

## Machiel van Frankenhuysen

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Born January 7, 1967 in Roermond, The Netherlands. Dutch citizenship.

**Education**

- Ph.D., Katholieke Universiteit Nijmegen, 1995. Advisors: Prof. Dr. A.C.M. van Rooij and Dr. R.A. Kortram.
- Doctoraal examen, Katholieke Universiteit Nijmegen, 1990. Thesis: *‘Over het vermoeden van Riemann’* (‘About Riemann’s Hypothesis’), *judicium Cum Laude*.
- Propedeuse, Katholieke Universiteit Nijmegen, 1986 (major Mathematics; minor Computer Science).
- Stedelijk Gymnasium Nijmegen, The Netherlands, 1985.

*Further education*

- CBMS conference on Graph Algebras, June 2004, University of Iowa.
- Workshop on Zeta-Functions and Associated Riemann Hypotheses, Courant Institute of Mathematical Sciences, May, 2002.
- Number theory conference in CSU San Marcos, CA, June 8, 2000.
- Conference *‘Diophantine Geometry Related to the ABC Conjecture’*, University of Arizona, Tucson, March 1998.
- Conference *‘Fractal Geometry and Number Theory’*, University of Iowa, August 1997.
- Course at UNILO (KU Nijmegen, to teach at high-schools), 1995. Work at two high-schools in The Netherlands.
- Conference *‘Potential theory’*, Université de Montréal, August 1993.
- Congress *‘The development of mathematics between 1900 and 1950’*, University of Luxemburg, June 1992.
- Workshop about special functions at the university of Twente, The Netherlands, January 1991.

**Positions**

- Assistant Professor, Utah Valley University, 2003–present.
- Assistant Professor, Rutgers University, 2000–2003.
- Visiting Assistant Professor, UC Riverside, 1998–2000.
- Marie Curie research fellow, Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France, 1996–1998.
- Erasmus Fellow, University of Tübingen, Germany, March–May 1990.

*Visiting positions*

- *June 2007*: University of Victoria, Canada (invited by M. Laca).
- *February 2007*: Institut des Hautes Études Scientifiques, Paris, France.
- *June 2006*: University of Hannover, Germany (invited by E. Schrohe).
- *July 2001*: University of Münster, Germany (invited by M. Laca).
- *July–August 1999*: University of Newcastle, Australia (invited by M. Laca).
- *January–February 1998*: University of California, Riverside (invited by M.L. Lapidus).
- *January–February 1997*: University of California, Riverside (invited by M.L. Lapidus).
- *July–August 1995*: Visiting Scholar, University of Rennes, France (invited by B. Edixhoven).
- *March–April 1994*: Visiting Scholar, Yale University (invited by S. Lang).

**Teaching Seminars**

- *Curves over Finite Fields*, Rutgers University, Spring 2002.
- *Tate’s Thesis*, Rutgers University, Fall 2001.
- *Riemann Zeros and Prime Powers*, research seminar in computational mathematics, UC Riverside, Fall 1999.

*Graduate courses*

- *Roth’s Theorem and the ABC Conjecture*, UC Riverside, Spring 2000.
- *The Prime Number Theorem*, UC Riverside, Spring 1999.

*Undergraduate courses*

- *Cryptology*, Utah Valley University, Fall 2007.
- College Algebra, Calculus I and II, Utah Valley University, 2003–present.
- *Number Theory*, Utah Valley University, Summer 2004.
- *Introduction to Mathematical Reasoning*, Rutgers University, 2003
- *Cryptology for Liberal Arts*, Rutgers University, 2002.
- Single and multivariable calculus, linear algebra, Rutgers University, 2000–2003.
- Calculus, linear algebra, differential equations, UC Riverside, 1998–2000.
- *Advanced Calculus* (upper division), UC Riverside, Winter 2000.
- *Speciale functies*, Nijmegen, The Netherlands, 1993.

*Teaching assistant*

For linear algebra, geometry, logic, . . . , Katholieke Universiteit Nijmegen, The Netherlands, 1986–1994.

*High-school*

Teacher at two schools in The Netherlands, 1995.

**Grants**

- Presidential Faculty Scholarly Grant, 2007, UVU.
- Summer stipend, 2005 and 2007, UVU.
- Presidential Award, 2003, UVU.
- Marie-Curie fellowship, 1996–1998.
- Erasmus grant, 1990.

- Honors, awards*
- Cum Laude, undergraduate thesis, 1990.
  - International Mathematics Olympiade, Finland, 1985.
  - Dutch Mathematics Olympiade, Second prize, 1985.
  - Dutch Mathematics Olympiade, Third prize, 1984.
- Conferences organized**
- *Special Session on Number Theory*, with Jasbir Chahal, BYU, at the Western Section Meeting, Salt Lake City, Utah, October 7–8, 2006.
  - *Special Session on Fractal Geometry: Connections to Dynamics, Geometric Measure Theory, Mathematical Physics and Number Theory*, with Michel L. Lapidus and Erin P. J. Pearse, at the 2006 Spring Western Section Meeting, San Francisco, CA, April 29–30.
  - Coorganize the special session ‘*Fractal Geometry and Applications: A Jubilee of Benoît Mandelbrot*’, San Diego, CA, January 6–9, 2002. The proceedings have been published, 2004.
  - Coorganize the special session on ‘*Fractal Geometry, Number Theory and Dynamical Systems*’, Lyon, France, July 17–20, 2001.
  - Coorganize the special session on ‘*Dynamical, Spectral and Arithmetic Zeta Functions*’, San Antonio, Texas, January 1999. The proceedings have been published in: *Contemporary Mathematics* **290**, AMS, Providence, RI, 2001.
- Professional service**
- Organize the State Math Contest, March 2009.
  - Coordinator for the College Algebra Sections, Fall 2008.
  - AP Reader for calculus, June 9–15, 2008.
  - Chair of Quantitative Literacy Committee, Fall 2006.
  - Reviewer for the Sterling Scholarships, at the Copper Hills High School, February 15, 2006.
  - Chairman of chair search committee, UVU, 2005.
  - Reviewer for *Mathematical Reviews*, 1999–present.
  - Reviewer for FIPSE (Fund for the Improvement of Postsecondary Education), November 20, 21, 2003.
  - Help organize ‘Expanding Your Horizons’, UVU, 2003 and 2004.
  - Organization of special sessions: AMS meeting, Salt Lake City, San Francisco, 2006, San Diego, 2002, Austin, TX, 1999; joint AMS-SMF meeting, Lyon, France, 2001.
  - Editor of proceedings: ‘*Fractal Geometry and Applications: A Jubilee of Benoît Mandelbrot*’, and ‘*Dynamical, Spectral and Arithmetic Zeta Functions*’.
- Memberships**
- The American Mathematical Society.
  - *Het Wiskundig Genootschap* (Dutch Mathematical Society).
- Languages**
- Dutch, English, French, German.
  - Reading knowledge of Russian.

- Invited papers** • For the memorial volume in honor of Serge Lang (1927–2005), *About an Alternative to the ABC Conjecture*.
- Invited talks**  
**At conferences**
- April 22, 2007, special session on Number Theory in the South-West, Tucson, *ABC implies the radicalized Vojta height inequality for curves*.
  - January 8, 2007, special session on Arithmetic Geometry, New Orleans, *The abc conjecture implies Vojta's height inequality for curves*.
  - October 8, 2006, special session on Number Theory, Salt Lake City, *Arithmetic progressions of zeros of the Riemann zeta function*.
  - April 2006, special session on Fractal Geometry, San Francisco, *Finite Arithmetic Progressions of Zeros of the Riemann Zeta Function*.
  - January 5–8, 2005, special session of the AMS on Inverse Spectral Geometry, Atlanta, Ga, *Arithmetic Progressions of Zeros of the Riemann Zeta Function*.
  - Special session of the AMS on Fractal Geometry and Applications: A Jubilee of Benoît Mandelbrot, San Diego, CA, January 2002.
  - Special session of the AMS on Fractal Geometry, Number Theory and Dynamical Systems, Lyon, France, July 2001.
  - Texas Geometry and Topology Conference at Texas Christian University, Feb. 23–25, 2001, *ABC implies Vojta's Height Inequality for Curves*.
  - AMS meeting on Interconnections Among Diophantine Geometry, Algebraic Geometry, and Value Distribution Theory, Austin, Texas, October 8–10, 1999, *The Contribution of the Infinite Valuation to the Radical*, abstract #948-11-96, AMS meeting 948.
  - University of Newcastle, Australia, in the miniconference on Hecke Algebras, Aug. 11–12, 1999, *Hecke Algebras in Number Theory*.
  - Special session of the AMS on Dynamical, Spectral and Arithmetic Zeta Functions, (at the annual meeting in San Antonio, Texas, January 1999), *Complex Dimensions of Self-Similar Fractal Strings*, abstracts Amer. Math. Soc. **20**, No. 1 (1999), p. 126, #939-58-84, AMS meeting 939.
  - XV Escola de Álgebra in Canela, RS, Brasil, July 1998, 'ABC implies Roth's Theorem and Mordell's Conjecture'.
  - Winter school 'Diophantine Problems Related to the ABC Conjecture', Tucson, Arizona, March 14–18, 1998, *ABC implies Roth and Mordell*.
  - Special session of the AMS on Analysis, Diffusions and PDEs on Fractals, (at the annual meeting in San Diego, CA, January 1997), *Zeta Functions and Explicit Formulas for the Geometry and the Spectrum of Fractal Strings*, abstracts Amer. Math. Soc. **18**, No. 1 (1997), pp. 82–83, #918-35-539, AMS meeting 918.
  - Annual meeting of the Dutch Mathematical Society, 1993, *The ABC Conjecture for Meromorphic Functions*.

*At colloquia*

- Brigham Young University, Provo, 2007, *ABC implies the radicalized Vojta height inequality for curves.*
- Brigham Young University, Provo, 2003, *ABC implies Vojta's Height Inequality.*
- Max-Planck Institut, Bonn, Germany, 2001, *ABC implies Vojta's Height Inequality.*
- Technion, Israel, Sep. 9, 1999, *Hecke Algebras and Classfield Theory.*
- UC Riverside, Jan. 29, 1997, *The Error Term in the ABC Conjecture.*
- Max-Planck Institut, Berlin, Germany, July 1995, *The Error Term in the ABC Conjecture.*

*At seminars*

- Harvard-MIT Algebraic Geometry Seminar, MIT, Boston, Dec. 7, 1999, *ABC implies Vojta's Height Inequality for Curves.*
- Technion, Haifa, Israel, December 1998, *Complex Dimensions of Self-Similar Fractal Strings.*
- IHÉS, France, Oct. 24, 1997, *Construction of Spec  $\mathbf{F}_1$ .*
- Gelfand Seminar, IHÉS, August 11, 1997, *Fractal Strings and the Riemann Zeta Function.*
- UC Riverside, Feb. 11, 1997, Functional Analysis Seminar, *The ABC Conjecture for Meromorphic Functions.*
- UC Riverside, Jan. 30, 1997, Mathematical Physics Seminar, *Fractal Strings and the Riemann Zeta Function.*