

# SEBASTIEN VASEY

(+1) 617 388 5103 • sebv@math.harvard.edu • math.harvard.edu/~sebv/

## 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,  *$\mu$ -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  $\mu$ -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.