

NAME AND CONTACT DETAILS

Kenneth Gavin, Professor of Subsurface Engineering, TU Delft from April 1st 2015.

CAREER PROFILE (Education and Employment)

1994 BEng Civil Engineering, Queens University Belfast (1st Class Honours)

1998 PhD Geotechnical Engineering, Trinity College Dublin

1998-2001 – Senior Geotechnical Engineer, Ove Arup and Partners, Dublin

2001- 2015 – Senior Lecturer, University College Dublin, Director of the UCD Centre for Critical Infrastructure Research

1st April 2015-Present: Professor of Subsurface Engineering, TU Delft

DETAILS OF MOST RELEVANT RESEARCH FUNDING AS LEAD/CO-APPLICANT

Prof. Gavin has won over € 4,000,000 in competitive research funding. He was the coordinator of the EU FP7 Collaborative Project SMARTRail and whilst working at UCD led a research team of 14 people investigating the behaviour of offshore foundation systems and the effects of climate change on civil engineering infrastructure. He currently is the coordinator of a Horizon 2020 Research and Innovation project developing decision support tool for the rail industry.

Table 1 Major research grants with value > €40,000 won at UCD (all budgets solely controlled by PI)

Grant Scheme	Project Title	Start Date	Finish Date	Grant Total
IRC	Risk of climate induced slope failure	01/03/14	30/02/17	€72,000
UK Carbon Trust	PISA Project Academic Work Group	01/08/13	31/12/15	€182,051
SFI US-NI-ROI	Novel Foundations for Green Energy	01/09/13	30/08/16	€391,861
EU FP7	TRA Visions2014	01/05/14	31/10/14	€51,907
Enterprise Ireland	A GBS Foundation for Offshore Wind	01/08/12	31/08/15	€319,054
EU FP7	SMART Rail	01/09/11	31/08/14	€458,000
EI IP Grant	Novel Jacket Structures	01/03/11	29/02.11	€178,276
HEA-PRTLTI	Rate Infrastructure	01/03/11	31/10/16	€250,800
EU FP7	TRA 2012	01/01/11	31/12/12	€108,506
Science Foundation Ireland, (RFP)	The development of foundation systems for offshore wind	01/08/10	31/07/14	€202,758
IRCSET - AIP	Offshore Wind Turbine Foundations	01/08/10	31/07/12	€79,280
IRCSET - Embark Initiative	Optimising the design of foundations for wind turbines	01/10/10	30/09/13	€72,000
EU, FP7 Framework	Advanced safety and driver support in essential road transport (ASSET)	01/08/08	31/12/11	€529,600
IRCSET	Reliability of foundations	01/10/06	30/09/09	€72,009
SEAI/ESBI	Monitoring of wind turbines	01/08/03	31/07/06	€80,000
Irish Rail	Slope stability	01/01/03	31/12/08	€93,750

HISTORY OF MENTORING AND SUPERVISION)

Table 2 List of research students

Student Name	Project Title	Degree	Status
David Gallagher	Axial Capacity of Piles in Soft Clay	PhD	Awarded 2006
Irfan Chatta	Effect of cyclic loading on piles	MSc	Awarded 2006
Jianfeng Xue	Reliability analysis applied to steep slopes	PhD	Awarded 2007
David Igoe	The axial resistance of pipe piles in sand	PhD	Awarded 2010
Paul Doherty	Reliability of Offshore Foundations	PhD	Awarded 2010
Abid Adekunle	Field response foundations for wind turbines	PhD	Awarded 2011
Ali Tolooiyan	FE methods applied to foundations in sand	PhD	Awarded 2011
David Cadogan	Axial capacity of bored piles in sand	PhD	Due Mar. 2016
Lisa Kirwan	Field tests of aging for offshore piles	PhD	Awarded 2015
Weichao Li	Offshore mono pile behaviour	PhD	Awarded 2015
Luke Prendergast	Novel methods to detect bridge scour	PhD	Awarded 2015
Sogol Moshfeghi	FEA analyses in geotechnical engineering	PhD	Awarded 2016
Cormac Reale	Effect of climate change on slope stability	PhD	Awarded 2015
Gerard Murphy	Field investigation of monopile behaviour	PhD	Submitted 2016
Yeganeh Attari	FE Modelling of Tidal Turbines	MSc	Submitted 2016
John Barret	Drive-Drill Piles for Offshore Wind	PhD	Start Sept 2014
Qiang Li	Numerical Modelling of Foundations	PhD	Start Sept 2015

4r

Table 3 Current Post-Doctoral Staff under sole supervision of PI (to PAril 1st 2015)

Name	Contract
Dr. David Igoe	August 2013 to Present (Enterprise Ireland and Carbon Trust)
Dr. Luke Prendergast	August 2015 – Present (Science Foundation Ireland)
Dr. Cormac Reale	August 2015 – Present (Science Foundation Ireland)

INNOVATION/COMMERCIALISATION ACTIVITY (e.g., relevant industry collaborations, invention disclosures, patents, spin-outs)

Ken's research group at UCD was engaged in projects with a number of industrial partners including DONG Energy, Mainstream Renewable Power (MRP), the Irish, Croatian and Slovenian Rail Companies and a number of European SME's. These included the PISA project (with the University of Oxford and Imperial College). This project that was funded by an international consortium of offshore wind developers, government agencies and certification bodies involved large-scale field-testing and numerical analyses to develop a new industry standard design methodology for large diameter monopiles used in the wind offshore wind industry. He has recently applied for a patent for a novel anchor system for offshore floating platforms (with the University of Texas, Rhode Island and Queens University Belfast). Recent projects include full-scale, proof of concept trials of the Keystone twisted jacket, one of the recent winners of the UK Carbon trust future foundations concepts to support the next generation of offshore wind turbines. The GRG are also developing a novel concrete gravity base for use in the offshore wind sector through an Enterprise Ireland commercialization grant. Since April 2015 Ken has been the Professor of Subsurface Engineering at TU Delft. The Chair is sponsored by Rijkwaterstaat (the Dutch Ministry for road and waterways) and the research institute Deltares.

OTHER INFORMATION AS APPROPRIATE

Ken is currently coordinating one Horizon 2020 project, two FP7 projects and has been a Work Package leader in a number of European projects. While at UCD he was an Executive Board

Member of UCD Earth Institute (www.ucd.ie/earth/) and the Director of the UCD Centre for Research on Critical Infrastructure. He is an Associate Editor of the Canadian Geotechnical Journal from 2012 to Present. He is a management board member of the Cost Action TU1202 considering the effect of climate change on engineered slopes and COST TU1406 on Bridge Maintenance. He is a research coordinator with the Federation of European Highway Research Laboratories (FEHRL). Ken has delivered keynote lectures on offshore piles, at ISFOG 2015 held in Oslo, and Slope Stability at CETRA 2014 held in Split, Croatia. He was an invited speaker and conference chair at Piling and Deep Foundations, Sydney, in November 2013, General Reporter at the Int. Conference on Case Histories in Geotechnical Engineering, Chicago 2013 and the International Symposium of Offshore Foundations and Geotechnics (ISFOG), Perth, November 2010, Co-general reporter at the 5th International. Conf. on Case Studies, Washington (2008) and Earthquake Engineering and Soil Dynamics 2010. He is a Member of ISSMGE Technical committee TC 209 on Offshore Geotechnics and TC212 on Deep Foundations. Ken is on the technical advisory board of a number of European projects in the offshore and transport infrastructure sectors.

SECTION 2 – Publication listing

Journal Papers

1. Optimization Technique to Determine the p-y Curves of Laterally Loaded Stiff Piles in Dense Sand, Geotechnical Testing Journal, <http://dx.doi.org/10.1520/GTJ20140257>. ISSN 0149-6115. Jianfeng Xue, Kenneth Gavin, Gerry Murphy and Paul Doherty. (In Press) Geotechnical Testing Journal.
2. Determining the presence of scour around bridge foundations using vehicle-induced vibrations, Luke Prendergast, David Hester and Kenneth Gavin, Accepted for publication in ASCE Journal of Bridge Engineering, January 2016.
3. Field experiments on instrumented Winged Monopiles, Gerry Murphy, Paul Doherty, David Cadogan and Kenneth Gavin, ICE Journal of Geotechnical Engineering Volume 169 Issue 3, June, 2016, pp. 227-239
4. Development of a Vehicle-Bridge-Soil Dynamic Interaction Model for Scour Damage modelling, Luke Prendergast, David Hester and Kenneth Gavin, Accepted for publication in Journal Shock and Vibration, Volume (2016), Article ID 7871089, 15 pages, <http://dx.doi.org/10.1155/2016/7871089>
5. A comparison of initial stiffness formulations for small-strain soil-pile dynamic Winkler modelling, Luke Prendergast and Kenneth Gavin Journal of Soil Dynamics and Earthquake Engineering, Volume 81, February 2016, Pages 27–41 (2016).
6. System reliability of slopes using multimodal optimization, Cormac Reale, Jianfeng Xue and Kenneth Gavin, Geotechnique. Volume 66 Issue 5, May, 2016, pp. 413-423
7. An investigation into the effect of scour on the natural frequency of an offshore wind turbine, Prendergast, L.J., Gavin, K., Doherty, P., Ocean Engineering 101 (2015), pp1–11
8. Field Validation of Fibre Bragg Grating sensors for measuring strain on driven steel piles, Geotechnique Letters, Paul Doherty, David Igoe, Gerry Murphy, Kenneth Gavin, James Preston, Rory O'Rourke, B.W. Byrne, R. McAdam, H.J. Burd, G.T. Houlsby, C.M. Martin, L. Zdravković, D.M.G. Taborda, D.M. Potts, R.J. Jardine, M. Sideri, F.C. Schroeder, A. Muir Wood, D. Kallehave and J. Skov Gretlund, (2015).
9. Deterministic and probabilistic multi-modal analysis of slope stability, Reale, C. Xue. J, Pan, Z and Gavin, K. Computers and Geotechnics, Volume 66, May 2015, Pages 172–17.
10. Field tests to investigate the cyclic loading response of monopiles in sand, Li, W, Igoe, D. and Gavin, K, Proceedings of the ICE Journal of Geotechnical Engineering, Accepted. January 2015.
11. Evaluation of CPT-based P–y models for laterally loaded piles in siliceous sand (2014),, Li, W, Igoe, D and Gavin, K. Geotechnique Letters, Vol 4, Issue April, pp 110-117

12. A review of bridge scour monitoring techniques. LJ Prendergast, K Gavin *Journal of Rock Mechanics and Geotechnical Engineering* 6 (2), 138-149, 2014.
13. Field investigation of the axial resistance of helical piles in dense sand (2014), Gavin, K, Tolooiyan, A and Doherty, P. *Canadian Geotechnical Journal*, Vol. 51, No 11: pp 1343-1354, 10.1139/cgj-2012-0463
14. An Investigation of the Changes in the Natural Frequency of a Pile affected by Scour, Luke J. Prendergast; David Hester; Kenneth Gavin; John O'Sullivan, *Journal of Sound and Vibration*, (2013), Vol 332 (25) pp 6685-6702
15. An investigation into the use of push-in pile foundations by the offshore wind sector, David Igoe, Kenneth Gavin and Brendan O'Kelly, *International Journal of Environmental Studies* (2013), Vol 70, No.5 , pp 777-791., DOI:10.1080/00207233.2013.798496
16. The effect of ageing on piles in sand, Kenneth Gavin, David Igoe and Lisa Kirwan, Published in a Special Edition of *ICE Journal of Geotechnical Engineering on the Geotechnical challenges of renewable energy projects*, Vol. 166, Issue 2. April 2013.
17. Pile ageing in cohesive soils, Paul Doherty and Kenneth Gavin, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, (2013), Vol 139 No), pp 1620–1624,doi: 10.1061/(ASCE)GT.1943-5606.0000884
18. The base resistance of non-displacement piles in sand. Part I: Kenneth Gavin; David Cadogan; Ali Tolooiyan, Patrick Casey, *Proceedings of the ICE - Geotechnical Engineering*, Volume 166, Issue 6, April 2013 pages 540 –548
19. The base resistance of non-displacement piles in sand. Part II: finite-element analyses Ali Tolooiyan and Kenneth Gavin. *Proceedings of the ICE - Geotechnical Engineering*, Volume 166, Issue 6 Volume 166, Issue 6, December 2013 , pages 549 - 560
20. An investigation of correlation factors linking footing resistance on sand with cone penetration test results, K.G. Gavin and A. Tolooiyan, *Computers and Geotechnics*, (2012). Volume 46, November, pp 84-92.
21. Axial cyclic and rapid load tests on displacement piles in soft clay, Paul Doherty and Kenneth Gavin, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, Vol.138, No. 8, pp 1022-1026, August 2012.
22. A review of current monopile design practice for offshore wind turbines, Paul Doherty and Kenneth Gavin, *ICE Energy Engineering Journal*, Volume 165, Issue 1, (2012) available online from December 19th, 2011, doi: 10.1680/ener.11.00003, (In Press).
23. Modelling the Cone Penetration Test in Sand Using Cavity Expansion and Arbitrary Lagrangian Eulerian Finite Element Methods. Ali Tolooiyan and Kenneth Gavin, *Computers and Geotechnics*, *Computers and Geotechnics*, 2011, Volume 38, No.4, pp 482-490. Accepted February 22nd 2011. doi:10.1016/j.compgeo.2007.04.002
24. The shaft capacity of open-ended piles in clay, Paul Doherty and Kenneth Gavin, *ASCE Journal of Geotechnical and Geoenvironmental Engineering* (2011), Volume 137, No.11, p1090-1102. doi:10.1061/(ASCE)GT.1943-5606.0000528
25. Case study of an enquiry based learning course in civil engineering, Kenneth Gavin, *European Journal of Engineering Education* (2011), Vol. 36 Issue 6, p547-558, December. 12p; DOI: 10.1080/03043797.2011.624173.
26. Piles for offshore wind turbines: A state of the art review, Kenneth Gavin, David Igoe and Paul Doherty, In *Proceedings of ICE Journal, Geotechnical Engineering*, (2011) Volume 164, Issue 4, pp 245-256.
27. The shaft capacity of displacement piles in clay – a state of the art review, Paul Doherty and Kenneth Gavin, *Geotechnical and Geological Engineering*, Volume 29, No.4 (2011) pp 389-410. DOI 10.1007/s10706-010-9389-2
28. Use of geophysical techniques to examine slope failures, Shane Donohue, Kenneth Gavin and Ali Tooliyan, *Journal of Near Surface Geophysics*. Vol 9, No.1, February 2011, pp 33-44, DOI: 10.3997/1873-0604.2010040

29. The shaft capacity of pipe piles in sand, David Igoe, Kenneth Gavin and Brendan O'Kelly, ASCE Journal of Geotechnical and Geoenvironmental Engineering,(2011) Vol 137, No.10, pp 903-912 DOI 10.1061/(ASCE)GT.1943.5606.0000511.
30. Laying the foundations for sustainable energy: the geotechnical challenges facing the offshore wind sector, Paul Doherty, Bernard Casey and Kenneth Gavin, The Engineers Journal, pp 262-266, July 2010
31. Field investigation of the effect of installation method on the shaft resistance on piles in clay. K.Gavin, D.Gallagher, Paul Doherty and B.McCabe, Canadian Geotechnical Journal. Vol. 47, No.7 July 2010, pp 730-741. DOI: 10.1139/T09-146.
32. Development and testing of an instrumented open-ended pile, David Igoe, Paul Doherty and Kenneth Gavin, ASTM Geotechnical Testing Journal, Vol. 33, No. 2, pp 1-12, (2010).
33. Design charts for the stability analysis of unsaturated soil slopes' Kenneth Gavin and Jianfeng Xue, Journal of Geotechnical and Geological Engineering, Vol 28 pp 79-90 (2010). DOI 10.1007/s10706-009-9282-z
34. Curriculum design for a second cycle master of civil engineering programme, Kenneth Gavin, Submitted to the European Journal of Civil Engineering Education, Vol. 35, Issue 2 June 2010, pp 175-185. DOI: 10.1080/03043790903511086
35. Field investigation of the base resistance of pipe piles in clay, Paul Doherty, Kenneth Gavin and David Gallagher, Proceedings of ICE Journal of Geotechnical Engineering, February 2010, Vol. 163, GE1, pp 13-22, DOI 10.1680/geng.2009.163.1.1
36. A field investigation of vertical footing response on sand. K.Gavin, A.Adekunte & B.O'Kelly, Proceeding of ICE, Geotechnical Engineering, Vol.162, Issue GE5, pp 257-267, DOI 10.1680/geng.2009.I 62.5.257, October 2009.
37. 'The shaft capacity of CFA piles in Sand' K.Gavin, D.Cadogan and Patrick Casey, ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 135, Issue 6, 2009, pp 790-798. DOI: 10.1061/(ASCE)GT.1943-5606.0000073
38. Development of Design Practice for Piles in Stiff Glacial Till, Kenneth Gavin, Journal of the Deep Foundations Institute, Volume 3, No.1, pp 22-31. May 2009.
39. 'Use of a genetic algorithm to perform reliability analysis of unsaturated soil slopes' K.Gavin & J.Xue, Geotechnique, Vol. 59, No. 6, 2009, pp 545-549. DOI 10.1680/geot.8.T.004
40. Axial resistance of CFA piles in Dublin boulder clay' K.Gavin, D.Cadogan and L.Twomey, Proceedings of ICE, Geotechnical Engineering, Vol. 161, Issue 4, pp. 171-180. August 2008. DOI 10.1680/geng.2008.161.4.171
41. Effect of rainfall intensity on infiltration into partly saturated slopes' J.Xue and K.Gavin, Journal of Geotechnical and Geological Engineering, Volume 26, No. 2, April 2008, pp 199-209. DOI 10.1007/s10706-007-9157-0.
42. 'A simple method to analyse infiltration into unsaturated slopes' K.Gavin & J.Xue, Computers and Geotechnics, Volume 35, Issue 2, March 2008, pp 223-230.
43. 'Base Load-Displacement Response of Piles in Sand' K.G.Gavin & B.M.Lehane, Canadian Geotechnical Journal, Vol. 44, No. 9, September 2007, pp 1053-1063.
44. Effect of friction fatigue on piles in dense sand' K.Gavin & B.O'Kelly. ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol.133, No.1, January 2007, pp 63-71.
45. Simultaneous determination of the critical slip surface and reliability index of earth slopes using a genetic algorithm' J.Xue and K.Gavin, ASCE Journal of Geotechnical and Geoenvironmental Engineering, Volume 133, No.7, July 2007, pp 878-886.
46. Development of Shaft Friction on Driven Piles in Sand and Clay' Kenneth Gavin & David Gallagher. Paper Presented to Engineers Ireland, 10th October 2005. Trans IEI 2005. (Geotechnical Prize Paper). Published on www.ei.ie in October 2005

47. 'The Shaft capacity of pipe piles in sand' K.G.Gavin & B.M.Lehane, Canadian Geotechnical Journal, Vol. 40, No.1, pp36-45, (2003), doi:10.1139/t02-093
48. 'Experimental investigation of the factors affecting the base resistance of open-ended piles in sand'. B.M.Lehane & K.G.Gavin. Journal of Geotechnical and Geoenvironmental Engineering, ASCE Vol. 127, No. 6, June (2001). doi:10.1061/(ASCE)1090-0241(2001)127:6(473)
49. Research on the axial capacity of pipe piles in sand' Gavin K. and Lehane B.M. Trans Inst. of Engng of Ireland, 2000, 124, 30-47. (Geotechnical Prize Paper).

Conference Papers

1. Gavin, K., Jardine, R.J., Karlsrud, K. and Lehane, B.M. (2015). The Effects of Pile Ageing on the Shaft Capacity of Offshore Piles in Sand. Keynote paper. Proc. international Symposium Frontiers in Offshore Geotechnics (ISFOG), Oslo. In Press to appear June 2015, p 25.
2. Estimation of spudcan penetration using a probabilistic Eulerian finite element analysis (2015), S. Fallah, K. Gavin & E. Moradabadi, International Symposium on Frontiers in Offshore Geotechnics, Oslo, June
3. In situ and laboratory tests in dense sand investigating the helix-to-shaft ratio of helical piles as a novel offshore foundation system (2015), G. Spagnoli, K.Gavin, C.Brangan and S.Bauer. International Symposium on Frontiers in Offshore Geotechnics, Oslo, June
4. New design methods for large diameter piles under lateral loading for offshore wind applications BW Byrne, R McAdam, HJ Burd, GT Houlsby, CM Martin, L Zdravković, DMG Taborda, DM Potts, RJ Jardine, M Sideri, FC Schroeder, K Gavin, P Doherty, D Igoe, A Muir Wood, D Kallehave, J Skov Gretlund (2015) International Symposium on Frontiers in Offshore Geotechnics, Oslo, June
5. Numerical modelling of large diameter piles under lateral loading for offshore wind applications (2015) L Zdravković, DMG Taborda, DM Potts, RJ Jardine, M Sideri, FC Schroeder, BW Byrne, R McAdam, HJ Burd, GT Houlsby, CM Martin, K Gavin, P Doherty, D Igoe, A Muir Wood, D Kallehave, J Skov Gretlund, International Symposium on Frontiers in Offshore Geotechnics, Oslo, June
6. Field testing of large diameter piles under lateral loading for offshore wind applications (2015) BW Byrne, RA McAdam, HJ Burd, GT Houlsby, CM Martin, K Gavin, P Doherty, D Igoe, L Zdravković, DMG Taborda, DM Potts, RJ Jardine, M Sideri, FC Schroeder, A Muir Wood, D Kallehave, J Skov Gretlund, Proceedings of the 16th European Conference on Soil Mechanics and Geotechnical Engineering, Edinburgh, UK
7. Spagnoli, G. and Gavin, K. (2015) Helical Piles as a Novel Foundation System for Offshore Piled Facilities, Abu Dhabi International Petroleum Exhibition and Conference, 9-12 November, Abu Dhabi, UAE
8. Igoe, D, Gavin, K.G. and O'Kelly, B. (2015). The influence of residual load on the axial load-displacement response of piles, Transport Research Board, Washington, January.
9. Ní Choine. M, O'Connor, A. Gehl, P. D'Ayla, D. Garcia-Fernandez, M, Jimenez, M.J, Gavin, K., Van Gelder, P, Salceda. T and Power. R. (2015) A Multi Hazard Risk Assessment Methodology Accounting for Cascading Hazard Events, 12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12, Vancouver, Canada, July 12-15, 2015
10. Murphy, G, Doherty, P, Gavin, K. Cadogan, D and Ward, D (2014) Characterisation of two dense sand sites using in-situ tests *3rd International Symposium on Cone Penetration Testing*
11. Prendergast, L.P, Gavin, K.G. and Igoe, D (2014) Dynamic Soil-Structure interaction modelling using stiffness derived from in-situ cone Penetration testing *3rd International Symposium on Cone Penetration Testing*

12. Doherty, P., Murphy, G., Igoe, D., Gavin, K., 2014. Determination of a dynamic Young ' s modulus from in-situ tests. In: 3rd International Symposium on Cone Penetration Testing, Las Vegas, Nevada, USA - 2014. pp. 645–654.
13. Prendergast, L and Gavin, K. (2014) Monitoring of scour critical bridges using changes in the natural frequency of vibration of foundation piles - A field investigation *Transport Research Arena 2014*
14. Igoe, D., Kirwan, L., & Gavin, K. G (2014) Ageing effects and CPT based design methods for driven piles in sands *3rd International Symposium on Cone Penetration Testing, Nevada*
15. Gavin, K. Reale, C and Xue, J. (2014) Geotechnical challenges for the European TEN-T network, Keynote Paper at the *3rd International Conference of Road and Rail Infrastructure , CETRA, Split, Croatia*
16. Stipanovic, I, Tan, X. and Gavin, K (2014) European existing rail-tracks: Overview of typical problems and challenges *3rd International Conference of Road and Rail Infrastructure , pp.341-348*
17. Li, W. Gavin, K, Igoe, D and Doherty, P. (2014) Review of design models for lateral cyclic loading of monopiles in sand *International Conference on Physical Modelling in Geotechnical Engineering*
18. Prendergast, L and Gavin, K.G. (2014) Bridge scour monitoring using accelerometers placed on bridge piers - A numerical investigation *3rd International Conference of Road and Rail Infrastructure*
19. Doherty, P., Prendergast, L.J., Murphy, G., Gavin, K., 2014. Design Tools Available for Monopile Engineering. In: Proceedings of the European Wind Energy Conference, At Barcelona, Spain.
20. Prendergast, L.P., Gavin. K.G. and Doherty, P. (2014). The effect of scour on the dynamic response of an offshore wind turbine, Proceedings of the Civil Engineering Research in Ireland (CERI) Conference, Belfast, August.
21. Fallah, S and Gavin, K. (2014) Finite element analyses of the installation of offshore foundations, Proceedings of the Civil Engineering Research in Ireland (CERI) Conference, Belfast, August.
22. Jalilvand, S., Gavin, K. and Doherty, P. (2014) Implications of geometrical variations on the pull-out capacity of plate anchors, Proceedings of the Civil Engineering Research in Ireland (CERI) Conference, Belfast, August
23. Prendergast, L.P., Doherty, P. and Gavin K.G. (2013). The effect of variation in soil stiffness on the dynamic response of an offshore wind turbine, Proceedings of the European Wind Energy Association Offshore Conference, Amsterdam
24. Gavin, K. et al. (2014) General report on Session 2- Case Histories of Unexpected Behaviour, International Conference on Case Histories in Geotechnical Engineering, April 29th to May 4th, Chicago. International Conference on Case Histories in Geotechnical Engineering
25. P. Doherty, L.Kirwan, K.Gavin, D.Igoe, S.Tyrrell , D.Ward and Brendan O'Kelly (2012) Soil Properties at the UCD Geotechnical Research Site at Blessington *National Bridge and Concrete Research in Ireland , pp.451-456*
26. G. Murphy, D.Cadogan, P. Doherty and K. Gavin (2012) Experimental investigation of novel foundation solutions for Wind Turbines *National Bridge and Concrete Research in Ireland , pp.457-462*
27. T. Byrne, P. Doherty and K.Gavin (2012) Applying static capacity approaches to pile driveability analysis for dense sands *National Bridge and Concrete Research in Ireland , pp.451-456*
28. L. Prendergast, K.G. Gavin, J.O'Sullivan, (2012) Non-intrusive bridge scour analysis using a laboratory test apparatus *Bridge and Concrete Research in Ireland Conference , pp.199-204*

29. C.Reale, K.Gavin. A.O'Connor (2012) A laboratory experiment to measure soil matrix suction and examine the effect of infiltration *Bridge and Concrete Research in Ireland Conference* , pp.253-258
30. Kenneth Gavin, Irina Stipanovic Oslakovic, Marko Vajdic, Goran Puz and Velimir Sporic (2012) Smart Maintenance and Analysis of Railway Transport Infrastructure *CETRA 2012*
31. Igoe, D., Kirwan, L., & Gavin, K. G (2012) Investigation into the factors affecting the shaft resistance of driven piles in sands *International Conference on Installation Effects in Geotechnical Engineering*
32. P. Doherty, K. Gavin and D. Igoe, (2012) Dynamic analysis of pile driving in dense sand *National Bridge and Concrete Research in Ireland* , pp.505-510
33. K. Gavin, P. Doherty and D. Murphy, (2012) The use of helical piles in glacial soils *National Bridge and Concrete Research in Ireland*
34. L. Kirwan, K. Gavin and D. Igoe, (2012) Development of an instrumented pile to investigate pile ageing *National Bridge and Concrete Research in Ireland*
35. Kenneth Gavin (2012) Use of project based learning to teach geotechnical design skills to civil engineering students *Shaking the Foundations of Geotechnical Engineering*
36. Kenneth Gavin (2012) The use of case histories to encourage reflection by civil engineering design students . In: Bryan McCabe and Marina Pantazidou eds. *Shaking the Foundations of Geotechnical Engineering* Galway,
37. Gavin, K., O'Connor, A.J., OBrien, E.J., Tucker, M. (2012) Sustainable Maintenance and Analysis of Rail Transport Infrastructure (SMART rail) . In: A.J. O'Connor, C.C. Caprani eds. *Bridge & Concrete Research in Ireland* , pp.529-533
38. OBrien, E.J., Taheri, A., Gavin, K. (2012) Influence of Subgrade Subsidence on Train Track Dynamic Interaction *CIVIL-COMP* Gran Canaria, Spain,
39. David Igoe, Ken Gavin, Brendan O'Kelly and Brian Byrne (2012) The use of in-situ site investigation techniques for the axial design of offshore piles *International Conference on Site Characterisation*
40. Tiernan Byrne, Paul Doherty, Ken Gavin and Robert Overy (2012) Pile driving measurements from offshore platforms *Society of Underwater Technology*
41. Shane Donohue, Kenneth Gavin and Ali Tolooiyan (2012) Railway earthwork stability assessment using geophysics *International Conference on Site Characterisation*
42. Doherty P., Gavin K. and Casey B.; (2011) The geotechnical challenges facing the offshore wind sector *Geofrontiers* Dallas, Texas, USA,
43. Kenneth Gavin, Paul Doherty, Lloyd Twomey and Jaime Bevin; (2011) Installation and static load resistance of pipe piles in glacial till *15th European Conference on Soil Mechanics and Geotechnical Engineering* Athens, Greece,
44. Paul Doherty, Kenneth Gavin and Bernard Casey; (2011) A parametric study on pile drivability for large diameter offshore monopiles *15th European Conference on Soil Mechanics and Geotechnical Engineering* Athens, Greece,
45. Paul Doherty, Kenneth Gavin and Weichao Li; (2011) The impact of soil autocorrelation on pile load-displacement behaviour *2011 Pan-Am CGS Geotechnical Conference* Toronto,
46. Doherty, P & Gavin, K; (2011) Aged reloading of piles in clay *Deep Foundations Institute 36th Annual Conference 2011* Boston,
47. Gavin, K & Doherty, P; (2011) The importance of measuring small strain stiffness in site investigations for wind farm foundations *Geophysical Association of Ireland, Seminar on Engineering Geophysics* Dublin, , pp.46-49
48. David Cadogan, Kenneth Gavin and Ali Tolooiyan; (2010) Physical model testing and FE analyses of the base resistance of bored piles in sand . In: Springman, Laue and Seward eds. *International Conference on Physical Modelling in Geotechnical Engineering* Zurich, , pp.739-744

49. Paul Doherty and Kenneth Gavin; (2010) A comparative investigation of the installation stresses on closed and open-ended model piles in soft clay . In: Springman, Laue and Seward eds. *International Conference on Physical Modelling in Geotechnical Engineering Zurich*, , pp.751-756
50. Ali Tolooiyan, Kenneth Gavin and David Cadogan; (2010) Finite element analysis of the Cone Penetration Test for the design of bored piles . In: Paul Mayne eds. *2nd International Symposium on Cone Penetration Test (CPT10)*
51. Paul Doherty and Kenneth Gavin; (2010) A statistical review of CPT data and the implications for pile design . In: Paul Mayne eds. *2nd International Symposium on Cone Penetration Test (CPT10)* California,
52. David Igoe, Kenneth Gavin and Brendan O'Kelly; (2010) Field tests using an instrumented model pipe pile in sand . In: Springman, Laue and Seward eds. *International Conference on Physical Modelling in Geotechnical Engineering Zurich*, , pp.775-780 Pedro de Alba,
53. Kenneth Gavin, Monica Prezzi and Theodoros Triantafyllidis; (2010) Dynamic Properties of Soil: Laboratory and Field Methods, Large Scale Testing, General Report on Session 1 . In: Shamsher Prakash eds. *5th International Conference in Geotechnical Earthquake Engineering and Soil Dynamics*
54. Doherty P. and Gavin K.; (2010) The installation resistance of open-ended piles . In: S. Springman eds. *Proc. of the International Conference on Physical Modelling Zurich*, Switzerland, , pp.751-756
55. Gavin K., Doherty P., Bevin J. and Twomey L.; (2010) Use of non-linear load-settlement model for predicting pile behaviour *Proc. of the Bridge and Infrastructure Research Conference* Cork, Ireland,
56. Doherty P., Igoe D. and Gavin K. ; (2010) Instrumented static pile load testing Field procedures, data interpretation and recent developments *Proc. of the Bridge, Concrete and Infrastructure Conference* Cork, Ireland,
57. Doherty P. and Gavin K.; (2009) Experimental investigation of the effect of shearing rate on the capacity of piles in soft silt . In: Iskander M., Laefer D., and Hussein M eds. *In, A.S.C.E. Contemporary Topics in Deep Foundations G.S.P. 185, Proc. of the International Foundation Congress and Equipment Expo* Orlando, Florida, USA, , pp.575-582
58. Doherty P. and Gavin K.; (2008) Degradation of axial shaft resistance of piles in soft clay due to cyclic loading. In: Prakash, S eds. *In Proc. of the 6th International Conference on Case Histories* Arlington, Virginia, USA,
59. Jianfeng Xue and Kenneth Gavin; (2008) Infiltration analysis in unsaturated soil slopes . In: David Toll eds. *First European Conference on Unstaurated Soil* Durham University, , pp.823-827
60. David Igoe, Kenneth Gavin and Brendan O'Kelly; (2008) Field measurement of the base resistance of a pipe pile in medium dense sand. In: Brown et al eds. *2nd International Conference on Foundation Behaviour* Dundee, pp.149-158
61. Bryan Mc Cabe, Kenneth Gavin and MAeve Kenneally; (2008) Installation of a reduced, scale pile group in silt. In: Brown et al eds. *2nd International Conference on foundation behavior*, Dundee, , pp.607-616
62. Rodrigo Salgado, Dipanjan Basu, Kenneth Gavin, Sanjeev Kumar, Gloria Alvarez and Syed Ahmad; (2008) Analysis, design, testing and performance of foundations. In: Shamser Prakash eds. *6th International Conference on Case Histories* Arlington, Virginia, USA, , pp.1-24
63. Paul Doherty and Kenneth Gavin; (2008) Degradation of axial shaft resistance of piles in soft clay due to cyclic loading . In: Shamsher Prakash eds. *6th International Conference on Case Histories* Arlington, Virginia, , pp.1-8
64. David Gallagher and Kenneth Gavin; (2007) An investigation of the effect of partial plugging on the shaft capacity of open-ended piles in clay . In: Howard Olsen eds. *GeoDenver 2007* Denver,

65. Kenneth Gavin, David Gallagher and Bryan McCabe; (2007) Design of Piles in Soft Clay *Proceedings of Seminar of Soft Ground Engineering*
66. Jianfeng Xue and Kenneth Gavin; (2007) Validation and application of reliability analysis of soil slopes using a global optimisation method *First International Symposium on Geotechnical Risk and Safety* Shanghai,
67. Gavin, K, Adekunle, A.; (2006) Physical Modelling of Onshore Wind Turbine Foundation Behaviour. In: Ng,Zhang and Wang eds. *International Conference on Physical Modelling in Geotechnical Engineering* Hong Kong, China,
68. Gavin, K., Chatta, I. O'Kelly, B.; (2006) Field Measurements of Horizontal Stress on an Instrumented Pile in Sand. In: D.DeGroot eds. *GeoCongress, Geotechnical Engineering in the Information Age* Atlanta,
69. Gallagher, D. Gavin, K.; (2006) Experimental Investigation of Local Stress Changes on Closed Ended Pile in Silt During Load Testing *International Symposium on Ultimate Limit States of Geotechnical Structures* Paris,
70. Gavin, K., Xue, J.F. Jennings, P.; (2006) Assessment of the effect of pore pressures on the behaviour of railway foundations *XIIth Danube-European Conference on Geotechnical Engineering* Lubjana,
71. Cadogan, D. Gavin, K.; (2006) Examination of Scale Effects During Field Tests on Model Bored Piles in Over-Consolidated Sand. In: Ng,Zhang and Wang eds. *International Conference on Physical Modelling in Geotechnical Engineering* Hong Kong,
72. David Igoe, Kenneth Gavin and Brendan O'Kelly; (2006) The base resistance of an open-ended pile installed in medium dense sand *Proceedings of the 3rd National Bridge and Transportation Infrastructure Symposium*
73. David Cadogan, Kenneth Gavin and Lloyd Twomey; (2006) Axial Capacity of CFA piles *3rd National Bridge and Transportation Infrastructure Symposium*
74. Jianfeng Xue and Kenneth Gavin; (2006) Infiltration analysis for partly saturated soil slopes *3rd National Bridge and Transportation Infrastructure Symposium*
75. Paul Doherty, Paul Casey and Kenneth Gavin; (2006) Suitability of Macamore clay as an embankment fill and the role of soil suction in embankment stability *3rd National Bridge and Transportation Infrastructure Symposium*
76. David Gallagher and Kenneth Gavin; (2006) Investigation of depth effects on shaft friction of piles in Clay *19th Australasian Conference on the Mechanics of Structures and Material*
77. David Gallagher and Kenneth Gavin; (2006) Experimental Investigation of Open and Closed Ended Piles in Clay *19th Australasian Conference on the Mechanics of Structures and Material*
78. Abidemi Adekunle, K.Gavin & Bernard Casey; (2005) Comparison of monitored wind turbine behaviour with design prediction *International Conference on Soil-Structure Interaction: Calculation Methods and Engineering Practice* Saint Petersburg,
79. Gavin, K. Lehane, B.; (2005) Estimating the end bearing resistance of pipe piles in sand using the final filling ratio . In: S.Gouvernec and M.Cassidy eds. *Proceedings of International Symposium on Offshore Geotechnics* Perth,
80. Cadogan, D. Gavin, K.; (2005) Field Tests on Model Bored Piles in Over-Consolidated Sand' *2nd International Young Geotechnical Engineers Conference* Osaka,
81. K.Gavin and B.Lehane; (2005) Estimating the end bearing resistance of pipe piles in sand using the final filling ratio *International Symposium on Offshore Geotechnics* Perth.
82. David Gallagher, Kenneth Gavin and Bryan Mc Cabe; (2005) Use of in-situ test methods to model the installation process of closed ended piles in soft clay *International Symposium on Pressuremeter Testing* Paris, France,
83. Gavin, K. O'Kelly, B. Adekunle, A. and Donohue, S.; (2005) The use of the cone penetration test to derive parameters for shallow foundation design *International*

- Conference on Soil-Structure Interaction: Calculation Methods and Engineering Practice* St. Petersburg, , pp.455-460
84. Gavin K., O'Kelly B., Adekunle A., Casey B. and Donohue S.; (2005) Use of the Cone Penetration Test to derive parameters for shallow foundation design *International Conference on Soil-Structure Interaction: Calculation Methods and Engineering Practice* Saint Petersburg, , pp.455-460
 85. O'Sullivan and Gavin; (2004) Exploring the micro mechanisms of open ended piles via discrete element modelling *SPECIAL PUBLICATION- ROYAL SOCIETY OF CHEMISTRY, 2004, VOL 292, pages 193-204 ISSN: 0260-6291* , pp.193-204
 86. D.Gallagher, K.Gavin, B.McCabe & B.Lehane; (2004) Experimental investigation of the Response of a Driven Pile in Soft Silt *18th Australasian Conference on the Mechanics of Structures and Material* Perth,
 87. Donohue, S., Long, M, O'Connor, P. and Gavin, K.; (2004) Use of multichannel analysis of surface waves in determining G_{max} for soft clay *Proc 2nd. Int Conf on Geotechnical Site Characterisation, ISC'2* Porto, , pp.459-466
 88. Donohue, S., Long, M., Gavin, K. and O'Connor, P.; (2004) The Use of multichannel analysis of surface waves in determining G_{max} for soft clay *International Site Characterization 2 (ISC 2) conference* Porto, Portugal, , pp.459-466
 89. Donohue, S., Long, M., Gavin, K. and O'Connor, P.; (2004) The Use of multichannel analysis of surface waves in determining G_{max} for soft clay *Conference on International Site Characterization 2 (ISC 2)* Porto, Portugal, , pp.459-466
 90. S.Donohue, M.Long, K.Gavin & P.O'Connor; (2004) Shear Wave Stiffness of Irish Glacial Till *International Conference of Site Characrerisation* Porto, Portugal, , pp.459-466
 91. Donohue, S., Gavin, K., Long, M. and O'Connor, P. ; (2003) G_{max} from Multichannel Analysis of Surface Waves for Dublin Boulder Clay . In: Vanicek et al eds. *XIIIth European Conference on Soil Mechanics and Geotechnical Engineering, Vol. 2* Prague, , pp.515-520
 92. K.Gavin & BM Lehane; (2003) End Bearing Resistance of Small Diameter Pipe Piles in Dense Sand *Proceedings of the International Conference on Foundation Behaviour* Dundee, , pp.321-230
 93. K.Gavin; (2003) Construction Technologies-Chairman's Report *Proceedings of the 13th European Conference on Soil Mechanics and Foundation Engineering* Prague, Czech Republic, , pp.375-378
 94. K.G.Gavin, C Prieto, and B.M.Lehane; (2003) The development of skin friction on pipe piles in sand *Proceedings of the 13th European Conference on Soil Mechanics and Foundation Engineering* Prague, Czech Republic, , pp.161-166
 95. S. Donohue & K.Gavin; (2003) Determination of the shear stiffness of Dublin boulder clay using geophysical techniques *Proceeding of the 13th European Conference on Soil Mechanics and Foundation Engineering* Prague, Czech Republic, , pp.515-520
 96. Donohue, S., Gavin, K, Long, M. and O'Connor, P.; (2003) G_{max} from multichannel analysis of surface waves for Dublin boulder clay. In: Vanicek et al eds. *Proc. 13th. ECSMGE* Prague, , pp.515-520
 97. Long, M., Brangan, C. and Gavin, K.; (2002) Behaviour of cantilever retaining walls *4th. Int. Sym. on Geotechnical Aspects of Underground Construction in Soft Ground (IS-Toulouse 2002)*, Toulouse, France, October Toulouse, France,
 98. Prieto, C.P, and Gavin, K.G; (2002) Research on the base capacity of pipe piles in sand *European Young Geotechnical Engineers Conference* Dublin, Ireland,
 99. K.Gavin; (2000) The Shaft Capacity of Pipe Piles *Proceeding of First International Young Geotechnical Engineers Conference* Southampton,
 100. K.G. Gavin and B.M. Lehane; (1998) Estimating end bearing capacities of driven piles in sand using In-situ tests *Proceedings VII International Conference On Piling and Deep Foundations* Vienna, Austria,

101. K.G. Gavin and B.M. Lehane; (1997) The Behaviour of open and closed ended piles jacked into loose sand *Proceedings of the XIV International Conference on Soil Mechanics and Foundation Engineering* Hamburg, Germany, , pp.1159-1162
102. K.G. Gavin and B.M. Lehane; (1996) The reliability of conventional design methods for driven piles in sand *Proceedings VI International Conference On Piling and Deep Foundations* Bombay, pp.51-56