

University of Manitoba Steel Bridge (UMSB) Society

Sponsorship Package 2021/2022



CSCE/CISC Canadian National Steel Bridge Competition (CNSBC)



Oct. 30, 2021

RE: 2021/2022 Request for Financial Support

MESSAGE FROM THE TEAM CAPTAIN

To whom it may concern,

The University of Manitoba Steel Bridge (UMSB) Society will be participating in the Canadian National Steel Bridge Competition (CNSBC) this year. The UMSB provides an excellent opportunity for our members to apply the theoretical knowledge that they have gained in academia to a hands-on project, and we achieve this by designing and constructing a steel bridge for the CNSBC. The skills developed through participation in engineering competitions such as this are readily transferable to both our academic and future professional careers. It is also a great opportunity for our team to compete against many teams from across Canada and even from Mexico and China. Several of our current team members have taken part in past years' competitions and can attest to the value of having the opportunity to take part in the CNSBC. We are extremely grateful for the support that has made those opportunities possible and we look forward to applying the lessons we have learned in past years to represent the University of Manitoba at the Université de Sherbrooke for the 2022 CNSBC.

The following package contains a statement from the UMSB faculty advisor, Professor Young-Jin Cha, Ph.D., P.Eng. and 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. Over the years, we have strived to increase awareness of our activities and expand our reach to more students on campus. To ensure that our members are getting a well-rounded experience, we have established a monthly technical presentation series with guest speakers from industry and academia. If you are interested in being a guest speaker at one of our events and you have not already been contacted, please feel free to respond to the distribution of this package with your expression of interest.

I am pleased to submit, on behalf of the University of Manitoba Steel Bridge (UMSB) Society, one (1) electronic PDF application for financial support from you/your organization. The team's anticipated expenses for the 2021/2022 academic year total **thirty thousand seven hundred fifty dollars, (\$30,750)** to participate in the annual CISC & CSCE Canadian National Steel Bridge Competition (CNSBC) being held in Sherbrooke, Quebec, in May 2022. Any amount that could be donated to the team would be greatly appreciated. Should you have any questions or concerns, please feel free to visit our website at <http://steelbridge.umes.mb.ca/> or contact me directly.

Sincerely,



Hazel Aguason (Team Captain)

Cell: (204) 590-9596

Email: aguasonh@myumanitoba.ca

2021 /2022 Request for Financial Support

MESSAGE FROM THE FACULTY ADVISOR

Dear our friends and supporters,

I am Young-Jin Cha who is an Associate Professor and the advisor of our University of Manitoba Steel Bridge (UMSB) team in the Department of Civil Engineering at the University of Manitoba. Our team UMSB has participated in the Student Steel Bridge Competition (SSBC) in the Canadian Society of Civil Engineers (CSCE) since 2018, followed by a fifth consecutive year of participating the international SSBC in American Society of Civil Engineer (ASCE).

The outlines of the SSBC are described as: The Canadian National Steel Bridge Competition (CNSBC) is an annual competition that was created in partnership between Canadian Institute of Steel Construction (CISC) and the Canadian Society for Civil Engineering (CSCE) in response to a need within the industry to give students a domestic alternative to the American Institute of Steel Construction (AISC)/ASCE National Student Steel Bridge Competition. The CNSBC challenges students to participate in a comprehensive project that involves conception and design, fabrication, erection, and testing of a steel bridge structure that meets client specifications and optimizes performance and economy. The competition increases students' awareness of real-world engineering issues. The competition is modelled after the AISC/ASCE National Student Steel Bridge Competition, with modifications so that students may use the bridge design in both competitions. Reference: <https://www.cisc-icca.ca/canadian-national-steel-bridge-competition/>.

I have worked with our team members who are mostly undergraduate students in our department. They have worked together to design and fabricate a steel bridge for the SSBC through extensive discussions, numerical analyses, and experiments for the competitive design of steel bridge system. Through these students' activities, they have learned practical engineering design methods and expanded their understanding about collaboration, teamwork, and engineering ethics, which also stimulated the students' curiosity and interest to practice their technical knowledge. Through the competitions, students can get a chance to meet the students from other universities from the other provinces in Canada with varieties of different designs of steel bridges. Students have been exposed to these excellent learning environments. Our team was placed **second in the "Construction" section and sixth Overall among 12 teams in total** through virtual competition by submission of design report and video to explain overall design procedures. Your financial support for this team activities has been the critical role for the success of this team. Your financial supports are appreciated.

Sincerely,



Young-Jin Cha, Ph.D., P.Eng.
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University of Manitoba
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Research Website: www.youngjincha.com

Team Leads

Hazel Aguason (Team Captain)

Hazel Aguason is a fifth-year civil engineering student at the University of Manitoba. This will be her third year on the UMSB Team and she has previously been a member of the Design and Analysis, Drafting, and Aesthetics sub-teams. This year, Hazel is excited to use her past experience on the team to take on the role of Team Captain and dive into the world of project management.

Hazel is a student member of the Co-op/IIP program at the U of M, Engineers Geoscientists Manitoba (EGM), the Canadian Society for Civil Engineering (CSCE) U of M Chapter, and the U of M Sustainable Project Team (UMEarth).

Some of her personal interests include gardening, playing the piano and guitar, and musical analysis.



Renato Palma Jr. (Treasurer)

Renato is in his fifth year of Civil Engineering, Minor in Management Program at the University of Manitoba. He is with UMSB for four years, where he was previously part of the design and analysis team and the treasurer of the previous year. This year will be his second year serving on the executive team as the treasurer.

Renato has most of this experience in the heavy civil construction industry. He recently worked at the Site C Clean Energy Project as part of the Spillways Civil Works Engineering Team. He also worked at the Keeyask Generating Infrastructure Project as a Field Engineer for the Generating Station Civil Contract. He also gained some consulting experience from JR Cousin Consultants Ltd.

Renato is CAPM®-certified with project management experience throughout his internship experience. He advocates for sustainable infrastructure, and leaning planning of construction methods. He is committed to supporting efficient and cost-effective private and public infrastructure solutions. He also advocates for embedding equity, diversity and inclusion considerations for any engineering projects and decision making.

Personal interests include canoeing, soccer and personal finance.



Israa Kanan (Design and Analysis Co-Lead)



Israa Kanan is a 5th year Civil Engineering student at the University of Manitoba. This is her third year participating in the Steel Bridge Team and was previously a member of the design, analysis and drafting sub-teams. This is also her second year as a Design and Analysis lead. Her focus is structural engineering and has an interest in architecture. As well, she is completing a management minor and has project management experience from working with Ernst Hansch Construction Ltd.

Israa is also a member of the Co-op/IIP at the University of Manitoba, and a student member of the Canadian Society for Civil Engineering and Engineers Geoscientists Manitoba.

In her spare time, she enjoys traveling, photography, learning languages, listening to music, working out and watching soccer.

Sukh Sawhney (Design and Analysis Co-Lead)

Sukh Sawhney is a 4th year Civil Engineering student at the Price Faculty of Engineering. She joined the team last year and was a member of the Design and Analysis, Aesthetics and Drafting sub-teams. This year, Sukh is taking on the role of Design and Analysis Co-lead. She has an interest in structural engineering, project management and the construction industry. She has 4 months of hands-on experience working as an Engineering Student for PCL construction within their major projects division.

Sukh is a member of the Co-op/IIP program at the University of Manitoba, a student member of Engineers Geoscientists Manitoba and Canadian Society for Civil Engineers (CSCE). In addition, she is also the Aesthetics and Technical exhibition co-lead for the University of Manitoba Concrete Canoe (UMCC) team and a mix-design member of the University of Manitoba Concrete Toboggan Race (UMGNTCR) team.



Outside of school, Sukh has a passion for working with kids. She is an instructor for Career Trek, a non-profit program, where she encourages elementary students to pursue post-secondary education by teaching them about different career paths.

In her spare time, Sukh enjoys watching crime documentaries/thriller series, learning shadow boxing and boxing on heavy bags.

Gabrielle Pagcaliwagan (Aesthetics Co-Lead)

Gabrielle is in her final year of Civil Engineering and just completed her Minor in Management at the University of Manitoba. In the previous years, she has been a member of the design, analysis and drafting sub-teams.

Gabrielle is a member of Co-op/IIP program at the University of Manitoba and a student member of Engineers Geoscientists Manitoba (EGM). She is primarily interested in structural and geotechnical engineering. Gabrielle plans to use her knowledge and experience that she obtained from her co-op terms at Manitoba Hydro as a Geotechnical Engineering Student and at the RM of East St Paul as an Engineering Student. She also spent one co-op term as an Engineering Aid at Manitoba Infrastructure.



In her spare time, Gabrielle enjoys spending time outdoors and eating out.

Jocelyne Dupas (Aesthetics Co-Lead)

Jocelyne Dupas is a 4th year Civil Engineering student at the University of Manitoba. This year will be Jocelyne's first year being a part of the UMSB team as she takes on the role of Co-Lead for the Aesthetics team. She is really excited to be part of the Aesthetics team and to bring her digital design knowledge and experience towards best representing the UMSB team with the logos, t-shirt and promo posters for the 2021 year. She is also looking forward to contributing her teamwork skills & structural engineering knowledge towards the team's success at the competition this year.

Jocelyne is part of the Co-op/IIP program with the University of Manitoba, a member of the Engineers Geoscientists Manitoba (EGM) since 2017, and most recently a member of the University of Manitoba International Transportation Engineers (ITE) Chapter.



In her spare time Jocelyne enjoys culinary arts, videogames, & watching Studio Ghibli movies.

Cael Penner (Drafting Co-Lead)

Cael Penner is a third-year Civil Engineering student at the University of Manitoba. He has been an active member of the team for three years starting as a member on construction and PR/Social. He now is a drafting co-lead alongside Karina Buckingham. Cael is passionate about project management and structural engineering and draws from his experience in the summer of 2021 where he worked as a field coordinator for Bockstael construction on the Centennial Concert Hall Envelope project.

In Cael's free time he enjoys playing with friends online and around the basketball court as well as adventuring in the woods in the wintertime.



Karina Buckingham (Drafting Co-Lead)



Karina Buckingham is starting her third year of Civil Engineering at the University of Manitoba. This is her second year on the Steel Bridge Team and her first being the co-lead of drafting. Karina has enjoyed learning how to use AutoCAD and became familiar with how to use it, she is excited to use these new skills to help the team. Karina wanted to pursue Civil Engineering and specifically wants to go the structural route because she has always been creative and wants to be able to do some sort of design work.

In her free time, she enjoys crocheting and whatever new hobby she has just picked up.

Arshdeep Chauhan (Executive Assistant)



Arshdeep is a third-year student in the Civil Engineering program at the University of Manitoba. This will be Arshdeep's second year as a part of the University of Manitoba Steel Bridge Design Team and will be taking on the role as Executive Assistant for the year. In the previous years, Arshdeep was part of the PR/ Socials, Drafting, and Video teams. Arshdeep intends to be an all-around team member as the executive assistant, assisting wherever required to guarantee the team's success. Arshdeep is also a member of the Engineering Society at the University of Manitoba, where he serves on the Socials Directorship.

Arshdeep's interest in Civil Engineering began at an early age. He was always captivated by the concept of infrastructure design and had a strong desire to assist his father with building projects. Arshdeep has since opted to pursue a career in Civil Engineering, with a focus on structural design and project management.

Outside of University, Arshdeep is a Co-Founder and Co-Host of a Winnipeg based podcast called 204 Rise. Some of Arshdeep's personal interest are playing soccer, running, being outdoors, and spending quality time with his family.

Jesse Adamson (Construction Lead)

Jesse is currently in his fifth year of Civil Engineering at the University of Manitoba. This is his fourth year on the University of Manitoba Steel Bridge Team. Returning as the construction lead, he plans to keep the members of UMSB active throughout the year. Most importantly, Jesse will teach members the methodologies as to how to construct the bridge effectively, prior to competition in May, 2022. Jesse plans to use his previous experience from attending the 2019 CNSBC in Montreal, as well as being on the construction team for two years and being the lead for one year.

He is a student member of Engineers Geoscientists Manitoba (EGM), the Canadian Society of Civil Engineers (CSCE), and the Mix Design Lead for the University of Manitoba Concrete Canoe (UMCC) team.



In his spare time, Jesse enjoys fishing, playing badminton and chess.

Ayobami Runsewe (SPEB Representative)

Ayobami Runsewe is a fourth year Civil Engineering student at the University of Manitoba. This is his third year as a member of the UMSB team. He was on the design and analysis team for his first year and this year is taking on the role of the SPED representative.

Ayobami wanted to pursue Civil Engineering because of his enthusiasm for the design and creation of infrastructure in the society with complex challenges and innovative solutions. He is a member of the Co-op/IIP program at the University of Manitoba and a student member of Engineers Geoscientists Manitoba. He has hands on experience working as an Engineering Intern with Pier-Solutions.

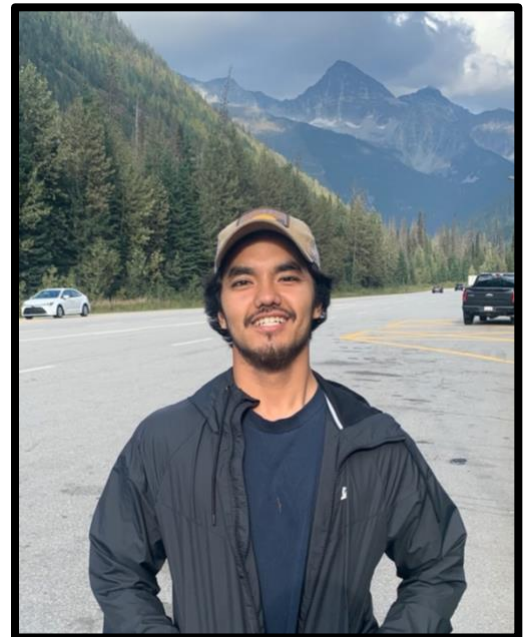
Some of his personal interests include painting, soccer, guitar, dancing, and graphic design.



Saleem Baraty (PR/Social Lead)

Saleem Baraty is a fifth year Civil Engineering student at the University of Manitoba. He has been a part of the UMSB team for four years as a member and three years as the PR/Social team lead. This is his fourth year on the team and is taking on the role of the PR/Social team lead once again.

Saleem wanted to pursue Civil Engineering because he was curious as to how the infrastructure of our society is built around us. Taking this into consideration, he was able to use this curiosity in his previous co-op work term as an Engineering Student in the Transmission Line and Civil Construction department at Manitoba Hydro. He was also introduced to the geotechnical and municipal sectors of Civil Engineering while working as a Geotechnical Assistant at Trek Geotechnical and as a Project Supervisor at JR Cousin Consultants Ltd.



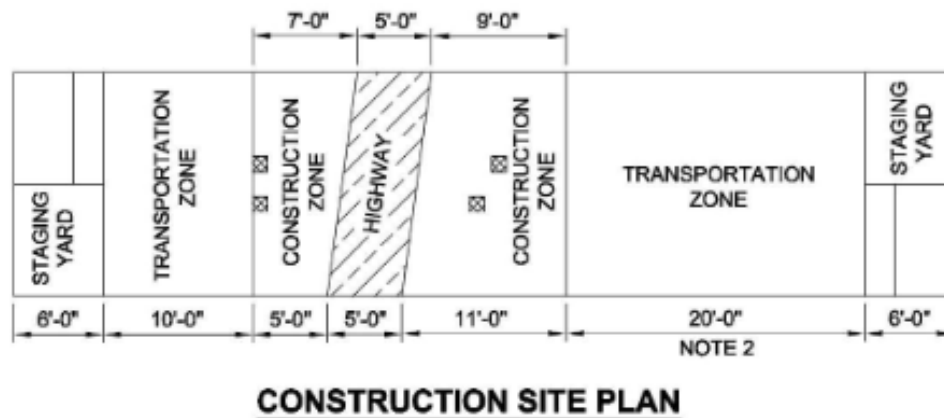
Some of his personal interests include playing soccer, guitar and financial investing.

Alumni Advisors

Daniel Szara, Daly Penner

Faculty Advisors

Dr. Young-Jin Cha, P.Eng



2022 Competition Problem Statement:

There has been interest in the creation of a wildlife bridge in Sherbrooke, Quebec. A steel wildlife bridge has been proposed because of the material's versatility, ease of prefabrication, ability for rapid erection, superior strength to weight ratio, durability, and high level of recycled content. In order to not deter wildlife from using the crossing, all parts of the bridge are required to remain below the bridge deck (i.e. no over trusses). The bridge also shall be aesthetically pleasing to the highway users passing under it. Due to the topography of the existing terrain and the location of the highway, the piers on one end of the bridge must be skewed and a portion of the bridge is required to be cantilevered.

A feasibility study is being conducted that includes a competition to identify the best design for the limited access green wildlife bridge. Your company is invited to compete by submitting a 1:10 scale model to demonstrate its concept. The bridge must have the ability to support the weight of the green surface, wildlife, pedestrians, and maintenance and parked vehicles. Private motor vehicles are prohibited. Scale models will be erected under simulated field conditions and will be tested for stability, strength, and serviceability using standardized lateral and vertical loads. Structural cost, construction cost and duration, and aesthetics are important considerations. Virtual costs are assigned to critical features, including a sliding scale for material that promotes robustness without wastefulness. The ability of your company to accurately estimate the overall performance of your bridge also will be judged. A design/build contract will be awarded to the company whose model satisfies the specified requirements and best achieves the project objectives.

To limit shut down of the existing highway, no construction activity can take place within the highway's confines. Designs with permanent or temporary piers within the confines of the highway will not be considered. Soil conditions and the proximity of the highway also preclude temporary piers elsewhere, as well as restricting the location of footings and the size of construction zones. Remote staging of material and equipment is required. The size and quantity of members to be transported also is limited. Models will not include deck, foundations, and approaches.

Design companies are encouraged to gather diverse teams and treat everyone with respect. A team that creates a respectful, welcoming, and inclusive environment, and is not predisposed to defined roles and biases, will benefit greatly from the creativity that diversity affords.

<https://www.cscecompetitions.ca/en/home/cnsbc/>

The UMSB Society is requesting funding for the following activities:

- **Competition Expenses** – We will be attending the Canadian National Steel Bridge Competition at Université de Sherbrooke in Sherbrooke, QC.
 - Expense: \$1,200/student (20 students, plus 1 advisor) to attend the conference. This expense covers registration fees, travel and vehicle rental fees, and accommodation costs.
- **Bridge Expenses** – Cost of fabrication plus extra materials including paint for the finishing of the bridge and tools needed to build the bridge.
 - Expenses: \$1,750
- **Apparel Expenses** – 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: \$2,000
- **Miscellaneous Expenses**– Throughout the year, the Steel Bridge Design Team realizes expenses relating to technical presentations from companies, creating technical posters and other documents, and also organizing events for student outreach.
 - Expense: \$1,800

Total anticipated expenses are \$30,750

Sponsorship Levels:

Level	Sponsor Receives
Title Sponsor (Negotiable)	Recognition as UMSB's Title Sponsor. First company logo to appear on posters and team t-shirts. Company logo and profile on UMSB website. <i>(Sponsor must request consideration this sponsorship level)</i>
Gold (\$2000 and above)	Large-sized Company Logo on posters, website, and team t-shirts. Company profile on UMSB website.
Silver (\$1000 - \$1999)	Medium-sized Company Logo on poster, website, and team t-shirts.
Bronze (\$250 - \$999)	Small-sized Company Logo on poster, website, and team t-shirts.



OFFICIAL UMSB SPONSORSHIP FORM FOR 2021/22**COMPANY NAME:** _____**ADDRESS:** _____**CONTACT:** _____**PHONE:** _____**E-MAIL:** _____

We wish to endorse the University of Manitoba Steel Bridge (UMSB) Society of 2021/22 with this sponsorship donation in the amount of \$_____.

This sponsorship is to be used solely for the purpose of the CSCE/CISC Canadian National Steel Bridge Competition (CNSBC) 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.

Our Company is interested in providing an educational presentation for the team

☐ **YES**☐ **NO**

Cheques should be made payable to:

“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