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Chairperson:

- David Musil

Outgoing chair:

- Elise Woolliams

Vice-chair and

Secretary:

- Ophir Kendler

Treasurer:

- Stuart Evans

Vice Chair, Student

Activities:

- Manal Faour

AWIM Representative:

- Dale Brown

Appointed Officer:

- Antonio Marchet

Appointed Officer:

- Colin Keddle

Appointed Officer:

- Colin Blair

Appointed Officer:

- Martin Jackson

Appointed Officer:

- Kyle Farnand

Webmaster:

- Bob Mai

Newsletter Editor:

- Casey Keulen

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E-mail us at:

[info@saebritishcolumbia.org](mailto:info@saebritishcolumbia.org)

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<https://www.facebook.com/SAEBritishColumbia?ref=bookmarks>

## Welcome back to the 2017-2018 SAE BC Season

### UPCOMING EVENT:

## 'Autonomous Driving – The State of Standards, US Regulations, Legislation, and Policy'

**PRESENTED BY: Barbara Wendling, Safety, Fuels, and Regulatory Affairs, Mercedes-Benz Research and Development, North America**



Mercedes-Benz

**WHEN:** Monday, September 25, 2017, 6:00 pm – 8:30 pm

**WHERE:** BCIT Burnaby Campus Lecture Hall, Building SW9, Rm 110, 3700 Willingdon Ave., Burnaby, BC, V5G 3H2  
Please see this [link for a map](#).

**WHAT:** Barbara chairs the SAE J3016 Task Force: Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles. She works for Mercedes-Benz RDNA in the area of technical policy and regulations with a focus on automated driving, connected vehicles, and functional safety. She will discuss the state of standards, US (state and federal) regulations, legislation and policy related automated driving.

*Food and beverages will be provided.*

**RSVP:** [Please RSVP using this link: http://register.saebritishcolumbia.org/](http://register.saebritishcolumbia.org/)  
And email: [info@saebritishcolumbia.org](mailto:info@saebritishcolumbia.org) for more information

**COST:** *Free for SAE BC members, all students, \$10 for non members*

## NEW CHAIRPERSON FOR SAE BC

SAE BC would like to welcome our new Chairperson, David Musil to the position. David has been involved with SAE starting in his student days in 1988. He led the University of Manitoba Super Mileage Team in 1992. Dave got re-involved with the SAE BC chapter in 2007, and has served positions of Secretary and Vice-Chair.

A huge thanks to our outgoing Chairperson, Elise Woolliams for her many years of dedication as Chair. Under her leadership, SAE BC has grown and improved each year with new members and more exciting events. Elise will continue her involvement with SAE BC as Outgoing Chair



**Dave Musil, Chair**



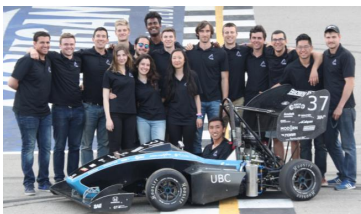
**Elise Woolliams, Outgoing Chair**

## ANOTHER UPCOMING EVENT: 'SAE BC Student Night'

Please mark your calendars for our annual SAE BC Student Night this year on October 23 at BCIT Burnaby Campus Lecture Hall, Building SW9, Rm 110, 3700 Willingdon Ave., Burnaby, BC, V5G 3H2. Please see this [link for a map](#). Note: this is the same location as September's event.

## UPDATE ON STUDENT TEAMS

The recipients of last year's student prizes were asked to provide an update on their progress. Each team has prepared a one page overview that has been appended to the back of the newsletter. This is an opportunity to celebrate the accomplishments of the previous year's design work and competition results.



## SUMMARY OF LAST EVENT: Year End Social Event: F1 Viewing Party

On June 11<sup>th</sup>, 2017, SAE members and friends joined together at Vancouver's King's Crossing Pub to enjoy the Grand Prix Race, held in Montreal. As we watched the televised race, we enjoyed an excellent brunch plus local craft beer. Door prizes were awarded to two lucky winners.



## QUESTION OF THE MONTH

Every month we will be asking a new mobility related question and post the best answers from last month.

**This month's question:**

***"What was your best driving experience this summer, where was it and why was it the best?"***

Please email your answer to: [info@saebritishcolumbia.org](mailto:info@saebritishcolumbia.org) or enter your answer while filling out the online [registration form for the upcoming event](#).

## 2017-18 SEASON'S TENTATIVE SCHEDULE

Below is a list of the upcoming events for this season. **Please mark your calendars!** Events are held on Mondays unless stated otherwise. Please note that the Board Meetings are open to anyone. Please let one of the board members know if you are interested in attending and/or getting involved!

2017 September 11	Board Meeting
2017 September 25	Autonomous Driving Event
2017 October 16	Board Meeting
2017 October 23	Student Night
2017 November 20	Board Meeting
2017 November 27	Event
2017 December 11	Event and Board Meeting
2018 January 15	Board Meeting
2018 January 29	Event

## WELCOME NEW MEMBERS

Let's welcome the following new members to the SAE BC Section for the 2017/18 season:

Felix Van Oost  
Nicholas Alfano  
Marshall Iu  
Michael Funk  
Gerald Sdoutz  
Timothy Blaskovic



*The BC Section of SAE International is now entering its 72st year, since being officially designated as the SAE British Columbia Group on June 12, 1946. The Section has about 250 regular members with additional student chapter members at UBC, UVic, SFU and BCIT.*

*The majority of our Members live and work in the Lower Mainland, and represent a wide spectrum of technical interests. We have a regular program of local events, mostly centered in the Vancouver area, although we have had meetings elsewhere in BC on occasion.*

## PROFESSIONAL DEVELOPMENT SEMINARS

SAE BC has the potential to host professional development seminars locally through SAE International. We are gaging interest in a variety of topics. Please have a look at the link below to see which courses are being considered: <https://www.surveymonkey.com/s/XX5NSJ2>

## VISION STATEMENT

SAE BC will be the active resource to the professional and student community for advancing the level of mobility engineering in the province of British Columbia.

## MISSION STATEMENT

To enrich the professional life of the membership by:

1. Providing recognized leadership for mobility in British Columbia.
2. Creating opportunities for technical meetings, tours, events and continuing professional career development.
3. Supporting young membership through mentorship and funding of student activities.
4. Communicating through the newsletter, website and timely responses to members.
5. Striving for membership satisfaction at every opportunity.



# University of British Columbia BAJA SAE



## This Years Vehicle:

For the 2016-2017 year, UBC Baja redesigned each sub-system using the existing chassis as a basis. The overarching goals for each sub-system was to improve reliability and reduce weight. While suspension geometry and general drivetrain layout was retained for the year, extensive testing of these sub-systems was completed to refine suspension geometry and validate proposed design changes. A custom gear-box was also designed, and is to be implemented into the 2017-2018 Competition Vehicle. On the team, it is a tradition to create a vehicle that is not only well engineered, but also created with a sense of craftsmanship. With the help of The University's wide array of facilities the team was able to create a stunning final product with minimal professional aide.

## Who We Are:

UBC Baja is an engineering student design team comprised of predominately Mechanical, Electrical, and Integrated Engineering Undergraduate students at the University of British Columbia. Every year the team designs and fabricates a single seated all-terrain vehicle to compete in the SAE International Baja Competitions. Students work outside of their course studies to not only build essential skills for the workplace, but also develop hands-on experience with the design and fabrication of the vehicle. Utilizing CAD design software, campus machine shop facilities, and industry relations, the team works to create a fast and reliable vehicle to not only perform well, but endure the grueling competition demands.



## Competition:

UBC Baja Attended the 2017 Baja SAE Competition in Pittsburg, Kansas USA. UBC Baja ended up in 38<sup>th</sup> place out of over 100 other teams from around the world. The team was pleased to improve on previous years, but recognizes many aspects that can be improved upon in the years to come.

UBC Baja would like to thank SAE BC, and the team's other longstanding sponsors for their support. UBC Baja is made possible by you.



# BCIT RACING



2016-2017 was a tumultuous and challenging season for BCIT Racing, beginning with a change in leadership, as Sanesh Iyer passed his Captaincy to Russ Case in September, and ending with disappointment at competition.

Two primary goals were set at the beginning of the season: build a new, more competitive vehicle, and complete the endurance event in Baja Illinois. Neither goal was ultimately met, however the team took great strides in transitioning to a new generation of core members, made significant progress towards completing the second-generation vehicle, and most importantly, finished the year with a tremendous amount of experience.



*The Baja Illinois crew poses with the V1 car*

By mid-May, competition and final exams loomed, so it was decided that time would be best spent refurbishing the previous vehicle to fit the revised 2017 rulebook. At Baja Illinois, the old frame was flagged for a roll cage bend angle violation. The BCIT pit crew worked together like a finely tuned machine, revising CAD drawings, printing coping templates, cutting away body panels, and welding new members in place. Unfortunately, the car arrived two minutes late for the final inspection call. While disappointing, the experience of working under such intense pressure was exhilarating.



*Coping new tubing*



*Body panel removal*



*Clarkson University TIG welding*

While the new team vehicle was not finished for competition, both second-year capstone design teams tasked with designing and building the new frame and suspension were able to complete their respective projects.

Notably, the new frame was designed for manufacturing and assembly, and its waterjet-cut jigs permitted precise control over the frame's key geometry while remaining inexpensive.



*Jig and frame rendering*



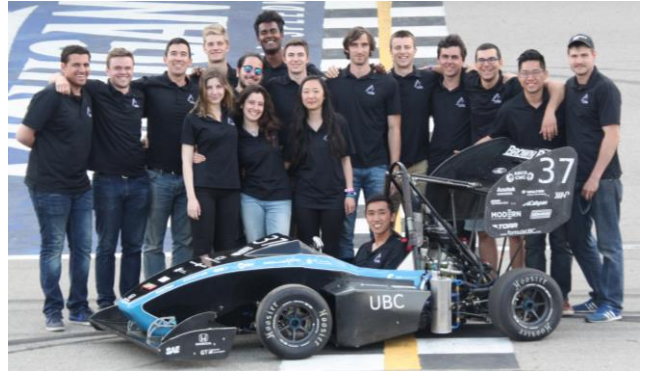
*Assembled for welding*



## UBC Formula SAE Team Places 23<sup>rd</sup> out of 120 at FSAE Michigan

In May, the Formula UBC Racing team participated in the Formula SAE Michigan competition. The team secured 23<sup>rd</sup> place overall out of 120 teams.

The design goals for the 2017 competing race car included a drastic weight reduction which led to a full redesign of the car's primary sub-systems. Changes included a smaller chassis and a switch from 13" to 10" wheels. An incredible 70 lbs was removed from the previous year's design resulting in a final weight of 447 lbs (without the driver). An example of the weight-cutting technologies implemented to aid in this aggressive weight target was the development of carbon fiber suspension components which required extensive physical testing to validate strength.



*The team at Michigan International Speedway*

Formula SAE competitions are comprised of both static and dynamic events. The static events include the engineering design presentation, business presentation, and the cost event where the team placed 18th, 65th, and 91st, respectively. Dynamic results were as follows: 15th in acceleration, 22nd for skid pads, 23rd in autocross, and 30th for endurance. The team also placed 1st for their engineering drawings which awarded the Three View Drawing Excellence award for the team's second year in a row.

Due to a lack of time for suspension adjustments and practice, drivers had difficulty completing their autocross runs cleanly and with competitive times. Nearing the end of the event, the second driver took a more conservative driving style and ran a fast lap earning the team 23rd in the autocross event.

The team started the endurance race strong due to diligent preparation and tuning that took place before the event. However, unfortunately, due to an overheating engine, it became necessary for the driver to slow down to preserve engine life. After 11km of racing and a successful driver change, the front brake rotors shattered due to the second driver's continuous hard braking. The driver pushed through the race with only the rear brakes while still managing to finish 30th overall.

In the end, Formula UBC secured 23rd place at the Formula SAE competition in Michigan. The success was attributed to the innovative design concepts and quick problem-solving skills exhibited by the driver's and team members. The team plans to address the issues faced during the endurance race to reach their goal of finishing top 20 at next year's Michigan competition.

The team would like to thank all the sponsors and supporters for such a successful year. The project could not be possible without them.