

WiSys Ref: T170041

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## Low Maintenance Snowmobile Ski Design that Increases Traction, Maneuverability and Safety on Paved Surfaces

### Market and Background

The global snowmobile market is projected to grow to over \$1.6 billion in 2022. In 2017 there were 118,657 snowmobiles sold worldwide; 50,659 were sold in the U.S. and 44,161 were sold in Canada. There are over 1.2 million registered snowmobiles in the US and over 600,000 registered snowmobiles in Canada. In North America, the average snowmobiler rides 1,175 miles per year.

The majority of modern snowmobiles have skis which use steel carbide runners as a means of gaining traction for steering on snow and ice. However, this ski design provides limited traction and maneuverability when crossing roads, going to gas stations and traveling on pavement, gravel and other hard surfaces. Exposure to these types of surfaces causes the runners to rapidly degrade and requires frequent and costly replacement. Conversely, direct contact with ski runners can cause damage to roads, driveways, sidewalks and other surfaces that are not intended for snowmobiles. There are also safety and convenience issues with the current design. Lack of traction and turning ability on hard surfaces often forces riders to dismount the snowmobile and manually guide the front end of the machine. Moreover, degradation of runners can result in loss of control on all types of surfaces, potentially causing injury or damage.

### Research and Development Status:

Inventors from the University of Wisconsin-Green Bay in partnership with UW-Platteville Senior Design have developed a snowmobile ski that offers improved steering and traction on pavement and other hard surfaces. The design incorporates a fixed wheel and runner system, which provides steering control when rolling on pavement and concrete, yet allows the skis to function properly when driving on snow and ice surfaces.

The design has been refined through multiple prototype iterations and has passed testing for mobility on hard surfaces, traction on ice, and functionality on snow. The present design increases maneuverability on pavement and requires less maintenance when compared with snowmobiles that are currently on the market. Further refinement may be needed prior to manufacturing.

### Applications and Key Benefits:

- Increased traction and turning ability on pavement and other hard surfaces; Better handling on rough terrain
- Improved rider safety and convenience
- Reduced wear and tear on the ski system
- Lower maintenance costs; Less frequent ski replacement and lower costs for wheel replacement
- Reduced damage to roads, driveway, sidewalks and other paved surfaces

### Intellectual Property:

A U.S. Patent Application has been filed for this technology. For more information, please contact Jennifer Cook at [jennifer@wisys.org](mailto:jennifer@wisys.org) or by phone at 608-316-4131.

### Development and Commercialization Needs:

WiSys is currently seeking a strategic partner interested in providing a route to market for the commercialization of this technology.