

Matthew A. Pons, Ph.D.

CONTACT INFORMATION

North Central College
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EDUCATION

- Ph.D., Mathematics, The University of Virginia, August 2007; Advisor: Barbara D. MacCluer
- M.S., Mathematics, The University of Virginia, May 2005
- B.A., Mathematics, The University of North Carolina at Asheville, May 2002; Advisors: David Peifer and Mark McClure

ACADEMIC POSITIONS

- Marie & Bernice Gantzert Professor in the Liberal Arts & Sciences, 2022–Present
- Chair, Mathematics and Actuarial Science, 2016–Present
- Professor of Mathematics 2018–Present
- Associate Professor of Mathematics 2013–2018
- Assistant Professor of Mathematics 2007–2013

HONORS AND AWARDS

National Awards

- Euler Book Prize 2022; awarded by the Mathematical Association of America for *Living Proof: Stories Resilience Along the Mathematical Journey*
- Project NExT Fellow 2008-2009; sponsored by the Dolciani-Halloran Foundation

North Central College

- Clarence F. Dissinger Prize for faculty scholarship, May 2015.
- Junior Faculty Enhancement Award, Winter 2012.
- Clarence F. Dissinger Award for distinguished teaching by a junior faculty member, May 2011.

University of Virginia

- Dissertation Semester Fellowship, Spring 2007
- Nominated for Departmental TA Teaching Award, Received Honorable Mention, 2005
- Edwin E. Floyd Fellowship, 2002-2003

University of North Carolina at Asheville

- Graduated Magna Cum Laude, Distinction in Mathematics, Distinction as a University Research Scholar, May 2002
- Achievement in Mathematics, May 2002
- Parsons Scholar, 2001-2002
- Elected Omicron Delta Kappa: National Leadership Honor Society, April 2001

TEACHING
EXPERIENCE

Department of Mathematics, North Central College, Professor 2018-Present, Associate Professor 2013-2018, Assistant Professor 2007-2013

Courses Taught

- FYE 100 First Year Experience
- HON 200 What is Truth
- MTH 111 Quantitative Reasoning
- MTH 118 Finite Mathematics
- MTH 130 Survey of Calculus
- MTH 140 Integrated Calculus I
- MTH 141 Integrated Calculus II
- MTH 151 Calculus I
- MTH 152 Calculus II
- MTH 153 Calculus III
- MTH 254 Calculus IV
- MTH 290 The Infinite and the Infinitesimal
- MTH 299 Topics in Mathematics
- MTH 300 Linear Algebra
- MTH 315 Differential Equations
- MTH 323 Complex Variables
- MTH 461 Real Analysis
- MTH 462 Real Analysis II
- MTH 490 Seminar in Mathematics
- MTH 499 Topics in Mathematics

Student Honors Theses

- Faber, Kelly (second reader). (2015-2016) *Chin Up, Shoulders Back: An Examination of Body Language in Authority Figures*.
- Gommel, Maria. (2012-2013) *Cantor's Continuum Hypothesis: To Infinity and Beyond*.
- Roggenkamp, Kaleb. (2011-2012) *Representing Negative Numbers in a Ternary Computer*.

Department of Mathematics, University of Virginia 2002-2007

- Instructor 2003-2007 – Calculus I, Applied Calculus I & II
- Teaching Assistant 2002-2003, Summer 2005 – Basic Real Analysis, Calculus II & III

RESEARCH
INTERESTS

Operator Theory, Complex Function Theory, Functional Analysis; Composition Operators on Banach and Hilbert Spaces of Analytic Functions

PUBLICATIONS

Books

- *Living Proof: Stories Resilience Along the Mathematical Journey*, edited with Allison K. Henrich, Emille D. Lawrence, and David G. Taylor, AMS and MAA, Providence, 2019.
- *Real Analysis for the Undergraduate: With an Invitation to Functional Analysis*, Springer Science + Business Media, New York, 2014.

Articles

- Spectra of composition operators on the Dirichlet space induced by full-maps of the disk, submitted to *Journal of Operator Theory*.
- Topological structure of the space of composition operators on L^∞ of a locally finite, unbounded metric space, with Robert F. Allen and Whitney George, submitted to *Mediterr. J. Math.*.
- Composition-differentiation operators on $S^2(\mathbb{D})$, with Robert F. Allen and Katherine C. Heller, submitted to *Complex Anal. Oper. Theory*.
- Composition-differentiation operators on the Dirichlet space, with Robert F. Allen and Katherine C. Heller, *J. Math. Anal. Appl.*, to appear.
- Weighted composition operators on discrete weighted Banach spaces, with Robert F. Allen, *Acta. Sci. Math. (Szeged)*, to appear.
- A survey of composition operators on the Dirichlet space, *Rocky Mt. J. Math.*, to appear.
- Analysis of SIR epidemic models with sociological phenomenon, with Robert F. Allen and Katherine C. Heller, *Spora: A Journal of Biomathematics*, **8** (2022), 38-55.
- Spectra of composition operators on weighted Bergman spaces, *Acta. Sci. Math. (Szeged)*, **85** (2019), 539-560.

- Hypercyclic composition operators on weighted Banach spaces of a tree, with Robert F. Allen, Flavia Colonna, and Rubén A. Martínez-Avendaño, *Mediterr. J. Math.*, **16** (2019), no. 5, Art. 115, 20pp.
- Composition operators on weighted Banach spaces of a tree, with Robert F. Allen, *Bull. Malays. Math. Sci. Soc.*, **41** (2018), no. 4, 1805-1818.
- Composition operators with monomial symbol acting on weighted Hardy spaces, with Katherine C. Heller, *Mediterr. J. Math.*, **15** (2018), no. 1, Art. 2, 14pp.
- The adjoint of a linear fractional composition operator on the Dirichlet space, *Houston J. Math.*, **43** (2017), no. 2, 495-508.
- The spectrum of a composition operator with automorphic symbol, *Mediterr. J. Math.*, **14** (2017), no. 2, Art. 53, 13 pp.
- Spectrum of a composition operator with automorphic symbol, with Robert F. Allen and Thong M. Le, *Involve*, **9** (2016), no. 5, 813-826.
- Multiplication operators on $S^2(\mathbb{D})$, with Robert F. Allen and Katherine C. Heller, *Acta. Sci. Math. (Szeged)*, **81** (2015), 575-587.
- Compact differences of composition operators on weighted Dirichlet spaces, with Robert F. Allen and Katherine C. Heller, *Cent. Eur. J. Math.*, **12** (2014), no. 7, 1040-1051.
- Isometric composition operators on the analytic Besov spaces, with Robert F. Allen and Katherine C. Heller, *J. Math. Anal. Appl.*, **414** (2014), 414-423.
- Composition operators on Besov and Dirichlet type spaces of the ball, *Acta. Sci. Math. (Szeged)*, **77** (2011), 525-550.
- The spectrum of a composition operator and Calderón's complex interpolation, *Operator Theory: Advances and Applications*, **202** (2010), 451-467.
- *Composition operators on Besov and Dirichlet type spaces*, Ph.D. thesis, The University of Virginia, 2007.
- Automorphic composition operators on Hardy and Bergman spaces in the ball, with Barbara D. MacCluer, *Houston J. Math.*, **32** (2006), no. 4, 1121-1132.
- Normal Forms for Artin Groups, Proceedings of the National Conference on Undergraduate Research, 2002.

TALKS

- *What are all these dimensions?*, University of Wisconsin La Crosse, November 2021.
- *Living Proof: Stories of Resilience Along the Mathematical Journey* Panel; Joint Mathematics Meetings; January 2020.
- *Living Proof: Stories of Resilience Along the Mathematical Journey* Panel; Mathfest; August 2019.
- *Distance Preserving Transformations*; North Central College Summer Undergraduate Research Colloquium; June 2017.
- *Addition, Patterns, and Proofs*; North Central College Math Circle; July 2015.
- *Three Things That Don't Go Together: Selected Topics From Basic Analysis*; Invited Address for the MAA-MD/DC/VA Sectional Meeting, Harrisonburg, Virginia; April 2014.
- *Irrational Numbers: The Zombies of the Reals*; Prime-Time Colloquium, North Central College, October 2011.
- *Composition Operators and Complex Interpolation*; International Workshop on Operator Theory and Applications, Williamsburg, Virginia, July 2008.
- *Composition Operators and Complex Interpolation*; Thesis Defense, University of Virginia, June 2007.
- *Composition operators on Banach spaces of analytic functions on the unit ball*; AMS Session on Operator Theory and Optimal Control, I, New Orleans, Louisiana; January 2007.

- *Composition operators continued: The Dirichlet space of the unit ball*; Graduate Seminar, University of Virginia, November 2006.
- *Composition operators with linear fractional symbol on the Dirichlet space of the unit ball*; Operator Theory Seminar, University of Virginia; October 2005.
- *Composition operators with linear fractional symbol on the Dirichlet space of the unit disk*; Operator Theory Seminar, University of Virginia; October 2005.
- *A Taste of Dirichlet*; Graduate Seminar, University of Virginia; October 2005.
- *Bergman spaces and the pseudohyperbolic metric on the ball* (2 talks); Operator Theory Seminar, University of Virginia; April 2005.
- *Automorphic composition operators on the Hardy and Bergman spaces in the ball*; Graduate Seminar, University of Virginia; February 2005.
- *On partition theorems of Fine and Dyson*; Algebra Seminar, University of Virginia; November 2003.
- *The symbolic dynamics of the sequence of pedal triangles*; Senior Seminar, University of North Carolina at Asheville; April 2002.
- *Normal forms for Artin groups*; National Conference on Undergraduate Research, White Water, Wisconsin; April 2002.

CONFERENCES

Attended

- Mathfest; Philadelphia, Pennsylvania; August 2022.
- Joint Mathematics Meetings; Denver, Colorado; January 2020.
- Mathfest; Cincinnati, Ohio; August 2019.
- Mathfest; Chicago, Illinois; July 2017.
- Mathematical Association of America Sectional Meeting MD/DC/VA; James Madison University, Harrisonburg, Virginia; April 2014.
- Virginia Operator Theory and Complex Analysis Meeting; University of Virginia, Charlottesville, Virginia; October 2013.
- Joint Mathematics Meetings; San Diego, California; January 2013.
- Mathfest; Madison, Wisconsin; August 2012.
- Joint Mathematics Meetings; Boston, Massachusetts; January 2012.
- Mathfest; Lexington, Kentucky; August 2011.
- South Eastern Analysis Meeting “SEAM XXVII”; University of Florida, Gainesville, Florida; March 2011.
- Mathfest; Portland, Oregon; August 2009.
- Joint Mathematics Meetings; Washington DC; January 2009.
- Mathfest; Madison, Wisconsin; August 2008.
- International Workshop on Operator Theory and Applications; Williamsburg, Virginia; 2008.
- South Eastern Analysis Meeting “SEAM XXIII”; University of Richmond, Richmond, Virginia; March 2007.
- Joint Mathematics Meetings; New Orleans, Louisiana; January 2007.
- South Eastern Analysis Meeting “SEAM XXII”; University of Florida, Gainesville, Florida; March 2006.
- Virginia Operator Theory and Complex Analysis Meeting; University of Virginia, Charlottesville, Virginia; October 2005.
- South Eastern Analysis Meeting “SEAM XXI”; Washington and Lee University, Lexington, Virginia; April 2005.

- National Conference on Undergraduate Research; University of Wisconsin at Whitewater, Whitewater, Wisconsin; April 2002.

Session Organizer

- Special Session on “Operator Theory on Analytic Function Spaces”; Joint Mathematics Meetings; Boston, Massachusetts; January 2012.
- Special Session on “Mathematical Modeling Projects that Matter”; Mathfest; Lexington, Kentucky; August 2011.

GRANTS

- NCC Summer Course Development Grant 2015 – MTH 290: The Infinite and the Infinitesimal
- NCC Teaching with Technology Grant 2014 – Teaching Real Analysis, with Katherine C. Heller
- NCC Summer Research Grant 2011 – Book Manuscript: *Real Analysis for the Undergraduate*
- NCC Summer Research Grant 2010 – Book Manuscript: *Real Analysis for the Undergraduate*
- NCC Summer Research Grant 2008 – *Composition Operators on Spaces of Analytic Functions*

REVIEW/REFEREE AFFILIATIONS

Springer Science + Business Media, *Acta Scientiarum Mathematicarum (Szeged)*, *Annals of Functional Analysis*, *Bulletin of the Iranian Mathematical Society*, *Complex Analysis and Operator Theory*, *Complex Variables and Elliptic Equations*, *Computational Methods and Function Theory*, *International Journal of Mathematics*, *Illinois Journal of Mathematics*, *Journal of the Australian Mathematical Society*, *Journal of the Mathematical Analysis and Applications*, *Kragujevac Journal of Mathematics*, *Mediterranean Journal of Mathematics*, *Open Mathematics*, *Operators and Matrices*, *Results in Mathematics*, *Rocky Mountain Journal of Mathematics*, *Turkish Journal of Mathematics*

PROFESSIONAL AFFILIATIONS

Mathematical Association of America, Pi Mu Epsilon National Mathematical Honor Society, American Association of University Professors

SERVICE TO THE MATHEMATICAL COMMUNITY

- Deputy Editor of MAA FOCUS
- Co-editor of the Math Values: Living Proof Blog

COMMITTEES AND CITIZENSHIP

- 2022 – Faculty Welfare Committee (spring semester replacement)
- 2022 – Outstanding Senior Selection Committee
- 2021-Present – Donald and Arline Johnson Math and Science Scholarship Selection Committee
- 2021-Present – Verne E. Dietrich Memorial Scholarship Selection Committee
- 2020-2021 – Commencement 2020/2021 Recommendation Committee (appointed)
- 2019-2021 – Faculty Handbook Committee (appointed)
- 2019 – Provost Evaluation Committee (elected)
- 2019 – Search Committee for tenure-track position in THE
- 2018 – Outstanding Senior Selection Committee
- 2017-Present – NCC AAUP Executive Committee (various roles)
- 2017 – BA/BS Taskforce
- 2017 – Tenure and Promotion Committee (spring term replacement)
- 2017 – Search Committee for program director of Engineering
- 2016-Present – Chair, Department of Mathematics and Actuarial Science
- 2016 – Outstanding Senior Man/Woman Selection Committee

- 2016 – Dean Search Committee (elected/appointed)
- 2015-Present – Faculty Marshall (appointed)
- 2014-2016 – Faculty Personnel Committee (elected)
- 2014-2016 – Cardinal SafeZone Working Group
- 2013-2015 – Elections Committee (elected)
- 2013-Present – Harold Temple Scholarship Selection Committee
- 2013-2014 – Welfare and Benefits Committee (appointed)
- 2013-2014 – Faculty Mentor Program (tenure track faculty)
- 2013 – Outstanding Senior Man/Woman Selection Committee
- 2013 – Search Committee for tenure-track position in THE
- 2013 – Search Committee for tenure-track position in MTH
- 2012 – Search Committee for one year position in MTH
- 2011-Present – Co-coordinator of Math Resource Center
- 2011 – Search Committee for tenure-track position in IMS
- 2010-2012 – College Scholars Committee (appointed)
- 2010-2011 – Faculty Mentor Program (half-time faculty)
- 2010 – Search Committee for tenure-track position in MTH
- 2009-2018 – Faculty Advisor for NCC OUTreach (formerly Gay-Straight Alliance)
- 2009-2014 – Faculty Welfare Committee (elected)
- 2009-2011 – Cultural Events Committee (appointed)
- 2008-2009 – Secretary for Faculty Welfare Committee
- 2008 – Cultural Events Committee (appointed)