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THE COMPETITION

The Great Northern Concrete Toboggan Race (GNCTR) is the oldest and largest student-run university engineering competition in Canada. Since its creation in 1974, it has grown to include over 400 engineering students representing over 20 teams from across Canada and the US. The GNCTR encourages students from all disciplines of engineering to carry on the tradition of teamwork, sportsmanship, innovation and school spirit.

Every year, the Western Engineering Toboggan Team (WETT) competes at the GNCTR. The 43rd installment of the five day competition will be hosted in February 2017 in Winnipeg, Manitoba, by the University of Manitoba.

Each team must design a toboggan that can accommodate five riders, with a running surface made entirely of concrete. The toboggan must weigh less than 350 lbs, incorporate a roll bar to protect the riders and have fully functional braking and steering systems. Each team must also choose a theme and integrate it into their toboggan display and team costumes.

Teams must excel in several different areas of the competition to be successful. At the competition, teams are graded on toboggan design and aesthetics, racing performance, technical presentations and team spirit. These elements are combined to form an overall ranking for the entire competition. The team with the best overall score is awarded the CSCE Cup as competition champions.
GOAL
This year, the WETT hopes to send 30 of its most dedicated and enthusiastic team members to Winnipeg to represent Western University at the GNCTR 2017. Our team has over 100 students spanning nine disciplines of engineering. These students will work on the design, construction, and testing of the toboggan throughout the six months prior to the competition. Our team breakdown allows students to gain in-depth technical skills in several areas including metalworking and welding, CAD and mathematical modeling, concrete reinforcement, concrete mix design, and sustainable alternatives in modern, small scale construction projects. Students participate in all aspects of launching the toboggan including sponsorship relations and theme design and implementation.

OUR TEAMS

CONCRETE
The Concrete Team mixes and tests a selection of innovative concrete designs, working to optimize and create the final ski mix design. The ski is designed with the objective of creating a strong and fast running surface.

SUPERSTRUCTURE
The Superstructure Team designs and constructs the frame, steering system and braking system. These components come together to form the framework of the toboggan.

THEME
The Theme Team designs the technical display and all team apparel. Most importantly, they promote team spirit.

SPONSORSHIP
The Sponsorship Team is responsible maintaining finances and focuses on key business relations, making it possible for students to participate in the GNCTR.
Dear Potential Sponsor

Western Engineering seeks to provide the best possible experiences for our students to learn and develop through project based applications of their courses. The Western Engineering Toboggan Team (WETT) is one such project. This group of hard working and enthusiastic students will design and build a concrete toboggan for competition in the Great Northern Canadian Toboggan Race (GNCTR), this year being held in Winnipeg, Manitoba from February 8 to 12, 2017.

At the 2016 competition held in Ottawa, the Western Engineering team did exceptionally well placing First overall. They also received First Place in Overall Toboggan Design and Braking Performance. Awards were given to the Western Engineering Toboggan team for Best Theoretical Toboggan, Best Braking Performance, Best Technical Support and Most Improved Team. In 2015 at the GNCTR in Kelowna, BC, our students came First in Superstructure Design and Most Original Toboggan Design. Our team has been the First Place Overall Champions in two of the last four years.

By choosing to sponsor this team not only would you be supporting this excellent group of undergraduate students as they once again prepare for the national competition, but you would also be exposed to a hard-working and creative group of students giving you the best possible opportunity to seek potential employees. The team would be pleased to acknowledge your sponsorship and support throughout the year at local events, during their community and school outreach and of course at the 2017 GNCTR. Associating your company and your brand with the Western Engineering Toboggan Team is mutually beneficial, so I encourage you to become a partner in our success.

Best Wishes,

Andrew N. Hrymak, PhD, P.Eng.,
Dean, Western Engineering
CONCRETE
The concrete running surface consisted of two front skis and two back skis that both included bottom profiles designed for stability and steering control. The skis utilized a Ultra High Performance Concrete mix and was reinforced with bonded 0.5 inch steel threaded rods. The skis featured boat bow-shaped tips which optimized the toboggan’s agility in the snow.

STEERING AND SUSPENSION
The toboggan featured a suspension system design to supplement the steering and braking systems’ performance. The front ski suspension and steering system consisted of a double wishbone suspension driven by a rack and pinion, while the rear ski suspension and braking system utilized a pivoting arm in order to lower the toboggan brakes onto the ground.

BRAKES
The brakes themselves were made of large angled steel teeth -modelled after cultivator teeth- which dug into the snow as the toboggan lowered by the pivoting arm.

FRAME
The frame has a 5x1 rider arrangement and is composed of round AISI 4130N Chromoly Steel tubing. It was designed to safely withstand frontend collisions and overturning at 80 km/h.

THEME
The theme for GNCTR 2016 was “Red, Green and WETT”, inspired by the long running Canadian comedy, The Red Green Show, which embodied the “can-do” engineering attitude, hard work, and competitive spirit of GNCTR.
The WETT has had numerous successes at the competitions over the past few years, which are outlined below. By sponsoring the WETT, you will be supporting a group of ambitious and dedicated students in pursuing their passion for engineering and provide the opportunity to keep the upstanding tradition of the WETT’s success in GNCTR.

### 2016 AWARDS
1st Place Overall Champions
1st Place Overall Toboggan Design
1st Place in Braking Performance
2nd Place in Team Spirit
Most Improved Team

### 2015 AWARDS:
1st Place Superstructure Design
Most Innovative Toboggan
2nd Place Concrete Reinforcement

### 2014 AWARDS:
4th Place Overall
1st Place Best Technical Display

We would like to thank you for your interest in the 2017 WETT. Your support helps not only this year’s competitors, but to all future competitors and engineering students who will strive to win in 2017 and onwards!
By sponsoring the Western Engineering Toboggan Team, you will be supporting student involvement and development beyond the classroom curriculum. You will help students gain exposure to a diverse atmosphere that will teach them about multi-disciplinary teamwork, real-world problem solving, time management, technical writing and group logistics. Your support will help stimulate development outside the classroom and help build Canada’s top engineering undergraduates.

By sponsoring our team, your company can expect:

- A contribution towards the career development of future engineers and potential employees in many areas, including project management, team-work, and hands-on technical skills.
- Media exposure at the local and national level during team events through television, newspaper, internet and social media outlets.
- Increased brand recognition among Western University students from local exposure and advertising.
- Tax exemptions for donations.
The Western Engineering Toboggan Team would not be possible without your help. Your support will help cover our construction costs, travel and competition expenses. The four sponsorship packages below detail the available levels of sponsorship. Any of the packages can be customized to suit your needs. Sponsorship through donations of labour, materials or other technical services are also appreciated, and can be arranged by contacting the Sponsorship Coordinator at wett.sponsorship@gmail.com.

<table>
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<th>Sponsor Incentives</th>
<th>Reinforced Concrete &gt;$2000</th>
<th>Concrete $1000-$1999</th>
<th>Asphalt $500-$999</th>
<th>Gravel &lt;$500</th>
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<tr>
<td>Logo and Link on Team Website</td>
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<tr>
<td>Race Day Invitation</td>
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<td>Toboggan and Team Members Available for Promotional Events*</td>
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<td>Logo on Toboggan</td>
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<td>Company Promotional Merchandise at Technical Exhibition</td>
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Adam Del Rosso, Captain
Adam is a 5th year Mechanical Engineering student due to graduate in May 2017. He is the longest tenured member of WETT, being the only remaining team member to represent Western at each of the past 4 competitions. Adam recently completed a 12 month internship at Formet Industries, a division of Magna International, and is also pursuing a second degree in Practical Elements of Mechanical Engineering at Fanshawe College.

Ashley Chow, Assistant Captain and Project Manager
Ashley is studying Civil Engineering and will be graduating 2017. She is going into her 5th year of studies, after completing a 16 month internship at the Ministry of Transportation Ontario. Ashley has been a part of WETT for 4 years now, set to attend her third GNCTR. She is also involved with Women in Engineering, attended the 2015 NCWiE conference on diversity, and volunteers at Go Eng Girl, an outreach day for young girls.

Nicole Kucirek, Sponsorship Coordinator
Nicole is studying Environmental Engineering and will be graduating in May 2017. Nicole has been heavily involved in WETT for the past 3 years and additionally competed in GNCTR 2015. She also competed IDeA competition where her team placed 2nd. Nicole has completed numerous professional terms such as conducting research on subsurface remediation and has just completed a 16-month internship in Pipeline Integrity with TransCanada.

Ben Morrish, Superstructure Lead
Ben is studying Mechanical Engineering at Western University and will be graduating in May 2018. He has been a part of the WETT since for his entire undergraduate career and has been heavily involved in the concrete and super structure team.

Matthew MacLean, Construction Manager
Matthew is entering his second year of studies at Western studying mechanical engineering. Matthew was heavily involved in WETT last year helping to design and construct the braking and steering systems of the toboggan and participated in GNCTR 2016. Additionally, Matthew has just completed a co-op term at Enwave Energy Corporation in Toronto.

Mike Hockin, Concrete Leader
Mike is a 5th Civil Engineering student. A former rower, Mike competed for Western at the Novice and Junior Varsity levels from 2012-2014, including the year Western won all four banners at the Men’s and Women’s Ontario University Athletics (OUA) and Canadian University Rowing Championship (CURC). Mike has previously worked for Dillon Consulting and the Ministry of Transportation Ontario and is currently completing his internship at the Boundary Layer Wind Tunnel Laboratory at Western.

Kristen Hall, Theme Leader
Kristen is studying Green Process Engineering. She is entering the final year of her program after completing a 16 month internship with GE Power, where she worked in the Department of Water & Process Technologies. Kristen is involved in numerous extra-curricular activities within the school community. In addition to WETT, she has taken part in the Women in Engineering Mentorship Program, and writes for the engineering newspaper.
CONTACT

For more information, please contact Nicole Kucirek:

wett.sponsorship@gmail.com

647.237.6454

www.eng.uwo.ca/wett