

CURRICULUM VITAE  
Prof Chris Hankin PhD CEng MBCS FIEE FCGI FRSA  
February 2007

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**Personal data:** British citizen born on 10 June 1954 and married to Alison with 2 children.

**Degrees:** B.Sc. (Hons) in Computer Science from City University (London), July 1976. Ph.D. in Computer Science from University of London, August 1979.

**Professional Bodies:** Member of the British Computer Society, Chartered Engineer, Member of the Association of Computing Machinery (ACM), Member of ACM Special Interest Group in Programming Languages (SIGPLAN), Fellow of the Institute of Electrical Engineers (FIEE), Fellow of City and Guilds of London Institute (FCGI), Fellow of the Royal Society for Arts, Manufactures and Commerce (FRSA).

**Current Position:** Professor of Computing Science at the Department of Computing, Imperial College, London since October 1995.

- Deputy Principal, Faculty of Engineering, 2006-2008
- Acting Head of Department, Department of Bioengineering, 2006-2007
- Pro Rector (Research), 2004-2006
- Deputy Head of Department of Computing, 1994-2004
- Director of Research for Department of Computing, 1995-2003
- Director of Finance for Department of Computing, 2003-2004
- Dean of City and Guilds College, 2000-2003
- Chair, College e-learning Committee, 2001-2004
- Member, College Web Review Committee, 2001-

**Previous Positions:** Reader in Computing Science at Imperial (1991-95); Senior Lecturer in Computing at Imperial (1989-91); Lecturer in Computing at Imperial (1984-89); Lecturer in Computer Science at Westfield College (1979-84).

# 1 Research

My early research work concerned functional programming languages. This led to my authorship of one of the early textbooks in this area (Glaser, Hankin and Till). I subsequently became interested in efficient implementation techniques and this led to my long-term interest in static analysis and abstract interpretation. My most recent work has been in the application of static analysis to problems in the certification of software for secure systems.

## 1.1 Publications

### Books:

1. H. W. Glaser, C. Hankin and D. R. Till, *Principles of Functional Programming*, Prentice Hall International 1984.
2. C. Hankin: *Lambda Calculi*, Oxford University Press, 1994.
3. F. Nielson, H. R. Nielson and C. Hankin, *Principles of Program Analysis*, Springer Verlag, 1999 (2nd corrected printing in 2005).
4. C. Hankin: *An Introduction to Lambda Calculi for Computer Scientists*, Kings College Publications, 2004.

### Books edited:

1. S. Abramsky and C. Hankin, *Abstract Interpretation of Declarative Languages*, Ellis Horwood, 1987.
2. C. Hankin, I. Mackie and R. Nagarajan, *Theory and Formal Methods of Computing 94*, Imperial College Press, 1995.
3. J.-M. Andreoli, C. Hankin and D. Le Métayer, *Coordination Programming*, Imperial College Press, 1996.
4. P. Ciancarini and C. Hankin, *Coordination Languages and Models*, Springer-Verlag LNCS 1061, 1996.
5. C. Hankin, *Programming Languages and Systems – ESOP’98*, Springer-Verlag LNCS 1381, 1998.
6. C. Hankin, *Static Analysis – SAS’05*, Springer-Verlag LNCS 3672, 2005.

### Chapters in Books:

1. C. Hankin, D. R. Till and H. W. Glaser: Applicative Languages and Data Flow, in *Functional Programming - languages, tools and architectures*, Eisenbach, S. ed, Ellis Horwood, 1987, 128-140.
2. S. Abramsky and C. Hankin: Introduction to Abstract Interpretation, in *Abstract Interpretation of Declarative Languages*, S. Abramsky and C. Hankin eds, Ellis Horwood, 1987, 9-32.
3. C. Hankin: Functional Languages, in *The Encyclopedia of Computer Science and Technology*, (Volume 24, Supplement 9, pp107-130) and *The Encyclopedia of Microcomputers*, (Volume 7, pp379-403), Marcel Dekker, New York) 1991.
4. P. Anderson, D. Bolton, C. Hankin, P. H. J. Kelly and P. E. Osmon: COB-WEB2: A Declarative Language Multiprocessor Architecture for Wafer Scale Integration, in *Multiprocessor Computer Architectures*, T. J. Fountain and M. J. Shute eds, North-Holland, 1990, 121-138.
5. C. Hankin: Abstract Interpretation of Term Graph Rewriting Systems, in *Functional Programming, Glasgow 1993*, S. L. Peyton Jones, G. Hutton and C. Kehler Holst eds, Springer Verlag, 1990.
6. C. Hankin: Graph Rewriting Systems and Abstract Interpretation, in *Theory and Formal Methods 1993*, G. Burn, S. Gay and M. Ryan eds, Springer Verlag, 1993.
7. L. Errington, C. Hankin and T. Jensen: Reasoning about Gamma Programs, in *Theory and Formal Methods 1993*, G. Burn, S. Gay and M. Ryan eds, Springer Verlag, 1993.
8. E. Goubault and C. Hankin: A Lattice for the Abstract Interpretation of Term Graph Rewriting Systems, Chapter 10 in *Term Graph Rewriting: Theory and Practice*, M. R. Sleep, M. J. Plasmeijer and M. C. van Eekelen eds, John Wiley & Sons, 1993, 131-140.
9. M. van Eekelen, E. Goubault, C. Hankin and E. Nocker: Abstract reduction: Towards a theory via Abstract Interpretation, Chapter 9 in *Term Graph Rewriting: Theory and Practice*, M. R. Sleep, M. J. Plasmeijer and M. C. van Eekelen eds, John Wiley & Sons, 1993, 117-130.
10. D. Clark, L. Errington and C. Hankin: Static Analysis of Value Passing Process Calculi, in *Theory and Formal Methods'94*, C. Hankin, I. Mackie and R. Nagarjan eds, Imperial College Press, 1994.
11. S. J. Gay and C. Hankin: A program logic for Gamma, in *Coordination Programming*, J-M. Andreoli, C. Hankin and D. Le Métayer eds, Imperial College Press, 1996.

12. S. J. Gay and C. Hankin: Gamma and the logic of transition traces, in *Advances in Theory and Formal Methods*, A. Edalat, S. Jourdan and G. McCusker eds, Imperial College Press, 1997.
13. C. Hankin: Models of Computation, in *Encyclopedia of Computer Science and Technology*, Vol 41, Marcel Dekker, 1999.
14. C. Hankin: Coordination Languages, in *Encyclopedia of Computer Science and Technology*, Nature Publishing Group, 2000.
15. C. Hankin, R. Nagarajan and P. Sampath: Flow Analysis: Games and Nets, in *The Essence of Computation*, Springer Verlag, LNCS 2566, 2002.
16. A. Aldini, M. Bravetti, A. Di Pierro, R. Gorrieri, C. Hankin and H. Wiklicky: Two Formal Approaches for Approximating Noninterference Properties, in *FOSAD 2003*, Springer Verlag, LNCS 2946, 2004.
17. A. Di Pierro, C. Hankin and H. Wiklicky: Probabilistic Linda-Based Coordination Languages, in *FMCO 2004*, Springer Verlag, LNCS 3657, 2005.
18. A. Di Pierro, C. Hankin and H. Wiklicky: On a Probabilistic Chemical Abstract Machine and the Expressiveness of Linda Languages, in *FMCO 2005*, Springer Verlag, LNCS 4111, 2006.

**Journal Publications:**

1. G. Burn, C. Hankin, and S. Abramsky: Strictness Analysis of Higher Order Functions, in *Science of Computer Programming*, vol. 7, 1986, 249-278.
2. C. Hankin, G. Burn and S. L. Peyton Jones: A Safe Approach to Parallel Combinator Reduction, in *Theoretical Computer Science*, vol. 56, 1988, 17-36.
3. D. Bolton, C. Hankin and P. H. J. Kelly: Parallel Object-Oriented Descriptions of Graph Reduction Machines, in *Future Generation Computer Systems*, vol. 6, 1990, 225-239.
4. C. Hankin and K. Arabadijyski: A Survey of Functional Programming Languages, in *Journal of New Generation Computer Systems*, vol. 3, 1990, 97-124.
5. D. Bolton, C. Hankin and P. H. J. Kelly: An Operational Semantics for Paragon: A Design Notation for Parallel Architectures, *New Generation Computing*, vol. 9, 1991, 171-197.
6. S. Hunt and C. Hankin: Fixed points and frontiers: a new perspective, in *Journal of Functional Programming*, vol 1(1), 1991, 91-120.

7. C. Hankin and S. Hunt: Approximate Fixed Points in Abstract Interpretation, *Science of Computer Programming* vol. 22, 1994.
8. C. Hankin and D. le Métayer: Lazy Type Inference and Program Analysis, *Science of Computer Programming* vol. 25, 1995, 219–249.
9. C. Hankin, D. le Métayer and D. Sands: Refining Multiset Transformers, *Theoretical Computer Science*, 192, 1998.
10. F. Arbab, P. Ciancarini and C. Hankin: Coordination Languages for Parallel Programming, *Parallel Computing*, 24(7), July, 1998.
11. C. Hankin: Program Analysis Tools, *Software Tools for Technology Transfer*, 2(1), 1998.
12. C. Hankin and P. Malacaria: Program Analysis Games, in *Electronic Symposium on the Theory of Computation, Computing Surveys*, 31(3), 1999.
13. A. Di Pierro, C. Hankin and H. Wiklicky: Probabilistic Confinement in a Declarative Framework, *Electronic Notes in Theoretical Computer Science*, 48, 2001. <http://www.elsevier.nl/locate/entcs/volume48.html>
14. D. Clark, C. Hankin and S. Hunt: Information Flow for Algol-like Languages, in *Computer Languages*, 28(1), 2002.
15. A. Di Pierro, C. Hankin and H. Wiklicky: On Approximate Non-Interference, *Journal of Computer Security*, 12(1), 2004.
16. A. Di Pierro, C. Hankin and H. Wiklicky: Measuring the Confinement of Concurrent Probabilistic Systems, *Theoretical Computer Science*, 340(1), 2005.
17. A. Di Pierro, C. Hankin and H. Wiklicky: Quantitative static analysis of distributed systems, *Journal of Functional Programming*, 15(5), 2005.
18. D. J. Pearce, P. H. J. Kelly and C. Hankin: Online Cycle Detection and Difference Propagation: New Algorithms for Pointer Analysis, *Software Quality Journal*, 12(4), 2004.
19. A. Di Pierro, C. Hankin and H. Wiklicky: Probabilistic  $\lambda$ -calculus and Quantitative Program Analysis, *Journal of Logic and Computation*, 15(2), 2005.
20. D. J. Pearce, P. H. J. Kelly and C. Hankin: Efficient Field-Sensitive Pointer Analysis for C, undergoing revision, 2006.
21. S. Nanz and C. Hankin: A Framework for Security Analysis of Mobile Wireless Networks, *Theoretical Computer Science*, 367, 2006.

22. A. Di Pierro, C. Hankin and H. Wiklicky: Reversible Combinatory Logic, *Mathematical Structures in Computer Science*, 16(4), 2006.
23. A. Di Pierro, C. Hankin and H. Wiklicky: Tempus Fugit, How to Plug It, to appear *Journal of Logic and Algebraic Programming*, 2007.

**Refereed Conference Papers:**

1. C. Hankin, P. Osmon and M. Shute: COBWEB - A Combinator Reduction Machine, in Proc. Functional Programming Languages and Computer Architecture, Springer Verlag LNCS 201, 1985, 99-112.
2. G. Burn, C. Hankin and S. Abramsky: The Theory of Strictness Analysis of Higher Order Functions, in Programs as Data Objects Springer Verlag LNCS 217, 1986, 42-62.
3. C. Hankin, G. Burn, and S. Peyton Jones: A Safe Approach to Parallel Combinator Reduction (Extended Abstract), in Proc. ESOP 86, Springer Verlag LNCS 213, 1986, 99-110.
4. P. Anderson, C. Hankin, P. Kelly, P. Osmon and M. Shute: COBWEB-2: Structured Specification of a Wafer Scale Supercomputer, in Proc. PARLE, Springer Verlag LNCS 258, 1987, 51-67.
5. C. Martin and C. Hankin: Finding Fixed Points in Finite Lattices, in Proc. Functional Programming Languages and Computer Architecture, Springer Verlag LNCS 274, 1987, 426-445.
6. P. Anderson, C. Hankin and P. Kelly: Parallel Combinator Reduction on a Wafer, in Proc. IFIP 88: Network Information Processing Systems, North Holland, 1989, 225-232.
7. D. Bolton, C. Hankin and P. Kelly: A Structured Design Methodology for Mapping Requirements to Silicon, in Proc. 1988 Alvey Technical Conference, IEE/BCS Press, 1988, 280-283.
8. D. Bolton, C. Hankin, P. Kelly: Parallel Object-oriented Descriptions of Graph Reduction Machines, in Proc. PARLE '89, Springer Verlag LNCS 365, 1989, 158-175.
9. D. Bolton and C. Hankin: A Paragon Description of Parallel Supercombinator Graph Rewriting, in Proc. Workshop on Parallel and Distributed Processing WP&DP '90, North-Holland, 1990, 199-212.
10. C. Hankin: Static Analysis of Term Graph Rewriting Systems, in Proc. PARLE '91, Springer Verlag LNCS 506, 1991, 367-384.

11. C. Hankin and S. Hunt: Approximate Fixed Points in Abstract Interpretation, in Proc. ESOP '92, Springer Verlag LNCS 582, 1992, 219-232.
12. C. Hankin, D. Le Métayer and D. Sands: Transformation of Gamma Programs, in Proc. 2nd Workshop on Static Analysis (WSA '92), BIGRE Notices, 1992.
13. C. Hankin, D. Le Métayer and D. Sands: A Calculus of Gamma Programs, in Proc. Yale Workshop on Parallel Programming Languages, Springer Verlag LNCS 757, 1993.
14. C. Hankin, D. Le Métayer and D. Sands: A Parallel Programming Style and Its Algebra of Programs, in Proc. PARLE'93, Springer Verlag LNCS 694, 1993.
15. D. Clark and C. Hankin: A Lattice of Abstract Graphs, in Proc. PLILP'93, Springer Verlag LNCS 714, 1993.
16. L. Errington, C. Hankin and T. Jensen: A Congruence for Gamma Programs, in Proc. WSA'93, Springer Verlag LNCS 724, 1993.
17. C. Hankin and D. Le Métayer: Deriving algorithms from type inference systems: Application to strictness analysis, in Proc. POPL'94, ACM Press, 1994.
18. C. Hankin and D. Le Métayer: Lazy type inference for the strictness analysis of lists, in Proc. ESOP'94, Springer-Verlag LNCS 788, 1994.
19. C. Hankin and D. Le Métayer: A type-based framework for program analysis, in Proc. SAS'94, Springer-Verlag LNCS 864, 1994.
20. P. Malacaria and C. Hankin: A new approach to Control Flow Analysis, in Proc. of CC'98, Springer-Verlag LNCS 1383, 1998.
21. P. Malacaria and C. Hankin: Generalised Flowcharts and Games, in Proc. of ICALP'98, Springer Verlag LNCS 1443, 1998.
22. P. Malacaria and C. Hankin: Non-deterministic Games and Program Analysis: An application to security, in Proc. LICS'99, IEEE Press, 1999.
23. D. Clark, C. Hankin and S. Hunt: Safety of Strictness Analysis via Term Graph Rewriting, in Proc. SAS'00, Springer Verlag LNCS 1824, 2000.
24. A. Di Pierro, C. Hankin and H. Wiklicky: On Approximate Non-Interference, in Proc ACM SIGPLAN and IFIP WG 1.7 Workshop on Issues in the Theory of Security, 2002.
25. A. Di Pierro, C. Hankin and H. Wiklicky: Approximate Non-Interference, in Proc. IEEE Computer Security Foundations Workshop, 2002.

26. A. Di Pierro, C. Hankin and H. Wiklicky: Analysing Approximate Confinement under Uniform Attacks, in SAS'02, Springer Verlag LNCS 2477, 2002.
27. A. Di Pierro, C. Hankin and H. Wiklicky: Measuring the Confinement of Concurrent Probabilistic Systems, in Proc ACM SIGPLAN and IFIP WG 1.7 Workshop on Issues in the Theory of Security, 2003.
28. A. Di Pierro, C. Hankin and H. Wiklicky: Quantitative Relations and Approximate Process Equivalences, in Proc. CONCUR'03, Springer Verlag, 2003.
29. D. J. Pearce, P. H. J. Kelly and C. Hankin: Online Cycle Detection and Difference Propagation for Pointer Analysis, in Proc. IEEE Workshop on Source Code Analysis and Manipulation (SCAM'2003), IEEE Computer Society Press, 2003.
30. A. Di Pierro, C. Hankin and H. Wiklicky: Probabilistic KLAIM, in Proc. Coordination, Springer-Verlag, 2004.
31. S. Nanz and C. Hankin: Static Analysis of Routing Protocols for Ad-Hoc Networks, in Proc ACM SIGPLAN and IFIP WG 1.7 Workshop on Issues in the Theory of Security, 2004.
32. C. Hankin and H. Wiklicky: Lambda Calculus and Quantitative Program Analysis, *Electronic Notes in Theoretical Computer Science*, 2004.
33. D. J. Pearce, P. H. J. Kelly and C. Hankin: Efficient Field-Sensitive Pointer Analysis for C, in Proc. ACM PASTE workshop, ACM Press, 2004.
34. S. Nanz and C. Hankin: Formal Security Analysis for Ad-Hoc Networks, in Proc VODCA, *Electronic Notes in Theoretical Computer Science*, 2006.
35. A. Di Pierro, C. Hankin and H. Wiklicky: On Reversible Combinatory Logic, in Proc. DCM, *Electronic Notes in Theoretical Computer Science*, February 2006.

**Special issues of Journals:**

1. Special Issue on Abstract Interpretation, *Journal of Logic and Computation*, 2(4), 1992.
2. Special Issue on Coordination Languages, *Theoretical Computer Science*, 192, 1998. (with R. Gorrieri)
3. Special Issue on Coordination Languages for Parallel Programming, *Parallel Computing*, 24(7), 1998. (with F. Arbab and P. Ciancarini)



4. Special Issue on Program Analysis Tools, *Software Tools for Technology Transfer*, 2, 1998.
5. Selected Papers from The European Symposium on Programming, *Nordic Journal of Computing*, 5(4), 1998.

**Other Recent Publications:**

1. C. Hankin and H. R. Nielson (editors): Symposium on Models of Programming Languages and Computation, *ACM Computing Surveys* vol 28 no. 2, 1996.
2. C. Hankin, H. R. Nielson and J. Palsberg: Strategic Directions for Research on Programming Languages, *ACM Computing Surveys* vol 28 no. 4, 1996.
3. C. Hankin, H. R. Nielson and J. Palsberg (editors): Position Statements on Strategic Directions for Research on Programming Languages, *ACM SIGPLAN Notices*, January, 1997.
4. A. Di Pierro, C. Hankin and H. Wiklicky: Probabilistic Confinement in a Declarative Framework, Proc. of WITS'00, July 2000.
5. D. Clark, C. Hankin, S. Hunt and R. Nagarajan: Possibilistic Information Flow is safe for Probabilistic Non-interference, Proc. of WITS'00, July 2000.
6. C. Hankin and T. Jensen: Security and safety through static analysis, ERCIM News, April 2002.

## 1.2 Research Funding

I have been involved in several national and international projects; I coordinated ESPRIT LTR projects SEMANTIQUE and COORDINATION and the LTR Working Group SEMANTIQUE II, I participated in the ESPRIT LTR project SEMAGRAPH and the LTR Working Groups SEGRAGRA and ATLANTIQUE.

**Recent Grants:** The following grants are specified by title, sponsor, value and duration.

1. *Programming languages for exact real number computation: theory and implementation*, EPSRC, 325155 pounds, 1996-99 (with Prof. A. Edalat).
2. *Semantic Analysis of Object Oriented Computer Applications*, British Council, 1700 pounds, 1999-2000.

3. *Typed Concurrent Object-oriented Languages: Foundations, Methods and Tools*, EPSRC, 194712 pounds, 1997-2000 (with Dr P. Malacaria).
4. *Coordina Working Group*, EU, 9392 pounds, 1997-2000.
5. *Abstract Interpretation of Safety Critical System Specifications*, EPSRC, 188892 pounds, 1998-2001 (with Prof. T. Maibaum).
6. *Probabilistic Abstract Interpretation*, EPSRC, 178087 pounds, 1999-2002.
7. *Secure and Safe Systems based on Static Analysis*, EU, 1.1MEuro, 2000–2003.
8. *Quantitative Analysis of Computational Resources*, EPSRC, 320000 pounds, 2004–2007.
9. *Program Analysis and the Pi-Calculus: Foundations and Applications to Security*, EPSRC, 176000 pounds, 2004–2007.

### 1.3 Conference Organisation

I am chair of the steering committee for ESOP (European Symposium on Programming) and a member of the steering committee for Coordination. Recently I have been a member of the programme committees for POPL'97, SAS'97, Coordination'97, ESOP'98(chair), FMOODS'99, Coordination'99, SAS'01, SAS'02, CSFW'03, WISP'03, WITS'03, WITS'04, CSFW'04, SAS'04, ESOP'05, CC'06, SAS'06, ESOP'07, Coordination'07 and SAS'07. I was programme chair for SAS'05. I was co-general chair for the ACM Symposium on Principles of Programming Languages (POPL) in 2001.

Together with P. Degano, R. Gorrieri, F. Nielson, H. R. Nielson, I organised the Dagstuhl seminar on “Security through Analysis and Verification” (December 2000) – I had previously organised 3 other seminars at Dagstuhl. Together with H. R. Nielson and J. Palsberg, I organised a working group on “Strategic Directions for Research on Programming Languages” as part of the celebration of ACM's 50th anniversary (June 1996).

## 2 Teaching

I was first appointed as a lecturer at Westfield College (University of London) in October 1979. I moved to Imperial College in August 1984. I have taught a variety of Undergraduate and Masters levels courses: Introductory Programming, Compilers, Databases, Semantics, Lambda Calculus. I have successfully supervised seventeen PhDs.

**PhD students supervised (with thesis title and date of award)**

1. S. Nanz, *Security Analysis of Mobile Wireless Networks*, 2006.
2. W. Chung, *Secure Information Flow in Object Oriented Languages*, 2004.
3. M. T. Burt, *Games, Call-by-value and Featherweight Java*, 2004.
4. M. Berger, *Towards Abstractions for Distributed Systems*, 2003.
5. P. Sampath, *Program Analysis Using Game Semantics*, 2000.
6. L. Errington, *Twisted Systems*, 2000.
7. F. Hernández Quiroz, *A Semantics-based Proof System for Gamma*, 1999.
8. A. P. G. Sinnadurai, *Lazy Instrumentalism and Finitist Geometry*, 1998.
9. D. J. Clark, *Term Graph Rewriting and Event Structures*, 1996.
10. J. Muylaert Filho, *Abstract Interpretation in Continuation Passing Style*, 1994.
11. M. Z. Schreiber, *Value-passing Process Calculi as a Formal Method*, 1994.
12. T. P. Jensen, *Abstract Interpretation in Logical Form*, 1993.
13. P. McBrien, *Implementing Logic Programming Languages by Graph Rewriting*, 1992.
14. S. P. Hughes, *Static Analysis of Store Use in Functional Programs*, 1991.
15. L. S. Hunt, *Abstract Interpretation of Functional Languages: From Theory to Practice*, 1991.
16. C. Martin, *Algorithms for Finding Fixed Points in Abstract Interpretation*, 1991.
17. D. Sands, *Calculi for Time Analysis of Functional Programs*, 1990.
18. G. L. Burn, *Abstract Interpretation and the Parallel Evaluation of Functional Languages*, 1987.
19. M. D. de Jong, *A Graphical Programming Environment for Data Flow Systems*, MPhil awarded 1986.

I have examined a large number of PhDs in the UK, Australia, Denmark, France, Italy, Sweden and The Netherlands.

### 3 Professional activities

I am an executive editor of the Journal of Logic and Computation (OUP). I am an associate editor of ACM Computing Surveys, the Journal of Software Tools for Technology Transfer (Springer) and the Journal of Autonomous Agents and Multi-Agent Systems (Kluwer).

I was an associate editor of the Journal of Functional Programming (CUP) from 1991 until 2002.

I have been Deputy Principal of the Faculty of Engineering since September 2006; I am also acting Head of the Bioengineering Department. I was Pro Rector (Research) at Imperial College from 2004–2006; I developed the College Research Strategy, helped found the Energy Futures Lab and the Imperial Nanosciences Partnership, and oversaw the introduction of a research ethical review process. I was Dean of City and Guilds College, which is part of the engineering faculty of Imperial College, from 2000 until 2003. I was elected a Councillor of the City and Guilds of London Institute for 2002-2006.

I am a member of the University of London Subject Area Board in Engineering and Technology (having been chair from 1997 until 2000). I am a member of the Senate and the Council of the University of London and I act for the Vice Chancellor on examination offences.

I was a member of the Committee of the Conference of Professors and Heads of Computing (CPHC) from 1995 until 2001. This is a standing conference that represents all Computing Departments in HEIs. I was chair of the committee from 1997 until 1999. I represented CPHC on the BCS Professional Formation Board. I was one of the founding members of the UK Computing Research Committee (UKCRC) which is now a major interface between EPSRC and academic computing research.

I was a member of the 5-person evaluation committee for CWI (Amsterdam) in 1999. I also served on the evaluation committee for the CWI Cluster on Coordination Languages in 2005.

I was a member of the Working Group of Deans of Engineering in London which produced HEFCE publication Research 01/59, *Engineering and higher education in London*.

I have been external examiner for the undergraduate Computer Science courses at Queen Mary and Westfield College (1996-1999) and for the Advanced MSc at Manchester University (1997-2000). I was the Chief External Examiner for the Modular Degree in Computing, Engineering and Mathematical Sciences at The University of West of England (1998-2002). I am currently external examiner of the MSc in Computer Science by Research at Royal Holloway College.

I am a member of the Advisory Board for the Institute of Informatics and Mathematical Modelling at the Danish Technical University. I am also a member of the advisory boards for the Institute of Mathematical Sciences and the Imaging Sciences Centre at Imperial College. I am a Director of the College's Energy Futures Lab.