Canadian Association of Earthquake Engineering, Director Candidates, June 2023

Martin Lawrence, PhD, PGeo

Specialist Engineering Geologist, BC Hydro and Power Authority

Ph.D. in Engineering Geology, University of Bristol, 1985
B.Sc. in Applied Geology, University of Bristol, 1980

Martin has been a Director with the CAEE for several years, most recently as Technical Secretary for the Association. He has been involved in the seismic design of new and existing dams and structures in Canada and internationally. He has managed CAEE's Director meetings including agenda and task planning, coordinated technical, management and financial tasks, and spearheaded our recent name change proposal. Martin has worked to grow the profile of CAEE nationally and to grow our membership base to include a variety of technical and disaster management disciplines. Martin has been involved in the planning of several conferences including the 2023 CCEE/PCEE in Vancouver, the 11CCEE Conference in 2015, and other geotechnical and seismology workshops and seminars internationally.

His engineering, geological and geotechnical experience includes seismic hazard development for major dam projects, dam safety and foundation characterisation, landslide and slope stability, geological mapping, seismic hazard analysis, rock slope engineering, reservoir shoreline management, geophysics and instrumentation, assessments of alkali aggregate reactivity and prevention and mitigation of its impact on dams, geographic information systems (GIS), geomorphology, paleo-seismology, tunneling, quarry development and environmental awareness and stewardship on numerous projects.

Juan-Carlos Carvajal, PhD, P.Eng.

Associate / Senior Geotechnical Engineer – Thurber Engineering, Vancouver

Ph.D. in Earthquake Engineering. University of British Columbia - UBC, Canada, 2011
M.Sc. in Geotechnical Engineering. National University of Mexico - UNAM, Mexico, 2000
B.Sc. in Civil Engineering. Industrial University of Santander - UIS, Colombia, 1996

Juan-Carlos has 23 years of professional and research experience in geotechnical, geo-structural and earthquake engineering, structural dynamics, ambient vibration testing of bridges, and advanced dynamic finite element simulations. He has been involved in analysis, design, review, and technical support during construction of more than 130 projects in Canada, Mexico and abroad. He has authored more than twenty technical papers including two journal papers on earthquake engineering. He has also imparted the course on seismic soil-structure interaction analysis for the Structural Engineers Association of BC.

Highlights of his experience include selection and scaling of earthquake records, nonlinear site response analysis, liquefaction assessment, slope stability analysis, seismic foundation-structure-embankment interaction, seismic response of bridge embankments, bridge foundation design, and displacement-based design for optimization of seismic retrofit of bridges.

Juan-Carlos's applied research experience includes the development of guidelines for modeling the seismic response of integral abutment bridges for the Ministry of Transportation and Infrastructure of British Columbia, development of alternative configurations of integral abutment bridge approach slabs for mitigation of asphalt distress for the Ministry of Transportation Ontario, and development of design guidelines for downdrag forces on driven piles for the Ministry of Transportation Ontario. He developed a simple procedure for seismic soil-abutment structure interaction analysis of bridges, which has been included in the Commentary on CSA S6-14 and CSA S6-19, Canadian Highway Bridge Design Code.

The Canadian Association for Earthquake Engineering L'Association Canadienne du Génie Parasismique

Jason Dowling, PhD, P.Eng.

Bridge Engineer – Associated Engineering, Vancouver

Postdoctoral Fellow, University of British Columbia, 2012-2015
Ph.D. and Instructor, University College Dublin, 2011
B.Eng., Civil Engineering, University College Dublin, 2006

Jason has over twelve years of engineering experience in bridge and seismic analysis and design including rehabilitation, seismic design and retrofit, earthquake and structural engineering research and education. His experience includes seismic assessment of existing bridges from simple span to arch and suspension bridge, static and dynamic analysis of structures, and design of seismic retrofit and rehabilitation works for several major bridges. He has been both technical lead and project manager on complex seismic engineering projects in British Columbia. His expertise and experience also includes an in-depth understanding of soil-structure interaction and its importance to seismic behaviour and design, liquefaction impacts and design for bridges, seismic hazard and seismic risk. He recently led a team of engineers, geoscientists and researchers on a multi-disciplinary study of seismic planning, network-wide risks, mitigations and recovery scenarios for a selection of British Columbia's most important highway routes.

Jason has written several papers in peer reviewed journals and presented at several bridge and seismic conferences in Canada. He has been a contributor to the CAEE for the past several years, liaising with researchers, graduate students and members across Canada and assisting with conference planning and organization.

Jason recently participated in the CAEE reconnaissance tour to Turkey following two destructive earthquakes in 2023 profoundly impacting the infrastructure and populations. He will co-author the report to follow in 2023, and will be one of the presenters of the reconnaissance findings at the CCEE / PCEE conference in Vancouver in June.

Sanda Koboevic, PhD

Associate Professor at Polytechnique Montreal

Ph.D. and MASc in earthquake engineering, McGill University**.**

Sanda is an Associate Professor at Polytechnique Montreal in the Department of civil, geological and mining engineering. Sanda received a bachelor's degree in structural engineering from University of Sarajevo, and master's and a Ph.D. degree in earthquake engineering from McGill University. Prior to joining Polytechnique Montreal in 2004, Dr. Koboevic worked over 10 years in industry as a consulting engineer on various project in Canada and abroad. Her research interests include seismic design of steel and reinforced concrete building structures, seismic assessment of existing structures, seismic resistant construction in developing countries and soil-structure interaction. Dr. Koboevic is an active member of different research groups such as the Group of Research in Structural Engineering (GRS) at Polytechnique Montreal and the Interuniversity Center for the Study of Structures under Extreme Loads (CEISCE). She is a member of CSA S16 Technical Committee and a member of the organizing committee of Montreal Structural Engineers association.

Sanda was a member of the Quebec-based organizing committee whom submitted a formal bid for candidacy of Montreal to host 2024 World Conference on Earthquake Engineering (Milano, Italy was successful). Sanda is keen to assist CAEE in areas such as the technical development of current and new members of CAEE, in liaison among students, universities and practicing engineers, and assisting in webinars and contributing to our newsletter.

Jimmy Fortier, P.Eng. (QC and Ontario), M.Eng.
Bridge Engineer – Parsons Corp, Montreal, Quebec

MASc in structural engineering, McGill University (2013)
BASc in civil Engineering, Université de Sherbrooke (2008)

Jimmy started his career in 2009 at Stantec (previously Dessau) where he worked for six years on the modelling, analysis, design, and load-rating evaluation of bridges. In 2014, Jimmy won the prestigious Quebec Emerging Consulting Engineering Professional Award, which recognizes the exceptional contribution of a young consulting engineer, for the major rehabilitation of the reinforced concrete arch bridge located in Montreal.

In 2015, he joined Parsons where he has been working for more than eight years gaining expertise in seismic design and retrofit of structures. His practical experience in seismic design and in seismic isolation grew from many projects where isolation bearings were investigated and implemented.

He is a member of the Technical subcommittee 4 on seismic design of the Canadian Highway Bridge Design Code and led a task force to streamline seismic isolation design, testing, procurement and construction. Jimmy is leading the development of a guide document on seismic isolation specific to Canada that will help support designers, owners and others implement isolation to the 2025 (and 2019) Canadian Highway Bridge Design Code. He worked on the seismic evaluation of many crossings including the Clement, Jacques-Cartier and Honoré-Mercier bridges in Montreal, the MacDonald-Cartier and Alexandra bridges in Ottawa as well as the Ironworkers Memorial and the Lion's Gate bridges in Vancouver.

Jimmy is enthusiastic about working within CAEE to further the practice of seismic design in Canada and internationally. Among his key objectives would be to promote CAEE in eastern Canada, such as in Quebec and Ontario, where seismic hazard is significant and design practice is evolving.