

Résumé

Name: McCarthy, Timothy John
Date of Birth: 2nd December 1959
Nationality: Irish
Family Status: Married, two children.
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Employer: School of Civil, Mining and Environmental Engineering, Faculty of Engineering, University of Wollongong, NSW 2522, Australia
Position: Professor of Structural Steel & Design
Qualifications: BE, MSc, PhD, MIEI
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Key areas of expertise

Structural Engineering, Computer Aided Design, Artificial Intelligence, Offshore Engineering, Investigating Structural Collapse, Steel structures, Information and Knowledge Management.

EDUCATION

University

1978-1982 University College Cork (U.C.C.)
Degree awarded: First Class Honours B.E. (Civil Engineering) HN Walshe Prize, Peel Memorial Prize

Postgraduate studies

1982-1983 College of Aeronautics, Cranfield University (formerly Cranfield Institute of Technology), Bedford, MK43 0AL, UK, Graduation date: July 1984
MSc in Offshore Structures: *The Dynamic Analysis of Suspended T.L.P. Tethers during Installation.*

1983-1988 Hydraulics Research Laboratory, Department of Civil Engineering, University College Cork, Ireland.
Phd Thesis: *Analysis of wave groups for the determination of low frequency drift forces on floating offshore structures.*
Graduation date: July 1989

PROFESSIONAL EXPERIENCE

Industrial

1978 Ove Arup and Partners, Cork. Student Engineer on building renovation project.
1979 Arup (France), 32 Rue du Louvre, Paris. Trainee Structural Engineer on building renovation project.
1982 Member of Institute of Engineers of Ireland
1986 UMIST Consultancy, CAPCIS and private work. Failure investigations for structural steelwork collapses. Various structural engineering consultancies. Freelance writer for computer aided design magazines.
1996 World Wide Web consultancy for W S Atkins, Civil Engineering Consultants, Manchester, UK
Wormald Ansul (UK) Ltd The effect of INERGEN discharge pressure spikes on the behaviour of enclosures. Risk assessment of structural collapse due to internal pressure spikes in buildings.
1999 Autodesk inc – Productivity study of CAD operators
2000 Glaxo Wellcome, Data Integration and Management Study
2000 Steel Construction Institute – Advisory Board for Design of Curved Steel Members – Specialist Design Guide
2001-3 Barnshaws Section Benders Ltd – Various consultancies on cold formed heavy steel sections
2003 Steel Construction Institute, Silwood Park, Ascot, UK – Senior Engineer (3 month Industrial Secondment)
Development work on steel design codes of practice.

Teaching

1985-2004 **School of Mechanical Aerospace and Civil Engineering, The University of Manchester** (prior to August 2004 this was known as Manchester Centre for Civil and Construction Engineering, UMIST)
Lecturer (1985-1997), Senior Lecturer (1997-present). Subjects include:
INTENGO - This was a pre-first year foundation course. Civil Engineering Tutor (-1994)
1st year - CAD (-2004), Communication Skills (-1993)
2nd year - Design in Metals (- 2002), Computing (-present), Stress Analysis (1995-99)
3rd year - Offshore Engineering (-1999), Steel Design, Stress Analysis
4th year - Bridge Assessment & Design and Enterprise project with local company (2001-2004)
- over 50 Final year projects to date.
MSc - CAD, Steel Design (-2004)

Research supervision at UMIST(see Appendix A for complete list)

1988-2004 36 MSc and MPhil dissertations in the area of Structural Steel Design, Expert Systems, and CAL
1988-1993 PhD student researching knowledge based approach to structural steel hybrid connection design.
1991-1995 PhD (joint supervision with Dr N J Smith) on Expert Systems for mitigation of construction delays.
1992-1994 Post doctoral RA on economic appraisal of steel designs.

1999-2004 PhD on Car park information systems – submitted November 2003 – viva passed Feb 2004
PhD on An Information approach for enhancing the health and safety file – awarded July 2003
Eng Doctorate on Optimization of Metallic Riser Configurations – awarded December 2004

External Examiner Appointments

1996 PhD Civil Engineering, Cardiff University, Bridge Repair Knowledge based system, Hamedani, AJ
1997 PhD Civil Engineering, Cardiff University, Case based Reasoning for Conceptual Design of Bridges, Lehane, M
1999 PhD Civil Engineering, Cardiff University, Genetic Algorithm for Structural Layout, Sisk G
2000 MA, Leeds Business School: Configuration management in aerospace design, McKee, D
2002 MRes Civil Engineering, University of Swansea, 2 candidates: Dynamic Response of Footbridges, Roberts, H and Testing of GRP materials, Curiel Sosa, JL
MEngSc, Civil Engineering, University of Malaya: Management for Construction Contract Management, Berawi, MA
2003 MPhil, Computer Science University of Manchester: Testing consistency of EXPRESS models, Clarke, J

Internal PhD Examiner Appointments at Manchester

1996 PhD Case based reasoning decision support for contractor pre-qualification, Ng, ST
1997 PhD Stress Concentration Factors in Multi-planar Tubular Joints, Jandali, M
2003 PhD Floor vibration induced by walking loads, El-Dardiry, E
PhD Force on yawed circular cylinder oscillating over a plane bed in current, Naeeni, S

In addition I have been internal examiner on approximately 30 MSc theses on Structural Engineering and Construction Management

RESEARCH CONTRACTS

2004 Travel grant to visit MIT, USA in March 2004 EPSRC **£1500**
RAIS award – eValid follow on for site work Total value **£65k** (£33k EPSRC £32k from GSK)
2001-2004 eValid – Improvements to Validation in GMP Total value **£725,000** (£275k EPSRC plus £450k from Pharmaceutical Industry companies) – lead investigator TJ McCarthy
1999-2004 Optimization of Metallic Risers for Deep Water Oil production **£120,000** Eng D project funded by EPSRC and RTI Energy Systems, Houston Texas– lead investigator TJ McCarthy
2003 Royal Academy of Engineering and Steel Construction Institute **£8500** Design Information Requirements for Implementation of the Steel Eurocodes– lead investigator TJ McCarthy
2002-2004 Barnshaws Steel Section Benders Ltd, **£27,300**, 1. Cold formed heavy hexagon and octagon sections 2. Beams with large web openings (Straight and curved Porthole beams) – lead investigator TJ McCarthy
1999-2001 Knowledge and Learning in Construction (KLICON) joint EPSRC project with Lead investigator Prof P Morris and University of Manchester and University of Salford, **£146,000**
1996-1998 Re-engineering the processes of design , production and erection of steel structures. Link/IDAC/EPSRC grant jointly with Professor N J Smith, University of Leeds and Prof D A Nethercot (Lead investigator), University of Nottingham Total **£150k** (EPSRC £77,000 Industrial contribution £73000 -UMIST Contract worth £15000)
1992-1995 Economic Appraisal of Structural Design – An Initial Study based on Tubular Truss Construction EPSRC grant jointly with NJ Smith and lead investigator Professor D A Nethercot, University of Nottingham Total **£180,000** (EPSRC £71,000, Industrial contribution £109,000)
1989 Royal Society Travel Grant, Fellowship of Engineering Travel Grant. **£750**

MANAGEMENT RESPONSIBILITIES

1998-2002 Academic Related Staffs Sub Committee representative on Appointments and promotions panels for academic related staff (e.g Computer Officers, Senior Technicians, Information Systems personnel)
1995-2004 Director of IT at the Manchester Centre for Civil and Construction Engineering with a complement of 2 Computer Officers, 1 Technician and 1 part time assistant.
Schools Liaison Officer – Organise open days in the MCCCE
Manage Research team of 1 academic, 3 post-doctoral, 3 doctoral researchers, fluctuating number of MSc students.
Trained Peer Appraiser – UK universities are required to appraise each member of staff regularly

OVERSEAS CONTACTS

1989 Visited the Waterways Experimental Station of the US Army Corps of Engineers, Vicksburg, Mississippi. Lectured at Karnataka Regional Engineering College, India.
1990 Lectured at COPPE/UFRJ, in Rio de Janeiro in April 1990, as part of a bi-lateral research agreement between that university and UMIST.

1994-1995 Visiting Scholar, Dept. of Civil and Environmental Engineering, Stanford University, California, USA.
2003 Visiting Research Fellow, Department of Computer Science, University of Manchester, UK
Visiting Scholar, Dept. of Civil and Environmental Engineering, Stanford University, California, USA
Fact finding visits to Tokyo Institute of Technology, Kansai University and Muroran Institute of Technology, Japan

PUBLICATIONS/REPORTS Over 50 publications to date covering Structural Steelwork, Applications of Artificial Intelligence to Structural Design, Knowledge Management and Pharmaceutical Engineering - See Appendix B for complete list.

AWARDS

1978 Entrance Scholarship to U.C.C. (2nd place in National examination)
1979,80,81 Course Prize and title College Scholar. (1st place in each year)
1982 H.N. Walshe Memorial Prize, Peel Memorial Graduate Prize,
The N.B.S.T.Scholarship in Petroleum Technology to study overseas at Cranfield University
1983 and 1984 Special Senior Studentship in Civil Engineering to study for PhD at UCC
1996 Performance related pay award of additional double increment above the top of lecturer scale
2000 UMIST Curriculum Development Award £1000 for On-line learning resources
2001 UMIST Teaching Development Award £1000 to develop CAL material
2002 UMIST Teaching Award, **First prize £20,000**
2003 Royal Academy of Engineering, Industrial Fellowship **£8500**

INTERESTS

Languages – French and Japanese (Level 2); Football – Manchester United supporter; Macromedia Flash programming, Gadgets and Gizmos; Art.