

# Curriculum Vitae

**Dr. Sosina Martirosyan Peterson**

**Ph.D. Mathematics, October 2003.**

Department of Mathematics, University Duisburg-Essen, Essen, Germany.

Dissertation: *Perfect Hash Families, Identifiable Parent Property Codes and Covering Arrays.*

**M.S./B.S. Mathematics, February 1996**

Department of Applied Mathematics, Yerevan State University, Yerevan, Armenia.

Dissertation: *On some code classes.*

- ACCESS project fellowship by The American Mathematical Association of Two-Year Colleges 2010

## Professional Experience

**August 2011-Present:** Mathematics Instructor, Alvin Community College

- Taught Basic Algebra, Algebra, Intermediate Algebra, College Algebra, Pre-Calculus, Calculus I, Calculus II and Calculus III

**January 2010-August 2011:**

Associate Professor of Mathematics, Lone Star College CyFair (full-time)

- Taught college algebra, finite mathematics, trigonometry, pre-calculus, Calculus I, Calculus II.

**August 2005-December 2009:**

Visiting Assistant Professor, adjunct instructor, Department of Mathematics and Department of Computer Sciences, University of Houston-Clear Lake.

- Taught linear algebra, differential equations, calculus III, design and analyses of algorithm

**January 2009-May 2009:**

Adjunct instructor, Department of Mathematics, San Jacinto College.

- Taught finite mathematics

**August 2006-December 2008:**

Adjunct instructor, tutor, Department of Mathematics, Alvin Community College.

- Taught college algebra, tutored at learning lab

**August 2004-May 2005:**

Post-Doctoral Research Associate, Department of Computer Science and Engineering, Arizona State University.

- Conducted research in mathematics

**January 2004-August 2004:**

Visiting Assistant Professor, Department of Mathematical Sciences, Michigan Technological University.

- Taught undergraduate cryptography and graduate permutation groups and enumeration

**October 2003-December 2003:**

Post-Doctoral Researcher, Institute for Experimental Mathematics, University Duisburg-Essen, Germany.

**October 2000-October 2003:**

Graduate Student as part of graduate program “Mathematical and Engineering Methods for Secure Data Transmission and Information Exchange,” Institute for Experimental Mathematics, University Duisburg-Essen, Germany.

### Refereed Journal Publications:

- Sosina Martirosyan and Tran van Trung, “Explicit Constructions for Perfect Hash Families”, *Designs, Codes and Cryptography* 46 (2008), 97-112.
- Charlie J. Colbourn, Sosina Martirosyan, Gary L. Mullen, Dennis Shasha, George B. Sherwood and Joseph L. Yucas, “Products of Mixed Covering Arrays of Strength Two,” *Journal of Combinatorial Designs, Journal of Combinatorial Designs* 14 (2006), 124-138.
- Charlie J. Colbourn, Sosina Martirosyan, Tran van Trung and Robert Walker “Roux-type Constructions for Covering Arrays of Strengths Three and Four”, *Designs, Codes and Cryptography* 41 (2006), 33-57.
- G.B. Sherwood, Sosina Martirosyan, and C.J. Colbourn, Covering Arrays of Higher Strength From Permutation Vectors, *Journal of Combinatorial Designs* 14 (2006), 202-213.
- Tran van Trung and Sosina Martirosyan, “New Constructions for IPP Codes,” *Designs, Codes and Cryptography*, Volume 35, Number 2, May, (2005), 227-239.
- Sosina Martirosyan and C.J. Colbourn, Recursive Constructions for Covering Arrays, *Bayreuther Mathematische Schriften* 74 (2005), 266-275.
- Tran van Trung and Sosina Martirosyan, “On Covering Arrays,” *Designs, Codes and Cryptography*, 32, (2004), 323-339.
- Tran van Trung and Sosina Martirosyan, “On a Class of Traceability Codes,” *Designs, Codes and Cryptography*, 31, (2004), 125-132.

- Samvel Martirosyan and Sosina Martirosyan, “New Upper Bound on the Cardinality of a K-separated Set or Perfect Hash Family and a Near Optimal Construction for It,” *Transactions of IPAA of NAN RA & YSU Mathematical Problems of Computer Science*, vol. XXI, (2000), 104-115.
- Sosina Martirosyan, “A Construction of Codes Correcting Probable Errors for QAM,” *Transactions of IPAA of NAN RA & YSU Mathematical Problems of Computer Science*, vol. XXI, (2000), 101-103.

### Some of Other publication:

- Tran van Trung and Sosina Martirosyan, “IPP and Traceability codes,” *Encyclopedia of Mathematic 2006*.
- Sosina Martirosyan, “Perfect Hash Families,” *Encyclopedia of Mathematics 2006*.
- Sosina Martirosyan, “Perfect Hash Families, Identifiable Parent Property Codes and Covering Arrays,” Ph.D. Thesis, Department of Mathematics, University Duisburg-Essen, Germany, October 2003.
- Tran van Trung and Sosina Martirosyan, “New Constructions for IPP Codes,” 2003 Proceedings IEEE International Symposium on Information Theory, Pacifico Yokohama, Yokohama, Japan, June 29- July 4, 2003, p. 255.
- Tran van Trung and Sosina Martirosyan, “Traceability Codes for Digital Fingerprinting,” Proc. of the IEEE Winter School on Coding and Information Theory, Monte Verita, Switzerland, February 2003.
- Tran van Trung and Sosina Martirosyan, “Constructions for Efficient IPP Codes,” *Preprints of IEM*, 3, 2002.
- Samvel Martirosyan, Sosina Martirosyan and A. J. Han Vinck, “Optical Orthogonal Code Constructions with Low Correlation,” *The 35<sup>th</sup> Annual Conference on Information Sciences and Systems, The Johns Hopkins University*, Baltimore, Maryland, March, 2001, pp.144.

- Samvel Martirosyan, Sosina Martirosyan and A. J. Han Vinck, “Optical Orthogonal Code Construction with Correlation 1 and 2,” *Proceedings of Mini-Workshop on synchronization*, Essen, Germany, August 2000, ISBN 90-74249-24-8, pp. 8.
- Samvel Martirosyan, Sosina Martirosyan and A. J. Han Vinck, “Optical Orthogonal Code Construction with Correlation 2,” *Proc. of SITA 2000*, Fukuoka, Japan, 2000, pp 61-64.