

Autonomous Snowplow Competition



**ION North Star Section
Outreach Program**

Autonomous Snowplow Committee



**Final Presentation Information & Outline
2011-12 Competitors**

January 1, 2012

Final Presentation Rules

- Final Presentation slides must follow the provided outline
 - Standardized judging for all Teams
- Final Presentation Slides Submission Deadline
 - January 23, 2012 (**extended to Monday**)
 - Time: 12 pm (noon) CDT
 - Email submission: vibhor.bageshwar@honeywell.com
 - Please submit a PDF formatted version of the presentation to minimize file size
- Final Presentation: January 26, 2012 (Thursday)
 - Final Presentation Venue: Science Museum of Minnesota
 - Final version of the Final Presentation Slides must be delivered to Dr. Vibhor Bageshwar at 5pm on January 26 at the Final Presentation Venue
 - Final presentations will be hosted using the Science Museum's AV equipment and Vibhor's Laptop
 - Supported media: standard Microsoft applications or Adobe Acrobat format

Final Presentation Rules

- Final Presentation time: each Team is allotted 25 minutes
 - Team Presentation order will be determined by random draw at 5pm on January 26, 2012 at the Final Presentation Venue
 - First Team Presentation begins at 6pm on January 26, 2012
 - Presentation time: 20 minutes maximum
 - Q&A time: 5 minutes maximum
- Team Scoring and Reviews
 - Team reviews will be returned to Team contacts following the ASC Competition Week
 - Final Presentation scoring is independent of Final Reports
 - Team standings will be updated by January 28, 2012
 - Website
 - www.autosnowplow.com
 - ASC Scoring Board at the Competition Venue

Final Presentation Outline

- Title Slide (1 slide)
 - Team university/name/logo
- Objectives (1 slide)
 - Team objectives
 - Snowplow vehicle plowing strategy (1 pass or multiple passes)
 - Team composition
- Snowplow Vehicle Program Top-Level Requirements (1 slide)
 - Table format
 - ASC Committee hint: a requirement is a metric that indicates when a design satisfies an objective
 - Ex: Heading angle accuracy: 0.25 deg

Final Presentation Outline

- Snowplow Vehicle Description (please follow the give order)
 - Concept/Plowing strategy
 - Snowplow vehicle design (minimum 1 slide)
 - Snowplow vehicle and blade design
 - Snowplow vehicle physical dimensions
 - Sensor + processor component housing
 - Navigation system design (minimum 1 slide)
 - Concept
 - Sensors
 - Navigation augmentation system
 - Placement of navigation aids in competition field
 - Guidance system design (if applicable) (minimum 1 slide)
 - Way-point selection concept
 - Control system design (minimum 1 slide)
 - Concept & available actuators
 - Bandwidth & actuator response speed
 - Processor & Software design (minimum 1 slide)
 - Timing and action sequence flowchart

Final Presentation Outline

- Safety System (minimum 1 slide)
 - System description
 - Emergency shut-off options
 - Physical and remote
 - Stopping distance from maximum speed
 - Identify surface
- Failure Modes and Recovery Actions (1 slide)
 - Identify failure mode and recovery actions
 - Table format
- Overall Risk Assessment Summary (1 slide)
 - Evaluate each subsystem
 - Identify known issues
 - Table format

Final Presentation Schedule

Team	Presentation Time (CST)
Dunwoody College of Technology “Snow Devil 2”	TBD: random draw at 5:00pm on 26 January 2012, 1 hour before the first final presentation time slot
Miami University “RedBlade”	
Ohio University “M.A.C.S.”	
University of Michigan “Geili”	
University of Michigan “Yeti 2.0”	
University of Minnesota “Blizzard Buster”	

Final Presentation Scoring

- Final Presentation scoring: 10% of the total Competition score

Category	Scoring
Quality of Presentation Slides	40
Technical Presentation	40
Ability to Engage Audience	20
Total Points	100