



Dr. Jonathan Fannin

Professor

Geotechnical Engineering

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Biography

Jonathan Fannin received a B.Sc. (Civil Engineering) from the Queen's University of Belfast, and a D. Phil. (Geotechnical Engineering) from the University of Oxford. He worked at the Norwegian Geotechnical Institute, before joining the University of British Columbia in 1989, and receiving promotion to Full Professor in 2001. Dr. Fannin is the recipient of many national and international research awards, including the 4th International Geosynthetics Society (IGS) Award for contributions of laboratory and field research to engineering practice, a CGS Quigley Award for the best paper in the Canadian Geotechnical Journal, a Karl Terzaghi Fellowship from the Norwegian Geotechnical Institute and more recently, a Distinguished Visiting Fellow award from the U.K. Royal Academy of Engineering. His professional service has included Chair of the Canadian Geotechnical Society (CGS) Geosynthetics Division, Board Member of the North American Geosynthetics Society, Associate Editor of the Canadian Geotechnical Journal, and Panel Member on the editorial board of Geotechnique Letters. He became a Fellow of the Engineering Institute of Canada in 2013.

Research Interests

Micromechanics of internal erosion, triaxial-permeability testing, internal erosion of earth dams and their foundations, grain shape and the strength of sands, geosynthetics for soil stabilization, slope stability in engineering practice, debris flow travel distance

Courses

CIVL 210 **Soil Mechanics I**

CIVL 413 **Design of Earth Dams and Containment Structures**

CIVL 579 **Geosynthetics**

Awards & Recognitions

- 2016, Invited Visiting Professor, University of Nantes, France
- 2013, Fellowship of the Engineering Institute of Canada
- 2012, CGS Geosynthetics Award, Canadian Geotechnical Society
- 2012, Visiting Erskine Fellowship, Department of Civil Engineering of University of Canterbury
- 2008, Distinguished Visiting Fellowship, Royal Academy of Engineering, United Kingdom
- 2008, President's Teaching Award, APEGBC
- 2007, Visiting Erskine Fellowship, University of Canterbury
- 2007, Certificate of Appreciation, Canadian Geotechnical Society
- 2004, Terzaghi Fellowship, Norwegian Geotechnical Institute
- 2004, UBC Killam Teaching Prize, Faculty of Applied Science
- 2003, Visiting Senior Scholar Award, Ministry of Research, Government of France
- 2001, Academic Exchange Award, United Nations, Food and Agriculture Organization (FAO)
- 1999, Human Resource for Technological Development Award, National Research Council of Brazil (CNPq)
- 1998, UBC Killam Teaching Prize, Faculty of Forestry
- 1998, IGS Award, International Geosynthetics Society
- 1996, R.M. Quigley Award, Canadian Geotechnical Society
- 1996, B.C. Asia Pacific Scholars Award, B.C. Centre for International Education

- Li, M. and Fannin, R.J. (2021). "Internal erosion: critical hydraulic gradient in 1-D vertical seepage and its relation to soil gradation," Canadian Geotechnical Journal (in press).
- Li, M. and Fannin, R.J. (2021). "On the mechanics of internal erosion in cohesionless soil," Proc.10th Int. Conf. on Scour and Erosion (ISCE-10), 18-21 Oct. 2021, online delivery (pp.138-147).
- Fannin, R.J. and Li, M. (2019). "Internal erosion of zoned earthfill dams and their foundations: commentary on the state-of-practice," Proc. 27th Can. Geotech. Soc. Conf., St. Johns, Nfld., 29 Sept. - 2 Oct. 2019 (6 pages).
- Fannin, R.J. (2019). "Cleveland Dam, Vancouver: Terzaghi's recommendations on seepage control and mitigation of internal erosion," Proc. 27th EWGIE, Vancouver, BC, 18-21 June, 2019 (2 pages).
- Ataii, S. and Fannin, R.J. (2019). "Inflow boundary conditions in triaxial permeameter testing," Proc. 27th EWGIE, Vancouver, BC, 18-21 June, 2019 (2 pages).
- Ganapathiraman, V. and Fannin, R.J. (2019). "Internal instability testing of widely-graded materials with oversize particles," Proc. 27th EWGIE, Vancouver, BC, 18-21 June, 2019 (2 pages).
- Antunes, A. and Fannin, R.J. (2019). "Grain size and shape in the glacial moraine borrow source for the Bennett Dam," Proc. 27th EWGIE, Vancouver, BC, 18-21 June, 2019 (2 pages).
- McClelland, V. and Fannin, R.J. (2019). "On specimen reconstitution and commissioning a triaxial permeameter," Proc. 27th EWGIE, Vancouver, BC, 18-21 June, 2019 (2 pages)
- Slangen, P. and Fannin, R.J. (2019). "Seepage induced internal instability for dam safety assessments," Proc. 39th USSD Conference, 8-12 Apr. 2019, Chicago, USA (18 pages).
- Fannin, R.J., Slangen, P., Hartford, D.N.D., Ataii, S., and McClelland, V. (2018). "Erosion of zoned earthfill dams by internal instability: advances in the state-of-art," Proc. 2018 Can. Dam Assoc. Annual Conference, 13-18 Oct. 2018 (6 pages).
- Fannin, R.J., Slangen, P., Ataii, S., McClelland, V., and Hartford, D.N.D. (2018). "Erosion of zoned earthfill dams by internal stability: laboratory testing for model development," Proc. 26th EWGIE, Milan, Italy, 10-13 Sept., 2018 (18 pages).
- Slangen, P. and Fannin, R.J. (2017). "The role of particle type on suffusion and suffosion," Geotechnique Letters, Vol. 7, pp.6-10.
- Slangen, P. and Fannin, R.J. (2017). "A flexible wall permeameter for investigating suffusion and suffosion," ASTM Geotechnical Testing Journal, Vol. 40(1), pp.1-14.
- Fannin, R.J., Mickovski, S.B., Stokes, A., Eliadorani, A.A. and McConnell, R. (2017). "Debris flow behavior and travel distance: Col du Sabot, France", ICE Journal of Environmental Geotechnics, Vol. 4(1), pp.19-26.
- Fannin, R.J. and Hartford, D.N.D. (2017). "Research needs for improved dam safety risk management of internal erosion," Proc. 25th EWGIE, Delft, Netherlands, 4-7 Sept., 2017, extended abstract.
- Slangen, P. and Fannin, R.J. (2017). "A flexible wall permeameter test device: design, commissioning, and operation," Proc. 25th EWGIE, Delft, Netherlands, 4-7 Sept., 2017, extended abstract.
- Fannin, R.J. and Roos, D. (2017). "Coursier Dam sinkholes incidents: backward erosion from filter incompatibility," Proc. 25th EWGIE, Delft, Netherlands, 4-7 Sept., 2017, extended abstract.
- Fannin, R.J., Li, M. and Anderlini, C. (2017). "Evaluation of internal erosion scenarios in an embankment dam," Proc. 37th Annual Conf. of the USSD, Anaheim, CA, 3-7 Apr., 2017, 15p.
- Li, M. and Fannin, R.J. (2016). "Critical hydraulic gradients for internally unstable cohesionless soils," Proc. GeoVancouver 2016, Vancouver, Canada, Oct. 2-5, 2016, 6p.
- Slangen, P. and Fannin, R.J. (2016). "A commentary on the ICOLD Bulletin 164 on internal erosion; the significance of volume change in internally unstable soils," Proc. GeoVancouver 2016, Vancouver, Canada, Oct. 2-5, 2016, 7p.
- Fannin, R.J. (2016). "A micro-mechanics understanding of internal erosion in dams: how, where, and when?" USSD Intl. Symp. on the Mechanics of Internal Erosion for Dams and Levees, Salt Lake City, Utah, 9-11 Aug. 2016, 5p.
- Fannin, R. and Quinteros, V.S. (2015). "Soil strength for design of reinforced soil walls," Proc. 16th European Conf. on Soil Mechanics and Geotechnical Engineering, Edinburgh, Scotland, Sept. 13-18, 2015, 6p.
- Shire, T., O'Sullivan, C., Fannin, R.J. and Hanley, K.J. (2015). "Use of discrete element modeling to assess the internal instability of dam filters," Proc. 16th European Conf. on Soil Mechanics and Geotechnical Engineering, Edinburgh, Scotland, Sept. 13-18, 2015, 6p.
- Ronnqvist, H., Fannin, R.J., and Viklander, P. (2015). "The unified plot approach for assessing internal erosion - a case study of the Grundsjon Dam sinkhole event," Proc. ICOLD 25th Congress, Stavanger, Norway, June 13-20, 2015, 17p.
- Shire, T., O'Sullivan, C. and Fannin, R.J. (2014). "Fabric and effective stress distribution in internally unstable soils", ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol. 140:12, DOI: 10.1061/(ASCE)GT.1943- 5606.0001184 (11p.).
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- Li, M., Fannin, R.J. and Anderlini, C. (2014). "Assessing performance of a potentially internally unstable filter," *Proceedings Canadian Dam Association Conference*, Oct. 4-9, 2014, Banff, AB, 10p.
- Fannin, R.J., Quinteros, V.S. and Vaslestad, J. (2014). "Behaviour of a geosynthetic reinforced soil slope: a 25-year field study," *Proceedings of the 10th International Conference on Geosynthetics*, Berlin, Sept. 21-25, 2014, 9p.
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- Li, M. and Fannin, R.J. (2013). "A capillary tube mode for internal instability of cohesionless soil," *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 139: 831-34.
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- Fannin, R.J., Busslinger, M. and Jordan, P. (2012). "Debris flow travel distance: field traverse data and regional guidelines for terrain stability assessment," *Proceedings 11th International Symposium on Landslides*, June 2-8, 2012, Banff, AB, 6p.
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- Fannin, R.J. and Bowman, E. (2010). "Debris flows-entrainment, deposition and travel distance," *Proceedings of the 11th Int. Assoc. for Engng. Geology Congress*, Auckland, New Zealand, Sept. 5-10, 2010, pp. 1111-1118.
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