

RYAN M. SHIFLER, PH.D.

Education

Doctor of Philosophy
Virginia Tech
Blacksburg, Virginia
Dissertation: *Equivariant quantum cohomology of the odd symplectic Grassmannian*
Dissertation Advisor: Leonardo Mihalea, Ph.D. Awarded May 2017

Master of Science
Virginia Tech
Blacksburg, Virginia
Thesis: *Computational algebraic geometry applied to invariant theory*
Thesis Advisor: Ezra Brown, Ph.D. Awarded May 2013

Bachelor of Science summa cum laude
Salisbury University
Salisbury, Maryland
Graduated with Honors in Mathematics
Honors Thesis: *Universal Groebner bases of circulant polynomial systems*
Thesis Advisor: Michael Bardzell, Ph.D. Awarded May 2011

Associates of Science and Associates of Arts
Hagerstown Community College
Hagerstown, Maryland
Graduated with high honors Awarded May 2009

Employment

Assistant Professor
Salisbury University
Salisbury, Maryland August 2017-Current

I was the Instructor of Record for:

MATH 140 Algebra and Trigonometry;
MATH 201 Differential Calculus;
MATH 202 Integral Calculus with Sequences and Series;
MATH 210 Discrete Mathematics;
MATH 306 Linear Algebra;
MATH 310 Multivariable Calculus;
MATH 385 Topology;
MATH 441 Abstract Algebra;
MATH 490 Undergraduate Algebraic Geometry.

Graduate Teaching Assistant
Virginia Tech
Blacksburg, Virginia August 2011-May 2017

I was the Instructor of Record for:

MATH 2015 Differential Calculus for Biological Sciences;
MATH 2016 Integral/Multivariable Calculus for Biological Sciences;
MATH 1225 Engineering Differential Calculus;
MATH 1226 Engineering Integral Calculus with Sequences and Series;
MATH 2204 Engineering Multivariable Calculus.

Adjunct Faculty
Hagerstown Community College
Hagerstown, Maryland June 2014-August 2014

I taught a remedial level and a college credit level mathematics course for Upward Bound High School students. Upward Bound is a federally funded program that provides first generation college students and low income students the opportunity to take college courses.

I instructed a remedial level algebra course for students who plan to eventually enroll in a college level mathematics course. The ages and experiences of the students varied greatly and I had to conform to this as the instructor.

Publications

Research **Bold font indicates student coauthors.**

L. Evans, L. Schneider, R. Shifler, **L. Short**, and **S. Warman** (2020) *Galkin's lower bound conjecture holds for the Grassmannian*, Communications in Algebra, 48:2, 857-865.

L. Bones, **G. Fowler**, L. Schneider, and R. Shifler, *Conjecture O holds for some horospherical varieties of Picard rank 1*, Involve, a Journal of Mathematics, 13-4 (2020), 551-558.

C. Li, L. Mihalcea, and R. Shifler, *Conjecture O holds for the odd symplectic Grassmannian*, Bull. London Math. Soc. 51 (2019) 705-714.

L. Mihalcea and R. Shifler *Equivariant Quantum cohomology of the odd symplectic Grassmannian*, Math. Zeitschrift, 291 (3-4), pag. 1569-1603, 2019.

R. Shifler, *Equivariant Quantum cohomology of the odd symplectic Grassmannian*, Ph.D. Dissertation. Virginia Polytechnic Institute and State University Library.

R. Shifler, *Universal Groebner bases of circulant polynomial systems*, Proceedings of The National Conference On Undergraduate Research (NCUR) 2011.

Expository Publication

J. Anderson, J. Austin, Y. Jing, L. Schneider, R. Shifler, and S. Wesolowski, *Faculty writing groups for mathematicians*, MAA Focus (October/November 2018)

Preprints

C. Pech and R. Shifler, *Curve neighborhoods of Schubert varieties in the odd symplectic Grassmannian*, submitted, available on arXiv:2011.05221.

R. Shifler and C. Withrow, *Minimum quantum degrees for isotropic Grassmannians of types B and C*, submitted, available on arXiv:2004.00084.

C. Li, R. Shifler, M. Yang, and C. Zhang, *On Frobenius-Perron dimension*, submitted, available on arXiv:1909.01693.

Presentations

Invited Talks

An introduction to (quantum) Schubert calculus, Salisbury University Math and Computer Science Club Meeting, October 20, 2020.

Minimum quantum degrees for isotropic Grassmannians of types B and C, (Cancelled) Virginia Tech Algebra Seminar, April 3, 2020.

An invitation to algebraic geometry, Salisbury University Math and Computer Science Department Colloquium, September 26, 2019.

Equivariant quantum cohomology of the odd symplectic Grassmannian, Rutgers University Algebra Seminar, February 22, 2017.

Contributed Presentations

Oral presentation of *Calculus readiness* at The Mathematical Association of America Maryland-District of Columbia-Virginia Section Meeting. Hood College and Frederick Community College; Frederick, MD, April 12-13, 2019.

Oral presentation of *Calculus readiness* at the Joint Mathematics meetings. Baltimore, MD January 16-19, 2019.

Oral presentation of *Calculus readiness* at The Mathematical Association of America Maryland-District of Columbia-Virginia Section Meeting. Mary Washington University; Fredericksburg, VA. November 2-3, 2018.

Oral presentation of *Universal Groebner bases of circulant polynomial systems* at The Joint Mathematics Meetings. San Diego, CA January 10-13, 2018.

Oral presentation of *Curve neighborhoods of the odd symplectic Grassmannian* at The Mathematical Association of America Maryland-District of Columbia-Virginia Section Meeting. Christopher Newport University; Newport News, VA. November 17-18, 2017.

Oral presentation of *Schubert calculus* at The Mathematical Association of America Maryland-District of Columbia-Virginia Section Meeting. Johns Hopkins University; Baltimore, Maryland. November 5, 2016.

Seminar talk of *Quantum cohomology of the odd symplectic Grassmannian* at the Algebra Seminar. Virginia Tech; Blacksburg, Virginia. April 29, 2016.

Show and tell presentation of *Quantum cohomology of the odd symplectic Grassmannian* at the Algebra Seminar. Virginia Tech; Blacksburg, Virginia. April 17, 2015.

Master thesis defense of *Computation algebraic geometry applied to invariant theory*. Virginia Tech; Blacksburg, Virginia. April 30, 2013.

Oral presentation of *Universal Groebner bases of circulant polynomial systems* at The Salisbury University Student Research Conference. Salisbury University; Salisbury, Maryland. April 29, 2011

Oral presentation of *Universal Groebner bases of circulant polynomial systems* at The Mathematical Association of America Maryland-District of Columbia-Virginia Section Undergraduate Research Conference. Received second place for the student paper awards. Randolph-Macon College; Ashland, Virginia. April 15-16, 2011

Poster presentation *Universal Groebner bases of circulant polynomial systems* at the National Conference of Undergraduate Research (NCUR). Ithaca College; Ithaca, New York. March 31-April 2, 2011

Journal Refereeing

Journal of Algebraic Combinatorics

Student Presentations and Awards

I was Garrett Fowler's Department Departmental Honors Advisor.

Garrett Fowler presented *Conjecture O holds for some horospherical varieties of Picard rank 1* at the contributed paper session of the Spring 2019 MD-DC-VA meeting of the MAA. **His paper won the second place award for Best Paper.**

Lela Bones and Garrett Fowler presented the poster titled *Conjecture O holds for some horospherical varieties of Picard rank 1* at the undergraduate poster session of the JMM in Baltimore, MD. **Their poster received the award for being an Outstanding Poster.**

Conference and Workshop Attendance

The conference Quantum Groups and Cohomology Theory of Quiver and Flag Varieties, virtual through Centre International De Rencontres Mathematiques Scientific Events, December 14-18, 2020. My collaborator, Clelia Pech, presented our joint work in an invited talk titled *Curve Neighbourhoods of the odd symplectic Grassmannian*.

Fall Meeting of the MD-DC-VA section of the MAA, virtual, November 7, 2020

Fall Meeting of the MD-DC-VA section of the MAA, Norfolk State University, November 8-9, 2019

Attended and accompanied student Garrett Fowler to the MD-DC-VA section of the MAA meeting, Hood College and Frederick Community College, Frederick, MD, April 12-13, 2019.

Attended and accompanied students Lela Bones and Garrett Fowler to the JMM held in Baltimore, MD, January 16-19, 2019.

Fall Meeting of the MD-DC-VA section of the MAA, Mary Washington University, November 2-3, 2018

The Ohio State Workshop on Schubert Calculus held on May 9-12, 2018

Spring Meeting of the MD-DC-VA section of the MAA, VMI/Washington and Lee, April 13-14, 2018

Joint Mathematics Meetings, San Diego, CA, January 10-13, 2018

Fall Meeting of the MD-DC-VA section of the MAA, Christopher Newport University, November 17-18, 2017

Joint Mathematics Meetings, Atlanta, GA, January 4-7, 2017

Fall Meeting of the MD-DC-VA section of the MAA, Johns Hopkins University, November 4-5, 2016

Workshop on Symplectic Varieties and Geometric Representation Theory, UNC, October 29-30, 2016

Algebraic Groups, Quantum Groups and Geometry, University of Virginia. May 24-27, 2016

Fall Eastern Sectional Meeting, Rutgers University, New Brunswick, NJ. November 14-15, 2015

Positivity in Combinatorial Algebraic Geometry at the University of Oregon, Eugene, OR. August 10-14, 2015

Graduate Student Combinatorics Conference at the University of Kentucky, Lexington, KY. March 27-29, 2015

Triangle Lectures in Combinatorics at North Carolina State University, Raleigh, NC. February 21, 2015

Fall Southeastern Sectional Meeting, University of North Carolina at Greensboro, Greensboro, NC. November 8-9, 2014

Spring Meeting of the MD-DC-VA section of the MAA, Salisbury University, April 12-13, 2013

Fall Meeting of the MD-DC-VA section of the MAA, Virginia Military Institute, October 26-27, 2012

Spring Meeting of the MD-DC-VA section of the MAA, Randolph-Macon College, April 15-16, 2011

(Selected) Service

MD-DC-VA Section of the MAA

Elected Program Chair

Fall 2020-Spring 2022

Elected Vice Program Chair

Fall 2019-Spring 2020

Salisbury University

Elected Athletics Committee

Fall 2019-Spring 2021

Site Coordinator for the MD-DC-VA Section Meeting

Spring 2020

Math and Computer Science Tutor Coordinator

Spring 2018-Spring 2019

Director of the Calculus Readiness Program

Spring 2018-Spring 2019

Virginia Tech

Vice President of Membership of the Graduate Student Assembly

February 2014-May 2014

Graduate Student Representative University Athletics Committee

August 2014-May 2016

Professional Awards and Recognition

Funding

Received \$10,645 through the Building Research Enhancement Grants Program at Salisbury University

Received the Henson Travel Award in the amount of \$1000 to attend The Joint Mathematics Meeting held in Denver, CO held on January 15-18, 2020

Received the Henson Travel Award in the amount of \$1000 to attend The Joint Mathematics Meeting held in Baltimore, MD held on January 16-19, 2019

Received the Henson Travel Award in the amount of \$1000 to attend The Joint Mathematics Meeting held in San Diego, CA held on January 10-13, 2018

Awarded \$1000 grant (Declined) from the SU foundation to attend the 2018 MAA Math Fest in Denver, CO

Awarded \$450 to attend The Ohio State Workshop on Schubert Calculus held on May 9-12, 2018

Total: \$15,095

Other

Nominated for SUSRC's 2019 Outstanding Research Mentor

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Section NEXt Fellow for the MD-DC-VA Section of the MAA.

Membership

Mathematical Association of America