

# Monroe Eskew

## *Curriculum Vitæ*

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### Education

- 2014 **Ph.D, Mathematics**, University of California, Irvine, USA.
- 2009 **MS, Mathematics**, University of California, Irvine, USA.
- 2005 **BA, Mathematics and Philosophy**, Rice University, USA.

### Employment

- 2017-present **Postdoctoral Researcher**, *University of Vienna*, Kurt Gödel Research Center, Faculty of Mathematics.
- 2015-2017 **Visiting Assistant Professor**, *Virginia Commonwealth University*, Department of Mathematics and Applied Mathematics.
- 2014-2015 **Postdoctoral Researcher**, *University of Tsukuba*, Department of Mathematics.
- 2010-2014 **Teaching Assistant**, *University of California, Irvine*, Department of Mathematics.

### Main areas of research

My research interests lie in logic, infinitary combinatorics, and foundations of mathematics. I focus mainly on large-cardinal-like properties of small cardinals and the extent to which these can be realized. Recently I have also worked on applications of logic to analysis.

### Projects and awards

1. Lead investigator on Austrian Science Foundation (FWF) Project P34603, "Trouble in Cantor's Paradise." Vienna, Austria. August 2021–present.
2. Co-investigator on Vera Fischer's FWF START-Programm Project Y1012, "Infinitary Combinatorics and Definability." Vienna, Austria. January 2020–July 2021.
3. Co-investigator on Sy-David Friedman's FWF Project P28420, "The Hyperuniverse Programme." Vienna, Austria. September 2017–July 2020.

4. Co-investigator on Virginia Commonwealth University PRQF Project, “Open problems in the foundations of mathematics.” Co-applicant with Sean Cox and Brent Cody. Richmond, Virginia, USA. Fall 2016–Summer 2017.
5. 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.
6. Invited Scientific Researcher. Fields Institute. Toronto, Canada. Fall 2012.
7. GAANN Fellowship (Graduate Assistantships for Areas of National Need), US Department of Education. Irvine, California, USA. Fall 2008–Spring 2010.

## Papers

1. *Mutually embeddable models of ZFC* (with Sy-David Friedman, Yair Hayut, and Farmer Schlutzenberg). Submitted.
2. *Integration with filters* (with Emanuele Bottazzi). Submitted.
3. *Strong independence and its spectrum* (with Vera Fischer). Submitted.
4. *Incompatibility of generic hugeness principles*. Submitted.
5. *Compactness versus hugeness at successor cardinals* (with Sean Cox). Submitted.
6. *Embeddings into outer models* (with Sy-David Friedman). Submitted.
7. *Nonregular ideals*. *Fund. Math.* 254 (2021), no. 2, 121–131.
8. *On a strengthening of Jónssonness for  $\aleph_\omega$* . *Math. Log. Quart.* 66 (2020), no. 2, 235–238.
9. *Local saturation and square everywhere*. *J. Math. Log.* 20 (2020), no. 3, 2050019, 33 pp.
10. *Global Chang’s Conjecture and singular cardinals* (with Yair Hayut). *Eur. J. Math.* 7 (2021), no. 2, 435–463.
11. *Generic large cardinals as axioms*. *Rev. Symb. Log.* 13 (2020), no. 2, 375–387.
12. *More rigid ideals*. *Israel J. Math.* 233 (2019), no. 1, 225–247.
13. *Strongly proper forcing and some problems of Foreman* (with Sean Cox). *Trans. Amer. Math. Soc.* 371 (2019), no. 7, 5039–5068.
14. *Rigid ideals* (with Brent Cody). *Israel J. Math.* 224 (2018), no. 1, 343–366.
15. *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.
16. *Some mutually inconsistent generic large cardinals*. *RIMS Kokyuroku No.* 1949 (2015), 24–33.
17. *Dense ideals and cardinal arithmetic*. *J. Symb. Log.* 81 (2016), no. 3, 789–813.
18. *Coherent forests*. *Proc. Amer. Math. Soc.* 143 (2015), no. 6, 2705–2717.

## Teaching Experience

- Served as a Teaching Assistant for the following courses at the University of California, Irvine. 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
- Taught the following courses at Virginia Commonwealth University:
  - Calculus II
  - Calculus III (x4)
  - Linear Algebra (x2)
  - Special Topics Course: Ultrafilters and Applications
- Taught the following Masters courses at the University of Vienna:
  - Proseminar in Mathematical Logic
  - Axiomatic Set Theory II