

Curriculum Vitae[†]

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Education

- *Universität Bielefeld*, Bielefeld, Germany,
Ph.D. in Mathematics, 1988, (Doktor der Mathematik), Magna cum laude.
Dissertation: “Zum rekursiven Aufbau der Familie der periodischen Pflasterungen der euklidischen Ebene” (“A Recursive Structure for the Family of Periodic Tilings of the Euclidean Plane”).
Advisor: Prof. Dr. Andreas W.M. Dress.
- *Universität Bielefeld*, Bielefeld, Germany,
M.S. in Mathematics, 1980, (Diplom Mathematiker), Magna cum laude.
Thesis: “Nichtstandardmethoden in der topologischen Algebra” (“Nonstandard Methods in the Topological Algebra”).
Advisor: Prof. Dr. Gerhard Schiffels.
- *Universität Bielefeld*, Bielefeld, Germany,
B.S. in Mathematics, 1975, (Vordiplom in Mathematik), Summa cum laude.

Teaching Experience

- *Utah Valley University*, Department of Mathematics, 2016 to date Associate Professor, 2014–2016 Lecturer, 2010–2014 Adjunct Instructor: College Algebra, Introduction to Calculus, Calculus I, II, Ordinary Differential Equations, Introduction to Statistics, etc.
- *Brigham Young University*, College of Engineering and Technology, 1999 to date, Associate Professor: Advanced Applied Engineering Mathematics for Graduate Students I,II (Eng T 502/3, ME 505) Math. Refresher Course (Eng T 295r).

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- *Brigham Young University*, Department of Mathematics, Evening Classes, 1997–1999: Calculus I,II (Math 112/3).
- *Brigham Young University*, Department of Mathematics, 1994–1997, vis. Associate Professor: Calculus I,II (Math 112/3), Advanced Engineering Mathematics I,II (Math 312/3), Linear Algebra (Math 343), Ordinary Differential Equations (Math 434), Multivariable Calculus (Math 344).
- *University of Utah*, Department of Mathematics, 1992–1994, Adjunct Instructor: College Algebra (Math 105), Introduction Into Scientific Computing.
- *Salt Lake Community College*, Department of Mathematics, 1992–1994, Adjunct Instructor: Intermediate Algebra, College Algebra.
- *Universität Bielefeld*, Fakultät für Mathematik, 1989–1992, Assistant Professor: Analysis III, Topology, Introduction into Galois Theory, Linear Algebra.
- *Fernuniversität Hagen*, Fakultät für Mathematik, 1982–1992, Mentor: Linear Algebra I,II, Analysis I,II.
- *Tutoring Service*: Private Teacher, 1976–1987: High School Mathematics.
- *Westfalen Kolleg Bielefeld*, 1975–1976, High School Teacher (Gymnasiallehrer): Algebra.

Awards, Scholarships

- *Golden Key National Honor Society Most Influential Professor*; selected as one of the 34 most influential professors on campus by the BYU chapter of the *Golden Key National Honor Society* in 1998.
- *Brigham Award 1996*, granted by the students of Brigham Young University.
- *Member of the “Studienstiftung des deutschen Volkes”*, academic scholarship for highly gifted graduate students by the “Studienstiftung des deutschen Volkes”, 1973–1978.

Current Research

- *Signal Processing*: Reconstruction of bandlimited functions from aperture filtered irregular samples, in particular understanding the constraints on the sample location in 2d for full reconstruction.
- *Combinatorics*: Meanders, understanding the recursive structure of the poset of all meanders; developing counting formulae for meanders of a given order.

Publications

1. Band-Limited Signal Reconstruction From Irregular Samples With Variable Apertures, with David G. Long, *IEEE Trans. Geoscience and Remote Sensing* **54**, Issue 4, (2016), 2424–2436.
2. Applied Engineering Mathematics (for graduate students), 2012, *BYU Academic Printing*, 1–433
3. Re-Integration, Brushing Up on Calculus, 2010, *BYU Academic Publishing*.
4. Linear Spaces, Applied Mathematics for Graduate Students in Engineering, 2010, *BYU Academic Printing*.
5. Advanced Applied Engineering Mathematics I, with Jordan Cox and Vladimir Solovjov, 2005, *BYU Academic Publishing*.
6. Advanced Applied Engineering Mathematics II, with Jordan Cox and Vladimir Solovjov, 2005. *BYU Academic Publishing*.
7. On the Representation of Meanders, *Bayr. Mathem. Schriften*, **67** (2003), 163–202.
8. Multidimensional Reconstruction From Irregular Samples, with David G. Long, *Signal Recovery and Synthesis*, OSA, Albuquerque, New Mexico, 2001, 135–137.
9. A Constructive Enumeration of Meanders, with B. Earnshaw, *Ann. of Comb.* **6** (2002), 7–17.
10. A Partial Order for the Set of Meanders, *Ann. of Comb.* **2** (1998), 7–18.
11. The Classification of the Quasi-Regular Polyhedra of Genus 2, with D. Huson, in *Discr. and Comput. Geometry* **7** (1992), 347–357.
12. There isn't Anything More Practical Than Good Theoretical Mathematics—Some Remarks on Application Oriented Mathematical Thinking (Es gibt nichts Praktischeres als eine gute theoretische Mathematik—Einige Bemerkungen über anwendungsorientiertes mathematisches Denken, with A. Dress, in *Finden, Erfinden, Lernen—Zum Umgang mit Mathematik unter heuristischem Aspekt*, M. Glatfeld (Hrsg.), Frankfurt am Main; Bern; New York; Paris: Lang, 1990, 165–194
13. Counting Periodic Tilings of the Euclidean Plane (Zur Abzählung periodischer Pflasterungen der euklidischen Ebene), *Pub. I. R. M. A. Strasbourg, 1988, 361/S-19, Actes 19^e Séminaire Lotharingien de Combinatoire*, 31–61.
14. A Recursive Structure for the Family of Periodic Tilings (Zum rekursiven Aufbau der Familie der periodischen Pflasterungen der euklidischen Ebene), Dissertation. Bielefeld 1988.
15. On the Parametrization of Subgroups of Free Groups (Zur Parametrisierung von Untergruppen freier Gruppen, with A. Dress, *Beitr. zur Algebra und Geometrie*, **24** (1987), 125–134.

16. Parametrizing the Subgroups of Finite Index in a Free Group and Related Topics, with A. Dress, *Bayr. Mathem. Schriften*, **20** (1985), 1–8.
17. Concerning a Question of S. Bilinski Regarding Tilings of the Brezel Surface (Zu einer Frage von Herrn S. Bilinski Pflasterungen von Brezelflächen betreffend), with A. Dress, *Jug. Akad. Zn. Umj. Zagreb, Rad* **428** (1987), 83–101.
18. Nonstandard Method in Topological Algebra (Nonstandard Methoden in der topologischen Algebra), Diplomarbeit, Bielefeld 1980, 1–104.
19. Counting Meanders I, preprint.
20. Meanders on Surfaces, preprint.
21. On Whitney’s Characterization of Planar Graphs, with A. Dress, preprint.
22. Reconstructing Discrete Band-limited Signals from Irregular Aperture-filtered Samples, with David G. Long, preprint.