

CURRICULUM VITAE

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PERSONAL DATA

Born December 25, 1972, in Kötzing, Germany.

German Citizen, U.S. Permanent Resident.

EDUCATION

- University of Illinois at Urbana-Champaign, 1997–2001
Ph.D., 2001; M.S., 1999. Advisor: Lou van den Dries.
- Brandeis University, 1996–1997
Non-degree graduate studies.
- Universität Passau, Germany, 1993–1996
Vordiplom in Computer Science, with a minor in Mathematics, 1995.

EMPLOYMENT

- University of California, Los Angeles: Professor (2011–present); Associate Professor (2007–2011).
- University of Illinois at Chicago: Associate Professor (2006–2007); Assistant Professor (2003–2006).
- Mathematical Sciences Research Institute, Berkeley: Postdoctoral Member (Spring 2003).
- University of California at Berkeley: Charles B. Morrey Jr. Visiting Research Assistant Professor (2001–2002).

AWARDS AND GRANTS

- National Science Foundation Grants DMS-0303618 (2003–2006), DMS-0556197 (2006–2009), DMS-0969642 (2010–2013).
- University of Illinois at Chicago Campus Research Board Grant (2006–2007).
- Gerald E. Sacks Prize for best Ph.D. thesis in logic worldwide, Association for Symbolic Logic, 2001.

- Kuo-Tsai Chen Prize for scholastic achievement by a graduate student, Department of Mathematics, University of Illinois at Urbana-Champaign, 1999.
- Deutscher Akademischer Austauschdienst, scholarship for study abroad, 1996.
- Undergraduate scholarship of the Bayerische Begabtenförderung, 1993.

PUBLICATIONS AND PREPRINTS

1. *Transseries and Todorov-Vernaev's asymptotic fields* (with I. Goldbring), submitted. (19 pp.)
2. *3-manifold groups* (with S. Friedl and H. Wilton). (108 pp.)
3. *Towards a model theory for transseries*, (with L. van den Dries and J. van der Hoeven), submitted. (32 pp.)
4. *Vapnik-Chervonenkis density in some theories without the independence property*, I (with A. Dolich, D. Haskell, D. Macpherson, and S. Starchenko), submitted. (59 pp.)
5. *An effective Weierstrass Division Theorem*, submitted. (68 pp.)
6. *Vapnik-Chervonenkis density in some theories without the independence property*, II (with A. Dolich, D. Haskell, D. Macpherson, and S. Starchenko), Notre Dame J. Form. Log., to appear. (53 pp.)
7. *3-manifold groups are virtually residually p* (with S. Friedl), Mem. Amer. Math. Soc., to appear. (97 pp.)
8. *Logarithms of iteration matrices, and proof of a conjecture by Shadrin and Zvonkine*, J. Combin. Theory Ser. A **119** (2012), 627–654.
9. *Algorithms for computing saturations of ideals in finitely generated commutative rings*, appendix to the paper: B. Poonen, *Automorphisms mapping a point into a subvariety*, J. Algebraic Geom. **20** (2011), 785–794.
10. *Residual properties of graph manifold groups* (with S. Friedl), Topology Appl. **158** (2011), 1179–1191.
11. *A criterion for HNN extensions of finite p -groups to be residually p* (with S. Friedl), J. Pure Appl. Algebra **215** (2011), 2280–2289.
12. *Definable versions of theorems by Kirszbraun and Helly* (with A. Fischer), Proc. London Math. Soc. **102** (2011), 468–502.
13. *Degree bounds for Gröbner bases in algebras of solvable type* (with A. Leykin), J. Pure Appl. Algebra **213** (2009), 1578–1605.
14. *Lefschetz extensions, tight closure, and big Cohen-Macaulay algebras* (with H. Schoutens), Israel J. Math. **161** (2007), 221–310.
15. *Finite generation of symmetric ideals* (with C. Hillar), Trans. Amer. Math. Soc. **359** (2007), 5171–5192.
16. *Finiteness theorems in stochastic integer programming* (with R. Hemmecke), Found. Comput. Math. **7** (2007), 183–227.
17. *Strongly minimal groups in the theory of compact complex spaces* (with R. Moosa and T. Scanlon), J. Symbolic Logic **71** (2006), 529–552.

18. *Differentially algebraic gaps* (with L. van den Dries and J. van der Hoeven), *Selecta Math.* **11** (2005), 247–280.
19. *Bounds and definability in polynomial rings*, *Quart. J. Math.* **56** (2005), 263–300.
20. *Reduction mod p of standard bases*, *Comm. Algebra* **33** (2005), 1635–1661.
21. *Asymptotic differential algebra* (with L. van den Dries), in: O. Costin, M. D. Kruskal, A. Macintyre (eds.), *Analyzable Functions and Applications*, *Contemp. Math.* **373**, Amer. Math. Soc., Providence, RI (2005), 49–85.
22. *Liouville closed H -fields* (with L. van den Dries), *J. Pure Appl. Algebra* **197** (2005), 83–139.
23. *Orderings of monomial ideals* (with W.-Y. Pong), *Fund. Math.* **181** (2004), 27–74.
24. *Ideal membership in polynomial rings over the integers*, *J. Amer. Math. Soc.* **17** (2004), 407–441.
25. *Some remarks about asymptotic couples*, in: F.-V. Kuhlmann, S. Kuhlmann, M. Marshall (eds.), *Valuation Theory and its Applications, II*, *Fields Institute Publications* **33**, AMS, Providence, RI (2003), 7–18.
26. *H -fields and their Liouville extensions* (with L. van den Dries), *Math. Z.* **242** (2002), 543–588.
27. *Closed asymptotic couples* (with L. van den Dries), *J. Algebra* **225** (2000), 309–358.

INVITED LECTURES AT CONFERENCES

- Workshop on *Neostability Theory*, Banff International Research Station, Banff, AB, January/February 2012.
- *O-minimal Structures and Real Analytic Geometry Retrospective Workshop*, Fields Institute, Toronto, ON, August 2011.
- *Logic Colloquium 2011*, Special Session in Model Theory, Barcelona, Spain, July 2011.
- *Logicum Urbanae Lugduni*, Lyon, France, July 2009.
- *Third International Workshop in Differential Algebra and Related Topics (DART III)*, Rutgers University at Newark, NJ, November 2008.
- Workshop on *Model Theory and Computable Model Theory*, University of Florida, Gainesville, FL, February 2007.
- *Canadian Mathematical Society Meeting Summer 2006*, University of Calgary, Calgary, AB, June 2006.
- Workshop on *Model Theory, Algebraic and Analytic Geometry*, Newton Institute, Cambridge, UK, July 2005.
- *Association for Symbolic Logic Winter Meeting*, Plenary lecture, Atlanta, GA, January 2005.
- *Logic Colloquium 2004*, Special Session in Model Theory, Torino, Italy, July 2004.
- Workshop on *Model Theory and Complex Analytic Geometry*, Mathematisches Forschungsinstitut Oberwolfach, Germany, July 2004.

- Workshop on *Interactions between Model Theory and Geometry*, Banff International Research Station, Banff, AB, March 2004.
- *Midwest Model Theory Meeting*, Toronto, ON, November 2003.
- *Logic Colloquium 2003*, Plenary lecture, Helsinki, Finland, August 2003. (cancelled)
- *American Mathematical Society Sectional Meeting*, Plenary lecture, Courant Institute, New York, April 2003.
- Workshop on *Computational Commutative Algebra*, Mathematical Sciences Research Institute, Berkeley, CA, March 2003.
- *Colloquium Logicum 2002*, Ph.D. colloquium, Universität Münster, Germany, August 2002.
- Workshop on *Analyzable Functions and Applications*, International Centre for Mathematical Sciences, Edinburgh, UK, June 2002.
- *Euro-Conference in Model Theory and Applications*, Ravello, Italy, May 2002.
- *Special Session in Model Theory*, First Joint Meeting of the American Mathematical Society and the Société Mathématique de France, Lyon, France, July 2001.
- *Second Annual Colloquiumfest*, University of Saskatchewan, Saskatoon, SK, March 2001.
- *Midwest Model Theory Meeting*, University of Wisconsin, Madison, WI, November 2000.
- Workshop on *Model Theory of Henselian Valued Fields*, International Centre for Mathematical Sciences, Edinburgh, UK, May 1999.

INVITED LECTURES IN SEMINARS AND COLLOQUIA

- *CUNY Logic Workshop*, City University of New York, April 2011.
- *Oberseminar Logik*, Humboldt-Universität zu Berlin, December 2010.
- *Oberseminar Analysis*, Christian-Albrechts-Universität zu Kiel, November 2010.
- *Kolloquium*, Institut für Mathematische Logik und Grundlagenforschung, Universität Münster, November 2009.
- *Department Colloquium*, California State University at Dominguez Hills, October 2009.
- *Logic Seminar*, University of Notre Dame, September 2009.
- *UIC Logic Seminar*, University of Illinois at Chicago, September 2009.
- *UCLA Mathematics Colloquium*, University of California, Los Angeles, May 2009.
- *Pure Math Colloquium*, University of Waterloo, Waterloo, ON, January 2009.
- *Kolloquium*, Institut für Mathematische Logik und Grundlagenforschung, Universität Münster, Juni 2008.
- *Kolloquium*, Universität Freiburg, Juni 2008.
- *Berkeley Logic Colloquium*, University of California at Berkeley, March 2008.
- *UCLA Logic Colloquium*, University of California, Los Angeles, March 2007.
- *Seminar*, Ohio State University, Columbus, OH, January 2007.
- *Logic Seminar*, Cornell University, Ithaca, NY, November 2006.

- *Mathematics Colloquium*, Middlebury College, Middlebury, VT, October 2006.
- *Departmental Colloquium*, University of Wisconsin, Madison, WI, October 2006.
- *Southern Wisconsin Logic Seminar*, University of Wisconsin, Madison, WI, April 2006.
- *Logic Seminar*, University of Notre Dame, April 2005.
- *Model Theory Seminar*, McMaster University, Hamilton, ON, February 2005.
- *Discrete Mathematics Seminar*, University of California at Davis, October 2002.
- *Mathematics Colloquium*, University of Illinois at Chicago, February 2002.
- *Logic Seminar*, University of Notre Dame, February 2002.
- *Berkeley Logic Colloquium*, University of California at Berkeley, October 2001.
- *MIT Logic Seminar*, Massachusetts Institute of Technology, Cambridge, MA, May 2001.
- *Logic Seminar*, Wesleyan University, Middletown, CT, April 2001.
- Lectures in the *Seminar on Hardy fields*, University of Saskatchewan, Saskatoon, SK, March 2001.
- *Algebraic Geometry Seminar*, Princeton University, February 2001.
- *Southern Wisconsin Logic Seminar*, University of Wisconsin, Madison, WI, January 2001.
- *Forschungsseminar Prof. Prestel*, Universität Konstanz, Germany, July 1999.
- Lecture series in the *Oberseminar Prof. Knebusch*, Universität Regensburg, Germany, June–July 1999.

CONTRIBUTED TALKS

- *Association for Symbolic Logic Winter Meeting*, Special Session in Model Theory, New Orleans, LA, January 2001.
- *Association for Symbolic Logic Annual Meeting*, Special Session in Model Theory, Urbana, IL, June 2000.
- *International Conference and Workshop on Valuation Theory*, University of Saskatchewan, Saskatoon, SK, August 1999.

RESEARCH VISITS

- Humboldt-Universität Berlin, Germany, August–December 2010.
- Fields Institute, Toronto, ON, January–March 2009 and June 2009.
- Université Paris Sud, Orsay, France, July 2006.
- Newton Institute, Cambridge University, UK, May–July 2005.
- Université Paris Sud, Orsay, France, July 2001.
- University of Saskatchewan, March 2001.
- Universität Regensburg, Germany, June/July 1999.

PROFESSIONAL SERVICE

- Refereeing for *Algebra Universalis*, *Amer. Math. Monthly*, *Ann. Pure Appl. Logic*, *Appl. Anal. and Discrete Math.*, *Arch. Math. Logic*, *Fund. Math.*, *Israel J. Math.*, *J. Log. Anal.*, *J. Symbolic Comput.*, *J. Symbolic Logic*, *Notre Dame J. Formal Logic*, *Real Anal. Exchange*, *Proc. Amer. Math. Soc.*, *Theor. Comput. Sci.*, *Trans. Amer. Math. Soc.*, Springer-Verlag book program, National Science Foundation, Simons Foundation.
- Reviewing for *Mathematical Reviews*.
- Member of the editorial board of *Order* (2005–present).
- Member of the *Committee on Logic in North America* of the Association for Symbolic Logic (2012–present).
- Member of the program committee for the Annual Meeting 2007 of the Association for Symbolic Logic.
- Organizer of a winter school during the special semester on o-minimal structures and real analytic geometry at the Fields Institute, Toronto, January 2009.
- Organizer of the Model Theory Seminar at UIC, Spring 2004–Fall 2006.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Association for Symbolic Logic, since 1998.
- American Mathematical Society, since 1996.
- Deutsche Mathematikervereinigung, since 2004.