

SEBASTIEN VASEY

svasey.github.io

EMPLOYMENT

Harvard University
Benjamin Peirce Fellow

July 2017-June 2020

EDUCATION

Carnegie Mellon University
Ph.D. in Mathematical Sciences

Aug. 2012-May 2017

- Thesis advisor: Rami Grossberg
- Thesis title: *Superstability and categoricity in abstract elementary classes* (572 pages).
Received the Sacks prize for best thesis in mathematical logic around the world.

Carnegie Mellon University
Master exchange year (was the only EPFL master student selected to go.)

Aug. 2011-May 2012

Swiss Federal Institute of Technology (EPFL)
B.Sc. in “Systèmes de communication” (ranked first out of 27 students).

Sep. 2008-June 2011

PAPERS

1. Sebastien Vasey, *Indiscernible extraction and Morley sequences*, Notre Dame Journal of Formal Logic **58** (2017), no. 1, 127–132.
2. Will Boney, Rami Grossberg, Alexei Kolesnikov, and Sebastien Vasey, *Canonical forking in AECs*, Annals of Pure and Applied Logic **167** (2016), no. 7, 590–613.
3. Sebastien Vasey, *Forking and superstability in tame AECs*, The Journal of Symbolic Logic **81** (2016), no. 1, 357–383.
4. Will Boney and Sebastien Vasey, *Tameness and frames revisited*, The Journal of Symbolic Logic **82** (2017), no. 3, 995–1021.
5. Sebastien Vasey, *Infinitary stability theory*, Archive for Mathematical Logic **55** (2016), nos. 3–4, 562–592.
6. Sebastien Vasey, *Building independence relations in abstract elementary classes*, Annals of Pure and Applied Logic **167** (2016), no. 11, 1029–1092.
7. Will Boney and Sebastien Vasey, *Chains of saturated models in AECs*, Archive for Mathematical Logic **56** (2017), no. 3, 187–213.
8. Sebastien Vasey, *Shelah’s eventual categoricity conjecture in universal classes: part I*, Annals of Pure and Applied Logic **168** (2017), no. 9, 1609–1642.
9. Rami Grossberg and Sebastien Vasey, *Equivalent definitions of superstability in tame abstract elementary classes*, The Journal of Symbolic Logic **82** (2017), no. 4, 1387–1408.

10. Monica VanDieren and Sebastien Vasey, *Symmetry in abstract elementary classes with amalgamation*, Archive for Mathematical Logic **56** (2017), no. 3, 423–452.
11. Sebastien Vasey, *Shelah’s eventual categoricity conjecture in tame AECs with primes*, Mathematical Logic Quarterly **64** (2018), nos. 1–2, 25–36.
12. Sebastien Vasey, *Building prime models in fully good abstract elementary classes*, Mathematical Logic Quarterly **63** (2017), nos. 3–4, 193–201.
13. Will Boney, Rami Grossberg, Michael Lieberman, Jiří Rosický, and Sebastien Vasey, *μ -Abstract elementary classes and other generalizations*, Journal of Pure and Applied Algebra **220** (2016), no. 9, 3048–3066.
14. Sebastien Vasey, *Downward categoricity from a successor inside a good frame*, Annals of Pure and Applied Logic **168** (2017), no. 3, 651–692.
15. Will Boney and Sebastien Vasey, *A survey on tame abstract elementary classes*, Beyond First Order Model Theory (José Iovino ed.), CRC Press (2017), 353–427.
16. Sebastien Vasey, *Shelah’s eventual categoricity conjecture in universal classes: part II*, Selecta Mathematica **23** (2017), no. 2, 1469–1506.
17. Sebastien Vasey, *Saturation and solvability in abstract elementary classes with amalgamation*, Archive for Mathematical Logic **56** (2017), nos. 5–6, 671–690.
18. Will Boney and Sebastien Vasey, *Good frames in the Hart-Shelah example*, Archive for Mathematical Logic **57** (2018), nos. 5–6, 687–712.
19. Sebastien Vasey, *Toward a stability theory of tame abstract elementary classes*, Journal of Mathematical Logic **18** (2018), no. 2, 1850009 (34 pages).
20. Will Boney, Rami Grossberg, Monica VanDieren, and Sebastien Vasey, *Superstability from categoricity in abstract elementary classes*, Annals of Pure and Applied Logic **168** (2017), no. 7, 1383–1395.
21. Sebastien Vasey, *Quasiminimal abstract elementary classes*, Archive for Mathematical Logic **57** (2018), nos. 3–4, 299–315.
22. Sebastien Vasey, *On the uniqueness property of forking in abstract elementary classes*, Mathematical Logic Quarterly **63** (2017), no. 6, 598–604.
23. Michael Lieberman, Jiří Rosický, and Sebastien Vasey, *Universal abstract elementary classes and locally multipresentable categories*, Proceedings of the American Mathematical Society **147** (2019), no. 3, 1283–1298.
24. Sebastien Vasey, *Tameness from two successive good frames*, Israel Journal of Mathematics **235** (2020), 465–500.
25. Michael Lieberman, Jiří Rosický, and Sebastien Vasey, *Internal sizes in μ -abstract elementary classes*, Journal of Pure and Applied Algebra **223** (2019), no. 10, 4560–4582.
26. Saharon Shelah and Sebastien Vasey, *Abstract elementary classes stable in \aleph_0* , Annals of Pure and Applied Logic **169** (2018), no. 7, 565–587.
27. Marcos Mazari-Armida and Sebastien Vasey, *Universal classes near \aleph_1* , The Journal of Symbolic Logic **83** (2018), no. 4, 1633–1643.
28. Will Boney and Sebastien Vasey, *Structural logic and abstract elementary classes with intersections*, Bulletin of the Polish Academy of Sciences (Mathematics) **67** (2019), 1–17.

29. Michael Lieberman, Jiří Rosický, and Sebastien Vasey, *Forking independence from the categorical point of view*, *Advances in Mathematics* **346** (2019), 719–772.
30. Nathanael Ackerman, Will Boney, and Sebastien Vasey, *Categoricity in multiuniversal classes*, *Annals of Pure and Applied Logic* **170** (2019), no. 11, 102712 (15 pages).
31. Sebastien Vasey, *The categoricity spectrum of large abstract elementary classes*, *Selecta Mathematica* **25** (2019), no. 5, 65 (51 pages).
32. Saharon Shelah and Sebastien Vasey, *Categoricity and multidimensional diagrams*, 63 pages. Submitted.
33. Sebastien Vasey, *On categoricity in successive cardinals*, 19 pages. Accepted by The Journal of Symbolic Logic.
34. Michael Lieberman, Jiří Rosický, and Sebastien Vasey, *Sizes and filtrations in accessible categories*, 27 pages. Accepted by the Israel Journal of Mathematics.
35. Michael Lieberman, Jiří Rosický, and Sebastien Vasey, *Cellular categories and stable independence*, 22 pages. Submitted.
36. Sebastien Vasey, *Accessible categories, set theory, and model theory: an invitation*, 68 pages. Submitted.
37. Michael Lieberman, Jiří Rosický, and Sebastien Vasey, *Hilbert spaces and C^* -algebras are not finitely concrete*, 7 pages. Submitted.
38. Michael Lieberman, Leonid Positselski, Jiří Rosický, and Sebastien Vasey, *Cofibrant generation of pure monomorphisms*, 14 pages. Submitted.

HONORS

National Science Foundation Research Grant

Spring 2020

Total value: \$155,000.

Derek Bok certificate of excellence in teaching (three times)

Fall 2018-2019

Acknowledges excellence of work with students and strength of commitment to teaching. Awarded for a score of 4.5/5 or more in overall student evaluations for three different undergraduate classes.

2017 Sacks prize

August 2018

Awarded annually by the Association for Symbolic Logic for the best thesis in mathematical logic worldwide.

Guy C. Berry graduate research award

April 2017

Awarded annually since 2005 by the Mellon College of Science. This is the first time the prize was given to a mathematics student.

Doc.Mobility fellowship

Sep. 2014-Dec. 2015

From the Swiss National Science Foundation. Covered tuition and stipends for three semesters. Approximate total value: \$63,000.

Nine Association for Symbolic Logic travel grants

2014-2017

Approximate total value: \$4,500.

TALKS

Plenary

2018: ASL 2018 Winter Meeting (with JMM).

Invited

2020: University of Cambridge; IST Austria; University of Utrecht.

2019: University of Münster; University of Maryland; Universität Bonn; University of Michigan Mathematics Colloquium; Some directions in model theory (16th CLMPST, Prague); University of Maryland Logic Seminar.

2018: Seminář z algebry (Masaryk University, Brno); University of Illinois at Chicago Logic Seminar; Accessible categories and their connections (Leeds); Snapshots of Math at Harvard.

2017: Seminář z algebry (Masaryk University, Brno); Northeast Regional Model Theory Day (New York).

2016: Cornell Logic Seminar.

2015: Rutgers Logic Seminar; Harvard Logic Colloquium; University of Illinois at Chicago Logic Seminar; Special session on beyond first-order model theory (2015 JMM).

2014: University of Maryland Logic Seminar; City University of New York model theory seminar; NIMS, S. Korea Classification Theory Workshop.

TEACHING EXPERIENCE

At Harvard University

July 2017-June 2020

- **Sole instructor:** Algebra II: rings and fields; Combinatorics; Mathematical logic I; Probability theory; Sets, groups, and topology; Set theory I; Model theory for abstract elementary classes (graduate).
- **Section instructor:** Linear algebra and differential equations; Multivariable calculus.
- **Supervised summer reading:** Elliot Parlin, *Topics in infinitary combinatorics*.

At Carnegie Mellon University

Aug. 2012-May 2017

- **Sole instructor:** Concepts of mathematics.
- **Teaching assistant:** Concepts of mathematics (three times); Differential and integral calculus (twice).
- **Grader:** Set theory; Basic logic.

At EPFL

Sep. 2010-June 2011

- **Undergraduate teaching assistant:** Discrete structures; Information technology project; Advanced topics in programming.

SERVICE

Organizer of the Harvard logic seminar Spring 2019

Serving/Served on the following committees at Harvard

- Graduate qualifying exam Spring 2018
- Intensive undergraduate advising Spring 2018-Spring 2019
- Graduate admission Fall 2019

Reviewer and referee

- Reviewer for the Israel Science Foundation (research grant proposal).
- Referee for Acta Analytica; Annals of Pure and Applied Logic; Beyond First-order Model Theory (vol. 2); The Israel Journal of Mathematics; The Journal of Mathematical Logic; Logical Methods in Computer Science; Mathematical Logic Quarterly; Proceedings of the American Mathematical Society.
- Reviewer for Mathematical Reviews and zbMATH.

Contributor for the “Solved and unsolved problems” section of the Newsletter of the European Mathematical Society.

MEMBERSHIPS

American Mathematical Society 2012-present

Association for Symbolic Logic 2012-present

LANGUAGES

French (native); **English** (fluent); **German** (intermediate).

CITIZENSHIPS

French and Swiss citizen; US permanent resident.