

Publications of Chris Heegard

Books

1. Chris Heegard, John (Seán) T. Coffey, Srikanth Gummadi, Peter A. Murphy, Ron Provencio, Eric J. Rossin, Sid Schrum, and Matthew B. Shoemake, “Evolution of 2.4 GHz Wireless LANs,” Chapter 2 of “Wireless Local Area Networks - The New Wireless Revolution,” B. Bing, Editor, John Wiley, 2002. [www]
2. Chris Heegard and Stephen Wicker, “Turbo Coding,” ISBN: 0-7923-8378-8, Kluwer Academic Press, January 1999. [www]

Refereed Publications

1. Chris Heegard, John (Seán) T. Coffey, Srikanth Gummadi, Eric J. Rossin, Matthew B. Shoemake and Michael Wilhoite “Combined Equalization and Decoding for IEEE 802.11b Devices,” Vol. SAC-21, No. 2, *IEEE Selected Areas in Communications*, February 2003. [www]
2. Chris Heegard, John (Seán) T. Coffey, Srikanth Gummadi, Peter A. Murphy, Ron Provencio, Eric J. Rossin, Sid Schrum, and Matthew B. Shoemake, “High Performance Wireless Ethernet,” *IEEE Communications Magazine*, November 2001. [www]
3. Chris Heegard and Andrew King, “FIR Parity Check Codes,” *IEEE Transactions on Communications*, Vol. COM-48, No. 7, July 2000. [www]
4. Ian Blake, Thomas Høholdt, Victor Wei and Chris Heegard, “Algebraic Geometry Coding,” (special issue celebrating the 50th anniversary of Information Theory), Vol. IT-44, No. 6, pp. 2596 - 2618 *IEEE Transactions on Information Theory*, October 1998. [www]
5. John H. Little, Keith Saints and Chris Heegard, “On the Structure of Hermitian Codes,” *Journal of Pure and Applied Algebra.*, 1997. [www]
6. Chris Heegard, John H. Little and Keith Saints, “Systematic Encoding via Gröbner Bases for a Class of Algebraic Geometric Goppa Codes,” Vol. IT-42, No. 6, *IEEE Transactions on Information Theory*, November 1995. [www]
7. Keith Saints and Chris Heegard, “Algebraic-Geometric Codes and Multi-dimensional Cyclic Codes: A Unified Theory and Algorithms for Decoding Using Gröbner Bases,” Vol. IT-42, No. 6, *IEEE Transactions on Information Theory*, November 1995. [www]
8. Eric J. Rossin, Nagabhushana T. Sindhushay and Chris Heegard, “Trellis Group Codes for the Gaussian Channel,” Vol. IT-41, No. 5, *IEEE Transactions on Information Theory*, September 1995. [www]

9. Chris Heegard, Scott A. Lery and Woo H. Paik, "Practical Coding for QAM Transmission of HDTV," *IEEE Journal on Selected Areas in Communications*, Vol. SAC-11, January 1993. [www] (Reprinted in *Digital Video: Concepts and Applications Across Industries*, Edited by Theodore S. Rzeszewski, IEEE Press, 1995.)
10. Chris Heegard and Lawrence Ozarow, "Bounding the Capacity of Saturation Recording: the Lorentz Model and Applications," *IEEE Journal on Selected Areas in Communications*, Vol. SAC-10, January 1992. [www]
11. Chris Heegard, Alexandra Duel-Hallen and Rajeev Krishnamoorthy, "On the Capacity of the Noisy Run-Length Channel," *IEEE Journal on Selected Areas in Communications*, Vol. SAC-10, January 1992. [www]
12. Kenneth Kerpez, Ayis Gallopoulos and Chris Heegard, "Maximum Entropy, Charge Constrained, Run-length Codes," *IEEE Transactions on Information Theory*, Vol. IT-37, May 1991. [www]
13. Chris Heegard, Brian Marcus and Paul Siegel, "Variable Length State Splitting with Applications to Average Run-length Constrained (ARC) Codes," *IEEE Transactions on Information Theory*, Vol. IT-37, May 1991. [www]
14. Thomas Fuja and Chris Heegard, "Focused Codes for Channels with Skewed Errors," *IEEE Transactions on Information Theory*, Vol. IT-36, No. 4, pp. 773-783, July 1990. [www]
15. Thomas Fuja, Chris Heegard and Mario Blaum, "Cross Parity Check Convolutional Codes," *IEEE Transactions on Information Theory* Vol. IT-35, No. 6, pp. 1264-1276, November 1989. [www]
16. Ayis Gallopoulos, Chris Heegard and Paul Siegel, "The Power Spectrum of Run-Length Limited Codes," *IEEE Transactions on Communications*, Vol. COM-37, No. 9, September 1989. [www]
17. Alexandra Duel-Hallen and Chris Heegard, "Delayed Decision-Feedback Sequence Estimation," *IEEE Transactions on Communications*, Vol. COM-37, No. 5, pp. 428-436, May 1989. [www]
18. Thomas Fuja, Chris Heegard and Rodney Goodman, "Linear Sum Codes for Random Access Memories," *IEEE Transactions on Computers*, Vol. C-37, No. 9, pp. 1030-1042, September 1988. [www]
19. A. Robert Calderbank, Chris Heegard and Ting-Ann Lee, "Binary Convolutional Codes with Application to Magnetic Recording," *IEEE Transactions on Information Theory*, Vol. IT-32, No. 6, pp. 797-815, November 1986. [www]

20. Tom Fuja and Chris Heegard, "Row/Column Replacement for the Control of Hard Defects in Semiconductor RAM's," *IEEE Transactions on Computers*, Vol. C-35, No. 11, pp. 996-1000, November 1986. [www]
21. Chris Heegard and Toby Berger, "Rate-Distortion When Side Information May Be Absent," *IEEE Transactions on Information Theory*, Vol. IT-30, No. 6, pp. 727-734, November 1985. [www]
22. Chris Heegard, "On the Capacity of Permanent Memory," *IEEE Transactions on Information Theory*, Vol. IT-30, No. 1, pp. 34-42, January 1985. [www]
23. Chris Heegard, "Partitioned Linear Block Codes for Computer Memory with "Stuck - at" Defects," *IEEE Transactions on Information Theory*, Vol. IT-29, No.6, pp. 831-842, November 1983. [www]
24. Chris Heegard and Abbas El Gamal, "On the Capacity Computer Memory with Defects," *IEEE Transactions on Information Theory*, Vol. IT-29, No. 5, pp. 731-739, September 1983. [www]
25. Chris Heegard, Hugo E. dePedro and Jack K. Wolf, "Permutation Codes for the Gaussian Broadcast Channel with Two Receivers," *IEEE Transactions on Information Theory*, Vol. IT-24, No. 5, pp.569-578, September 1978. [www]
26. Chris Heegard, Jerrold A. Heller and Andrew J. Viterbi, "A Microprocessor-Based PSK Modem for Packet Transmission Over Satellite Channels," *IEEE Transactions on Communications*, Vol. COM-26, No. 5, pp.552-564, May 1978. [www]

Conference Publications

1. Chris Heegard, "High Performance Wireless Local Area Networks (WLAN) in the ISM, 2.4GHz, Band," Wireless Symposium/Portable by Design, Chicago Il, September 26-29, 2000.
2. Mehul Motani and Chris Heegard, "Computing Weight Distributions of Convolutional Codes via Shift Register Synthesis," 13th AAECC Symposium On Applied Algebra, Algebraic Algorithms, and Error-Correcting Codes,Hawaii (USA), November 15-19, 1999.
3. Matthew Shoemake, Chris Heegard and Eric Rossin, "Turbo Codes for High Order Constellations," IEEE Information Theory Workshop, Killarney, Kerry, Ireland, June 22-26, 1998.
4. Chris Heegard, "Turbo Coding for Magnetic Recording," IEEE Information Theory Workshop, San Diego, CA, February 8 - 11, 1998.

5. David Rowe and Chris Heegard, "Balanced Concatenated Trellis Coded Modulation and Reed-Solomon Codes," 1996 International Symposium on Information Theory and its Applications, Victoria, British Columbia, CANADA, September, 1996.
6. Nagabhushana T. Sindhushay and Chris Heegard, "A Source Coding Theorem for Stationary Sources Parsed with Trees," 1994 Conference on Information Sciences and Systems, Princeton University, March, 1994.
7. Talal Shamoon and Chris Heegard, "A Rapidly Adaptive Lossless Compression Algorithm for High Fidelity Audio Coding," 1994 DCC, Snowbird Utah, March, 1994.
8. Chris Heegard and Eric J. Rossin, "Trellis Codes, Symbolic Dynamics, and Isometries," *DIMACS Series in Discrete Mathematics and Theoretical Computer Science, Coding and Quantization*, Robert Calderbank, G. David Forney Jr., Nader Moayeri, Editors, Volume 14, 1993.
9. Keith Saints and Chris Heegard, "On Hyperbolic Cascaded Reed-Solomon Codes," Tenth International Symposium on Applied Algebra, Algebraic Algorithms, and Error Correcting Codes (AAECC-10), San Juan de Puerto Rico, May 10-14, 1993.
10. Eric Rossin, Mitchell D. Trott and Chris Heegard, "Geometrically Uniform, Rotationally Invariant 4-Dimensional Trellis Codes," 1993 Conference on Information Sciences and Systems, Johns Hopkins University, March, 1993.
11. Nagabhushana T. Sindhushay and Chris Heegard, "Finding the Minimal Graph for a Shift of Finite Type from a Forbidden Word List," 1993 Conference on Information Sciences and Systems, Johns Hopkins University, March, 1993.
12. Eric Rossin and Chris Heegard, "Rotationally Invariant Trellis Codes with a Linear Structure," 1992 Conference on Information Sciences and Systems, Princeton University, March, 1992.
13. Talal Shamoon and Chris Heegard, "High-Fidelity Audio Compression: Fractional-Octave Wavelets and Adaptive Quantization," 1992 International Conference on Acoustics, Speech and Signal Processing, San Francisco, California, March, 1992.
14. Mignon Belongie and Chris Heegard, "Pairwise Charge Constrained Run Length Codes," 1991 Conference on Information Sciences and Systems, Johns Hopkins University, March, 1991.
15. Alexandra Duel-Hallen and Chris Heegard, "Spectra of Cyclostationary Run-length Limited Codes," 1991 Conference on Information Sciences and Systems, Johns Hopkins University, March, 1991.

16. Rajeev Krishnamoorthy and Chris Heegard, "Structure and Decoding of Reed-Solomon Based Cascade Codes," 1991 Conference on Information Sciences and Systems, Johns Hopkins University, March, 1991.
17. Talal Shamoon and Chris Heegard, "Audio Compression via Wavelets and Multiresolution Filtering," 1991 Conference on Information Sciences and Systems, Johns Hopkins University, March, 1991.
18. Chris Heegard, "Trellis Codes for Recording," 1988 IEEE Military Communications Conference, San Diego, October 23–26, 1988.
19. Tom Fuja and Chris Heegard, "Asymptotic Bounds for Focused Error Control Codes," 26'th Annual Allerton Conference on Communication, Control and Computing, September 28–30, 1988.
20. Chris Heegard and Alexandra Duel-Hallen, "On the Capacity of the Noisy Run-Length Channel," 1988 IEEE International Workshop on Information Theory, Beijing China, July, 1988.
21. Tom Fuja and Chris Heegard, "Focused Error Control Codes," 1988 Conference on Information Sciences and Systems, Princeton University, March 16–18, 1988.
22. Chris Heegard, Rasmik Karabed and David Neuhoff, "Transmission of Sources over Noiseless Channels," 1988 Conference on Information Sciences and Systems, Princeton University, March 16–18, 1988.
23. Chris Heegard, "A Pair Of Information Theoretic Lemmas With Application To Run-Length Coding," 25'th Annual Allerton Conference on Communication, Control and Computing, September 30–October 2, 1987.
24. Chris Heegard and Mignon Belongie, "Combined Algebraic and Run-Length Limited Codes," 5th International Conference on Applied Algebra, Algebraic Algorithms and Error Correcting Codes, Menorca, SPAIN, June 15–19, 1987.
25. Alexandra Duel and Chris Heegard, "Signal Processing in Digital Recording: The Delayed Decision-Feedback Sequence Estimation Algorithm," SPIE Conference, San Diego, August 18–22, 1986.
26. Alexandra Duel and Chris Heegard, "Delayed Decision Feedback Sequence Estimation for QAM and Trellis Coded Systems," 1986 Conference on Information Sciences and Systems, Princeton University, March 19–21, 1986.
27. Chris Heegard, "Filtered Trellis Codes — A Study of Distance Properties of Magnetic Recording Codes," 2'cd IASTED International Conference — TELECON'85, Rio de Janeiro, Brazil, December 10–13, 1985.

28. Alexandra Duel and Chris Heegard, "Delayed Decision-Feedback Sequence Estimation," 23'rd Annual Allerton Conference on Communication, Control and Computing, October 2–4, 1985.
29. Thomas Fuja, Chris Heegard and Rodney Goodman, "The Structure and Complexity of Linear Sum Codes," 23'rd Annual Allerton Conference on Communication, Control and Computing, October 2–4, 1985.
30. Ting-Ann Lee and Chris Heegard, "An Inversion Technique for the Design of Binary Convolutional Codes for the $1 - D^N$ Channel," 1985 Conference on Information Sciences and Systems, Johns Hopkins University, March 27–29, 1985.
31. Chris Heegard and Ting-Ann Lee, "New Modulation Codes for Magnetic Recording," 22'cd Annual Allerton Conference on Communication, Control and Computing, October 3–5, 1984.
32. Chris Heegard, "An Efficient Encoder for Algebraic Optical Disk Codes," 1984 Conference on Information Sciences and Systems, Princeton University, March 14–16, 1984.
33. Chris Heegard, C. Richard Johnson and James P. Lyons, "Quantizer Effects in RML-Based ADPCM," Conference on Decision and Control, San Antonio, Texas, December 14–16 1983.
34. Chris Heegard and Toby Berger, "The Binary and Gaussian Rate-Distortion Functions for a Degraded Source Network," 21'st Annual Allerton Conference on Communication, Control and Computing, October 5–7, 1983.
35. Chris Heegard, "On the Capacity of Permanent Memory," 1983 Conference on Information Sciences and Systems, Johns Hopkins University, March 23–25, 1983.
36. C. Richard Johnson, Jim P. Lyons and Chris Heegard, "A New Parameter Estimation Structure Applicable to ADPCM," 1983 International Conference on Acoustics, Speech and Signal Processing, Boston, Massachusetts, April 14–16, 1983.
37. Chris Heegard, "Codes for Optical Data Storage," SPIE Topical Meeting on Optical Data Storage, Lake Tahoe Nevada, January 19–22, 1983.

Papers Presented

1. Mehul Motani, Venugopal V. Veeravalli and Chris Heegard, "On Capacity and Spreading in CDMA Systems," 2000 IEEE Information Theory Symposium, Sorrento, ITALY, June, 2000.

2. Mehul Motani, Venugopal Veeravalli and Chris Heegard, "On Multiple Access Spread Spectrum Systems," Second International Conference on Information, Communications & Signal Processing (ICICS'99), 7-10 December 1999, Hotel Mandarin, Singapore.
3. Kenneth Andrews, Chris Heegard and Dexter Kozen "Interleaver Design Methods for Turbo Coding," 1998 IEEE Information Theory Symposium, Cambridge, MA, August, 1998.
4. Mehul Motani and Chris Heegard, "The Viterbi Algorithm Meets the Key Equation," 1998 IEEE Information Theory Symposium, Cambridge, MA, August, 1998.
5. Matthew Shoemake and Chris Heegard, "A New Turbo Code for 8-PSK Modulation," 1998 IEEE Information Theory Symposium, Cambridge, MA, August, 1998.
6. Ivelisse Rubio, Moss Sweedler and Chris Heegard, "Gröbner Bases for 0-Dimensional Ideals with Applications to Coding Theory," Algebraic Geometry and Coding Theory-6, Marseilles, FRANCE, June, 1997.
7. Matthew Shoemake and Chris Heegard, "Computationally Efficient Turbo Decoding with the Bi-directional Viterbi," 1997 IEEE Information Theory Symposium, Ulm, GERMANY, June-July, 1997.
8. Ivelisse Rubio, Moss Sweedler and Chris Heegard, "Gröbner Bases for Linear Recursion Relations on m-D Arrays and Applications to Decoding," 1997 IEEE Information Theory Symposium, Ulm, GERMANY, June-July, 1997.
9. Chris Heegard, "Shaping, Coding and Channel Capacity for the Gaussian Channel," 1996 IEEE Information Theory Workshop, Haifa, ISRAEL, June, 1996.
10. Chris Heegard, "Cable Modem Technology: Hopes, Dreams and Reality," Workshop on Frontiers in Distributed Information Systems, Key West, Florida, April 28 – May 1, 1996.
11. Chris Heegard, "Constellation Shaping for the Gaussian Channel," 1995 IEEE Information Theory Symposium, Whistler, B.C., CANADA, September, 1995.
12. Eric Rossin, Chris Heegard and David Rowe, "Punctured, Rotationally Invariant Trellis Coding," 1995 IEEE Information Theory Symposium, Whistler, B.C., CANADA, September, 1995.
13. Chris Heegard, "Modulation and FEC for Digital TV Transmission," 1995 IEEE Information Theory Workshop, Rydzyna, POLAND, June, 1995.

14. Chris Heegard, "Digital TV," Workshop on Emerging Opportunities for Information Technology, Key West, Florida, April 30 – May 2, 1995.
15. Talal Shamoon and Chris Heegard, "Adaptive Update Algorithms for Fixed Dictionary Lossless Data Compressors," 1994 IEEE Information Theory Symposium, Trondheim, NORWAY, June 27 – July 1, 1994.
16. Nagabhushana T. Sindhushay and Chris Heegard "Symbolic Dynamic Techniques for Trellis Group Codes," 1994 IEEE Information Theory Symposium, Trondheim, NORWAY, June 27 – July 1, 1994.
17. Keith Saints, Ivelisse Rubio and Chris Heegard, "Decoding Algebraic-Geometric Codes Using Gröbner Bases," 1994 IEEE Information Theory Symposium, Trondheim, NORWAY, June 27 – July 1, 1994.
18. Eric J. Rossin and Chris Heegard "On the Symmetries and Structure of Trellis Codes," 1994 IEEE Information Theory Symposium, Trondheim, NORWAY, June 27 – July 1, 1994.
19. Chris Heegard, Eric J. Rossin and Nagabhushana T. Sindhushay, "Trellis Group Codes for the Gaussian Channel," 1993 IEEE Information Theory Workshop on Coding, System Theory and Symbolic Dynamics Mansfield, Massachusetts, October 18–20, 1993.
20. Nagabhushana T. Sindhushay and Chris Heegard "Symbolic Dynamics Groups and Generators," 1993 IEEE Information Theory Workshop, Mt. Fuji, Japan, June, 1993.
21. Keith Saints and Chris Heegard "Cascaded Reed-Solomon Codes and Gröbner Bases," 1993 IEEE Information Theory Workshop, Mt. Fuji, Japan, June, 1993.
22. Eric J. Rossin and Chris Heegard, "Rotationally Invariant Trellis Codes for QAM," 1993 IEEE Information Theory Symposium, San Antonio Texas, January, 1993.
23. Talal Shamoon and Chris Heegard, "Lossless Compression Algorithms for High Fidelity Audio Compression," 1993 IEEE Information Theory Symposium, San Antonio Texas, January, 1993.
24. Keith Saints and Chris Heegard, "Algebraic Structure and Decoding of Two - Dimensional Cascade Codes," 1993 IEEE Information Theory Symposium, San Antonio Texas, January, 1993.
25. Mignon Belongie and Chris Heegard, "Runlength Limited Trellis Codes for Partial Response Channels," 1993 IEEE Information Theory Symposium, San Antonio Texas, January, 1993.
26. Chris Heegard, "Isometries of Trellis Codes via Symbolic Dynamics over Groups," MSRI Symbolic Dynamics Conference Program, Berkeley, November 2–6, 1992.

27. Eric Rossin and Chris Heegard, "Trellis Codes, Symbolic Dynamics, and Isometries," Joint DIMACS / IEEE Workshop on Coding and Quantization, Rutgers University, October 19–21, 1992.
28. Chris Heegard, Mignon Belongie, Nagabhushana Sindhushay, "Coding with Variable Length Graphs," 1992 IEEE Information Theory Workshop, Salvador, Brazil, June, 1992.
29. Mignon Belongie and Chris Heegard, "Variable Length Trellis Decoding," 1991 IEEE Information Theory Symposium, Budapest, Hungary, June, 1991.
30. Chris Heegard and Mignon Belongie, "Trellis Codes and Sequence Estimation for Recording Channels," 1990 IEEE Information Theory Workshop, Eigenhoven, Netherlands, June, 1990.
31. Mignon Belongie and Chris Heegard, "Performance of Trellis Coded Run-Length Codes," 1990 IEEE Information Theory Symposium, San Diego, California, January 14–19, 1990.
32. Rajeev Krishnamoorthy and Chris Heegard, "The Effect of Coding on the Reliability of Computer Memories," 1990 IEEE Information Theory Symposium, San Diego, California, January 14–19, 1990.
33. Kenneth Kerpez, Ayis Gallopoulos and Chris Heegard, "Maximum Entropy, Charge Constrained, Run-length Codes," 1990 IEEE Information Theory Symposium, San Diego, California, January 14–19, 1990.
34. Rajeev Krishnamoorthy and Chris Heegard, "Reliability of Computer Memory," 1989 IEEE/CAM Information Theory Workshop, Cornell University, Ithaca, New York, June 25–29, 1989.
35. Mignon Belongie and Chris Heegard, "Trellis Constrained, Run-Length Codes," 1989 IEEE/CAM Information Theory Workshop, Cornell University, Ithaca, New York, June 25–29, 1989.
36. Chris Heegard and Rajeev Krishnamoorthy, "Limits on Coding for Computer Memory," Workshop on Information Theory, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May, 1989.
37. Chris Heegard and Mignon Belongie, "Trellis Constrained, Run-Length Codes," IEEE Communication Theory Workshop, Hawkes Key, Florida, April 10–12, 1989.
38. Chris Heegard, Brian Marcus and Paul Siegel, "Variable Length State Splitting with Applications to Average Run-length Constrained (ARC) Codes," IEEE International Symposium on Information Theory, Kobe, Japan, June, 1988.

39. Chris Heegard, "Trellis Coded Run-Length Codes," 1987 Workshop on Error - Correcting Codes, Almaden Research Center, IBM, San Jose CA., September 1987.
40. Chris Heegard, "Combined Trellis and Run-Length Coding," International Symposium on Information and Coding Theory, Campinas, SP, Brazil, July 27-29, 1987.
41. Chris Heegard, "Spectral Properties of Run-Length Limited and Charge Constrained Modulation Codes," IEEE Communication Theory Workshop, Howie-In-The-Hills, Florida, April 27-29, 1987.
42. Chris Heegard, "Properties of Constrained Modulation Codes," National Radio Science meeting, Boulder Colorado, January 12-15, 1987.
43. Thomas Fuja, Chris Heegard and Mario Blaum, "Cross Parity Check Convolutional Codes for Magnetic Tape," IEEE International Symposium on Information Theory, University of Michigan, Ann Arbor, October 6-9, 1986.
44. Chris Heegard, A. Robert Calderbank and Ting-Ann Lee, "Binary Convolutional Codes with Application to Magnetic Recording," IEEE International Symposium on Information Theory, University of Michigan, Ann Arbor, October 6-9, 1986.
45. Thomas Fuja, Chris Heegard and Mario Blaum, "Cross Parity Check Codes for Magnetic Tape," 1986 Workshop on Error-Correcting Codes, Almaden Research Center, IBM, San Jose CA., August 1986.
46. Chris Heegard, Paul Siegal and Panagiotis Gallopoulos, "On the Spectrum of (d, k) Codes," Workshop on Information Theory, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, May 11-17, 1986.
47. Howard L. Dyckman and Chris Heegard, "On the Capacity of Gaussian Channels with Intersymbol Interference and a Cardinality Constraint on the Input," IEEE International Symposium on Information Theory, Brighton, England, June 23-28, 1985.
48. Thomas Fuja, Chris Heegard and Rodney Goodman, "Some Linear Sum Codes for Random Access Memories," IEEE International Symposium on Information Theory, Brighton, England, June 23-28, 1985.
49. A. Robert Calderbank, Chris Heegard and Lawrence H. Ozarow, "A New Approach to Coding for High Density Magnetic Recording," IEEE International Symposium on Information Theory, Brighton, England, June 23-28, 1985.

50. Ting-Ann Lee and Chris Heegard, "Binary Convolutional Codes for Partial Response Channels," Fourth Caribbean Conference on Combinatorics and Computing, Puerto Rico, April 1–5, 1985.
51. Chris Heegard and Thomas Fuja, "Redundancy in the Design of Semiconductor Memories," 1984 IEEE Information Theory Workshop, Caesarea Israel, July 2–6, 1984.
52. Chris Heegard and Toby Berger, "Rate-Distortion when Side Information May Be Absent," IEEE International Symposium on Information Theory, St. Jovite, Quebec, Canada, September 25–29, 1983.
53. Chris Heegard, "Algebraic Codes for Optical Data Disks," IEEE International Symposium on Information Theory, St. Jovite, Quebec, Canada, September 25–29, 1983.
54. Chris Heegard, "Linear Block Codes for Computer Memory with Defects," IEEE International Symposium on Information Theory, Les Arcs, France, June 1982.
55. Chris Heegard and Abbas El Gamal, "On the Capacity of Computer Memory with Defects," IEEE International Symposium on Information Theory, Santa Monica, California, February 1981.