

# Gordon Ashley Fenton

## *Curriculum Vitae*

---

Department of Engineering Mathematics  
Dalhousie University  
Halifax, Nova Scotia, Canada  
B3H 4R2  
(902) 494-6002

42 Arlington Ave.  
Halifax, Nova Scotia  
Canada  
B3N 2A1  
(902) 479-3446

### **Education**

- Ph.D., Princeton University, in Civil Engineering and Operations Research, Thesis Title: “Simulation and Analysis of Random Fields”, Jan. 1990
- M.A., Princeton University, in Civil Engineering and Operations Research, Structures Program, 1987
- M.Eng., Carleton University, in Civil Engineering, Thesis Title: “Differential Movements and Stresses Arising in Masonry Veneers of Highrise Structures,” Graduated, Thesis with Distinction, 1984
- B.Eng., Carleton University, in Civil Engineering Graduated with High Distinction, 1981

### **Work Experience**

- |            |  |
|------------|--|
| 2019:      | Visiting Professor, Faculty of Civil Engineering and Geosciences, Delft University of Technology, The Netherlands.         |
| 2015:      | Visiting Professor, ARC Centre of Excellence for Geotechnical Science and Engineering, University of Newcastle, Australia. |
| 2011-2012: | Visiting Professor, Faculty of Civil Engineering and Geosciences, Delft University of Technology, The Netherlands.         |
| 1999-pres: | Professor, Department of Engineering Mathematics, Cross-appointed to Civil Engineering, Dalhousie University.              |
| 2004-2005: | Visiting Professor, School of Civil and Environmental Engineering, University of Adelaide, Adelaide, Australia.            |
| 1997/98:   | Visiting Associate Professor, Dept. of Civil and Operations Research, Princeton University, Princeton, New Jersey.         |
| 1997:      | Research Fellow, Norwegian Geotechnical Institute, Oslo, Norway.   |
| 1994-1999: | Associate Professor, Department of Applied Mathematics, Technical University of Nova Scotia.                               |
| 1990-1994: | Assistant Professor, Department of Applied Mathematics, Technical University of Nova Scotia.                               |

- 1990: Consulting engineer, Adjeleian Allen Rubeli Inc., structural design, development of design oriented computer programs. Also session lecturer at Carleton University.
- 1986-1989: Research Assistant, Princeton University, development and evaluation of simulation techniques and application to random media. Conditional simulation of correlated random series.
- 1983-1985: Research Engineer, reinforced masonry code development, design and setup of research projects, supervision of graduate students, supervision of masonry research projects, development of reinforced concrete handbook, at Carleton University, Department of Civil Engineering, Ottawa, Canada.

### Teaching Interests

*Undergraduate Level:* risk management, probability and statistics, geotechnical engineering, numerical methods in engineering, structural design, Fortran and C programming.

*Graduate Level:* risk assessment and management, theory of random fields with application to reliability studies and problems in geomechanics and environmental engineering, finite element methods (linear, dynamic, non-linear), time series modeling and analysis, numerical linear algebra, linear regression.

### Teaching Experience

- 1990-pres: Assistant/Associate/Full Professor at Dalhousie University, in the Department of Engineering Mathematics, developing and teaching undergraduate courses in *Probability and Statistics*, *Computer Programming* and *Numerical Methods*. Introduced and taught graduate level courses in *Risk Assessment and Management*, *Random Field Theory* and the *Finite Element Method*. Also developed and taught graduate level courses in *Linear Regression*, and *Numerical Linear Algebra*. Directed studies at the graduate level have also been offered in *Time Series Analysis*.
- 1997: Visiting Associate Professor at the Dept. of Civil Engineering and Operations Research, Princeton University, taught *Fundamentals of Engineering Statistics*.
- 1990: Sessional lecturer at Carleton University, for the course *Mechanics of Deformable Bodies* in the Dept. of Civil Engineering.
- 1988-1990: Assistant in Instruction at Princeton University, Civil Eng., for the course *Introduction to Structured Programming*, involved lab setup and instruction in Fortran and C.
- 1987: Assistant in Instruction at Princeton University, Civil Eng., for the course *Design of Structures*, involved the development of interactive instructional computer programs written in BASIC for PC's with graphics screens.
- 1981-1983: Assistant in Instruction at Carleton University, Civil Eng., for the courses *Reinforced Concrete Design* and *Prestressed Concrete Design*, involved office hours, marking, and instruction.

**Invited Lectures, Short Courses, Workshops, and Site Visits**

- 2018: Short course on *Limit States Design*, GeoEdmonton 2018 Conference, Edmonton, Alberta, Sep 23, 2018.
- 2017: “Wilson Tang” Opening Keynote Lecture, Geo-Risk 2017 Conference, Denver, Colorado, June 4-7.
- 2017: Short course on *Risk Assessment in Geotechnical Engineering*, Norwegian Geotechnical Institute, Oslo, Norway, May 8-12.
- 2016: Invited (and accepted) to author the Limit States Design chapter of the next edition of the Canadian Foundation Engineering Manual (Richard Bathurst, editor).
- 2016: Short course on *Risk Assessment in Geotechnical Engineering*, Vancouver Geotechnical Society, May 9-10.
- 2016: Short course on *Risk Assessment in Geotechnical and Structural Engineering*, 2016 GI-SEI Congress, Phoenix, Arizona, Feb 14.
- 2016: CHBDC Lecture Tour for the Canadian Society of Civil Engineers in eastern Canada, Apr 18-29.
- 2015: Cross-Canada Lecture Tour for the Canadian Geotechnical Society, on *Reliability-Based Geotechnical Design*, Sep 14 – Oct 30.
- 2015: Short course on *Reliability Analysis and Updating in Geotechnical Engineering*, 5th International Symposium on Geotechnical Safety and Risk (ISGSR 2015), Rotterdam, The Netherlands, Oct 13, 2015.
- 2015: Invited Lecture on *Reliability-Based Geotechnical Design: From Theory to Practice*, Australian Geomechanics Society, University of Newcastle, Jul 7.
- 2014: Short course on *Stochastic Analysis and Inverse Modeling*, ALERT School, Aussois, France, Oct 2-4.
- 2014: Short course on *Risk Assessment in Geotechnical Engineering*, ASCE Geo-Institute Annual Conference, GeoCongress 2014, Atlanta, Feb 23.
- 2012: Invited Lecture on *Modeling the Ground: The Random Finite Element Method*, Sparks Lecture Series, Delft University of Technology, Delft, The Netherlands, Mar 13.
- 2011: Workshop on *Safety Concepts and Calibration of Partial Factors in European and North American Codes of Practice*, Delft University of Technology, Delft, The Netherlands, Nov 30 – Dec 1.
- 2011: Short course on *Risk Assessment in Geotechnical Engineering*, GeoRisk 2011 Conference, Atlanta, Georgia, Jun 26.
- 2010: Keynote lecture on *Reliability-Based Geotechnical Engineering*, ASCE Geo-Institute Annual Conference, GeoFlorida 2010, West Palm Beach, Florida, Feb 23.
- 2010–pres: On-line short course on *Risk Assessment in Geotechnical Engineering*, ASCE Continuing Education Program.

- 2007–pres: Short course on *Risk Assessment in Geotechnical Engineering*, ASCE Continuing Education Program, 1.5 days. Delivered in New York (Nov 8-9, 2012) San Diego (Mar 24-25, 2011), San Francisco (Apr 22–23, 2010), New Orleans (Jan 14–15, 2010), Boston (Nov 12–13, 2009), Sacramento (Apr 2–3, 2009), Nashville (Feb 26–27, 2009), Scottsdale (Dec 11–12, 2008), Atlanta (Feb 28–29, 2008), San Francisco (Dec 6–7, 2007), Burlington (Sep 27–28, 2007), Denver (Jul 12–13, 2007).
- 2009: Short course on *Risk Assessment in Geotechnical Engineering*, Canadian Geotechnical Society, 1 day, Halifax, Sep 20.
- 2006: Short course on *Probabilistic Methods in Geotechnical Engineering*, International Centre for Mechanical Sciences (CISM), 5 days, Udine, Italy, July 10–14.
- 2006: Short course on *Geotechnical Risk Assessment and Reliability-Based Design*, Canadian Geotechnical Society, 1 day, Toronto, Feb 22.
- 2005: Lecture tour on *Reliability-Based Geotechnical Design*, delivered to the Australian Geomechanics Society and Universities in Adelaide, Melbourne, Sydney, Newcastle, and Canberra.
- 2003: National Science Foundation Site Visit Team Leader, *Review of Pacific Earthquake Engineering Research Center*, Berkeley, CA
- 2001: National Science Foundation Site Visit, *Review of Pacific Earthquake Engineering Research Center*, Berkeley, CA
- 2000: National Science Foundation Site Visit, *Review of Pacific Earthquake Engineering Research Center*, Berkeley, CA
- 1998: Short course on *Site Characterization*, University of Washington, Seattle
- 1998: *Approaches to Inferential Geostatistics*, Princeton University
- 1997: *Random Field Representation of CPT Data: Parameter Estimation*, Norwegian Geotechnical Institute, Oslo, Norway
- 1996-7: Short course on *Probabilistic Methods in Geotechnical Engineering*, University of Wisconsin (1996), University of Utah (1997), USA
- 1995: *Random Fields*, Composite Materials Group, Technical University of Nova Scotia
- 1994: *Geostatistics*, Mining Engineering Program, Technical University of Nova Scotia
- 1994: *Simulation Techniques*, Industrial Engineering Dept., Technical University of Nova Scotia
- 1994: *Simulation Techniques*, Department of Mathematics and Statistics, Dalhousie University, Halifax, Nova Scotia
- 1994: *Random Field Generation*, Mathematics and Statistics Dept., Queen's University, Kingston, Ontario
- 1992: *Random Fields in Geotechnical Engineering*, School of Engineering, Manchester University, United Kingdom

### Current Research Interests

- Reliability-based geotechnical design and code development;
- Risk assessment of geotechnical systems;
- Probabilistic behaviour of shallow and deep foundations, earth retaining structures, and slopes;
- Effects of climate change on climatic loads;
- Variance reduction techniques applied to random field simulation;

### Citation Highlights

- G.A. Fenton has an “h-index” of 41 with over 7800 citations to his publications, as of Aug 2019 (Google Scholar).
- The paper “Simulation of random fields via local average subdivision,” by Fenton and Vanmarcke (1990), is the 24th most cited paper of the ASCE Journal of Engineering Mechanics in the last 25 years (Google Scholar, as of 2015).
- The paper “Bearing capacity of spatially random soil: The undrained clay Prandtl problem revisited,” by Griffiths and Fenton (2001) is the 16th most highly cited paper of the journal *Géotechnique* in the last 14 years (Google Scholar, as of 2015).
- The paper “Probabilistic foundation settlement on spatially random soil,” by Fenton and Griffiths (2002) is the 19th most highly cited paper of the Journal of Geotechnical and Geoenvironmental Engineering in the last 13 years (Google Scholar, as of 2015).
- The paper “Bearing capacity prediction of spatially random  $c - \phi$  soils,” by Fenton and Griffiths (2003) is the 3rd most highly cited paper of the Canadian Geotechnical Journal in the last 12 years (Google Scholar, as of 2015).
- The paper “Probabilistic slope stability analysis by finite elements,” by Griffiths and Fenton (2004) is the 3rd most highly cited paper of the Journal of Geotechnical and Geoenvironmental Engineering in the last 11 years (Google Scholar, as of 2015).
- The paper “Reliability of traditional retaining wall design,” by Fenton, Griffiths, and Williams (2005) is the 18th most highly cited paper of the journal *Géotechnique* in the last 10 years (Google Scholar, as of 2015).
- The paper “Three-dimensional probabilistic foundation settlement,” by Fenton and Griffiths (2005) is the 28th most highly cited paper of the Journal of Geotechnical and Geoenvironmental Engineering in the last 10 years (Google Scholar, as of 2015).
- The paper “Influence of spatial variability on slope reliability using 2-d random fields,” by Griffiths, Huang, and Fenton (2009) is the most highly cited paper of the Journal of Geotechnical and Geoenvironmental Engineering in the last 6 years (Google Scholar, as of 2015).

### Professional Affiliations

- Chair of the Canadian Highway Bridge Design Code CSA A271-6 Foundations and Geotechnical Systems Technical Subcommittee.
- Chair of the NRC Canadian Commission on Building and Fire Code Task Group on Geotechnical Design. Responsible for implementing and improving reliability-based geotechnical design code provisions in the National Building Code of Canada.
- Member of the National Building Code of Canada Standing Committee on Structural Design. Responsible for geotechnical design code development.
- North American Managing Editor of the International Journal *Georisk*.
- Core member and past-Chair (1999 to 2003) of the ASCE Geo-Institute Risk Assessment and Management Committee.

- Member and past-chair of the ISSMGE Engineering Practice of Risk Assessment and Management Committee, TC304.
- Fellow of the Engineering Institute of Canada
- Fellow of the Canadian Academy of Engineering
- Registered Professional Engineer with APENS.
- Member of the Canadian Geotechnical Society.
- Member of the American Society of Civil Engineers.
- Member of the International Society for Soil Mechanics and Geotechnical Engineering.

### Awards and Honours

- 2020: “G. Geoffrey Meyerhof Award” from the Canadian Geotechnical Society for outstanding contribution to soil mechanics and foundation engineering in Canada.
- 2017: “Editor’s Choice” selection by the Canadian Geotechnical Journal for the 2017 paper “Target geotechnical reliability for redundant foundation systems”.
- 2016: Received the “Outstanding Paper Award” from the journal *Computers and Geotechnics* for the paper “Probabilistic infinite slope analysis”.
- 2016: Selected by the Canadian Society of Civil Engineers to deliver the CHBDC lecture tour in Eastern Canada in the spring of 2016.
- 2015: Selected by the Canadian Geotechnical Society to deliver the Cross-Canada Lecture Tour in the fall of 2015. Delivered lectures in Victoria, Vancouver, Calgary, Edmonton, Regina, Winnipeg, Toronto, Kingston, Ottawa, Montreal, Moncton, Halifax, and St. John’s.
- 2015: Awarded the CERRA C. Allin Cornell Award, presented to the person with the most outstanding contributions to the science and/or application of risk and reliability theory to civil engineering once every four years at the International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP12, Vancouver, 2015).
- 2013: Became a Fellow of the Canadian Academy of Engineering.
- 2011: Received the Thomas C. Keefer Medal from the Canadian Society for Civil Engineering for the paper entitled “A method to assess risk reduction when utilizing geosynthetic clay liners (GCLs) with compacted soil liners” (published in the Canadian Geotechnical Journal, **48**(1), 2011).
- 2009: Received the Dalhousie *Faculty of Engineering Teaching Award*.
- 2004: Received the Dalhousie Undergraduate Engineering Society *Professor Appreciation Award*.
- 1994: Received the *George Stephenson Medal* from the Institution of Civil Engineers, United Kingdom, for the paper entitled “Seepage beneath water retaining structures founded on spatially random soil” (published in *Géotechnique*, 1993).
- 1993: Received the *TUNS Annual Award for Teaching Excellence*, Technical University of Nova Scotia. Each year one teacher at TUNS is selected for this award by the student body.
- 1991: Nominated for the *TUNS Annual Award for Teaching Excellence*, Technical University of Nova Scotia. Also in 1992 and 1994.
- 1988: Received the *John von Neumann Supercomputer Fellowship*, held at Princeton University.
- 1986: Received the *Gzowski Medal*, awarded annually by the Engineering Institute of Canada for the best paper of the year on a civil engineering subject, “Differential movements and stresses in high-rise masonry veneers: Analysis,” published in the *Canadian Journal of Civil Engineering*.

**Patents**

- US Provisional Patent Application No. 60/090,330 on KLT-Based Quality Controlled Compression, with G.C. Kember and T. Blanchet, 1998.
- US Provisional Patent Application on the computer program SIMQKE-II: Conditional Simulation of Earthquake Ground Motion, with Erik VanMarcke and Ernesto Heredia-Zavoni, 1997.

## Publications

### Refereed Journal Publications

1. ESPOSITO G., FENTON, G.A., and NAGHIBI, F., Seismic reliability of axially-loaded vertical piles, *Canadian Geotechnical Journal*, DOI: 10.1139/cgj-2019-0342, 2020.
2. FENTON, G.A., BURGESS, J., and GRIFFITHS, D.V., Response to Discussion on "Probabilistic seismic slope stability analysis and design, *Canadian Geotechnical Journal*, 2019.
3. BURGESS, J., FENTON, G.A., and GRIFFITHS, D.V., Probabilistic seismic slope stability analysis and design, *Canadian Geotechnical Journal*, DOI: 10.1139/cgj-2017-0544, 56(12), 1979–1998, 2019.
4. CRISP, M.P., JAKSA, M.B., KUO, Y.L., FENTON, G.A., and GRIFFITHS, D.V., A method of generating virtual soil profiles with complex, multi-layer stratigraphy, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, 13(2), 154–163, 2019.
5. NAGHIBI, F., and FENTON, G.A., Calibration of resistance factors for geotechnical seismic design, *Canadian Geotechnical Journal*, DOI: 10.1139/cgj-2018-0433, 56(8), 1134–1141, 2019.
6. MACKILLOP, K., FENTON, G.A., MOSHER, D., LATOUR, V., and MITCHELMORE, P., Assessing submarine slope stability through deterministic and probabilistic approaches: A case study on the west-central scotia slope, *Geosciences*, DOI: 10.3390/geosciences9010018, 9(1), 18 pp, 2019.
7. ZHU, D., GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Worst-case spatial correlation length in probabilistic slope stability analysis, *Géotechnique*, 69(1), 85–88, DOI: 10.1680/jgeot.17.T.050, 2019.
8. FENTON, G.A., NAGHIBI, F., and HICKS, M.A., Effect of sampling plan and trend removal on residual uncertainty, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, DOI:10.1080/17499518.2018.1455106, 12(4), 253–264, 2018.
9. CASAGRANDE, D., BUZZI, O., GIACOMINI, A., LAMBERT, C., and FENTON, G.A., A new stochastic approach to predict peak and residual shear strength of natural rock discontinuities, *Rock Mechanics and Rock Engineering*, 51(1), 69–99, 2019.
10. ZHU, D., GRIFFITHS, D.V., HUANG, J., GAO, Y.F., and FENTON, G.A., Probabilistic analysis of shallow passive trapdoor in cohesive soil, *Journal of Geotechnical and Geoenvironmental Engineering*, 145(6), 2019.
11. ZHU, D., GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Probabilistic stability analyses of undrained slopes with linearly increasing mean strength, *Géotechnique*, 67(8), 733–746, DOI: 10.1680/jgeot.16.P.223, 2017.
12. NAGHIBI, F., and FENTON, G.A., Target geotechnical reliability for redundant foundation systems, *Canadian Geotechnical Journal*, 54(7), 945–952, DOI: 10.1139/cgj-2016-0478, 2017.
13. LIZA, R., FENTON, G.A., LAKE, C.B., and GRIFFITHS, D.V., An analytical approach to assess quality control sample sizes of cement-based “solidification/stabilization”, *Canadian Geotechnical Journal*, 54(3), 419–427, 2017.
14. HUANG, J., FENTON, G.A., GRIFFITHS, D.V., LI, D., and ZHOU C., On the efficient estimation of small failure probability in slopes, *Landslides*, 14(2), 491–498, DOI: 10.1007/s10346-016-0726-2, 2017.



15. ALLAHVERDIZADEH, P., GRIFFITHS, D.V., and FENTON, G.A., Influence of soil shear strength spatial variability on the compressive strength of a block, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, 10(1), 2–10, 2016.
16. DEPINA, I., LE, T.M.H., FENTON, G.A., and EIKSUND, G., Reliability analysis with metamodel line sampling, *Structural Safety*, 60, 1–15, 2016.
17. FENTON, G.A., NAGHIBI, F., and GRIFFITHS, D.V., On a unified theory for reliability-based geotechnical design, *Computers and Geotechnics*, DOI: 10.1016/j.compgeo.2016.04.013, 78, 110–122, 2016.
18. NAGHIBI, F., FENTON, G.A., and GRIFFITHS, D.V., Probabilistic considerations for the design of deep foundations against excessive differential settlement, *Canadian Geotechnical Journal*, DOI: 10.1139/cgj-2015-0194, 53(7), 1167–1175, 2016.
19. CHOK, Y.H., JAKSA, M.B., KAGGWA, W.S., GRIFFITHS, D.V., and FENTON, G.A., Neural network prediction of the reliability of heterogeneous cohesive slopes, *International Journal for Numerical and Analytic Methods in Geomechanics*, DOI: 10.1002/nag.2496, 40(11), 1556–1569, 2016.
20. FENTON, G.A., NAGHIBI, F., DUNDAS, D., BATHURST, R.J., and GRIFFITHS, D.V., Reliability-based geotechnical design in the 2014 Canadian Highway Bridge Design Code, *Canadian Geotechnical Journal*, DOI: 10.1139/cgj-2015-0158, 53(2), 236–251, 2016.
21. CHOK, Y.H., JAKSA, M.B., GRIFFITHS, D.V., FENTON, G.A., and KAGGWA, W.S., Probabilistic analysis of a spatially variable  $c' - \phi'$  slope, *Australian Geomechanics*, 50(2), 17–27, 2015.
22. WAMBEKE, T., ALVAREZ GRIMA, M., FENTON, G.A., BENNDORF, J., and VERVOORT, A., Use of local average subdivision to characterize marine mineral reserves – A conceptual framework, *Canadian Mining Journal*, 6(3), 157–167, 2015.
23. FENTON, G.A., LIZA, R., LAKE, C.B., MENZIES, W.T., and GRIFFITHS, D.V., Statistical sample size for quality control programs of cement-based “solidification/stabilization”, *Canadian Geotechnical Journal*, DOI: 10.1139/cgj-2013-0478, 52(10), 1620–1628, 2015.
24. PIECZYŃSKA-KOZŁOWSKA, J.M., PUŁA, W., GRIFFITHS, D.V., and FENTON, G.A., Influence of embedment, self-weight and anisotropy on bearing capacity reliability using the random finite element method, *Computers and Geotechnics* 67, 229–238, 2015.
25. ZHU, H., GRIFFITHS, D.V., FENTON, G.A., and ZHANG, L.M., Undrained failure mechanisms of slopes in random soil, *Engineering Geology*, DOI: 10.1016/j.enggeo.2015.03.009, 191, 31–35, 2015.
26. VAHDATIRAD, M.J., GRIFFITHS, D.V., ANDERSEN, L.V. SØRENSEN, J.D., and FENTON, G.A., Reliability analysis of a gravity-based foundation for wind turbines: A code-based design assessment, *Géotechnique*, 64(8), 635–645, DOI: 10.1680/geot.13.P.152, 2014.
27. NAGHIBI, F., FENTON, G.A., and GRIFFITHS, D.V., Serviceability limit state design of deep foundations, *Géotechnique*, DOI: 10.1680/geot.14.P.40, 64(10), 787–799, 2014.
28. NAGHIBI, F., FENTON, G.A., and GRIFFITHS, D.V., Prediction of pile settlement in an elastic soil, *Computers and Geotechnics*, 60, 29–32, 2014.
29. LLORET-CABOT, M., FENTON, G.A., and HICKS, M.A., On the estimation of scale of fluctuation in geostatistics, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, 8(2), 129–140, 2014.

30. FENTON, G.A., LIZA, R., LAKE, C.B., and GRIFFITHS, D.V., Probability of excessive hydraulic flow through soil liners, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 139(6), 937–946, 2013.
31. FENTON, G.A., MCLEAN, A., NADIM, F., and GRIFFITHS, D.V., Landslide hazard assessment using digital elevation models, *Canadian Geotechnical Journal*, 50(6), 620–631, 2013.
32. GRIFFITHS, D.V., PAIBOON, J., HUANG, J., and FENTON, G.A., Reliability analysis of beams on random elastic foundations, *Géotechnique*, 63(2), 180–188, 2013.
33. PAIBOON, J., GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Numerical analysis of effective elastic properties of geomaterials containing voids using 3D random fields and finite elements, *International Journal of Solids and Structures*, 50(20-21), 3233–3241, 2013.
34. GRIFFITHS, D.V., PAIBOON, J., HUANG, J., and FENTON, G.A., Homogenization of geomaterials containing voids by random fields and finite elements, *International Journal of Solids and Structures*, 49(14), 2006–2014, 2012.
35. NAGHIBI, M., and FENTON, G.A., Geotechnical resistance factors for ultimate limit state design of deep foundations in cohesive soils, *Canadian Geotechnical Journal*, 48(11), 1729–1741, 2011.
36. FENTON, G.A., and NAGHIBI, M., Geotechnical resistance factors for ultimate limit state design of deep foundations in frictional soils, *Canadian Geotechnical Journal*, 48(11), 1742–1756, 2011.
37. FENTON, G.A., and SUTHERLAND, N., Reliability-based transmission line design, *IEEE Transactions on Power Delivery*, 26(2), 596–606, 2011.
38. FENTON, G.A., GRIFFITHS, D.V., and OJOMO, O.O., Consequence factors in the ultimate limit state design of shallow foundations, *Canadian Geotechnical Journal*, 48(2), 265–279, 2011.
39. MENZIES, W.T., FENTON, G.A., LAKE, C.B., and GRIFFITHS, D.V., A method to assess risk reduction when utilizing geosynthetic clay liners (GCLs) with compacted soil liners, *Canadian Geotechnical Journal*, 48(1), 146–161, 2011.
40. GRIFFITHS, D.V., and FENTON, G.A., It's all the RAGE, in *Geo-Strata*, 14(1), 16–20, 2010.
41. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Probabilistic infinite slope analysis, *Computers and Geotechnics*, 38(4), 577–584, 2011.
42. HUANG, J., GRIFFITHS, D.V., and FENTON, G.A., System reliability of slopes by RFEM, *Soils and Foundations*, 50(3), 343–353, 2010.
43. HUANG, J., GRIFFITHS, D.V., and FENTON, G.A., Probabilistic analysis of coupled soil consolidation, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 136(3), 417–430, 2010.
44. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., On the reliability of earth slopes in three dimensions, *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 465(2110), 3145–3164, 2009.
45. GRIFFITHS, D.V., and FENTON, G.A., Probabilistic settlement analysis by stochastic and random finite element methods, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 135(11), 1629–1637, 2009.
46. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Influence of spatial variability on slope reliability using 2-D random fields, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 135(10), 1367–1378, 2009.

47. FENTON, G.A., GRIFFITHS, D.V. and ZHANG, X.Y., Load and resistance factor design of shallow foundations against bearing failure, *Canadian Geotechnical Journal*, 45(11), 1556–1571, 2008.
48. GRIFFITHS, D.V., FENTON, G.A., and ZIEMANN, H.R., Reliability of passive earth pressure, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, 2(2), 113–121, 2008.
49. FENTON, G.A., ZHANG, X.Y., and GRIFFITHS, D.V., Reliability of shallow foundations designed against bearing failure using LRFD, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, 1(4), 202–215, 2007.
50. CHOK, Y.H., JAKSA, M.B., GRIFFITHS, D.V., FENTON, G.A., and KAGGWA, W. S., A parametric study on reliability of spatially random cohesive slopes, *Australian Geomechanics*, 42(2), 79–85, 2007.
51. GOLDSWORTHY, J.S., JAKSA, M.B., FENTON, G.A., KAGGWA, W.S., GRIFFITHS, D.V., and POULOS, H.G., Effect of sample location on the reliability based design of pad foundations, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, 1(3), 155–166, 2007.
52. GRIFFITHS, D.V., FENTON, G.A., and MANOHARAN, N., Undrained bearing capacity of two strip footings on spatially random soil, *International Journal of Geomechanics*, 6(6), 421–427, 2006.
53. FENTON, G.A., GRIFFITHS, D.V., and CAVERS, W., Resistance factors for settlement design, *Canadian Geotechnical Journal*, 42(5), 1422–1436, 2005.
54. JAKSA, M.B., GOLDSWORTHY, J.S., FENTON, G.A., KAGGWA, W.S., GRIFFITHS, D.V., KUO, Y.L., and POULOS, H.G., Towards reliable and effective site investigations. *Géotechnique*, 55(2), 109–121, 2005.
55. FENTON, G.A., GRIFFITHS, D.V., and WILLIAMS, M.B., Reliability of traditional retaining wall design, *Géotechnique*, 55(1), 55–62, 2005.
56. FENTON, G.A., and GRIFFITHS, D.V., Three-dimensional probabilistic foundation settlement, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 131(2), 232–239, 2005.
57. KEMBER, G.C., ARMOUR, J.A., FENTON, G.A., and MALHOTRA, A., Control of cardiac function and noise from a decaying power spectrum, *Physical Review E*, 70(2), 2004.
58. GRIFFITHS, D.V., and FENTON, G.A., Probabilistic slope stability analysis by finite elements, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 130(5), 507–518, 2004.
59. FENTON, G.A., and GRIFFITHS, D.V., Reply to the discussion by R. Popescu on “Bearing capacity prediction of spatially random  $c - \phi$  soils”, *Canadian Geotechnical Journal*, 41(2), 368–369, 2004.
60. CAVERS, W., and FENTON, G.A., An evaluation of pile cap design methods in accordance with the Canadian design standard, *Canadian Journal of Civil Engineering*, 31(1), 109–119, 2004.
61. CAVERS, W., and FENTON, G.A., Reply to the discussion by P. Adebar on “An evaluation of pile cap design methods in accordance with the Canadian design standard”, *Canadian Journal of Civil Engineering*, 31(6), 1127–1129, 2004.
62. FENTON, G.A., and GRIFFITHS, D.V., Bearing capacity prediction of spatially random  $c - \phi$  soils, *Canadian Geotechnical Journal*, 40(1), 54–65, 2003.

63. GRIFFITHS, D.V., FENTON, G.A., and MANOHARAN, N., Bearing capacity of a rough rigid strip footing on cohesive soil: a probabilistic study, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 128(9), 743–755, 2002.
64. GRIFFITHS, D.V., FENTON, G.A., and LEMONS, C.B., Probabilistic analysis of underground pillar stability, *International Journal for Numerical and Analytical Methods in Geomechanics*, 26(8), 775–791, 2002
65. FENTON, G.A., and GRIFFITHS, D.V., Probabilistic foundation settlement on spatially random soil, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 128(5), 381–390, 2002.
66. GRIFFITHS, D.V., and FENTON, G.A., Bearing capacity of spatially random soil: The undrained clay Prandtl problem revisited, *Géotechnique*, 51(4), 351–359, 2001.
67. KEMBER, G.C., FENTON, G.A., ARMOUR, J.A., and KALYANIWALLA, N., A competition model for aperiodic stochastic resonance in a Fitzhugh-Nagumo model of cardiac sensory neurons, *Physical Review E*, 63(4), Article 041911, 2001.
68. FENTON, G.A., and JAKSA, M.B., Response to discussion on “Random field modeling of CPT data”, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 126(12), 1212–1215, 2000.
69. JAKSA, M.B., and FENTON, G.A., Random field modeling of CPT data, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 126(12), 1212–1215, 2000.
70. KEMBER, G., FENTON, G., COLLIER, K., and ARMOUR, D., Aperiodic stochastic resonance in a hysteretic population of cardiac neurons, *Physical Review E*, 61(2), 1816–1824, Feb 2000.
71. FENTON, G.A., Estimation for stochastic soil models, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 125(6), 470–485, 1999.
72. FENTON, G.A., Random field modeling of CPT data, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 125(6), 486–498 June, 1999.
73. GRIFFITHS, D.V., and FENTON, G.A., Probabilistic analysis of exit gradients due to steady seepage, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 124(9), 789–797, 1998.
74. BLANCHET, T., KEMBER, G.C., and FENTON, G.A., KLT-based quality controlled compression of single-lead ECG, *IEEE Transactions in Biomedical Engineering*, 45(7), 942–945, 1998.
75. FENTON, G.A., and VANMARCKE, E.H., Spatial variation in liquefaction risk, *Géotechnique*, 48(6), 819–831, 1998.
76. FENTON, G.A., and GRIFFITHS, D.V., A mesh deformation algorithm for free surface problems, *International Journal for Numerical and Analytical Methods in Geomechanics*, 21(12), 817–824, 1997.
77. FENTON, G.A., and GRIFFITHS, D.V., Extreme hydraulic gradient statistics in a stochastic earth dam, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 123(11), 995–1000, 1997.
78. GRIFFITHS, D.V., and FENTON, G.A., Three-dimensional seepage through spatially random soil, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 123(2), 153–160, 1997.
79. IKEDIALA, J.N., CORREIA, L.R., FENTON, G.A., and BEN-ABDALLAH, N., Finite element modeling of heat transfer in meat patties during single-sided pan-frying, *Journal of Food Science*, 61(4), 796–802, 1996.

80. PAICE, G.M., GRIFFITHS, D.V., and FENTON, G.A., Finite element modeling of settlements on spatially random soil, *ASCE Journal of Geotechnical Engineering*, 122(9), 777–779, 1996.
81. FENTON, G.A., and GRIFFITHS, D.V., Statistics of free surface flow through stochastic earth dam, *ASCE Journal of Geotechnical Engineering*, 122(6), 427–436, 1996.
82. FENTON, G.A., A random field excursion model of salt induced concrete delamination, *Journal of Research of the National Institute of Standards and Technology*, 99(4), 475–483, 1994.
83. FENTON, G.A., Error evaluation of three random field generators, *ASCE Journal of Engineering Mechanics*, 120(12), 2478–2497, 1994.
84. VANMARCKE, E.H., HEREDIA, E., and FENTON, G.A., Conditional simulation of spatially correlated earthquake ground motion, *ASCE Journal of Engineering Mechanics*, 119(11), 2333–2352, 1993.
85. FENTON, G.A., and GRIFFITHS, D.V., Statistics of block conductivity through a simple bounded stochastic medium, *Water Resources Research*, 29(6), 1825–1830, 1993.
86. GRIFFITHS, D.V., and FENTON, G.A., Seepage beneath water retaining structures founded on spatially random soil, *Géotechnique*, 43(4), 577–587, 1993.
87. FENTON, G.A., and VANMARCKE, E. H., Simulation-based excursion statistics, *ASCE Journal of Engineering Mechanics*, 118(6), 1129–1145, June, 1992.
88. VANMARCKE, E.H., and FENTON, G.A., Conditioned simulation of local fields of earthquake ground motion, *Structural Safety*, Special Issue on Spatial Variation of Earthquake Ground Motion, 10(1-3), 247–264, 1991.
89. FENTON, G.A., and VANMARCKE, E.H., Simulation of random fields via local average subdivision, *ASCE Journal of Engineering Mechanics*, 116(8), 1733–1749, 1990.
90. FENTON, G.A., and SUTER, G.T., Differential movements and stresses in high-rise masonry veneers: Analysis, *Canadian Journal of Civil Engineering*, 13(6), 700–712, 1986.
91. FENTON, G.A., and SUTER, G.T., Differential movements and stresses in high-rise masonry veneers: Case study, *Canadian Journal of Civil Engineering*, Vol. 13, pp. 713–721, 1986.
92. SUTER, G.T., and FENTON, G.A., Flexural capacity of reinforced masonry members, *Journal of the American Concrete Institute*, 83(1), 127–136, 1986.

### **Books, Notes, and Chapters**

93. FENTON, G.A., Geotechnical design code development in Canada, in *Modern Geotechnical Design Codes of Practice: Implementation, Application, and Development*, eds. Arnold, P., Fenton, G.A., Hicks, M.A., Schweckendiek, T., and Simpson, B., IOS Press, Amsterdam, pp. 277–294, 2013.
94. FENTON, G.A., and GRIFFITHS, D.V., *Risk Assessment in Geotechnical Engineering*, John Wiley & Sons, New York, 2008.
95. FENTON, G.A., DUPUIS, D.J., and IAKOVLEV, S., *Applied Probability and Statistics*, course notes, 242 pgs, 2008.
96. FENTON, G.A., and GRIFFITHS, D.V., Review of probability theory, random variables, and random fields, in *Probabilistic Methods in Geotechnical Engineering*, eds. D.V. Griffiths and G.A. Fenton, Springer Wien, New York, pp. 1–69, 2007.

97. FENTON, G.A., and GRIFFITHS, D.V., Random field generation and the Local Average Subdivision Method, in *Probabilistic Methods in Geotechnical Engineering*, eds. D.V. Griffiths and G.A. Fenton, Springer Wien, New York, pp. 201–223, 2007.
98. FENTON, G.A., *Risk Assessment and Management*, course notes, 332 pgs, 2018.
99. PHILLIPS, W.J., and FENTON, G.A., *C Programming Course Notes*, course notes, 111 pgs, 2007.
100. FENTON, G.A., *Mathematics for Internetworking*, course notes, 225 pgs, 2007.
101. FENTON, G.A., ed. *Probabilistic Methods in Geotechnical Engineering*, Short Course notes, 1st Edition presented at ASCE Uncertainty'96 Conference, Madison, Wisconsin, 1996, 90 pgs, 2nd Edition at ASCE GeoInstitute Conference, University of Utah, 1997, 95 pgs.
102. FENTON, G.A., and SUTER, G. T., *Concrete Design Handbook: Chapter 9, Footings*, Canadian Portland Cement Association, Ottawa, Canada, 1995.
103. FENTON, G.A., *Simulation and Analysis of Random Fields*, thesis presented to Princeton University, at Princeton, New Jersey, in partial fulfillment of the requirements for the degree of Doctor of Philosophy, 178 pgs, Jan. 1990.
104. SUTER, G. T., and FENTON, G.A., *Concrete Design Handbook: Chapter 9, Footings*, Canadian Portland Cement Association, Ottawa, Canada, 1985.
105. FENTON, G.A., *Differential Movements and Stresses Arising in Masonry Veneers of Highrise Structures*, M. Eng. Thesis, Department of Civil Engineering, Carleton University, Ottawa, Canada, 1984.

### **Edited Publications**

106. ARNOLD, P., FENTON, G.A., HICKS, M.A., SCHWECKENDIEK, T., and SIMPSON, B., Eds. *Modern Geotechnical Design Codes of Practice: Implementation, Application, and Development*, IOS Press, Amsterdam, 2013.
107. JUANG, C.H., PHOON, K.K., PUPPALA, A.J., GREEN, R.A., and FENTON, G.A., Eds. *GeoRisk 2011: Geotechnical Risk Assessment and Management*, Geotechnical Special Publication No. 224, 1250 pp., 2011.
108. FENTON, G.A., and FERGUSON, G., Eds. *Proceedings of the 62nd Canadian Geotechnical Conference and 10th Joint CGS/IAH-CNC Groundwater Conference*, Canadian Geotechnical Society, Halifax, Nova Scotia, Sept 2009.
109. PHOON, K.K., FENTON, G.A., GLYNN, E.F., JUANG, C.H., GRIFFITHS, D.V., WOLFF, T.F., and ZHANG, L., Eds. *Probabilistic Applications in Geotechnical Engineering*, Geotechnical Special Publication No. 170, Pub. ASCE, 2007.
110. GRIFFITHS, D.V., and FENTON, G.A., Eds. *Probabilistic Methods in Geotechnical Engineering*, International Centre for Mechanical Sciences, Courses and Lectures No. 491, SpringerWien, New York, 2007.
111. VANMARCKE, E.H., and FENTON, G.A., Eds. *Probabilistic Site Characterization at the National Geotechnical Experimentation Sites*, Geotechnical Special Publication No. 121, Pub. ASCE, 2003.
112. GRIFFITHS, D.V., FENTON, G.A., and MARTIN, T.R., Eds. *Slope Stability 2000*, Geotechnical Special Publication No. 101, Proceedings of the GeoDenver 2000 Symposium, Pub. ASCE, 2000.

**Refereed Conference Publications**

113. NAGHIBI, F., and FENTON, G.A., Considerations for resistance factor calibration in the National Building Code of Canada, Proceedings of the 72nd Canadian Geotechnical Society Conference, GeoStJohn's 2019, Sep 29-Oct 2, St. John's, Newfoundland, Canada, Paper No. 514, 2019.
114. NAGHIBI, F., and FENTON, G.A., Geotechnical resistance factors for seismic design, Paper #424 in *GeoEdmonton 2018*, Proceedings of the 71st Canadian Geotechnical Conference, Edmonton, Canada, Sep 23-26, 2018.
115. ESPOSITO, G., and FENTON, G.A., Review of reliability levels achieved by geotechnical design codes, Paper #416 in *GeoEdmonton 2018*, Proceedings of the 71st Canadian Geotechnical Conference, Edmonton, Canada, Sep 23-26, 2018.
116. FENTON, G.A., and NAGHIBI, F., Probabilistic seismic design of geotechnical systems, in *GeoOttawa 2017*, Proceedings of the 70th Canadian Geotechnical Conference, Ottawa, Canada, Oct 1-4, 2017.
117. BUZZI, O., CASAGRANDE, D, GIACOMINI, A., LAMBERT, C., and FENTON, G.A., A new approach to avoid the scale effect when predicting the shear strength of large in situ discontinuity, in *GeoOttawa 2017*, Proceedings of the 70th Canadian Geotechnical Conference, Ottawa, Canada, Oct 1-4, 2017.
118. FENTON, G.A., GRIFFITHS, D.V., and NAGHIBI, F., Future directions in reliability-based geotechnical design, in *Geo-Risk 2017: The Keynote Lectures*, Proceedings of the Geo-Risk 2017 Conference on Geotechnical Risk from Theory to Practice, Griffiths, D.V., Fenton, G.A., Huang, J., and Zhang, L., Eds., Denver Colorado, June 4–7, 2017.
119. NAGHIBI, F., and FENTON, G.A., Target geotechnical reliability for redundant foundation systems, in *Proceedings of the 69th Canadian Geotechnical Society Conference*, Geo-Vancouver 2016, Canadian Geotechnical Society, Vancouver, Oct 2-5, Paper # 3650, 2016.
120. NAGHIBI, F., and FENTON, G.A., Role of soil and structural heterogeneity in geotechnical system redundancy, in *Proceedings of the 5th International Symposium on Geotechnical Safety and Risk (ISGSR)*, Rotterdam, The Netherlands, October 13–16, 2015.
121. NAGHIBI, F., FENTON, G.A., and GRIFFITHS, D.V., Total versus differential settlement of deep foundations, in *Proceedings of the 68th Canadian Geotechnical Conference*, Canadian Geotechnical Society, Quebec City, September 20-23, Paper # 072, 2015.
122. FENTON, G.A., NAGHIBI, F., and GRIFFITHS, D.V., Reliability-based geotechnical design: Towards a unified theory, in Proceedings of the 12th International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP12), Haukaas, T., Ed., Vancouver, July 12-15, Paper # 504, 2015.
123. FENTON, G.A., and NAGHIBI, F., Reliability-based geotechnical design code development, in *Vulnerability, Uncertainty, and Risk: Quantification, Mitigation, and Management*, Proceedings of the 2nd International Conference on Vulnerability, Risk Analysis, and Management (ICVRAM 2014), Beer, M., Au, S-K., and Hall, J.W., Ed's, ASCE Council on Disaster Risk Management, Monograph No. 9, American Society of Civil Engineers, July 13-16, Liverpool, UK, pp. 2468–2477, 2014.
124. DEPINA, I., EIKSUND, G., LE, T.M.H., and FENTON, G.A., Estimation of failure probability by limit state sampling, in *Vulnerability, Uncertainty, and Risk: Quantification, Mitigation, and Management*, Proceedings of the 2nd International Conference on Vulnerability, Risk Analysis, and Management (ICVRAM 2014), Beer, M., Au, S-K., and Hall, J.W., Ed's, ASCE Council on Disaster Risk Management, Monograph No.

- 9, American Society of Civil Engineers, July 13-16, Liverpool, UK, pp. 2063–2072, 2014.
125. ZHU, H., GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Effect of spatial variability on failure mechanism location in random undrained slopes, *Computer Methods and Recent Advances in Geomechanics: Proceedings of the 14th International Conference of International Association for Computer Methods and Recent Advances in Geomechanics*, IACMAG 2014, 1255-1258, 2014.
126. NAGHIBI, F., FENTON, G.A., and GRIFFITHS, D.V., Resistance and consequence factor calibration for deep foundations, *Proceedings of the 66th Canadian Geotechnical Conference – GeoMontreal 2013*, Canadian Geotechnical Society, Montreal, Sep 29 – Oct 3, Paper # 224, 2013.
127. FENTON, G.A., and HICKS, M.A., Site sampling: Assessing residual uncertainty, *Proceedings of the 18th International Conference on Soil Mechanics and Geotechnical Engineering*, Paris, Sep 2-6, pp. 523–526, 2013.
128. HUANG, J., LYAMIN, A.V., GRIFFITHS, D.V., SLOAN, S.W., and FENTON, G.A., Undrained bearing capacity of spatially random clays by finite elements and limit analysis, *Proceedings of the 18th International Conference on Soil Mechanics and Geotechnical Engineering*, Paris, Sep 2-6, pp. 731–734, 2013.
129. FENTON, G.A., HICKS, M.A., WANG, X., and GRIFFITHS, D.V., Effect of slope height and gradient on failure probability, in *Annual Congress of the Geo-Institute of ASCE: GeoCongress, 2013*, Paper 137, San Diego, California, Mar 3–6, 2013.
130. FENTON, G.A., NAGHIBI, F., and BATHURST, R.J., Comparison of geotechnical LRFD implementations, in *Proceedings of the 65th Canadian Geotechnical Conference – GeoManitoba 2012*, Winnipeg, Manitoba, Canada, Paper # 163 (CD-ROM), Sep 30 – Oct 3, 2012.
131. NAGHIBI, F., FENTON, G.A., GRIFFITHS, D.V., and BATHURST, R.J., Settlement of piles founded in spatially variable soils, in *Annual Congress of the Geo-Institute of ASCE: GeoCongress, 2012*, Oakland, California, Mar 25–29, 2846–2855, 2012.
132. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Risk assessment in geotechnical engineering: stability analysis of highly variable soils, in *Geotechnical Engineering State of the Art and Practice: Keynote Lectures from GeoCongress 2012*, 78-101, 2012.
133. GHALBA, A., JAKSA, M.B., KAGGWA, W.S., FENTON, G.A., and GRIFFITHS, D.V., Probabilistic analysis of foundation settlement on multilayered soil with a complex layer-boundary, *Australia New Zealand 2012 Conference Proceedings*, 608–613, 2012.
134. GRIFFITHS, D.V., PAIBOON, J., HUANG, J., and FENTON, G.A., Numerical analysis of the influence of porosity and void size on soil stiffness using random fields, in *Proc. 13th Int. Conf. on Computer Methods and Advances in Geomechanics* (IACMAG 2011), Melbourne, Australia, (eds. N. Khalili and M. Oeser), Pub. Centre for Infrastruc. Eng. and Safety, Sydney, pp. 21–27, 2011.
135. PIECZYŃSKA, J., PUŁA, W., GRIFFITHS, D.V., and FENTON, G.A., Probabilistic characteristics of strip footing bearing capacity evaluated by random finite element method, in *Proc. of ICASP 2011*, Paper No. 10321 (CD-ROM), Zurich, Switzerland, August, 2011.
136. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Modeling of stability and risk of geotechnical systems in highly variable soils, in *Proc. ICAGE 2011*, Perth, Australia, (eds. M.A. Shahin and H.R. Nakriz), Pub. Dept. Civil Engineering, Curtin University, pp. 75–88, 2011.



137. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Three-dimensional stability analysis of highly variable slopes by finite elements, in *Proceedings of the 10th International Congress on Numerical Methods in Engineering and Scientific Applications, CIMENICS'10*, Mar 22-24, Merida, Venezuela, 2010.
138. FENTON, G.A. and GRIFFITHS, D.V., Reliability-based geotechnical engineering, Keynote lecture in *Proceedings of GeoFlorida 2010: Advances in Analysis, Modeling, and Design*, West Palm Beach, Florida, Feb 20-24, pp. 14–52, 2010.
139. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Stability and risk analysis of slopes in highly variable soils by finite elements, Keynote lecture in *Proceedings of the University of Minnesota 58th Annual Geotechnical Engineering Conference*, St. Paul, Minnesota, Feb 26, 2010.
140. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Comparison of slope reliability methods of analysis, in *Proceedings of GeoFlorida 2010: Advances in Analysis, Modeling, and Design*, West Palm Beach, Florida, Feb 20-24, 2010.
141. ARSYAD, A., JAKSA, M.B., FENTON, G.A. and KAGGWA, W.S., (2009). The effect of limited site investigations on the design of pile foundations, in *Proceedings of the XVII ICSMGE*, Alexandria, Egypt, Vol. 3, pp. 2671–2674, October 5-9, 2009.
142. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Three dimensional probabilistic slope stability analysis by RFEM, in *Proceedings of the XVII ICSMGE*, Alexandria, Egypt, Vol. 2, 1538–1541, Paper 1538 (CD-ROM), eds M. Hamza et al., October 5-9, 2009.
143. MENZIES, T., FENTON, G.A., and LAKE, C.B., The role of correlation length on the probability of failure for soil liner systems, in *Proceedings of the 62nd Annual Canadian Geotechnical Conference*, Canadian Geotechnical Society, Halifax, Nova Scotia, 527–532, Sep 20-24, 2009.
144. GRIFFITHS, D.V., SCHIERMEYER, R.P., HUANG, J., and FENTON, G.A., Influence of anisotropy and rotation on probabilistic slope stability analysis by RFEM, in *Proceedings of the 62nd Annual Canadian Geotechnical Conference*, Canadian Geotechnical Society, Halifax, Nova Scotia, 542–546, Sep 20-24, 2009.
145. FENTON, G.A., OJOMO, O.O., and GRIFFITHS, D.V., Consequence factors for use in shallow foundation reliability-based design, in *Proceedings of the 62nd Annual Canadian Geotechnical Conference*, Canadian Geotechnical Society, Halifax, Nova Scotia, 563–568, Sep 20-24, 2009.
146. NAGHIBI, M., and FENTON, G.A., Resistance factors for design of deep foundations in undrained soils, in *Proceedings of the 62nd Annual Canadian Geotechnical Conference*, Canadian Geotechnical Society, Halifax, Nova Scotia, 569–576, Sep 20-24, 2009.
147. GRIFFITHS, D.V., HUANG, J., and FENTON, G.A., Probabilistic stability analysis of shallow landslides using random fields, in *Proceedings of the 12th International Conference on Computer Methods and Advances in Geomechanics, IACMAG 08*, Goa, India, 2013–2020 (CD-ROM), 2008.
148. GRIFFITHS, D.V., PAIBOON, J., HUANG, J., and FENTON, G.A., Numerical analysis of beams on random elastic foundations, in *Proceedings of the 9th International Congress on Numerical Methods in Engineering and Scientific Applications, CIMENICS'08*, (eds L. Martino et al.), Pub. Sociedad Venezolana de Métodos Numéricos en Ingeniería, CI 19–25, 2008.
149. FENTON, G.A., ZHANG, X.Y., and GRIFFITHS, D.V., Load and resistance factor design of strip footings, in *Geosustainability and Geohazard Mitigation*, Geotechnical Special Publication No. 178, ASCE Press, Reston, Virginia, pp. 106-113, 2008.

150. GRIFFITHS, D.V., DEWOLFE, G.F., HUANG, J., and FENTON, G.A., Analysis of infinite slopes with spatially random shear strength, in *Geosustainability and Geohazard Mitigation*, Geotechnical Special Publication No. 178, ASCE Press, Reston, Virginia, pp. 122-129, 2008.
151. HUANG, J., GRIFFITHS, D.V., and FENTON, G.A., One-dimensional probabilistic uncoupled consolidation analysis by the Random Finite Element Method, in *Geosustainability and Geohazard Mitigation*, Geotechnical Special Publication No. 178, ASCE Press, Reston, Virginia, pp. 138-145, 2008.
152. MENZIES, W.T., FENTON, G.A., LAKE, C.B., and GRIFFITHS, D.V., A method to assess risk reduction when utilizing GCLs with compacted soil liners, in *60th Annual Canadian Geotechnical Conference*, Ottawa, pp. 2115-2122, October 2007.
153. FENTON, G.A., and GRIFFITHS, D.V., Reliability-based deep foundation design, in *Probabilistic Applications in Geotechnical Engineering*, Geotechnical Special Publication No. 170, Pub. ASCE, pp. 1-12, 2007.
154. GOLDSWORTHY, J.S., JAKSA, M.B., FENTON, G.A., GRIFFITHS, D.V., KAGGWA, W.S., and POULOS, H.G., Measuring the risk of geotechnical site investigations, in *Probabilistic Applications in Geotechnical Engineering*, Geotechnical Special Publication No. 170, Pub. ASCE, 2007.
155. GRIFFITHS, D.V., and FENTON, G.A., Probabilistic settlement analysis by stochastic and Random Finite Element Methods, in *Proceedings of the XIII PanAmerican Conference on Soil Mechanics and Geotechnical Engineering*, Isla de Margarita, Venezuela, July 15-19, pp. 166-176 (CD-ROM), 2007.
156. GRIFFITHS, D.V., FENTON, G.A., and DENAVIT, M.D., Traditional and advanced probabilistic slope stability analysis, in *Probabilistic Applications in Geotechnical Engineering*, Geotechnical Special Publication No. 170, Pub. ASCE, 2007.
157. CHOK, Y.H., JAKSA, M.B., GRIFFITHS, D.V., FENTON, G.A., and KAGGWA W. S., Effect of spatial variability on reliability of soil slopes, in *Proc. 10th Australia New Zealand Conference on Geomechanics*, Brisbane, Vol. 2, pp. 584-589, Oct 2007.
158. GRIFFITHS, D.V., FENTON, G.A., and ZIEMANN, H.R., The influence of strength variability in the analysis of slope failure risk, *Geomechanics II*, Proceeding of the Second Japan-U.S. Workshop on Testing, Modeling and Simulation, P.V. Lade and T. Nakai, Eds., Kyoto, Japan, September, 2005. Also in *Geotechnical Special Publication No. 156*, ASCE, pp. 113-123, 2006.
159. GRIFFITHS, D.V., FENTON, G.A., and ZIEMANN, H.R., Seeking out failure: The Random Finite Element Method (RFEM) in probabilistic geotechnical analysis, in *Proceeding of the GEOCONGRESS 2006* (CD-ROM), Mini-Symposium on Numerical Modeling and Analysis: Probabilistic Modeling and Design, ASCE, Atlanta, pp. 1-6, 2006.
160. GRIFFITHS, D.V., and FENTON, G.A., Probabilistic settlement analysis of rectangular footings, in *Proceedings of the 16th International Conference on Soil Mechanics and Geotechnical Engineering*, Osaka, Japan, Vol. 2, pp. 1041-1044, Sep 12-16, 2005.
161. FENTON, G.A., and GRIFFITHS, D.V., A slope stability reliability model, in *Proceedings of the K.Y. Lo Symposium* (CD-ROM), London, Ontario, Jul 7-8, 2005.
162. GRIFFITHS, D.V., FENTON, G.A., and TVETEN, D.E., Probabilistic passive earth pressure analysis by the Random Finite Element Method, in *Proceedings of the 11th International Conference on Computer Methods and Advances in Geomechanics (IAC-MAG 05)*, Turin, Italy, (eds. G. Barla and M. Barla), Pub. Pàtron Editore, Bologna, vol. 4, pp. 235-249, Jun 19-24, 2005.

163. GOLDSWORTHY, J.S., JAKSA, M.B., KAGGWA, G.W.S., FENTON, G.A., GRIFFITHS, D.V. and POULOS, H.G., Reliability of site investigations using different reduction techniques for foundation design, in *Proc. 9th Int. Conf. on Structural Safety and Reliability*, on CD, Rome, Italy, Augusti, G., Schuller, G. I., and Ciampoli, M., (eds), Millpress, Rotterdam, pp. 901–908, June 2005.
164. PHOON, K.K, and FENTON, G.A., Estimating sample autocorrelation functions using bootstrap, in *Proceedings of the 9th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Albuquerque, Jul 26-28, 2004.
165. GOLDSWORTHY, J.S., JAKSA, M.B., KAGGWA, G.W.S., FENTON, G.A., GRIFFITHS, D.V., and POULOS, H.G., Cost of foundation failures due to limited site investigations, in *Proceedings of the International Conference on Structural and Foundation Failures*, Wang, C.M. and Murugappan, K, Eds., IES/IStructE Joint Committee, Singapore, pp. 398–409, 2004.
166. KUO, Y.L., JAKSA, M.B., KAGGWA, W.S., FENTON, G.A., GRIFFITHS, D.V., and GOLDSWORTHY, J.S., Probabilistic analysis of multi-layered soil effects on shallow foundation settlement, in *Proc. 9th Australia New Zealand Conference on Geomechanics*, Auckland, Vol. 2, pp. 541–547, Feb 2004.
167. GOLDSWORTHY, J.S., JAKSA, M.B., KAGGWA, W.S., FENTON, G.A., GRIFFITHS, D.V., POULOS, H.G., and KUO, Y.L., Influence of site investigations on the design of pad footings, in *Proc. 9th Australia New Zealand Conference on Geomechanics*, Auckland, Vol. 1, pp. 282-288, Feb 2004.
168. FENTON, G.A., ZHOU, H., JAKSA, M.B., and GRIFFITHS, D.V., Reliability analysis of a strip footing designed against settlement, in *Proceedings of the 9th International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP9)*, San Francisco, pp. 1271–1277, Jul 2003.
169. FENTON, G.A., GRIFFITHS, D.V., and URQUHART, A., A slope stability model for spatially random soils, in *Proceedings of the 9th International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP9)*, San Francisco, 1263–1269, Jul 2003.
170. FENTON, G.A., and VANMARCKE, E.H., Random field characterization of NGES data, in *Probabilistic Site Characterization at the National Geotechnical Experimentation Sites*, Geotechnical Special Publication No. 121, Pub. ASCE, pp. 61–78, 2003.
171. JAKSA, M.B., KAGGWA, W.S., FENTON, G.A., and POULOS, H.G., A framework for quantifying the reliability of geotechnical investigations, *9th International Conference on the Application of Statistics and Probability in Civil Engineering*, 1285–1291, 2003.
172. GRIFFITHS, D.V., FENTON, G.A., and TVETEN, D.E., Probabilistic geotechnical analysis: How difficult does it need to be?, in *Proc. Int. Conf. on Probabilistics in Geotechnics: Technical and Economic Risk Estimation*, R. Pottler, H. Klapperich and H. Schweiger (eds.), Graz, Austria, United Engineering Foundation, New York, pp. 3–20, Sep 2002.
173. JAKSA, M.B., and FENTON, G.A., Assessment of fractal behavior of soils, in *Proc. Int. Conf. on Probabilistics in Geotechnics: Technical and Economic Risk Estimation*, R. Pottler, H. Klapperich and H. Schweiger (eds.), Graz, Austria, United Engineering Foundation, New York, pp. 47–54, Sep 2002.
174. GRIFFITHS, D.V., SZYNAKIEWICZ, T., and FENTON, G.A., A probabilistic investigation of  $c'$ ,  $\phi'$  slope stability, in *Proceedings of the 6th International Congress on Numerical Methods in Engineering and Scientific Applications*, CIMENICS'02, (eds. C. Muller-Karger et al), Pub. Sociedad Venezolana de Métodos Numéricos en Ingeniería, pp. CI 25–36, 2002.

175. GRIFFITHS, D.V., FENTON, G.A., and LEMONS, C.B., Underground pillar stability: A probabilistic approach, in *Proceedings of the 15th International Conference on Soil Mechanics and Geotechnical Engineering*, Istanbul, Turkey, Aug 2001.
176. MANOHARAN, N., GRIFFITHS, D.V., and FENTON, G.A., A probabilistic study of rough strip footing on cohesive soil, in *6th U.S. National Congress on Computational Mechanics*, Dearborn, Michigan, University of Michigan, p. 257, Aug 2001.
177. FENTON, G.A., and GRIFFITHS, D.V., Bearing capacity of spatially random  $c - \phi$  soils, in *Proc. 10th Int. Conf. on Computer Methods and Advances in Geomechanics (IACMAG 01)*, Tucson, Arizona, pp. 1411–1415, 2001.
178. GRIFFITHS, D.V., and FENTON, G.A., Influence of soil strength spatial variability on the stability of an undrained clay slope by finite elements, in *Slope Stability 2000*, ASCE Geotechnical Special Publication No. 101, pp. 184–193, 2000.
179. FENTON, G.A., and GRIFFITHS, D.V., Bearing capacity of spatially random soils, in *Proceedings of the Probabilistic Mechanics and Structural Reliability Conference*, Notre Dame, Indiana, Paper No. 097, Jul 2000.
180. GRIFFITHS, D.V., and FENTON, G.A., Bearing capacity of heterogeneous soils by finite elements, in *Proceedings of the 5th International Congress on Numerical Methods in Engineering and Scientific Applications*, N. Troyani and M. Cerrolaza, Eds., Sociedad Venezolana de Métodos Numéricos en Ingeniería, pp. 27–37, 2000.
181. GRIFFITHS, D.V., and FENTON, G.A., Elasto-plastic finite element analysis of geomaterials with randomly distributed shear strength, in *5th US National Congress on Computational Mechanics*, Book of Abstracts, Pub. University of Colorado at Boulder, p. 496, 1999.
182. GRIFFITHS, D.V., FENTON, G.A., and PAICE, G.M., Reliability-based exit gradient design of water retaining structures, in *Proceedings of the ASCE Uncertainty'96 Conference: Uncertainty in the Geological Environment: From Theory to Practice*, Madison, Wisconsin, pp. 518–534, Aug 1996.
183. FENTON, G.A., PAICE, G.M., and GRIFFITHS, D.V., Probabilistic analysis of foundation settlement, in *Proceedings of the ASCE Uncertainty'96 Conference: Uncertainty in the Geological Environment: From Theory to Practice*, Madison, Wisconsin, pp. 651–665, Aug 1996.
184. FENTON, G.A., and GRIFFITHS, D.V., Flow through earthdams with spatially random permeability, in *Proceedings of the 10th ASCE Engineering Mechanics Conference*, Boulder, Colorado, pp. 341–344, May 1995.
185. GRIFFITHS, D.V., and FENTON, G.A., Observations on two- and three-dimensional seepage through a spatially random soil, in *Proceedings of the Seventh International Conference on Applications of Statistics and Probability in Civil Engineering*, Paris, France, pp. 65–70, Jul 1995.
186. GRIFFITHS, D.V., PAICE, G.M., and FENTON, G.A., Finite element modelling of seepage beneath a single sheet pile wall in spatially random soil, in *Proc. Int. Conf. of the International Association for Computer Methods and Advances in Geomechanics (IACMAG 94)*, Morgantown, W. Virginia, (ed. H.J. Siriwardane), pp. 1205–1210, 1994.
187. PAICE, G.M., GRIFFITHS, D.V. and FENTON, G.A., Influence of spatially random soil stiffness on foundation settlements, in *ASCE Specialty Conference, Settlement '94*, Texas A&M University, (ed. Yeung, A.T., and Felio, G.Y.), pp. 628–639, 1994.
188. VANMARCKE, E.H., HEREDIA, E., and FENTON, G.A., Local fields of earthquake ground motion: Conditioned simulation, in *ASCE Conference on Probabilistic Mechanics and Structural & Geotechnical Reliability*, Denver, Colorado, Jul 1992.

189. FENTON, G.A., and VANMARCKE, E.H., Liquefaction risk assessment: 3-D modeling, in *Proceedings of the Fourth International Conference on Seismic Zonation*, Stanford, California, pp. 669–676, Aug 1991.
190. FENTON, G.A., and VANMARCKE, E.H., Spatial variation in liquefaction risk assessment, in *Proceedings of the ASCE Geotechnical Engineering Congress*, Boulder, Colorado, pp. 594–607, Jun 1991.
191. VANMARCKE, E.H., and FENTON, G.A., Application of kriging techniques to earthquake ground motion simulation, in *4th International Conference on Soil Dynamics and Earthquake Engineering*, Mexico City, 125–137, Oct 1989.
192. SUTER, G.T., and FENTON, G.A., Splice length tests of reinforced concrete masonry walls, in *Third North American Masonry Conference*, Arlington, Texas, p. 68, Jun 1985.
193. FENTON, G.A., and SUTER, G.T., Differential movement between clay brick veneer and concrete block in loadbearing masonry highrise structures, in *Seventh International Brick Masonry Conference*, Melbourne, Australia, Feb 1985.
194. SUTER, G.T., KELLER, H., and FENTON, G.A., Summary of a decade of reinforced masonry research at Carleton University, Canada, in *International Symposium on Reinforced and Prestressed Masonry*, Edinburgh, United Kingdom, Aug 1984.
195. KELLER, H., SUTER, G.T., and FENTON, G.A., Field instrumentation to determine differential movements in loadbearing masonry highrise structures, in *Third Canadian Masonry Symposium*, Edmonton, Canada, Jun 1983.

#### **Non-refereed Publications and Reports**

196. FENTON, G.A., Random field characterization of NGENS data, Short Course Notes, University of Washington, Seattle, Aug 2, 1998, 19 pg.
197. FENTON, G.A., Random field representation of CPT data: Parameter estimation, Norwegian Geotechnical Institute, Report 514170-4, Oslo, Norway, 1997, 32 pg.
198. VANMARCKE, E.H., FENTON, G.A., and HEREDIA, E., SIMQUAKE-II: Conditioned Earthquake Ground Motion Simulator, User's Manual (Version 2.5), National Information Service for Earthquake Engineering, UC Berkeley, 1997, 25 pg.
199. FENTON, G.A., *APENS Student Affairs Committee Handbook*, Association of Professional Engineers of Nova Scotia, Halifax, Nova Scotia, Feb. 1996, 59 pg.
200. HEREDIA-ZAVONI, E., VANMARCKE, E.H., and FENTON, G.A., Simulation Condicional del Movimiento Sismico del Terreno, in *Proceedings of the Mexican National Conference on Earthquake Engineering*, Guadalajara, Mexico, 1994.
201. FENTON, G.A., Random Field Generators: Which to Use?, in *Proceedings of the Joint ASCE-ASME-SES Meeting*, Charlottesville, Virginia, Jun 1993.
202. VANMARCKE, E.H., HEREDIA, E., and FENTON, G.A., Conditional simulation of earthquake ground motion, in *Proceedings of the Joint ASCE-ASME-SES Meeting*, Charlottesville, Virginia, Jun 1993.
203. VANMARCKE, E.H., HEREDIA, E., and FENTON, G.A., SIMQUAKE-II: A program for conditional simulation of earthquake ground motion, User Manual and Documentation, Structures and Mechanics Research Report SM-92-4, Princeton University; Presented at Poster Session at Annual NCEER Investigator Meeting, Buffalo, New York, Nov 1992.
204. FENTON, G.A., RISK 2.0: *System Failure Probability*, report and computer program for Public Works Canada under Research Contract No. 330-1866, Jan 1992.

205. VANMARCKE, E.H., FENTON, G.A., and HEREDIA, E., Local fields of earthquake ground motion: Conditioned simulation, Structures and Mechanics Research Report SM-91-2, Princeton University, 1991.
206. FENTON, G.A., and VANMARCKE, E. H., Simulation of correlated time histories, Report No. 88-SM-1, Department of Civil Engineering and Operations Research, Princeton University, Princeton, NJ, 1988.