

Curriculum Vitae for Jon-Lark Kim

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Department of Mathematics
Sogang University
R 1419, 35 Baekbeom-ro
Mapo-gu, Seoul 121-742, S. Korea

Phone : (02) 705-8875
Fax : (02) 714-6284
email : jlkim@sogang.ac.kr
<http://maths.sogang.ac.kr/jlkim>

A. Areas of Main Interest:

- I. Coding Theory and Its Interaction with Algebra, Discrete Math, and Number Theory
- II. Applied Areas of Coding Theory: especially, Quantum Coding, Network Coding, Biological Coding, Information Theory, and Cryptography

B. Education:

2002	PhD	mathematics	University of Illinois–Chicago
		thesis title	Construction of new self-dual codes and quantum codes and their connections
		thesis advisor	Professor Vera Pless
1997	MS	mathematics	Seoul National University, S. Korea
1993	BS	mathematics	Pohang University of Science and Technology, S. Korea

C. Professional Experiences:

9/2012 – current	Associate Professor	Sogang University, Korea
7/2010 – 8/2012	Associate Professor with tenure	University of Louisville, KY
6/2012 – 8/2012	Visiting Professor	KIAS, Korea (on leave)
8/2011 – 12/2011	Visiting Professor	POSTECH, Korea (on leave)
8/2005 – 6/2010	Assistant Professor	University of Louisville, KY
8/2002 - 8/2005	Research Assistant Professor	University of Nebraska–Lincoln
	post doctoral advisor	Professor Judy Walker
1/2002 – 5/2002	Instructor	University of Illinois–Chicago
8/1998 – 12/2001	Teaching Assistant/University Fellow	University of Illinois–Chicago
3/1998 – 6/1998	Part time instructor	Dongyang Technical College, Korea
9/1996 – 12/1996	Teaching Assistant	Seoul National University
9/1994 – 3/1996	Soldier	Military service in Navy, Korea
3/1993 – 6/1994	Teaching Assistant	Seoul National University

D. Awards/Fellowships:

- [1] 3/2005 : 2004 **Kirkman medal**, Institute of Combinatorics and its Applications (ICA), Winnipeg, Canada (*the medal recognizes outstanding work by ICA members in their early research careers*), announced in the Bulletin of ICA, Vol 44, May 2005 (cf. http://en.wikipedia.org/wiki/Kirkman_medal)
- [2] 2002/2003 : Leitzel Project NExT Fellow awarded by the Mathematical Association of America.
- [3] 2000/2001 : University Fellowship (university-wide competition), Graduate College, University of Illinois-Chicago.
- [4] Spring, 2000 : TA teaching award from Department of Mathematics, Stat, & Computer Science, University of Illinois-Chicago.

E. Editor/Program Committee:

- [1] **Editor of Designs, Codes and Cryptography** (an SCI Journal with Impact Factor 0.766), Springer Publisher, Aug. 2011-current.
- [2] Editor of *International Journal of Information and Coding Theory*, Inderscience Publisher, 2009-current.
- [3] Co-guest editor of a special issue of International Journal of Information and Coding Theory : *Algebraic and Combinatorial Coding Theory in honor of the retirement of Vera Pless*.
- [4] Co-organizer of International Conference on Coding and Cryptography, Ewha Womans University, Korea, August 24-26, 2011.
- [5] Program committee member of *13th IMA Conf. on Cryptography and Coding Theory* at University of Oxford, UK, Dec. 12-15, 2011.
- [6] Program committee member of *12th IMA Conf. on Cryptography and Coding Theory* at Cirencester, UK, Dec. 14-17, 2009.
- [7] Symposium organizing committee of *US-Korea Conference 2008*, San Diego, Applied and Pure Mathematics, 8/14 - 8/16, 2008.

F. Publications:

a. Book:

Title: **Selected Unsolved Problems in Coding Theory**
 Authors: David Joyner and Jon-Lark Kim
 No. of pages: 248
 Published on: 9/30/2011
 Publisher: Birkhäuser Boston
 ISBN: 978-0-8176-8255-2
 Website: [http : //www.springer.com/birkhauser/mathematics/book/978-0-8176-8255-2](http://www.springer.com/birkhauser/mathematics/book/978-0-8176-8255-2)

b. Refereed Journal Papers:

- [35] S. Bouyuklieva, N. Yankov, and J.-L. Kim, Classification of binary self-dual $[48,24,10]$ codes with an automorphism of odd prime order, *Finite Fields and Their Applications*, 18 (2012) 1104-1113
- [34] C. Carlet, P. Gaborit, J.-L. Kim, P. Solé, A new class of codes for Boolean masking of cryptographic computations, *IEEE Trans. Inform. Theory*, Vol. 58 No. 9, pp. 6000-6011, 2012.
- [33] S. Han, J.-L. Kim, Computational results of duadic double circulant codes, *J. Appl. Math. Comput.* 40 (2012), no. 1-2, 33-43.
- [32] S. Han, J.-L. Kim, H. Lee, Y. Lee, Construction of quasi-cyclic self-dual codes, *Finite Fields Appl.* 18 (2012), no. 3, 613-633.
- [31] C. Aguilar-Melchor, P. Gaborit, J.-L. Kim, L. Sok, and P. Solé, Classification of extremal and s-extremal binary self-dual codes of length 38, *IEEE Trans. Inform. Theory*, 58 (2012), no. 4, 2253-2262.
- [30] J.-L. Kim and S.-J. Kim, The 2-distance coloring of the Cartesian product of cycles using optimal Lee codes, *Discrete Applied Math*, Volume 159 Issue 18, December, 2011 Pages 2222-2228.
- [29] H. K. Kim, D. K. Kim, and J.-K. Kim, Type I codes over $GF(4)$, *Ars Combinatoria*, Volume 106, July 2012, Pages 173-191.
- [28] S. Han and J.-L. Kim, Formally self-dual additive codes over \mathbb{F}_4 , *Journal of Symbolic Computation* as a special issue on Algebraic Coding Theory and Applications, Vol. 45, No. 7 (2010), pp. 787-799.
- [27] J.-L. Kim and S.-J. Kim, Identifying codes in q-ary hypercubes, *Bulletin of the Institute of Combinatorics and its Application*, Canada, Vol. 59 (2010), pp. 93-102.
- [26] S. T. Dougherty, J.-L. Kim, H. Kulosman, and H. Liu, Self-dual codes over commutative Frobenius rings, *Finite Fields and Their Applications*, Vol. 16, No. 1 (2010), pp. 14–26.
- [25] S. T. Dougherty, J.-L. Kim and H. Liu, Constructions of self-dual codes over finite commutative chain rings, *International Journal of Information and Coding Theory* as a special issue in Honour of the Retirement of Vera Pless, Vol 1, No. 2 (2010), pp. 171 – 190.
- [24] J.-L. Kim and X. Liu, A generalized Gleason-Pierce-Ward theorem, *Designs, Codes, and Cryptography*, Vol. 52, No. 3 (2009), pp. 363–380.
- [23] S. Han and J.-L. Kim, The nonexistence of near-extremal formally self-dual codes, *Designs, Codes, and Cryptography*, Vol. 51, No. 1 (2009), pp. 69–77.

- [22] S.T. Dougherty, J.-L. Kim, and H. Kulosman, MDS codes over finite principal ideal rings, *Designs, Codes, and Cryptography*, Vol. 50 (2009), pp. 77–92.
- [21] J.-L. Kim, and S. Seif, and H. Kulosman, An elementary path to Galois and strongly pure chain rings, *Pan-American Mathematical Journal*, Vol. 18, No. 4 (2008), pp. 39–44.
- [20] J.-L. Kim and P. Solé, Skew Hadamard designs and their codes, *Designs, Codes, and Cryptography*, Special issue: Coding and Cryptography. In Memory of Hans Dobbertin, WCC 2007, Vol. 49 (2008), pp. 135–145.
- [19] T.A. Gulliver, J.-L. Kim, and Y. Lee, New MDS or near-MDS self-dual codes, *IEEE Transactions on Inform Theory* Vol. 54, No. 9 (2008), pp. 4354–4360.
- [18] S. Han and J.-L. Kim, On self-dual codes over \mathbb{F}_5 , *Designs, Codes, and Cryptography*, Vol. 48, No. 1 (2008), pp. 43–58.
- [17] J.-L. Kim and J.L. Walker, Nonbinary Quantum error-correcting codes from algebraic curves, *Discrete Math* as a special issue of Com2MaC conference, July 2004, Pusan, Korea, Vol. 308, No. 14 (2008), pp. 3115–3124.
- [16] S. Han and J.-L. Kim, Upper bounds for the lengths of s-extremal codes over \mathbb{F}_2 , \mathbb{F}_4 , and $\mathbb{F}_2 + u\mathbb{F}_2$, *IEEE Trans. Inform. Theory*, Vol. 54, No. 1 (2008), pp. 418–422.
- [15] J.-L. Kim and Y. Lee, Construction of MDS self-dual codes over Galois rings, *Designs, Codes, and Cryptography*, Vol. 45 (2007), pp. 247–258.
- [14] J.-L. Kim and V. Pless, A note on formally self-dual even codes of length divisible 8 with Vera Pless, *Finite Fields and Their Applications*, Vol. 13, No. 2, (2007), pp. 224–229.
- [13] J.-L. Kim, K.E. Mellinger, and L. Storme, Small weight codewords in LDPC codes defined by (dual) classical generalized quadrangles, *Designs, Codes and Cryptography*, Vol. 42 (2007), 73–92.
- [12] S.T. Dougherty, J.-L. Kim, and P. Sole, Double circulant codes from two class association schemes, *Advances in Mathematics of Communication*, Vol. 1 (2007), 45–64.
- [11] E.P. Bautista, P. Gaborit, J.-L. Kim, and J.L. Walker, s-extremal Additive \mathbb{F}_4 codes, *Advances in Mathematics of Communication*, Vol. 1 (2007), 111–130.
- [10] J.-L. Kim and Y. Lee, Euclidean and Hermitian self-dual MDS codes over large finite fields, *J. Combinatorial Theory, Ser. A*, Vol. 105 (2004) pp. 79–95.
- [9] J.-L. Kim, U.N. Peled, I. Perepelitsa, V. Pless and S. Friedland, Explicit construction of families of LDPC codes with no 4-cycles, *IEEE Trans. Inform. Theory*, Vol. 50, No. 10 (2004), pp. 2378–2388.
- [8] T.A. Gulliver and J.-L. Kim, Circulant based extremal additive self-dual codes over $\text{GF}(4)$, *IEEE Trans. Inform. Theory*, Vol. 50, No. 2 (2004), pp 359–366.

- [7] J.-L. Kim, K. Mellinger and V. Pless, Projections of binary linear codes onto larger fields, *SIAM Journal on Discrete Math.*, Vol. 16, No. 4 (2003), pp. 591–603.
- [6] J.-L. Kim and V. Pless, Designs in additive codes over $\text{GF}(4)$, *Designs, Codes and Cryptography*, Vol. 30 (2003), pp. 187–199.
- [5] P. Gaborit, J.-L. Kim, and V. Pless, Decoding binary $R(2, 5)$ by hand, a special issue on Com²Mac Conference on Association Schemes, Codes and Designs, Pohang, Korea, 7/3 - 7/7, 2000, *Discrete Math.* Vol. 264 (2003), pp. 55–73.
- [4] T. A. Gulliver, M. Harada, and J.-L. Kim, Construction of some extremal self-dual codes, *Discrete Math.*, Vol. 263 (2003), pp. 81–91.
- [3] J.-L. Kim, New self-dual codes over $\text{GF}(4)$ with the highest known minimum weights, *IEEE Trans. Inform. Theory*, Vol. 47 (2001), pp. 1575–1580.
- [2] J.-L. Kim, New extremal self-dual codes of lengths 36, 38, and 58, *IEEE Trans. Inform. Theory*, Vol. 47 (2001), pp. 386–393.
- [1] J.-L. Kim, Relation between weight distribution and combinatorial identities, *Bulletin of the Institute of Combinatorics and its Application*, Canada, Vol. 31 (2001), pp. 69–79.

c. Book Chapter (refereed):

- [3] J.-L. Kim, A prize problem in coding theory, the book for proceedings *D1: Groebner, Coding, and Cryptography*, 2009, 373-377.
- [2] J.-L. Kim and G.L. Matthews, Quantum error-correcting codes from algebraic curves, survey paper, *Advances in algebraic geometry codes*, ed. E. Martínez-Moro, C. Munuera, and D. Ruano, *Series on Coding Theory and Cryptology*, 5. World Scientific Publishing Co. Pte. Ltd., Hackensack, NJ, 2008.
- [1] J.-L. Kim, Remarks on s-extremal codes, *Advances in Coding Theory and Cryptology*, ed. T. Shaska, W. C. Huffman, D. Joyner, and V. Ustimenko, *Series on Coding Theory and Cryptology*, 2. World Scientific Publishing Co. Pte. Ltd., Hackensack, NJ, 2007, pp. 101-113.

d. Proceeding Papers (refereed):

- [3] J.-L. Kim, New quantum-error-correcting codes from Hermitian self-orthogonal codes over GF(4) (pdf), *Proceedings of the sixth international conference on Finite fields and applications*, at Oaxaca, Mexico, May 21-25, 01. 2001, Springer Verlag (2002), pp. 209-213.
- [2] P. Gaborit, W. C. Huffman, J.-L. Kim, and V. Pless, On Additive GF(4) Codes(ps), *DIMACS Workshop on Codes and Association Schemes*, DIMACS Series in Discrete Math. and Theoretical Computer Science, American Mathematical Society, Vol. 56 (2001), pp. 135-149.
- [1] J.-L. Kim and V. Pless, Decoding Some Doubly-Even Self-Dual [32,16,8] Codes by Hand, *Proceedings of XXVth Ohio State-Denison conference on Codes and Designs*(May, 2000), Sep. 25, 2000. pp. 165-178.

e. Accepted Papers:**f. Submitted Papers:**

- [2] F. Freibert, J.-L. Kim, Optimal subcodes of formally self-dual codes and their optimum distance profiles, a special issue of *Applicable Algebra in Engineering, Communication and Computing devoted to Coding Theory and Cryptography*, submitted on Oct. 19, 2012
- [1] Y. Lee and J.-L. Kim, The building-up construction of self-dual codes, submitted on Sep. 12, 2012

g. MathSciNet data:

- [1] As of Nov. 6, 2012, I have 39 papers reviewed by Mathematical Reviews excluding one paper on Erratum.
- [2] I have been cited 133 times by 97 authors.

[3] The two most cited papers are the following:

- (1) d. Proceeding papers [2], 16 times
- (2) b. Refereed Journal Papers [9], 14 times. Moreover, this paper has been cited 60 times from Google Scholar.

G. List of Recent Selected Presentations: (* marked for invited talks)

2011

- [9*] 10/21-10/22, 2011: Special session on Algebra and Representations, Korea Mathematical Society Fall meeting at Kyungbook National University, “Codes from rings”.
- [8*] 9/29-9/30, 2011: Intensive lectures on Coding Theory, Ewha Womans University, “What color is my hat?” and “A new class of linear codes for cryptographic uses” (4 hours)
- [7*] 9/27, 2011: Invited seminar at National Security Research Institute, ETRI attached institute, “A new class of linear codes for cryptographic uses”.
- [6*] 8/24-8/26, 2011: International Conference on Coding and Cryptography, “The journey of binary self-dual codes”, (Plenary speaker, 60 minutes)
- [5*] 8/17-8/19, 2011: 2011 Combinatorics Workshop, Kangwon National University, “LDPC codes from graphs” (50 minutes)
- [4*] 7/19, 2011: Coding seminar at Bayreuth University, Bayreuth, Germany, “Classification and construction of extremal self-dual codes”.
- [3*] 7/11, 2011: Quantum coding seminar at Laboratoire Traitement et Communication de l’Information CNRS - Telecom ParisTech, “Quantum codes from AG codes”.
- [2*] 5/23-5/26, 2011: Workshop on Coding and Cryptology, Nanyang Technological University, Singapore, “Classification and construction of extremal self-dual codes” (50 minutes)
- [1] 5/12-5/14, 2011: 24th Cumberland Conference on Combinatorics, Graph Theory, and Computing, “The 2-distance coloring of the Cartesian product of cycles using optimal Lee codes”.

2010

- [7*] 8/30-9/3, 2010: IEEE Information Theory Workshop, Dublin, Ireland, “Self-dual codes and their applications”.
- [6*] 8/3, 2010: Math Seminar, Department of Mathematics, Huazhong Normal University, Wuhan, P.R. China, “Self-dual codes and their applications”.

- [5*] 7/29, 2010: Discrete Math Seminar, Department of Mathematical Sciences, KAIST, Korea, “On self-dual codes”.
- [4*] 7/27, 2010: BrOMA Seminar, Department of Electrical Engineering, POSTECH, Korea, “Self-dual codes and their applications”.
- [3*] 7/27, 2010: Coding Seminar, Department of Mathematics, POSTECH, Korea, “On self-dual codes”.
- [2*] 7/23, 2010: Department Colloquium, Department of Mathematics, Ewha Womans University, Korea, “Self-dual codes and their applications”.
- [1*] 7/21, 2010: Coding Seminar, Department of Mathematics, POSTECH, Korea, “Introduction to Low-Density Parity-Check Codes”.

2009

- [2*] 7/16 - 7/19, 09: US-Korea Conference 2009, Raleigh NC, Mathematics: Fundamentals and Applications, “Conjectures on hyperelliptic curves and quasi-quadratic residue codes”.
- [1*] 4/17, 09: Department Colloquium, Department of Math and Statistics, Wright State University, Dayton OH, “Codes over rings and their application to lattices”.

2008

- [4*] 10/17 - 10/19, 08: AMS sectional meeting (special session on Linear codes over rings and modules), Western Michigan University, Kalamazoo, MI, “Building-up constructions for self-dual codes”.
- [3*] 8/14 - 8/16, 08: US-Korea Conference 2008, San Diego, Applied and Pure Mathematics, “Duadic double circulant codes”.
- [2*] 7/28 - 8/1, 08: Mathematical Theory of Networks and Systems, Virginia Tech, Blacksburg, VA, “Double circulant codes based on a duadic splitting”.
- [1*] 4/5 - 4/6, 08: AMS sectional meeting (special session on Algebraic Aspects of Coding Theory), Indiana University, Bloomington, IN, “Self-dual codes over finite chain rings”.

2007

- [5*] 10/5 - 10/6, 07: AMS sectional meeting, DePaul University, Chicago, “Formally self-dual additive codes over \mathbb{F}_4 ”.
- [4*] /9 - 8/11, 07: US-Korea Conference 2007, Washington DC., Contemporary Basic Science, “Codes over rings”.

- [3*] 7/19 - 7/22, 07: Advances in Coding Theory and Cryptography, Oakland University, MI, “Remarks on s -extremal codes”.
- [2*] 3/3 - 3/4, 07: AMS sectional meeting, Davidson, North Carolina, “MDS or near-MDS self-dual codes”.
- [1*] 1/5 - 1/8, 07: Joint Mathematics meeting, New Orleans, LA, “Skew Hadamard Designs and Their Codes”.

2006

- [5*] 10/21, 06 : AMS sectional meeting, Cincinnati, OH “Optimal subcodes of self-dual codes”.
- [4] 7/1-7/2, 06: A *Mini Workshop on Coding Theory* at Pohang Univ. of Sci. and Tech., “Quadratic double circulant codes and their generalization”.
- [3] 7/9-7/14, 06: IEEE International Symp. Information Theory, Seattle, “ s -extremal additive codes over $GF(4)$ ”.
- [2] 6/26- 6/30, 06: Algebraic Combinatorics, An International Conference in Honour of Eiichi Bannais 60th Birthday, “Small weight codewords in LDPC codes defined by (dual) classical generalized quadrangles”
- [1*] 2/6, 06 : The math department talk at Clemson University, Clemson, SC, “Capacity-approaching low-density parity-check codes”.

2005

- [8*] 11/1, 05 : Algebra-Combinatorics-Number Theory seminar, University of Louisville, “Some open problems on formally self-dual codes”.
- [7*] 5/26, 05 : Number Theory Seminar, Korea Institute for Advanced Study, “Capacity-approaching low-density parity-check codes”.
- [6*] 4/2 - 4/3, 05 : The 2005 AMS sectional meeting, Special Session on Designs, Codes, and Geometries, University of Delaware, “LDPC codes from geometries”.
- [5*] 2/25, 05 The math department talk at the Georgia State University, Atlanta, “Two constructions of low-density parity-check codes”.
- [4*] 2/21, 05 The talk for undergraduate students at the SUNY at Brockport, “Application of graphs to error-correcting codes”.
- [3*] 2/14, 05 The math department talk at the University of Missouri, Kansas City, “A journey to error-correcting codes”.
- [2*] 2/11, 05 The math department talk at the University of Louisville, “Two constructions of low-density parity-check codes”.

- [1*] 1/5 - 1/8, 05 Joint Mathematics Meeting, SIAM Minisymposium on Error-Correcting Codes, Atlanta, “Algebraic or combinatorial constructions of LDPC codes”.

2004

- [11*] 10/23 - 10/24, 04 : The 2004 AMS sectional meeting, Special session on Codes and Applications, Evanston, IL, “Formally self-dual even codes of length divisible by 8”.
- [10*] 7/19 - 7/23, 04 : The 2004 Com²MaC Conference on Association Schemes, Codes, and Designs at Pusan National University, Korea, “Nonbinary quantum error-correcting codes from algebraic curves”.
- [9] 6/27 - 7/2, 04 : The 2004 IEEE International Symposium on Information Theory at Chicago Downtown, IL, “MDS self-dual code”.
- [8*] 6/8 - 6/26, 04 : The 2004 IMA PI Summer Program for Graduate Students on Coding and Cryptography at the University of Notre Dame, “Construction of LDPC codes”.
- [7*] 5/13 - 5/15, 04 : Joint AMS-SMM International Meeting, Special Session on Coding Theory and Cryptography at Houston, TX, “LDPC codes and their constructions”.
- [6*] 3/23, 04 The math department talk at the Florida Atlantic University at Boca Raton.
- [5*] 3/5, 04 The Rocky Mountain Algebraic Combinatorics Seminar, Colorado State University, Fort Collins
- [4*] 2/23, 04 The math department talk at the Wright State University at Dayton.
- [3*] 2/19, 04 The math department talk at the University of Wyoming at Laramie.
- [2*] 2/17, 04 The math department talk at the WPI (Worcester Polytechnic Institute) and a talk for undergraduate students titled “What color is my hat?”.
- [1*] 2/7, 04 The math department talk at the University of Virginia at Charlottesville.

2003

- [8] 11/7 - 11/9, 03 : The Workshop on the Mathematics of Public-Key Cryptography, at the University of Illinois-Chicago, IL., “Code-based public-key cryptosystems”.
- [7*] 10/23, 03 : The 2003 Fall department colloquium, at the University of Nebraska, Lincoln, NE., “Codes, graphs, and generalized polygons”.
- [6] 10/15, 03 : The coding theory seminar, at the University of Nebraska, Lincoln, NE., “MDS self-dual codes”.
- [5*] 10/2 - 10/4, 03 : The 2003 AMS sectional meeting, at the University of Colorado, Boulder, CO., “Nonbinary quantum error-correcting codes from algebraic curves”.

- [4] 5/20 - 5/24, 03 : *The Conference and Workshop on Coding theory and Quantum Computing* at the University of Virginia, Charlottesville, “Nonbinary quantum error-correcting codes from algebraic curves”.
- [3] 5/5 - 5/9, 03 : *The 7th Conference on Finite Fields and Applications*, Toulouse, France, “Projections of binary linear codes onto larger fields”.
- [2*] 4/14, 03 : *A Special Mathematics Lecture*, One hour talk at the department of Mathematics, Smith College, “Codes on graphs”.
- [1*] 1/6 - 1/7, 03 : *A Mini Workshop on Coding Theory* at Pohang Univ. of Sci. and Tech., “Codes on graphs” and “Cyclic codes and exponential sums”.

2002

- [4] 11/2002 : *Mathematical Landscapes seminar*, for the first-year graduate students, University of Nebraska-Lincoln, “Perspectives : Discrete Math”.
- [3] 10/2002 : *Quantum coding seminar*, University of Nebraska-Lincoln, “Classification of additive self-dual quantum codes”.
- [2*] 10/2 - 10/4, 02 : *the 40th Allerton Conference on Communication, Control and Computing*, invited speaker, Univ. of Illi. at Urbana-Champaign, IL, “Dual cyclic codes with two zeros”.
- [1*] 4/2002 : *Combinatorics/Algebra seminar*, Iowa State University, invited speaker, “Application of exponential sums to coding theory”.

2001

- [4] 10, 2001 : *Coding seminar*, University of Illinois, Chicago, “Quantum error correcting codes”.
- [3*] 9/21- 9/23, 2001 : *2001 AMS sectional meeting on Codes and Designs*, invited speaker, Columbus, OH, “Assmus-Mattson theorem on additive codes over $\text{GF}(4)$ ”.
- [2] 6/24 - 6/29, 2001 : *2001 IEEE International Symposium on Information Theory*, Washington, D.C., “New good Hermitian self-dual codes over $\text{GF}(4)$ ”.
- [1] 5/21 - 5/25, 2001 : *the Sixth International Conference on Finite Fields and Applications*, Oaxaca, Mexico, “New self-dual codes over $\text{GF}(4)$ with the highest known minimum weights”.

2000

- [4] 10/5 - 10/8, 2000 : *International workshop on combinatorics, 12th Franco-Japanese conference*, Yamagata, Japan, “New extremal type I codes over $\text{GF}(4)$ ”.

- [3*] 10/2 - 10/4, 2000 : *International workshop on Codes, Lattices, Modular forms, and VOA*, invited speaker at Yamagata, Japan, “Additive self-dual codes over GF(4) and lattices”.
- [2*] 7/3 - 7/7, 2000 : *Com²Mac Conference on Association Schemes, Codes and Designs*, Pohang, Korea, invited speaker “A method to build up binary self-dual codes”.
- [1] 5/18 - 5/21, 2000 : *The XXVth Ohio State-Denison conference*, Ohio State University, “New extremal self-dual codes of lengths 36,38, and 38”.

H. Referee/Reviewer:

- [1] Referee for journals: **(a)** IEEE Transactions on Information Theory, **(b)** SIAM journal on Discrete Math, **(c)** Ars Combinatoria, **(d)** Discrete Math, **(e)** Designs, Codes, and Cryptography, **(f)** Journal of Combinatorial Theory, Ser. A, **(g)** J. of Pure and Applied Math, **(h)** Finite Fields and Their Applications, **(i)** Discrete Applied Math, **(j)** Advances in Mathematics of Communication, **(k)** Graphs and Combinatorics, **(l)** Math Magazine, **(m)** Michigan Mathematical Journal, **(n)** International J. of Information and Coding Theory, **(o)** The Computer Journal, **(p)** Journal of Applied Math and Computing, **(q)** Acta Mathematica Scientia, **(r)** Bulletin of Korean Mathematical Society, **(s)** J. of the Chungcheong Mathematical Society **(t)** J. of Algebra and Its Applications **(u)** Science China Mathematics
- [2] Referee for conferences : **(a)** 2001 Proceedings of the Louisiana / Mississippi section of the Math. Assoc. of Amer., **(b)** 2004 IEEE International Symposium on Information Theory at Chicago, **(c)** the Workshop on “Coding and Cryptography” organized by MIRIAM, **(d)** ICC 2005 - IEEE International Conference on Communication - in Seoul, **(e)** 16th AAECC Symposium on Applied Algebra, Algebraic Algorithms, and Error-Correcting Codes, **(f)** 12th IMA Conference on Cryptography and Coding Theory, **(g)** 2009 IEEE Int. Symposium on Information Theory, **(h)** Int. Workshop on Coding and Cryptography (2009), **(i)** 2010 IEEE Int. Symposium on Information Theory
- [3] Reviewer for AMS Mathematical Reviews (63 times as of Oct. 27, 2011) and the Encyclopedia of Information Systems (Academic Press).

I. Other Academic Activities:

- [7] Co-organizer with Heide Gluesing-Luerssen of AMS sectional meeting on Advances in Algebraic Coding Theory, (3/27-3/28, 2010), Lexington, KY.
- [6] Session chair at US-Korea Conference 2009, Raleigh, NC, Mathematics: Fundamentals and Applications, 7/16 - 7/19, 2009.
- [5] Session chair at US-Korea Conference 2008, San Diego, Applied and Pure Mathematics, 8/14 - 8/16, 2008.
- [4] Co-organizer with W.C. Huffman of AMS sectional meeting on coding theory, (10/21-10/22, 2006), Cincinnati, OH.

- [3] Participant for the Algebra-Combinatorics-Number Theory seminar (since Fall, 2005) at U. of Louisville.
- [2] Senior mentor at 2004 IMA PI Summer Program for Graduate Students on Coding and Cryptography (6/8-6/26, 2004).
- [1] Organizer of coding theory seminar at U. of Nebraska (9/2003 - 5/2005) and an informal cryptography seminar with four graduate students (Fall, 2003).

J. Academic Membership:

American Mathematical Society (past), Institute of Electrical and Electronics Engineers (past Member), Institute of Combinatorics and its Applications (current Fellow).

K. Doctoral Students Supervised:

Finley Freibert from Fall, 2009-Spring, 2012. Currently an Assistant Professor at Ohio Dominican University, Columbus, OH.

L. Postdoctoral Scholars Supervised:

Sunghyu Han.

Dr. Han was a postdoc at the University of Louisville for 2007-2008 and is now a tenure-track assistant professor at Korea University of Technology and Education, Cheonan, Korea.

M. Courses Taught:

- [1] At University of Illinois at Chicago:
Elementary Algebra, Calculus I, II, III, and Business Mathematics
- [2] At University of Nebraska at Lincoln:
Contemporary Math, Graph Theory, Calculus II, III, Linear Algebra, Number Theory/Cryptography, Combinatorics, Coding Theory (independent study), Elliptic Curves (independent study)
- [3] At University of Louisville:
Finite Math, Precalculus, Calculus I, II, III, Linear Algebra, Combinatorics, Modern Algebra I, II, Abstract Algebra (graduate) I, II, Coding Theory (independent study).

N. Services at University of Louisville:

- [1] Departmental Divisional Program:
Colloquium Committee (2008-2009), Faculty Search Committee (2008-2009, 2006-2007, 2005-2006), Member of Undergraduate Scholarship Committee (Spring, 2007), Member of Bullitt Lecture Committee (2006-2007), Chair of the Algebra Qualifying Exam (Fall, 2006)

[2] College (A & S):

Academic Discipline Committee (2008-2011)

[3] University Wide:

Advisor of Korean Student Association at University of Louisville (2008 -current)

[4] Service to the Community:

National Mathematics and Science Competition (NMSC) Math Committee (2008, 2009, 2011). It has been recognized as an important Community service organized by the Korean-American Scientists and Engineers Association.