

Andrew H. Volk, Ph.D.

Assistant Professor of Mathematics and Physics | Liberty University

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Mathematics and physics faculty member with undergraduate teaching experience in mathematics, physics, statistics, and engineering across residential and online settings. Work includes quantitative reasoning curriculum development, engineering education and mathematics education scholarship, student research mentoring, and academic service.

EDUCATION

Doctor of Philosophy in Engineering, concentration in Engineering Education

Mississippi State University, Mississippi State, Mississippi | Conferred August 12, 2026

Master of Arts in Science Education (Secondary Physics)

Western Governors University, 2023

Master of Science in Mathematics

Central Methodist University, Fayette, Missouri | May 2021

Master of Education in Instructional Design

Western Governors University | 2018

Bachelor of Science in Mathematics, double major in Spanish

Liberty University, Lynchburg, Virginia | May 2011

LICENSURE

Virginia Collegiate Professional License

Secondary Mathematics (grades 6-12) and Secondary Physics (grades 6-12) | Issued May 2011

ACADEMIC APPOINTMENTS

Assistant Professor of Mathematics and Physics, full-time residential

Liberty University | July 2021 to present

Residential Adjunct Faculty

Liberty University | 2020-2021 academic year

Additional Liberty University roles

Adjunct Professor of Engineering; Liberty University Online instructor for PHYS 103; Director of the A.S. in STEM Mathematics Program.

EARLIER ACADEMIC AND PROFESSIONAL EXPERIENCE

Faculty in Statistics, online adjunct

Franklin University, Columbus, Ohio | 2021-2022 | MATH 280, Introduction to Probability and Statistics

Mathematics Teacher and Department Chair

Lynchburg City Schools, Virginia | 2017-2020 | Algebra I, Algebra II, Math 8, and remedial mathematics

Mathematics and Computer Science Teacher

Spotsylvania County Public Schools, Virginia | 2014-2017 | Algebra I, Geometry, C++, AP Computer Science Principles, and applied mathematics

Earlier K-12 teaching roles

Mathematics and general teaching positions at Mountain View High School, Nova Classical Academy, Andersen United School, City West Academy, and Lynchburg City Schools | 2011-2014

Introductory Programming Instructor

Udemy | 2016-2022

TEACHING AND CURRICULUM DEVELOPMENT

Subject Matter Expert, MATH 114 Quantitative Reasoning

Liberty University | May 2022 to present | Design, development, and evaluation for the residential program

Teaching emphasizes clear explanations, applied examples, mathematical modeling, mastery-oriented assessment, and supportive feedback. Instructional interests include educational technology, hands-on learning, and helping students build durable understanding and confidence.

Courses taught

Liberty University

MATH 100 Fundamentals of Mathematics; MATH 105 Algebra for Liberal Arts; MATH 110 Intermediate Algebra; MATH 114 Quantitative Reasoning; MATH 130 Advanced Technical Mathematics; ENGI 220 Engineering Economy; PHYS 103 Elements of Physics Lab; PHYS 201L General Physics Lab I; PHYS 231L University Physics Lab I; PHYS 202L General Physics Lab II; PHYS 232L University Physics Lab II.

Franklin University

MATH 280 Introduction to Probability and Statistics (online).

RESEARCH INTERESTS

Engineering education; mathematics education; student progression and success; behavioral nudges; AI in higher education; STEM participation; applied quantitative research; digital humanities; and interdisciplinary inquiry.

PUBLICATIONS

Doctoral dissertation

Volk, A. H. (2026). *Engineering Education Beyond the Engineering Classroom: Three Studies on Behavioral Nudges, General Education Completion, and Honors Program Participation* (Order No. 32791154). Available from ProQuest Dissertations & Theses Global (3383396732). [ProQuest record](#).

Journal article

Byrd, J. T., Conner, H. J., Geisler, C. S., Giles, J. A., Granger, M. D., Ruyack, S., & Volk, A. H. (2026). Beyond lecturing: A qualitative exploration of the impact of artificial intelligence (AI) and academic integrity on faculty job satisfaction in Christian higher education. *Journal for the Scholarship of Teaching & Learning*, 2(1), Article 8. <https://doi.org/10.70623/YTUI8353>.

Mathematics education article

Volk, A. H. (2021, September 1). A practitioner's review of visible learning for mathematics classrooms. *MathBits*. [MathBits](#).

Mathematics education article

Volk, A. H. (2019). Euclidean: The game of geometric constructions. *Virginia Mathematics Teacher*, 46(1), 56-57.

Mathematics education review

Volk, A. H. (2019). Flatland by Edwin Abbott Abbott. *Virginia Mathematics Teacher*, 45(2), 36.

RESEARCH PROJECTS IN PROGRESS

- AI Use in Higher Ed Lesson Planning - under journal peer review
- Nudge Theory in Higher Ed Systematic Review - preparing for submission
- Higher Education Text Message Nudge Study - preparing for submission
- Engineering Majors Honors Program Engagement Study - revise and resubmit
- MASLD Phenotyping and Underdiagnosis Study - preparing for submission
- Math Major Classification Using IPEDS - preparing for submission

RESEARCH FUNDING

ILLUMINATE Grant, 2026

Primary Author, \$1,000 | *The Tangible Math Project: Visualizing Mathematics through 3D Printing*

SELECTED SCHOLARLY PRESENTATIONS

January 2027 | Conference on Teaching Excellence (forthcoming)

What Is My Role Now? Lesson Planning and Preparation, Artificial Intelligence, and Identity Transformation in Christian Higher Education. Coauthored poster scheduled for presentation with Janet K. Brown, Laura B. Beiler, Jyminor Guerisma, Monique A. Maloney, and Chelsea J. Milks.

January 2026 | Conference on Teaching Excellence

Beyond Lecturing: A Qualitative Exploration of the Impact of Artificial Intelligence (AI) and Academic Integrity on Faculty Job Satisfaction in Christian Higher Education. Presenter.

July 2024 | Board Game Academics Conference

Mapping History's Battles: A Survey of Playable Nations in BoardGameGeek's Top 100 War Games. Presenter.

April 2024 | NCTM Virtual Conference

Cultivating Reflective Practice in Math Education: A Dual Perspective. Co-presented with Gail McGowan.

March 2023 | Virginia Council of Teachers of Mathematics Annual Conference

Exploring the Capabilities of OpenAI to Write Mathematical Proofs: Implications for Mathematics Educators. Presenter.

October 2021 | Indiana College English Association, 86th Annual Conference

Vocabulary and Dr. Seuss: A Study in Zipf's Law Search Frequency. Co-presented with Underwood.

June 2021 | XXVII Congreso Internacional de Literatura Hispánica

La cuantificación del estilo: los prefijos positivos y negativos en La Celestina. Co-presented with Milacci.

November 2020 | Mathematical Association of America MD-DC-VA Section Meeting

Zipf's Law of Baseball Career Leaderboards. Presenter.

EARLIER PROFESSIONAL PRESENTATIONS

2019 | Techstravaganza

Embedding Formative Assessment in Instruction.

2018 | Lynchburg City Schools Professional Development Day

Using Nearpod for Formative Assessment.

2018 | Techstravaganza

Using Video for Engaging Instruction.

2016 | Spotsylvania Teacher's Conference

Blended Learning.

2015 | Spotsylvania Teacher's Conference

Data Driven Classroom.

2015 | Interactive Achievement User Conference

What to Do with the Data?

2015 | Pioneer Central Schools Inservice

Growth Centered Classroom.

2014 | Rappahannock Region Association of Teachers of Mathematics Conference

Teaching Students to Solve Word Problems. Co-presented with Martin.

SERVICE AND STUDENT MENTORSHIP

Faculty Advisor, Kappa Mu Epsilon

Liberty University | 2021 to present. KME remains active; activities are incorporated into shared Pi Mu Epsilon and Mathematics Club events.

Founder and Chapter Advisor, Pi Mu Epsilon Virginia Omicron

Liberty University | Chapter process initiated May 2025; installation and induction held April 7, 2026. More than 20 students were inducted, including four online students.

Faculty Advisor, Mathematics Club

Liberty University. Supports student activities, workshops, competitions, undergraduate research, and conference participation.

Research Week Judge

Liberty University | 2021-2026

Honors Thesis Committee Chair

Liberty University | October 2023 to present

Honors Thesis Committee Reader

Liberty University | January 2024 to present

Undergraduate research mentoring includes guidance in project development, scholarly writing, conference presentations, and publication. Mentees have presented at Liberty Research Week, SUMS, NURVA, MARCUS, JMM, and the National Collegiate Research Conference.

Small Group Leader and Children's Ministry Volunteer

Crosspoint Church, Lynchburg, Virginia | January 2018 to present

SELECTED ADDITIONAL PROFESSIONAL ROLES

- Managing Editor, Board Game Academics Journal
- Peer Reviewer, Digital Humanities Quarterly
- Evaluation Consultant, Empirically Grounded Solutions

PROFESSIONAL AFFILIATIONS

American Society for Engineering Education; Association of Christians in the Mathematical Sciences; Mathematical Association of America; National Council of Teachers of Mathematics; Virginia Council of Teachers of Mathematics; Pi Mu Epsilon.

SELECTED HONORS AND AWARDS

- LMS Impact Educator of the Year, Lynchburg City Schools, 2020
- MathCounts team, third-place regional finish as coach, 2020
- William C. Lowry Math Educator of the Year, Virginia Council of Teachers of Mathematics, 2019
- Above and Beyond Call of Duty Award, 2015
- Teacher of Promise Institute, 2011; SDP Distinguished Service Award, 2011
- ETS Recognition of Excellence Award, 2010; Gift of the Spirit Service Award, 2010; Barlow Scholarship Award, 2010