Capstone Project Proposal

To: Montana State University-Bozeman Engineering Capstone
From: Clean Snowmobile Club at Montana State University
Project: Exhaust Diversion Valve
Date: August, 2018

The Project
The Clean Snowmobile Club at MSU is requesting the engineering assistance from a capstone group for creating an exhaust diversion valve. This will be implemented for a two stroke engine in a snowmobile to alternate between to two different exhaust expansion chambers to help improve emissions and performance from two strokes.

About the Club
The mission of the Clean Snowmobile Club at Montana State University is for all members to unify and collaborate as a team to achieve our club's objectives. Our goal is to not only create a clean and competitive snowmobile, but to also have fun and learn a few things along the way. We will represent our University and the Bozeman community at large at the SAE Clean Snowmobile Challenge.

About the Competition
The SAE CSC program is an engineering design competition for undergraduate and graduate students. The program provides participants with the opportunity to enhance their engineering design and project management skills by applying learned classroom theories in a challenging competition that tests their designs to reengineer an existing snowmobile to reduce emissions and noise. Participants' modified snowmobiles will compete in a variety of events including emissions, noise, fuel economy/endurance, acceleration, handling, static display, cold start and design.

The CSC Rules Committee makes changes to the competition each year to keep the competition fresh and to present new engineering challenges. CSC is primarily an "engine" competition however the underlying theme has remained consistent to engineer a clean and quiet trail sled. Current trail sleds are engineered to these standards, but it is possible to achieve more. Noise levels can be reduced and cleaner fuels can lead to lower emissions.