

SHIRA POLSTER VIEL

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ACADEMIC APPOINTMENTS

Assistant Professor of the Practice of Mathematics, Duke University 2018 - present

EDUCATION

North Carolina State University 2012 - 2018

M.S. in Mathematics. Phi Kappa Phi, Graduate minor in Statistics.

Ph.D. in Mathematics. Advisor: Nathan Reading. Dissertation title: “Cluster Algebras and Mutation-Linear Algebra: Folding, Dominance, and the Orbifolds Model”.

Smith College 2011 - 2012

Post-Baccalaureate Certificate in Mathematics. Sigma Xi.

Rice University 2004 - 2009

B.A. in Mathematics and Theatre. Magna Cum Laude, Phi Beta Kappa.

PUBLICATIONS

Akin, V. & Viel, S. (2021). Equity in Grading Systems: Moving away from “fair” towards transparency and inclusion in coordinated Calculus courses. To appear in Voigt, M., Hagman, J. E., Gehrtz, J., Ratliff, B., & Levy, R. (Eds.) *Justice Through the Lens of Calculus*. MAA.

Barcelo, H., Bernstein, M., Bockting-Conrad, S., McNicholas, E., Nyman, K., & Viel, S. (2020). Algebraic voting theory and representations of $S_m \wr S_n$. *Adv. in Appl. Math.* 120, 102077.

Akin, V. & Viel, S. (2019). Interpreting Student Evaluations of Teaching. *A Conference and Workshop on Preparing Mathematics Graduate Students for Careers Teaching and Advising Undergraduates*. Non-refereed.

Barnard, E., Meehan, E., Reading, N., & Viel, S. (2018). Universal geometric coefficients for the four-punctured sphere. *Annals of Combinatorics*. 22, no. 1.

Gilbert, S., Tymoczko, J., & Viel, S. (2016). Generalized splines on arbitrary graphs. *Pacific Journal of Mathematics*. 281, no. 2.

TEACHING

Assistant Professor of the Practice, Duke University

Math 105L: Laboratory Calculus and Functions I Sp 2019, Sp 2020

Math 111L: Laboratory Calculus I Fl 2018, Fl 2019, Fl 2020, Fl 2021

Math 202D: Multivariable Calculus for Economists Sp 2019, Fl 2019, Sp 2020

Math 771S: Teaching College Mathematics (with Victoria Akin) Fl 2021

Math 799: MAT Independent Study Su 2019, Su 2020

Graduate Student Instructor, North Carolina State University

Math 105: Financial Math Sp 2014

Math 107: Precalculus I Fl 2013

Math 141: Calculus I Fl 2014, Fl 2015

Math 225: Foundations of Adv. Math Sp 2016

Math 231: Calculus B Sp 2017, Fl 2017

Math 241: Calculus II Sp 2015

FUNDING

PI (with Maria Tackett), *Building Community and Self-Efficacy Through Inclusive Teaching Practices*, Duke Learning Innovation: Carry the Innovation Forward, \$4,616. 07/01/2021 - 06/30/2023.

HONORS AND FELLOWSHIPS

Duke University

Inclusive Assessment Faculty Learning Community, Learning Innovation 2021-Present
Transformative Learning Intellectual Community, Learning Innovation 2021-Present
Teaching for Equity Fellowship, Human Rights Center 2020 - 2021
Active Learning Fellowship, Learning Innovation 2019

Travel Grants

Graduate student support for JMM Attendance, Am. Math. Society Sp 2018 Summer
Research support for Women in Mathematics, Math. Sci. Research Inst. Su 2017

North Carolina State University

Dissertation Completion Fellowship, Graduate School 2018
Maltbie Award for Excellence in Teaching, Department of Mathematics 2016
Preparing the Professoriate Fellowship, Graduate School 2016 - 2017
Thank-a-Teacher Award, Office of Faculty Development 2014, 2016
Outstanding Teaching Assistant Award, Graduate Student Association 2014
STEM Fellowship, Department of Mathematics 2012 - 2013
University Fellowship, Department of Mathematics 2012 - 2013

Rice University

Dunlevie Summer Writing Fellowship 2006
Trustee Distinguished Scholarship 2005 - 2009

RECENT PROFESSIONAL DEVELOPMENT

PEER-Chicago Workshop on Discipline Based Ed. Research Sp and Su 2021
CoMINDS Workshop on Improving Prep. of Grad. Students to Teach Su 2020
Mastery Grading Workshop and Conference Su 2020
From Bystander to Upstander Training, Duke University Sp 2020, Fl 2021
Implicit Bias Training, Duke University Fl 2019

INVITED TALKS AND PANELS

Workshop on SoTL, Duke Learning Innovation and DKU Teaching & Learning Fl 2020
Invited panelist, How and Why to Research your Teaching Practice
Teaching IDEAS, Duke Learning Innovation and Duke Graduate School Fl 2021
Invited panelist, Carrying the Innovation Forward to Teach Diverse Learners (with Maria Tackett)
FEMMES+ Hacks Panelist, Duke Females+Allies Excelling in Math, Eng., Sci. Fl 2020
Invited panelist, Women in STEM
SPIRE Lunch and Learn Speaker, Duke SPIRE Fl 2019
Voting Theory, Fold-and-Cut, & Scissor Congruence (with Victoria Akin).
Math Grad Student Training Series Panelist, N. Carolina State U. Dept. of Math. Fl 2018
Invited panelist, Preparing for Interviews.
Joint PtC/SEMINAL Conference, University of Nebraska, Lincoln Su 2019
From Project CALC to Today: 30 Years of Calculus at Duke (with Victoria Akin).
Workshop on Inclusive Teaching Panelist, U. N. Carolina, CH Chapter of AMS Sp 2019
Invited panelist, Inclusive Teaching in Undergraduate Mathematics

Sonia Kovalevsky Day Faculty Keynote , N. Carolina State U. Chapter of AWM No Fair: Games of Chance and Expected Value.	<i>Sp 2019</i>
Math Grad Student Training Series Panelist , N. Carolina State U. Dept. of Math. <i>Invited panelist</i> , Conference Attendance.	<i>Fl 2018</i>
AMS Special Session on Combinatorics and Geometry , JMM, San Diego, CA Surfaces, orbifolds, and dominance	<i>Sp 2018</i>
University of Minnesota Combinatorics Seminar Folding and dominance: relationships among mutation fans for surfaces and orbifolds	<i>Fl 2017</i>
NCSU Algebra and Combinatorics Seminar Folding and dominance: relationships among mutation fans for surfaces and orbifolds	<i>Fl 2017</i>
DePaul University Algebra and Combinatorics Seminar Folding and dominance: relationships among mutation fans for surfaces and orbifolds	<i>Fl 2017</i>
Algebraic CombinatoriXX 2 Workshop , BIRS Surfaces, orbifolds, and dominance.	<i>Su 2017</i>

CONTRIBUTED TALKS AND POSTERS

Mid-Atlantic RUME Conference , James Madison University A Proposed Investigation of Non-points-based Grading in Calculus (with Victoria Akin).	<i>Fl 2019</i>
AWM Graduate Student Poster Session , JMM San Diego, CA <i>Poster</i> , Algebraic voting theory and representations of $S_m \wr S_n$	<i>Sp 2018</i>
NCSU Distance Education and Learning Technology Summer Shorts Redesigning a Traditional Lecture Course Using a Blended & Flipped Approach: Exploration of Strategies (with Yan Shen & Chris Willis)	<i>Su 2017</i>

CONTRIBUTED TALKS AND POSTERS, CONTD.

Graduate Student Combinatorics Conference , University of Kansas Surfaces, orbifolds, and dominance.	<i>Sp 2017</i>
Intl. Conf. on Formal Power Series and Algebraic Combinatorics , Daejon, Korea Universal geometric coefficients for the four-punctured sphere (with Emily Meehan).	<i>Su 2015</i>
NCSU Graduate Student Algebra Seminar What is a cluster algebra?	<i>Fl 2016</i>
Hudson River Undergraduate Mathematics Conference , W. New England Univ. Generalized splines (with Simcha Gilbert and Tia Pilaroscia)	<i>Sp 2012</i>
Special Session on Undergrad. and Postbac. Research , JMM, Boston, MA Rainbow domination number of a graph (with Michaela Harris, Kristina Martin, & Julie Woods).	<i>Sp 2012</i>

SERVICE

To the Profession and Community

GROW (Graduate Research Opportunities for Women) Lead Organizer	<i>2022 - 2023</i>
CoMInDS (College Math. Instructor Dev. Source) Teaching Seminar Facilitator	<i>Su 2021</i>
FURM (Foundations for Undergraduate Research in Mathematics) Reviewer	<i>Sp 2021</i>
Math Alliance Mentor , National Alliance for Doctoral Studies in Math. Sci.	<i>2020 - present</i>
Duke Math Circle Organizing Committee , Duke Math Dept.	<i>Fl 2020</i>
FEMMES+ Capstone Activity Leader , "Rational Tangles," Duke FEMMES+	<i>Sp 2020</i>
Math Doesn't Bug Me Activity Leader , Bugfest, NC Museum of Nat. Sci.	<i>2012 - 2018</i>
Sonia Kovalevsky Day Activity Leader , N. Carolina State U. Chapter of AWM	<i>2012 - 2018</i>
Southeastern Conf. for Undergrad. Women in Math Panelist , Duke University	<i>Fl 2015</i>
Math Circle in the Triangle Instructor , N. Carolina State U. Math. Dept.	<i>2013 - 2015</i>
Campus School Math Enrichment Instructor , Smith College, Northampton MA	<i>2011 - 2012</i>
Space City Math Circle Instructor , Reasoning Mind, Houston TX	<i>2009 - 2011</i>

To Duke University

Student Success Advisory Committee Member, Office of Undergrad Education *2022 - present*
Program II Committee Member, Arts & Sciences Council *2021 - present*
SPIRE Mentor, STEM Pathways for Inclusion, Readiness, and Excellence *2020 - present*
College Advisor, 2019-2020: 6 students; 2020-2021: 12 students *2019 - present*
ASA DataFest Judge, Department of Statistics *2020*
Teaching Quant. Sci. Journal Club Co-organizer, Learning Innovation *2019 - 2020*

To Duke University Department of Mathematics

Calculus Textbook Subcommittee Chair *2021 - present*
Diversity, Equity, and Inclusion Committee Member *2021 - present*
Major Advisor, 2 students *2020 - present*
AWM Faculty Advisor and Mentor *2020 - present*
Teaching Committee Member *2018 - present*
Midterm Student Survey Co-author and Administrator *2018 - present*
Training Coordinator Hiring Committee Member *2021*
Lab Calculus Help Room Co-manager *2019 - 2021*
Calculus I Course Coordinator *Fall 2018, 2019, 2020, 2021*
Postdoc Workshop on Making Midterm Teaching Improvements Co-leader *Sp 2020*
Training Week Workshop Co-leader *Fall 2019, 2020, 2021*

To North Carolina State University

Math Grad Instructor Support & Tools Founding Committee Member *2014 - 2018*
University Grad TA Training Panelist, Graduate School *2017*
SUM Series Undergrad Math Seminar Assistant, Math Department *2013 - 2017*
Math Undergrads Under Grads Mentor *2016 - 2017*
Math Grad TA Training Panelist and Assistant, Math Department *2015 - 2016*
Math Grad Student Association President *2014 - 2015*
Engineering Calculus I-III Textbook Editor, Math Department *2014 - 2015*

OTHER PROFESSIONAL EXPERIENCE

Subject Matter Expert, Stembrite & Pearson Education *2017 - 2018*
Prepared and delivered lightboard video lessons of precalculus and trigonometry content and examples to accompany digital release of “College Algebra” textbook by Lial, Hornsby, and Schneider.

Senior Professional Development Specialist, Reasoning Mind *2010 - 2011*
Created and led mathematics and software training workshops for elementary and middle school teachers with state-standard-specific modifications for 5 states.

Program Coordinator, Reasoning Mind *2009 - 2010*
Provided ongoing support for curriculum implementation at classroom and administrative levels in elementary and middle schools across the Houston Independent School District.

MEMBERSHIPS

Mathematical Association of America (MAA), Special Interest Group on Research in Undergraduate Mathematics Education (SIGMAA on RUME), Association for Women in Mathematics (AWM)