Paris Christos Kanellakis

Curriculum Vitae

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Personal Information
PLACE – DATE OF BIRTH: Athens, Greece – December 3, 1953.
CITIZENSHIP: USA since 1988 – permanent resident since 1982.
FAMILY STATUS: is married, has two children.
LANGUAGES: is fluent in English, Greek and French.

1. Research Interests

Primary work and interests are in the area of *theoretical computer science*, with emphasis on: (1) *the principles of database systems* (relational databases, knowledge bases, object-oriented databases, constraint databases, algorithms for database concurrency control, database system graphical interfaces, indexing algorithms) (2) *logic in computer science* (parallel algorithms and complexity for logic programming, computing with equations and rewrite rules, programming language types, lambda calculus, constraint programming). Other topics of interest in which research has been conducted include: (3) *the principles of distributed computing* (distributed and fault-tolerant parallel algorithms, concurrent program analysis) and (4) *combinatorial optimization* (scheduling, the Traveling Salesman Problem).

2. Professional Appointments

6/90– Professor of Computer Science, Brown University, Providence RI USA.

6/86–6/90 Associate Professor of Computer Science, Brown University, Providence RI USA.

9/81–6/86 Assistant Professor of Computer Science, Brown University, Providence RI USA.

9/76–9/81 Research and Teaching Assistant, MIT, Cambridge MA USA.

Temporary Professional Appointments

6/94– Advisory Board Member, Institute for Research in Cognitive Science (IRCS) at UPenn.
IRCS is directed by Lila Gleitman and Aravind Joshi.

6/91–7/91 Visiting Scientist, C.S. , IBM T. J. Watson Research Center, Yorktown Heights NY USA.
Worked with group headed by Jean-Louis Lassez.

9/88–9/89 Visiting Scientist, GIP – Altaïr and Project Verso, INRIA, Rocquencourt France.
Worked with groups headed by Fançois Bancilhon and Serge Abiteboul.
(On a special assignment leave of absence from Brown University).

2/87–3/87 Visiting Scientist, Math., IBM T. J. Watson Research Center, Yorktown Heights NY USA.
Worked with group headed by Ashok Chandra.

6/85–7/85 Visiting Scientist, Project Verso, INRIA, Rocquencourt France.
Worked with group headed by Fançois Bancilhon and Serge Abiteboul.

9/84–6/85 Visiting Assistant Professor, Laboratory for Computer Science, MIT, Cambridge MA USA.
Worked with group headed by Nancy Lynch.
(On a junior sabbatical leave of absence from Brown University).

6/84–7/84 Visiting Scientist, C.S. , IBM T. J. Watson Research Center, Yorktown Heights NY USA.
Worked with group headed by Jeffrey Jaffe.

7/82–8/82 Visiting Scientist, Math., IBM T. J. Watson Research Center, Yorktown Heights NY USA.
Worked with group headed by Ashok Chandra.

6/78–9/78 Visiting Scientist, Codex Corporation, Newton MA USA.
Worked on routing in data networks under the supervision of Robert Gallager and Pierre Humblet.

3. Education

2/82 PhD in Electrical Engineering and Computer Science, Massachusetts Institute of Technology.
PhD Thesis: *On the Complexity of Concurrency Control for Distributed Databases.*
Tech. Rep. LCS-TR-269, Laboratory for Computer Science, MIT, March 1982.
Thesis Advisor: C.H. Papadimitriou.

6/78 MSc in Electrical Engineering and Computer Science, Massachusetts Institute of Technology.
MSc Thesis: *Algorithms for a Scheduling Application of the Asymmetric Traveling Salesman Problem.*
Tech. Rep. ESL-TH-823, Laboratory for Information and Decision Systems, MIT, May 1978.
Thesis Advisors: R. Rivest and M. Athans.

6/76 Diploma in Electrical Engineering, National Technical University of Athens, Greece.
Undergraduate Thesis: *Easy-to-test Criteria for Weak Stochastic Stability of Dynamical Systems.*
Thesis Advisor: E.N. Protonotarios.

4. Honors and Awards

6/89–6/90 IBM Associate Professor of Computer Science, Brown Univ.

9/87–9/89 Alfred P. Sloan Fellow.

6/85–6/87 IBM Faculty Development Award.

9/71–6/76 Scholarship from the National Foundation for Scholarships of Greece.
Three prize awards from the Technical Chamber of Greece.

5. Publications

Of the papers listed in sections 5.1-5.2, some first appeared as extended abstracts in conference proceedings. The corresponding (shorter) conference publication is appended as a note to the journal or book publication and not repeated in section 5.3.

5.1 Journal Articles

1. Kanellakis, P.C., Ramaswamy, S., Vengroff, D.E., Vitter, J.S., "Indexing for Data Models with Constraints and Classes". Accepted in October 1994 by the *Journal of Computer and System Sciences*, special issue edited by C. Beeri. To appear. (Note: an extended abstract appeared in the proceedings of the *12th ACM PODS Symposium on the Principles of Database Systems*, pp. 233–243, Washington DC USA, June 1993.)

2. Abiteboul, S., Kanellakis, P.C., Ramaswamy, S. Waller, E., "Method Schemas". Accepted in August 1994 by the *Journal of Computer and System Sciences.* To appear. (Note: an extended abstract appeared in the proceedings of the *9th ACM PODS Symposium on the Principles of Database Systems*, Nashville Tennessee USA, pp. 16–28, March 1990. Extended abstract reprinted as Chapter 6 in book collection [35] below.)

3. Kanellakis, P.C., Shvartsman, A.A., "Efficient Parallel Algorithms on Restartable Fail-stop Processors". Accepted in August 1994 by the *Journal of Algorithms.* To appear. (Note: an extended abstract appeared in the proceedings of the *10th ACM PODC Symposium on the Principles of Distributed Computing*, Monteal Quebec Canada, pp. 23–37, August 1991.)

4. Hillebrand, G. Kanellakis, P.C. Mairson, H.G., Vardi, M.Y., "Undecidable Boundedness Problems for Datalog Programs". *Journal of Logic Programming*, vol. 25, no. 2, pp. 163–190, November 1995. (Note: an extended abstract appeared in the proceedings of the *10th ACM PODS Symposium on the Principles of Database Systems*, Denver Colorado USA, pp. 1–13, June 1991.)

5. Kanellakis, P.C., Kuper, G., Revesz, P.Z., "Constraint Query Languages". *Journal of Computer and System Sciences*, special issue edited by Y.Sagiv, vol. 51, no. 1, pp. 26–52, August 1995. (Note: an extended abstract appeared in the proceedings of the *9th ACM PODS Symposium on the Principles of Database Systems*, Nashville Tennessee USA, pp. 299–314, March 1990.)

6. Kanellakis, P.C., Michailidis, D., Shvartsman, A.A., "Controlling Memory Access Concurrency in Efficient Fault Tolerant Parallel Algorithms". *Nordic Journal of Computing*, no. 2, pp. 146–180, May 1995. (Note: an extended abstract appeared in the proceedings of the *7th Inter. Workshop on Distributed Algorithms*, Springer-Verlag LNCS 725, pp. 99–114, Lausanne, Switzerland, September 1993. (Note: full version submitted to the Journal of Parallel and Distributed Computing).

7. Kanellakis, P.C., Shvartsman, A.A., "Efficient Parallel Algorithms can be made Robust". *Distributed Computing*, vol. 5, pp. 201-217, 1992. (Note: an extended abstract appeared in the proceedings of the *8th ACM PODC Symposium on the Principles of Distributed Computing*, pp. 211–222, Edmonton Canada, August 1989.)

8. Abiteboul, S., Kanellakis, P.C., "The Two Facets of Object-Oriented Data Models". *IEEE Data Engineering Bulletin*, special issue edited by R. Agrawal, vol. 14, no. 2, pp. 3–8, June 1991.

9. Buchsbaum, A., Kanellakis, P.C., Vitter, J.S., "A Data Structure for Arc Insertion and Regular Path Finding". *Annals of Mathematics and AI*, special issue edited by S. Naqvi and D. Tsur, vol. 3, no. 2–4, pp. 187–211, March 1991 (Note: an extended abstract appeared in the proceedings of the *1rst ACM-SIAM Symposium on Discrete Algorithms*, San Francisco California USA, pp. 22–32, January 1990.)

10. Abiteboul, S., Kanellakis, P.C., Grahne, G., "On the Representation and Querying of Sets of Possible Worlds". *Theoretical Computer Science*, special issue edited by G. Gardarin, vol. 78, pp. 159–187, January 1991. (Note: an extended abstract appeared in the proceedings of the *ACM SIGMOD Symposium on the Management of Data*, pp. 10–19, San Francisco California USA, May 1987).

11. Beeri, C., Kanellakis, P.C., Bancilhon, F., Ramakrishnan, R., "Bounds on the Propagation of Selection into Logic Programs". *Journal of Computer and System Sciences*, special issue edited by M.Y. Vardi, vol. 41, no. 2, pp. 157–180, October 1990. (Note: an extended abstract appeared in the proceedings of the *6th ACM PODS Symposium on the Principles of Database Systems*, pp. 214–227, San Diego California USA, March 1987).

12. Kanellakis, P.C., Smolka, S.A., "CCS Expressions, Finite State Processes and Three Problems of Equivalence". *Information and Computation*, vol. 86, no. 1, pp. 43–68, May 1990. (Note: an extended abstract appeared in the proceedings of the *2nd ACM PODC Symposium on the Principles of Distributed Computing*, pp. 228–240, Montreal Canada, August 1983).

13. Cosmadakis, S.S., Kanellakis, P.C., Vardi, M.Y., "Polynomial-Time Implication Problems for Unary Inclusion Dependencies". *JACM*, vol. 37, no. 1, pp. 15–47, January 1990. (Note: an extended abstract appeared in the proceedings of the *15th ACM STOC Symposium on the Theory of Computing*, pp. 264–277, Boston Massachusetts USA, April 1983).

14. Kanellakis, P.C., Revesz, P., "On the Relationship of Congruence Closure and Unification". *Journal of Symbolic Computation*, special issue edited by C. Kirchner, vol. 7, no. 3-4, pp. 427–444, March-April 1989. (Note: an extended abstract appeared in the proceedings of the *1rst DBPL Workshop on Database Programming Languages*, F. Bancilhon and P. Buneman editors, Roscoff France, September 1987).

15. Dwork, C., Kanellakis, P.C., Stockmeyer, L., "Parallel Algorithms for Term Matching". *SIAM Journal of Computing*, vol. 17, no. 4, pp. 711–731, August 1988. (Note: an extended abstract appeared in the proceedings of the *8th CADE Conference on Automated Deduction*, Springer-Verlag Lecture Notes in Computer Science 230, pp. 416-430, Oxford England, July 1986).

16. Kanellakis, P.C., Smolka, S.A., "On the Analysis of Cooperation and Antagonism in Networks of Communicating Processes". *Algorithmica*, special issue edited by J.S. Vitter, no. 3, pp. 421–450, August 1988. (Note: an extended abstract appeared in the proceedings of the *4th ACM PODC Symposium on the Principles of Distributed Computing*, pp. 23–39, Minaki Canada, August 1985).

17. Cosmadakis, S.S., Kanellakis, P.C., Spyratos, N., "Partition Semantics for Relations". *Journal of Computer and System Sciences*, special issue edited by J.D. Ullman, vol. 33, no. 2, pp. 203–233, October 1986. (Note: an extended abstract appeared in the proceedings of the *4th ACM PODS Symposium on the Principles of Database Systems*, pp. 261–275, Portland Oregon USA, March 1985).

18. Kanellakis, P.C., Papadimitriou, C.H., "The Complexity of Distributed Concurrency Control". *SIAM Journal of Computing*, vol. 14, no. 1, pp. 52–75, February 1985. (Note: an extended abstract appeared in the proceedings of the *22nd IEEE FOCS Symposium on the Foundations of Computer Science*, pp. 185–197, Nashville Tennessee, October 1981).

19. Dwork, C., Kanellakis, P.C., Mitchell, J.C., "On the Sequential Nature of Unification". *Journal of Logic Programming*, vol. 1, no. 1, pp. 35–50, June 1984.

20. Papadimitriou, C.H., Kanellakis, P.C., "On Concurrency Control by Multiple Versions". *ACM Transactions on Database Systems*, vol. 9, no. 1, pp. 89–99, March 1984. (Note: an extended abstract appeared in the proceedings of the *1st ACM PODS Symposium on the Principles of Database Systems*, pp. 76–83, LA California USA, March 1982).

21. Kanellakis, P.C., Papadimitriou, C.H., "Is Distributed Locking Harder?". *Journal of Computer and System Sciences*, special issue edited by A.V. Aho, vol. 28, no. 1, pp. 103–120, February 1984. (Note: an extended abstract appeared in the proceedings of the *1st ACM PODS Symposium on the Principles of Database Systems*, pp. 98–107, LA California USA, March 1982).

22. Kanellakis, P.C., "On the Computational Complexity of Cardinality Constraints in Relational Data bases". *Information Processing Letters*, vol. 11, no. 2, pp. 98–101, November 1980.

23. Kanellakis, P.C., Papadimitriou, C.H., "Local Search for the Asymmetric Traveling Salesman Problem". *Operations Research*, vol. 28, no. 5, pp. 1086–1099, October 1980. (Note: a single page abstract appeared in the proceedings of the *ORSA TIMS*, LA California USA, 1978).

24. Papadimitriou, C.H., Kanellakis, P.C., "Flowshop Scheduling with Limited Temporary Storage". *Journal of the ACM*, vol. 27, no. 3, pp. 533–549, July 1980. (Note: an extended abstract appeared in the proceedings of the *16th Allerton Conference on Communication, Control and Computing*, pp. 214–224, Allerton Illinois USA, October 1978).

5.2 Book Chapters

25. Kanellakis, P.C., Shvartsman, A.A., "Fault-Tolerance and Efficiency in Massively Parallel Algorithms". Chapter 2.2 in *Foundations of Dependable Computing: Paradigms for Dependable Applications*, G. Koob, C. Lau editors, Kluwer Academic Publishers, pp. 125–154, 1994.

26. Hillebrand, G., Kanellakis, P.C., Ramaswamy, S., "Functional Programming Formalisms for OODB Methods". Chapter 2.3 in *Advances in Object-Oriented Databases*, Asuman Dogac, M. Tamer Özsu, Alexandros Biliris, Timos Sellis editors, Springer-Verlag, Series F: Computer and Systems Sciences, vol. 130, pp. 73–98, 1994. (Note: NATO ASI Series, Workshop on OODBs, Kusadasi, Turkey, August 1993).

27. Kanellakis, P.C., Lécluse, C., Richard, P.,"Introduction to the (O_2) Data Model". Chapter 3 in *Building an Object-Oriented Database System: the story of O_2*. F. Bancilhon, C. Delobel, P.C. Kanellakis editors, Morgan-Kaufmann, pp. 61–76, 1992. (Note: this is formal definition of the data model as implemented in the O_2 system).

28. Kanellakis, P.C., Mairson H.G., Mitchell J.C., "Unification and ML Type Reconstruction". Chapter 13 in *Computational Logic, Essays in Honor of Alan J. Robinson*, J-L. Lassez and G. Plotkin editorss, MIT Press, pp. 444–478, 1991. (Note: part of this paper appeared as extended abstract: "Polymorphic Unification and ML Typing", by Kanellakis, P.C., Mitchell, J.C., in the proceedings of the *16th ACM POPL Symposium on the Principles of programming Languages*, pp. 105–115, Austin Texas USA, January 1989).

29. Kanellakis, P.C., "Elements of Relational Database Theory". Chapter 17 in *The Handbook of Theoretical Computer Science*, Volume B, A.R. Meyer, M. Nivat, M.S. Paterson, D. Perrin and J. van Leeuwen editors, North Holland, pp. 1075–1144, 1990.

30. Goldman, K.J., Goldman, S.A., Kanellakis, P.C., Zdonik, S.B., "ISIS: Interface for a Semantic Information System". Chapter 8.1 in: *Readings on Object-Oriented Databases*, S.B. Zdonik and D. Maier editors, Morgan Kaufmann, pp. 522–536, 1989. (Note: reprinted from the proceedings of the *ACM SIGMOD Symposium on the Management of Data*, pp. 328–342, Austin Texas USA, May 1985).

31. Kanellakis, P.C., "Logic Programming and Parallel Complexity". Chapter 14 in: *Foundations of Deductive Databases and Logic Programming*, J. Minker editor, pp. 547–586, Morgan Kaufmann, 1988. (Note: an extended abstract appeared in the proceedings of the *1rst ICDT International Conference on Database Theory*, Springer-Verlag Lecture Notes in Computer Science 243, pp. 1–30, Rome Italy, September 1986).

32. Cosmadakis, S.S., Kanellakis, P.C., "Functional and Inclusion Dependencies: A Graph Theoretic Approach". Chapter 7 in: *The Theory of Databases, Advances in Computing Research vol. III*, P.C. Kanellakis and F.C. Preparata editors, pp. 163–184, JAI Press, 1986. (Note: an extended abstract

appeared in the proceedings of the *3rd ACM PODS Symposium on the Principles of Database Systems*, pp. 29–37, Waterloo Canada, April 1984).

33. Smolka, S.A., Kanellakis, P.C., "Recent Results in the Static Analysis of Communicating Finite State Processes". Chapter 10 in: *Current Advances in Distributed Computing and Communications*, Y. Yemini editor, pp. 208–234, Computer Science Press, 1986.

5.3 Edited Books and Journal Special Issues

34. "Special TCS issue on ICDT-90, Third International Conference on Database Theory". S. Abiteboul and P.C. Kanellakis editors. *Theoretical Computer Science*, vol. 116, no. 1-2, August 1993.

35. "Proceedings 11th ACM Symposium on the Principles of Database Systems San Diego, June 1992". P.C. Kanellakis editor, ACM, June 1992. (Note: a special issue of JCSS is being prepared based on these proceedings).

36. *Building an Object-Oriented Database System: the story of* O_2. F. Bancilhon, C. Delobel, P.C. Kanellakis editors, Morgan-Kaufmann 1992.

37. "Third International Workshop on Database Programming Languages: Bulk Types and Persistent Data" (Proceedings of Workshop in Nafplion Greece, August 1991) P.C. Kanellakis and J. Schmidt editors, March 1992, Morgan Kaufmann.

38. "Proceedings ICDT-90, Third International Conference on Database Theory, Paris France, December 1990". S. Abiteboul and P.C. Kanellakis editors. LNCS 470, Springer-Verlag, December 1990.

39. "The Theory of Databases". *Advances in Computing Research vol. III*, P.C. Kanellakis and F.C. Preparata editors, JAI Press, 1986.

5.4 Other Conference Abstracts

For some of these conference publications, full versions have been submitted for journal or book publication and are currently in review. This is noted below the corresponding entries.

40. Goldin, D.Q., Kanellakis, P.C., "On Similarity Queries for Time-Series Data: Constraint Specification and Implementation". *1rst International Conference on the Principles and Practice of Contraint Programming*, LNCS 976, pp. 137-153, Cassis France, September 1995.

41. Ramaswamy, S., Kanellakis, P.C., "OODB Indexing by Class-Division". *ACM SIGMOD Symposium on the Management of Data*, San Jose CA USA, pp. 139–150, May 1995.

42. Kanellakis, P.C., Michailidis, D., Shvartsman, A.A., "Concurrency = Fault-Tolerance in Parallel Computation". Invited paper, *5th International Conference on Concurrency Theory*, in LNCS 836, Uppsala Sweden, pp. 242–266, August 1994.

43. Kanellakis, P.C., Hillebrand, G., Mairson, H.G., "An Analysis of Core-ML: Expressive Power and Type Inference". Invited paper, *International Colloquium on Automata, Languages and Programming*, in LNCS 820, Jerusalem Israel, pp. 83–105, July 1994.

44. Kanellakis, P.C., Goldin, D.Q., "Constraint Programming and Database Query Languages". Invited paper, *Symposium on Theoretical Aspects of Computer Software*, LNCS 789, pp. 96-120, Sendai Japan, April 1994. (Note: full version invited to the first issue Constraints).

45. Hillebrand, G., Kanellakis, P.C., "Functional Database Query Languages as Typed Lambda Calculi of Fixed Order". *13th ACM PODS Symposium on the Principles of Database Systems*, pp. 222–231, June 1994. (Note: full version invited to the JCSS special issue on 13th PODS).

46. Hillebrand, G., Kanellakis, P.C., Mairson, H.G., "Database Query Languages Embedded in the Typed Lambda Calculus". Accepted subject to revisions to the *Journal of the ACM*, Currently under revision. *8th IEEE LICS Symposium on Logic in Computer Science*, pp. 332–343, Montreal Canada, June 1993. (Note: full version invited to the Information and Computation special issue on 8th LICS. Accepted subject to minor revision).

47. Abiteboul S., Kanellakis P.C., "Object Identity as a Query Language Primitive". Accepted subject to revisions to the *Journal of the ACM*, Currently under revision. (Note: an extended abstract appeared in the proceedings of the *ACM SIGMOD Symposium on the Management of Data*, Portland Oregon USA, pp. 159–173, June 1989. Reprinted as chapter 5 in book collection [35] above. Full version is available as Brown Univ. Tech. Rep. CS-89-26).

48. Kanellakis, P.C., Abiteboul, S., "A Logical Query Language with Object Identity and Strong Typing". Invited paper, *6th International Conference on Logic Programming*, MIT Press, pp. 675–692, Lisbon Portugal, June 1989.

49. Cosmadakis, S.S., Gaifman H., Kanellakis, P.C., Vardi, M.Y., "Decidable Optimization Problems for Database Logic Programs". *20th ACM STOC Symposium on the Theory of Computing*, pp. 477–490, Chicago Illinois USA, May 1988.

50. Cosmadakis, S.S., Kanellakis, P.C., "Equational Theories and Database Constraints". *17th ACM STOC Symposium on the Theory of Computing*, pp. 273–285, Providence Rhode Island USA, May 1985.

51. Cosmadakis, S.S., Kanellakis, P.C., "Parallel Evaluation of Recursive Rule Queries". *5th ACM PODS Symposium on the Principles of Database Systems*, pp. 280–293, Boston Massachusetts, March 1986.

52. Cosmadakis, S.S., Kanellakis, P.C., "Two Applications of Equational Theories to Data base Theory". *1rst International Conference on Rewriting Techniques and Applications*, Springer-Verlag Lecture Notes in Computer Science 202, pp. 107–124, Dijon France, May 1985.

53. Yannakakis, M., Kanellakis, P.C., Cosmadakis, S.S., Papadimitriou, C.H., "Cutting and Partitioning a Graph after a Fixed Pattern". *10th ICALP International Colloquium on Automata, Languages and Programming*, Springer-Verlag Lecture Notes in Computer Science 154, pp. 712–722, Barcelona Spain, July 1983.

54. Karatzas, I., Protonotarios, E.N., Kanellakis, P.C., "Easy-to-Test Criteria for Weak Stochastic Stability of Dynamical Systems". *John Hopkins Conference on Information Sciences and Systems*, single page abstract only, p. 535, Baltimore Maryland USA, 1978.

5.5 Other Misc. Manuscripts

55. Three SIGACT News columns on Database Theory. (1) vol. 20, no. 4 pp. 17–23, 1989. (2) vol. 21, no. 3, pp. 9–18, 1990. (3) vol. 25, no. 4, 1994.

56. Shvartsman A.A., Kanellakis, P.C., "Fault-Tolerant and Efficient Parallel Computation". Monograph manuscript in preparation, to be published by Kluwer, 1996.

57. Kanellakis, P.C., "Database Theory". Manuscript in preparation, Chapter in Handbook of Computer Science, CRC Press, 1996.

58. Afrati, F., Goldin, D., Kanellakis, P.C., "Efficient Parallelism for Structured Data: Directed Reachability in S–P Dags". Brown Univ. Tech. Rep. CS-88-07, January 1988.

59. Kanellakis, P.C., "An Election Problem in a Network: Formulation and Communication Complexity Analysis". Unpublished manuscript, MIT, May 1978.

6. Research Grants

Principal Investigator (PI) Grants

1995-1998 NSF, "Constraint Query Languages": $ 205,000.
PI: P.C. Kanellakis.

1994-1997 ONR, "Linear Constraint Programming": $ 600,000.
PI: P.C. Kanellakis. co-PIs: A. Brodsky, P. Van Hentenryck, J-L. Lassez.

1993-1995 ONR, "Workshop on the Principles and Practice of Constraint Programming": $ 20,500.
PI: P.C. Kanellakis. (Note: support for the PPCP93–94 workshops and the CP95 conference).

1991-1993 ONR, "Principles of Fault-Tolerant and Efficient Parallel Computation": $ 318,291.
PI: P.C. Kanellakis.

1991-1995 DARPA/ONR, "High Performance Design Environments": $ 2,697,175.
PIs: E. Charniak, P.C. Kanellakis, S.P. Reiss. co-PIs: faculty of Brown CS.

1987-1990 NSF, "Logic, Databases and Parallel Computation": $ 253,172.
PI: P.C. Kanellakis.

1987-1990 DARPA/ONR, "Multiparadigm Design Environments": $ 2,000,000.
PIs: P.C. Kanellakis, S.P. Reiss, J.E. Savage. co-PIs: faculty of Brown CS.

1987-1989 Alfred P. Sloan Foundation Fellowship (see Honors and Awards above). $ 25,000.

1985-1987 IBM Faculty Development Award (see Honors and Awards above). $ 60,000.

1982-1985 NSF, "Graph Algorithms, Combinatorial Optimization and Database Theory": $ 60,030.
PI: P.C. Kanellakis.

Co-Principal Investigator (co-PI) Grants

1995-1998 NSF/Esprit "Database Programming Languages". Amount: $ 60,000.
PI: P. Buneman. P.C. Kanellakis is one of co-PIs.

1989-1990 NSF/INRIA "Languages for Knowledge Bases and Databases". Amount: $ 65,000.
PI: P. Buneman. co-PIs: R. Hull, P.C. Kanellakis, V. Vianu.

1989-1990 NSF–CISE, "Multiparadigm Design Environments": $ 3,469,574.
Equipment grant for Brown CS. PI: John Savage. P.C. Kanellakis was one of co-PIs.

1982-1987 NSF–CER, "An Integrated Experimental Environment for Computer Science": $ 2,736,377.
Equipment grant for Brown CS. PI: Andries Van Dam. P.C. Kanellakis was one of co-PIs.

1982-1985 DARPA/ONR, "Ideographics": $1,426,120.
PI: John Savage. P.C. Kanellakis was one of co-PIs.

7. Professional Activities

Invited Speaker at Conferences:

Conf. on Information and Knowledge Management, Washington DC, November 1994.

5th International Conference on Concurrency Theory, Uppsala Sweden, August 1994.

International Colloquium on Automata, Languages and Programming, Jerusalem Israel, July 1994.

Symposium on Theoretical Aspects of Computer Software, Sendai Japan, April 1994.

6th International Conference on Logic Programming, Lisbon Portugal, June 1989.

1rst International Conference on Database Theory, Rome Italy, August 1986.

Tutorial Speaker at Conferences:

14th ACM Symposium on Principles of Database Systems, San Jose CA, May 1995.

DIMACS Workshop on Finite Model Theory, Princeton NJ, January 1996.

Panel Chair: 5th Workshop on Database Programming Languages, Gubbio Italy, September 1995.

Editorial Advisor to Journals:

Constraints (Kluwer) (1995–).

Chicago Journal of Theoretical Computer Science (electronic) (1994–).

Information and Computation (Academic Press) (1993–).

ACM Transactions on Database Systems (ACM) (1992–1995).

SIAM Journal of Computing (SIAM) (1990–1993).

Theoretical Computer Science (North Holland) (1989–).

Journal of Logic Programming (North Holland) (1989–).

Applied Mathematics Letters (Pergamon Press) (1987–).

Executive Committee Member for Conferences and Workshops:

ACM PODS – Principles of Database Systems Conference (since 1992) (chair starting 1995).

CP – Principles and Practice of Constraint Programming (1993–1994 workshop) (conference 1995).

DBPL – International Workshop on Database Programming Languages (since 1991).

EATCS ICDT – International Conference on Database Theory (since 1990).

Program Committee Chair:

1rst Workshop on Principles and Practice of Constraint Programming, Newport RI USA, April 1993. Co-chaired with Jean-Louis Lassez and Vijay Saraswat.
Advising editor for Book based on workshop published by MIT Press 1995.

11th ACM Symposium on the Principles of Database Systems, San Diego, CA USA, June 1992. Editor of proceedings.

3rd International Workshop on Database Programming Languages, Greece, August 1991. Co-chaired with Joachim Schmidt and co-edited proceedings.

3rd International Conference on Database Theory, Paris France, December 1990. Co-chaired with Serge Abiteboul and co-edited proceedings.

Program Committee Member of:

24th Int. Colloquium on Automata, Languages and Programming, Bologna Italy, July 1997.

6th Int. Conference on Database Theory, Delphi Greece, January 1997.

Joint Int. Conference and Symposium on Logic Programming, Bonn Germany, September 1996.

22nd International Conference on Very Large Data Bases, Bombay India, September 1996.

3rd Workshop on Digital Libraries, Washington DC, May 1996.

Conf. on Information and Knowledge Management, Washington DC, December 1995.

2nd Workshop on Digital Libraries, Washington DC, May 1995.

Conf. on Information and Knowledge Management, Washington DC, November 1994.

1rst Workshop on Digital Libraries, Washington DC, May 1994.

9th IEEE Symposium on Logic in Computer Science, Paris France, July 1994.

ACM Symposium on the Management of Data, Minneapolis Minn., June 1994.

Symposium on Theoretical Aspects of Computer Software, Sendai Japan, April 1994.

International Logic Programming Symposium (ILPS'93), Vancouver Canada, October 1993.

19th International Conference on Very Large Data Bases, Ireland, August 1993.

25th ACM Symposium on the Theory of Computing, San Diego, CA, USA, May 1993.

Joint Int. Conf. and Symp. on Logic Programming, Washington DC USA, November 1992.

2nd Int. Symp. on AI and Mathematics, Fort Lauderdale Florida USA, January 1992.

2nd International Conference on Deductive and Object-Oriented Databases, December 1991.

North American Conference on Logic Programming, Austin USA, October 1990.

15th Symposium on Math. Foundations of Computer Science, Czechoslovakia, August 1990.

9th ACM Symposium on the Principles of Distributed Computing, Quebec Canada, August 1990.

5th IEEE Symposium on Logic in Computer Science, Philadelphia USA, June 1990.

9th ACM Symposium on the Principles of Database Systems, Nashville USA, March 1990.

2nd International Conference on Extending Database Technology, Venice Italy, March 1990.

North American Conference on Logic Programming, Cleveland USA, October 1989.

ACM Symposium on the Management of Data, Portland USA, June 1989.

2nd International Conference on Database Theory, Bruges Belgium, August 1988.

15th International Conference for Very Large Databases, LA USA, August 1988.

3rd IEEE Symposium on Logic in Computer Science, Edinburgh Scotland, July 1988.

International Conference on Knowledge Bases and Databases, Jerusalem Israel, June 1988.

7th ACM Symposium on Principles of Database Systems, Austin Texas, March 1988.

28th IEEE Conference on the Foundations of Computer Science, LA USA, October 1987.

6th ACM Symposium on Principles of Database Systems, San Diego USA, March 1987.

ACM Symposium on the Management of Data, Washington DC USA, June 1986.

11th International Conference on Very Large Data Bases, Singapore, August 1984.

Consultant for: NASA CESDIS 6/95–present.

The IBM T. J. Watson Research Center, Yorktown Heights NY USA, 1/88–12/88.

The Microelectronics and Computer Corporation, Austin Texas USA, 1/85–3/88.

Referee for: Journal of the ACM, SIAM Journal of Computing, ACM Transactions on Database Systems, Acta Informatica, Journal of Computer and System Sciences, Algorithmica, Theoretical Computer Science, Information and Computation, Networks, and other journals.

Reviewer for: for SUNY, the National Science Foundation, the USRA-NASA.

Colloquium Speaker: at many universities and research laboratories in the US and Europe.

8. Teaching and Service to the University

Courses taught at Brown University, and co-taught with J. Guttag at MIT (spring of 1985). Developed courses CS051, CS154/CS254, CS258 as new additions to Brown CS curriculum.

1995–1996 CS051: Computation Models (undergraduate).
CS152: Introduction to the Theory of Computation (advanced undergraduate).
CS254: Logic and Computation (graduate).

1993-1994 CS051: Computation Models (undergraduate).
CS152: Introduction to the Theory of Computation (advanced undergraduate).

1993-1994 CS154: Introduction to Logic and Computation (graduate).
CS152: Introduction to the Theory of Computation (advanced undergraduate).

1992-1993 On sabbatical for fall 1992.
CS152: Introduction to the Theory of Computation (advanced undergraduate).

1991-1992 CS253: Analysis of Algorithms (graduate).
CS152: Introduction to the Theory of Computation (advanced undergraduate).

1990-1991 CS154: Introduction to Logic and Computation (graduate).
CS152: Introduction to the Theory of Computation (advanced undergraduate).

1989-1990 CS154: Introduction to Logic and Computation (graduate).
CS152: Introduction to the Theory of Computation (advanced undergraduate).

1988-1989 On leave at the GIP Altaïr – INRIA.

1987-1988 CS021: Algorithms and Data Structures (undergraduate).
CS154: Introduction to Logic and Computation (graduate).

1986-1987 CS021: Algorithms and Data Structures (undergraduate).
CS196: Introduction to Logic and Computation (graduate).

1985-1986 CS021: Algorithms and Data Structures (undergraduate).
CS296: Logic Programming (graduate).

spring 1985 6.035: Computer Language Engineering (advanced undergraduate).

fall 1984 On leave at the Theory of Distributed Systems Group, LCS, MIT.

1983-1984 CS152: Introduction to the Theory of Computation (advanced undergraduate).
CS258: Combinatorial Optimization: Algorithms and Complexity (graduate).
CS128: Database Management Systems (advanced undergraduate; co-taught with S.B. Zdonik).

1982-1983 CS021: Algorithms and Data Structures (undergraduate).
CS152: Introduction to the Theory of Computation (advanced undergraduate).
CS128: Database Management Systems (advanced undergarduate).

1981-1982 CS152: Introduction to the Theory of Computation (advanced undergraduate).
CS227: Topics in Database Management Systems (graduate).
CS258: Combinatorial Optimization: Algorithms and Complexity (graduate).

Ph.D. thesis advisor:

Scott Smolka (Brown Univ., 1985, currently Professor at SUNY Stonybrook),
thesis: *Analysis of Communicating Finite-State Processes.*
Stavros Cosmadakis (MIT, 1985, currently Associate Professor at the University of Patras, Greece),
thesis: *Equational Theories and Database Constraints.*
Peter Revesz (Brown Univ., 1991, currently Assistant Professor at the University of Nebraska Lincoln),
thesis: *Constraint Query Languages.*
Alex Shvartsman (Brown Univ., 1992, currently postdoc at MIT),
thesis: *Fault-Tolerant and Efficient Parallel Computation.*
Gail Mitchell (Brown Univ., 1993, currently at GTE Labs),
thesis: *Extensible Optimization for OODBs.*
Gerd Hillebrand (Brown Univ., 1994, currently postdoc at UPenn),
thesis: *Finite Model Theory in the Simply Typed Lambda Calculus.*
Sridhar Ramaswamy (Brown Univ., 1994, currently at Bellcore, New Jersey).
thesis: *Indexing in Data Models with Constraints and Classes.*

Currently advising 3 Ph.D. students: Michael Benjamin, Dina Goldin, Dimitrios Michailidis.

M.Sc. thesis advisor: for Dina Goldin (Brown Univ., 1987), for Peter Revesz (Brown Univ., 1987) for Alex Shvartsman (Brown Univ., 1989), for Gerd Hillebrand (Brown Univ., 1991), for Alain Mayer (Brown Univ., 1991), for Scott Apgar (Brown Univ., 1992), for Dimitrios Michailidis (Brown Univ., 1993). Also, has supervised a number of undergraduate honors thesis. Has Participated on a number of thesis committees at Brown and outside Brown (including MIT, UMass, Paris-Sud).

At Brown University Dept. of Computer Science: (1) Served as member of various committees (colloquium, library, comprehensive exams, faculty search, administrative staff, promotion). (2) Was chair of faculty search committee for five years 1990-94. (3) Co-organized two Industrial Partners Program (IPP) events on parallel computation and constraint programming; was speaker in a third IPP event on object-oriented databases.

At Brown University: Faculty Committee on Admissions and Financial Aid (member) 1983-1985, (chairman) 1985-1986.