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National Science Foundation
2415 Eisenhower Ave
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Dear National Science Foundation Review Committee,

The machine-directed air stream system (M-DAS) was born out of ingenuity and a recognition of the limitations wildland firefighters have to influence fire behavior. The fire behavior triangle provides a conceptual illustration of three factors that influence fire behavior: weather, topography, and fuels. Historically, the fuel leg of the triangle was the only option firefighters and land managers had to manipulate if they wanted to change fire behavior (and subsequently the all-important metric of fire severity). However, with the originality of the M-DAS system and an appreciation for fluid dynamics, this innovative system allows practitioners the opportunity to harness the physical force of wind.

The ability to create and direct wind is particularly useful in the application of prescribed fire. In particular, the M-DAS system could prove useful in reducing the amount of time is takes to "blackline" fire control lines. Given the millions of acres across the west that would benefit from a prescribed burn and the narrow weather windows to complete that work, any application of technology that can increase the numbers of acres burned per day would be welcome and critical to getting ahead of the treatment curve.

While the first M-DAS system has already been built and field tested with the conservation-leading prescribe fire practitioners at Tall Timbers Research Station, additional testing, analysis, and education outreach is required. In this regard, a strategic partnership with New Mexico State University Cooperative Extension Service is an ideal match. The Extension Service specializes in applied research as well as educational outreach. The Cooperative Extension Service is prepared and capable to deliver the necessary applied research and practitioner outreach necessary to continue developing the capacity and capabilities of the M-DAS system.

In summary, given a warming and drying climate, particularly in the western United States, and the direct correlation to increased wildland fire severity, any number of efforts will be necessary to collectively coalesce around this outsized threat and challenge. The M-DAS system represents one of many innovative ideas that will help advance solutions to wildland fire challenge in the United States and beyond.

Respectfully,