



Second Annual Structures Graduate Students Conference 2016 (SGSC 2016)

Royal Glenora Club

Edmonton, Alberta | September 9th, 2016

On behalf of our Structures Group at the University of Alberta, we would like to welcome you to our Second Annual Structures Graduate Students Conference. The event is dedicated to celebrate our students, present our work, and thank our industry and alumni for their valuable support.

AGENDA

8:00 – 8:30	Registration and Breakfast
8:30 – 9:00	Opening remarks
9:00 – 9:45	Keynote: “ <i>Reliability Assessment of Existing Structures</i> ” By: <i>Sherif Hassanein</i>
9:45 – 10:30	Session 1: “Biomechanics” Chair: Bernardo Garcia Ramirez
10:30 – 10:45	Coffee Break
10:45 – 12:00	Session 2: “Structural Health Monitoring” Chair: Bernardo Garcia Ramirez
12:00 – 12:55	Luncheon and Poster Session
12:55 – 13:15	Keynote: “ <i>Aesthetics: Why Should Structural Engineers Bother?</i> ” By: <i>Georg Josi</i>
13:15 – 14:30	Session 3: “Concrete and Innovative Materials” Chair: Chike Okoloekwe
14:30 – 14:45	Coffee Break
14:45 – 16:00	Session 4: “Pipelines and Steel” Chair: Fatemeh Fallahi Arezodar
16:00 – 16:45	Keynote: “ <i>Advanced Computation: Integration of Architectural and Structural Design by Means of Generative Design</i> ” By: <i>Peter Olendzki</i>
16:45 – 19:00	Dinner and Awards

KEYNOTE SPEAKERS

Keynote: “*Reliability Assessment of Existing Structures*”

Presenter: Sherif Hassanein
Senior Manager, Enbridge Pipeline Inc.

Bio:

Sherif has 25 years of experience in the fields of structural analysis & design, reliability & risk assessment, statistical uncertainty quantification, and finite element modeling. He gained most of his industrial and R&D experience through working at Enbridge Pipelines Inc., C-FER Technologies (AITF), SNC-LAVALIN, Trow Global, and Military Technical College and handling different technical and managerial roles. Dr. Hassanien is currently the senior manager of integrity reliability-Enbridge Pipeline Inc. where he is leading a team that is responsible of evaluating and assessing the reliability of 25,000 km of transmission liquid pipeline system against integrity hazards.

He received his PhD from the University of Calgary, Alberta. Dr.Hassanien is a member in different professional societies such as APEGA, ASQ (American Society of Quality) and SRE (Structural reliability Engineering). He is a certified risk assessment lecturer at the World Bank institute (WBI).

Keynote: “*Aesthetics: Why Should Structural Engineers Bother?*”

Presenter: Georg Josi, Ph.D., P.Eng.
Principal, DIALOG

Bio:

Georg brings over 20 years of international design experience, specializing in building, tunnel, bridge and rail infrastructure projects. He has completed two postgraduate degrees in Alberta and lived for more than 10 years in Canada; he is very familiar with the local environment, customs, design philosophies and codes. As a team player, Georg enjoys working with owners, architects, other engineers, and contractors, and always strives to provide cost-efficient, practical solutions to engineering problems.

Georg has been part of connectEd Transit Partnership (CTP), the owner’s engineer on the Valley Line LRT, since 2011. He has led the Sustainable Urban Integration (SUI), the facilities and the structures teams and is currently one of three design review managers and part of the City’s project management team. Georg has also had the privilege to be the lead structural engineer and/or project manager on local projects such as the River Valley Mechanized Access, the Royal Alberta Museum, the Kelly Ramsay Tower and the Kaye Edmonton Clinic, and has provided special advice and peer review services on projects including the

Walterdale Bridge and Rogers Place. Prior to joining DIALOG, Georg worked on several tunnel, bridge and building projects in Switzerland, the highlight being the lead structural engineer on portions of the almost 35 km long Lötschberg Base Tunnel, a high speed rail tunnel through the Swiss Alps, linking Germany and northern Europe to Italy and the Balkan.

Keynote: *“Advanced Computation: Integration of Architectural and Structural Design by Means of Generative Design”*

Presenter: Peter Olendzki M.E.Sc., P.Eng.
Senior Engineer - Entuitive

Bio:

Peter is a Senior Engineer at Entuitive. He has experience in a variety of project types, with a focus on sports and recreation and institutional facilities. He has worked in a variety of project delivery environments including design build, construction management, and conventional tender. Projects include the New Calgary Central Library, Remai Art Gallery of Saskatchewan, Ripley’s Aquarium of Canada, the University of Toronto School of Architecture, and BMO Field Expansion amongst many others.

His focus has been in establishing and integrating Vertebrae into Entuitive. Vertebrae is an internal initiative which aims to research new technology and distill it to applicable components which relate to the integration of architecture with engineering. Working with clients in a highly collaborative and creative environment he develops an understanding of the primary visions and goals of a project and develops unique approaches to providing tailored structural solutions.

Processes like generative and parametric design tied with structural analysis and optimization provide a platform for which the team can explore possibilities. Using his structural background as a guide, he ensures solutions to complex problems are efficient, feasible, and if required, elegant.

PRESENTATION OUTLINE:

Complexity in architectural design has become prevalent in the industry with the introduction of computation as a leading design tool. Time limitations to explore complex structural systems in an iterative fashion during conceptual phases of design has compelled engineers to explore structure in new ways. This presentation will walk the audience through live case studies of how advanced computation was used for structural form finding, optimization, optioneering, and other important computational processes to enhance collaboration amongst design teams and quickly explore complex structural designs.