
- 2011 Plenary Triangle Lectures in Combinatorics, Raleigh, USA.
- 2009 Plenary Alexander von Humboldt Foundation Meeting, Bonn, Germany.
- 2008 Summer School on Schur functions, Seoul National University, S. Korea.

Additionally given over 100 other invited conference, colloquium and seminar talks around the globe.

SELECTED CONFERENCE ORGANIZATION

- 19-20 Scientific Organizing Committee Member for CMS Winter Meeting 2020.
- 15-17 Co-organizer for Banff International Research Station (BIRS) workshop on “Algebraic Combinatorixx 2” to collaborate with, strengthen visibility of, and continue mentoring network for, female combinatorialists.
- 2015 Co-organizer for BIRS workshop on “Positivity in Algebraic Combinatorics”.
- 12-13 Organizer of CanaDAM 2013 Invited Minisymposium on Algebraic Combinatorics.
- 2012 Co-organizer of Focused Research Group BIRS workshop “A t -Pieri rule for Hall-Littlewood P-functions and $QS(t)$ -functions”.
- 09-11 Co-organizer for BIRS workshop on “Algebraic Combinatorixx” to collaborate with, strengthen visibility of, and begin mentoring network for, female combinatorialists.
- 2008 Co-organizer of Research in Teams BIRS workshop “Schur quasisymmetric functions and Macdonald polynomials”.
- 05-07 Co-organizer for CRM semester on Recent Advances in Combinatorics.
- 2004 Co-organizer for the BIRS workshop on Combinatorial Hopf Algebras.
- 03-04 Co-organizer for FPSAC 2004 Vancouver, Canada.
- 03-04 Co-chair of program committee for FPSAC 2004 Vancouver, Canada.

Additionally organized numerous AMS and CMS conference special sessions, and chaired many sessions and panels at a variety of conferences.

JUNIOR RESEARCHER SUPERVISION

Undergraduate research: Eva Koo (2003), Navid Mohammadi (2003), Wendy Thiessen (2003), Kristin Shaw (2003, 2004, 2005), Chris Ryan (2005), Josh Fiddler (2006), Andrew Brown (2007), Farzin Barekat (2008), Ian Mak (2015), Jesseca Eng (2015), Foster Tom (2016), Adrian She (2017, 2018), Victor Wang (2020).

MSc: Matthew Morin (2003-05), Vasu Tewari (2009-11), Zheng Li (2010-11), Caleb Cheek (2010-12), Christina Koch (2011-2013), Myrto Mavraki (2012-14), Foster Tom (2016-18).

PhD: Ben Young (2003-04), Matthew Morin (2005-10), Vasu Tewari (2011-2015), Myrto Mavraki (2014-16), Ching Wong (2014-2020), Brian Chan (2016-2020).

Postdoctoral Fellow: Kevin Purbhoo (2006-07), Eric Fusy (2008-09), Kurt Luoto (2009-11), Mahdad Khatirinejad (2010-11), Ed Richmond (2011-14), Julian Courtiel (2015-16), Samantha Dahlberg (2016-18), Orit Raz (2017-19), Farid Aliniaiefard (2019-).

SELECTED SERVICE TO MATHEMATICS

- Co-founded the Algebraic Combinatorixx research community in 2009 to foster research collaborations and mentorship for women in my area of algebraic combinatorics, which has so far been realised through workshops at BIRS, conference sessions, and publications. At present, myself and three others are trying to take this model online during Covid.
- Speak on numerous panels and at conferences, visiting high schools, and collaborating with the media, such as the National Film Board of Canada and Canada's National Museum of Science and Technology, on being a woman in STEM, and tips for forging a successful career, overcoming barriers, and flourishing.
- NSERC Math-Stat Liaison Committee Member 2019-2022.
- Associate Head for Research at UBC Mathematics 2014 onwards.
- Referee for various journals. Assessor of grants for NSA, NSERC. Assessor of proposals for BIRS.