Ryan Shifler, Ph.D.

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Academic Appointments

2023 – Present **Associate Professor,** Department of Mathematical Sciences, Salisbury University.
2017 – 2023 **Assistant Professor,** Department of Mathematical Sciences, Salisbury University.
2011 – 2017 **Graduate Teaching Assistant,** Department of Mathematics, Virginia Tech.
2011 and 2014 **Adjunct Faculty,** Developmental Mathematics, Hagerstown Community College.

Education and Training

2025 **Emerging Leader Program, Leadership Maryland.** (Competitively selected)
2013 – 2017 **Ph.D. in Mathematics**, Virginia Tech.
2011 – 2013 **M.S. in Mathematics**, Virginia Tech.
2009 – 2011 **B.S. in Mathematics**, Salisbury University.
2007 – 2009 **A.A. in Mathematics and A.S. in Arts and Sciences**, Hagerstown Community College.

Academic Administrative Experience

Associate Dean of the Richard A. Henson School of Science and Technology, Salisbury University

2022 – Present

Director of the Integrated Science Program.

- Collaborate with students and faculty to support student progress toward completion of a Bachelor of Science degree.
- Facilitate key administrative processes for academic programs, including coordination of the Academic Program Review.
- Develop and propose curriculum revisions to align program offerings with student educational objectives and career pathways.

Co-Coordinator of the Forensic Science Concentration within the Integrated Science Program.

- Co-facilitate an academic concentration in partnership with faculty subject-matter experts.
- Maintain a collaborative partnership with Wor-Wic Community College to implement and manage a Memorandum of Understanding enabling Salisbury University students to enroll in WWCC courses.
- Coordinate financial and logistical components of the agreement to ensure seamless cross-institutional course participation.

Oversight of the Urban and Regional Planning Program.

- Support key personnel in the administration of academic programs.
- Recommend program updates in response to evolving university policies.
- Guide proposed program changes through the institutional curriculum approval process.
- Communicate critical administrative updates and recommendations to the Program Director.

Articulation Agreements for STEM Transfer Pathways.

- Established more than 10 articulation agreements with regional community colleges.
- Convened faculty across institutions to align curricula and reduce administrative barriers in the transfer process.

Academic Administrative Experience (continued)

Data Analytics for Institutional Decision-Making.

- Conducted multi-year analyses of DFW rates, degree completion, program selection and changes, and summer and winter session enrollment for first-time students.
- Led assessment of math and chemistry placement exams and evaluated their impact on student success.
- Contributed to policy and practice changes based on findings, including implementation of high school transcript–based placement for Calculus I.

STEM Outreach Initiatives.

- Serve as an ex officio member of the STEM Outreach Committee, advocating for resources to support faculty-led initiatives.
- Coordinate and facilitate outreach activities, including Henson Newsletters and Henson Seminars.

Mathematics and Computer Science Tutor Coordinator, Salisbury University

Fall 2021 – Spring 2022 and Spring 2018 – Spring 2019

- Facilitated student application and hiring processes in collaboration with Department Chairs.
- Managed student employment contracts, ensured compliance with Human Resources requirements, and met all administrative deadlines.
- Expanded recruitment efforts across all science programs, with intentional outreach to students from diverse backgrounds.
- Implemented an electronic sign-in system to track student attendance and improve administrative efficiency.

Calculus Readiness Director, Salisbury University

Spring 2018 – Spring 2019

- Designed and launched Calculus Readiness, a co-requisite learning program for Calculus I students, building the full infrastructure for session design, student scheduling, and peer leader management.
- Served 150 students across six sections, improving prerequisite preparedness in response to a department-wide need.

Service to Salisbury University

University System of Maryland (USM) Level

- Member, USM Admissions Standards Task Force, Fall 2025 – Present.
- Member, USM High School Math Course Evaluation Group, Fall 2023 – Present.
- Co-Chair, USM-MACC Math Affinity Group, Fall 2022 – Present.

University Level

- Member, Athletics Committee, Fall 2019 – Spring 2027.
- Member, Government Relations Committee, Fall 2024 – Spring 2026.
- Chair, Long Range Academic Planning Committee, Fall 2024 – Spring 2025.
- Member, Faculty Development Committee, Fall 2021 – Spring 2024.

Department Level

- Member, Tenure and Promotion Committee, [Name 1 confidential], Fall 2023 – Present.
- Member, Tenure and Promotion Committee, [Name 2 confidential], Fall 2023 – Present.
- Member, Faculty Search Committee for Statistics, Fall 2022 – Spring 2023.
- Organizer, Department Colloquium, Spring 2021 – Spring 2022.

University Community

- Faculty Advisor, Club Cross Country and Track and Field Team, Fall 2022 – Present.

Service to the Profession

External Reviewer

- Promotion to Associate Professor with Tenure, Mathematics, [Institution confidential], 2026.

Editorial

- Associate Editor, Mathematics Magazine, 2026 – Present.

Mathematical Association of America (MAA)

- Program Chair, MD-DC-VA Section of the MAA, Fall 2020 – Fall 2022.
- Salisbury University Representative/Site Coordinator, MD-DC-VA Section Meeting, Spring 2020 and Fall 2021.

Maryland State Department of Education (MSDE)

- Co-Chair, Launch Years Task Force — statewide initiative to strengthen the transition from high school to college-level mathematics, Fall 2024 – Present.

Refereeing and Reviewing

- Quantum computing textbook proposal, Cambridge University Press.
- Journal of Algebraic Combinatorics, Communications in Algebra, Mathematics Magazine.

Publications

In pure mathematics, authors are listed in alphabetical order. It is generally accepted that each author contributed equally to the work.

Bold font indicates undergraduate coauthors.

Research

- *Minimum quantum degrees with Maya diagrams in a family of odd orthogonal partial flag varieties*, submitted (with **S. Barr**).
- *On the quantum parameter in the quantum cohomology of a family of odd symplectic partial flag varieties*, Journal of Algebra and Its Applications, to appear (with **C. Bean** and **C. Shank**).
- *Curve neighborhoods and combinatorial property $\mathcal{O}$ for a family of odd symplectic partial flag manifolds*, Rocky Mountain Journal of Mathematics, to appear (with **C. Bean** and **B. Cruikshank**).
- *Minimum quantum degrees with Maya diagrams*, Annals of Combinatorics 29 (2), 395-413, 2025.
- *Positivity determines the quantum cohomology of the odd symplectic Grassmannian of lines*, Communications in Algebra 52 (11), 4955-4960, 2024.
- *Curve neighborhoods of Schubert varieties in the odd symplectic Grassmannian*, Transformation Groups 29 (1), 361-408, 2024 (with C. Pech).
- *On the spectral properties of the quantum cohomology of the odd quadrics*, Involve, a Journal of Mathematics 16 (1), 27-34, 2023 (with **S. Warman**).
- *Minimum quantum degrees for isotropic Grassmannians of types B and C*, Annals of Combinatorics 26 (2), 453-480, 2022 (with C. Withrow).
- *On Frobenius-Perron dimension*, Proceedings of the American Mathematical Society 150 (12), 5035-5045, 2022 (with C. Li, M. Yang, and **C. Zhang**).
- *Galkin's lower bound conjecture holds for the Grassmannian*, Communications in Algebra 48 (2), 857-865, 2020 (with **L. Evans**, L. Schneider, **L. Short**, and **S. Warman**).
- *Conjecture $\mathcal{O}$ holds for some horospherical varieties of Picard rank 1*, Involve, a Journal of Mathematics 13 (4), 551-558, 2020 (with **L. Bones**, **G. Fowler**, and L. Schneider).
- *Conjecture $\mathcal{O}$ holds for the odd symplectic Grassmannian*, Bulletin of the London Mathematical Society 51 (4), 705-714, 2019 (with C. Li, and L. Mihalcea).

Publications (continued)

- *Equivariant quantum cohomology of the odd symplectic Grassmannian*, Mathematische Zeitschrift 291 (3-4), 1569-1603, 2019 (with L. Mihalcea).

Other

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

Student Mentee Awards and Recognition

Departmental Honors
- **Stephen Barr** (2026), **Caleb Shank** (2025), **Stephanie Warman** (2021), **Laurie Short** (2021), and **Garrett Fowler** (2019).

University Honors
- **Connor Bean** (2024), **Stephanie Warman** (2021).

External Awards
- **Stephen Barr** won the first-place Student Poster Award, MD-DC-VA Sectional Meeting of the MAA, Spring 2026.
- **Garrett Fowler** won the second-place Student Talk Award, MD-DC-VA Sectional Meeting of the MAA, Spring 2019.
- **Lela Bones** and **Garrett Fowler** received the Outstanding Poster Award, Joint Mathematics Meetings, 2019.

Funding

Grants

- $12,000 — Faculty Research Enhancement Grant, Salisbury University, 2024. Collaborative project supporting STEM transfer students (with J. Sokoloski, S. Daly, G. Franchi).
- $10,645 — Faculty Research Enhancement Grant, Salisbury University, 2020. Project on quantum Schubert calculus.

Student Research

- Henson Summer Research Program, Salisbury University — Summer 2026: Ian Abrego ($3,300); Summer 2025: Stephen Barr ($3,300); Summer 2023: Connor Bean and Caleb Shank ($4,000); Summer 2022: Connor Bean and Bradley Cruikshank ($4,000).

Travel Awards

- $5,118 — Henson Travel Awards and other funding (7 awards, 2018-2026).

Presentations

Invited Talks

- *Geometry, Symmetry, and Counting Curves: A Combinatorial Perspective*, Virginia Tech, Blacksburg, VA, Department Colloquium, January 23, 2026.
- *Curve neighborhoods of Schubert Varieties of the odd symplectic Grassmannian*, Eastern Fall Sectional Meeting of the American Mathematical Society, UMass Amherst, Amherst, MA, October 1-2, 2022.
- *Curve neighborhoods of Schubert Varieties of the odd symplectic Grassmannian*, Virginia Tech, Blacksburg, VA, Algebra Seminar, January 28, 2022.
- *Curve neighborhoods of Schubert Varieties of the odd symplectic Grassmannian*, University of Poitiers, Groups, Algebra, and Geometry Seminar, virtual, November 18, 2021.
- *Equivariant quantum cohomology of the odd symplectic Grassmannian*, Rutgers University, Algebra Seminar, New Brunswick, NJ, February 22, 2017.

Presentations (continued)

Selected Contributed Presentations

- *A case for quantum computing in math departments* at the Spring Meeting of the MD-DC-VA section of the MAA, Frederick Community College, Frederick, MD, April 24-25, 2026.
- *Quantum cohomology determined with negative structure constants present* at The Joint Mathematics Meetings, San Francisco, CA January 3-6, 2024.
- *A proposed generalization of a full rim hook removal on partitions* at the Spring Meeting of the MD-DC-VA section of the MAA, Montgomery College, Germantown, MD, April 22-23, 2022.
- *Calculus readiness* at Spring Meeting of the MD-DC-VA section of the MAA, Hood College and Frederick Community College, Frederick, MD, April 12-13, 2019.
- *Calculus readiness* at the Joint Mathematics Meetings, Baltimore, MD January 16-19, 2019.
- *Calculus readiness* at Fall Meeting of the MD-DC-VA section of the MAA, Mary Washington University, Fredericksburg, VA, November 2-3, 2018.
- *Curve neighborhoods of the odd symplectic Grassmannian* at Fall Meeting of the MD-DC-VA section of the MAA, Christopher Newport University, Newport News, VA, November 17-18, 2017.

Courses Taught

Foundational and Lower-Division Mathematics

- Salisbury University: MATH 105 Liberal Arts Mathematics; MATH 140 Algebra and Trigonometry; MATH 201 Differential Calculus; MATH 202 Integral Calculus with Sequences and Series; MATH 310 Multivariable Calculus.
- Virginia Tech: MATH 1225 Engineering Differential Calculus; MATH 1226 Engineering Integral Calculus with Sequences and Series; MATH 2204 Engineering Multivariable Calculus; MATH 2015 Differential Calculus for Biological Sciences; MATH 2016 Integral/Multivariable Calculus for Biological Sciences.
- Hagerstown Community College: MATH 099 and 100 Developmental College Algebra.

Upper-Division Pure Mathematics

- Salisbury University: MATH 441 Abstract Algebra 1; MATH 442 Abstract Algebra 2; MATH 451 Analysis 1; MATH 452 Analysis 2; MATH 406 Geometric Structures; MATH 490 Special Topics: Undergraduate Algebraic Geometry; MATH 385 Independent Study: Topology.

Applied and Computational Mathematics

- Salisbury University: MATH 471 Numerical Methods (Python); MATH 472 Numerical Linear Algebra (Python).

Discrete Mathematics, Data, and Quantum Computing

- Salisbury University: MATH 210 Discrete Mathematics; MATH 490 Special Topics: Combinatorics; MATH 306 Linear Algebra; MATH 385 Independent Study: Sports Analytics; MATH 490 Special Topics: Introduction to Quantum Computing.

Undergraduate Research and Honors

- Salisbury University: MATH 390 Undergraduate Research: Schubert Calculus (numerous times); COSC 390 Undergraduate Research: Programming in Schubert Calculus; HONR 495 Honors Thesis.

Honors and Nominations

- Nominated for the University System of Maryland Board of Regents' Faculty Award for Mentoring in 2023.
- Nominated for SUSRC's Outstanding Research Mentor Award in 2018, 2019, and 2026.
- Section NExT Fellow for the MD-DC-VA Section of the MAA in 2017.