



The Institute of Navigation  
Proudly Announces The



# Annual Autonomous Snowplow Competition



## Lets Plow!

**Your assignment, if you choose to accept it, is to design and operate a snowplow vehicle that will autonomously clear snow from a path**

- WIN cash prizes and awards for best vehicle design presentation and report
- WIN cash prizes and awards for most effective snow clearing
- HAVE fun and learn new science and technology stuff!!

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If you are interested in competing in 2014, please contact:

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For more general information check out our website:  
[www.autosnowplow.com](http://www.autosnowplow.com)

Next Competition Year  
January 2014

The Institute of Navigation (ION) is the proud organizer of the Annual Autonomous Snowplow Competition. This competition is operated by the ION North Star Section based in Minneapolis, MN, and includes ION members from Minnesota, North Dakota, South Dakota, and western Wisconsin. ION's Satellite Division directly sponsors the competition.

The contest objective is for teams to design a snowplow that will autonomously clear snow from a pre-defined field. The competition invites and challenges teams in high-performance autonomous vehicle guidance, navigation, and control. It is designed to encourage students that are interested in the art of navigation and the general areas of science, technology, engineering, and mathematics.

Teams must build a vehicle to autonomously plow snow entirely from two snowfields in a set amount of time. The two snowfields have a straight single "I" shape and a double "I" shape. The teams can use augmentation systems, such as visual cues or GPS, to aid the vehicle's navigation system, however there will be no direct human control of the snowplow during its competition run.

The competition invites teams from colleges and universities, and is also open to the general public. As student involvement is a major objective of the competition, general public teams will be required to have at least one student as a contributing member and presenter of their design in all competition events, and all team members must be 18 years or older.

The annual competition is held in conjunction with the Saint Paul Winter Carnival during January in St. Paul, MN. The contest is a multi-day event during its competition week:

- Thursday – Teams present their final snowplow designs to a judge panel of industry professionals, as well as a public audience
- Friday – Teams demonstrate their snowplow's operability and safety features
- Saturday – First day of on-field competition, with teams clearing the single "I" snowfield using their vehicles
- Sunday – Second day of on-field competition, with teams clearing the double "I" snowfield using their vehicles

Judging occurs throughout the competition – from the on-paper design phase months in advance, through the final day of the on-field competition. In the design phase, teams are evaluated on their snowplow designs and skill in presenting their designs to the judges during a Preliminary Design Review. During the competition week, teams are judged on their final design, through reports and presentations, and their snowplow's performance removing snow on two different courses. Teams that accumulate the most points throughout the competition will be awarded cash prizes and trophies for their success, including the prestigious Golden Shovel Award for best student presentation and Golden Pen Award for best final report.



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For Additional Information Please Visit  
[www.autosnowplow.com](http://www.autosnowplow.com)