University of Manitoba Steel Bridge (UMSB) Society

Sponsorship Package 2017/18



ASCE/AISC Student Steel Bridge Competition (SSBC)



To whom it may concern,

I am pleased to submit, on behalf of the University of Manitoba Steel Bridge (UMSB) Society, one (1) electronic PDF application for consideration for financial support from your company or organization. The team's anticipated expenses for 2017/2018 total fourteen thousand dollars, (\$14,000) to travel to the University of Iowa and participate in the annual ASCE/AISC Student Steel Bridge Competition (SSBC). Any amount that could be donated to the team would be greatly appreciated, and in return your company or organization will be represented at the competition on our team poster and team t-shirts as well as on our team website.

The following package contains a statement from Dr. Dimos Polyzois and Dr. Young-Jin Cha, faculty advisors to the UMSB Society. In addition, this package contains personal statements from the team leads, highlighting their personal and professional backgrounds as well as why they chose to get involved with the team. More details regarding the competition and the request for funding are also presented.

The SSBC provides an excellent opportunity for us students to apply our theoretical knowledge to a hands-on project. The skills developed through participation in engineering competitions such as this are readily transferable to both our academic and future professional careers. Several of our current team members have taken part in last year's competition and can attest to the value of having the opportunity to take part in the SSBC. We are extremely grateful for the support that has made those opportunities possible and we look forward to applying the lessons we learned last year to represent the University of Manitoba even better this spring when we head to the Midwest Regional ASCE Student Conference at the University of Iowa.

As a relatively new group to the University of Manitoba we have strived to increase awareness of our activities and expand our reach to more students on campus. Our outreach has resulted in a huge expansion in student interest from our humble beginnings just a few years ago. Just this past year we formed the first ever CISC student chapter. I hope that this document will convey to you the commitment of our team members to this competition that will serve to benefit their professional development. If you wish to contribute to the furthering of this tradition in any way, we would greatly appreciate your support. Should you have any questions to concerns, please feel free to contact me.

Sincerely,

Col Frieren

Cole Friesen Team Captain Ph: (204) 894-2478 Email: umsteelbridge@outlook.com

It is with great pride that I introduce to you our team of Civil Engineering students from the University of Manitoba, who are participating in the American Society of Civil Engineers' International Student Steel Bridge Competition for the fifth consecutive year. As the team's advisor for this year, I am excited to be working with the students on their design. I believe that this experience will provide a greater understanding of engineering design and inspire the students to seek every opportunity to practice their technical knowledge. The official mission statement of the Steel Bridge Competition outlines its mandates and intentions:

The mission of the ASCE/AISC Student Steel Bridge Competition (SSBC) is to supplement the education of civil engineering students with a comprehensive, student-driven project experience from conception and design through fabrication, erection, and testing, culminating in a steel structure that meets client specifications and optimizes performance and economy. The SSBC increases awareness of real-world engineering issues such as spatial constraints, material properties, strength, serviceability, fabrication and erection processes, safety, esthetics, and cost. Success in inter-collegiate competition requires effective teamwork and project management. Future engineers are stimulated to innovate, practice professionalism, and use structural steel efficiently. (<u>http://www.nssbc.info</u>)

The Department of Civil Engineering places a strong value on teamwork and this project provides an excellent opportunity for students to work together. Through this competition the students will see the direct correlation between design and construction as they have to design, fabricate, and assemble their bridge under strict guidelines. The challenge of the Steel Bridge Competition will help the students gain appreciation for their university education and see its connection to professional practice, taking them beyond the technical aspect of engineering design.

This competition brings together a number of North American universities. Our students will have the opportunity to meet students from other universities, network with professionals from other regions, and become further involved in international events. These types of endeavors benefit the faculty and the local steel industry as well as the students. Through mentorship and sponsorship, practicing members of the profession have the opportunity to meet and form connections with young engineers, in turn facilitating the development of student-focused programs. Your financial support of this student-driven activity will be greatly appreciated.

Thank you for your support,

Tolyins

Dr. Dimos Polyzois, FEC, P.Eng. Professor and Associate Head (Research)

oug Din Cha

Dr. Young-Jin Cha, P.Eng Assistant Professor





Cole Friesen (Team Captain)

Cole Friesen is in his fourth year of Civil Engineering at the University of Manitoba. He is interested in structural design and project management. This is his third year on the U of M Steel Bridge Design Team. He joined to gain hands-on experience with construction and practical application of the design process.

Cole spent the past winter semester working for Manitoba Hydro as a construction inspector on a transmission line project. He hopes to apply the experience and knowledge in project management learned during the work term to his position running the Steel Bridge team. He has also spent the last several summers volunteering at Manitoba Pioneer Camp, leading the maintenance team and guiding canoe trips.

During his free time, Cole enjoys canoeing, practicing guitar, and playing intramural basketball.



Karl Nickel (Construction Team Lead)

Karl Nickel is a fifth year Civil Engineering Student at the University of Manitoba. His primary area of interest is structural engineering. This is Karl's second year as a member of the UMSB Team and first year as the Construction Lead for the 2017-18 Steel Bridge Team. He was a member of last year's construction team at competition.

Karl has worked in the engineering consulting industry for TetraTech as a member of the structural engineering group, where he gained exposure to structural engineering design as well as bridge design. Karl also has work experience as a research assistant in the Hydraulics Research and Testing Facility at the University of Manitoba, focusing on channel flow under partial ice cover.

In his spare time, he enjoys playing soccer, travelling, hiking, and other outdoor activities.



Brennan Slater (Drafting Team Co-Lead)

Brennan Slater is in his final year of Civil Engineering at the University of Manitoba. His primary field of focus within Civil Engineering is structural design. Brennan is the Drafting Lead of the Steel Bridge Team, and has participated in the competition for the last two years mainly as a drafter and building team member.

Brennan worked for a residential and commercial construction company for two summers as a technical drafter, completing technical drawing sets for approval by Structural Engineers. Over the following two summers, Brennan spent his time working as a surveyor and project coordinator for heavy civil construction company. Brennan has worked at various landfills across Northern Alberta and Southern Manitoba. This most recent summer. Brennan worked on site as a Project Administrator for Tri-Core Projects performing project estimates, construction various lavout calculations, and quantity management methods.



During his free time, Brennan plays guitar and drums. He also likes to spend time at the lake swimming, kayaking, and mountain biking.

Daly Penner (Drafting Team Co-Lead)

Daly Penner is in her third year of civil engineering. She joined the UMSB team last year and worked on the drafting team and was part of the construction team for the competition. Daly enjoys working with AutoCAD on personal projects, during university and as a TA for the Civil Graphics course. As a Drafting Lead, Daly wants to focus on the 3D modeling so that the model can be integrated with the analysis and facilitate efficient shop drawings.

Daly is part of the Civil Co-op program and spent her summer working at Bockstael Construction in the Pre-Construction department. In her spare time, she enjoys canoeing and cross-country skiing on the Assiniboine river.



Ralu Eze (Aesthetics Team Lead)

Ralu Eze is currently a 4th year Civil Engineering Student at the University of Manitoba. Since childhood he has had a passion for designing structures such as buildings and bridges, inspiring him to join the University of Manitoba Steel Bridge Team. His love for design extends beyond engineering applications as well, which is why he chose to lead the aesthetics team for this year's bridge team.

Ralu was a member of last year's team as well, where he helped draft bridge plans and was a spare for the assembly team. His work experience includes an 8-month work term at Inland Pipe as an Engineer & Sales Assistant. He



is expected to graduate in Winter 2019. Outside of school, Ralu is involved in his Nigerian Community as well as Folklorama. His hobbies include fitness, travel, and producing music.

Uzair Wasif (Social/PR Team Lead)

Uzair Wasif is currently in his fourth year of Civil Engineering at the University of Manitoba. This is his third year on the U of M Student Steel Bridge Team and he plans to work with his teammates to have another successful competition. As the Social Lead for the team, Uzair hopes to use his great experiences at the past competitions and conferences to improve team bonding by planning team socials throughout the 2017-2018 year as well maintaining the UMSB team website and social media page.

Uzair has an interest in structural engineering and along with this, he has developed an interest in project management through his co-op work experience. He is a student member of Engineers Geoscientists Manitoba (EGM), Canadian Society of Civil Engineers (CSCE), as well as the American Society of Civil Engineers (ASCE). In his spare time, Uzair enjoys travelling, working out, playing basketball and eating at local restaurants with friends.



Céline Rivard & Sara Sadowy (Analysis Team Co-Leads)

Céline Rivard and Sara Sadowy are in their fifth and final year in Civil Engineering at the University of Manitoba. Céline and Sara will be assuming the roles of Analysis and Modelling Co-Leads on the 2017-2018 UMSB Team.

This is Sara's second year on the UMSB team. Last year she was involved with the drafting team applying her skills in AutoCAD. This year she is excited to apply her knowledge of analyzing structures to design a winning bridge.

She has spent the past two summers working for the City of Winnipeg surveying and developing maps in Civil 3D for project planning and construction management. This past summer she supervised and inspected the construction of a new Community



Resource Recovery Centre. Sara has also been involved in various other student groups over the course of her degree such as UMES, ITE, and UMEARTH. Sara enjoys traveling and spending her free time outdoors exploring new places.

Although this is Céline's first year as part of the Steel Bridge Design Team, she has participated in various student groups over her time in engineering, including current involvement on the Institute of Transportation Engineering student chapter, and the University of Manitoba Engineering Society. She also enjoyed being involved as student representative on the Civil Engineering Department Council, as well as the Civil Engineering Dean Search Committee last year. Céline is looking forward to applying the structural analysis skills accumulated throughout her studies in a competitive environment, and hopes to gain hands-on experience with structural design.

Céline spent the past summer working as an engineering co-op student for Manitoba Hydro, programming and performing various analyses, as part of the Hydrologic and Hydroclimatic Studies section. She is interested in pursuing a future career in consulting, more specifically in the structural or transportation fields On her free time, Céline enjoys spending time at the lake, cheering on the Jets, and walking her dog. The SSBC challenges teams to design a bridge entirely out of steel that satisfies various requirements and is capable of supporting a load of 2500 pounds. All pieces of the bridge must fit within the dimensions of 3'x6"x4" and must be connected to each other by bolts.

The first part of the competition requires teams to construct their bridge as quickly as possible while avoiding stepping in the "river" in the middle of the construction zone. Teams are assessed a cost for every minute it takes to construct their bridge with an additional cost for any violations, such as dropping a tool or stepping in the "river." The construction requirements make it necessary for a team to carefully design their bridge to be as easily constructible as possible.



After construction, the bridge is subjected to separate lateral and vertical load tests, to measure sway and deflection. During the vertical load test, deflection is measured in multiple locations and the team is assessed a cost based on the measured deflection against the total weight of the bridge itself.



The costs from construction and loading are then combined to make up a team's total cost for their bridge, which is then ranked against the other schools with the lowest cost bridge declared the winner.

Aside from the bridge competition itself, the conference also features an essay competition, an ASCE student chapter meeting, a banquet as well as presentations from steel construction industry professionals.

More information on the competition and the competition rules can be found online at:

http://www.aisc.org/education/university-programs/student-steel-bridge-competition/



2017 / 2018 Request for Financial Support

From left to right

Front Row: Yang Bao, Dr. Dimos Polyzois (Faculty Advisor), Suzanne Schultz, Bianca Trinidad, Gabrielle Pagcaliwagan, Sakshi Bali, Amanda Johnston, Ze Zeng, Siqi Xu, Sara Sadowy, Céline Rivard, Daly Penner, Cole Friesen

Middle Row: Dr. Young-Jin Cha (Faculty Advisor), Aaron Fleming, Long Chen, Alanna Morris, Yu Yan Li, Yuri Seo, Linda Duch, Michael, Guevarra, Paras Kanda, Brennan Slater, Dong Jin, Renato Palma, Jinrong Liang

Back Row: Uzair Wasif, Ralu Eze, Karl Nickel, Quinn Desrochers, Jonathan Vandenberg, Matthew Allen, Elijah Edie, Eric Schillberg, Richard Watson, Trevor Linney, Matthew Harrison, Steven Kolt

Not Pictured: Kirby Bridges, Habeeb Balogun, Naier Faheem

The UMSB Society is requesting funding for the following activities:

- **Competition Expenses** We will be attending the Midwest Regional ASCE Student Conference at the University of Iowa. The competition is the culmination of a year's effort for the team and includes bridge judging, timed construction and load testing. At the conference, the team will also have the chance to network with other students from a variety of other universities and attend speaker sessions on real-world projects from engineering professionals.
 - Expense: \$420/student (30 students, plus 2 advisors) to attend the conference. This expense covers registration fees, travel and vehicle rental fees, and accommodation costs.
- **Team T-shirts** A requirement of the competition is to have a distinct team uniform. We will order t-shirts that include recognition for all team sponsors and supporters.
 - Expense: \$450
- **Team Posters** A requirement of the design judging portion of the competition is a technical poster displaying shear force and bending moment diagrams as well as information regarding the decisions behind the bridge design. We will also have a poster displaying logos for all organizations sponsoring the team. These posters will be on display during the competition as well as during future student recruiting and team promoting events.
 - Expense: \$100 (2 x \$50)

Total anticipated expenses are \$14,000.

As mentioned before, in return for sponsorship we will include your company's logo on team t-shirts and posters. We will also include your company logo and profile on our team website: steelbridge.umes.mb.ca.



OFFICIAL UMSB SPONSORSHIP FORM FOR 2017/18	
ADDRESS:	
CONTACT:	•
PHONE:	
E-MAIL:	•
We wish to endorse the University of Manitoba Steel Bridge (UMSB) Society of 2017/18	

We wish to endorse the University of Manitoba Steel Bridge (UMSB) Society of 2017/18 with this sponsorship donation in the amount of \$ _____.

This sponsorship is to be used solely for the purpose of the ASCE/AISC Student Steel Bridge Competition (SSBC) and any funds that are not used may be left to assist future UMSB Society events.

On behalf of the University of Manitoba Steel Bridge (UMSB) Society, thank you for your generous contribution.

Cheques should be made payable to the UNIVERSITY OF MANITOBA STEEL BRIDGE SOCIETY

CHEQUES SHOULD BE SENT TO:

U of M Steel Bridge Team C/O Beata Chartrand Room E1-368A Engineering, 15 Gillson Street University of Manitoba Winnipeg, MB, R3T 5V6 Canada