

Michael R. Fellows

- Position** Professor (Australian Professorial Fellow)
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- Personal Information** Born: June 15, 1952, in Upland, California
Citizenship: Australia, Canada, U.S.A.
Married: to Frances Rosamond (Professor, Charles Darwin University)
- Education** Ph.D., Computer Science, University of California, San Diego, 1985
M.A., Mathematics, University of California, San Diego, 1982
B.A., Mathematics, Sonoma State University, California, 1980
- Experience** 2010–present: Professor, Charles Darwin University, Australia
2001–2010: Professor of Computer Science, Univ. Newcastle, Australia
1999–2001: Reader of Theoretical Computer Science, Victoria Univ., N.Z.
1995–2001: Professor of Computer Science, Univ. Victoria, Canada
1990–1995: Associate Professor, Univ. Victoria, Canada
1987–1990: Associate Professor, Univ. Idaho, U.S.A.
1986–1987: Assistant Professor, Univ. New Mexico, U.S.A.
1985–1986: Assistant Professor, Washington State Univ., U.S.A.
- Professional Interests** Computational Complexity Theory, Combinatorial Algorithms,
Computational Biology, Mathematical Sciences Communication

Research Funding

“An Algebraic Approach to Parallel Processing,” \$30,000 (US), Sandia Laboratories University Research Program, October 1986–October 1987, Principal Investigator.

“Solution Strategies for Practical Problems of VLSI Design,” \$91,795 (US), U.S. National Science Foundation, December 1986–May 1989, Co-Principal Investigator, one of two.

“Structured Approaches for Problems of Network Design and Utilization,” \$146,045 (US), U.S. Office of Naval Research, July 1988–July 1991, Principal Investigator.

“VLSI Hardware Acceleration Center for Space Research,” \$1,500,000 (US), U.S. National Aeronautics and Space Administration, June 1988 – March 1991, Co-Principal Investigator, one of ten.

“First Idaho Workshop on Software Research,” \$5,000 (US), U.S. Office of Naval Research, June 1989 – August 1989, Principal Investigator.

“Algorithmic and Combinatorial Advances on VLSI Design Theory,” \$310,344 (US), U.S. National Science Foundation, November 1989 – October 1992, Co-Principal Investigator, one of two.

“Second Idaho Workshop on Algorithms and Software,” \$5,000 (US), U.S. Office of Naval Research, June 1990 – August 1990, Co-Principal Investigator, one of two.

“New Tools for Constructing Efficient Combinatorial Algorithms,” \$27,791 (Can) annually, National Science and Engineering Research Council of Canada (NSERC), Operating Grant, 1990-92, Principal Investigator.

“New Techniques in Algorithms and Complexity for Fixed-Parameter Problems,” \$34,000 (Can) annually, NSERC Operating Grant, 1992-95, Principal Investigator.

“Mega-Math,” \$45,801 (US), U.S. Department of Energy, Los Alamos National Laboratories, 1994-95, Principal Investigator.

“Research in Mathematics and Computer Science Education,” \$16,000 (Can), NSERC Presidential Research Award, University of Victoria, 1995-96, Principal Investigator.

“Compumania: The Mathematical Roots of Computer Technology,” \$11,900 (Can), annually, British Columbia Ministry of Training and Development, 1995-97. (Awarded to the Mathmania Society for the Popularization of Mathematical Science, of which I am a founder and currently Director, and author of the proposals).

“Parameterized Complexity,” \$2,800 (Can), NSERC Scientific Monograph Preparation Grant, 1995-96, Principal Investigator.

“Implementation of Bounded Width Algorithmics for Applications in Biology,” \$20,742 (Can), NSERC Equipment Grant, 1999-2000, Leading Principal Investigator, one of three co-applicants.

“Parameterized Algorithm Design and Complexity Analysis,” \$41,800 (Can), annually, NSERC Individual Research Grant, 1995-99.

“Parameterized Algorithm Design and the Systematic Design of Heuristics,” \$52,500 (Can), annually, NSERC Individual Research Grant, 1999-2003.

“Computational Support for Experiments with Heuristic Algorithms and Combinatorial Computing,” \$20,100 (Can), 1999-2000, NSERC Equipment Grant, Leading Principal Investigator, one of four co-applicants.

“Pacific Institute of the Mathematical Sciences (PIMS) Postdoctoral Research Matching Funds Grant,” \$18,000 (Can), annually, 1999-2001.

“The Mathematical Foundations of Computing and Information Technology for the Early Grades and for the General Public,” \$36,000 (NZ), 1999-2002, Victoria University Targeted PhD Scholarship, co-Principal Investigator, one of two.

“The Systematic Design of Useful Heuristic Algorithms via Parametric Complexity Methods,” \$260,000 (NZ), 1999-2002, New Zealand Marsden Fund for Basic Research, Leading Principal Investigator, one of two co-applicants.

“Computer Games: Interdisciplinary and Interinstitutional Collaboration for Applications in Science, Medicine and Education,” \$36,000 (NZ), 1999-2000, Victoria University Strategic Development Fund Seed Grant, Leading Principal Investigator, one of five co-applicants.

“Applications of Parameterized Complexity in Computational Biology,” \$50,000 (Aus), 2001-2003, University of Newcastle Research Initiation Grant.

“Approximate Proximity for Applications in Data Mining and Visualization,” \$70,000 (Aus) annually, 2002-2006, Australian Research Council Discovery Grant, one of three co-applicants.

“Parameterized Algorithm Design and the FPT Server Project,” \$155,000 (Aus), 2003-2005, Australian Research Council Discovery Grant (sole principal investigator). In 2003 this was folded into the ARC Centre of Excellence in Bio-Informatics.

“Efficient Pre-Processing of Hard Problems: New Approaches, Basic Theory and Applications,” Australian Research Council Discovery Grant DP0209818 (Two CIs — also V. Estivill-Castro, Griffith University). 2007–2010, approx. (AUD) 380,813.

“Multivariate Algorithmics: Meeting the Challenge of Real World Computational Complex-

ity,” Australian Research Council / Discovery Project DP1097129. Australian Professorial Fellowship, sole CI, 2010–2014, approx. (AUD) 177,000 per year.

“Algorithmic Engineering and Complexity Analysis of Protocols for Consensus,” two CIs, 2011 – 2014 Australian Research Council / Discovery Project DP110101792. (AUD) 210,000.

“Local Re-optimization for Turbo-charging Heuristics, four CIs, 2015–2018, Australian Research Council Discovery Project. (AUD) 355,100.

Refereed Journal Publications In Print or Accepted for Publication

1. “A Topological Parameterization and Hard Graph Problems,” *Congressus Numerantium* 59 (1987), 69–78, with F. Hickling and M. Syslo.
2. “Computational Complexity of Integrity,” *Journal of Combinatorial Mathematics and Combinatorial Computing* 2 (1987), 179–191, with L. H. Clark and R. C. Entringer.
3. “Nonconstructive Proofs of Polynomial-Time Complexity,” *Information Processing Letters* 26(1987/88), 157–162, with M. A. Langston.
4. “Processor Utilization in a Linearly Connected Parallel Processing System,” *IEEE Transactions on Computers* 37 (1988), 594–603, with M. A. Langston.
5. “On Finding Optimal and Near-Optimal Lineal Spanning Trees,” *Algorithmica* 3 (1988), 549–560, with D. K. Friesen and M. A. Langston.
6. “Nonconstructive Tools for Proving Polynomial-Time Complexity,” *Journal of the Association for Computing Machinery* 35 (1988) 727–739, with M. A. Langston.
7. “On the Galactic Number of a Hypercube,” *Mathematical and Computer Modelling* 11 (1988), 212–215, with M. Hoover and F. Harary.
8. “Radius and Diameter in Manhattan Lattices,” *Discrete Mathematics* 73 (1989), 119–125, with D. J. Kleitman.
9. “Polynomial-Time Self-Reducibility: Theoretical Motivations and Practical Results,” *International Journal of Computer Mathematics* 31 (1989), 1–9, with D. J. Brown and M. A. Langston.
10. “The Robertson-Seymour Theorems: A Survey of Applications,” *Contemporary Mathematics* 89 (1989), 1–18.

11. "Counting Spanning Trees in Directed Regular Multigraphs," *Journal of the Franklin Institute* 326 (1989), 889-896, with J. M. Wojciechowski.
12. "The Immersion Order, Forbidden Subgraphs and the Complexity of Network Integrity," *Journal of Combinatorial Mathematics and Combinatorial Computing* 6 (1989), 23-32, with S. Stueckle.
13. "Transversals of Vertex Partitions in Graphs," *SIAM J. Discrete Math.* 3 (1990), 206-215.
14. "Searching for $K_{3,3}$ in Linear Time," *Linear and Multilinear Algebra* 29 (1991), 279-290, with P. A. Kaschube.
15. "Perfect Domination," *Australasian J. Combinatorics* 3 (1991), 141-150, with M. Hoover.
16. "Fast Search Algorithms for Graph Layout Permutation Problems," *Integration, the VLSI Journal* 12 (1991), 321-337, with M. A. Langston.
17. "Cycles of Length 0 Modulo 3 in Graphs," *Annals of Discrete Math.* (1991), 87-101, with C. A. Barefoot, L. H. Clark, J. Douthett and R. C. Entringer.
18. "Constructive Complexity," *Discrete Applied Math.* 34 (1991), 3-16, with K. Abrahamson, M. A. Langston and B. Moret. (At the special invitation of the editor-in-chief, this was published also in the book series *Annals of Discrete Mathematics*, in: Combinatorics and Theoretical Computer Science, R. Simion, ed., North-Holland, 1992, pp. 3-16.)
19. "On the Complexity and Combinatorics of Covering Finite Complexes," *Australasian J. Combinatorics* 4 (1991), 103-112, with J. Abello and J. Stillwell.
20. "On Well-Partial-Order Theory and Its Application to Combinatorial Problems of VLSI Design," *SIAM J. Discrete Math.* 5 (1992), 117-126, with M. A. Langston.
21. "Small Diameter Symmetric Networks From Linear Groups," *IEEE Transactions on Computers* 40 (1992), 218-220, with L. Campbell, G. E. Carlsson, M. J. Dinneen, V. Faber, M. A. Langston, J. W. Moore, A. P. Mullhaupt and H. B. Sexton.
22. "Fixed-Parameter Tractability and Completeness," *Congressus Numerantium* 87 (1992), 161-178, with R. G. Downey.
23. "Self-Witnessing Polynomial-Time Complexity and Certificates for Primality," *Designs, Codes and Cryptography* 2 (1992), 231-235, with N. Koblitz.
24. "The Private Neighborhood Cube," *SIAM J. Discrete Math.* 7 (1994), 41-47, with G. Fricke, S. Hedetniemi and D. Jacobs.

25. “Cultural Aspects of Mathematics Education Reform,” *Notices of the American Mathematics Society* 41 (1994), 5–9, with A. Hibner and N. Koblitz.
26. “On Search, Decision and the Efficiency of Polynomial-Time Algorithms,” *Journal of Computer and Systems Science* 49 (1994), 769–779, with M. A. Langston.
27. “The Complexity of Induced Minors and Related Problems,” *Algorithmica* 13 (1995), 266–282, with J. Kratochvíl, M. Middendorf and F. Pfeiffer.
28. “Large Planar Graphs with Given Diameter and Maximum Degree,” *Discrete Applied Math.* 61 (1995), 133–153, with P. Hell and K. Seyffarth.
29. “Fixed-Parameter Tractability and Completeness I: Basic Theory,” *SIAM J. Computing* 24 (1995), 873–921, with R. Downey.
30. “Fixed-Parameter Tractability and Completeness II: Completeness for $W[1]$,” *Theoretical Computer Science A* 141 (1995), 109–131, with R. Downey.
31. “Fixed Parameter Tractability and Completeness IV: On Completeness for $W[P]$ and PSPACE Analogs,” *Annals of Pure and Applied Logic* 73 (1995), 235–276, with K. Abrahamson and R. Downey.
32. “The Parameterized Complexity of the Longest Common Subsequence Problem,” *Theoretical Computer Science A* 147 (1995), 31–54, with H. Bodlaender, R. Downey and H.T. Wareham.
33. “Parameterized Complexity Analysis in Computational Biology,” *Computer Applications in the Biosciences* 11 (1995), 49–57, with H. Bodlaender, R. Downey, M. Hallett, and H.T. Wareham.
34. “On the Parameterized Complexity of Problems in NP,” *Information and Computation* 123 (1995), 38–49. with L. Cai, J. Chen and R. Downey.
35. “On the Complexity of k -Processor Scheduling,” *Operations Research Letters* 18 (1995), 93–98, with H. Bodlaender.
36. “Vertex Transversals That Dominate,” *Journal of Graph Theory* 21 (1996), 21–32, with N. Alon and D.O. Hare.
37. “A Simple Linear Time Algorithm for Finding Path Decompositions of Small Width,” *Information Processing Letters* 57 (1996), 197–203, with K. Cattell and M. J. Dinneen.
38. “Sparse Parameterized Problems,” *Annals of Pure and Applied Logic* 82 (1996), 1–15, with M. Cesati.
39. “Approaches to Detection of Distantly Related Proteins by Database Searches,” *BioTechniques* 21 (1996), 1118–1125, with K. Cattell, R. Olafson, B. Koop, I. Bailey, R.W. Olafson and C. Upton.

40. “Advice Classes of Parameterized Tractability,” *Annals of Pure and Applied Logic* 84 (1997), 119–138, with L. Cai, J. Chen and R.G. Downey.
41. “The Parameterized Complexity of Short Computation and Factorization,” Proceedings of the *Sacks Symposium*, in *Archive for Mathematical Logic* 36 (1997), 321–338, with L. Cai, J. Chen and R. Downey.
42. “A Note on the Computability of Obstruction Sets for Monadic Second Order Ideals,” *Journal of Universal Computer Science* 3 (1997), 1194–1198, with B. Courcelle and R. Downey.
43. “Parameterized Circuit Complexity and the W Hierarchy,” *Theoretical Computer Science A* 191 (1998), 97–115, with R. G. Downey and K. W. Regan.
44. “An Improved Fixed-Parameter Algorithm for Vertex Cover,” *Information Processing Letters* 65 (1998), 163–168, with R. Balasubramanian and V. Raman.
45. “Constructions of Dense Planar Networks,” *Networks* 32 (1998), 275–281, with P. Hell and K. Seyffarth.
46. “Threshold Dominating Sets and An Improved Characterization of $W[2]$,” *Theoretical Computer Science A* 209 (1998), 123–140, with R. G. Downey.
47. “The Parameterized Complexity of Some Fundamental Problems in Coding Theory,” *SIAM J. Computing* 29 (1999), 545–570, with R.G. Downey, A. Vardy and G. Whittle.
48. “On Computing Graph Minor Obstruction Sets,” *Theoretical Computer Science A* 233 (2000), 107–127, with K. Cattell, M.J. Dinneen, R.G. Downey and M.A. Langston.
49. “The Complexity of Irredundant Sets Parameterized by Size,” *Discrete Applied Math.* 100 (2000), 155–167, with R.G. Downey and V. Raman.
50. “The Hardness of Perfect Phylogeny, Feasible Register Assignment and Other Problems on Thin Colored Graphs,” *Theoretical Computer Science A* 244 (2000), 167–188, with H. Bodlaender, M. Hallett, H. Wareham and T. Warnow.
51. “Index Sets and Parametric Reductions,” *Archive for Mathematical Logic* 40 (2001), 329–348, with R.G. Downey.
52. “Forbidden Minors to Graphs with Small Feedback Sets,” *Discrete Mathematics* 230 (2001), 215–252, with K. Cattell and M. Dinneen.
53. “On the Parameterized Complexity of Minimizing Tardy Tasks,” *Theoretical Computer Science A* 298 (2003), 317–324, with C. McCartin.
54. “Analogues and Duals of the MAST Problem for Sequences and Trees,” *Journal of Algorithms* 49 (2003), 192–216, with M. Hallett and U. Stege.

55. “Explaining Cryptographic Ideas to the General Public,” *Computers and Education* 40 (2003), 199–215, with T. Bell, I. Witten and N. Koblitz.
56. “Foreward from the Guest Editors,” *Journal of Computer and Systems Science* 67 (2003), 653–654, with J. Chen.
57. “Cutting Up is Hard to Do: the Parameterized Complexity of k -Cut and Related Problems,” *Electronic Notes in Theoretical Computer Science* 78 (2003), 205–218, with R. Downey, V. Estivill-Castro, E. Prieto-Rodriguez and F. Rosamond.
58. “Polynomial-Time Data Reduction for Dominating Set,” *Journal of the ACM* 51 (2004), 363–384, with J. Alber and R. Niedermeier.
59. “The Dominating Set Problem is Fixed Parameter Tractable on Graphs of Bounded Genus,” *Journal of Algorithms* 52 (2004), 152–168, with H. Fan and J. Ellis.
60. “Refined Search Tree Technique for Dominating Sets on Planar Graphs,” *Journal of Computer and Systems Science* 71 (2005), 385–405, with J. Alber, H. Fan, H. Fernau, R. Niedermeier, F. Rosamond and U. Stege.
61. “Tight Lower Bounds for Certain Parameterized NP-Hard Problems,” *Information and Computation* 201 (2005), 216–231, with J. Chen, B. Chor, X. Huang, D. Juedes, I. Kanj and G. Xia.
62. “On Finding Short Resolution Refutations and Small Unsatisfiable Subsets,” *Theoretical Computer Science* 351 (2006), 351–359, with S. Szeider and G. Wrightson.
63. “On the Parameterized Intractability of Motif Search Problems,” *Combinatorica* 26 (2006), 141–167, with J. Gramm and R. Niedermeier.
64. “A Fixed-Parameter Approach to Two-Layer Planarization,” *Algorithmica* 45 (2006), 159–182, with V. Dujmovic, M. Hallett, M. Kitching, G. Liotta, C. McCartin, N. Nishimura, P. Ragde, F. Rosamond, M. Suderman, S. Whitesides and D. R. Wood.
65. “An $O(2^{O(k)})$ FPT Algorithm for the Undirected Feedback Vertex Set Problem,” *Theory of Computing Systems* 41 (2007), 479–492, with F. Dehne, M. Langston, F. Rosamond and K. Stevens.
66. “Crown Structures for Vertex Cover Kernelization,” *Theory of Computing Systems* 41 (2007), 411–431, with F. Abu-Khzam, M. Langston and W. Suters.
67. “On the Efficiency of Polynomial Time Approximation,” *Theory of Computing Systems* 41 (2007), 459–477, with L. Cai, D. Juedes and F. Rosamond.
68. “On the Complexity of Lobbying in Multiple Referenda,” *Review of Economic Design* 11 (2007), 217–224, with R. Christian, F. Rosamond and A. Slinko.

69. “Parameterized Approximation for Dominating Set Problems,” *Information Processing Letters* 109 (2008), 68–70, with R. Downey, C. McCartin and F. Rosamond.
70. “On the Parameterized Complexity of Layered Graph Drawing,” *Algorithmica* 52 (2008), 267–292, with V. Dujmovic, M. Kitching, G. Liotta, C. McCartin, N. Nishimura, P. Ragde, F. Rosamond, M. Suderman, S. Whitesides and D. R. Wood.
71. “The Computer Journal Special Issue on Parameterized Complexity: Foreword by the Guest Editors,” *The Computer Journal* 51(1) (2008), 1–6, with R. Downey and M. Langston.
72. “Faster Fixed-Parameter Tractable Algorithms for Matching and Packing Problems,” *Algorithmica* 52 (2008), 167–176, with C. Knauer, N. Nishimura, P. Ragde, F. Rosamond, U. Stege, D. Thilikos and S. Whitesides.
73. M. Fellows, F. Rosamond, U. Rotics and S. Szeider. “Cliquewidth is NP-Complete,” *SIAM Journal on Discrete Mathematics* 23(2): 909-939 (2009).
74. “Derivation of Algorithms for Cutwidth and Related Graph Layout Parameters,” *Journal of Computer and System Sciences* 75 (2009), 231–244, with H.L. Bodlaender and D.M. Thilikos.
75. “The Complexity Ecology of Parameters: An Illustration Using Bounded Max Leaf Number,” *Theory of Computing Systems* 45 (2009), 822–848, with D. Lokshtanov, N. Misra, M. Mnich, F. Rosamond and S. Saurabh.
76. “On the Fixed-Parameter Intractability and Tractability of Multiple-Interval Graph Problems,” *Theoretical Computer Science* 410 (2009), 53–61, with D. Hermelin, F. Rosamond and S. Vialette.
77. “On Problems Without Polynomial Kernels,” *Journal of Computer and System Sciences* 75 (2009), 423–434, with H. Bodlaender, R. Downey and D. Hermelin.
78. “Fixed-Parameter Algorithms for Kemeny Ranking,” *Theoretical Computer Science* 410 (2009), 4554–4570, with N. Betzler, J. Guo, R. Niedermeier and F. Rosamond.
79. H.L. Bodlaender, M. Fellows, P. Heggernes, F. Mancini, C. Papadopoulos and F. Rosamond. “Clustering with Partial Information,” *Theoretical Computer Science* 411 (2010), 1202–1211.
80. “W-Hierarchies Defined by Symmetric Gates,” *Theory of Computing Systems* 46 (2010), 311–339, with J. Flum, D. Hermelin, M. Mueller and F. Rosamond.
81. M. Fellows, J. Guo and I. Kanj. “The Parameterized Complexity of Some Minimum Label Problems,” *Journal of Computer and System Sciences* 76 (2010), 727–740.

82. M. Fellows, J. Guo, C. Komusiewicz, R. Niedermeier and J. Uhlmann. “Graph-Based Data Clustering with Overlaps,” *Discrete Optimization* 8 (2011), 2–17.
83. M. Fellows, F. Fomin, D. Lokshtanov, F. Rosamond, S. Saurabh, S. Szeider and C. Thomassen. “On the Complexity of Some Colorful Problems Parameterized by Treewidth,” *Information and Computation* 209 (2011), 143–153.
84. M. Fellows and H. Fernau. “Facility Location Problems: A Parameterized View,” *Discrete Applied Mathematics* 159 (2011), 1118–1130.
85. M. Fellows, F. Fomin and G. Gutin. “Preface: Special Issue on Parameterized Complexity of Discrete Optimization,” *Discrete Optimization* 8 (2011), 1.
86. M. Fellows, J. Guo, H. Moser and R. Niedermeier. “A Generalization of Nemhauser and Trotter’s Local Optimization Theorem,” *Journal of Computer and System Sciences* 77 (2011), 1141–1158.
87. N. Betzler, R. van Bevern, M. Fellows, C. Komusiewicz and R. Niedermeier. “Parameterized Algorithmics for Finding Connected Motifs in Biological Networks,” *IEEE/ACM Transactions on Computational Biology and Bioinformatics* 8 (2011), 1296–1308.
88. H. Bodlaender, M. Fellows, M. Langston, M. Ragan, F. Rosamond and M. Weyer. “Quadratic Kernelization for Convex Recoloring of Trees,” *Algorithmica* 61 (2011), 362–378.
89. M. Fellows, G. Fertin, D. Hermelin and S. Vialette. “Upper and Lower Bounds for Finding Connected Motifs in Vertex-Colored Graphs,” (conference version presented at ICALP 2007), *Journal of Computer and System Sciences* 77 (2011), 799–811.
90. M. Fellows, D. Hermelin, G. Landau, F. Rosamond, L. Rozenberg and L. Tzavika. “Haplotype Inference Constrained by Plausible Haplotype Information,” *IEEE/ACM Transactions on Computational Biology and Bioinformatics* 8 (2011).
91. M. Fellows, J. Guo, H. Moser and R. Niedermeier. “A Complexity Dichotomy for Finding Disjoint Solutions of Vertex Deletion Problems,” *ACM Transactions on Computation Theory* 2 (2011), 5–25.
92. M. Fellows, S. Gaspers and F. Rosamond, “Parameterizing by the Number of Numbers,” *Theory of Computing Systems* 50 (2012), 675–693.
93. M. Fellows, F. Fomin, D. Lokshtanov, F. Rosamond, S. Saurabh and Y. Villanger. “Local Search: Is brute-force avoidable?” *Journal of Computer and System Sciences* 78 (2012), 707–719.
94. M. Dom, M. Fellows, F. Rosamond and S. Sikdar. “The Parameterized Complexity of Stabbing Rectangles,” *Algorithmica* 62 (2012), 564–594.

95. M. Fellows, D. Hermelin and F. Rosamond. “Well-Quasi-Orders in Subclasses of Bounded Treewidth Graphs and their Algorithmic Applications,” *Algorithmica* 64 (2012), 3–18.
96. M. R. Fellows, B. M. P. Jansen and F. A. Rosamond. “Towards Fully Multivariate Algorithmics: Parameter Ecology and the Deconstruction of Computational Complexity,” *European J. Combinatorics* 34 (2013), 541–566.
97. M. Fellows, T. Friedrich, D. Hermelin, N. Narodytska and F. Rosamond. “Convexity Makes All-Different Constraints Tractable,” *Theoretical Computer Science*, 472 (2013), 81–89.
98. M. Fellows, F. Fomin, D. Lokshtanov, E. Losievskaja, F. Rosamond and S. Saurabh. “Distortion Is Fixed-Parameter Tractable,” *ACM Transactions on Computation Theory* 5(4): 16 (2013).
99. R. Crowston, M. Fellows, G. Gutin, M. Jones, E. J. Kim, F. Rosamond, S. Thomasse, I. Z. Ruzsa and A. Yeo. “Satisfying More Than Half of a System of Linear Equations Over $GF[2]$: A Multivariate Approach,” *Journal of Computer and System Sciences* 80 (2014), 687–696.
100. C. Bazgan, M. Chopin, M. Cygan, M. Fellows, F. Fomin and E.J. van Leeuwen. “Parameterized Complexity of Firefighting Revisited,” *Journal of Computer and System Sciences* 80 (2014), 1285–1297.
101. M.R. Fellows and B.M.P. Jansen, “FPT is Characterized by Useful Obstruction Sets,” *ACM Transactions on Computation Theory* 6 (2014), 16–26.
102. M. R. Fellows. “Some Open Problems in Parameterized Complexity Related to the Work of Jianer Chen,” *Tsinghua Science and Technology* 19(4) (2014), 325–328.
103. R. Downey, J. Egan, M. Fellows, F. Rosamond and P. Shaw. “Dynamic Dominating Set and Turbo-Charging Greedy Heuristics,” *Tsinghua Science and Technology* 19(4) (2014), 329–337.
104. M. Fellows, D. Hermelin, F. Rosamond and H. Shachnai, “Tractable Parameterizations for the Minimum Linear Arrangement Problem,” *ACM Transactions on Computation Theory*, to appear.
105. M.R. Fellows, M. Dantas da Silva, F. Protti and U. dos Santos Souza. “Tractability and Hardness of Flood-Filling Games on Trees,” *Theoretical Computer Science* 576: 102–116 (2015).
106. R. van Bevern, R.G. Downey, M.R. Fellows, S. Gaspers and F. Rosamond. “Myhill-Nerode Methods for Hypergraphs,” *Algorithmica*, to appear.

107. G. Erdelyi, M. Fellows, L. Piras and J. Rothe. “Control Complexity in Bucklin and Fallback Voting: Theoretical Aspects,” *Journal of Computer and System Sciences* 81(4): 632-660 (2015)
108. G. Erdelyi, M. Fellows, L. Piras and J. Rothe. “Control Complexity in Bucklin and Fallback Voting: Experimental Aspects,” *Journal of Computer and System Sciences* 81(4): 661-670 (2015)
109. F. N. Abu-Khzam, J. Egan, M. R. Fellows, F. A. Rosamond and P. Shaw. “On the Parameterized Complexity of Dynamic Problems,” *Theoretical Computer Science*, to appear.

Books

1. This is Mega-Mathematics!, 134 pp., available for free at the World Wide Web site: <http://www.c3.lanl.gov/captors/mega-math>, 1992, with Nancy Casey.
2. Computer Science Unplugged ... offline activities and games for all ages, 231 pp., 1996, with Tim Bell and Ian Witten.
3. Parameterized Complexity, 530 pp., Springer-Verlag, 1999, with R.G. Downey.
4. Fundamentals of Parameterized Complexity, 790 pp., Springer-Verlag, 2013, with R.G. Downey.

Book Contributions

1. M.R. Fellows, “Parameterized complexity: new developments and research frontiers.” In R.G. Downey and D. Hirschfeldt (eds.), *Aspects of Complexity*, pp. 51–72. de Gruyter Series in Logic and Its Applications, Vol. 4, de Gruyter, Berlin, 2000.
2. M. Fellows, S. Gaspers and F. Rosamond, “Multivariate Complexity Theory.” In E.K. Blum and A.V. Aho (eds.), *Computer Science: The Hardware, Software and Heart of It*, pp. 269–294. Springer, 2011.

Refereed Conference Proceedings

1. “On Finding Obstruction Sets and Polynomial-Time Algorithms for Gate Matrix Layout,” *Proceedings of the 25th Allerton Conference on Communication, Control and Computing* (1987), 397–398, with R. L. Bryant, N. G. Kinnersley and M. A. Langston.
2. “Layout Permutation Problems and Well-Partially-Ordered Sets,” *Proceedings Fifth M.I.T. Conference on Advanced Research in VLSI*, published as Advanced Research in VLSI (J. Allen and F. T. Leighton, editors), The MIT Press, 1988, 315–327, with M. A. Langston.
3. “Fast Self-Reduction Algorithms for Combinatorial Problems of VLSI Design,” *Proceedings Third International Workshop on Parallel Computation and VLSI Theory*, Springer-Verlag, Lecture Notes in Computer Science vol. 319 (1988), 278–287, with M. A. Langston.
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122. M. Dantas, M. Fellows, F. Protti, U. dos Santos Souza and F. Rosamond. “The Flood-It Game Parameterized by the Vertex Cover Number,” Proceedings LAGOS 2015, to appear.

Currently Being Refereed

1. M.R. Fellows, B.M.P. Jansen, D. Lokshtanov, F.A. Rosamond and S. Saurabh, “Determining the Winner of a Dodgson Election is Hard,” submitted to *Theory of Computing Systems*.
2. M.R. Fellows, A. Kulik, F.A. Rosamond and H. Shachnai. “Parameterized Approximation via Fidelity Preserving Transformations,” submitted to *ACM Transactions on Computation Theory*.

Citation Information

According to curated *Publish-or-Perish* data my work has been cited more than 12,000 times.

Recent Invited Conference Presentations

“Parameterized Complexity,” New Zealand Mathematics Society Annual Summer Workshop, Featured Short Course, January 2000.

“Parameterized Complexity,” Twelfth International Symposium on Algorithms and Computation (ISAAC 2001), December 2001, Christchurch, New Zealand (Invited Plenary Lecture).

“Parameterized Complexity and Its Applications,” Invited Plenary Lecture at CATS 2002, Melbourne.

Invited Plenary Lecture at WADS 2003.

Invited Plenary Lecture at WG 2003.

Invited Plenary Lecture at ESA 2004.

Invited Plenary Lecture at the *Algorithms and Complexity in Durham* Workshop, July, 2005.

Invited Special Lecture at the Third Dagstuhl Workshop on Parameterized Complexity, July, 2005.

Invited Plenary Lecture at IWPEC 2006, Zurich, September 2006.

Special Opening Lecture at the Fourth Dagstuhl Workshop on Parameterized Complexity, July, 2007.

Invited Plenary Lecture at ICYCS 2008, Yunan, China, November, 2008.

Invited Special Lecture at the Dagstuhl Workshop on Communication of Computer Science (“The Brainware Crisis”), March, 2009.

Invited Lecturer, AGAPE Summer School on Parameterized and Exact Algorithms, Corsica, May, 2009.

Featured International Research Colloquium Speaker, Chinese University of Hong Kong, April, 2009.

Invited Plenary Lecture at IWOCA 2009, Czech Republic, July, 2009.

Invited Plenary Lecture at ACCMCC 2010, December, Canberra, Australia.

Featured Invited Lecture, DIMAP, Warwick University, UK, April, 2011.

Invited Plenary Speaker, FAW/AAIM 2011, Jinhua, China, May, 2011.

Keynote Address, WORKER 2011, Vienna, Austria, September, 2011.

Invited Plenary Speaker, Workshop on Cognition and Games, Amsterdam, March, 2015.

Opening Invited Lecture, TTCS 2015, Tehran, Iran, August 26-28, 2015.

Professional Service and Honors

Associate Editor for the *Journal of Computer and Systems Sciences*.

Associate Editor for the *ACM Transactions on Algorithms*.

Guest Editor for a double special issue of *The Computer Journal* in 2008 (Numbers 1,3).

Guest Editor for a special issue of *Discrete Optimization* 8 (2011).

Member of the Steering Committee for the conference series *International Workshop on Parameterized and Exact Computation*, 2002–2012.

Recipient of an Erskine Fellowship with the Department of Computer Science at the University of Canterbury, 1996.

Recipient of a Fellowship to the Institute of Advanced Study, Durham University, January - March, 2007.

Recipient of a Humboldt Research Award, 2007.

Recipient of a Australian Professorial Fellowship, 2010–2014.

Australian Professorial Fellowships, funded by the Australian Research Council, provide 5 years of support for exclusive focus on research, for “outstanding researchers with proven international reputations to undertake research that is both of major importance in its field and of significant benefit to Australia.”

Appointment with the title, “Visiting Professor in Computer Science,” to the Royal Holloway, University of London, 2009–2015. (Essentially, an honorary appointment to a distinguished faculty (renewable).)

Presented with a 60th birthday festschrift at Dagstuhl: *The Multivariate Algorithmic Revolution and Beyond: Essays Dedicated to Michael R. Fellows on the Occasion of His 60th Birthday*, 497 pp., Springer, *Lecture Notes in Computer Science* 7370 (2012).

Recipient of the *ETH International Medal of Honor for Computer Science Education* for 2012, in recognition of the contributions made by the book *Computer Science Unplugged!*.

Recognized as an EATCS Fellow, one of the inaugural cohort of ten, 2014.

Nerode Prize of EATCS-IPEC, 2014.

Elected an Honorary Fellow of the Royal Society of New Zealand, 2014.

Since 1870 a total of 230 scientists and scholars have received this honor, including Albert Einstein, Marie Curie, Charles Darwin, Sir Aurthur Eddington, Niels Bohr, Sir Laurence Bragg, A.H. Compton, Sir Charles Lyell ...

Conference Organization

First Idaho ONR Workshop on Software Research, June, 1989, Conference Chair.

Second Idaho ONR Workshop on Software Research, June, 1990, Conference Chair.

STOC '92 Conference Chair.

Co-organizer, Dagstuhl Workshop on Parameterized Complexity, August 2001.

Co-organizer, Workshop on Structural Aspects of Parameterized Complexity, in conjunction with FST-TCS 2002, Kanpur, India, December 2002.

Co-organizer, Dagstuhl Workshop on Parameterized Algorithms, July 2003.

Co-Chair, First International Workshop on Parameterized and Exact Computation, Bergen, 2004.

Co-organizer, Dagstuhl Workshop on Parameterized Complexity and Kernelization, June, 2012.

Co-organizer, “Frontiers and Connections Between Parameterization and Approximation,” Banff International Research Station, Canada, Nov 29 – Dec 4, 2015.

Co-organizer, “FPT and Computational Geometry,” Lorentz Center, Netherlands, 4–8 April, 2016.

Program Committees

DMTCS 2002, FST-TCS 2002, COCOON 2003, WADS 2003, CATS 2003, ACSW 2003, CATS 2004, ACSW 2004, WG 2004, IWPEC 2004 (Co-Chair), MFCS 2005, ACSW 2005, IWPEC 2006, WG 2008, COCOA 2008, FAW 2008, ICYCS 2008 (Co-Chair), ALENEX 2009, IWPEC 2009, TAMC 2009, FAW 2009, COMSOC 2010, IWOCA 2010, LATA 2010, IPEC 2010, TAMC 2012, APEX 2012, MFCS 2012, FAW-AAIM 2013 (Co-Chair), LATA 2013, APEX 2013, IPEC 2013, LATA 2014, AAIM 2014, LATA 2016

Graduate Student Supervision

Mark Hoover, Ph.D., 1989. *Educational Testing Services, Inc.*

Yasu Koda, Ph.D., 1991. *Working in industry in Japan.*

Xiuyan Liu, M.S., 1994. *Working in industry in Canada.*

Michael Dinneen, Ph.D., 1996. *Senior Lecturer, University of Auckland.*

Michael Hallett, Ph.D., 1996. *Professor, McGill University, Canada.*

Todd Wareham, Ph.D., 1997. *Associate Professor, Memorial University, Canada.*

Patricia Evans, Ph.D., 1999. *Associate Professor, University of New Brunswick, Canada.*

Elena Prieto-Rodriguez, Ph.D., 2005. *Research Assistant, University of Newcastle, Australia.*

Peter Shaw, Ph.D., 2006. *Senior Lecturer, Charles Darwin University, Australia*

Postdoctoral Student Supervision

Ulrike Stege *Associate Professor, University of Victoria, Canada.*