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Monroe Eskew

Curriculum Vitæ

Education

10.09.2014 **Ph.D**, *Mathematics*, University of California, Irvine, USA.

11.06.2009 **MS**, *Mathematics*, University of California, Irvine, USA.

14.05.2005 **BA**, *Mathematics and Philosophy*, Rice University, USA.

Employment

09.2022–present **Part-time Lecturer**, *Mathematics*, University of Applied Sciences Wiener Neustadt.

09.2017–present **Postdoctoral Researcher**, *University of Vienna*, Kurt Gödel Research Center, Faculty of Mathematics.

09.2015–08.2017 **Visiting Assistant Professor**, *Virginia Commonwealth University*, Department of Mathematics and Applied Mathematics.

10.2014–06.2015 **Postdoctoral Researcher**, *University of Tsukuba*, Department of Mathematics.

08.2010–06.2014 **Teaching Assistant**, *University of California, Irvine*, Department of Mathematics.

Language competency

- English (native tongue)
- German (B2 level)

Publications

Link to all papers: arxiv.org/a/eskew_m_1.html

1. *Dense ideals* (with Yair Hayut). Submitted.
2. *Chang's Conjectures and Easton collapses* (with Masahiro Shioya). Submitted.
3. *Saturated ideals from Laver collapses.* to appear in the *Tsukuba Journal of Mathematics.*
4. *Weak saturation properties and side conditions.* Ann. Pure Appl. Logic 175 (2024), no.1, Paper No. 103356.
5. *Mutually embeddable models of ZFC* (with Sy Friedman, Yair Hayut, and Farmer Schlutzenberg). Ann. Pure Appl. Logic (2023).

6. *Strong independence and its spectrum* (with Vera Fischer). Adv. Math. 430 (2023), Paper No. 109206.
7. *Compactness versus hugeness at successor cardinals* (with Sean Cox). J. Math. Log. 23 (2023), no. 1, Paper No. 2250016, 16 pp.
8. *Incompatibility of generic hugeness principles.* Bull. Symb. Log. 29 (2023), no. 2, 157–162.
9. *Integration with filters* (with Emanuele Bottazzi). J. Log. Anal. 14 (2022), Paper No. 1, 54 pp.
10. *Embeddings into outer models* (with Sy Friedman). J. Symb. Log. 87 (2022), no. 4, 1301–1321.
11. *Global Chang's Conjecture and singular cardinals* (with Yair Hayut). Eur. J. Math.7 (2021), no.2, 435–463.
12. *Nonregular ideals.* Fund. Math. 254 (2021), no. 2, 121–131. DOI: 10.4064/fm960-9-2020
13. *On a strengthening of Jónssonness for* $\aleph_\omega$. Math. Log. Quart. 66 (2020), no. 2, 235-238.
14. *Local saturation and square everywhere.* J. Math. Log.20 (2020), no.3, 2050019, 33 pp.
15. *Generic large cardinals as axioms.* Rev. Symb. Log. 13 (2020), no. 2, 375–387.
16. *More rigid ideals.* Israel J. Math. 233 (2019), no. 1, 225–247.
17. *Strongly proper forcing and some problems of Foreman* (with Sean Cox). Trans. Amer. Math. Soc. 371 (2019), no. 7, 5039–5068.
18. *Rigid ideals* (with Brent Cody). Israel J. Math. 224 (2018), no. 1, 343–366.
19. *On the consistency of local and global versions of Chang's Conjecture* (with Yair Hayut). Trans. Amer. Math. Soc. 370 (2018), no. 4, 2879–2905.
20. *Some mutually inconsistent generic large cardinals.* RIMS Kokyuroku No. 1949 (2015), 24-33.
21. *Dense ideals and cardinal arithmetic.* J. Symb. Log. 81 (2016), no. 3, 789–813.
22. *Coherent forests.* Proc. Amer. Math. Soc. 143 (2015), no. 6, 2705–2717.

Projects and awards

1. Co-investigator with Grigor Sargsyan on FWF-NCN (Austrian and Polish Science Foundations) Project 1355423, "Generic large cardinals and determinacy." €679,003.
2. Lead investigator on Austrian Science Foundation (FWF) Project P34603, "Trouble in Cantor's Paradise." Vienna, Austria. 01.08.2021–31.07.2025. €323,358.
3. Co-investigator on Vera Fischer's FWF START-Programm Project Y1012, "Infinitary Combinatorics and Definability." Vienna, Austria. January 2020–July 2021.
4. Co-investigator on Sy-David Friedman's FWF Project P28420, "The Hyperuniverse Programme." Vienna, Austria. September 2017–July 2020.
5. Co-investigator on Virginia Commonwealth University *Presidential Research Quest Fund* Project, "Open problems in the foundations of mathematics." Co-applicant with Sean Cox and Brent Cody. Richmond, Virginia, USA. Fall 2016–Summer 2017. $40,000
6. International Research Fellow of the Japan Society for the Promotion of Science (JSPS) under the project, "Forcing and Large Cardinals." Host professor: Mashiro Shioya. Tsukuba, Japan. October 2014–June 2015. Approximately $30,000.
7. Invited Scientific Researcher. Fields Institute. Toronto, Canada. Fall 2012. $3000.
8. GAANN Fellowship (Graduate Assistantships for Areas of National Need), US Department of Education. Irvine, California, USA. Fall 2008–Spring 2010. $30,000.

Selected invited talks

1. "Dense ideals and partitions." Cornell University Logic Seminar. October 2024.
2. "Dense ideals." Three-part lecture series. Research Institue for Mathematical Sciences, University of Kyoto. October 2024.

3. “Dense ideals.” Plenary talk. ASL North American Annual Meeting. Ames, Iowa. May 2024.
4. “Uncountable universal pseudotrees.” Notre Dame logic seminar. May 2024.
5. “Dense ideals.” Perspectives on Set Theory Conference, Polish National Institute of Mathematics, Warsaw. November 2023.
6. “Higher independence spectra.” Sixth workshop on generalized Baire spaces, TU Wien. July 2023.
7. “Chang’s conjecture for triples revisited.” Young Set Theory Workshop, Münster. June 2023.
8. “The approximation property and generic embeddings.” CUNY set theory seminar. April 2021.
9. “Global Chang’s Conjecture.” Mid-Atlantic Mathematical Logic Seminar. Richmond, Virginia, USA. April 2017.
10. “Precipitous ideals.” Lecture series for the UC Irvine Graduate Summer School in Set Theory. July 2015.

Professional service

1. Co-organizer: Workshop on Set Theory, Erwin Schrödinger Institute. July 4–8, 2022.
2. Referee service for the following journals:
   (a) Algebra Universalis
   (b) Archive for Mathematical Logic
   (c) Bulletin of Symbolic Logic
   (d) Israel Journal of Mathematics
   (e) Journal of Mathematical Logic
   (f) Journal of Symbolic Logic
   (g) Journal of the Mathematical Society of Japan
   (h) Mathematical Logic Quarterly
   (i) Monatshefte für Mathematik
   (j) Proceedings of the American Mathematical Society
   (k) Review of Symbolic Logic
3. MathSciNet reviewer.

Thesis Supervision

1. “Gödel‘s Second Incompleteness Theorem,” by Timo Rydholm. Bacherlor’s thesis for the Mathematics degree at the University of Vienna. May 2020.
2. PhD of Kevin Krecisz. University of Vienna. Ongoing.

Teaching Experience

- Instructor for “Mathematics for Business and Economics” at the Fachhochschule Wiener Neustadt. Flipped-classroom format. Winter Semester 2022—2024.
- Taught the following Master’s courses at the University of Vienna:
  - Introductory seminar on Mathematical Logic. Summer Semester 2019.
  - Axiomatic Set Theory 2. Winter Semester 2019.
- Taught the following courses at Virginia Commonwealth University between Fall 2015 and Spring 2017:
  - Calculus II
  - Calculus III (x4)
  - Linear Algebra (x2)
  - Special Topics Course: Ultrafilters and Applications

- Served as a Teaching Assistant for the following courses at the University of California, Irvine, between Fall 2010 and Spring 2014. Duties included leading discussion section, holding office hours, writing and administering examinations, and providing feedback to student work.
  - Calculus (x6)
  - Math for Economists
  - Linear Algebra (x4)
  - Introduction to Abstract Math
  - Rings and Fields
  - Elementary Analysis (x2)
  - Complex Analysis
  - Modern Geometry
  - History of Mathematics
  - Introduction to Logic (x2)
  - Introduction to Cryptology
  - Probability and Stochastic Processes