

## LIST OF PUBLICATIONS

October 31, 2024

Lane A. Hemaspaandra born Lane A. Hemachandra)

### BOOKS

1. **Complexity Theory Retrospective II**, L. Hemaspaandra and A. Selman, editors, Springer-Verlag, softcover edition (original edition is entry 6), ISBN 1461273196, 2012.
2. **Theory of Semi-Feasible Algorithms**, L. Hemaspaandra and L. Torenvliet, Monographs in Theoretical Computer Science, an EATCS Series, Springer-Verlag, softcover edition (original edition is entry 4), ISBN 3-642-07581-0, 2010.
3. **The Complexity Theory Companion**, L. Hemaspaandra and M. Ogihara, Texts in Theoretical Computer Science, an EATCS Series, Springer-Verlag, softcover edition (original edition is entry 5), ISBN 3-642-08684-7, 2010.
4. **Theory of Semi-Feasible Algorithms**, L. Hemaspaandra and L. Torenvliet, Monographs in Theoretical Computer Science, an EATCS Series, Springer-Verlag, hardcover, ISBN 3-540-42200-5, 2003.
5. **The Complexity Theory Companion**, L. Hemaspaandra and M. Ogihara, Texts in Theoretical Computer Science, an EATCS Series, Springer-Verlag, hardcover, ISBN 3-540-67419-5, 2002.
6. **Complexity Theory Retrospective II**, L. Hemaspaandra and A. Selman, editors, Springer-Verlag, ISBN 0-387-94973-9, 1997.

### BOOK CHAPTERS

7. **The Complexity of Manipulative Actions in Single-Peaked Societies**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, in Economics and Computation: An Introduction to Algorithmic Game Theory, Computational Social Choice, & Fair Division, second edition, ed. J. Rothe, pp. 369–402, Springer, 2024.
8. **The Power of Self-Reducibility: Selectivity, Information, and Approximation**, L. Hemaspaandra, in Complexity and Approximation, eds. D.-Z. Du and J. Wang, pp. 19–47, Springer, 2020.
9. **Credimus**, E. Hemaspaandra, and L. Hemaspaandra, in The Future of Economic Design: The Continuing Development of a Field as Envisioned by Its Researchers, eds. J.-F. Laslier, H. Moulin, R. Sanver, and W. Zwicker, pp. 141–152, Springer, 2019.
10. **That Most Important Intersection**, L. Hemaspaandra, in Adventures Between Lower Bounds and Higher Altitudes: Essays Dedicated to Juraj Hromkovič on the Occasion of his 60th Birthday, eds. H.-J. Böckenhauer, D. Komm, and W. Unger, pp. 568–589, Springer, 2018.

11. **Complexity Classes**, L. Hemaspaandra, in Handbook of Discrete and Combinatorial Mathematics, second edition, ed. K. Rosen, pp. 1308–1314, CRC Press, 2018.
12. **Dodgson’s Rule and Young’s Rule**, I. Caragiannis, E. Hemaspaandra, and L. Hemaspaandra, in Handbook of Computational Social Choice, eds. F. Brandt, V. Conitzer, U. Endriss, J. Lang, and A. Procaccia, pp. 103–126, Cambridge University Press, 2016.
13. **The Complexity of Manipulative Actions in Single-Peaked Societies**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, in Economics and Computation: An Introduction to Algorithmic Game Theory, Computational Social Choice, & Fair Division, ed. J. Rothe, pp. 327–360, Springer, 2016.
14. **Computational Aspects of Approval Voting**, D. Baumeister, G. Erdélyi, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, in Handbook on Approval Voting, eds. J. Laslier and M. Sanver, pp. 199–251, Springer, 2010.
15. **A Richer Understanding of the Complexity of Election Systems**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, in Fundamental Problems in Computing: Essays in Honor of Professor Daniel J. Rosenkrantz, eds. S. Ravi and S. Shukla, pp. 375–406, Springer, 2009.
16. **Complexity Classes**, L. Hemaspaandra, in Handbook of Discrete and Combinatorial Mathematics, ed. K. Rosen, pp. 1085–1090, CRC Press, 2000.
17. **Witness-Isomorphic Reductions and Local Search**, S. Fischer, L. Hemaspaandra, and L. Torenvliet, in Complexity, Logic and Recursion Theory, ed. A. Sorbi, pp. 207–223, Marcel Dekker, Inc., 1997.
18. **Promises and Fault-Tolerant Database Access**, J.-Y. Cai, L. Hemachandra, and J. Vyskoč, in Complexity Theory: Current Research, eds. K. Ambos-Spies, S. Homer, and U. Schöning, pp. 101–146, Cambridge University Press, 1993.
19. **Reductions to Sets of Low Information Content**, V. Arvind, Y. Han, L. Hemachandra, J. Köbler, A. Lozano, M. Mundhenk, M. Ogiwara, U. Schöning, R. Silvestri, and T. Thierauf, in Complexity Theory: Current Research, eds. K. Ambos-Spies, S. Homer, and U. Schöning, pp. 1–45, Cambridge University Press, 1993.
20. **Is #P Closed Under Subtraction?**, L. Hemachandra and M. Ogiwara, in Current Trends in Theoretical Computer Science: Essays and Tutorials, eds. G. Rozenberg and A. Salomaa, pp. 523–536, World Scientific, 1993.

## REFEREED JOURNAL PUBLICATIONS

21. **Gaps, Ambiguity, and Establishing Complexity-Class Containments via Iterative Constant-Setting**, L. Hemaspaandra, M. Juvekar, A. Nadjimzadah, P. Phillips, to appear in ACM Transactions on Computation Theory.
22. **Separating and Collapsing Electoral Control Types**, B. Carleton, M. Chavrimootoo, L. Hemaspaandra, D. Narváez, C. Taliancich, and H. Welles, Journal of Artificial Intelligence Research. V. 81, pp. 71–116, September 2024.

23. **The Complexity of Online Bribery in Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Journal of Computer and System Sciences, V. 127, pp. 66–90, August 2022.
24. **The Opacity of Backbones**, L. Hemaspaandra, and D. Narváez, Information and Computation, V. 281, Article 104772, 10 pages, December 2021.
25. **Existence versus Exploitation: The Opacity of Backdoors and Backbones**, L. Hemaspaandra and D. Narváez, Progress in Artificial Intelligence, V. 10, #3, pp. 297–308, September 2021.
26. **Closure and Nonclosure Properties of the Classes of Compressible and Rankable Sets**, J. Abascal, L. Hemaspaandra, S. Maimon, and D. Rubery, Journal of Computer and System Sciences, V. 120, pp. 162–176, September 2021.
27. **The Robustness of LWPP and WPP, with an Application to Graph Reconstruction**, E. Hemaspaandra, L. Hemaspaandra, H. Spakowski, and O. Watanabe, Computational Complexity, V. 29, #2, Article No. 7, pp. 1–49, December 2020.
28. **Control in the Presence of Manipulators: Cooperative and Competitive Cases**, Z. Fitzsimmons, E. Hemaspaandra, and L. Hemaspaandra, Autonomous Agents and Multi-Agent Systems, V. 34, #2, Article No. 52, pp. 1–32, October 2020.
29. **Search versus Decision for Election Manipulation Problems**, E. Hemaspaandra, L. Hemaspaandra, and C. Menton, ACM Transactions on Computation Theory, V. 12, #1, Article No. 3, pp. 1–42, March 2020.
30. **Recursion-Theoretic Ranking and Compression**, L. Hemaspaandra and D. Rubery, Journal of Computer and System Sciences, V. 101, pp. 31–41, May 2019.
31. **The Complexity of Online Voter Control in Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Autonomous Agents and Multi-Agent Systems, V. 31, #5, pp. 1055–1076, September 2017.
32. **The Complexity of Controlling Candidate-Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Theoretical Computer Science, V. 678, pp. 14–21, May 2017.
33. **Manipulation Complexity of Same-System Runoff Elections**, Z. Fitzsimmons, E. Hemaspaandra, and L. Hemaspaandra, Annals of Mathematics and Artificial Intelligence, V. 77, #3/4, pp. 159–189, August 2016.
34. **Schulze and Ranked-Pairs Voting are Fixed-Parameter Tractable to Bribe, Manipulate, and Control**, L. Hemaspaandra, R. Lavace, and C. Menton, Annals of Mathematics and Artificial Intelligence, V. 77, #3/4, pp. 191–223, August 2016.
35. **Bypassing Combinatorial Protections: Polynomial-Time Algorithms for Single-Peaked Electorates**, F. Brandt, M. Brill, E. Hemaspaandra, and L. Hemaspaandra, Journal of Artificial Intelligence Research, V. 53, pp. 439–496, July 2015.
36. **Weighted Electoral Control**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, Journal of Artificial Intelligence Research, V. 52, pp. 507–542, April 2015.

37. **The Complexity of Online Manipulation of Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Journal of Computer and System Sciences, V. 80, #4, pp. 697–710, June 2014.
38. **The Complexity of Manipulative Attacks in Nearly Single-Peaked Electorates**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, Artificial Intelligence, V. 207, pp. 69–99, February 2014.
39. **Three Hierarchies of Simple Games Parameterized by “Resource” Parameters**, T. Gvozdeva, L. Hemaspaandra, and A. Slinko, International Journal of Game Theory, V. 42, #1, pp. 1–17, February 2013.
40. **The Shield that Never Was: Societies with Single-Peaked Preferences Are More Open to Manipulation and Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Information and Computation, V. 209, #2, pp. 89–107, February 2011.
41. **Multimode Control Attacks on Elections**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, Journal of Artificial Intelligence Research, V. 40, pp. 305–351, January 2011.
42. **Using Complexity to Protect Elections**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, Communications of the ACM, V. 53, #11, pp. 74–82, November 2010.
43. **On the Complexity of Kings**, E. Hemaspaandra, L. Hemaspaandra, T. Tantau, and O. Watanabe, Theoretical Computer Science, V. 411, #4–5, pp. 783–798, January 2010.
44. **Generalized Juntas and NP-Hard Sets**, G. Erdélyi, L. Hemaspaandra, J. Rothe, and H. Spakowski, Theoretical Computer Science, V. 410, #38–40, pp. 3995–4000, September 2009.
45. **Hybrid Elections Broaden Complexity-Theoretic Resistance to Control**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Mathematical Logic Quarterly, V. 55, #4, pp. 397–424, August 2009.
46. **Guarantees for the Success Frequency of an Algorithm for Finding Dodgson-Election Winners**, C. Homan and L. Hemaspaandra, Journal of Heuristics, V. 15, #4, pp. 403–423, August 2009.
47. **How Hard Is Bribery in Elections?**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, Journal of Artificial Intelligence Research, V. 35, pp. 485–532, July 2009.
48. **Frequency of Correctness versus Average Polynomial Time**, G. Erdélyi, L. Hemaspaandra, J. Rothe, and H. Spakowski, Information Processing Letters, V. 109, #16, pp. 946–949, July 2009.
49. **Llull and Copeland Voting Computationally Resist Bribery and Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Journal of Artificial Intelligence Research, V. 35, pp. 275–341, June 2009.
50. **The Complexity of Power-Index Comparison**, P. Faliszewski and L. Hemaspaandra, Theoretical Computer Science, V. 410, #1, pp. 101–107, January 2009.

51. **Enforcing and Defying Associativity, Commutativity, Totality, and Strong Non-invertibility for Worst-Case One-Way Functions**, L. Hemaspaandra, J. Rothe, and A. Saxena, Theoretical Computer Science, V. 401, #1–3, pp. 27–35, July 2008.
52. **The Consequences of Eliminating NP Solutions**, P. Faliszewski and L. Hemaspaandra, Computer Science Review, V. 2, #1, pp. 40–54, April 2008.
53. **Query-Monotonic Turing Reductions**, L. Hemaspaandra and M. Thakur, Theoretical Computer Science, V. 383, #2–3, pp. 153–186, September 2007.
54. **Cluster Computing and the Power of Edge Recognition**, L. Hemaspaandra, C. Homan, and S. Kosub, Information and Computation, V. 205, #8, pp. 1274–1293, August 2007.
55. **Anyone but Him: The Complexity of Precluding an Alternative**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Artificial Intelligence, V. 171, #5–6, pp. 255–285, April 2007.
56. **Dichotomy for Voting Systems**, E. Hemaspaandra and L. Hemaspaandra, Journal of Computer and System Sciences, V. 73, #1, pp. 73–83, February 2007.
57. **Complexity Results in Graph Reconstruction**, E. Hemaspaandra, L. Hemaspaandra, S. Radziszowski, and R. Tripathi, Discrete Applied Mathematics, V. 155, #2, pp. 103–118, January 2007.
58. **The Complexity of Computing the Size of an Interval**, L. Hemaspaandra, C. Homan, S. Kosub, and K. Wagner, SIAM Journal on Computing, V. 36, #5, pp. 1264–1300, December 2006.
59. **If  $P \neq NP$  then Some Strongly Noninvertible Functions are Invertible**, L. Hemaspaandra, K. Pasanen, and J. Rothe, Theoretical Computer Science, V. 362, #1–3, pp. 54–62, October 2006.
60. **The Complexity of Finding Top-Toda-Equivalence-Class Members**, L. Hemaspaandra, M. Ogihara, M. Zaki, and M. Zimand, Theory of Computing Systems, V. 39, #5, pp. 669–684, September/October 2006.
61. **Context-Free Languages Can Be Accepted with Absolutely No Space Overhead**, L. Hemaspaandra, P. Mukherji, and T. Tantau, Information and Computation, V. 203, #2, pp. 163–180, December 2005.
62. **All Superlinear Inverse Schemes Are  $\text{coNP}$ -Hard**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, Theoretical Computer Science, V. 345, #2–3, pp. 345–358, November 2005.
63. **Advice for Semifeasible Sets and the Complexity-Theoretic Cost(lessness) of Algebraic Properties**, P. Faliszewski and L. Hemaspaandra, International Journal of Foundations of Computer Science, V. 16, #5, pp. 913–928, October 2005.
64. **Extending Downward Collapse from 1-versus-2 Queries to  $m$ -versus- $m + 1$  Queries**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, SIAM Journal on Computing, V. 34, #6, pp. 1352–1369, July 2005.

65. **Competing Provers Yield Improved Karp–Lipton Collapse Results**, J.-Y. Cai, V. Chakaravathy, L. Hemaspaandra, and M. Ogihara, Information and Computation, V. 198, #1, pp. 1–23, April 2005.
66. **Lower Bounds and the Hardness of Counting Properties**, L. Hemaspaandra and M. Thakur, Theoretical Computer Science, V. 326, #1–3, pp. 1–28, October 2004.
67. **Algebraic Properties for Selector Functions**, L. Hemaspaandra, H. Hempel, and A. Nickelsen, SIAM Journal on Computing, V. 33, #6, pp. 1309–1337, August 2004.
68. **P-Immune Sets with Holes Lack Self-Reducibility Properties**, L. Hemaspaandra and H. Hempel, Theoretical Computer Science, V. 302, #1–3, pp. 457–466, June 2003.
69. **Almost-Everywhere Superiority for Quantum Polynomial Time**, E. Hemaspaandra, L. Hemaspaandra, and M. Zimand, Information and Computation, V. 175, #2, pp. 171–181, June 2002.
70. **On Characterizing of the Existence of Partial One-Way Permutations**, J. Rothe and L. Hemaspaandra, Information Processing Letters, V. 82, #3, pp. 165–171, May 2002.
71. **Reducing the Number of Solutions of NP Functions**, L. Hemaspaandra, M. Ogihara, and G. Wechsung, Journal of Computer and System Sciences, V. 64, #2, pp. 311–328, March 2002.
72. **Optimal Series-Parallel Tradeoffs for Reducing a Function to its Own Graph**, R. Beigel, L. Hemaspaandra, H. Hempel, and J. Vogel, Information and Computation, V. 173, #2, pp. 123–131, March 2002.
73. **A Second Step Towards Complexity-Theoretic Analogs of Rice’s Theorem**, L. Hemaspaandra, and J. Rothe, Theoretical Computer Science, V. 244, #1–2, pp. 205–217, August 2000.
74. **Characterizing of the Existence of One-Way Permutations**, L. Hemaspaandra and J. Rothe, Theoretical Computer Science, V. 244, #1–2, pp. 257–261, August 2000.
75. **Restrictive Acceptance Suffices for Equivalence Problems**, B. Borchert, L. Hemaspaandra, and J. Rothe, London Mathematical Society Journal of Computation and Mathematics, V. 3, pp. 86–95, March 2000.
76. **A Note on Bounded-Weight Error-Correcting Codes**, R. Bent, M. Schear, L. Hemaspaandra, and G. Istrate, Journal of Universal Computer Science, V. 5, #12, pp. 817–827, December 1999.
77. **Robust Reductions**, J.-Y. Cai, L. Hemaspaandra, and G. Wechsung, Theory of Computing Systems, V. 32, #6, pp. 625–647, November/December 1999.
78. **Self-Specifying Machines**, L. Hemaspaandra, H. Hempel, and G. Wechsung, International Journal of Foundations of Computer Science, V. 10, #3, pp. 263–276, September 1999.
79. **Creating Strong, Total, Commutative, Associative One-Way Functions from Any One-Way Function in Complexity Theory**, L. Hemaspaandra and J. Rothe, Journal of Computer and System Sciences, V. 58, #3, pp. 648–659, June 1999.

80. **A Downward Collapse within the Polynomial Hierarchy**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, SIAM Journal on Computing, V. 28, #2, pp. 383–393, April 1999.
81. **Query Order**, L. Hemaspaandra, H. Hempel, and G. Wechsung, SIAM Journal on Computing, V. 28, #2, pp. 637–651, April 1999.
82. **Boolean Operations, Joins, and the Extended Low Hierarchy**, L. Hemaspaandra, Z. Jiang, J. Rothe, and O. Watanabe, Theoretical Computer Science, V. 205, #1–2, pp. 317–327, September 1998.
83. **Power Balance and Apportionment Algorithms for the United States Congress**, L. Hemaspaandra, K. Rajasethupathy, P. Sethupathy, and M. Zimand, ACM Journal of Experimental Algorithmics, V. 3, #1, 16pp., URI [www.jea.acm.org/1998/HemaspaandraPower](http://www.jea.acm.org/1998/HemaspaandraPower), August 1998.
84. **A Note on Linear-Nondeterminism, Linear-Sized, Karp-Lipton Advice for the P-Selective Sets**, L. Hemaspaandra, C. Nasipak, and K. Parkins, Journal of Universal Computer Science, V. 4, #8, pp. 670–674, August 1998.
85. **Query Order and the Polynomial Hierarchy**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, Journal of Universal Computer Science, V. 4, #6, pp. 574–588, June 1998.
86.  **$R_{1-tt}^{SN}(\text{NP})$  Distinguishes Robust Many-One and Turing Completeness**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, Theory of Computing Systems, V. 31, #3, pp. 307–325, May/June 1998.
87. **Universally Serializable Computation**, L. Hemaspaandra and M. Ogihara, Journal of Computer and System Sciences, V. 55, #3, pp. 547–560, December 1997.
88. **Exact Analysis of Dodgson Elections: Lewis Carroll’s 1876 Voting System is Complete for Parallel Access to NP**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, Journal of the ACM, V. 44, #6, pp. 806–825, November 1997.
89. **Easy Sets and Hard Certificate Schemes**, L. Hemaspaandra, J. Rothe, and G. Wechsung, Acta Informatica, V. 34, #11, pp. 859–879, November 1997.
90. **Unambiguous Computation: Boolean Hierarchies and Sparse Turing-Complete Sets**, L. Hemaspaandra and J. Rothe, SIAM Journal on Computing, V. 26, #3, pp. 634–653, June 1997.
91. **Polynomial-Time Multi-Selectivity**, L. Hemaspaandra, Z. Jiang, J. Rothe, and O. Watanabe, Journal of Universal Computer Science, V. 3, #3, pp. 197–229, March 1997.
92. **Logspace Reducibility: Models and Equivalences**, L. Hemaspaandra and Z. Jiang, International Journal of Foundations of Computer Science, V. 8, #1, pp. 95–108, March 1997.
93. **Threshold Computation and Cryptographic Security**, Y. Han, L. Hemaspaandra, and T. Thierauf, SIAM Journal on Computing, V. 26, #1, pp. 59–78, February 1997.
94. **Pseudorandom Generators and the Frequency of Simplicity**, Y. Han and L. Hemaspaandra, Journal of Cryptology, V. 9, #4, pp. 251–262, Autumn 1996.

95. **Strong Self-Reducibility Precludes Strong Immunity**, L. Hemaspaandra and M. Zimand, Mathematical Systems Theory, V. 29, #5, pp. 535–548, September/October 1996.
96. **Computing Solutions Uniquely Collapses the Polynomial Hierarchy**, L. Hemaspaandra, A. Naik, M. Ogihara, and A. Selman, SIAM Journal on Computing, V. 25, #4, pp. 697–708, August 1996.
97. **Reducibility Classes of P-Selective Sets**, L. Hemaspaandra, A. Hoene, and M. Ogihara, Theoretical Computer Science, V. 155, #2, pp. 447–457, March 1996 and erratum in V. 234, #1–2, p. 323, March 2000.
98. **Optimal Advice**, L. Hemaspaandra and L. Torenvliet, Theoretical Computer Science, V. 154, #2, pp. 367–377, February 1996.
99. **Nondeterministically Selective Sets**, L. Hemaspaandra, A. Hoene, A. Naik, M. Ogihara, A. Selman, T. Thierauf, and J. Wang, International Journal of Foundations of Computer Science, V. 6, #4, pp. 403–416, December 1995.
100. **Defying Upward and Downward Separation**, L. Hemaspaandra and S. Jha, Information and Computation, V. 121, #1, pp. 1–13, August 1995.
101. **Easily Checked Generalized Self-Reducibility**, L. Hemaspaandra and R. Silvestri, SIAM Journal on Computing, V. 24, #4, pp. 840–858, August 1995.
102. **P-Selectivity: Intersections and Indices**, L. Hemaspaandra and Z. Jiang, Theoretical Computer Science, V. 145, #1–2, pp. 371–380, July 1995.
103. **Space-Efficient Recognition of Sparse Self-Reducible Languages**, L. Hemaspaandra, M. Ogihara, and S. Toda, Computational Complexity, V. 4, #3, pp. 262–296, September 1994.
104. **On the Complexity of Graph Reconstruction**, D. Kratsch and L. Hemaspaandra, Mathematical Systems Theory, V. 27, #3, pp. 257–273, May/June 1994.
105. **Quasi-Injective Reductions**, E. Hemaspaandra and L. Hemaspaandra, Theoretical Computer Science, V. 123, #2, pp. 407–413, January 1994.
106. **Banishing Robust Turing Completeness**, L. Hemaspaandra, S. Jain, and N. Vereshchagin, International Journal of Foundations of Computer Science, V. 4, #3, pp. 245–265, September 1993.
107. **On Checking Versus Evaluation of Multiple Queries**, W. Gasarch, L. Hemachandra, and A. Hoene, Information and Computation, V. 105, #1, pp. 72–93, July 1993.
108. **A Complexity Theory for Feasible Closure Properties**, M. Ogiwara and L. Hemachandra, Journal of Computer and System Sciences, V. 46, #3, pp. 295–325, June 1993.
109. **Collapsing Degrees Via Strong Computation**, L. Hemachandra and A. Hoene, Journal of Computer and System Sciences, V. 46, #3, pp. 363–380, June 1993.
110. **Using Inductive Counting to Simulate Nondeterministic Computation**, G. Buntrock, L. Hemachandra, and D. Siefkes, Information and Computation, V. 102, #1, pp. 102–117, 1993.



111. **Polynomial-Time Compression**, J. Goldsmith, L. Hemachandra, and K. Kunen, Computational Complexity, V. 2, #1, pp. 18–39, 1992.
112. **Relating Equivalence and Reducibility to Sparse Sets**, E. Allender, L. Hemachandra, M. Ogiwara, and O. Watanabe, SIAM Journal on Computing, V. 21, #3, pp. 521–539, June 1992.
113. **Lower Bounds for the Low Hierarchy**, E. Allender and L. Hemachandra, Journal of the ACM, V. 39, #1, pp. 234–250, January 1992.
114. **Separating Complexity Classes with Tally Oracles**, L. Hemachandra and R. Rubinfeld, Theoretical Computer Science, V. 92, #2, pp. 309–318, January 1992.
115. **Simultaneous Strong Separations of Probabilistic and Unambiguous Complexity Classes**, D. Eppstein, L. Hemachandra, J. Tisdall, and B. Yener, Mathematical Systems Theory, V. 25, #1, pp. 23–36, 1992.
116. **On Sets With Efficient Implicit Membership Tests**, L. Hemachandra and A. Hoene, SIAM Journal on Computing, V. 20, #6, pp. 1148–1156, December 1991.
117. **On the Limitations of Locally Robust Positive Reductions**, L. Hemachandra and S. Jain, International Journal of Foundations of Computer Science, V. 2, #3, pp. 237–255, September 1991.
118. **Near-Testable Sets**, J. Goldsmith, L. Hemachandra, D. Joseph, and P. Young, SIAM Journal on Computing, V. 20, #3, pp. 506–523, June 1991.
119. **Kolmogorov Characterizations of Complexity Classes**, L. Hemachandra and G. Wechsung, Theoretical Computer Science, V. 83, #2, pp. 313–322, June 1991.
120. **A Note on Enumerative Counting**, J.-Y. Cai and L. Hemachandra, Information Processing Letters, V. 38, #4, pp. 215–219, May 1991.
121. **One-Way Functions and the Non-Isomorphism of NP-Complete Sets**, J. Hartmanis and L. Hemachandra, Theoretical Computer Science, V. 81, #1, pp. 155–163, April 1991.
122. **On Sets Polynomially Enumerable By Iteration**, L. Hemachandra, A. Hoene, D. Siefkes, and P. Young, Theoretical Computer Science, V. 80, #2, pp. 203–225, March 1991.
123. **Probabilistic Polynomial Time is Closed Under Parity Reductions**, R. Beigel, L. Hemachandra, and G. Wechsung, Information Processing Letters, V. 37, #2, pp. 91–94, January 1991.
124. **On the Complexity of Ranking**, L. Hemachandra and S. Rudich, Journal of Computer and System Sciences, V. 41, #2, pp. 251–271, October 1990.
125. **Robust Machines Accept Easy Sets**, J. Hartmanis and L. Hemachandra, Theoretical Computer Science, V. 74, #2, pp. 217–226, August 1990.
126. **On the Power of Parity Polynomial Time**, J.-Y. Cai and L. Hemachandra, Mathematical Systems Theory, V. 23, #2, pp. 95–106, 1990.
127. **The Strong Exponential Hierarchy Collapses**, L. Hemachandra, Journal of Computer and System Sciences, V. 39, #3, pp. 299–322, December 1989.

128. **Enumerative Counting is Hard**, J.-Y. Cai and L. Hemachandra, Information and Computation, V. 82, #1, pp. 34–44, July 1989.
129. **The Boolean Hierarchy II: Applications**, J.-Y. Cai, T. Gundermann, J. Hartmanis, L. Hemachandra, V. Sewelson, K. Wagner, and G. Wechsung, SIAM Journal on Computing, V. 18, #1, pp. 95–111, February 1989.
130. **The Boolean Hierarchy I: Structural Properties**, J.-Y. Cai, T. Gundermann, J. Hartmanis, L. Hemachandra, V. Sewelson, K. Wagner, and G. Wechsung, SIAM Journal on Computing, V. 17, #6, pp. 1232–1252, December 1988.
131. **On Sparse Oracles Separating Feasible Complexity Classes**, J. Hartmanis and L. Hemachandra, Information Processing Letters, V. 28, pp. 291–295, August 1988.
132. **Complexity Classes Without Machines: On Complete Languages for UP**, J. Hartmanis and L. Hemachandra, Theoretical Computer Science, V. 58, pp. 129–142, 1988.
133. **Using Simulated Annealing to Design Good Codes**, A. El Gamel, L. Hemachandra, I. Shperling, and V. Wei, IEEE Transactions on Information Theory, V. IT-33, #1, pp. 116–123, January 1987.

#### ADDITIONAL JOURNAL PUBLICATIONS

134. **Thirty Years of Complexity (Columns)**. L. Hemaspaandra, SIGACT News, V. 54, #1, pp. 82–89, March 2023.
135. **Juris Hartmanis and Two Golden Rules**. L. Hemaspaandra, SIGACT News, V. 53, #4, pp. 35–40, December 2022.
136. **Juris Hartmanis (1928–2022): Understanding Time, Space, and Human Creativity**, L. Hemaspaandra, SIGACT News, V. 53, #3, pp. 42–45, September 2022.
137. **Thoughts on Alan Selman (1941–2021)**, L. Hemaspaandra, Bulletin of the EATCS, #133, pp. 15–20, February 2021.
138. **Teaching Models, Computability, and Complexity in Time of COVID-19**, L. Hemaspaandra, SIGACT News, V. 51, #3, pp. 55–58, August 2020.
139. **Team Diagonalization**, L. Hemaspaandra and H. Spakowski, SIGACT News, V. 49, #3, pp. 51–61, September 2018.
140. **Beautiful Structures: An Appreciation of the Contributions of Alan Selman**, L. Hemaspaandra, SIGACT News, V. 45, #3, pp. 54–70, September 2014.
141. **An Atypical Survey of Typical-Case Heuristic Algorithms**, L. Hemaspaandra and R. Williams, SIGACT News, V. 43, #4, pp. 71–89, December 2012.
142. **Open Questions in the Theory of Semifeasible Computation**, P. Faliszewski and L. Hemaspaandra, SIGACT News, V. 37, #1, pp. 47–65, March 2006.
143. **The Complexity Theory Companion: Abridged Preface**, L. Hemaspaandra and M. Ogihara, SIGACT News, V. 32, #4, p. 66–68, December 2001.

144. **A Moment of Perfect Clarity II: Consequences of Sparse Sets Hard for NP with Respect to Weak Reductions**, C. Glaßer and L. Hemaspaandra, SIGACT News, V. 31, #4, pp. 39–51, December 2000.
145. **A Moment of Perfect Clarity I: The Parallel Census Technique**, C. Glaßer and L. Hemaspaandra, SIGACT News, V. 31, #3, pp. 37–42, September 2000.
146. **One-Way Functions in Worst-Case Cryptography: Algebraic and Security Properties are on the House**, A. Beygelzimer, L. Hemaspaandra, C. Homan, and J. Rothe, SIGACT News, V. 30, #4, pp. 25–40, December 1999.
147. **Writing and Editing Complexity Theory: Tales and Tools**, L. Hemaspaandra and A. Selman, SIGACT News, V. 29, #4, pp. 20–27, December 1998.
148. **What’s Up with Downward Collapse: Using the Easy-Hard Technique to Link Boolean and Polynomial Hierarchy Collapses**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, SIGACT News, V. 29, #3, pp. 10–22, September 1998.
149. **Take-Home Complexity**, L. Hemaspaandra, SIGACT News, V. 29, #2, pp. 9–13, June 1998.
150. **An Introduction to Query Order**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, Bulletin of the EATCS, #63, pp. 93–107, October 1997. (Also appears in the Festschrift book: *Komplexität, Graphen und Algorithmen*, J. Vogel and K. Wagner, editors, pp. 21–36, Würzburg, February 1999.)
151. **Raising NP Lower Bounds to Parallel NP Lower Bounds**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, SIGACT News, V. 28, #2, pp. 2–13, June 1997.
152. **Journals to Die For**, L. Hemaspaandra, SIGACT News, V. 28, #1, pp. 2–6, March 1997.
153. **Worlds to Die For**, L. Hemaspaandra, A. Ramachandran, and M. Zimand, SIGACT News, V. 26, #4, pp. 5–15, December 1995.
154. **The Satanic Notations: Counting Classes Beyond #P and Other Definitional Adventures**, L. Hemaspaandra and H. Vollmer, SIGACT News, V. 26, #1, pp. 2–13, March 1995.
155. **Teaching Computational Complexity: Resources to Treasure**, L. Hemaspaandra, SIGACT News, V. 25, #4, pp. 2–11, December 1994.
156. **Semi-Membership Algorithms: Some Recent Advances**, D. Denny-Brown, Y. Han, L. Hemaspaandra, and L. Torenvliet, SIGACT News, V. 25, #3, pp. 12–23, September 1994.
157. **The Not-Ready-for-Prime-Time Conjectures**, L. Hemaspaandra, SIGACT News, V. 25, #2, pp. 5–10, June 1994.
158. **Lowness: A Yardstick for NP-P**, L. Hemaspaandra, SIGACT News, V. 24, #2, pp. 10–14, Spring 1993.
159. **Is #P Closed Under Subtraction?**, L. Hemachandra and M. Ogiwara, Bulletin of the EATCS, #46, pp. 107–122, February 1992.

## PUBLICATIONS IN PROCEEDINGS OF SELECTIVE CONFERENCES

160. **Search versus Search for Collapsing Electoral Control Types**, B. Carleton, M. Chavrimootoo, L. Hemaspaandra, D. Narváez, C. Taliancich, and H. Welles, *Proceedings of the 21st European Conference on Multi-Agent Systems (2024)*, Springer Lecture Notes in Computer Science, to appear.
161. **Separating and Collapsing Electoral Control Types**, B. Carleton, M. Chavrimootoo, L. Hemaspaandra, D. Narváez, C. Taliancich, and H. Welles, *Proceedings of the 22nd International Conference on Autonomous Agents and Multiagent Systems*, pp. 1743–1751, IFAAMAS, May–June 2023. Journal version: [22].
162. **Search versus Search for Collapsing Electoral Control Types** (extended abstract), B. Carleton, M. Chavrimootoo, L. Hemaspaandra, D. Narváez, C. Taliancich, and H. Welles, *Proceedings of the 22nd International Conference on Autonomous Agents and Multiagent Systems*, pp. 2682–2684, IFAAMAS, May–June 2023.
163. **Gaps, Ambiguity, and Establishing Complexity-Class Containments via Iterative Constant-Setting**, L. Hemaspaandra, M. Juvekar, A. Nadjimzadah, P. Phillips, *Proceedings of the 47th International Symposium on Mathematical Foundations of Computer Science*. pp. 57:1–57:15, Leibniz International Proceedings in Informatics (LIPIcs) V. 241, August 2022. Journal version: [21].
164. **The Complexity of Online Bribery in Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 17th Conference on Theoretical Aspects of Rationality and Knowledge*, pp. 233–251, Electronic Proceedings in Theoretical Computer Science V. 297, July 2019. Journal version: [23].
165. **Closure and Nonclosure Properties of the Compressible and Rankable Sets**, J. Abascal, L. Hemaspaandra, S. Maimon, and D. Rubery, *Proceedings of the 13th International Conference on Language and Automata Theory and Applications*, pp. 177–189, Springer-Verlag Lecture Notes in Computer Science #11417, March 2019. Journal version: [26].
166. **Existence versus Exploitation: The Opacity of Backbones and Backdoors Under a Weak Assumption**, L. Hemaspaandra and D. Narváez, *Proceedings of the 45th International Conference on Current Trends in Theory and Practice of Computer Science*, pp. 247–259, Springer-Verlag Lecture Notes in Computer Science #11376, January 2019. Journal version: [25].
167. **The Robustness of LWPP and WPP, with an Application to Graph Reconstruction**, E. Hemaspaandra, L. Hemaspaandra, H. Spakowski, and O. Watanabe, *Proceedings of the 43rd International Symposium on Mathematical Foundations of Computer Science*, pp. 51:1–51:14, Leibniz International Proceedings in Informatics (LIPIcs) V. 117, August 2018. Journal version: [27].
168. **Computational Social Choice and Computational Complexity: BFFs?**, L. Hemaspaandra, *Proceedings of the 32nd AAAI Conference on Artificial Intelligence*, pp. 7971–7977, AAAI Press, February 2018.

169. **The Opacity of Backbones**, L. Hemaspaandra, and D. Narváez, *Proceedings of the 31st AAAI Conference on Artificial Intelligence*, pp. 3900–3906, AAAI Press, February 2017. Journal version: [24].
170. **More Natural Models of Electoral Control by Partition**, G. Erdélyi, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 4th International Conference on Algorithmic Decision Theory*, pp. 396–413, Springer-Verlag Lecture Notes in Artificial Intelligence #9346, September 2015.
171. **The Complexity of Manipulative Attacks in Nearly Single-Peaked Electorates**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 24rd International Joint Conference on Artificial Intelligence*, pp. 4178–4182, AAAI Press and IJCAI, July/August 2015. Journal version: [38].
172. **A Control Dichotomy for Pure Scoring Rules**, E. Hemaspaandra, L. Hemaspaandra, and H. Schnoor, *Proceedings of the 28th AAAI Conference on Artificial Intelligence*, pp. 712–720, AAAI Press, July 2014. (Also appears in the workshop notes of the *Fifth International Workshop on Computational Social Choice*, Pittsburgh, Pennsylvania, June 2014.)
173. **Bribery and Voter Control Under Voting-Rule Uncertainty**, G. Erdélyi, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems*, pp. 61–68, IFAAMAS, May 2014.
174. **Control in the Presence of Manipulators: Cooperative and Competitive Cases**, Z. Fitzsimmons, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 23rd International Joint Conference on Artificial Intelligence*, pp. 113–119, AAAI Press and IJCAI, August 2013. (Also appears in the workshop notes of the *Fifth International Workshop on Computational Social Choice*, Pittsburgh, Pennsylvania, June 2014.) Journal version: [28].
175. **Weighted Electoral Control**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 12th International Conference on Autonomous Agents and Multiagent Systems*, pp. 367–374, IFAAMAS, May 2013. (One of the three papers in the conference that were finalists for the 2013 AAMAS Best Paper Award.) Journal version: [36].
176. **Schulze and Ranked-Pairs Voting are Fixed-Parameter Tractable to Bribe, Manipulate, and Control**, L. Hemaspaandra, R. Lavaee, and C. Menton, *Proceedings of the 12th International Conference on Autonomous Agents and Multiagent Systems*, pp. 1345–1346, IFAAMAS, May 2013. Journal version: [34].
177. **Search versus Decision for Election Manipulation Problems**, E. Hemaspaandra, L. Hemaspaandra, and C. Menton, *Proceedings of the 30th Annual Symposium on Theoretical Aspects of Computer Science*, pp. 377–388, Leibniz International Proceedings in Informatics (LIPIcs) V. 20, February/March 2013. Journal version: [29].
178. **The Complexity of Online Manipulation of Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 14th Conference on Theoretical Aspects of Rationality and Knowledge*, pp. 111–120, TARK (tark.org), January 2013. (Preliminary version appears in *Workshop Notes of the Third International Workshop on Computational Social Choice*, ILLC, pp. 227–238, September 2012.) Journal version: [37].

179. **Online Voter Control in Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 20th European Conference on Artificial Intelligence*, pp. 396–401, IOS Press, August 2012. Journal version: [31].
180. **Controlling Candidate-Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 20th European Conference on Artificial Intelligence*, pp. 905–906, IOS Press, August 2012. Journal version: [32].
181. **The Complexity of Manipulative Attacks in Nearly Single-Peaked Electorates**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 13th Conference on Theoretical Aspects of Rationality and Knowledge*, pp. 228–237, ACM Digital Library, July 2011. Journal version: [38].
182. **Three Hierarchies of Simple Games Parameterized by “Resource” Parameters**, T. Gvozdeva, L. Hemaspaandra, and A. Slinko, *Proceedings of the Third International Workshop on Computational Social Choice*, pp. 259–270, Düsseldorf University Press, September 2010. Journal version: [39].
183. **Bypassing Combinatorial Protections: Polynomial-Time Algorithms for Single-Peaked Electorates**, F. Brandt, M. Brill, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 24th AAAI Conference on Artificial Intelligence*, pp. 715–722, AAAI Press, July 2010. (Also appears in *Proceedings of the Third International Workshop on Computational Social Choice*, pp. 211–222, Düsseldorf University Press, September 2010.) Journal version: [35].
184. **Multimode Control Attacks on Elections**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 21st International Joint Conference on Artificial Intelligence*, pp. 128–133, AAAI Press and IJCAI, July 2009. Journal version: [41].
185. **The Shield that Never Was: Societies with Single-Peaked Preferences Are More Open to Manipulation and Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 12th Conference on Theoretical Aspects of Rationality and Knowledge*, pp. 118–127, ACM Digital Library, July 2009. Journal version: [40].
186. **Copeland Voting Fully Resists Constructive Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 4th International Conference on Algorithmic Aspects in Information and Management*, pp. 165–176, Springer-Verlag Lecture Notes in Computer Science #5034, June 2008. (Also appears, in extended version combined with our related AAAI-07 paper, under the title “Llull and Copeland Voting Computationally Resist Bribery and Control,” in *Proceedings of the Second International Workshop on Computational Social Choice*, pp. 241–252, University of Liverpool, August 2008.) Journal version: [49].
187. **The Complexity of Power-Index Comparison**, P. Faliszewski and L. Hemaspaandra, *Proceedings of the 4th International Conference on Algorithmic Aspects in Information and Management*, pp. 177–187, Springer-Verlag Lecture Notes in Computer Science #5034, June 2008. Journal version: [50].
188. **On the Complexity of Kings**, E. Hemaspaandra, L. Hemaspaandra, T. Tantau, and O. Watanabe, *Proceedings of the 13th International Symposium on Fundamentals of Computation*

- Theory*, pp. 328–340, Springer-Verlag Lecture Notes in Computer Science #4639, August 2007. Journal version: [43].
189. **On Approximating Optimal Weighted Lobbying, and Frequency of Correctness versus Average-Case Polynomial Time**, G. Erdélyi, L. Hemaspaandra, J. Rothe, and H. Spakowski, *Proceedings of the 13th International Symposium on Fundamentals of Computation Theory*, pp. 300–311, Springer-Verlag Lecture Notes in Computer Science #4639, August 2007. Journal version: [44,48].
  190. **Llull and Copeland Voting Broadly Resist Bribery and Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 22nd AAAI Conference on Artificial Intelligence*, pp. 724–730, AAAI Press, July 2007. (Also appears, in extended version combined with our related AAIM-08 paper, under the title “Llull and Copeland Voting Computationally Resist Bribery and Control,” in *Proceedings of the Second International Workshop on Computational Social Choice*, pp. 241–252, University of Liverpool, August 2008.) Journal version: [49].
  191. **Hybrid Elections Broaden Complexity-Theoretic Resistance to Control**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 20th International Joint Conference on Artificial Intelligence*, pp. 1308–1314, AAAI Press and IJCAI, January 2007. (Also appears in *Proceedings of the First International Workshop on Computational Social Choice*, pp. 234–247, ILLC, University of Amsterdam, December 2006.) Journal version: [45].
  192. **Guarantees for the Success Frequency of an Algorithm for Finding Dodgson-Election Winners**, C. Homan and L. Hemaspaandra, *Proceedings of the 31st International Symposium on Mathematical Foundations of Computer Science*, pp. 528–539, Springer-Verlag Lecture Notes in Computer Science #4162, August/September 2006. (Also appears in *Proceedings of the First International Workshop on Computational Social Choice*, pp. 262–275, ILLC, University of Amsterdam, December 2006.) Journal version: [46].
  193. **The Complexity of Bribery in Elections**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, *Proceedings of the 21st National Conference on Artificial Intelligence*, pp. 641–646, AAAI Press, July 2006. (Also appears in *Proceedings of the First International Workshop on Computational Social Choice*, pp. 192–205, ILLC, University of Amsterdam, December 2006 and *Preproceedings of the Second North East Student Colloquium on Artificial Intelligence*, CD-ROM, Cornell University, April 2007.) Journal version: [47].
  194. **Cluster Computing and the Power of Edge Recognition**, L. Hemaspaandra, C. Homan, and S. Kosub, *Proceedings of the 3rd Annual Conference on Computation and Logic: Theory and Applications of Models of Computation*, pp. 283–294, Springer-Verlag Lecture Notes in Computer Science #3959, May 2006. Journal version: [54].
  195. **P-Selectivity, Immunity, and the Power of One Bit**, L. Hemaspaandra and L. Torenvliet, *Proceedings of the 32nd International Conference on Current Trends in Theory and Practice of Computer Science*, pp. 323–331, Springer-Verlag Lecture Notes in Computer Science #3881, January 2006.
  196. **Enforcing and Defying Associativity, Commutativity, Totality, and Strong Noninvertibility for One-Way Functions in Complexity Theory**, L. Hemaspaandra, J. Rothe,

- and A. Saxena, *Proceedings of the 9th Italian Conference on Theoretical Computer Science*, pp. 265–279, Springer-Verlag Lecture Notes in Computer Science #3701, October 2005. Journal version: [51].
197. **Query-Monotonic Turing Reductions**, L. Hemaspaandra and M. Thakur, *Proceedings of the 11th Annual International Computing and Combinatorics Conference*, pp. 895–904, Springer-Verlag Lecture Notes in Computer Science #3595, August 2005. Journal version: [53].
  198. **Anyone but Him: The Complexity of Precluding an Alternative**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 20th National Conference on Artificial Intelligence*, pp. 95–101, AAAI Press, July 2005. Journal version: [55].
  199. **Complexity Results in Graph Reconstruction**, E. Hemaspaandra, L. Hemaspaandra, S. Radziszowski, and R. Tripathi, *Proceedings of the 29th International Symposium on Mathematical Foundations of Computer Science*, pp. 287–297, Springer-Verlag Lecture Notes in Computer Science #3153, August 2004. Journal version: [57].
  200. **All Superlinear Inverse Schemes are coNP-Hard**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, *Proceedings of the 29th International Symposium on Mathematical Foundations of Computer Science*, pp. 368–379, Springer-Verlag Lecture Notes in Computer Science #3153, August 2004. Journal version: [62].
  201. **The Complexity of Finding Top-Toda-Equivalence-Class Members**, L. Hemaspaandra, M. Ogihara, M. Zaki, and M. Zimand, *Proceedings of the 6th Latin American Symposium on Theoretical Informatics*, pp. 90–99, Springer-Verlag Lecture Notes in Computer Science #2710, April 2004. Journal version: [60].
  202. **Computation with Absolutely No Space Overhead**, L. Hemaspaandra, P. Mukherji, and T. Tantau, *Proceedings of the 7th International Conference on Developments in Language Theory*, pp. 325–336, Springer-Verlag Lecture Notes in Computer Science #2710, July 2003. Journal version: [61].
  203. **Competing Provers Yield Improved Karp–Lipton Collapse Results**, J.-Y. Cai, V. Chakaravarthy, L. Hemaspaandra, and M. Ogihara, *Proceedings of the 20th Annual Symposium on Theoretical Aspects of Computer Science*, pp. 535–546, Springer-Verlag Lecture Notes in Computer Science #2607, February/March 2003. Journal version: [65].
  204. **Lower Bounds and the Hardness of Counting Properties**, L. Hemaspaandra and M. Thakur, *Proceedings of the 17th IFIP World Computer Congress/2nd IFIP International Conference on Theoretical Computer Science*, pp. 49–58, Kluwer Academic Publishers, August 2002. Journal version: [66].
  205. **Algebraic Properties for Deterministic Selectivity**, L. Hemaspaandra, H. Hempel, and A. Nickelsen, *Proceedings of the 7th Annual International Computing and Combinatorics Conference*, pp. 49–58, Springer-Verlag Lecture Notes in Computer Science #2108, August 2001. Journal version: [67].
  206. **If  $P \neq NP$  then Some Strongly Noninvertible Functions are Invertible**, L. Hemaspaandra, K. Pasanen, and J. Rothe, *Proceedings of the 13th International Symposium on*



- Fundamentals of Computation Theory*, pp. 162–171, Springer-Verlag Lecture Notes in Computer Science #2138, August 2001. Journal version: [59].
207. **The Complexity of Computing the Size of an Interval**, L. Hemaspaandra, S. Kosub, and K. Wagner, *Proceedings of the 28th International Colloquium on Automata, Languages, and Programming*, pp. 1040–1051, Springer-Verlag Lecture Notes in Computer Science #2076, July 2001. Journal version: [58]
  208. **P-Immune Sets with Holes Lack Self-Reducibility Properties**, L. Hemaspaandra and H. Hempel, *Combinatorics, Computability, and Logic: Proceedings of the 3rd International Conference on Combinatorics, Computability, and Logic*, pp. 115–124, Springer Series in Discrete Mathematics and Theoretical Computer Science, Springer-Verlag, July 2001. Journal version: [68].
  209. **Reducing the Number of Solutions of NP Functions**, L. Hemaspaandra, M. Ogihara, and G. Wechsung, *Proceedings of the 25th International Symposium on Mathematical Foundations of Computer Science*, pp. 394–404, Springer-Verlag Lecture Notes in Computer Science #1893, August/September 2000. Journal version: [71].
  210. **Restrictive Acceptance Suffices for Equivalence Problems**, B. Borchert, L. Hemaspaandra, and J. Rothe, *Proceedings of the 12th International Symposium on Fundamentals of Computation Theory*, pp. 124–135, Springer-Verlag Lecture Notes in Computer Science #1684, August/September 1999. Journal version: [75].
  211. **Extending Downward Collapse from 1-versus-2 Queries to  $j$ -versus- $j + 1$  Queries**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, *Proceedings of the 16th Annual Symposium on Theoretical Aspects of Computer Science*, pp. 270–280, Springer-Verlag Lecture Notes in Computer Science #1563, March 1999. Journal version: [64].
  212. **Downward Collapse from a Weaker Hypothesis**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, *Proceedings of the 6th Italian Conference on Theoretical Computer Science*, pp. 253–264, World Scientific, November 1998. Journal version: [64].
  213. **A Second Step Towards Circuit Complexity-Theoretic Analogs of Rice’s Theorem**, L. Hemaspaandra, and J. Rothe, *Proceedings of the 23rd International Symposium on Mathematical Foundations of Computer Science*, pp. 418–426, Springer-Verlag Lecture Notes in Computer Science #1450, August 1998. Journal version: [73].
  214. **Robust Reductions**, J.-Y. Cai, L. Hemaspaandra, and G. Wechsung, *Proceedings of the 4th Annual International Computing and Combinatorics Conference*, pp. 174–183, Springer-Verlag Lecture Notes in Computer Science #1449, August 1998. Journal version: [77].
  215. **Query Order in the Polynomial Hierarchy**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, *Proceedings of the 11th International Symposium on Fundamentals of Computation Theory*, pp. 222–232, Springer-Verlag Lecture Notes in Computer Science #1279, September 1997. Journal version: [85].
  216. **Exact Analysis of Dodgson Elections: Lewis Carroll’s 1876 Voting System is Complete for Parallel Access to NP**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, *Proceedings of the 24th International Colloquium on Automata, Languages, and Programming*,

- pp. 214–224, Springer-Verlag Lecture Notes in Computer Science #1256, July 1997. Journal version: [88].
217. **On Sets with Easy Certificates and the Existence of One-Way Permutations** L. Hemaspaandra, J. Rothe, and G. Wechsung, *Proceedings of the 3rd Italian Conference on Algorithms and Complexity*, pp. 264–275, Springer-Verlag Lecture Notes in Computer Science #1203, March 1997. Journal versions: [70,89].
  218.  **$R_{1-tt}^{SN}(\text{NP})$  Distinguishes Robust Many-One and Turing Completeness**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, *Proceedings of the 3rd Italian Conference on Algorithms and Complexity*, pp. 49–60, Springer-Verlag Lecture Notes in Computer Science #1203, March 1997. Journal version: [86].
  219. **A Downward Translation in the Polynomial Hierarchy**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, *Proceedings of the 14th Annual Symposium on Theoretical Aspects of Computer Science*, pp. 319–328, Springer-Verlag Lecture Notes in Computer Science #1200, February/March 1997. Journal version: [80].
  220. **Polynomial-Time Semi-Rankable Sets**, L. Hemaspaandra, M. Zaki, and M. Zimand, *Journal of Computing and Information*, V. 2, #1, *Special Issue: Proceedings of the 8th International Conference on Computing and Information*, CD-ROM ISSN 1201-8511/V2/#1, pp. 50–67, 1996. Journal version: see [60].
  221. **The Join Can Lower Complexity**, L. Hemaspaandra, Z. Jiang, J. Rothe, and O. Watanabe, *Proceedings of the 2nd Annual International Computing and Combinatorics Conference*, pp. 260–267, Springer-Verlag Lecture Notes in Computer Science #1090, June 1996. Final-form publication: [82].
  222. **Witness-Isomorphic Reductions and the Local Search Problem**, S. Fischer, L. Hemaspaandra, and L. Torenvliet, *Proceedings of the 20th Symposium on Mathematical Foundations of Computer Science*, pp. 277–287, Springer-Verlag Lecture Notes in Computer Science #969, August 1995. Final-form publication: [17].
  223. **Intersection Suffices for Boolean Hierarchy Equivalence**, L. Hemaspaandra and J. Rothe, *Proceedings of the 1st Annual International Computing and Combinatorics Conference*, p. 430–435, Springer-Verlag Lecture Notes in Computer Science #959, August 1995. Journal version: [90].
  224. **Pseudorandom Generators and the Frequency of Simplicity**, Y. Han and L. Hemaspaandra, *Proceedings of the 12th Annual Symposium on Theoretical Aspects of Computer Science*, pp. 50–59, Springer-Verlag Lecture Notes in Computer Science #900, March 1995. Journal version: [94].
  225. **Computing Solutions Uniquely Collapses the Polynomial Hierarchy**, L. Hemaspaandra, A. Naik, M. Ogihara, and A. Selman, *Proceedings of the 5th International Symposium on Algorithms and Computation*, pp. 56–64, Springer-Verlag Lecture Notes in Computer Science #834, August 1994. Journal version: [96].
  226. **P-Selectivity: Intersections and Indices**, L. Hemaspaandra and Z. Jiang, *Journal of Computing and Information*, V. 1, #1, *Special Issue: Proceedings of the 6th International*

- Conference on Computing and Information*, CD-ROM ISSN 1201-8511/V1/#1, pp. 66–75, Trent University Press, 1995. Journal version: [102].
227. **Threshold Computation and Cryptographic Security**, Y. Han, L. Hemaspaandra, and T. Thierauf, *Proceedings of the 4th International Symposium on Algorithms and Computation*, pp. 230–239, Springer-Verlag Lecture Notes in Computer Science #762, December 1993. Journal version: [93].
228. **Selectivity**, L. Hemaspaandra, A. Hoene, M. Ogiwara, A. Selman, T. Thierauf, and J. Wang, *Computing and Information: Proceedings of the Fifth International Conference on Computing and Information*, pp. 55–59, IEEE Computer Society Press, 1993. Journal version: [99].
229. **Easily Checked Self-Reducibility**, L. Hemachandra and R. Silvestri, *Proceedings of the 9th Conference on Fundamentals of Computation Theory*, pp. 289–298, Springer-Verlag Lecture Notes in Computer Science #710, August 1993. Journal version: [101].
230. **Defying Upward and Downward Separation**, L. Hemachandra and S. Jha, *Proceedings of the 10th Annual Symposium on Theoretical Aspects of Computer Science*, pp. 185–195, Springer-Verlag Lecture Notes in Computer Science #665, February 1993. Journal version: [100].
231. **Promise Problems and Access to Unambiguous Computation**, J.-Y. Cai, L. Hemachandra, and J. Vyskoč, *Proceedings of the 17th Symposium on Mathematical Foundations of Computer Science*, pp. 162–171, Springer-Verlag Lecture Notes in Computer Science #629, August 1992. Final-form publication: [18].
232. **Reductions to Sets of Low Information Content**, V. Arvind, Y. Han, L. Hemachandra, J. Köbler, A. Lozano, M. Mundhenk, M. Ogiwara, U. Schöning, R. Silvestri, and T. Thierauf, *Proceedings of the 19th International Colloquium on Automata, Languages, and Programming*, pp. 162–173, Springer-Verlag Lecture Notes in Computer Science #623, July 1992. Final-form publication: [19].
233. **Banishing Robust Turing Completeness**, L. Hemachandra, S. Jain, and N. Vereshchagin, *Proceedings of Logic at Tver '92: Symposium on Logical Foundations of Computer Science*, pp. 168–197, Springer-Verlag Lecture Notes in Computer Science #620, July 1992. Journal version: [106].
234. **On the Structure and Complexity of Infinite Sets with Minimal Perfect Hash Functions**, J. Goldsmith, L. Hemachandra, and K. Kunen, *Proceedings of 11th Conference on Foundations of Software Technology and Theoretical Computer Science*, pp. 212–223, Springer-Verlag Lecture Notes in Computer Science #560, December 1991. Journal version: [111].
235. **On the Complexity of Graph Reconstruction**, D. Kratsch and L. Hemachandra, *Proceedings of the 8th Fundamentals of Computation Theory Conference*, pp. 318–328, Springer-Verlag Lecture Notes in Computer Science #529, September 1991. Journal version: [104].
236. **Collapsing Degrees Via Strong Computation**, L. Hemachandra and A. Hoene, *Proceedings of the 18th International Colloquium on Automata, Languages, and Programming*, pp. 393–404, Springer-Verlag Lecture Notes in Computer Science #510, July 1991. Journal version: [109].

237. **Relating Equivalence and Reducibility to Sparse Sets**, E. Allender, L. Hemachandra, M. Ogiwara, and O. Watanabe, *Proceedings of the 6th Structure in Complexity Theory Conference*, pp. 220–229, IEEE Computer Society Press, June/July 1991. Journal version: [112].
238. **A Complexity Theory for Feasible Closure Properties**, M. Ogiwara and L. Hemachandra, *Proceedings of the 6th Structure in Complexity Theory Conference*, pp. 16–29, IEEE Computer Society Press, June/July 1991. Journal version: [108].
239. **On Checking Versus Evaluation of Multiple Queries**, W. Gasarch, L. Hemachandra, and A. Hoene, *Proceedings of the 15th Symposium on Mathematical Foundations of Computer Science*, pp. 261–268, Springer-Verlag Lecture Notes in Computer Science #452, August 1990. Journal version: [107].
240. **Using Inductive Counting to Simulate Nondeterministic Computation**, G. Buntrock, L. Hemachandra, and D. Siefkes, *Proceedings of the 15th Symposium on Mathematical Foundations of Computer Science*, pp. 187–194, Springer-Verlag Lecture Notes in Computer Science #452, August 1990. Journal version: [110].
241. **A Note on Relativizing Complexity Classes with Tally Oracles**, L. Hemachandra and R. Rubinfeld, *Proceedings of the 5th Structure in Complexity Theory Conference*, pp. 287–294, IEEE Computer Society Press, July 1990. Journal version: [114].
242. **On Sets With Efficient Implicit Membership Tests**, L. Hemachandra and A. Hoene, *Proceedings of the 5th Structure in Complexity Theory Conference*, pp. 11–19, IEEE Computer Society Press, July 1990. Journal version: [116].
243. **On Generating Hard Instances of Problems in NP**, M. Abadi, E. Allender, A. Broder, J. Feigenbaum, and L. Hemachandra, *Proceedings of Advances in Cryptology—CRYPTO 1988*, pp. 297–310, Springer-Verlag Lecture Notes in Computer Science #403, 1990.
244. **On the Limitations of Locally Robust Positive Reductions**, L. Hemachandra and S. Jain, *Proceedings of 9th Conference on Foundations of Software Technology and Theoretical Computer Science*, pp. 193–203, Springer-Verlag Lecture Notes in Computer Science #405, December 1989. Journal version: [117].
245. **Polynomial-Time Functions Generate SAT: On P-Splinters**, L. Hemachandra, A. Hoene, and D. Siefkes, *Proceedings of the 14th Symposium on Mathematical Foundations of Computer Science*, pp. 259–269, Springer-Verlag Lecture Notes in Computer Science #379, August/September 1989. Journal version: [122].
246. **Using Randomness to Characterize the Complexity of Computation**, L. Hemachandra and G. Wechsung, *Information Processing 89: Proceedings of the 11th World Computer Conference*, pp. 281–286, North-Holland, August 1989. Journal version: [119].
247. **Lower Bounds for the Low Hierarchy**, E. Allender and L. Hemachandra, *Proceedings of 16th International Colloquium on Automata, Languages, and Programming*, pp. 31–45, Springer-Verlag Lecture Notes in Computer Science #372, July 1989. Journal version: [113].
248. **On the Power of Probabilistic Polynomial Time:  $P^{NP[\log]} \subseteq PP$** , R. Beigel, L. Hemachandra, and G. Wechsung, *Proceedings of the 4th Structure in Complexity Theory Conference*, pp. 225–227, IEEE Computer Society Press, June 1989. Journal version: [123].

249. **Probabilistic and Unambiguous Computation are Incomparable**, D. Eppstein, L. Hemachandra, J. Tisdall, and B. Yener, *Computing and Information: Proceedings of the 1989 International Conference on Computing and Information*, pp. 65–70, North-Holland, May 1989. Journal version: [115].
250. **On the Power of Parity Polynomial Time**, J.-Y. Cai and L. Hemachandra, *Proceedings of the 6th Annual Symposium on Theoretical Aspects of Computer Science*, pp. 229–239, Springer-Verlag Lecture Notes in Computer Science #349, February 1989. Journal version: [126].
251. **Enumerative Counting is Hard**, J.-Y. Cai and L. Hemachandra, *Proceedings of the 3rd Structure in Complexity Theory Conference*, pp. 194–203, IEEE Computer Society Press, June 1988. Journal version: [128].
252. **One-Way Functions, Robustness, and the Non-Isomorphism of NP-Complete Sets**, J. Hartmanis and L. Hemachandra, *Proceedings of the 2nd Structure in Complexity Theory Conference*, pp. 160–174, IEEE Computer Society Press, June 1987. (Short abstract appears as **One-way Functions and the Isomorphism Conjecture**, *Abstracts of the AMS*, V. 9, #1, p. 124, 1988.) Journal versions: [121,125].
253. **On Ranking**, L. Hemachandra, *Proceedings of the 2nd Structure in Complexity Theory Conference*, pp. 103–117, IEEE Computer Society Press, June 1987. Journal version: [124].
254. **The Strong Exponential Hierarchy Collapses**, L. Hemachandra, *Proceedings of the 19th ACM Symposium on Theory of Computing*, pp. 110–122, ACM Press, May 1987. One-page abstract appears in *Proceedings of the 2nd Structure in Complexity Theory Conference*, IEEE Computer Society Press, June 1987. Journal version: [127].
255. **Complexity Classes Without Machines: On Complete Languages for UP**, J. Hartmanis and L. Hemachandra, *Proceedings of the 13th International Colloquium on Automata, Languages, and Programming*, pp. 123–135, Springer-Verlag Lecture Notes in Computer Science #226, July 1986. Journal version: [132].
256. **The Boolean Hierarchy: Hardware over NP**, J.-Y. Cai and L. Hemachandra, *Proceedings of the 1st Structure in Complexity Theory Conference*, pp. 105–124, Springer-Verlag Lecture Notes in Computer Science #223, June 1986. Journal versions: [129,130].
257. **On Sparse Oracles Separating Feasible Complexity Classes**, J. Hartmanis and L. Hemachandra, *Proceedings of the 3rd Annual Symposium on Theoretical Aspects of Computer Science*, pp. 321–333, Springer-Verlag Lecture Notes in Computer Science #210, January 1986. Journal version: [131].
258. **Using Simulated Annealing to Calculate Combinatorial Constants**, L. Hemachandra and V. Wei, *Proceedings of the 22nd Allerton Conference on Communication, Control, and Computing*, pp. 545–552, October 1984. (Related short abstract appears as **Simulated Annealing and Error Corrective Codes**, L. Hemachandra and V. Wei, *Proceedings of the 1985 IEEE International Symposium on Information Theory*, p. 141, June 1985.) Journal version: [133].
259. **A Comparison of Logic Minimization Strategies Using ESPRESSO: An APL Program Package for Partitioned Logic Minimalization**, R. Brayton, G. Hachtel,

L. Hemachandra, A. Newton, and A. Sangiovanni-Vincentelli, *Proceedings of the 1982 IEEE International Symposium on Circuits and Systems*, V. 1, pp. 42–48, May 1982.

260. **Some Properties of a Probabilistic Model for Global Wiring**, D. Wallace and L. Hemachandra, *Proceedings of the ACM IEEE 18th Design Automation Conference*, pp. 660–667, IEEE Computer Society, June 1981.

## INVITED CONFERENCE PAPERS

261. **The Consequences of Eliminating NP Solutions**, P. Faliszewski and L. Hemaspaandra, *Proceedings of 8th International Workshop on Descriptive Complexity of Formal Systems*, pp. 1–15, NMSU/IFIP, available as NMSU-CS-TR-2006-001, June 2006. Journal version: [52]
262. **Advice for Semifeasible Sets and the Complexity-Theoretic Cost(lessness) of Algebraic Properties**, L. Hemaspaandra, *Preproceedings of 6th Workshop on Descriptive Complexity of Formal Systems*, pp. 52–66, University of Western Ontario, available as UWO-DCS Report 619, July 2004. Journal version: [63].
263. **Computational Politics: Electoral Systems**, E. Hemaspaandra and L. Hemaspaandra, *Proceedings of the 25th International Symposium on Mathematical Foundations of Computer Science*, pp. 64–83, Springer-Verlag Lecture Notes in Computer Science #1893, August/September 2000.
264. **Semi-Feasible Computation**, L. Hemaspaandra, *American Mathematical Society 1995 Fall Southern Meeting (Special Session on Complexity Theory)*, *Abstracts of the AMS*, V. 16, #4, p. 854, Fall 1995.
265. **Fault-Tolerance and Complexity**, L. Hemachandra, *Proceedings of the 20th International Colloquium on Automata, Languages, and Programming*, pp. 189–202, Springer-Verlag Lecture Notes in Computer Science #700, July 1993.
266. **How Hard Are Sparse Sets?**, L. Hemachandra, M. Ogiwara, and O. Watanabe, *Proceedings of the 7th Structure in Complexity Theory Conference*, pp. 222–238, IEEE Computer Society Press, June 1992.
267. **Algorithms from Complexity Theory: Polynomial-Time Operations for Complex Sets**, L. Hemachandra, *Proceedings of the SIGAL International Symposium on Algorithms*, pp. 221–231, Springer-Verlag Lecture Notes in Computer Science #450, August 1990.
268. **Structure of Complexity Classes: Separations, Collapses, and Completeness**, L. Hemachandra, *Proceedings of the 13th Symposium on Mathematical Foundations of Computer Science*, pp. 59–73, Springer-Verlag Lecture Notes in Computer Science #324, August/September 1988.

**SIGACT News *COMPLEXITY THEORY COLUMN***  
**INTRODUCTIONS**

269. **Introduction to SIGACT News Complexity Theory Column 116**, L. Hemaspaandra, SIGACT News, V. 54, #1, p. 62, March 2023.
270. **Introduction to SIGACT News Complexity Theory Column 114**, L. Hemaspaandra, SIGACT News, V. 53, #3, p. 41, September 2022.
271. **Introduction to SIGACT News Complexity Theory Column 113**, L. Hemaspaandra, SIGACT News, V. 53, #2, p. 39, June 2022.
272. **Introduction to SIGACT News Complexity Theory Column 112**, L. Hemaspaandra, SIGACT News, V. 53, #1, p. 58, March 2022.
273. **Introduction to SIGACT News Complexity Theory Column 111**, L. Hemaspaandra, SIGACT News, V. 52, #4, p. 55, December 2021.
274. **Introduction to SIGACT News Complexity Theory Column 110**, L. Hemaspaandra, SIGACT News, V. 52, #3, p. 37, September 2021.
275. **Introduction to SIGACT News Complexity Theory Column 109**, L. Hemaspaandra, SIGACT News, V. 52, #2, p. 45, June 2021.
276. **Introduction to SIGACT News Complexity Theory Column 108**, L. Hemaspaandra, SIGACT News, V. 52, #1, pp. 41–46, March 2021.
277. **Introduction to SIGACT News Complexity Theory Column 107**, L. Hemaspaandra, SIGACT News, V. 51, #4, p. 47, December 2020.
278. **Introduction to SIGACT News Complexity Theory Column 105**, L. Hemaspaandra, SIGACT News, V. 51, #2, pp. 36–37, June 2020.
279. **Introduction to SIGACT News Complexity Theory Column 104**, L. Hemaspaandra, SIGACT News, V. 51, #1, p. 37, March 2020.
280. **Introduction to SIGACT News Complexity Theory Column 103**, L. Hemaspaandra, SIGACT News, V. 50, #4, p. 56, December 2019.
281. **Introduction to SIGACT News Complexity Theory Column 102**, L. Hemaspaandra, SIGACT News, V. 50, #3, p. 51, September 2019.
282. **Introduction to SIGACT News Complexity Theory Column 101**, L. Hemaspaandra, SIGACT News, V. 50, #2, pp. 29–30, June 2019.
283. **Introduction to SIGACT News Complexity Theory Column 100**, L. Hemaspaandra, SIGACT News, V. 50, #1, pp. 35–37, March 2019.
284. **Introduction to SIGACT News Complexity Theory Column 99**, L. Hemaspaandra, SIGACT News, V. 49, #3, pp. 48–50, September 2018.
285. **Introduction to SIGACT News Complexity Theory Column 98**, L. Hemaspaandra, SIGACT News, V. 49, #2, p. 32, June 2018.

286. **Introduction to SIGACT News Complexity Theory Column 97**, L. Hemaspaandra, SIGACT News, V. 49, #1, p. 54, March 2018.
287. **Introduction to SIGACT News Complexity Theory Column 96**, L. Hemaspaandra, SIGACT News, V. 48, #4, p. 42, December 2017.
288. **Introduction to SIGACT News Complexity Theory Column 95**, L. Hemaspaandra, SIGACT News, V. 48, #3, p. 37, September 2017.
289. **Introduction to SIGACT News Complexity Theory Column 94**, L. Hemaspaandra, SIGACT News, V. 48, #2, p. 40, June 2017.
290. **Introduction to SIGACT News Complexity Theory Column 93**, L. Hemaspaandra, SIGACT News, V. 48, #1, p. 101, March 2017.
291. **Introduction to SIGACT News Complexity Theory Column 92**, L. Hemaspaandra, SIGACT News, V. 47, #3, pp. 44–45, September 2016.
292. **Introduction to SIGACT News Complexity Theory Column 91**, L. Hemaspaandra, SIGACT News, V. 47, #2, p. 65, June 2016.
293. **Introduction to SIGACT News Complexity Theory Column 90**, L. Hemaspaandra, SIGACT News, V. 47, #1, p. 41, March 2016.
294. **Introduction to SIGACT News Complexity Theory Column 88/89**, L. Hemaspaandra, SIGACT News, V. 46, #4, p. 31, December 2015.
295. **Introduction to SIGACT News Complexity Theory Column 87**, L. Hemaspaandra, SIGACT News, V. 46, #3, p. 36, September 2015.
296. **Introduction to SIGACT News Complexity Theory Column 86**, L. Hemaspaandra, SIGACT News, V. 46, #2, p. 40, June 2015.
297. **Introduction to SIGACT News Complexity Theory Column 85**, L. Hemaspaandra, SIGACT News, V. 46, #1, p. 39, March 2015.
298. **Introduction to SIGACT News Complexity Theory Column 84**, L. Hemaspaandra, SIGACT News, V. 45, #4, p. 58, December 2014.
299. **Introduction to SIGACT News Complexity Theory Column 83**, L. Hemaspaandra, SIGACT News, V. 45, #3, p. 53 September 2014.
300. **Introduction to SIGACT News Complexity Theory Column 82**, L. Hemaspaandra, SIGACT News, V. 45, #2, p. 46, June 2014.
301. **Introduction to SIGACT News Complexity Theory Column 81**, L. Hemaspaandra, SIGACT News, V. 45, #1, p. 47, March 2014.
302. **Introduction to SIGACT News Complexity Theory Column 80**, L. Hemaspaandra, SIGACT News, V. 44, #4, p. 52, December 2013.
303. **Introduction to SIGACT News Complexity Theory Column 79**, L. Hemaspaandra, SIGACT News, V. 44, #3, p. 42, September 2013.



304. **Introduction to SIGACT News Complexity Theory Column 78**, L. Hemaspaandra, SIGACT News, V. 44, #2, pp. 45–46, June 2013.
305. **Introduction to SIGACT News Complexity Theory Column 77**, L. Hemaspaandra, SIGACT News, V. 44, #1, p. 49, March 2013.
306. **Introduction to SIGACT News Complexity Theory Column 76**, L. Hemaspaandra, SIGACT News, V. 43, #4, p. 70, December 2012.
307. **Introduction to SIGACT News Complexity Theory Column 75**, L. Hemaspaandra, SIGACT News, V. 43, #3, pp. 65–66, September 2012.
308. **Introduction to SIGACT News Complexity Theory Column 74**, L. Hemaspaandra, SIGACT News, V. 43, #2, pp. 51–52, June 2012.
309. **Introduction to SIGACT News Complexity Theory Column 73**, L. Hemaspaandra, SIGACT News, V. 43, #1, p. 61, March 2012.
310. **Introduction to SIGACT News Complexity Theory Column 72**, L. Hemaspaandra, SIGACT News, V. 42, #4, p. 53, December 2011.
311. **Introduction to SIGACT News Complexity Theory Column 71**, L. Hemaspaandra, SIGACT News, V. 42, #3, pp. 53–54, September 2011.
312. **Introduction to SIGACT News Complexity Theory Column 70**, L. Hemaspaandra, SIGACT News, V. 42, #2, p. 51, June 2011.
313. **Introduction to SIGACT News Complexity Theory Column 69**, L. Hemaspaandra, SIGACT News, V. 42, #1, p. 58, March 2011.
314. **Introduction to SIGACT News Complexity Theory Column 68**, L. Hemaspaandra, SIGACT News, V. 41, #4, pp. 73–74, December 2010.
315. **Introduction to SIGACT News Complexity Theory Column 67**, L. Hemaspaandra, SIGACT News, V. 41, #3, p. 58, September 2010.
316. **Introduction to SIGACT News Complexity Theory Column 66**, L. Hemaspaandra, SIGACT News, V. 41, #2, p. 57, June 2010.
317. **Introduction to SIGACT News Complexity Theory Column 65**, L. Hemaspaandra, SIGACT News, V. 40, #4, p. 45, December 2009.
318. **Introduction to SIGACT News Complexity Theory Column 64**, L. Hemaspaandra, SIGACT News, V. 40, #3, pp. 60–61, September 2009.
319. **Introduction to SIGACT News Complexity Theory Column 63**, L. Hemaspaandra, SIGACT News, V. 40, #2, p. 49, June 2009.
320. **Introduction to SIGACT News Complexity Theory Column 62**, L. Hemaspaandra, SIGACT News, V. 40, #1, p. 26, March 2009.
321. **Introduction to SIGACT News Complexity Theory Column 61**, L. Hemaspaandra, SIGACT News, V. 39, #4, pp. 35–36, December 2008.

322. **Introduction to SIGACT News Complexity Theory Column 60**, L. Hemaspaandra, SIGACT News, V. 39, #3, p. 41, September 2008.
323. **Introduction to SIGACT News Complexity Theory Column 59**, L. Hemaspaandra, SIGACT News, V. 39, #2, p. 50, June 2008.
324. **Introduction to SIGACT News Complexity Theory Column 58**, L. Hemaspaandra, SIGACT News, V. 39, #1, p. 33, March 2008.
325. **Introduction to SIGACT News Complexity Theory Column 57**, L. Hemaspaandra, SIGACT News, V. 38, #4, pp. 39–40, December 2007.
326. **Introduction to SIGACT News Complexity Theory Column 56 (and An Appreciation of the Career of Steve Mahaney)**, L. Hemaspaandra, SIGACT News, V. 38, #3, pp. 34–38, September 2007.
327. **Introduction to SIGACT News Complexity Theory Column 55**, L. Hemaspaandra, SIGACT News, V. 38, #2, p. 35, June 2007.
328. **Introduction to SIGACT News Complexity Theory Column 54**, L. Hemaspaandra, SIGACT News, V. 38, #1, p. 31, March 2007.
329. **Introduction to SIGACT News Complexity Theory Column 53**, L. Hemaspaandra, SIGACT News, V. 37, #4, p. 47, December 2006.
330. **Introduction to SIGACT News Complexity Theory Column 52**, L. Hemaspaandra, SIGACT News, V. 37, #3, pp. 36–37, September 2006.
331. **Introduction to SIGACT News Complexity Theory Column 51**, L. Hemaspaandra, SIGACT News, V. 37, #2, p. 31, June 2006.
332. **Introduction to SIGACT News Complexity Theory Column 50**, L. Hemaspaandra, SIGACT News, V. 37, #1, p. 47, March 2006.
333. **Introduction to SIGACT News Complexity Theory Column 49**, L. Hemaspaandra, SIGACT News, V. 36, #4, p. 49, December 2005.
334. **Introduction to SIGACT News Complexity Theory Column 48**, L. Hemaspaandra, SIGACT News, V. 36, #3, p. 24, September 2005.
335. **Introduction to SIGACT News Complexity Theory Column 47**, L. Hemaspaandra, SIGACT News, V. 36, #2, p. 25, June 2005.
336. **Introduction to SIGACT News Complexity Theory Column 46**, L. Hemaspaandra, SIGACT News, V. 36, #1, p. 30, March 2005.
337. **Introduction to SIGACT News Complexity Theory Column 45**, L. Hemaspaandra, SIGACT News, V. 35, #3, p. 25, September 2004.
338. **Introduction to SIGACT News Complexity Theory Column 44**, L. Hemaspaandra, SIGACT News, V. 35, #2, p. 22, June 2004.
339. **Introduction to SIGACT News Complexity Theory Column 43**, L. Hemaspaandra, SIGACT News, V. 35, #1, p. 22, March 2004.

340. **Introduction to SIGACT News Complexity Theory Column 42**, L. Hemaspaandra, SIGACT News, V. 34, #4, p. 38, December 2003.
341. **Introduction to SIGACT News Complexity Theory Column 41**, L. Hemaspaandra, SIGACT News, V. 34, #3, p. 26, September 2003.
342. **Introduction to SIGACT News Complexity Theory Column 40**, L. Hemaspaandra, SIGACT News, V. 34, #2, p. 27, June 2003.
343. **Introduction to SIGACT News Complexity Theory Column 39**, L. Hemaspaandra, SIGACT News, V. 34, #1, p. 32, March 2003.
344. **Introduction to SIGACT News Complexity Theory Column 38**, L. Hemaspaandra, SIGACT News, V. 33, #4, p. 22, December 2002.
345. **Introduction to SIGACT News Complexity Theory Column 37**, L. Hemaspaandra, SIGACT News, V. 33, #3, p. 32, September 2002.
346. **Introduction to SIGACT News Complexity Theory Column 36**, L. Hemaspaandra, SIGACT News, V. 33, #2, p. 34, June 2002.
347. **Introduction to SIGACT News Complexity Theory Column 35**, L. Hemaspaandra, SIGACT News, V. 33, #1, p. 32, March 2002.
348. **Introduction to SIGACT News Complexity Theory Column 34**, L. Hemaspaandra, SIGACT News, V. 32, #4, p. 24, December 2001.
349. **Introduction to SIGACT News Complexity Theory Column 33**, L. Hemaspaandra, SIGACT News, V. 32, #3, p. 40, September 2001.
350. **Introduction to SIGACT News Complexity Theory Column 32**, L. Hemaspaandra, SIGACT News, V. 32, #2, p. 32, June 2001.
351. **Introduction to SIGACT News Complexity Theory Column 31**, L. Hemaspaandra, SIGACT News, V. 32, #1, p. 21, March 2001.
352. **Introduction to SIGACT News Complexity Theory Column 30**, L. Hemaspaandra, SIGACT News, V. 31, #4, p. 39, December 2000.
353. **Introduction to SIGACT News Complexity Theory Column 29**, L. Hemaspaandra, SIGACT News, V. 31, #3, p. 37, September 2000.
354. **Introduction to SIGACT News Complexity Theory Column 28**, L. Hemaspaandra, SIGACT News, V. 31, #2, p. 22, June 2000.
355. **Introduction to SIGACT News Complexity Theory Column 27**, L. Hemaspaandra, SIGACT News, V. 31, #1, p. 16, March 2000.
356. **Introduction to SIGACT News Complexity Theory Column 26**, L. Hemaspaandra, SIGACT News, V. 30, #4, p. 25, December 1999.
357. **Introduction to SIGACT News Complexity Theory Column 25**, L. Hemaspaandra, SIGACT News, V. 30, #3, p. 25, September 1999.

358. **Introduction to SIGACT News Complexity Theory Column 24**, L. Hemaspaandra, SIGACT News, V. 30, #2, p. 22, June 1999.
359. **Introduction to SIGACT News Complexity Theory Column 23**, L. Hemaspaandra, SIGACT News, V. 30, #1, p. 17, March 1999.
360. **Introduction to SIGACT News Complexity Theory Column 22**, L. Hemaspaandra, SIGACT News, V. 29, #4, p. 20, December 1998.
361. **Introduction to SIGACT News Complexity Theory Column 21**, L. Hemaspaandra, SIGACT News, V. 29, #3, p. 10, September 1998.
362. **Introduction to SIGACT News Complexity Theory Column 19**, L. Hemaspaandra, SIGACT News, V. 28, #4, p. 2, December 1997.
363. **Introduction to SIGACT News Complexity Theory Column 18**, L. Hemaspaandra, SIGACT News, V. 28, #3, p. 2, September 1997.
364. **Introduction to SIGACT News Complexity Theory Column 17**, L. Hemaspaandra, SIGACT News, V. 28, #2, p. 2, June 1997.
365. **Introduction to SIGACT News Complexity Theory Column 15**, L. Hemaspaandra, SIGACT News, V. 27, #4, p. 3, December 1996.
366. **Introduction to SIGACT News Complexity Theory Column 14**, L. Hemaspaandra, SIGACT News, V. 27, #3, p. 6, September 1996.
367. **Introduction to SIGACT News Complexity Theory Column 13**, L. Hemaspaandra, SIGACT News, V. 27, #2, p. 20, June 1996.
368. **Introduction to SIGACT News Complexity Theory Column 12**, L. Hemaspaandra, SIGACT News, V. 27, #1, p. 2, March 1996.
369. **Introduction to SIGACT News Complexity Theory Column 11**, L. Hemaspaandra, SIGACT News, V. 26, #4, p. 5, December 1995.
370. **Introduction to SIGACT News Complexity Theory Column 10**, L. Hemaspaandra, SIGACT News, V. 26, #3, p. 2, September 1995.
371. **Introduction to SIGACT News Complexity Theory Column 9**, L. Hemaspaandra, SIGACT News, V. 26, #2, p. 4, June 1995.
372. **Introduction to SIGACT News Complexity Theory Column 8**, L. Hemaspaandra, SIGACT News, V. 26, #1, p. 2, March 1995.
373. **Introduction to SIGACT News Complexity Theory Column 6**, L. Hemaspaandra, SIGACT News, V. 25, #3, p. 12, September 1994.
374. **Introduction to SIGACT News Complexity Theory Column 4**, L. Hemaspaandra, SIGACT News, V. 25, #1, p. 22, March 1994.
375. **Introduction to SIGACT News Complexity Theory Column 3**, L. Hemaspaandra, SIGACT News, V. 24, #4, p. 2, December 1993.
376. **Introduction to SIGACT News Complexity Theory Column 2**, L. Hemaspaandra, SIGACT News, V. 24, #3, p. 5, September 1993.

## REVIEWS

377. Review of “*Local Distance Restricted Bribery in Voting*, by P. Dey,” Computing Reviews, V. 61, #11, p. 373, November 2020.
378. Review of “*Manipulative Design of Scoring Systems*, by D. Baumeister and T. Högbe,” Computing Reviews, V. 61, #10, p. 326, October 2020.
379. Review of “*Sculpting Quantum Speedups*, by S. Aaronson and S. Ben-David,” Mathematical Reviews, MathSciNet, review MR3540827, August 2017.
380. Review of “ $P \stackrel{?}{=} NP$ , by S. Aaronson,” Mathematical Reviews, MathSciNet, review MR3526932, April 2017.
381. Review of “*Alan Turing and the Foundation of Computer Science* by J. Hromkovič,” Mathematical Reviews, MathSciNet, review MR3409853, February 2017.
382. Review of “*General Tiebreaking Schemes for Computational Social Choice*, by R. Freeman, M. Brill, and V. Conitzer,” Computing Reviews, V. 57, #8, p. 506, August 2016.
383. Review of “*Complexity of Manipulation and Bribery in Judgment Aggregation for Uniform Premise-Based Quota Rules* by D. Baumeister, G. Erdélyi, O. Erdélyi, and J. Rothe,” Mathematical Reviews, MathSciNet, review MR3360683, January 2016.
384. Review of “*Bribery in Multiple-Adversary Path-Disruption Games Is Hard for the Second Level of the Polynomial Hierarchy*, by A. Marple, A. Rey, and J. Rothe,” Computing Reviews, V. 56, #9, pp. 562–563, September 2015.
385. Review of “*Voter Dissatisfaction in Committee Elections*, by D. Baumeister and S. Dennisen,” Computing Reviews, V. 56, #9, p. 563, September 2015.
386. Review of “*On the Hardness of Finding Subsets with Equal Average*, by E. Elkind and J. Orlin,” Computing Reviews, V. 56, #6, p. 184–185, March 2015.
387. Review of “*Unions of Disjoint NP-Complete Sets*, by C. Glaßer, J. Hitchcock, A. Pavan, and S. Travers,” Mathematical Reviews, MathSciNet, review MR3195012, January 2015.
388. Review of “*A Brief History of NP-Completeness, 1954–2012*, by D. Johnson,” Mathematical Reviews, MathSciNet, review MR2991498, August 2013.
389. Review of “*Optimal Manipulation of Voting Rules*, by S. Obraztsova and E. Elkind,” Computing Reviews, V. 54, #6, p. 381, June 2013.
390. Review of “*Manipulation Under Voting Rule Uncertainty*, by E. Elkind and G. Erdélyi,” Computing Reviews, V. 54, #4, p. 250, April 2013.
391. Review of “*Taking the Final Step to a Full Dichotomy of the Possible Winner Problem in Pure Scoring Rules*, by D. Baumeister and J. Rothe,” Computing Reviews, V. 53, #11, p. 693, November 2012.
392. Review of “*The Complexity of Voter Partition in Bucklin and Fallback Voting: Solving Three Open Problems*, by G. Erdélyi, L. Piras, and J. Rothe,” Computing Reviews, V. 53, #11, p. 702, November 2012.

393. Review of “*Parameterized Complexity of Control Problems in Maximin Elections*, by H. Liu and D. Zhu,” Computing Reviews, V. 53, #1, p. 51, January 2012.
394. Review of “*Extensional Uniformity for Boolean Circuits*, by P. McKenzie, M. Thomas, and H. Vollmer,” Mathematical Reviews, V. 2011, 2011m:68069, December 2011.
395. Review of “*Space-Efficient Informational Redundancy*, by C. Glaßer,” Mathematical Reviews, V. 2011, 2011m:68084, December 2011.
396. Review of “*Does the Polynomial Hierarchy Collapse if Onto Functions Are Invertible?*, by H. Buhrman, L. Fortnow, M. Koucký, J. Rogers, and N. Vereshchagin,” Mathematical Reviews, V. 2011, 2011f:68046, June 2011.
397. Review of “*Non-Mitotic Sets*, by C. Glaßer, A. Selman, S. Travers, and L. Zhang,” Mathematical Reviews, V. 2010, 2010f:68045, June 2010.
398. Review of “*The Complexity of Unions of Disjoint Sets*, by C. Glaßer, A. Selman, S. Travers, and K. Wagner,” Mathematical Reviews, V. 2009k, 2009k:68073, November 2009.
399. Review of “*Splitting NP-Complete Sets*, by C. Glaßer, A. Pavan, A. Selman, and L. Zhang,” Mathematical Reviews, V. 2009d, 2009d:68046, April 2009.
400. Review of “*Proving SAT Does Not Have Small Circuits with an Application to the Two Queries Problem*, by L. Fortnow, A. Pavan, S. Sengupta,” Mathematical Reviews, V. 2009d, 2009d:68038, April 2009.
401. Review of “*P, NP, and Mathematics—A Computational Complexity Perspective*, by A. Wigderson,” Mathematical Reviews, V. 2008h, 2008h:68043, August 2008.
402. Review of “*On the Power of Unambiguity in Alternating Machines*, by H. Spakowski and R. Tripathi,” Mathematical Reviews, V. 2008e, 2008e:68046, May 2008.
403. Review of “*Autoreducibility, Mitoticity, and Immunity*, by C. Glaßer, M. Ogihara, A. Pavan, A. Selman, and L. Zhang,” Computing Reviews, V. 49, #4, review CR134333, p. 239, April 2008.
404. Review of “ $S_2^P \subseteq ZPP^{NP}$ , by J.-Y. Cai,” Mathematical Reviews, V. 2007i, 2007i:68028, September 2007.
405. Review of “*NL-Printable Sets and Nondeterministic Kolmogorov Complexity*, by E. Allender,” Computing Reviews, V. 48, #7, p. 432, July 2007.
406. Review of “*Random Access to Advice Strings and Collapsing Results*, by J.-Y. Cai and O. Watanabe,” Mathematical Reviews, V. 2007f, 2007f:68054, June 2007.
407. Review of “*The NP-Completeness Column*, by D. Johnson,” Computing Reviews, V. 48, #5, p. 303, May 2007.
408. Review of “*LWPP and WPP Are Not Uniformly Gap-Definable*, by H. Spakowski and R. Tripathi,” Mathematical Reviews, V. 2007b, 2007b:68055, February 2007.
409. Review of “*Resource Bounded Immunity and Simplicity*, by T. Yamakami and S. Tomoyuki,” Mathematical Reviews, V. 2006k, 2006k:68036, November 2006.

410. Review of “*Derandomizing Arthur-Merlin Games Using Hitting Sets*, by P. Miltersen and N. Vinodchandran,” Mathematical Reviews, V. 2006k, 2006k:68030, November 2006.
411. Review of “*One Query Reducibilities Between Partial Information Classes*, by S. Bab and A. Nickelsen,” Mathematical Reviews, V. 2006e, 2006e:68043, May 2006.
412. Review of “*Reductions between Disjoint NP-Pairs*, by C. Glaßer, A. Selman, and S. Sen-gupta,” Computing Reviews, V. 46, #9, p. 589, September 2005.
413. Review of “ *$AM_{exp} \not\subseteq (NP \cap coNP)/poly$* , by V. Vinodchandran,” Mathematical Reviews, V. 2005e, 2005e:68072, May 2005.
414. Review of “*Uniformly Hard Languages*, by R. Downey and L. Fortnow,” Mathematical Reviews, V. 2004b, 2004b:68053, February 2004.
415. Review of “*The (Non)Enumerability of the Determinant and the Rank*, by A. Beygelzimer and M. Ogihara,” Mathematical Reviews, V. 2004b, 2004b:68051, February 2004.
416. Review of “*PP-Lowness and a Simple Definition of AWPP*, by S. Fenner,” Mathematical Reviews, V. 2003j, 2003j:68052, October 2003.
417. Review of “*Two Oracles that Force a Big Crunch*, by H. Buhrman, S. Fenner, L. Fortnow, and L. Torenvliet,” Mathematical Reviews, V. 2003d, 2003d:68074, April 2003.
418. Review of “*Reducing the Complexity of Reductions*, by M. Agrawal, E. Allender, R. Impagliazzo, T. Pitassi, S. Rudich,” ACM Computing Reviews, V. 44, #2, pp. 103–104, February 2003.
419. Review of “*Sparse Sets and Collapse of Complexity Classes*, by V. Glasnák,” Mathematical Reviews, V. 2002h, 2002h:68064, August 2002.
420. Review of “*A Compendium of Problems Complete for Symmetric Logarithmic Space*, by C. Álvarez and R. Greenlaw,” Mathematical Reviews, V. 2001m, 2001m:68054, December 2001.
421. Review of “*Adaptive versus Nonadaptive Queries to NP and P-Selective Sets*, by A. Naik and A. Selman,” Mathematical Reviews, V. 2001b, 2001b:68046, February 2001.
422. Review of “*Complexity Limitations on Quantum Computation*, by L. Fortnow and J. Rogers,” Mathematical Reviews, V. 2001b, 2001b:68044, February 2001.
423. Review of “*A Note on Unambiguous Function Classes*, by S. Kosub,” Mathematical Reviews, V. 2000j, 2000j:68057, October 2000.
424. Review of “ *$NQP_{\mathbb{C}} = co-C=P$* , by T. Yamakami and A. Yao,” Mathematical Reviews, V. 2000h, 2000h:68082, August 2000.
425. Review of “*Resolution of Hartmanis’s Conjecture for NL-Hard Sparse Sets*, by J.-Y. Cai and D. Sivakumar,” Mathematical Reviews, V. 2000a, 2000a:68036, January 2000.
426. Review of “*Probabilistic Verification of Proofs*, by M. Sudan,” Mathematical Reviews, V. 99j, 99j:68038, October 1999.
427. Review of “*New Collapse Consequences of NP Having Small Circuits*, by J. Köbler and O. Watanabe,” ACM Computing Reviews, V. 40, #6, p. 302, June 1999.

428. Review of “*A Hierarchy Based on Output Multiplicity*, by A. Naik, J. Rogers, J. Royer, and A. Selman,” ACM Computing Reviews, V. 40, #5, pp. 256-257, May 1999.
429. Review of “*Downward Separation Fails Catastrophically for Limited Nondeterminism Classes*, by R. Beigel and J. Goldsmith,” Mathematical Reviews, V. 99d, 99d:68078, April 1999.
430. Review of “*The Isomorphism Conjecture Holds and One-Way Functions Exist Relative to an Oracle*, by J. Rogers,” Mathematical Reviews, V. 98i, 98i:68106, September 1998.
431. Review of “*Alternating Time versus Deterministic Time: A Separation*, by S. Gupta,” Mathematical Reviews, V. 98e, 98e:68078, May 1998.
432. Review of “*Gap-Definability as a Closure Property*, by S. Fenner, L. Fortnow, and L. Li,” Mathematical Reviews, V. 98e, 98e:68075, May 1998.
433. Review of “*Complexity Classes and Sparse Oracles*, by D. Bovet, P. Crescenzi, and R. Silvestri,” ACM Computing Reviews, V. 37, #9, pp. 477-478, September 1996.
434. Review of “*Computing Functions with Parallel Queries to NP*, by B. Jenner and J. Torán,” ACM Computing Reviews, V. 37, #6, p. 315, June 1996.
435. Review of “*Sperner’s Lemma and Robust Machines*, by P. Crescenzi and R. Silvestri,” Mathematical Reviews, V. 96e, 96e:68030, May 1996.
436. Review of “*Deterministic versus Nondeterministic Space in Terms of Synchronized Alternating Machines*, by J. Hromkovič, B. Rován, A. Slobodová,” Mathematical Reviews, V. 95k, 95k:68050, November 1995.
437. Review of “*Introduction to the Theory of Complexity*, D. Bovet and P. Crescenzi,” ACM Computing Reviews, V. 36, #10, pp. 513-514, October 1995.
438. Review of “*The Complexity of Computing Maximal Word Functions*, by E. Allender, D. Bruschi, and G. Pighizzini,” in Mathematical Reviews, V. 95g, 95g:68031, July 1995.
439. Review of “*The Complexity of Malign Measures*, by P. Miltersen,” ACM Computing Reviews, V. 35, #7, p. 366, July 1994.
440. Review of “*Separating Complexity Classes Related to  $\Omega$ -Decision Trees*, by C. Damm and C. Meinel,” Mathematical Reviews, V. 94a, 94a:68037, January 1994.
441. Review of “*Communication for Alternating Machines*, by A. Slobodová,” ACM Computing Reviews, V. 34, #9, p. 497, September 1993.
442. Review of “*Generalizations of OptP to the Polynomial Hierarchy*, by M. Krentel,” Mathematical Reviews, V. 93i, 93i:68073, September 1993.
443. Review of “*Completeness in Approximation Classes*, by P. Crescenzi and A. Panconesi,” Mathematical Reviews, V. 93c, 93c:68029, March 1993.
444. Review of “*Constructive Complexity*, by K. Abrahamson, M. Fellows, M. Langston, and Moret,” Mathematical Reviews, V. 93a, 93a:68042, January 1993.
445. Review of “*PP Is as Hard as the Polynomial-Time Hierarchy*, by S. Toda,” Mathematical Reviews, V. 93a, 93a:68047, January 1993.



446. Review of “*Bounded Queries to SAT and the Boolean Hierarchy*, by R. Beigel,” ACM Computing Reviews, V. 33, #10, October 1992.
447. Review of “*An Upward Measure Separation Theorem*, by J. Lutz,” Mathematical Reviews, V. 92g, 92g:68054, July 1992.
448. Review of “*One-Way Functions in Complexity Theory*, by A. Selman,” Mathematical Reviews, V. 92f, 92f:68057, June 1992.
449. Review of “*Randomness, Tally Sets, and Complexity Classes*, by S. Tang,” Mathematical Reviews, V. 92e, 92e:68058, May 1992.
450. Review of “*On Intractability of the Class UP*, by O. Watanabe,” Mathematical Reviews, V. 91m, 91m:68064, December 1991.
451. Review of “*Bounded Query Classes*, by K. Wagner,” Mathematical Reviews, V. 91k, 91k:68063, December 1991.
452. Review of “*Computational Complexity Theory*, J. Hartmanis, editor,” Mathematical Reviews, V. 91j, 91j:68004, October 1991.
453. Review of “ *$P^{NP[\log n]}$  and Sparse Turing-Complete Sets for NP*, by J. Kadin,” Mathematical Reviews, V. 91c, 91c:68031, March 1991.
454. Review of “*Two applications of Complementation via Induction Counting*, by A. Borodin, P. Dymond, S. Cook, W. Ruzzo, and M. Tompa,” Mathematical Reviews, V. 90k, 90k:68049, November 1990.
455. Review of “*On a Strong Nondeterministic Polynomial Time Turing Reducibility*, by H. Tanaka,” Mathematical Reviews, V. 90j, 90j:03073, October 1990.
456. Review of “*A Natural NP-Complete Problem with a Nontrivial Lower Bound*, by E. Grandjean,” Mathematical Reviews, V. 90a, 90a:68027, January 1990.
457. Review of “*On Sets Truth-Table Reducible to Sparse Sets*, by R. Book and K. Ko,” Mathematical Reviews, V. 89i, 89i:68039, September 1989.
458. Review of “*Polynomial Terse Sets*, by A. Amir and W. Gasarch,” Mathematical Reviews, V. 89c, 89c:68032, March 1989.
459. Review of “*On Helping by Robust Oracle Machines*, by K. Ko,” Mathematical Reviews, V. 89a, 89a:68075, January 1989.
460. Review of “*A Hierarchy Theorem for Almost Everywhere Complex Sets with Application to Polynomial Complexity Degrees*, by J. Geske, D. Huynh, and A. Selman,” Mathematical Reviews, V. 88i, 88i:68034, September 1988.
461. Review of “*The Polynomial-Time Hierarchy and Sparse Oracles*, by J. Balcázar, R. Book, and U. Schöning,” Mathematical Reviews, V. 88e, 88e:68037, May 1988.
462. Review of “*On Restricting the Size of Oracles Compared with Restricting Access to Oracles*, by T. Long,” Mathematical Reviews, V. 87h, 87h:68053, August 1987.

## THESIS

463. **Counting in Structural Complexity Theory**, Ph.D. Thesis, Cornell University, Ithaca, NY, May 1987. (Short abstract appears in Bulletin of the EATCS, #33, pp. 288–290, October 1987.)

## TECHNICAL REPORTS

464. **Search versus Search for Collapsing Electoral Control Types**, B. Carleton, M. Chavrimootoo, L. Hemaspaandra, D. Narváez, C. Taliancich, and H. Welles, ACM Computing Research Repository Technical Report arXiv:2207.03049 [cs.GT], July 2022 (revised February 2024).
465. **Separating and Collapsing Electoral Control Types**, B. Carleton, M. Chavrimootoo, L. Hemaspaandra, D. Narváez, C. Taliancich, and H. Welles, ACM Computing Research Repository Technical Report arXiv:2207.00710 [cs.MA], July 2022 (revised June 2024).
466. **Gaps, Ambiguity, and Establishing Complexity-Class Containments via Iterative Constant-Setting**, L. Hemaspaandra, M. Juvekar, A. Nadjimzadah, P. Phillips, ACM Computing Research Repository Technical Report arXiv:2109.14764 [cs.CC], September 2021 (revised June 2022).
467. **The Complexity of Online Bribery in Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, ACM Computing Research Repository Technical Report arXiv:1906.08308 [cs.GT], June 2019 (revised October 2021).
468. **The Power of Self-Reducibility: Selectivity, Information, and Approximation**, L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1902.08299 [cs.CC], February 2019 (revised March 2019).
469. **Team Diagonalization**, L. Hemaspaandra and H. Spakowski, ACM Computing Research Repository Technical Report arXiv:1807.10983 [cs.CC], July 2018
470. **The Robustness of LWPP and WPP, with an Application to Graph Reconstruction**, E. Hemaspaandra, L. Hemaspaandra, H. Spakowski, and O. Watanabe, ACM Computing Research Repository Technical Report arXiv:1711.01250 [cs.CC], November 2017 (revised July 2018).
471. **Credimus**, E. Hemaspaandra and L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1711.00201 [cs.CC], November 2017 (revised June 2019).
472. **Computational Social Choice and Computational Complexity: BFFs?**, L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1710.10753 [cs.MA], October 2017 (revised November 2017).
473. **Existence versus Exploitation: The Opacity of Backbones and Backdoors Under a Weak Assumption**, L. Hemaspaandra and D. Narváez, ACM Computing Research Repository Technical Report arXiv:1706.04582 [cs.AI], June 2017 (revised November 2018).

474. **Closure and Nonclosure Properties of the Compressible and Rankable Sets**, J. Abascal, L. Hemaspaandra, S. Maimon, and D. Rubery, ACM Computing Research Repository Technical Report arXiv:1611.01696 [cs.LO], November 2016 (revised October 2018).
475. **Recursion-Theoretic Ranking and Compression**, L. Hemaspaandra and D. Rubery, ACM Computing Research Repository Technical Report arXiv:1610.01185 [cs.LO], October 2016 (revised November 2017).
476. **The Opacity of Backbones**, L. Hemaspaandra and D. Narváez, ACM Computing Research Repository Technical Report arXiv:1606.03634 [cs.AI], June 2016 (revised January 2019).
477. **More Natural Models of Electoral Control by Partition**, G. Erdélyi, E. Hemaspaandra, and L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1410.2652 [cs.GT], October 2014.
478. **Beautiful Structures: An Appreciation of the Contributions of Alan Selman**, L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1406.4106 [cs.CC], June 2014.
479. **A Control Dichotomy for Pure Scoring Rules**, E. Hemaspaandra, L. Hemaspaandra, and H. Schnoor, ACM Computing Research Repository Technical Report arXiv:1404.4560 [cs.GT], April 2014.
480. **Control in the Presence of Manipulators: Cooperative and Competitive Cases**, Z. Fitzsimmons, E. Hemaspaandra, and L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1308.0544 [cs.GT], August 2013 (revised June 2017).
481. **Weighted Electoral Control**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1305.0943 [cs.GT], May 2013.
482. **Manipulation Complexity of Same-System Runoff Elections**, Z. Fitzsimmons, E. Hemaspaandra, and L. Hemaspaandra, ACM Computing Research Repository Technical Report arXiv:1301.6118 [cs.GT], January 2013 (revised June 2014).
483. **An Atypical Survey of Typical-Case Heuristic Algorithms**, L. Hemaspaandra and R. Williams, ACM Computing Research Repository Technical Report arXiv:1210.8099 [cs.CC], October 2012. (Also appears as University of Rochester Department of Computer Science Technical Report 984, October 2012.)
484. **Schulze and Ranked-Pairs Voting Are Fixed-Parameter Tractable to Bribe, Manipulate, and Control**, L. Hemaspaandra, R. Lavaee, and C. Menton, ACM Computing Research Repository Technical Report arXiv:1210.6963 [cs.GT], October 2012 (revised June 2014). (Also appears as University of Rochester Department of Computer Science Technical Report 982, October 2012, revised June 2014.)
485. **The Complexity of Online Voter Control in Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, ACM Computing Research Repository Technical Report arXiv:1203.0411 [cs.GT], March 2012 (revised June 2016). (An earlier version appears as University of Rochester Department of Computer Science Technical Report 976, March 2012.)
486. **The Complexity of Online Manipulation of Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, ACM Computing Research Repository Technical Report

- arXiv:1202.6655 [cs.GT], February 2012 (revised September 2012). (Also appears as University of Rochester Department of Computer Science Technical Report 974, March 2012, revised September 2012.)
487. **The Complexity of Controlling Candidate-Sequential Elections**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, ACM Computing Research Repository Technical Report arXiv:1202.6649 [cs.GT], February 2012 (revised June 2016). (And earlier version appears as University of Rochester Department of Computer Science Technical Report 975, February 2012.)
488. **Search versus Decision for Election Manipulation Problems**, E. Hemaspaandra, L. Hemaspaandra, and C. Menton, ACM Computing Research Repository Technical Report arXiv:1202.6641 [cs.GT], February 2012 (revised March 2012). (Also appears as University of Rochester Department of Computer Science Technical Report 971, February 2012, revised March 2012.)
489. **Barbosa, Uniform Polynomial Time Bounds, and Promises**, L. Hemaspaandra, K. Murray, and X. Tang, University of Rochester Department of Computer Science Technical Report 969, June 2011. (Also appears as ACM Computing Research Repository Technical Report arXiv:1106.1150 [cs.CC], June 2011).
490. **The Complexity of Manipulative Attacks in Nearly Single-Peaked Electorates**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 968, May 2011 (revised July 2012). (Also appears as ACM Computing Research Repository Technical Report arXiv:1105.5032 [cs.GT], May 2011, revised July 2012.)
491. **A Note on Nonuniform versus Uniform  $ACC^k$  Circuits for NE**, L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 964, December 2010. (Also appears as ACM Computing Research Repository Technical Report arXiv:1012.0556 [cs.CC], December 2010, revised December 2010).
492. **Multimode Control Attacks on Elections**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 960, July 2010. (Also appears as ACM Computing Research Repository Technical Report arXiv:1007.1800 [cs.GT], July 2010.)
493. **Bypassing Combinatorial Protections: Polynomial-Time Algorithms for Single-Peaked Electorates**, F. Brandt, M. Brill, E. Hemaspaandra, and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 955, April 2010 (revised September 2013).
494. **The Shield that Never Was: Societies with Single-Peaked Preferences Are More Open to Manipulation and Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 950, September 2009 (revised June 2010). (Also appears as ACM Computing Research Repository Technical Report arXiv:0909.3257 [cs.GT], September 2009, revised June 2010.)
495. **Computational Aspects of Approval Voting**, D. Baumeister, G. Erdélyi, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 944, May 2009.

496. **Llull and Copeland Voting Computationally Resist Bribery and Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, ACM Computing Research Repository Technical Report arXiv:0809.4484 [cs.GT], September 2008 (revised September 2008). (An earlier version appears as University of Rochester Department of Computer Science Technical Report 933, May 2008, revised September 2008.)
497. **Frequency of Correctness versus Average Polynomial Time and Generalized Juntas**, G. Erdélyi, L. Hemaspaandra, J. Rothe, and H. Spakowski, University of Rochester Department of Computer Science Technical Report 934, June 2008. (Also appears as ACM Computing Research Repository Technical Report arxiv:0806.2555 [cs.CC], June 2008.)
498. **The Complexity of Power-Index Comparison**, P. Faliszewski and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 929, January 2008. (Also appears as ACM Computing Research Repository Technical Report arXiv:0801.4585 [cs.CC], January 2008.)
499. **Copeland Voting Fully Resists Constructive Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 923, October 2007. (Also appears as ACM Computing Research Repository Technical Report arXiv:0711.4759 [cs.GT], November 2007, revised December 2007.)
500. **On Approximating Optimal Weighted Lobbying, and Frequency of Correctness versus Average-Case Polynomial Time**, G. Erdélyi, L. Hemaspaandra, J. Rothe, and H. Spakowski, University of Rochester Department of Computer Science Technical Report 914, March 2007. (Also appears as ACM Computing Research Repository Technical Report cs/0703097, March 2007.)
501. **Llull and Copeland Voting Broadly Resist Bribery and Control**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 913, February 2007.
502. **On the Complexity of Kings**, E. Hemaspaandra, L. Hemaspaandra, T. Tantau, and O. Watanabe, University of Rochester Department of Computer Science Technical Report 905, December 2006 (revised November 2007).
503. **A Richer Understanding of the Complexity of Election Systems**, P. Faliszewski, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 903, September 2006. (Also appears as ACM Computing Research Repository Technical Report cs.GT/0609112, September 2006.)
504. **Hybrid Elections Broaden Complexity-Theoretic Resistance to Control**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 900, June 2006 (revised September 2008). (Also appears as ACM Computing Research Repository Technical Report arXiv:cs/0608057, August 2006, revised September 2008.)
505. **The Consequences of Eliminating NP Solutions**, P. Faliszewski and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 898, June 2006 (revised August 2006). (Also appears as ACM Computing Research Repository Technical Report cs.CC/0606009, June 2006, revised August 2006.)

506. **How Hard Is Bribery in Elections?**, P. Faliszewski, E. Hemaspaandra, and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 895, April 2006, revised August 2008. (Also appears as ACM Computing Research Repository Technical Report cs.GT/0608081, August 2006, revised August, 2008.)
507. **Guarantees for the Success Frequency of an Algorithm for Finding Dodgson-Election Winners**, C. Homan and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 881, September 2005 (revised June 2007). (Also appears as ACM Computing Research Repository Technical Report cs.DS/0509061, September 2005, revised June 2007.)
508. **Cluster Computing and the Power of Edge Recognition**, L. Hemaspaandra, C. Homan, and S. Kosub, University of Rochester Department of Computer Science Technical Report 878, September 2005. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0509060, September 2005.)
509. **Anyone but Him: The Complexity of Precluding an Alternative**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, ACM Computing Research Repository Technical Report cs.GT/0507027, July 2005 (revised March 2006). (Also appears as University of Rochester Department of Computer Science Technical Report 873, October 2005, revised March 2006.)
510. **Open Questions in the Theory of Semifeasible Computation**, P. Faliszewski and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 872, June 2005. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0506082, June 2005.)
511. **The Complexity of Kings**, E. Hemaspaandra, L. Hemaspaandra, and O. Watanabe, University of Rochester Department of Computer Science Technical Report 870, June 2005. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0506055, June 2005 and Tokyo Institute of Technology Technical Report C-213, August 2005.)
512. **P-Selectivity, Immunity, and the Power of One Bit**, L. Hemaspaandra and L. Torenvliet, University of Rochester Department of Computer Science Technical Report 864, April 2005 (revised December 2005). (Also appears as ACM Computing Research Repository Technical Report cs.CC/0504096, April 2005, revised December 2005.)
513. **Dichotomy for Voting Systems**, E. Hemaspaandra and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 861, April 2005. (Also appears as ACM Computing Research Repository Technical Report cs.GT/0504075, April 2005.)
514. **The Complexity of Computing the Size of an Interval**, L. Hemaspaandra, C. Homan, S. Kosub, and K. Wagner, University of Rochester Department of Computer Science Technical Report 856, February 2005 (revised March 2005). (Also appears as ACM Computing Research Repository Technical Report cs.CC/0502058, February 2005, revised March 2005.)
515. **Enforcing and Defying Associativity, Commutativity, Totality, and Strong Noninvertibility for One-Way Functions in Complexity Theory**, L. Hemaspaandra, J. Rothe, and A. Saxena, University of Rochester Department of Computer Science Technical Report 854, December 2004 (revised November 2007). (Also appears as ACM Computing Research Repository Technical Report cs.CC/0503049, March 2005, revised November 2007.)

516. **All Superlinear Inverse Schemes are coNP-Hard**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, ACM Computing Research Repository Technical Report cs.CC/0410023, October 2004. (An earlier version appears as University of Rochester Department of Computer Science Technical Report 841, July 2004.)
517. **Complexity Results in Graph Reconstruction**, E. Hemaspaandra, L. Hemaspaandra, S. Radziszowski, and R. Tripathi, University of Rochester Department of Computer Science Technical Report 852, October 2004. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0410021, October 2004.)
518. **Overhead-Free Computation, DCFLs, and CFLs**, L. Hemaspaandra, P. Mukherji, and T. Tantau, University of Rochester Department of Computer Science Technical Report 844, July 2004 (revised October 2004). (Also appears as ACM Computing Research Repository Technical Report cs.CC/0410035, October 2004.)
519. **Advice for Semifeasible Sets and the Complexity-Theoretic Cost(lessness) of Algebraic Properties**, L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 843, July 2004.
520. **Query-Monotonic Turing Reductions**, L. Hemaspaandra and M. Thakur, University of Rochester Department of Computer Science Technical Report 818, November 2003 (revised January 2006). (Also appears as ACM Computing Research Repository Technical Report cs.CC/0602001, January 2006.)
521. **The Complexity of Finding Top-Toda-Equivalence-Class Members**, L. Hemaspaandra, M. Ogihara, M. Zaki, and M. Zimand, University of Rochester Department of Computer Science Technical Report 808, August 2003.
522. **Computation with Absolutely No Space Overhead**, L. Hemaspaandra, P. Mukherji, and T. Tantau, University of Rochester Department of Computer Science Technical Report 779, May 2002 (revised July 2003).
523. **Algebraic Properties for Selector Functions**, L. Hemaspaandra, H. Hempel, and A. Nickelsen, University of Rochester Department of Computer Science Technical Report 778, May 2002 (revised January 2004). (Also appears as ACM Computing Research Repository Technical Report cs.CC/0501022, January 2005.)
524. **Lower Bounds and the Hardness of Counting Properties**, L. Hemaspaandra and M. Thakur, University of Rochester Department of Computer Science Technical Report 768, January 2002.
525. **Competing Provers Yield Improved Karp–Lipton Collapse Results**, J.-Y. Cai, V. Chakaravarthy, L. Hemaspaandra, and M. Ogihara, University of Rochester Department of Computer Science Technical Report 759, September 2001 (revised November 2002).
526. **Rice-Style Theorems for Complexity Theory**, L. Hemaspaandra and M. Thakur, University of Rochester Department of Computer Science Technical Report 757, September 2001.
527. **Almost-Everywhere Superiority for Quantum Polynomial-Time Languages**, E. Hemaspaandra, L. Hemaspaandra, and M. Zimand, University of Rochester Department of Computer Science Technical Report 754, July 2001 (revised August 2002 and January 2005).

528. **Using the No-Search Easy-Hard Technique for Downward Collapse**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 752, June 2001. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0106037, June 2001.)
529. **Algebraic Properties for Deterministic Selectivity**, L. Hemaspaandra, H. Hempel, and A. Nickelsen, University of Rochester Department of Computer Science Technical Report 746, April 2001.
530. **P-Immune Sets with Holes Lack Self-Reducibility Properties**, L. Hemaspaandra and H. Hempel, University of Rochester Department of Computer Science Technical Report 742, February 2001. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0102024, February 2001.)
531. **A Moment of Perfect Clarity II: Consequences of Sparse Sets Hard for NP with Respect to Weak Reductions**, C. Glaßer and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 738, November 2000. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0011019, November 2000.)
532. **If  $P \neq NP$  then Some Strongly Noninvertible Functions are Invertible**, L. Hemaspaandra, K. Pasanen, and J. Rothe, ACM Computing Research Repository Technical Report cs.CC/0010011, October 2000. (An earlier version appears as University of Rochester Department of Computer Science Technical Report 737, August 2000.)
533. **A Moment of Perfect Clarity I: The Parallel Census Technique**, C. Glaßer and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 735, July 2000. (Also appears as ACM Computing Research Repository Technical Report cs.CC/0007025, July 2000.)
534. **Algebraic Properties for P-Selectivity**, L. Hemaspaandra and H. Hempel, University of Rochester Department of Computer Science Technical Report 730, April 2000.
535. **Reducing the Number of Solutions of NP Functions**, L. Hemaspaandra, M. Ogihara, and G. Wechsung, University of Rochester Department of Computer Science Technical Report 727, January 2000 (revised March 2000).
536. **Take-home Complexity**, L. Hemaspaandra, ACM Computing Research Repository Technical Report cs.CY/0001016, January 2000.
537. **One-Way Functions in Worst-Case Cryptography: Algebraic and Security Properties**, A. Beygelzimer, L. Hemaspaandra, C. Homan, and J. Rothe, University of Rochester Department of Computer Science Technical Report 722, November 1999. (Also appears as ACM Computing Research Repository Technical Report cs.CC/9911007, November 1999.)
538. **Almost-Everywhere Superiority for Quantum Polynomial Time**, E. Hemaspaandra, L. Hemaspaandra, and M. Zimand, Los Alamos e-Print Physics Archive, Quantum Physics Technical Report quant-ph/9910033, October 1999 (revised April 2000). (Also appears as University of Rochester Department of Computer Science Technical Report 720, October 1999.)
539. **Query Order**, L. Hemaspaandra, H. Hempel, and G. Wechsung, ACM Computing Research Repository Technical Report cs.CS/9909020, September 1999.



540. **On Bounded-Weight Error-Correcting Codes**, R. Bent, M. Schear, L. Hemaspaandra, and G. Istrate, ACM Computing Research Repository Technical Report cs.OH/9906001, June 1999.
541. **Restrictive Acceptance Suffices for Equivalence Problems**, B. Borchert, L. Hemaspaandra, and J. Rothe, Friedrich-Schiller-Universität Technical Report Math/Inf/99/07, March 1999. (Also appears as ACM Computing Research Repository Technical Report cs.CC/9907041, July 1999.)
542. **Writing and Editing Complexity Theory: Tales and Tools**, L. Hemaspaandra and A. Selman, ACM Computing Research Repository Technical Report cs.GL/9811005, November 1998.
543. **Optimal Separations for Parallel versus Sequential Self-Checking: Parallelism can Exponentially Increase Self-Checking Cost**, L. Hemaspaandra, H. Hempel, and J. Vogel, University of Rochester Department of Computer Science Technical Report 691, May 1998.
544. **Creating Strong Total Commutative Associative One-Way Functions from Any One-Way Function**, L. Hemaspaandra and J. Rothe, University of Rochester Department of Computer Science Technical Report 688, May 1998 (revised May 1998).
545. **What's Up with Downward Collapse: Using the Easy-Hard Technique to Link Boolean and Polynomial Hierarchy Collapses**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 682, February 1998. (Also appears as ACM Computing Research Repository Technical Report cs.CC/9910002, October 1999.)
546. **Downward Collapse from a Weaker Hypothesis**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 681, February 1998. (Also appears as ACM Computing Research Repository Technical Report cs.CC/9808002, August 1998.)
547. **Robust Reductions**, J.-Y. Cai, L. Hemaspaandra, and G. Wechsung, University of Rochester Department of Computer Science Technical Report 666, December 1997. (Revised version appears as ACM Computing Research Repository Technical Report cs.CC/9906033, June 1999.)
548. **Linear-Nondeterminism Linear Advice for the P-Selective Sets**, L. Hemaspaandra, C. Nasipak, and K. Parkins, University of Rochester Department of Computer Science Technical Report 667, September 1997.
549. **An Introduction to Query Order**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 665, August 1997. (Updated version appears as ACM Computing Research Repository Technical Report cs.CC/9910004, October 1999.)
550. **Complexity-Theoretic Analogs of Rice's Theorem**, L. Hemaspaandra and J. Rothe, University of Rochester Department of Computer Science Technical Report 662, July 1997. (Revised version appears as ACM Computing Research Repository Technical Report cs.CC/9907038, July 1999.)

551. **Raising NP Lower Bounds to Parallel NP Lower Bounds**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 658, May 1997. (Also appears as ACM Computing Research Repository Technical Report cs.CC/9907039, July 1999.)
552. **Translating Equality Downwards**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 657, April 1997. (Updated version appears as ACM Computing Research Repository Technical Report cs.CC/9910008, October 1999.)
553. **Self-Specifying Machines**, L. Hemaspaandra, H. Hempel, and G. Wechsung, University of Rochester Department of Computer Science Technical Report 654, April 1997. (Updated version appears as ACM Computing Research Repository Technical Report cs.CC/9910006, October 1999.)
554. **Exact Analysis of Dodgson Elections: Lewis Carroll's 1876 Voting System is Complete for Parallel Access to NP**, E. Hemaspaandra, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 640, October 1996 (revised May 1997). (Also appears as Friedrich-Schiller-Universität Technical Report Math/Inf/96/31, October 1996, revised May 1997 and, revised, as ACM Computing Research Repository Technical Report cs.CC/9907036, July 1999.)
555. **Universally Serializable Computation**, L. Hemaspaandra and M. Ogihara, University of Rochester Department of Computer Science Technical Report 638, September 1996 (supercedes Technical Report 520).
556. **Power Balance and Congressional Apportionment Algorithms**, L. Hemaspaandra, K. Rajasethupathy, P. Sethupathy, M. Zimand, University of Rochester Department of Computer Science Technical Report 637, September 1996.
557.  **$R_{1-tt}^{SN}(NP)$  Distinguishes Robust Many-One and Turing Completeness**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 635, September 1996. (Updated version appears as ACM Computing Research Repository Technical Report cs.CC/9910003, October 1999.)
558. **Query Order and the Polynomial Hierarchy**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 634, September 1996 (revised August 1997). (Updated version appears as ACM Computing Research Repository Technical Report cs.CC/9910005, October 1999.)
559. **A Downward Translation in the Polynomial Hierarchy**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, University of Rochester Department of Computer Science Technical Report 630, July 1996 (revised January 1997). (Also appears as Friedrich-Schiller-Universität Technical Report Math/Inf/96/18, July 1996 (revised January 1997) and updated as ACM Computing Research Repository Technical Report cs.CC/9910007, October 1999.)
560. **An Upward Separation in the Polynomial Hierarchy**, E. Hemaspaandra, L. Hemaspaandra, and H. Hempel, Friedrich-Schiller-Universität Technical Report Math/Inf/96/15, June 1996.

561. **Powers-of-Two Acceptance Suffices for Equivalence and Bounded Ambiguity Problems**, B. Borchert, L. Hemaspaandra, and J. Rothe, University of Rochester Department of Computer Science Technical Report 628, June 1996. (Also appears as Friedrich-Schiller-Universität Technical Report Math/Inf/96/13, June 1996 and, in slightly revised form, Electronic Colloquium on Computational Complexity Technical Report 96-045, August 1996. Definitive technical report version appears as item 541.)
562. **The Join Can Lower Complexity**, L. Hemaspaandra, Z. Jiang, J. Rothe, and O. Watanabe, University of Rochester Department of Computer Science Technical Report 627, June 1996. (Also appears as Friedrich-Schiller-Universität Technical Report Math/Inf/96/12, June 1996 and, revised as “Boolean Operations, Joins, and the Extended Low Hierarchy,” as ACM Computing Research Repository Technical Report cs.CC/9907037, July 1999.)
563. **Witness-Isomorphic Reductions and Local Search**, S. Fischer, L. Hemaspaandra, and L. Torenvliet, University of Rochester Department of Computer Science Technical Report 619, May 1996. (Supersedes **Witness-Isomorphic Reductions and the Local Search Problem**, S. Fischer, L. Hemaspaandra, and L. Torenvliet, University of Rochester Department of Computer Science Technical Report 522, July 1994.)
564. **Characterizations of the Existence of Partial and Total One-Way Permutations**, J. Rothe and L. Hemaspaandra, Friedrich-Schiller-Universität Fakultät für Mathematik und Informatik Technical Report MATH/INF/96/7, April 1996. (Also appears as ACM Computing Research Repository Technical Report cs.CC/9907040, July 1999.)
565. **Computing Solutions Uniquely Collapses the Polynomial Hierarchy**, L. Hemaspaandra, A. Naik, M. Ogiwara, and A. Selman, Electronic Colloquium on Computational Complexity Technical Report TR96-027, April 1996. (An earlier version appears as SUNY–Buffalo Department of Computer Science Technical Report TR 93-28, August 1993 and University of Rochester Department of Computer Science Technical Report 467, August 1993.)
566. **Worlds to Die For**, L. Hemaspaandra, A. Ramachandran, and M. Zimand, University of Rochester Department of Computer Science Technical Report 597, November 1995.
567. **Query Order and Self-Specifying Machines**, L. Hemaspaandra, H. Hempel, and G. Wechsung, University of Rochester Department of Computer Science Technical Report 596, October 1995. (Also appears as Friedrich-Schiller-Universität Fakultät für Mathematik und Informatik Technical Report MATH/95/13, October 1995.)
568. **Strong Self-Reducibility Precludes Strong Immunity**, L. Hemaspaandra and M. Zimand, University of Rochester Department of Computer Science Technical Report 480, June 1995. (Revises and replaces December 1993 and May 1994 versions entitled **Strong Forms of Balanced Immunity**.)
569. **Easy Sets and Hard Certificate Schemes**, L. Hemaspaandra, J. Rothe, and G. Wechsung, University of Rochester Department of Computer Science Technical Report 585, May 1995. (Also appears as Friedrich-Schiller-Universität Technical Report MATH/95/5, May 1995 and, revised, as ACM Computing Research Repository Technical Report cs.CC/9907035, July 1999.)

570. **Polynomial-Time Semi-Rankable Sets**, L. Hemaspaandra, M. Zaki, and M. Zimand, University of Rochester Department of Computer Science Technical Report 584, May 1995 (revised February 1996).
571. **Polynomial-Time Multi-Selectivity**, L. Hemaspaandra, Z. Jiang, J. Rothe, and O. Watanabe, University of Rochester Department of Computer Science Technical Report 568, January 1995 (revised May 1996). (Also appears as Friedrich-Schiller-Universität Technical Report Math/Inf/96/11, May 1996 and, revised, as ACM Computing Research Repository Technical Report cs.CC/9907034, July 1999.)
572. **Logspace Reducibility: Models and Equivalences**, L. Hemaspaandra and Z. Jiang, University of Rochester Department of Computer Science Technical Report 544, June 1995. (Revises and replaces a November 1994 version entitled **Logspace Reducibility and Self-Reducibility: Models and Equivalences**.)
573. **The Satanic Notations: Counting Classes Beyond #P and Other Definitional Adventures**, L. Hemaspaandra and H. Vollmer, University of Rochester Department of Computer Science Technical Report 561, December 1994.
574. **Teaching Computational Complexity: Resources to Treasure**, L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 543, November 1994.
575. **Optimal Advice**, L. Hemaspaandra and L. Torenvliet, University of Rochester Department of Computer Science Technical Report 527, July 1994.
576. **Semi-Membership Algorithms: Some Recent Advances**, D. Denny-Brown, Y. Han, L. Hemaspaandra, and L. Torenvliet, University of Rochester Department of Computer Science Technical Report 526, July 1994.
577. **Reducibility Classes of P-Selective Sets**, L. Hemaspaandra, A. Hoene, and M. Ogihara, University of Rochester Department of Computer Science Technical Report 524, July 1994.
578. **Pseudorandom Generators and the Frequency of Simplicity**, Y. Han and L. Hemaspaandra, University of Rochester Department of Computer Science Technical Report 507, May 1994.
579. **Unambiguous Computation: Boolean Hierarchies and Sparse Turing-Complete Sets**, L. Hemaspaandra and J. Rothe, University of Rochester Department of Computer Science Technical Report 483, January 1994. (Revised version appears as ACM Computing Research Repository Technical Report cs.CC/9907033, July 1999.)
580. **P-Selectivity: Intersections and Indices**, L. Hemaspaandra and Z. Jiang, University of Rochester Department of Computer Science Technical Report 482, January 1994.
581. **Selectivity: Reductions, Nondeterminism, and Function Classes**, L. Hemaspaandra, A. Hoene, A. Naik, M. Ogiwara, A. Selman, T. Thierauf, and J. Wang, University of Rochester Department of Computer Science Technical Report 469, August 1993. (Also appears as SUNY–Buffalo Department of Computer Science Technical Report TR 93-29, August 1993.)
582. **Threshold Computation and Cryptographic Security**, Y. Han, L. Hemaspaandra, and T. Thierauf, University of Rochester Department of Computer Science Technical Report 461,

- June 1993. (Earlier but not strictly superseded version appears as **Threshold Computation and Cryptographic Security**, Y. Han, L. Hemachandra, and T. Thierauf, University of Rochester Department of Computer Science Technical Report 443, November 1992.)
583. **Fault-Tolerance and Complexity**, L. Hemachandra, University of Rochester Department of Computer Science Technical Report 450, April 1993.
584. **Promises and Fault-Tolerant Database Access**, J.-Y. Cai, L. Hemachandra, and J. Vyskoč, University of Rochester Department of Computer Science Technical Report 447, April 1993. (Earlier but not strictly superseded version appears as **Promise Problems and Access to Unambiguous Computation**, J.-Y. Cai, L. Hemachandra, and J. Vyskoč, University of Rochester Department of Computer Science Technical Report 419, April 1992.)
585. **Easily Checked Self-Reducibility**, L. Hemachandra and R. Silvestri, University of Rochester Department of Computer Science Technical Report 431, July 1992 (revised December 1993).
586. **Defying Upward and Downward Separation**, L. Hemachandra and S. Jha, University of Rochester Department of Computer Science Technical Report 430, June 1992.
587. **Reductions to Sets of Low Information Content**, V. Arvind, Y. Han, L. Hemachandra, J. Köbler, A. Lozano, M. Mundhenk, M. Ogiwara, U. Schöning, R. Silvestri, and T. Thierauf, University of Rochester Department of Computer Science Technical Report 417, April 1992. (Earlier version appears as **Reductions to Sets of Low Information Content**, V. Arvind, Y. Han, L. Hemachandra, J. Köbler, A. Lozano, M. Mundhenk, M. Ogiwara, U. Schöning, R. Silvestri, and T. Thierauf, Universität Ulm Fakultät für Informatik Technical Report 91-08, 1991.)
588. **Banishing Robust Turing Completeness**, L. Hemachandra, S. Jain, and N. Vereshchagin, University of Rochester Department of Computer Science Technical Report 404, December 1991. (Extends and incorporates **On Relativization and the Existence of Turing Complete Sets**, L. Hemachandra and S. Jain, University of Rochester Department of Computer Science Technical Report 297, June 1989.)
589. **Quasi-Injective Reductions**, L. Hemachandra and E. Spaan, University of Amsterdam Institute for Language, Logic, and Information Technical Report CT-91-11, August 1991. (Also appears in University of Rochester Computer Science and Engineering Research Review 1990–1991.)
590. **Relating Equivalence and Reducibility to Sparse Sets**, E. Allender, L. Hemachandra, M. Ogiwara, and O. Watanabe, University of Rochester Department of Computer Science Technical Report 358, April 1991. (Earlier version appears as DIMACS Technical Report 90-81, October 1990.)
591. **A Complexity Theory for Feasible Closure Properties**, M. Ogiwara and L. Hemachandra, University of Rochester Department of Computer Science Technical Report 377, March 1991. (Extends and incorporates **A Complexity Theory for Closure Properties**, M. Ogiwara and L. Hemachandra, Tokyo Institute of Technology Department of Information Sciences Technical Report C-99, October 1990.)

592. **On the Complexity of Graph Reconstruction**, D. Kratsch and L. Hemachandra, University of Rochester Department of Computer Science Technical Report 375, March 1991.
593. **Collapsing Degrees Via Strong Computation**, L. Hemachandra and A. Hoene, University of Rochester Department of Computer Science Technical Report 361, November 1990.
594. **Space-Efficient Recognition of Sparse Self-Reducible Languages**, L. Hemachandra, M. Ogiwara, and S. Toda, University of Rochester Department of Computer Science Technical Report 347, May 1990.
595. **Algorithms from Complexity Theory: Polynomial-Time Operations for Complex Sets**, L. Hemachandra, University of Rochester Department of Computer Science Technical Report 343, May 1990.
596. **On the Structure and Complexity of Infinite Sets with Minimal Perfect Hash Functions**, J. Goldsmith, L. Hemachandra, and K. Kunen, University of Rochester Department of Computer Science Technical Report 339, May 1990.
597. **Separating Complexity Classes with Tally Oracles**, L. Hemachandra and R. Rubinfeld, University of Rochester Department of Computer Science Technical Report 340, April 1990. (Also appears as Worcester Polytechnic Institute Department of Computer Science Technical Report 90-4, April 1990.)
598. **Using Inductive Counting to Simulate Nondeterministic Computation**, G. Buntrock, L. Hemachandra, and D. Siefkes, Bayerische Julius Maximilians Universität Würzburg, Institut für Informatik Report 13, April 1990. (Extends and incorporates **Unambiguous Computation May be Better than Determinism at Simulating Nondeterminism**, G. Buntrock, L. Hemachandra, and D. Siefkes, Technische Universität Berlin, Forschungsberichte des Fachbereichs Informatik 88-20, November 1988.)
599. **Simultaneous Strong Separations of Probabilistic and Unambiguous Complexity Classes**, D. Eppstein, L. Hemachandra, J. Tisdall, and B. Yener, University of Rochester Department of Computer Science Technical Report 335, March 1990.
600. **On Sets Polynomially Enumerable by Iteration**, L. Hemachandra, A. Hoene, D. Siefkes, and P. Young, University of Rochester Department of Computer Science Technical Report 333, March 1990. (Also appears as Technische Universität Berlin, Forschungsberichte des Fachbereichs Informatik 90-7, March 1990.)
601. **A Note on Enumerative Counting**, J.-Y. Cai and L. Hemachandra, University of Rochester Department of Computer Science Technical Report 330, February 1990.
602. **On Checking Versus Evaluation of Multiple Queries**, W. Gasarch, L. Hemachandra, and A. Hoene, University of Rochester Department of Computer Science Technical Report 323, January 1990. (Extends and incorporates **On Checking Versus Evaluation of Multiple Queries: Characteristic Vector Terseness**, L. Hemachandra and A. Hoene, Technische Universität Berlin, Forschungsberichte des Fachbereichs Informatik 88-21, 1988.)
603. **On Sets With Efficient Implicit Membership Tests**, L. Hemachandra and A. Hoene, University of Rochester Department of Computer Science Technical Report 318, November 1989. (Also appears as Technische Universität Berlin, Forschungsberichte des Fachbereichs Informatik 88-22, November 1989.)

604. **Lower Bounds for the Low Hierarchy**, E. Allender and L. Hemachandra, University of Rochester Department of Computer Science Technical Report 314, October 1989. (Also appears as Rutgers University Department of Computer Science Technical Report DCS-TR-260, October 1989.)
605. **On the Limitations of Locally Robust Positive Reductions**, L. Hemachandra and S. Jain, University of Rochester Department of Computer Science Technical Report 300, July 1989.
606. **On the Power of Probabilistic Polynomial Time:  $P^{NP[\log]} \subseteq PP$** , R. Beigel, L. Hemachandra, and G. Wechsung, The Johns Hopkins University Department of Computer Science Technical Report JHU-89/07, June 1989. Also appears in University of Rochester Computer Science and Engineering Research Review 1989–1990. (Revised version of University of Rochester Department of Computer Science Technical Report TR275, February 1989 and Columbia Computer Science Technical Report CUCS-372-88, September 1988.)
607. **Using Randomness to Characterize the Complexity of Computation**, L. Hemachandra and G. Wechsung, University of Rochester Department of Computer Science Technical Report 286, May 1989. (Revised version of **Can P and NP Manufacture Randomness?**, L. Hemachandra, Cornell Computer Science Department Technical Report TR-86-795, December 1986.)
608. **Polynomial-Time Functions Generate SAT: On P-Splinters**, L. Hemachandra, A. Hoene, and D. Siefkes, University of Rochester Department of Computer Science Technical Report 276, March 1989.
609. **Generating Hard, Certified Elements of NP-Complete Sets**, L. Hemachandra, E. Allender, J. Feigenbaum, A. Broder, and M. Abadi, AT&T Bell Laboratories Technical Memorandum 11276-890208-03TM, February 1989.
610. **Complexity Corresponds to Topology**, J. Hartmanis, L. Hemachandra, and S. Kurtz, University of Chicago Technical Report 88-17, November 1988.
611. **On the Structure of Solutions of Computable Real Functions**, J. Hartmanis and L. Hemachandra, Columbia Computer Science Technical Report CUCS-344-88, May 1988.
612. **Structure of Complexity Classes: Separations, Collapses, and Completeness**, L. Hemachandra, Columbia Computer Science Technical Report CUCS-343-88, May 1988.
613. **Enumerative Counting is Hard**, J.-Y. Cai and L. Hemachandra, Yale University Department of Computer Science Technical Report YALEU/DCS/TR-585, January 1988.
614. **On the Power of Parity Polynomial Time**, J.-Y. Cai and L. Hemachandra, Columbia Computer Science Technical Report CUCS-274-87, December 1987.
615. **Near-Testable Sets**, J. Goldsmith, L. Hemachandra, D. Joseph, and P. Young, University of Washington Department of Computer Science Technical Report 87-11-06, November 1987. University of Wisconsin-Madison Department of Computer Science Technical Report 88-797, October 1988.
616. **On Parity and Near-Testability:  $P^A \neq NT^A$  With Probability 1**, L. Hemachandra, Cornell Computer Science Department Technical Report TR-87-852, July 1987.

- 617. **Counting in Structural Complexity Theory**, L. Hemachandra, Cornell Computer Science Department Technical Report TR-87-840, June 1987.
- 618. **One-Way Functions, Robustness, and the Non-Isomorphism of NP-Complete Sets**, J. Hartmanis and L. Hemachandra, Cornell Computer Science Department Technical Report TR-86-796, December 1986.
- 619. **On Ranking**, L. Hemachandra, Cornell Computer Science Department Technical Report TR-86-794, December 1986.
- 620. **THE SKY IS FALLING: The Strong Exponential Hierarchy Collapses**, L. Hemachandra, Cornell Computer Science Department Technical Report TR-86-777, August 1986.
- 621. **Exact Counting is as Easy as Approximate Counting**, J.-Y. Cai and L. Hemachandra, Cornell Computer Science Department Technical Report TR-86-761, June 1986.
- 622. **Complexity Classes Without Machines: On Complete Languages for UP**, J. Hartmanis and L. Hemachandra, Cornell Computer Science Department Technical Report TR-86-746, April 1986.
- 623. **The Boolean Hierarchy: Hardware over NP**, J.-Y. Cai and L. Hemachandra, Cornell Computer Science Department Technical Report TR-85-724, December 1985.
- 624. **On Sparse Oracles Separating Feasible Complexity Classes**, J. Hartmanis and L. Hemachandra, Cornell Computer Science Department Technical Report TR-85-707, October 1985.

#### MISC.

- 625. **The Boolean Hierarchy**, J.-Y. Cai and L. Hemaspaandra, in Computational Complexity: The Work of Juris Hartmanis and Richard E. Stearns (tentative title), eds. D. Kozen and M. Marathe, accepted (in the somewhat amorphous way that book chapters in books on their path to publication are accepted).