

## Research Grants Awarded by CISC<sup>1</sup> 1995 – 2019

No.	Title	Recipient(s)	University
9501	Bolted End Plate Connections for Ductile Moment Connections	J.J. Roger Cheng Gilbert Y. Grondin	University of Alberta
9502	Beam Connections Subject to Combined Shear & Tension	John L. Dawe	University of New Brunswick
9503	Plate Connections to HSS Members at Brace Points	Jeffrey A. Packer	University of Toronto
9601	Seismic Brace Connection Forces for Steel Buildings	Robert Tremblay	École Polytechnique de Montréal
9602	Behaviour of Webs of Rolled Shapes Subjected to Concentrated Loads	Stephen J. Kennedy	Carleton University
9603	EBF Requirements for Moderate Seismic Zones	R.G. Redwood	McGill University
9604	Optimum Bridging for Steel Joists	John L. Dawe	University of New Brunswick
9605	Competitive Steel Highway Bridge Pier Concept Lower Chord	M. Bruneau	University of Ottawa
9701	Review of Resistance Factors for Steel	F. Michael Bartlett	Western University
9702	LSD for Combined Torsion & Bending of W-Shapes	Gilbert Y. Grondin J.J. Roger Cheng	University of Alberta
9703	Internet Based Resource for Structural Steel Design and Construction	Neal M Holtz Stephen J. Kennedy	Carleton University
9704	Seismic Brace Connection Forces for Steel Buildings	Robert Tremblay	École Polytechnique de Montréal
9705	Shear Lag in Welded Angles	S.M.R. Adluri	Memorial University
9801	Seismic Behaviour of Low Rise Steel Building Frames	Helmut G.L. Prion Carlos E. Ventura	University of British Columbia
9802	HSS Connections PC Program	Jeffrey A. Packer	University of Toronto
9803	Mitigating Brace Overstrength in Concentrically Braced Steel	Robert Tremblay	École Polytechnique de Montréal
9804	Interactive Handbook of Steel Construction	Neal M. Holtz Stephen J. Kennedy	Carleton University

<sup>1</sup> In 1995 the Steel Structures Education Foundation (SSEF) initiated the University Research Grant program and awarded grants from 1995 to 2014. On October 15, 2014, the SSEF merged with the Canadian Institute of Steel Construction (CISC). Since that date, the University Research Grant program is administered by the CISC.

No.	Title	Recipient(s)	University
9805	Vibration Control Design of Floor Systems Using Cold-Formed Steel Joists	Lei Xu, W-C Xie R.M. Schuster	University of Waterloo
9806	Test of Ductile Diaphragms Concept for Steel Deck Trusses	M. Bruneau	University of Ottawa
9901	Behaviour and Design of Steel Plate Shear Walls for High-Rise Buildings	Gilbert Y. Grondin	University of Alberta
9902	Shear Lag and Tear-out Behaviour and Design of Connections	Peter C. Birkemoe	University of Toronto
9903	Bracing Systems for Earthquake Resistance of Low-Rise Steel Buildings	Helmut G.L. Prion Carlos E. Ventura	University of British Columbia
9904	Interactive Object Oriented Handbook	Neal M. Holtz Stephen J. Kennedy	Carleton University
2001	Optimization of the Behaviour of Brace Members For Centrally Braced Frames	Tom G. Brown	Calgary University
2002	Joining of Steel Poles	Jeffrey A. Packer	University of Toronto
2003	A Study of Built-up Cold-formed Steel Sections Used In Compression	Jane Thorburn	Dalhousie University
2004	Interaction Relations for Steel Tubular Sections	Magdi Mohareb	University of Ottawa
2005	Block Shear Failure in Steel Members	Gilbert Y. Grondin Robert Driver	University of Alberta
2006	Aspects of the Seismic Design of Centrally Braced Steel Frames	Robert Tremblay	École Polytechnique de Montréal
2001-01	Welded Truss Connections with Angle Web Members	Dominique B. Bauer	Université du Québec, École de technologie supérieure
2001-02	Notch Toughness of Canadian Hollow Structural Sections	Jeffery A. Packer	University of Toronto
2001-03	Damage Detection in Welded Connections Using Impact Hammer Test	Carlos E. Ventura	University of British Columbia
2001-04	Weld Washer Detailing for Improved Seismic Response of Metal Roof Deck Diaphragms in Steel Buildings	Robert Tremblay Colin Rogers	École Polytechnique de Montréal McGill University
2001-05	Behaviour of Welded Tension Members	J.J. Roger Cheng	University of Alberta
2001-06	Fatigue Resistance of High Performance Steel for Canada's Highway and Rail Bridges	Robert G. Driver Gilbert Y. Grondin	University of Alberta
2002-01	Full Strength Slotted HSS Connections	Heng Aik Khoo	Carleton University

No.	Title	Recipient(s)	University
2002-02	Investigation of Steel Roofs Designed to Retain Rain Water	F. Michael Bartlett	University of Western Ontario
2002-03	Improving the Economic Viability of Steel Plate Shear Walls Proportioned un the Capacity Design Requirements of S16-01	Robert G. Driver Gilbert Y. Grondin	University of Alberta
2002-04	Strength of Plasma Cut 3-Plate Steel Columns	K.S. Sivakumaran	McMaster University
2002-05	Welded Truss Connections with Angle Web Members. A continuation for 2001	Dominique B. Bauer	Université du Québec, École de technologie supérieure
2003-01	Innovative Methods to Enhance the Economy of Steel Structures: Decision Aids in the Design and Fabrication of Steel Structures	Siegfried F. Stiemer	University of British Columbia
2003-02	Compressive Resistance of Solid Round Steel Bars	Khaled Sennah	Ryerson University
2003-03	a) Performance of Light Gauge Cold-Formed Steel Roof Trusses b) Knife Plate Connections for Tubular Bracing c) Light Gauge Cold Formed Steel Joists with Web Perforations	John L. Dawe	University of New Brunswick
2003-04	A Comprehensive Monograph for the Design of Steel Plate Shear Walls	Robert G. Driver Gilbert Y. Grondin	University of Alberta
2003-05	Variable Amplitude Fatigue Testing of High Performance Steel	Colin MacDougall	Queen's University
2003-06	Experimental Study of Stiffener Requirements for Beams Framing Over Column Caps	Yi Liu	Dalhousie University
2003-07	Interaction of Failure Modes in Bolted Steel Tension Members	Reinhold Schuster	University of Waterloo
2004-01	Assessment of the Ultimate Limit States of Single and Double Angle Connections with Slotted Holes	Robert G. Driver Gilbert Y. Grondin	University of Alberta
2004-02	Seismic Design of Steel Structures with Replaceable Nonlinear Links	Constantin Christopoulos Robert Tremblay	University of Toronto École Polytechnique de Montréal
2004-03	Guidance on the Issue of Thermal Mass in Steel Framed Office Buildings in Canada	Mark Gorgolewski	Ryerson University
2004-04	Seismic Behaviour and Computer Modeling of Ductile Steel Plate Walls	Carlos E. Ventura	University of British Columbia
2004-05	Bolted Beam Flanges (Effects of Flange Fastener Holes on Flexural Strength of Steel Beams)	K.S. Sivakumaran	McMaster University
2005-01	Gusset Plate to Round HSS Connections	Jeffery A. Packer *	University of Toronto
2005-02	Double-Angle Shear Connections with Short Outstanding Legs	Yanglin Gong	Lakehead University

No.	Title	Recipient(s)	University
2005-03	Design of Angles in Compression	Yi Liu	Dalhousie University
2005-04	Analytical Method for Calculating the Reduction in Strength Due to Shear Lag Effects in Tension Member Connections	Dominique Bauer	Université du Québec, École de technologie supérieure
2005-05	Diaphragm Capacity of Composite Deck-Slab System	John L. Dawe	University of New Brunswick
2005-06	Assessment of the Seismic Performance of Concentrically Braced Steel Frames of the Conventional Construction Category	Robert Tremblay	École Polytechnique de Montréal
2006-01	Unification of S16 Design Procedures for Net Section Rupture, Tension and Shear Block and Bolt Tear-out Limit States	Robert G. Driver *	University of Alberta
2006-02	Use of Steel Castings for Critical Steel Bracing	Constantin Christopoulos Jeffrey A. Packer	University of Toronto
2006-03	Seismic Design of Tall Eccentrically Braced Frames for Canadian Conditions	Sanda Koboevic	École Polytechnique de Montréal
2006-04	Shear and Tension Capacity of ARC Spot Weld Connections for Multi-Overlap Roof Deck Panels	Robert Tremblay Colin A. Rogers	École Polytechnique de Montréal McGill University
2006-05	Steel Wind Turbine Towers	Jeffrey A. Packer Constantin Christopoulos	University of Toronto
2006-06	Strap Tension Only Bracing	Heng Aik Khoo	Carleton University
2007-01	Use of Light Gauge Steel Plate in Plate Walls	Robert G. Driver * Gilbert Y. Grondin *	University of Alberta
2007-02	Connecting Braces in Type MD CBF's Reduced Sections to Optimize Bracing Connections	Frédéric Légeron	Université de Sherbrooke
2007-03	Design of Laterally Unsupported Crane Supporting Girders (Crane Runways)	Siegfried F. Stiemer	University of British Columbia
2007-04	DSPW as Cost-Effective Seismic Retrofit System for School Buildings	Carlos E. Ventura	University of British Columbia
2007-05	Resistance Factors for Components Proportioned using Capacity Design	Michael Bartlett	University of Western Ontario
2008-01	Economical Steel Plate Shear Walls for Canada's Low and Moderate Seismic Regions	Robert D. Driver *	University of Alberta
2008-02	Design Method for Gerber Beam	Magdi Mohareb	University of Ottawa
2008-03	Elliptical Hollow Sections – Welded Connections	Jeffrey A. Packer	University of Toronto

No.	Title	Recipient(s)	University
2008-04	Simplified Design Methods for Gerber Girders	Siegfried F. Stiemer	University of British Columbia
2008-05	Predicting the Effectiveness of Post-Weld Treatments Applied Under Load	Scott Walbridge	University of Waterloo
2008-06	Comparing carbon emissions from constructing a steel and concrete frame building	Mark Gorgolewski Vera Straka	Ryerson University
2009-01	Development of Canadian Progressive Collapse Mitigation Criteria for Steel Structures	Robert G. Driver *	University of Alberta
2009-02	Blast Resistance of HSS Columns	Jeffrey A. Packer	University of Toronto
2009-03	Testing of HSS Connections in Fire Environments	George Hadjisophocleous	Carleton University
2009-04	Response of Steel Structures to Blast Loads	A. Ghani Razaqpur	McMaster University
2009-05	Extended Shear Tabs	Y. Liu	Dalhousie University
2010-01	Weld Design for HSS Connections	Jeffrey A. Packer *	University of Toronto
2010-02	Steel-frame Multi-Material Mid-Rise Hybrid Systems	Siegfried F. Stiemer	University of British Columbia
2010-03	Steel Plate Shear Walls for Economical Industrial Protective Structures	Robert G. Driver	University of Alberta
2010-04	Steel-Precast Composite Girders with Non-Conventional Shear Connectors	Scott Walbridge Jeffrey West	University of Waterloo
2010-05	Performance-Based Design Procedures for Innovative Steel Framing Systems	Tony T.Y. Yang	University of British Columbia
2011-01	Tension-Only Brace System for Earthquake Resistance of Low Rise Buildings: Shake Table Testing	Carlos Ventura *	University of British Columbia
2011-02	Lateral torsional buckling of plate girders with flexible restraints	Yi Liu	Dalhousie University
2011-03	Dynamic Testing of Low-Rise Steel Framed Buildings with Flexible Roof Deck Diaphragms	Colin Rogers	McGill University
2011-04	A Holistic Approach to Evaluating and Enhancing the Progressive Collapse Resistance of Steel Structures	Robert G. Driver	University of Alberta
2011-05	Development of Innovative Steel Structural Systems for Seismic Applications in Canada	Tony T.Y. Yang	University of British Columbia
2012-01	Life Cycle Assessment of Steel-Framed, Multi-Unit Residential Construction	Mark Gorgolewski*	Ryerson University

No.	Title	Recipient(s)	University
2012-02	Development of Generalized Design Procedures for Steel Extended Shear Tab Connections	Robert G. Driver	University of Alberta
2012-03	Hybrid (steel-frame / timber in-fill walls) Design for Mid-rise Hybrid Systems	Siegfried F. Stiemer	University of British Columbia
2012-04	Shear Tab to Hollow Structural Section Column Connections	Yanglin Gong	Lakehead University
2012-05	Development of High Performance Sustainable Steel Truss Frames for Seismic Applications	Tony T.Y. Yang	University of British Columbia
2012-06	Dynamic Stability of Steel Columns Subjected to Seismic Loading	Dimitrios Lignos Robert Tremblay Charles-Philippe Lamarche	McGill University École Polytechnique de Montréal Université de Sherbrooke
2013-01	Solving the Mystery of Double-coped Beams	Robert G. Driver*	University of Alberta
2013-02	Behaviour of Light-Gauge Steel Shear Walls With Screwed Infill Plate Connections for Regions of Low-to-Moderate Seismicity	Anjan Bhowmick	Concordia University
2013-03	Development of $R_y$ , $R_t$ Factors and Probable Brace Resistance Axial Loads for the Seismic Design of Bracing Connections and Other Members	Dimitrios Lignos	McGill University
2013-04	Fatigue Behaviour and Design of Shear Connectors in Steel-Precast Composite Girders	Scott Walbridge Jeffrey West	University of Waterloo
2013-05	Development of Innovative and Cost-Effective Seismic Fuses using Wide Flange Steel Sections	Tony T.Y. Yang	University of British Columbia
2014-01	Development of High-Performance Modular Steel Structures	Tony T.Y. Yang*	University of British Columbia
2014-02	Effective Weld Properties for Connections of Round HSS	Jeffrey A. Packer	University of Toronto
2014-03	The Increasingly Common Case of Weak-axis End Moments – Eliminating Unnecessary Joint Stiffeners	Robert G. Driver	University of Alberta
2014-04	Reducing Construction Costs by Improving Seismic Performance: Controlled Rocking Steel Braced Frames	Lydell Wiebe	McMaster University
2014-05	Design of Partial-Length Cover Plates to Strengthen Steel Columns	Michael Bartlett	University of Western Ontario
2015-01	An Improved Connection for Seismically Designed Concentrically Braced Frames	Lydell Wiebe*	McMaster University
2015-02	Offset HSS Connections	Jeffrey A. Packer	University of Toronto

No.	Title	Recipient(s)	University
2015-03	Development of Innovative and Economical Steel Floor System	Tony T.Y. Yang	University of British Columbia
2015-04	Towards a Performance Based Fire Design Framework for Composite Steel Deck Construction in Canada	John Gales	Carleton University
2015-05	Lateral Torsional Buckling of Welded Wide Flange Beams	Anjan Bhowmick	Concordia University
2016-01	Performance Based Seismic Design of Steel Bridges According to CHBDC S6-14	Carlos E. Ventura*	University of British Columbia
2016-02	Development of Innovative Steel Diagrid High-Rise Structures for Seismic Applications	Tony T.Y. Yang	University of British Columbia
2016-03	Completing the Load Path for Controlled Rocking Steel Braced Frames	Lydell Wiebe	McMaster University
2016-04	Hot Dip Galvanized HSS	Min Sun	University of Victoria
2016-05	Promoting Steel as a Material of Choice in Bridge Infrastructures: Current and Future Innovations	Khaled Sennah	Ryerson University
2017-01	Simplified Design Methods for Steel Multi-Tiered Braced Frames in Regions of Low and Moderate Seismicity	Ali Imanpour*	University of Alberta
2017-02	Design of Beams with Overhanging Segments Against Lateral Torsional Buckling	Nicolas Boissonnade	Laval University
2017-03	Analysis of Concentrically Loaded Braced Frame Using Continuous End Plate	Nathalie Roy (Principal Researcher), P. Labossière and S. Parent (Collaborators)	Université de Sherbrooke
2017-04	Performance-Based Seismic Design of Innovative Damage Free Rocking Steel Bridge Piers	Shahria Alam, Robert Tremblay (Co-Directors)	University of British Columbia École Polytechnique de Montréal
2018-01	HSS Joint Welding	Jeffrey A. Packer*	University of Toronto
2018-02	Experimental Validation of Seismically Resilient Concentrically Braced Frames with Replaceable Brace Modules	Lydell Wiebe	McMaster University
2018-03	Test-Based Design Method for Steel Cantilever Beams	Ali Imanpour, Robert Driver and Yong Li	University of Alberta
2018-04	Assessment of Fatigue Design Provisions for Welded Shear Studs in Steel-Concrete Composite Bridges	Scott Walbridge	University of Waterloo
2019-01	Design of Single-Sided Fillet Welds in Tension	Kyle Tousignant*	Dalhousie University
2019-02	Application of Artificial Intelligence to Performance-Based Earthquake Engineering of Steel Buildings	Lydell Wiebe	McMaster University

No.	Title	Recipient(s)	University
2019-03	Improved Evaluation Methods for Fatigue Life and Toughness Assessment of Steel Bridges	Scott Walbridge	University of Waterloo
2019-04	Design of Exposed Column Base Connections Subjected to Axial Load and Bi-Axial Bending	Muntasir Billah	Lakehead University
2019-05	Innovative Modular Structural System for Steel Framed Structures	Ali Imanpour	University of Alberta

**\*H.A. Krentz Research Award Winner**