

CURRICULUM VITAE

GRZEGORZ W. WASILKOWSKI

Computer Science Department
University of Kentucky
Lexington, KY 40506-0046
859-257-8029, greg@cs.uky.edu

Personal Data:

Born in Legnica, Poland.
U.S. Citizen.

EDUCATION

Ph.D., Computer Science, University of Warsaw, 1980.

M.S., Computer Science, University of Warsaw, 1977.

PROFESSIONAL EMPLOYMENT

1990 to present, University of Kentucky, Department of Computer Science, *Professor*.

1993 to 2007, University of Kentucky, Department of Computer Science, *Director of Graduate Studies*.

1987 to 1990, University of Kentucky, Department of Computer Science, *Associate Professor*.

1985 to 1987, Columbia University, Department of Computer Science, *Associate Professor*.

1983 to 1985, Columbia University, Department of Computer Science, *Assistant Professor*.

1982 to 1983, Columbia University, Department of Computer Science, *Visiting Assistant Professor*.

1980 to 1982, University of Warsaw, Department of Mathematics, Computer Science and Mechanics, *Assistant Professor*.

1977 to 1980, University of Warsaw, Department of Mathematics, Computer Science and Mechanics, *Teaching and Research Assistant*.

LONG-TERM VISITS

Fall 2014, Brown University, *Institute for Computational and Experimental Research in Mathematics*, *Senior Researcher*.

Summer 2011, Bonn University, *Hausdorff Research Institute for Mathematics*, *Analysis and Numerics of High Dimensional Problems* Trimester, *Senior Researcher*.

Spring 2002, Hong Kong Baptist University, *Department of Mathematics, Visiting Research Scholar*.

Fall 1995, Columbia University, *Computer Science Department, Visiting Professor*.

Spring 1986, University of California at Berkeley, *Mathematical Sciences Research Institute, Complexity Year, Research Member*.

1978/1979, Carnegie-Mellon University, *Computer Science Department, Visiting Scholar*.

MONTH-LONG VISITS

University of Warsaw, *Institute of Applied Mathematics*

November 1996, May 1998, September 2000, September 2003,
May 2005, November 2008, August 2010, May 2014,
August-September 2016.

University of New South Wales, Sydney, *School of Mathematics and Statistics*,

April 2002, July 2006, August 2008, August 2011, August 2012,
October-November 2016.

AWARDS/RECOGNITIONS

Information-Based Complexity Prize for 2001

Outstanding Teacher Award in Computer Science in 2014.

2014 Henry Mason Lutes Award for Excellence in Engineering Education.

Member of **Omicron Delta Kappa** since 2009.

Master Thesis awarded as the **Best Computer Science Thesis** in Poland, 1978; published in *J. ACM* (see position [3]).

Four Awards of the Ministry of Science, Poland, for research achievements, 1979, 1980, 1981, 1988.

Award of the Ministry of Science, Poland, for the Ph.D. dissertation, 1980.

Best Paper Presentation award at the *1990 American Control Conference*, May 1990, San Diego.

Paper [90]: among

- **Top 25 Hottest Articles in J. of Complexity**

for July to September 2010 and for October to December 2010,

- **25 Most Cited J. of Complexity Articles published since 2007** (in Nov. 2012),

- **25 Most Cited J. of Complexity Articles published since 2008** (in July 2013)

Paper [91] among

- **Top 25 Hottest Articles J. of Complexity**
for October–December 2010.

Paper [93]

- **Journal of Complexity 2011 Best Paper Award,**
2nd on the list of - **Most Cited J. of Complexity Articles published since 2011**
(in Summer 2016).

Paper [94] among

- **Top 25 Hottest Articles J. of Complexity**
for January–March 2012, and April–Jun 2012.

Paper [95] among

- **Top 25 Hottest Articles J. of Complexity**
for October–December 2012, April–Jun 2013, July–September 2013
- **19th** on the list of **Top Hottest Articles in J. of Complexity in Full Year 2013.**

Paper [98]among

- **Top 25 Hottest Articles in J. of Complexity**
for January–March 2013, July–September 2013, and April–June 2014,
- **6th** on the list of **Top Hottest Articles in J. of Complexity in Full Year 2013.**

Paper [100] among

- **Top 25 Hottest Articles in J. Complexity**
for April–June 2014.

Paper [101] among

- **Top 25 Hottest Articles in J. of Complexity**
for July–September 2015 and October–December 2015.

SERVICE

Senior editor of *Journal of Complexity*.

Member of the Council of the *Federation on Computational Mathematics*, 2002 to 2005.

One of three co-editors of a special issue of *Journal of Complexity* in honor of H. Woźniakowski's 60th Birthday celebrated in Dagstuhl, September 2006.

One of three co-editors of a special issue of *Journal of Complexity* Vol. **19** (2003); proceedings of *Information-Based Complexity* workshop at the *4th Symposium of the Federation on Computational Mathematics*, Minneapolis, August, 2002.

One of two co-editors of Proceedings of the Dagstuhl Seminar, Germany, November, 2000.

One of two jurors for *Journal of Complexity 1999 Best Paper Award*.

Reviewing for NSF, NRC, U.S. Civilian Research and Development Foundation, and various journals including:

ANZIAM (Australian and New Zealand Industrial and Applied Mathematics) Journal, Applied Math. and Comput., Bulletin of AMS, Computers and Math. with Appl., Found. of Comput. Math., J. of ACM, IEEE Trans. Aut. Control., J. Approx. Theory, J. Complexity, J. Computational and Applied Mathematics, Constructive Approximation, J. Integral Equat. and Applic., Math. Comp., SIAM J. Computing, SIAM J. Control and Optim., J. Mathematical Physics, SIAM J. Matrix Analysis and Appl., SIAM Review, American Mathematical Monthly

Chairing sessions at several conferences and co-organizing:

- Session, “Control-Oriented System Identification via Information-Based Complexity,” at the *1992 American Control Conference*.
- Section, “Algorithms and Complexity for Continuous Problems,” at the *1992 Congress of the International Federation for Information Processing*.
- Dagstuhl Seminar, Dagstuhl, Germany, November, 1996.
- Dagstuhl Seminar, Dagstuhl, Germany, November, 2000.
- Session, “Information-Based Complexity” at the *4th Symposium of the Federation on Computational Mathematics*, July, 2002.
- Two mini-symposia at *6th International Conference on Monte Carlo and Quasi-Monte Carlo Methods*, Juan-les-Pins, Cote d’Azur, France, June 2004.
- Session at *First Joint International Meeting Between AMS and PTM*, Warsaw, Poland, July/August 2007.
- Program Committee of Ninth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Warsaw, Poland, August 2010.
- Program Committee of Tenth International Conference on *Monte Carlo and Quasi-Monte Carlo Methods*, Sydney 2012.
- Program Committee of the Fifth International Conference on *High-Dimensional Approximation.*, Canberra 2013.
- Co-Organizer of *Information-Based Complexity and Stochastic Computation* workshop at *Institute for Computational and Experimental Research in Mathematics*, Brown University, September 2014.
- Scientific Committee of *Monte Carlo and Quasi-Monte Carlo Methods 2016* conference, Stanford.
- Scientific Committee of *IBC on the 70th anniversary of Henryk Woźniakowski* conference, Bedlewo (Poland) 2016.
- Organizing Committee of *IBC on the 70th anniversary of Henryk Woźniakowski* conference, Bedlewo (Poland) 2016.
- Program Committee of the *Eleventh International Conference on Monte Carlo Methods and Application*, Montreal, 2017.

University Committees:

University Senate, Fall 2009 – Spring 2014, Fall 2015 – Spring 2018
Senate Hearing Panel (Privilege and Tenure), Fall 2015 – Spring 2018
Senate Academic Programs Committee, Fall 2009– Spring 2011, Fall 2015 – Spring 2018
Graduate Council Committee on Fellowships and Traineeships, Fall 2015 – Spring 2017,
Senate Council, 2011 – 2013,
Senate Advisory Organization and Structure Committee, Fall 2012 – Spring 2014,
Chair since 2013,
Senate Admission Advisory Committee, 2013-2014,
Senate ad hoc Committee on Senate Non-Faculty Membership, Fall 2012 – Spring 2014,
Senate ad hoc Committee on President Evaluation Fall 2011 – Spring 2012,
Senate ad hoc Faculty Committee on Review, Rewards, and Retention,
Fall 2011 – Fall 2012,
Senate Advisory Committee on Privilege and Tenure, Fall 2008 – Fall 2011,
Senate Reinstatement Committee 2013/2014
College of Engineering Dean Search Committee, Fall 2011 – Spring 2012,
Internationalization Task Force Research Subcommittee, Spring 2008,
Academic Area Advisory Committee for Physical and Engineering Sciences, 2004 – 2006,
and 2006–2008,
Chair of Ad Hoc Committee for the Review of the College of Engineering, 98/99,
Graduate Council, 97/98, 98/99, and 99/00 (Chair of Phys. & Eng. Sci. Comm.), 03/04,
04/05, 05/06 (Chair of Phys. & Eng. Sci. Comm.), 11/12,
CS/CE Cooperative Committee, 89/90,
Sturgill Award Selection Committee, 1995,

College Committees:

CS Dept. Chairman Search Committee (chairing), 2007,
Raymond-Blythe Professorship Committee 2005,
ME Department Chair Evaluation Committee, 2000,
Engineering Faculty Advisory Council, 94/95 – 02/03,
Committee on Graduate Studies, 94/95 – 06/07,
CS Dept. Chairman Search Committee (chairing), 89/90,

Departmental Committees:

Chair of Selection Committee for the Gartner Group endowed position in Networking:
Spring 2014,
Director of Graduate Studies: 93/94 to 06/07,
Chair of Committee on Higher Degree: 87/88 to 06/07,
Executive Committee: 89/90 to 06/07,
Faculty Search Committee: 88/89, 89/90, and 90/91 (chair),
Industrial Affiliates Program: 89/90,
Graduate Curriculum: 87/88 and 88/89,
Undergraduate Curriculum: 87/88 and 88/89,

Preparing Annual Departmental Reports: 87-93.

EXTERNAL SUPPORT

NSF DMS-0609703, “Efficient Algorithms for Multivariate Problems,” 8/15/06-7/31/09.

NSF CCR-0511994, “Information-Based Complexity and Efficient Algorithms for Multivariate Problems,” 9/15/05-8/31/06.

NSF CCR-0095709, “Information-Based Complexity of Multivariate Problems,” 6/1/01-5/31/05.

NSF CCR-9729971, “Information-Based Complexity of Multivariate Problems,” 6/1/98-5/31/01.

NSF CCR-9420543, “Average Case and Probabilistic Settings for Information Based Complexity,” (with J. F. Traub), 7/1/95-5/1/98.

Federation on Computing in the United States, International Travel, Fall 1994.

NSF CCR-91-14042, “Average Case and Probabilistic Settings for Information Based Complexity,” (with J. F. Traub), 9/1/91-8/30/94.

Federation on Computing in the United States, International Travel, Fall 1992.

UK, International Travel, Fall 1992.

NSF CCR-89-05371, “Average Case and Probabilistic Settings for Information Based Complexity,” (with J.F. Traub, Columbia University), Subcontract University of Kentucky, 8/15/89-8/15/91.

NSF CCR-86-03674, “Average Case and Probabilistic Settings for Information Based Complexity,” (with J.F. Traub, Columbia University), 7/15/86-12/31/89; from 1/7/87 Subcontract University of Kentucky.

UK, Computing Equipment, 1/7/87-1/6/88.

NSF MCS-82-14322, “Information and Complexity,” (with J.F. Traub and H. Woźniakowski, Columbia University), 10/1/82-9/30/85.

DARPA N00039-82-C-0427 and N00039-84-C-0427, “Research in Computer Science,” (award to the group of faculty in diverse areas at the Computer Science Department, Columbia University; I was one of the Co-Investigators), 1982-1985.

Plenary Talks

2nd Symposium of the Foundation of Computational Mathematics, Rio de Janeiro, Brazil, January 1997.

Workshop on Complexity of Multivariate Problems, Hong Kong, China, October 1999.

5th International Conference on Monte Carlo and Quasi-Monte Carlo Methods, Singapore, November, 2002.

Modern Computational Methods in Applied Mathematics, Bedlewo, Poland, July 2004.

Ninth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Warsaw, Poland, August 2010.

Foundations of Computational Mathematics, (semi-plenary talk), Budapest, July, 2011.

Information-Based Complexity conference, Bedlewo, Poland, April/May 2015.

INVITED TALKS AND CONFERENCES (SINCE 2000)

Invited Talk, *Smalefest 70*, Computational Mathematics Conference in honor of 70th birthday of Prof. Smale, Hong Kong, China, June, 2000.

Institute of Applied Mathematics, University of Warsaw, Warsaw, Poland, September 2000.

Speaker and Co-organizer, Dagstuhl Seminar, Dagstuhl, Germany, September, 2000.

The 4th International Conference on Monte Carlo and Quasi-Monte Carlo Methods, Hong Kong, China, November 2000.

IIIrd IMACS Seminar on Monte Carlo Methods MCM 2001, Salzburg, Austria, Sept. 2001.

Integration and its Complexity workshop, Oberwolfah, Germany, Nov. 2001.

Department of Mathematics, Hong Kong Baptist University, Hong Kong, February 2002.

School of Mathematics, University of New South Wales, Sydney, April 2002.

Speaker and co-organizer of a workshop at *4th Symposium of the Foundation on Computational Mathematics*, Minneapolis, August, 2002.

Dagstuhl Seminar, Dagstuhl, Germany, September/October, 2002.

Speaker and co-organizer of a section at *5th International Congress on Industrial and Applied Mathematics*, Sydney, Australia, July, 2003.

IVth IMACS Seminar on Monte Carlo Methods, MCM 2003, Berlin, Germany, September, 2003.

Institute of Applied Mathematics, University of Warsaw, Warsaw, Poland, September 2003.

School of Physical Sciences, University of Cardinal S. Wyszyński, Warsaw, Poland, September 2003.

Oberwolfah Seminar on *Discrepancy Theory and its Applications*, Oberwolfah, Germany, March 2004.

6th International Conference on Monte Carlo and Quasi-Monte Carlo Methods, Juan-les-Pins, Cote d'Azur, France, June 2004. In addition to presenting a talk, co-organizing two mini-symposia.

Dagstuhl Seminar on *Complexity and Algorithms for Continuous Problems*, Dagstuhl, Germany, Sept. 2004.

Seminar on *Complexity and Discrepancy*, Linz, Austria, Oct. 2004.

Department of Mathematics, Hong Kong Baptist University, Hong Kong, December 2004.

Institute for Applied Mathematics, Bonn University, Bonn, Germany, May 2005.

Institute of Applied Mathematics, University of Warsaw, Warsaw, Poland, May 2005.

School of Physical Sciences, University of Cardinal S. Wyszyński, Warsaw, Poland, May 2005.

Invited talk at *International Conference on Statistics* in Honor of Professor Kai-Tai Fang's 65th Birthday, Hong Kong, June 2005.

School of Mathematics, University of New South Wales, Sydney, July 2006.

6th International Conference on Monte Carlo and Quasi-Monte Carlo Methods, Ulm, Germany, August 2006. In addition to presenting a talk, co-organizing two mini-symposia.

Dagstuhl Seminar on *Complexity and Algorithms for Continuous Problems*, Dagstuhl, Germany, Sept. 2006.

Optimal Algorithms and Computational Complexity for Numerical Problems, in honor of Professors Frank Stenger's 65th Birthday, Salt Lake City, May 2007.

Workshop on *Discrepancy Theory and Related Areas*, Varenna, Italy, June 2007.

6th International Congress on Industrial and Applied Mathematics, Zurich, Switzerland, July 2007.

First Joint International Meeting Between AMS and PTM, Warsaw, Poland, July/August 2007. In addition to presenting a talk, I co-organized a special session on *Complexity of Multivariate Problems*.

Foundation of Computational Mathematics Conference 2008, Hong Kong, June 2008.

CTAC'08 - The 14th Biennial Computational Techniques and Applications Conference, 13-16th July 2008, Australian National University, Canberra, ACT, Australia

School of Mathematics, University of New South Wales, Sydney, Australia, August 2008.

Institute for Applied Mathematics, Bonn University, Bonn, Germany, October, 2008.

Institute of Physics, Polish Academy of Sciences, Warsaw, Poland, November 2008.

Institute of Applied Mathematics, University of Warsaw, Warsaw, Poland, November 2008.

Department of Computer Science and Department of Mathematics, Technical University of Kaiserslautern, Kaiserslautern, Germany, June, 2011.

Hausdorff Institute for Mathematics, Bonn University, June, 2011.

First Meeting of Israeli and Polish Mathematical Societies, Łódź, Poland, September 2011.

School of Mathematics, University of New South Wales, Sydney, Australia, August 2012.
 Dagstuhl Seminar on *Complexity and Algorithms for Continuous Problems*, Dagstuhl, Germany, Sept. 2012.
 Institute of Applied Mathematics, University of Warsaw, Warsaw, Poland, March 2013.
 Industrial Engineering and Management Sciences, Northwestern University, May 2013
 School of Mathematics, University of New South Wales, Sydney, Australia, June 2013.
Discrepancy, Numerical Integration and Hyperbolic Cross Approximations workshop, Hausdorff Center for Mathematics, University of Bonn, September 2013.
Uniform Distribution Theory and Applications workshop, Oberwolfach, Germany, September/October 2013.
 Institute of Applied Mathematics, University of Warsaw, Warsaw, Poland, May 2014.
 Division of Applied Mathematics, Brown University, Providence, RI, October 2014.
SIAM Conference on Computational Science and Engineering, Salt Lake City, UT, March 2015.
 Institute of Applied Mathematics, University of Warsaw, Warsaw, Poland, May 2015.
 Department of Applied Mathematics and Statistics, Colorado School of Mines, Golden, CO, October 2016.

POST-DOCTORAL AND PH.D. STUDENTS

- K. Ritter, Post-Doctoral student from Institute of Mathematics, Erlangen-Nürnberg University, Germany, 1992/93. Currently, Professor at Kaiserslautern, Germany.
- D. Lee, completed in 1985, Columbia University. Currently, Ohio Board of Regents Distinguished Professor and the Director of the Networking and Communications Lab of HP.
- M. Hatzitheodorou and A. Papageorgiou at Columbia University, Fall 1989; I was their advisor until 1987 (prior to my move to UK) and since 1987 I have been advising them informally. Currently, Hatzitheodorou working for industry in Athens, Greece; and Papageorgiou is a senior researcher in CS Department at Columbia University.
- Sung Hee Choi, completed in 1994; currently Professor and Head in Computer Science, Sun Moon University, Chung-Nam, Korea.
- Youming Li, completed in 2002; currently Associate Professor in Computer Science Department, Georgia Southern University.
- Yaxi Zhao, completed in December 2008; currently Associate Professor Computer Science, New Mexico State University.
- Member of a number of Ph.D. committees at various departments (e.g., Mathematics, Physics, Electrical and Computer Engineering, Chemical Engineering).

COURSES TAUGHT

University of Warsaw:

1. Introduction to Computer Science
2. Programming (PASCAL)
3. Numerical Analysis
4. Analytic Computational Complexity

Department of Computer Science, Columbia University:

1. Computability and Formal Languages
2. Scientific Computation
3. Numerical Algorithms and Complexity

Department of Computer Science, University of Kentucky:

1. Introduction to Logic and Discrete Computer Mathematics
2. Discrete Mathematics
3. Numerical Analysis (both undergraduate and graduate courses)
4. First Course in Computer Science for Engineers

PUBLICATIONS

Books/Chapters:

1. *Information, Uncertainty, Complexity*, with J.F. Traub and H. Woźniakowski, Addison-Wesley, Reading, Ma., 1983. *Russian* translation by MIR, Moscow, 1988.
2. *Information-Based Complexity*, with J.F. Traub and H. Woźniakowski Academic Press, New York, NY, 1988.
3. *Information-Based Complexity Workshop*, Proceedings of a workshop held in Minneapolis, MN, August 5–14, 2002. Edited by E. Novak, G. W. Wasilkowski and H. Woźniakowski. *J. of Complexity* **19** (2003), no. 6.
4. *Festschrift for the 60th Birthday of Henryk Woźniakowski*. Edited by Z. Kacewicz, L. Plaskota, and G.W. Wasilkowski. *J. of Complexity* 2007.

5. "Spline algorithms for linear problems," Chapter 4 in *A General Theory of Optimal Algorithms*, by J.F. Traub and H. Woźniakowski, Academic Press, 1980.

Papers:

6. "Can any stationary iteration using linear information be globally convergent?" *J. of ACM* **27** (1980) 263-269.
7. "n-evaluation conjecture for multipoint iterations for the solution of scalar nonlinear equations," *J. of ACM* **28** (1981), 71-80.
8. "The strength of nonstationary iteration," *Aequationes Mathematicae* **24** (1982), 243-260.
9. "Any iteration for polynomial equations using linear information has infinite complexity," *Theoretical Computer Science* **22** (1983), 195-208.
10. "Inverse function problem," *J. of Inf. Processing and Cybernetics*, **19** (1983), 491-496.
11. "Some nonlinear problems are as easy as the approximation problem," *Computers and Mathematics with Applications* **10** (1984), 351-363.
12. "Average case optimality for linear problems," with J.F. Traub and H. Woźniakowski, *Theoretical Computer Science* **29** (1984), 1-25.
13. "Can adaption help on the average?" with H. Woźniakowski, *Numerische Mathematik* **44** (1984), 169-190.
14. "Average case optimality," *J. of Complexity* **1** (1985), 107-117.
15. "Optimal algorithms for linear problems with Gaussian measures," *Rocky Mt. J. of Math.* **16** (1986), 727-749.
16. "Approximation of linear functionals on Banach spaces with a Gaussian measure," with D. Lee, *J. of Complexity* **2** (1986), 12-43.
17. "Average case optimal algorithms in Hilbert spaces," with H. Woźniakowski, *J. of Approximation Theory* **47** (1986), 17-25.
18. "Information of varying cardinality," *J. of Complexity* **2** (1986), 204-228.
19. "Average condition number for solving linear equations," with M. Shub, N. Weiss and H. Woźniakowski, *Linear Algebra and its Applications* **83** (1986), 79-102.
20. "How powerful is continuous nonlinear information for linear problems?" with B. Kacwicz, *J. of Complexity* **2** (1986), 306-316.

21. "A note on the trade-off between sampling and quantization in signal processing," with D. Lee and T. Pavlidis, *J. of Complexity* **3** (1987), 359-371.
22. "On optimal algorithms in an asymptotic model with Gaussian measure," with H. Woźniakowski, *SIAM J. Math. Anal.* **19** (1988), 632-647.
23. "On adaption with noisy information," with J.B. Kadane and H. Woźniakowski, *J. of Complexity* **4** (1988), 257-276.
24. "Maximum likelihood estimators and worst case optimal algorithms for system identification," with R. Tempo, *Systems & Control Letters* **10** (1988), 265-270.
25. "A clock synchronization problem with random delays," *J. of Complexity*, **5** (1989), 1-11.
26. "Randomization for continuous problems," *J. of Complexity* **5** (1989), 195-218.
27. "On adaptive information with varying cardinality for linear problems with elliptically contoured measures," *J. of Complexity* **5** (1989), 363-368.
28. "Mixed settings for linear problems," with H. Woźniakowski, *J. of Complexity* **5** (1989), 457-465.
29. "On average complexity of multivariate problems," with A. Papageorgiou, *J. of Complexity* **6** (1990), 1-23.
30. "On piecewise-polynomial approximation for functions with a fractional derivative bounded in L_p -norm," *J. of Approximation Theory* **62** (1990), 372-380.
31. "Note on quantization for signals with bounded $(r + 1)$ st derivative," *J. of Complexity* **6** (1990), 278-289.
32. "On the power of adaptive information for functions with singularities," with F. Gao, *Mathematics of Computation* **58** (1992), 285-304.
33. "On average complexity of global optimization problems," *Mathematical Programming* **57** (1992), 313-324.
34. "On a posteriori upper bounds for approximating linear functionals in probabilistic setting," *J. Complexity* **8** (1992), 424-433.
35. "Discontinuity detection and thresholding – a stochastic approach," with D. Lee, *J. Complexity* **9** (1993), 76-96.
36. "A new zero-crossing-based edge detector," with D. Lee and R. Mehrotra, *IEEE Trans. on Image Processing* **2**, (1993), 265-268.

37. "On detecting regularity of functions: A probabilistic analysis," with F. Gao, *J. of Complexity* **9** (1993), 373-386.
38. "Integration and approximation of multivariate functions: Average case complexity with isotropic Wiener measure," *Bulletin of the American Mathematical Society* **28** (1993), 308-314.
39. "On multivariate integration of stochastic processes," with K. Ritter and H. Woźniakowski, *International Series of Numerical Mathematics* **112** (1993), 331-347.
40. "There exists a linear problem with infinite combinatory complexity," with H. Woźniakowski, *J. Complexity* **9** (1993), 326-337.
41. "Numerical stability of a convex hull algorithm for simple polygons," with J. W. Jaromczyk, *Algorithmica* **10** (1993), 457-472.
42. "Integration and approximation of multivariate functions: Average case complexity with isotropic Wiener measure," (full version) *J. of Approximation Theory* **77** (1994), 212-227.
43. "Computing convex hull in floating point arithmetic," with J. W. Jaromczyk, *Computational Geometry: Theory and Applications* **4** (1994), 283-292.
44. "Parallel B-spline surface interpolation on a mesh-connected processor array," with F. Cheng, J. Wang, C. Zhang, and W. Wang, *J. Parallel and Distributed Computing* **24** (1995), 224-229.
45. "Multivariate integration and approximation for random fields satisfying Sacks-Ylvisaker Conditions," with K. Ritter and H. Woźniakowski, *Annals of Applied Probability* **5** (1995), 518-540.
46. "Explicit cost bounds of algorithms for multivariate tensor product problems," with H. Woźniakowski, *J. of Complexity* **11** (1995), 1-56.
47. "Probabilistic and average linear widths in L_∞ -norm with respect to r -fold Wiener measure," with V. Maiorov, *J. of Approximation Theory* **84** (1995), 31-40.
48. "On tractability of path integration," with H. Woźniakowski, *J. of Mathematical Physics* **37** (4) (1996), 2071-2088.
49. "On the average case complexity of solving Poisson equations," with K. Ritter, in *Lectures in Applied Mathematics*, Vol. **32**, (J. Renegar, M. Shub, and S. Smale, eds.), 1996, pp. 677-687.
50. "Average case complexity of multivariate integration and function approximation; An overview," *J. of Complexity* **12** (1996), 257-272.

51. "Integration and L_2 -approximation; Average case setting with isotropic Wiener measure for smooth functions," with K. Ritter, *Rocky Mt. J. of Math.* **26** (1997), 1541-1557.
52. "The exponent of discrepancy is at most 1.4778...," with H. Woźniakowski, *Mathematics of Computation* **66** (1997), 1125-1132.
53. "Cubature and reconstruction of smooth isotropic random function," with K. Ritter, in *Applied Stochastics and Optimization* (O. Mahrenholtz, K. Marti, and R. Mennicken, eds.), AkademieVerlag, 1997, pp. 120-124.
54. "Weighted tensor-product algorithms for linear multivariate problems," with H. Woźniakowski, *J. of Complexity* **15**, (1999), 402-447.
55. "Complexity of weighted approximation over \mathbf{R}^1 ," with H. Woźniakowski, *J. of Approximation Theory* **103** (2000), 223-251.
56. "A new optimal algorithm for weighted approximation and integration over \mathbf{R} ," with Lei Han, *Numerical Algorithms* **23** (2000), 393-406.
57. "On the complexity of stochastic integration," with H. Woźniakowski, *Mathematics of Computation* **70** (2000), 685-698.
58. "A new algorithm and worst case complexity for Feynman-Kac path integration," with L. Plaskota and H. Woźniakowski, *J. of Computational Physics* **164** (2000), 335-353.
59. "The inverse of the star-discrepancy depends linearly on the dimension," with S. Heinrich, E. Novak, and H. Woźniakowski, *Acta Arithmetica* **XCVI.3** (2001), 279-302.
60. "Complexity of weighted approximation over \mathbf{R}^d ," with H. Woźniakowski, *J. of Complexity* **17** (2001), 722-740.
61. "The exact exponent of sparse grid quadratures in the weighted case," with L. Plaskota, *J. of Complexity* **17** (2001), 840-849.
62. "On the power of standard information for weighted approximation," with H. Woźniakowski, *Foundations of Computational Mathematics* **1** (2001), 417-434.
doi:10.1007/s102080010016
63. "Worst case complexity of weighted approximation and integration over \mathbf{R}^d ," with Youming Li, *J. of Complexity* **18** (2002), 330-345.
64. "Average case complexity of weighted approximation and integration over \mathbf{R}_+ ," with L. Plaskota and K. Ritter, *J. of Complexity* **18** (2002), 517-544.
65. "A Monte Carlo algorithm for weighted integration over \mathbf{R}^d ," with P. Gajda, Y. Li, and L. Plaskota, *Mathematics of Computation* **73** (2004), 813-825.

66. “Optimal designs for weighted approximation and integration of stochastic processes over $[0, \infty)$,” with L. Plaskota and K. Ritter, *J. Complexity* **20** (2004), 108-131.
67. “On polynomial-time property for a class of randomized quadratures,” *J. of Complexity* **20** (2004), 624-637.
68. “On tractability of weighted integration over bounded and unbounded regions in \mathbf{R}^s ,” with F. J. Hickernell and I. H. Sloan, *Mathematics of Computation* **73** (2004), 1885-1901.
69. “On strong tractability of weighted multivariate integration,” with F. J. Hickernell and I. H. Sloan, *Mathematics of Computation* **73** (2004), 1903-1911.
70. “Smolyak’s algorithm for integration and L_1 -approximation of multivariate functions with bounded mixed derivatives of second order,” with L. Plaskota, *Numerical Algorithms*, **36** (2004), 229-246. <http://dx.doi.org/10.1023/B:NUMA.0000040060.56819.a7>
71. “Finite-order weights imply tractability of linear multivariate problems,” with H. Woźniakowski, *J. of Approximation Theory* **130** (2004), 57-77.
72. “A piecewise constant algorithm for weighted L_1 approximation over bounded or unbounded regions in \mathbf{R}^s ,” with F. J. Hickernell and I. H. Sloan, *SIAM J. Numerical Analysis* **43** (2005), 1003-1020.
73. “Polynomial-time algorithms for multivariate problems with finite-order weights; worst case setting” with H. Woźniakowski, *Foundations of Computational Mathematics* **5** (2005), 451-491.
74. “Adaption allows efficient integration of functions with unknown singularities,” with L. Plaskota, *Numerische Mathematik* **102** (2005), 123-144.
75. “Randomly-shifted lattice rules for unbounded integrands,” with F. Y. Kuo and B. J. Waterhouse, *J. Complexity* **22** (2006), 630-651. DOI:10.1016/j.joc/2006.04.006.
76. “The power of standard information for multivariate approximation in the randomized setting,” with H. Woźniakowski, *Mathematics of Computation* **76** (2007), 965-988.
77. “Multivariate L_∞ approximation in the worst case setting over reproducing kernel Hilbert spaces,” with F. Y. Kuo and H. Woźniakowski, *J. Approximation Theory* **152** (2008), 135–160.
78. “The power of adaption for approximating functions with singularities,” with L. Plaskota and Y. Zhao, *Mathematics of Computation* **77** (2008), 2309-2338.
79. “Polynomial-time algorithms for multivariate problems with finite-order weights; average case setting,” with H. Woźniakowski, *Foundations of Computational Mathematics* **9** (2009), 105-132.

80. “Uniform approximation of piecewise r -smooth and globally continuous functions,” with L. Plaskota, *SIAM J. Numerical Analysis* **47** (2009), 762-785.
doi: 10.1137/070708937
81. “A survey of average case complexity for linear multivariate problems,” with H. Woźniakowski, an invited review paper for the **50th year celebration** of *Izvestija Vyssh. Uchebn. Zaved. Matematika* 2009 N. 4, 3-19. doi: 10.3103/S1066369X0904001X
82. “On the power of standard information for multivariate approximation in the worst case setting,” with F. Y. Kuo and H. Woźniakowski, *J. Approximation Theory* **158** (2009), 97-125. dx.doi.org/10.1016/j.jat.2008.01.011
83. “New averaging technique for approximating weighted integrals,” with L. Plaskota and Y. Zhao, *J. Complexity* **25** (2009), 268-291. doi:10.1016/j.jco.2009.02.004
84. “Lattice algorithms for multivariate L_∞ approximation in the worst case setting,” with F. Y. Kuo and H. Woźniakowski, *Constructive Approximation* **30** (2009), 475-493.
85. “On the power of standard information for L_∞ approximation in the randomized setting,” with F. Y. Kuo and H. Woźniakowski, *BIT Numer. Math.* **158** (2009), 543-564.
86. “The power of adaptive algorithms for functions with singularities,” with L. Plaskota, *J. of Fixed Point Theory and Applications* (2009). DOI: 10.1007/s11784-009-0121-x
87. “On decompositions of multivariate functions,” with F. Y. Kuo, I. H. Sloan, and H. Woźniakowski, *Mathematics of Computation* **79** (2010), 953-966.
DOI: 0.1090/S0025-5718-09-02319-9
88. “On the exponent of discrepancies,” with H. Woźniakowski, *Mathematics of Computation* **79** (2010), 983-992. DOI: 10.1090/S0025-5718-09-02314-X
89. “Randomly shifted lattice rules with the optimal rate of convergence for unbounded integrands,” with F. Y. Kuo, I. H. Sloan, and B. J. Waterhouse, *J. of Complexity* **26** (2010), 135-160. DOI: 10.10.16/j.jco.2009.07.005
90. “Liberating the dimension,” with F. Y. Kuo, I. H. Sloan, and H. Woźniakowski, *J. of Complexity* **26** (2010), 422-454. DOI: 10.1016/j.jco.2009.12.003.
91. “Liberating the dimension for function approximation,” with H. Woźniakowski, *J. of Complexity* **27** (2011), 86-110. DOI: 10.10.16/jco.2010.08.004
92. “Liberating the dimension for function approximation: standard information,” with H. Woźniakowski, *J. of Complexity* **27** (2011), 417-440. DOI: 10.10.16/j.jco.2011.02.002
93. “Tractability of infinite-dimensional integration in the worst case and randomized settings,” with L. Plaskota, *J. of Complexity* **27** (2011), 505-518.
doi:10.1016/j.jcom.2011.01.006

94. “Liberating the dimension for L_2 -approximation,” *J. of Complexity* **28** (2012) 304-319. DOI: 10.1016/j.jco.2011.12.002
95. “On tractability of approximation in special function spaces,” with M. Hegland, *J. Complexity* **29** (2013) 76-91. DOI: 10.1016/j.jco.2012.10.002
96. “Average case tractability of approximating ∞ -variate functions,” *Mathematics of Computation*, **83** (2014), 1319-1336. DOI: <http://dx.doi.org/10.1090/S0025-5718-2013-02759-7>
97. “An adaptive algorithm for weighted approximation of singular functions over \mathbb{R} ,” with L. Plaskota and Y. Zhao, *SIAM J. Numerical Analysis*, **51** (2013), 1470-1493. DOI: 10.1137/120876897
98. “On tractability of linear tensor product problems for ∞ -variate classes of functions” *J. Complexity* **29** (2013), 351-369. DOI: 10.1016/j.jco.2013.04.008
99. “Efficient algorithms for multivariate and ∞ -variate integration with exponential weight,” with L. Plaskota, *Numerical Algorithms* **67** (2014), 385-403. DOI: 10.1007/s11075-013-9798-4
100. “Tractability of approximation of ∞ -variate functions with bounded mixed partial derivatives,” *J. Complexity* **30** (2014), 325-346. DOI: 10.1016/j.jco.2013.12.001
101. “On equivalence of weighted anchored and ANOVA spaces of functions with mixed smoothness of order one in L_1 or L_∞ norms,” with M. Hefter and K. Ritter, *J. of Complexity* **32** (2016), 1-19. DOI: 10.1016/j.jco.2015.07.001
102. “Optimal algorithms for doubly weighted approximation of univariate functions,” with F. Y. Kuo and L. Plaskota, *J. of Approximation Theory* **201** (2016), 30-47. doi:10.1016/j.jat.2015.08.007
103. “Very low truncation dimension for high dimensional integration under modest error demand,” with P. Kritzer and F. Pillichshammer, *J. of Complexity* **35** (2016), 63-85. dx.doi.org/10.1016/j.jco.2016.02.002
104. “A note on equivalence of anchored and ANOVA spaces; lower bounds,” with P. Kritzer and F. Pillichshammer, *J. of Complexity*, to appear.

Refereed Conference Publications

105. “When is nonadaptive information as powerful as adaptive information?” with J.F. Traub and H. Woźniakowski, invited paper, *Proceedings of the 23rd IEEE Conference on Decision and Control*, 1984, 1536-1540.

106. "Average case ϵ -complexity: A Bayesian view," with J.B. Kadane, invited paper with discussion, *Bayesian Statistics 2* (ed. J.M. Bernardo et.al.), Proceedings of the II Valencia International Meeting on Bayesian Statistics, 1985, 361-374.
107. "Computational aspects of determining optical flow," with D. Lee and A. Papageorgiou, *Proceedings of 2nd International Conference on Computer Vision*, Dec. 1988, 612-618.
108. "Computing optical flow," with D. Lee and A. Papageorgiou, *Proceedings of IEEE Computer Society Workshop on Visual Motion*, March 1989.
109. "Information-based complexity; An overview," *Proc. of the 1990 American Control Conference*, San Diego, May 1990, 374-279.
110. "On average case complexity of problems that are intractable in the worst case," *Proc. 1992 American Control Conference*, pp. 265-269.
111. "Discontinuity detection and thresholding – a stochastic approach," with D. Lee, *Proceedings of 1991 IEEE Conference on Computer Vision and Pattern Recognition*, pp. 204-218.
112. "On strong tractability of multivariate problems," with H. Woźniakowski, Proceedings of the *IFIP 13th World Computer Congress*, pp. 621-628, Hamburg, Germany, August 28 – September 2, 1994.
113. "Average case complexity of weighted integration and approximation over \mathbf{R}^d for isotropic weights," with L. Plaskota and K. Ritter, *Monte Carlo and Quasi-Monte Carlo Methods 2000*, (K.-T. Fang, F. J. Hickernell, H. Niederreiter, eds.), Springer, 2002, pp. 446-459.
114. "Tractability of approximation and integration for weighted tensor product problems over unbounded domains," with H. Woźniakowski, *Monte Carlo and Quasi-Monte Carlo Methods 2000*, (K.-T. Fang, F. J. Hickernell, H. Niederreiter, eds.), Springer, 2002, pp. 497-522.
115. "On tractability of weighted integration for certain Banach spaces of functions," with F. J. Hickernell and I. H. Sloan, *Monte Carlo and Quasi-Monte Carlo Methods 2002*, (H. Niederreiter, ed.), Springer, 2004, pp. 51-71.
116. "The strong tractability of multivariate integration using lattice rules," with F. J. Hickernell and I. H. Sloan, *Monte Carlo and Quasi-Monte Carlo Methods 2002*, (H. Niederreiter, ed.), Springer, 2004, pp. 259-273.
117. "Tractability of linear multivariate problems in the average case setting," with F. J. Hickernell and H. Woźniakowski, *Monte Carlo and Quasi-Monte Carlo Methods 2006*, (A. Keller, S. Heinrich, H. Niederreiter, eds.), 359–381, Springer, 2008.

118. “Liberating the dimension for function approximation and integration,” *Monte Carlo and Quasi-Monte Carlo Methods 2010* (L. Plaskota and H. Woźniakowski, eds.), pp. 211-231, Springer Proceedings in Math. and Stat., Springer-Verlag, Berlin, 2012.
DOI:10.1007/978-3-642-27440-4-9

Papers Submitted for Publication:

119. “Infinite-dimensional integration and the multivariate decomposition method,” with F. Y. Kuo, D. Nuyens, L. Plaskota, and I. H. Sloan.
120. “Truncation Dimension for Approximation,” with P. Kritzer and F. Pillichshammer
121. “Small superposition dimension and active sets construction for multivariate integration under modest error demand,” with A. D. Gilbert.
122. “Equivalence of weighted anchored and ANOVA spaces of functions with mixed smoothness of order one in L_p ,” with M. Gnewuch, M. Hefter, A. Hinrichs, K. Ritter.