

Rebecca Mancy BSc, PhD

Lecturer in Science and Mathematics Education

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Education

PhD in Science Education. Centre for Science Education, University of Glasgow

2002 - 2007

- Title: Explicit and Implicit Learning: the Case of Computer Programming.
- An investigation of the role of conscious and non-conscious knowledge amongst undergraduate learners of computer programming. Abstract and full thesis available for download at www.rebeccamancy.net/Written/PhD.pdf
- Funded by full scholarship from Faculty of Education, University of Glasgow.
- Integrated literature from education, educational and experimental psychology, learning sciences, science education.
- Employed quantitative and qualitative research methodologies including psychological testing, correlational statistics, interviews and inductive analysis.
- Research training including representation on the Faculty Research Committee, conference organization, running a small externally-funded research project, research methods seminars.

BSc. Mathematics with Intercalated Year, First Class Honours. University of Warwick

1996-2000

- Studied core courses in pure and applied mathematics plus options in mathematics education, problem solving, programming, statistics, languages, and French politics, society and philosophy.
- Exchange year (1998-1999) at the *Université de Genève*, Geneva, Switzerland.

Three A-Levels, one AS-Level. Hills Road Sixth Form College, Cambridge

1994-1996

- A-Levels: Mathematics, French, Chemistry; AS-Level: Further Mathematics (All at grade A)

Professional Experience

Lecturer in Science and Mathematics Education, University of Glasgow, UK

Since Nov 2005

A Russell Group University and founding member of Universitas 21, the University of Glasgow is committed to undertaking leading-edge, internationally-competitive research while offering a challenging student-centred learning environment. The Centre for Science Education, based in the Faculty of Education is a research centre of international standing engaging in sustained and integrated programmes of research.

Teaching and Supervision

- Currently supervising 1 PhD student, 1 master's level research projects and 2 undergraduate research dissertations in education.
- Supervision of five successful completions at master's level.
- Delivery of a course on the psychology of learning to a large undergraduate cohort.
- Due to develop and deliver one or two courses in science education and communication as of October 2008.

- Invited lecturer on other courses covering psychology and research methods.

Administration

- Programme Leader of MSc in Science and Science Education since November 2006. Developed programme documentation, managed team integration, handled applications and queries arising from them, directly supported current students.
- Development of new MSc in Inter-Professional Science Education and Communication due to start in October 2008, subject to approval.
- Member of Departmental Research Committee and Departmental Teaching and Learning Committee.

**Dec 2000 - Aug
2002**

Software Engineer, DotBase Solutions Informatiques SA, Genève

Developed bespoke database applications using Oracle, Access and MySQL; created user interfaces using Visual Basic, ASP, PHP, HTML, Javascript and other web technologies.

Papers Published in Conference Volumes

Rebecca Mancy and Norman Reid (2006) *Using interviews to investigate implicit knowledge in computer programming*. Proceedings of the International Conference of the Learning Sciences (ICLS), Bloomington, Indiana, USA, 27 June - 1 July 2006, 460-466.

Richard Thomas and Rebecca Mancy (2004) *Use of large databases for group projects at the nexus of teaching and research*. Proceedings of the 9th annual SIGCSE conference on Innovation and Technology in Computer Science Education (ITiCSE), University of Leeds, 28-30 June 2004, 161-165.

Richard Thomas, Gregor Kennedy, Steve Draper, Rebecca Mancy, Murray Crease, Huw Evans, Phil Gray (2003) *Generic usage monitoring of programming students*. In Crisp, G. & Thiele D. (eds) Proceedings of ASCILITE Conference, University of Adelaide, Adelaide, Australia, 1, December 7-10, 2003, pp. 715-719.

Work in Progress

Mancy, R. (in progress) Random and better-than-random processes in biological and social evolution. Presented at ICCS 2007 - *Seventh International Conference on Complex Systems*, 28 October – 2 November 2007, Boston, MA, USA.

Mancy, R. (in progress) *Modes of Discernment and Transfer*. Based on Mancy and Reid (2006).

Mancy, R. (in progress) *Evolution for the future: teaching evolution in a world of complex and shifting epistemologies*.

Conferences

ICCS 2007 - *Seventh International Conference on Complex Systems*, 28 October – 2 November 2007, Boston, MA, USA.

CogSci 2006 – 28th Annual Conference of the Cognitive Science Society, 26-29 July 2006, Sheraton Vancouver Wall Centre, Vancouver, BC, Canada.

ICLS 2006 – International Conference of the Learning Sciences, 27 June – 1 July, Indiana University, Bloomington, Indiana.

CogSci2005 - XXVII Annual Conference of the Cognitive Science Society, 21-23 July, Stresa, Italy.

EARLI: European Association for Research on Learning and Instruction, 23-27 August 2005, Nicosia, Cyprus.

The 6th Annual Conference of the Higher Education Subject Network for Information and Computer Science, 30 August - 1 September 2005, University of York, UK

British Congress of Mathematics Education (BCME6), Routes of Unity, 30 March - 2 April 2005, University of Warwick, UK.

Unroll Your Ideas: a work-in-progress meeting of the Psychology of Programming Interest Group, 15-16 December 2004, University of Nottingham, UK (also on local organising committee)

The 9th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE), 28-30 June 2004, Leeds, UK.

Teaching, Learning and Assessment in Databases (TLAD2), 7 July 2004, Herriot-Watt University, Edinburgh, UK.

LTSN-ICS (Learning and Teaching Support Network, Information and Computer Sciences), 26-28 August 2003, Galway, Ireland.

Psychology of Programming Interest Group (PPIG)

18-21 June 2002: Brunel University, London, UK.

8-10 April 2003: Keele University, Keele, UK.

5-7 April 2004: Carlow Institute of Technology, Carlow, Ireland.

The SRHE 2002 Annual Conference Students and Learning: what is changing? 10-12 December 2002, University of Glasgow

The Evolution of the Intelligent Mind, 15-16 April 2000, King's College London, UK

Research Grants

January 2007: Co-investigator on an EPSRC grant resulting from the EPSRC workshop on Emergence and Complexity described below; Network Grant to keep members of the forum together and link projects over the next 4 years. Funding commences October 2007, for 4 years, with funding to cover 1 hour per week of my time throughout the period. *Miss R Mancy, Department of Educational Studies, Professor L Cronin, Department of Chemistry, Dr Y Merali, University of Warwick and Dr C Cerulli, University of Sheffield. EmergeNET. Four year Research Grant funded by the Engineering and Physical Sciences Research Council to the value of £169,182. Announced 28.01.07.*

October 2006: Faculty Pump Priming grant awarded for a research visit in March 2007 to work with Dr. Manu Kapur of the Learning Sciences Lab, National Institute of Education, Singapore. Project concerned the development of Wikipedia articles using a representation based on evolutionary mechanisms and complexity science.

Autumn 2004: Higher Education Academy, Information and Computer Sciences, Development Fund Grant for the project ExploreCSEd. Award granted in autumn 2004. Value £3000.

Summer 2003: Faculty of Education PhD Studentship, University of Glasgow (tuition fees and maintenance grant from October 2003 - October 2005)

Other Skills and Training

EPSRC Emergence Sandpit

Participation in the EPSRC funded Sandpit event on Emergence (October 2006). The IDEAS Factory event, entitled 'Emergence: how, when and why the whole is greater than the sum of its parts' was an intensive 5-day workshop aimed to develop highly innovative and multi-disciplinary research ideas that would not normally or easily emerge from the research community. All attendees were assessed and selected on the basis of application forms they submitted.

University teaching qualification: New Lecturer and Teacher Programme

The New Lecturer and Teacher Programme (NLTP) is a 2-year programme leading to the award of a Postgraduate Certificate in Academic Practice and eligibility for recognition as a Fellow of the Higher Education Academy (FHEA), UK. Completed August 2007.

New England Complex Systems Institute (NECSI) Summer School MIT, Cambridge, MA

The course, run in June 2007, covered essential concepts of complex systems and related mathematical methods and simulation strategies with application to physical, biological and social systems. It also provided an introduction to building models of complex systems (physical, biological, social and

engineering), network architectures and evolutionary processes. Two supervised group projects formed an integral part of the course; I worked with other researchers to establish quality metrics for Wikipedia articles and on understanding network motifs.

Conference Organisation

Conference: *Theorising and Performing Knowledge: Teaching, Learning and Research, January 2005*. Organisation of an interdisciplinary conference examining the different roles of academics: teachers, learners and researchers. Funded by the Graduate Schools of the Faculty of Arts and Faculty of Education at the University of Glasgow.

Training seminars

One-day courses on Recruitment and Selection, Assertiveness, Publishing Papers in Refereed Journals, Winning Research Income, Negotiating and Influencing, as well as numerous seminars on research tools and techniques.

Other Teaching Experience

1999-1999: Private tutoring in English and Mathematics, working both independently and for a tutoring agency, Ajeta/ARA, in Geneva, Switzerland.

1997: University of Warwick: Peer tutor, involved in launch of a new teaching methodology within the mathematics department. Assisting students experiencing difficulties with new ideas and material.

2002-2005: Postgraduate Tutor, Department of Computing Science, University of Glasgow. Responsibilities included lesson planning, teaching, practical support in laboratory sessions and marking both assignments and examinations.

IT and Programming

- Programming: PHP, ASP, VBA and VBScript, SQL and PLSQL, HTML, Javascript, Python
- Databases: Access, MySQL, Oracle, SQLServer
- Operating Systems: Windows, MacOSX, Linux
- Web page design tools: Dreamweaver/UltraDev, Fireworks, PhotoShop
- Office programs: Microsoft Office (Word, Access, Excel, PowerPoint); Apple: Pages, Keynote
- Publishing software: Pages, Word

English-French Translation

- Feb 2004 – Jun 2004: Participated in a professional translation (French to English) and copy editing of a pedagogical text on Aspect Oriented Programming, based on cutting edge research in information technology.
- Jun 2003 – Jun 2004: Coordinated and organised translations of scientific articles from English to French by translators of varying skill levels. Participated in translating the materials, copy-edited final text.