



McGill University
Tractor Pulling Team



Financial Support Document 2020



About Mutrac...

Mutrac is a young and innovative team on the Macdonald Campus of McGill University. The goal of Mutrac is to demonstrate and develop the knowledge obtained in the Bioresource Engineering courses, as well as gain valuable experience in a 'real life' situation by constructing a tractor, analyzing costs and promoting the idea to a market.

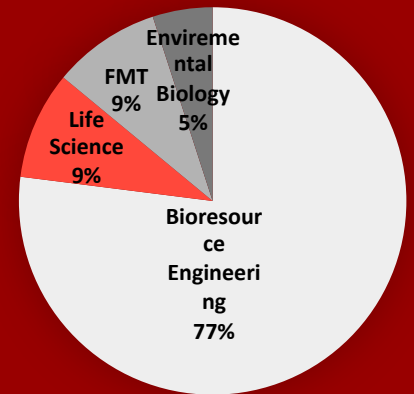
The Project

Students must complete the design, construction, written report, owner's manual and sales presentation of the tractor within the 12-month period leading to the International Quarter-Scale Tractor Competition. The event is hosted by the American Society of Agricultural and Biological Engineers (ASABE) and is held in Peoria, Illinois, at the end of May. Approximately 30 teams from across North America will compete against one another. This competition will be judged by engineers and industry experts from large companies such as John Deere and Caterpillar who will evaluate the tractor based on: innovation, durability, pulling capacity, safety, design, ergonomics and maneuverability.

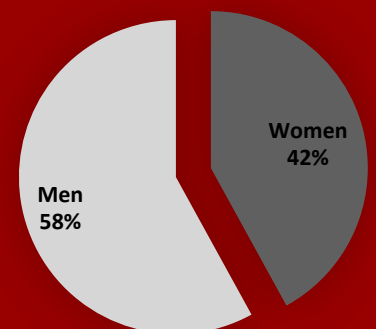
The Team

Our team is made up of 30 undergraduate students with different backgrounds and complementary skills: practical knowledge of agricultural machines, interpersonal communication skills, budget management experience and advertising expertise. But mostly, every team member wants to learn and participate in a project that will help him or her improve as future engineers. This competition is an opportunity to apply the knowledge and skills acquired in the classroom. In preparation for the professional world, the team provides an environment now that will, in turn, benefit both the industry and the team members.

Program Breakdown of Team



Gender Breakdown of Team





Support Level (*Sponsorship)

Level	Logo on Website	Logo on Apparel	Logo on Tractor	Logo on Banner
Bronze (\$100)	X			
Silver (\$250)	X	X		
Gold (\$500)	X	X	X	
Platinum (\$1000+)	X	X	X	X

Table 1 Support Level. Depending on the monetary value of the support given, a level is attributed to a sponsor that relates to a different level of visibility for the sponsor.

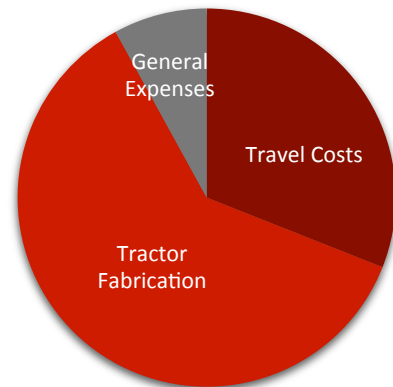
***Sponsorship** (without a tax receipt) is a fee paid to an organization/group in return for access to the commercial potential associated with the organization and/or event, i.e.; Company names/ Logos on pamphlets and Banners.

***Donations** or **Philanthropy** (with a tax receipt) are in support of a cause without any commercial incentives.

How will your donation be used?

Your contribution will be primarily used to buy components and materials needed to build the tractor. It will also pay for the transportation and accommodations of the team members during the competition. ASABE provides the 31-hp engine and the rear wheels. Also, some components from previous years can be reused. Nonetheless, many quality pieces must be bought or donated to our team in order to exceed the level of our fellow competitors, which will preserve and strengthen our reputation. This is beneficial to our sponsors, as it will bring more attention to the tractor both during the competition and at external events, leading to greater visibility for our companies who have their logo displayed on our tractor and apparel.

Team Expenses





Donation/Sponsorship Form

Name of Donor/Corporation _____

Contact Person _____

Address _____

Tel: _____

Email: _____

Donation Amount (Tax Receipt) \$ _____ (CDN) (USD)
(Donations or Philanthropy are in support of a cause without any commercial incentives).

- Payment Type: Cheque
- **Please make your cheque payable to McGill University and include “Mutrac” on the Memo line**

Sponsorship Amount (No Tax Receipt) \$ _____ (CDN) (USD)
(Sponsorship is a fee paid to an organization/group in return for access to the commercial potential associated with that organization and/or event, i.e.: Company names/Logos on pamphlets and Banners).

- Payment Type: Cheque
- **Please make your cheque payable to Macdonald Campus Students Society and include “Mutrac” on the Memo line**

To mail contribution:

MCSS - Mutrac
Room CC-101
Centre Centennial Building
21 111, Rue Lakeshore
Ste-Anne-de-Bellevue, Québec
H9X 3V9

***Please note:** to have your logo displayed on our tractor (Silver Level and above), we need either stickers with the company logo or a vectoral image file of your logo sent by email.





If you wish to contact us, you can reach us:

By email:

audree.roy@mail.mcgill.ca
heidi.macek@mail.mcgill.ca
scaletractor.bree@gmail.com

By telephone:

Audree Roy: (514) 792-718
Heidi Macek: (450) 522-1857

By mail:

MCSS - Mutrac
Room CC-101
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21 111, Rue Lakeshore
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Thank you!





Mutrac History

2011-2012 MR13

Everybody had to learn SolidWorks, mechanical front wheel drive, no electronics, rookie of the year award and 13th place overall

2013-2014 MR14

Two-wheel drive tractor, dynamic ballast system, first onboard computer, drive-by-wire steering, push-start ignition, RFID identification, 15th place overall

2014-2015 MR15

Two-wheel drive tractor, new compound steering option, variable sensitivity steering and variable speed ballast, 9th place overall and 3rd-place presentation

2014-2015 MR16

Electric brakes, electronic CVT, aluminum drop box for transaxle, front suspension, improved ergonomics, main computer moved to armrest, new exhaust pipe, extensive use of instrumentation, 3D printed parts, electronic throttle, best pulling performance so far.

2015-2016 MR17

Development of testing procedure, improved reliability, refurbished Stuska dynamometer, conceptualization and 3D CAD drawing of pulling sled, welcoming 60th student to join the team since September 2011

2016-2017 MR18

Two-wheel drive, hydraulic disk brakes, electronic CVT, independent front suspension and the addition of a new electronic control system sponsored by Danfoss, won several awards including Manufacturability, Serviceability, Craftsmanship and second place overall for marketing presentation

2017-2018 MR19

All-new four-wheel drive system, locking differential, hydraulic disk brakes, electronic CVT, independent front suspension.

2018-2019 MH1

First generation of the hydrostatic drivetrain. This system featured 1 variable displacement pump driving 2 variable displacement motors sending power to the wheels through 2 locking differentials

