

SEAN D. COX

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Department of Mathematics and Applied Mathematics $\diamond$ Virginia Commonwealth University
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EDUCATION AND EMPLOYMENT

- **Professor**, Virginia Commonwealth University, Department of Mathematics and Statistics (July 2024 to present).
- **Associate Professor**, Virginia Commonwealth University, Department of Mathematics and Applied Mathematics (July 2018 to June 2024).
- **Assistant Professor**, Virginia Commonwealth University, Department of Mathematics and Applied Mathematics (August 2012 to June 2018).
- **Fields Postdoctoral Fellow** for the *Thematic Program on Forcing and its Applications* (Fields Institute, July-December 2012).
- **Akademischer Rat auf Zeit** (postdoctoral position), Institute for Mathematical Logic and Basic Research, University of Münster, Germany (November 2009 to May 2012). *Supervisor*: Dr. Ralf Schindler.
- **Ph.D. in Mathematics**, University of California, Irvine (2009). *Dissertation*: “Covering theorems for the core model, with applications.” *Advisor*: Dr. Martin Zeman. Received the department’s *Kovalevsky Outstanding PhD Thesis Award*.
- **Economist**, Regional Economic Research, San Diego, CA (2001–2002) and Triangle Economic Research, Durham, NC (1999–2001).
- **B.A. in Economics** (minor in English), North Carolina State University (1999).

GRANTS, AWARDS, AND FELLOWSHIPS

- NSF grant DMS-2154141 (PI), 9/1/2022 - 8/31/2027, \$180,000. Project title: *Approximation theory and elementary submodels*.
- VCU Seed Award (PI), 7/1/2021 - 5/31/2023 (est.), \$5,000. Project title: *How Robustly Can You Predict the Future?*
- VCU Presidential Research Quest Fund (PI), 7/1/16-12/31/17, \$40,000. Project title: *Open problems in the foundations of mathematics*. Co-PIs: Brent Cody and Monroe Eskew.
- Simons Foundation Collaboration Grant for Mathematicians (PI), 2014–2019, \$35,000. Project title: *Forcing and the nonstationary ideal*.
- Fields Postdoctoral Fellow for the *Thematic Program on Forcing and its Applications* (July-December 2012).
- Obtained grant from the European Science Foundation (ESF) to visit and collaborate with Dr. Matteo Viale in Torino, Italy (November 2011).
- Obtained grant from ESF to attend Third European Set Theory Conference (July 2011).
- *Kovalevsky Outstanding PhD Thesis Award 2008-2009*, UC-Irvine Mathematics Department.
- Obtained grant to attend the 2009 Young Set Theorist Workshop in Barcelona, Spain.
- Obtained NSF/ASL grant to attend the 2009 annual meeting of Association for Symbolic Logic.
- *Von Neumann Award for Outstanding Performance as a Graduate Student 2006-2007*, UC-Irvine Mathematics Department.
- UC-Irvine mathematics department fellowships (Winter 2007, Summer 2007, Spring 2008).

- *Kaplansky classes and stability*
- (with Kamsma and Rosický) *Cellular generation revisited*
- (with Aspero, Karagila, and Weiss) *The κ -Strongly Proper Forcing Axiom*

PUBLICATIONS

- *Approximation Theory and Elementary Submodels*. Bulletin of Symbolic Logic (to appear)
- (with Feigert, Kamsma, Mazari-Armida, and Rosický) *Cofibrant generation of pure monomorphisms in presheaf categories*. Advances in Mathematics (to appear)
- *The Flat Cover Conjecture for Monoid Acts*. Journal of the London Mathematical Society (2) 112 (2025), no. 6, Paper No. e70404.
- *Vopěnka's Principle, Maximum Deconstructibility, and singly-generated torsion classes*. Applied Categorical Structures 33 (2025), no. 3, Paper No. 19.
- (with Marco Aldi, Jeff Buffkin II, and Cody Cline) *Sparse systems of functions and quasi-analytic classes*. Fundamenta Mathematicae 270 (2025), no. 2, 99–111.
- (with Alejandro Poveda and Jan Trlifaj) *Approximation Properties of Torsion Classes*. Bull. London Math. Soc. 56 (2024), no. 12, 3819–3828.
- (with Brent Cody and Kayla Lee) *Sparse analytic systems*. Forum of Mathematics, Sigma 11 (2023): e58.
- (with Gunter Fuchs) *The diagonal strong reflection principle and its fragments*. The Journal of Symbolic Logic, 88(3), 1281–1309.
- *Filtration Games and Potentially Projective Modules*. Fundamenta Mathematicae 260(2023), no.3, 199–232.
- (with Matthew Elpers) *How robustly can you predict the future?* Canadian Journal of Mathematics, 75(5), 1493–1515 (2023).
- (with Monroe Eskew) *Compactness versus hugeness at successor cardinals*. J. Math. Log. 23(2023), no.1, Paper No. 2250016, 16 pp.
- (with Jiří Rosický) *Fibrantly generated weak factorization systems*. Rend. Semin. Mat. Univ. Padova 152 (2024), 133–144.
- (with Philipp Lücke) *Forcing axioms and the complexity of non-stationary ideals*. Monatshefte für Mathematik 199 (2022), no. 1, 45–84.
- *Salce's problem on cotorsion pairs is undecidable*. Bull. Lond. Math. Soc. 54 (2022), no. 4, 1363–1374.
- *Maximum Deconstructibility in Module Categories*. Journal of Pure and Applied Algebra 226 (2022), no. 5.
- *The Π_1^1 Löwenheim-Skolem-Tarski property of Stationary Logic*, in Set Theory and Infinity, RIMS Kokyuroku volume 2164, 108–116, 2020.
- (with Hiroshi Sakai) *Martin's Maximum and the Diagonal Reflection Principle*, in Axiomatic set theory and its applications, RIMS Kokyuroku volume 2141, 29–36, 2019.
- *Adjoining only the things you want: a survey of Strong Chang's Conjecture and related topics*. To appear in Research Trends in Contemporary Logic.
- *Forcing axioms, approachability, and stationary set reflection*. The Journal of Symbolic Logic 86, no. 2 (2021): 499–530.
- (with Hiroshi Sakai) *A variant of Shelah's characterization of Strong Chang's Conjecture*, Mathematical Logic Quarterly, 65 (2019), 251–257.
- (with Monroe Eskew) *Strongly proper forcing and some problems of Foreman*, Transactions of the American Mathematical Society 371 (2019), no. 7, 5039–5068.

- (with John Krueger) *Namba forcing, weak approximation, and guessing*, Journal of Symbolic Logic, Volume 83, Issue 4 December 2018, pp. 1539–1565.
- *Chang’s Conjecture and semiproperness of nonreasonable posets*, Monatshefte für Mathematik 187 (2018), no. 4, 617–633.
- *On the universality of the nonstationary ideal*, Mathematical Logic Quarterly 64 (2018), no. 1–2, 103–117.
- (with John Krueger) *Indestructible guessing models and the continuum*, Fund. Math. 239 (2017), no. 3, 221–258.
- *Layered posets and Kunen’s universal collapse*, Notre Dame J. Form. Log. 60 (2019), no. 1, 27–60.
- (with Philipp Lücke) *Characterizing large cardinals in terms of layered posets*, Annals of Pure and Applied Logic, Volume 168 (2017), Issue 5, pages 1112–1131.
- (with Dominik Adolf and Philip Welch) *Lower consistency bounds for mutual stationarity with divergent uncountable cofinalities*, Israel Journal of Mathematics October 2018, Volume 228, Issue 1, pp 1–19.
- (with John Krueger) *Quotients of strongly proper forcings and guessing models*, J. Symb. Log. 81 (2016), no. 1, 264–283.
- (with Brent Cody) *Indestructibility of generically strong cardinals*, Fundamenta Mathematicae 232 (2016), no. 2, 131–149.
- *Prevalence of Generic Laver Diamond*, Proceedings of the American Mathematical Society, Volume 143, Number 9, September 2015, pages 4045–4058.
- (with Martin Zeman) *Ideal projections and forcing projections*, The Journal of Symbolic Logic, Volume 79, Issue 04, December 2014, pp 1247–1285.
- (with Matteo Viale) *Martin’s Maximum and Tower Forcing*, Israel Journal of Mathematics 197 (2013), Issue 1, pp 347–376.
- *The Diagonal Reflection Principle*, Proceedings of the American Mathematical Society 140 (2012), no. 8, 2893–2902.
- *PFA and ideals on ω_2 whose associated forcings are proper*, Notre Dame Journal of Formal Logic 53 (2012), no. 3, 397–412.
- *Consistency strength of higher Chang’s Conjecture, without CH*, Archive for Mathematical Logic 50 (2011), no. 7, 759–775.
- *Nonregular ultrafilters on ω_2* , J. Symbolic Logic 76 (2011), no. 3, 827–845.
- *Covering theorems for the core model, and an application to stationary set reflection*, Ann. Pure Appl. Logic 161 (2009), no. 1, 66–93.

PRESENTATIONS

Invited talks:

- *Almost everywhere is all you need*. BLAST conference tutorial (2 sessions), Waco, TX, May 2026.
- *Almost everywhere is all you need*. Special Session on Commutative Algebra, 2026 Spring Southeastern Sectional Meeting of the AMS, Savannah, GA, March 28, 2026.
- *Almost everywhere is all you need*. Menachem Magidor 80th birthday conference, Irvine, CA, February 2026.
- *Almost-everywhere effective unions of $\mathcal{M}$ -subobjects*. Masaryk University Algebra Seminar, May 21, 2025.
- *The Flat Cover Conjecture in non-additive settings*. Charles University Algebra Seminar, May 19, 2025.
- *Maximum Deconstructibility, Vopěnka’s Principle, and singly-generated torsion classes*. Barcelona Set Theory Seminar, March 2025.
- *A new tool for detecting cofibrant generation*. U. of Virginia Topology Seminar, February 2025.
- *New tools in relative homological algebra*. AMS Fall Sectional Meeting, special session on Commutative Algebra, Savannah, Georgia, October 2024. *Conference cancelled due to Hurricane Helene*.

- *Sparse systems of Denjoy-Carleman classes*. Set theory and analysis seminar, Czech Academy of Sciences (Prague, Czech Republic) (May 7, 2024).
- *Set-theoretic tools for approximation theory*. Charles U. Algebra Seminar (Prague, Czech Republic) (May 6, 2024).
- *Sparse systems, CH, and Denjoy-Carleman classes*. Rutgers Logic Seminar (March 4, 2024).
- *Deconstructibility and elementary submodels*. Cornell Logic Seminar (October 20, 2023).
- *Predicting non-continuous functions*. XVII International Luminy Workshop in Set Theory (Luminy, France, October 12, 2023).
- *Predicting non-continuous functions*. Harvard CMSA Colloquium (September 25, 2023).
- *On the universality of the nonstationary ideal*. Irvine conference on inner model theory (July 2023).
- *Predicting non-continuous functions*. Workshop on the Frontiers of Set Theory, Fields Institute, Toronto (June 2023).
- *Elementary submodels, deconstructibility, and Salce's Problem*. Miniworkshop on set-theoretic methods in module theory and homological algebra, Fields Institute, Toronto (May 2023).
- *How robustly can you predict the future?* Charles University Algebra Seminar (March 2023).
- *Homological algebra, elementary submodels, and stationary logic*. Bristol (UK) Logic and Set Theory Seminar, November 1, 2022.
- *Homological algebra, elementary submodels, and stationary logic*. ESI Set Theory Workshop, Vienna, Austria, July 2022.
- *Set theory and deconstructibility in homological algebra*. 5th Münster conference on inner model theory, Münster, Germany, June 2022.
- *Applications of elementary submodels in homological algebra*. AMS Sectional Meeting, Special Session on Large Cardinals and Forcing Axioms, Charlottesville, Virginia (March 11-13, 2022). *Conference cancelled due to COVID-19*.
- *Homological algebra, elementary submodels, and stationary logic*. Barcelona Set Theory Seminar (November 3, 2021).
- *Vopěnka's Principle and completeness of cotorsion pairs*. Charles University Algebra Seminar (Prague, Czech Republic, March 2021).
- *Gorenstein Homological Algebra and elementary submodels*. University of Illinois Chicago Logic Seminar (February 2021).
- ESI Set Theory Workshop, Vienna, Austria (July 6-10, 2020). *Conference cancelled due to COVID-19*.
- Mid-Atlantic Mathematical Logic Seminar (MAMLS) Spring Fling meeting, NYC (April 22-24, 2020). *Conference cancelled due to COVID-19*.
- Special Session on Forcing and Ramsey Theory, 2020 North American Meeting of the Association for Symbolic Logic in Irvine, CA (March 25-28, 2020). *Conference cancelled due to COVID-19*.
- *Martin's Maximum and the Diagonal Reflection Principle*, University of Bonn, Germany (March 2019).
- *Martin's Maximum and the Diagonal Reflection Principle*, CUNY Set Theory Seminar (February 2019).
- *Some problems related to internal approachability*, RIMS Workshop on Axiomatic set theory and its applications, Kyoto, Japan (November 5-8, 2018).
- *Forcing axioms, approachability, and stationary reflection*, Special Session on Large Cardinals and Combinatorial Set Theory, AMS Sectional Meeting, Ann Arbor, Michigan (October 2018).
- *Reflection Principles and Strong Chang's Conjecture*, 1st Girona conference on inner model theory, Girona, Catalonia, July 16-27, 2018.
- *Semiproperness of nonreasonable posets*, UC Irvine Logic Seminar (January 8, 2018).
- *Strong Chang's Conjecture and semiproperness of nonreasonable posets*, Rutgers Logic Seminar (May 2017).
- *Layered posets, weak compactness, and Kunen's universal collapse*, Set Theory special session, North American Annual Meeting of the Association of Symbolic Logic (May 2016).

- *Layered posets, weak compactness, and Kunen's universal collapse*, U. of Turin Logic Seminar (March 2016).
- *Indestructible guessing models*, U. of Illinois Chicago Logic Seminar (February 2016).
- *Guessing models*, UC-Irvine Logic Seminar (January 2016).
- *Layered partial orders*, CUNY Set Theory Seminar (October 2015).
- *Quotients of strongly proper posets, and related topics*, Forcing and its Applications Retrospective Workshop, Fields Institute (March 2015).
- *Lifting behavior and antichain structure of ideal quotients*, Millican Colloquium, University of North Texas (April 2014).
- *Is there a Truth Calculator for all of mathematics?* Colloquium talk to the mathematics department at Washington and Lee University (November 2013)(expository talk).
- *Forcing Axioms and the Baire Category Theorem*, Seminar in Operator Theory and Operator Algebras, University of Virginia (November 2013).
- *Presaturation and bounding by canonical functions on NS restricted to S_1^2* , Fall 2013 Sectional Meeting of the American Mathematical Society, Special Session on Set Theory and Its Applications, Louisville, Kentucky (October 2013)
- *Some consistency results about saturated ideals*, special session on Set Theory at the 2013 North American annual meeting of the Association of Symbolic Logic, Waterloo, Canada (May 2013).
- *Generalized Laver Diamond*, Spring 2013 Southeastern Sectional Meeting of the American Mathematical Society, Special Session on Set Theory and Its Applications, Oxford, Mississippi (February 2013).
- *Coding reals by clubs in $[\omega_2]^\omega$* , UC-Irvine Logic Seminar (October 2012).
- *Some topics related to bounding by canonical functions*, Young Set Theory Workshop, Luminy, France (May 2012).
- *Ideal projections as forcing projections*, Canadian Mathematical Society Winter Meeting (December 2011).
- *Ideal projections as forcing projections*, Logic seminar, University of Torino, Italy (November 2011).
- *Compactness and tower forcing*, UC-Irvine Logic Seminar (October 2011).
- *The Diagonal Reflection Principle and well-determined generic ultrapowers*, UC-Irvine Logic Seminar (two 2-hour sessions, September/October 2011).
- *Martin's Maximum and limitations on presaturated towers*, University of Colorado Boulder logic seminar (September 2011).
- *The tree property and elementary embeddings*, Graduate Colloquium, University of Denver math department (September 2011).
- *Forcing axioms and generic ultrapowers with critical point ω_2* , Carnegie Mellon Logic Seminar (March 2011).
- *Diagonal Stationary Reflection and Generic Ultrapowers*, Cornell University Logic Seminar (February 2011).
- *Diagonal Stationary Reflection and Generic Ultrapowers*, 2011 Mid Atlantic Mathematical Logic Seminar at Harvard University (February 2011).
- *The Diagonal Reflection Principle*, Torino set theory workshop, Italy (November 2010).
- *Natural ideals under PFA*, Special Session on Large Cardinals and the Continuum, 2010 Fall Western Section Meeting of the AMS, UCLA (October 2010).
- *Catching slender functions*, UC-Irvine Logic Seminar (two 2-hour sessions, October 2010).
- *Nonregularity*, Amsterdam Workshop in Set Theory (June 2010).
- *The Chang Ideal*, Universität Bonn Oberseminar (April 2010).
- *Reflection of stationary sets at small cofinalities*. Workshop on Fine Structure and Inner Model Theory, Oberwolfach, Germany (November 2009).
- *Consistency Strength of Combinatorial Properties at Small Regular Cardinals*, UCLA Logic Colloquium (January 2009).

- *A covering theorem for the core model, with applications.* Special session on set theory, annual meeting of the Association for Symbolic Logic, Irvine, CA (March 2008).

Extended presentations:

- *Graduate summer school in set theory: large cardinals, inner models, and fine structure*, Irvine (five 1.5 hour lectures, June 25-29, 2012).

Other talks (contributed talks, talks at home institution, etc.):

- *A new tool for detecting cofibrant generation.* International Category Theory Conference 2025 (Brno, Czech Republic). July 18, 2025.
- *Predicting non-continuous functions.* VCU Analysis, Logic, and Physics Seminar. September 29, 2023.
- *Analytic-invariant predictions and a theorem of Erdős.* RIMS Set Theory Meeting 2022, Kyoto, Japan, October 22, 2022.
- *How robustly can you predict the future?* VCU Analysis, Logic, and Physics Seminar (September 16, 2022).
- *Undecidability of Salce's Problem for abelian groups.* VCU Analysis, Logic, and Physics Seminar (September 10, 2021).
- *Gorenstein Homological Algebra and elementary submodels.* VCU Analysis, Logic, and Physics Seminar (January 29, 2021).
- *Martin's Maximum and reflection properties of Stationary Logic.* RIMS Set Theory and Infinity meeting, Kyoto, Japan, November 2019.
- *The Gale-Stewart Theorem.* VCU Analysis, Logic, and Physics Seminar (September 2019).
- *The Löwenheim-Skolem Theorem and higher order logics.* VCU Analysis, Logic, and Physics Seminar (October 2018).
- *Curiosities in the plane.* VCU Analysis, Logic, and Physics Seminar (April 2018).
- *The Tree Property.* VCU Analysis, Logic, and Physics Seminar (September 2017).
- *Semiproperness of nonreasonable posets.* 6th European Set Theory meeting, Budapest, Hungary (July 2017).
- *The universality of the nonstationary ideal.* VCU Analysis, Logic, and Physics Seminar (March 2017).
- *Filters, ultrafilters, and applications.* VCU Analysis, Logic, and Physics Seminar (November 2016).
- *What do ultrafilters have to do with finite graphs?* VCU Discrete Math Seminar (September 2016).
- *Elementary submodels: the next best thing to circular reasoning,* VCU Analysis, Logic, and Physics Seminar (January 2016).
- *Is there a truth calculator for mathematics?*, VCU Honors College Berglund Seminar Series (September 2015).
- *Saturated ideals and regular embeddings of Boolean Algebras,* VCU Analysis, Logic, and Physics Seminar (September 2013).
- *Forcing Axioms and the Baire Category Theorem,* VCU Analysis, Logic, and Physics Seminar (September 2013).
- *Undecidable problems in mathematics,* VCU Honors College Berglund Seminar Series (April 2013).
- *Random Graphs, zero-one laws, and model theory,* VCU Discrete Math Seminar (March 2013).
- *Suslin's Problem,* VCU Analysis, Logic, and Physics Seminar (2 sessions, January 2013).
- *Antichain catching at ω_1 versus antichain catching at ω_2 ,* Toronto Set Theory Seminar (December 2012).
- *Coding reals by clubs in $[\omega_2]^\omega$,* Oberseminar in Logic, University of Münster (April 2012).
- *Compactness properties of the 2nd uncountable cardinal,* MAA Contributed talk session, Joint Mathematics Meetings, Boston (January 2012).
- *Martin's Maximum and Tower Forcing,* ASL Contributed talk session, Joint Mathematics Meetings, Boston (January 2012).

- *Ideal projections as forcing projections*, Oberseminar in Logic, University of Münster (October 2011).
- *Martin's Maximum and Tower Forcing*, Oberseminar in Logic, University of Münster (June 2011).
- *Some current research in Set Theory*, joint presentation at the Münster SFB Conference (July 2011).
- *Forcing axioms and correct models*, Oberseminar in Logic, University of Münster (four 2-hour sessions, December 2010 and January 2011).
- *The tree property*, Fall 2010 SoCal-Nev Section Meeting of the MAA, UC-Irvine (October 2010).
- *Forcing Axioms and ideals on ω_2* , Colloquium Logicum 2010, Münster, Germany (September 2010).
- *Moore's Map Reflection Principle*, Oberseminar in Logic, University of Münster (four 2-hour sessions, May 2010).
- *Stationary set reflection, square, and covering theorems*. Oberseminar in Logic, University of Münster (four 2-hour sessions, November 2009 to January 2010).
- *The mathematical uses and philosophical aspects of downward reflection*, MathFest 2009 (Portland, OR).
- *The Löwenheim-Skolem Theorem and countable models*. UC-Irvine Undergraduate Colloquium (May 2009).
- *Strong ideal properties which yield extenders in the core model*. Annual meeting of the Association for Symbolic Logic, Notre Dame IN (May 2009).
- *Consistency strength of variants of Chang's Conjecture*. UC-Irvine Logic Seminar (six sessions, Winter and Spring 2009).
- *Covering properties of the core model*. V.I.G. conference at UCLA (February 2008).
- *Weakly normal ultrafilters*. UC-Irvine Logic Seminar (six 2-hour sessions, Fall 2007 and Spring 2008).
- *Relative Consistency in Set Theory*. UC-Irvine Math Graduate Student Colloquium (March 2007).

COURSES TAUGHT AT VCU

- Math 602 Abstract algebra. Spring 2015.
- Math 601 Abstract algebra. Fall 2014.
- Math 591 Topics course: Filters, ultrafilters, and applications. Spring 2017 (jointly with Brent Cody and Monroe Eskew as part of PERQ grant).
- Math 591 Topics course: Logic and Mathematical Structures. Spring 2014 (jointly with Brent Cody).
- Math 509 Topology. Fall 2015.
- Math 507 Bridge to Modern Analysis. Fall 2019, Fall 2025.
- Math 502 Abstract Algebra I. Fall 2017.
- Math 492 Independent Studies. Summer 2013; Fall 2014; Spring 2015; Fall 2018, Spring 2020.
- Math 490 Mathematical Expositions. Spring 2014 (jointly with Brent Cody), Spring 2017, Fall 2018.
- Math 407 Advanced Calculus. Fall 2016, Spring 2018, Spring 2019, Spring 2020, Spring 2025.
- Math 401 Introduction to Abstract Algebra. Fall 2017, Fall 2019.
- Math 310 Linear Algebra. Spring 2016.
- Math 307 Multivariate Calculus. Fall 2013, Fall 2015, Spring 2026.
- Math 300 Intro to mathematical reasoning. Spring 2013 (2 sections), Fall 2013, Spring 2014, Spring 2015, Spring 2016, Spring 2018, Spring 2019, Spring 2020, Spring 2021 (2 sections), Spring 2022 (2 sections), Fall 2025, Spring 2026.
- Math 200 Calculus and Analytic Geometry I. Fall 2018, Fall 2021 (2 sections), Fall 2023, Spring 2024, Fall 2024 (2 sections), Fall 2025, Spring 2026.

PROFESSIONAL SERVICE

- Reviewer for National Science Foundation, Israel Science Foundation, Simons Foundation, Austrian Science Fund
- Organizer for Workshop on Stationary Sets and Algebra 2024 (May 2024)
- Reviewer for various internal VCU award programs (Seed, Catalyst, PERQ)
- Program Committee member for 2018-19 ASL Winter Meeting (with Joint Mathematics Meetings) Baltimore, Maryland, January 2019.
- Co-organizer for *IdealFest* workshop, held at Virginia Commonwealth University, May 19-20, 2017.
- Co-organizer for *Mid-Atlantic Mathematical Logic Seminar*, held at Virginia Commonwealth University on April 1-2, 2017.
- Local organizer for *Appalachian Set Theory Workshop*, held at Virginia Commonwealth University on April 9, 2016.
- Organizer and facilitator for *Graduate Summer School in Set Theory 2015*, held at UC-Irvine from July 6-17, 2015.
- Regularly serve as referee for various mathematics journals, including *Transactions of the American Mathematical Society*, *Journal of Symbolic Logic*, *Annals of Pure and Applied Logic*, *Fundamenta Mathematicae*, *Mathematical Logic Quarterly*, *Archive for Mathematical Logic*, and *Journal of Mathematical Logic*.
- Reviewer for *MathSciNet* (the review database of the American Mathematical Society). See “Reviews Authored” section for complete list.
- Program Committee member for 2011 and 2013 Young Set Theory Workshops.
- Wrote the official report of the Workshop on Fine Structure and Inner Model Theory, Oberwolfach (2009).
- Reviewer of conference notes from Appalachian Set Theory meeting (2010).
- Panel member for 2009 TA Professional Development Program at University of California, Irvine.

REVIEWS AUTHORED

- *Three papers related to the Mitchell order*. The Bulletin of Symbolic Logic, 23(1), 110-112.
- *MathSciNet* review of Foreman’s “Ideals and generic elementary embeddings” (chapter in the *Handbook of Set Theory*) (MR2768692)
- *MathSciNet* review of Friedman-Lücke “Large cardinals and definable well-orders, without the GCH” (MR3292806)
- *MathSciNet* review of Hamkins-Johnstone “Resurrection axioms and uplifting cardinals” (MR3194674)
- Review of the *Fields Institute Distinguished Lecture Series* given by Matthew Foreman (*Fields Notes*, Winter 2013, Volume 12:3)
- *MathSciNet* review of Yasuo Yoshinobu “Operations, climbability and the proper forcing axiom” (MR3037549)
- *MathSciNet* review of Philipp Lücke “ Σ_1^1 -definability at uncountable regular cardinals” (MR2987148)
- *MathSciNet* review of Spencer Unger “Fragility and indestructibility of the tree property” (MR2945572)
- *MathSciNet* review of Sy-David Friedman “BPFA and inner models” (MR2857735).
- *MathSciNet* review of Andrew Brooke-Taylor “Indestructibility of Vopěnka’s Principle” (MR2805294).
- *MathSciNet* review of Thilo Weinert “The Bounded Axiom A Forcing Axiom” (MR2560728).
- *MathSciNet* review of Sy-David Friedman “Forcings which preserve large cardinals” (MR2752958).
- *MathSciNet* review of Arthur Apter “Indestructibility, instances of strong compactness, and level by level inequivalence” (MR2726733).

SERVICE TO DEPARTMENT AND UNIVERSITY

- Department Assessment Committee chair, Fall 2024–
- Panelist, VCU College of Humanities and Sciences Mentoring Workshop (Oct 18, 2024)
- Associate Chair / Director of Undergraduate Studies, Department of Mathematics and Applied Mathematics (Summer 2022 –Summer 2024)
- Executive Committee (department), Fall 2018–Spring 2024
- Faculty Senate, Fall 2019 to Spring 2022.
- Promotion and Tenure committees (department; Fall 2021, Fall 2023, Fall 2024, Fall 2025)
- 3rd-year review committees (one as chair), 2018-2019; 2021.
- Postdoctoral hiring committee (2017-2018).
- Department Undergraduate Affairs Committee: 2014-2015, 2015-2016 (chair), 2016-2017 (Credentials Subcommittee), 2017-2018, 2022-.
- Department Assessment Committee: 2016-2017, 2024-.
- Department Colloquium Committee: 2014-2015, 2024-.
- Department Majors' Capstone Committee: 2014-2015.
- Hiring Committee for department chair, Department of Mathematics and Applied Mathematics: 2013-2014.
- College of Humanities and Sciences Undergraduate Academic Committee: 2013-2014.
- Co-organizer, Analysis, Logic, and Physics Seminar: Spring 2013 to Fall 2019, 2024-2025
- Department Undergraduate Curriculum Committee: 2012-2013.
- Department Undergraduate Credentials Committee: 2012-2013.

THESIS COMMITTEES

- PhD committee for Noah Schoem, U. of Illinois, Chicago (April 2021)
- PhD thesis defense jury for Rahman Mohammadpour, U. of Paris (September 2020)
- Master's Thesis committee member for Alexander Bradford (VCU, August 2016)
- PhD Thesis committee for Giorgio Audrito (U. of Turin, Italy, March 2016)
- Master's Thesis committee member for Alexi Hoeft (VCU, May 2013)
- Master's Thesis committee member for Owen Puffenberger (VCU, April 2013)