

## Matthew A. Pons, Ph.D.

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### 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

### HONORS AND AWARDS

#### National Awards

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

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

### 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 *Integral Equations Operator Theory*.
- Topological structure of the space of composition operators on  $L^\infty$  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

- 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, <i>Acta Scientiarum Mathematicarum (Szeged)</i> , <i>Annals of Functional Analysis</i> , <i>Bulletin of the Iranian Mathematical Society</i> , <i>Complex Analysis and Operator Theory</i> , <i>Complex Variables and Elliptic Equations</i> , <i>Computational Methods and Function Theory</i> , <i>International Journal of Mathematics</i> , <i>Illinois Journal of Mathematics</i> , <i>Journal of the Australian Mathematical Society</i> , <i>Kragujevac Journal of Mathematics</i> , <i>Mediterranean Journal of Mathematics</i> , <i>Open Mathematics</i> , <i>Operators and Matrices</i> , <i>Results in Mathematics</i> , <i>Rocky Mountain Journal of Mathematics</i> , <i>Turkish Journal of Mathematics</i>
PROFESSIONAL AFFILIATIONS	Mathematical Association of America, Pi Mu Epsilon National Mathematical Honor Society, American Association of University Professors
SERVICE TO THE MATHEMATICAL COMMUNITY	Co-editor of the Math Values: Living Proof Blog
COMMITTEES AND CITIZENSHIP	<ul style="list-style-type: none"> <li>• 2022 – Faculty Welfare Committee (spring semester replacement)</li> <li>• 2022 – Outstanding Senior Selection Committee</li> <li>• 2021-Present – Donald and Arline Johnson Math and Science Scholarship Selection Committee</li> <li>• 2021-Present – Verne E. Dietrich Memorial Scholarship Selection Committee</li> <li>• 2020-2021 – Commencement 2020/2021 Recommendation Committee (appointed)</li> <li>• 2019-2021 – Faculty Handbook Committee (appointed)</li> <li>• 2019 – Provost Evaluation Committee (elected)</li> <li>• 2019 – Search Committee for tenure-track position in THE</li> <li>• 2018 – Outstanding Senior Selection Committee</li> <li>• 2017-Present – NCC AAUP Executive Committee (various roles)</li> <li>• 2017 – BA/BS Taskforce</li> <li>• 2017 – Tenure and Promotion Committee (spring term replacement)</li> <li>• 2017 – Search Committee for program director of Engineering</li> <li>• 2016-Present – Chair, Department of Mathematics and Actuarial Science</li> <li>• 2016 – Outstanding Senior Man/Woman Selection Committee</li> <li>• 2016 – Dean Search Committee (elected/appointed)</li> <li>• 2015-Present – Faculty Marshall (appointed)</li> <li>• 2014-2016 – Faculty Personnel Committee (elected)</li> <li>• 2014-2016 – Cardinal SafeZone Working Group</li> <li>• 2013-2015 – Elections Committee (elected)</li> <li>• 2013-Present – Harold Temple Scholarship Selection Committee</li> <li>• 2013-2014 – Welfare and Benefits Committee (appointed)</li> <li>• 2013-2014 – Faculty Mentor Program (tenure track faculty)</li> <li>• 2013 – Outstanding Senior Man/Woman Selection Committee</li> <li>• 2013 – Search Committee for tenure-track position in THE</li> <li>• 2013 – Search Committee for tenure-track position in MTH</li> <li>• 2012 – Search Committee for one year position in MTH</li> <li>• 2011-Present – Co-coordinator of Math Resource Center</li> <li>• 2011 – Search Committee for tenure-track position in IMS</li> <li>• 2010-2012 – College Scholars Committee (appointed)</li> </ul>

- 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)