GEORGE H. SEELINGER—CV

https://ghseeli.github.io ✉ ghs9ae@virginia.edu

RESEARCH INTERESTS

Algebraic combinatorics: symmetric functions, Schubert calculus, Macdonald polynomials

EDUCATION

Doctor of Philosophy, Mathematics　　　　University of Virginia, Charlottesville, Virginia
Advisor: Jennifer Morse　　　　　　　　　　　　　　　　　　　　　　　*Expected May 2021*

Master of Science, Mathematics　　　　Loyola University Chicago, Chicago, Illinois
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　August 2015

Bachelor of Science, summa cum laude　　　Loyola University Chicago, Chicago, Illinois
Major: Mathematics and Computer Science　　　　　　　　　　　　　　　　　*May 2015*
Interdisciplinary Honors

PUBLICATIONS

K-theoretic Catalan functions　　　　　　　　　　　　　　　　　arxiv:2010.01759
Joint with Jonah Blasiak and Jennifer Morse

· Submitted. Preprint available on arXiv.org.

Canonical idempotents of multiplicity-free families of algebras　　　arxiv:1606.08900
Joint with Stephen Doty and Aaron Lauve

· L'Enseignment Mathematique, **64** (2018) 23–63.

A shuffle theorem for paths under any line
Joint with J. Blasiak, M. Haiman, J. Morse, and A. Pun

· In preparation.

RESEARCH TALKS

Philadelphia Area Combinatorics and Algebraic Geometry Seminar　　February 6, 2020
University of Pennsylvania

· Title: *K-theoretic Catalan functions*

Garsiafest 90: Future Directions in Algebraic Combinatorics　　　June 18, 2019
The Scripps Seaside Forum, San Diego, CA. Lightning Talk

· Title: *Raising operators in Schubert calculus*

Mid-Atlantic Algebra, Combinatorics, and Geometry Workshop　　　May 4, 2019
Drexel University. Poster

· Title: *K-theoretic Catalan functions*

Sage Days 65　　　　　　　　　　　　　　　　　　　　　　　　June 11, 2015
Loyola University Chicago

· Title: *Orthogonal idempotents in semisimple Brauer algebras*

EXPOSITORY TALKS

University of Virginia Representation Theory Reading Seminar 2016 – 2020
Seminar talks on various topics; selected titles listed

· k-Schur functions as Schubert representatives for the affine Grassmannian Spring 2020
· Introduction to the affine Grassmannian Spring 2020
· Chern class computations, flag manifolds, and the Grassmannian Spring 2019
· Schur-Q functions and related combinatorics Fall 2018
· Applications of the Jacobson-Morozov Theorem Fall 2017
· The principal, subregular, and minimal nilpotent orbits Fall 2016

University of Virginia Integrable Probability and Combinatorics Seminar 2019
Seminar talks on various topics

· Multispecies ASEP and nonsymmetric Macdonald polynomials Fall 2019
· A q-analogue of de Finetti's theorem Spring 2019
· Extreme characters of $U(\infty)$ Spring 2019

Undergraduate Math Club October 2, 2018
University of Virginia

· Title: Generating functions: a mathematical link

TEACHING EXPERIENCE

Instructor of Record University of Virginia
· MATH 1310: Calculus I (flipped classroom) *Fall 2019*
· MATH 1220: Survey of Calculus II *Spring 2018*
· MATH 1210: Survey of Calculus I *Fall 2017*

HONORS, AWARDS, AND FELLOWSHIPS

· Dorothy M. Batten Jefferson Fellowship, 2016–2021, by the Jefferson Scholars Foundation, UVa
· Phi Beta Kappa Honor Society, inducted May 7, 2015
· Alpha Sigma Nu Honor Society, induced October 14, 2014

SERVICE AND OUTREACH

Department
· **Member and Webmaster, Association for Women in Mathematics** Fall 2018–Present
Help maintain the UVa AWM chapter's website and developed a blog for other members to post content.
· **Mentor, Directed Reading Program at University of Virginia** Fall, 2018
Guided my undergraduate DRP mentee, Dylan Hunt, through a machine learning textbook and helped him prepare for a presentation at UVa's Math Club.
· **UVa Math Ambassador** Fall 2017– Spring 2019
UVa's Mathematics outreach program to Albemarle County and Charlottesville city schools.
· **Panelist, Prospective Graduate Student Open House** Spring 2018

Professional
· **Organizing committee, Mid-Atlantic Algebra, Geometry, and Combinatorics Workshop** Spring, 2020
Cancelled due to Covid-19
· **Contributor, SageMath (Open-Source Computer Algebra Software)** 2013, 2015, 2018

University
- **Jefferson Scholar Selection Weekend Seminar Planner and Leader,**
  Jefferson Scholars Foundation, UVa — Spring 2020
  Cancelled due to Covid-19
- **Jefferson Scholar Selection Weekend Seminar Planner,**
  Jefferson Scholars Foundation, UVa — Spring 2019
- **Panelist, Institute for Leadership and Citizenship Graduate School Panel**
  Jefferson Scholars Foundation, UVa — Summer 2018
- **Member, Sujack Teaching Award Committee, Loyola University Chicago** — Spring 2015

MATHEMATICAL SOFTWARE CONTRIBUTIONS

Contributions to SageMath `http://sagemath.org`

- Implementation of Young's Raising Operators (ticket #26939) — Fall 2018
- Implement Jucys-Murphys elements for Brauer algebra (ticket #18798) — Summer 2015
- Major improvement to usability of diagram algebras (tickets #18707,18720,18762) — Summer 2015
- Initial implementation of diagram algebras (ticket #14234) — Spring 2013

k-**Combinat for Sage** `https://github.com/MareoRaft/k_combinat_for_sage/`

- Maintain and improve code relating to Catalan functions

CONFERENCES ATTENDED

- Hilbert schemes, categorification, and combinatorics, UC Davis — June 19–23, 2019
- Garsiafest, Scripps Seaside Forum, San Diego, CA — June 17–20, 2019
- Algebra, Geometry and Combinatorics Day, Loyola University Chicago — May 25, 2019
- Mid-Atlantic Algebra, Geometry, and Combinatorics (MAAGC) Worksohp, Drexel University — May 3–4, 2019
- Triangle Lectures in Combinatorics, Wake Forest University — March 30, 2019
- Combinatorics and beyond: the many facets of Sergey Fomin's mathematics, University of Michigan — November 8–11, 2018
- Workshop on Representation Theory, Combinatorics, and Geometry, University of Virginia — October 19–21, 2018
- Women's Intellectual Network Research Symposium, University of Virginia — September 15, 2018
- Joint Mathematics Meetings, San Diego, CA — January 10–13, 2018
- AMS Fall Central Sectional Meeting, Loyola University Chicao — October 2–4, 2015
- Sage Days 65, Loyola University Chicago — June 8–12, 2015
- AMS Spring Western Sectional Meeting, University of Colorado Boulder — April 13–14, 2013
- Sage-Combinat Days 40, Institute for Mathematics and its Applications at University of Minnesota — July 9–13, 2012
- Sage Days 38, Centre de Recherches Mathématique, Montreal — May 7–11, 2012

TECHNICAL STRENGTHS

Computer Languages	Proficiency with: Python, Sage, Java and Scala.
	Experience with: Mathematica, R and C/C++.
Languages	Fluent: English
	Elementary Proficiency: French, Italian