PROJECT NAME: V2 FLOWSTRIDE

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## WHAT IS V2 FLOWSTRIDE?

- A proprietary and novel snowshoe technology developed by SUMMIT.
- The second iteration of the award winning FlowStride system: awarded last year's HP Innovation Award.

WHAT MAKES IT NOVEL TECH?

- A gimbaled crampon provides foot articulation to improve performance and mitigate strain in uneven terrain.
- Pitch and roll capability is unseen in the snowshoe market today.

Gimbal

Oregon State University

SNOWSHOEING:

Remove Strain. Improve Performance. Get FlowStride.

BY THE NUMBERS

CR #	Customer Requirements
1	Optimize 2-axes pivot crampon
2	Redesign for manufacturability
3	Redesign for reliability
4	Deliver a functional prototype

Engineering Specification	Target	Achieved
Pitch	30° ± 10°	✅
Roll	20° ± 10°	✅
Prototyping	< $1000	✅
Modular	Yes	✅
Functional Prototype	Yes	✅

PROTOTYPING
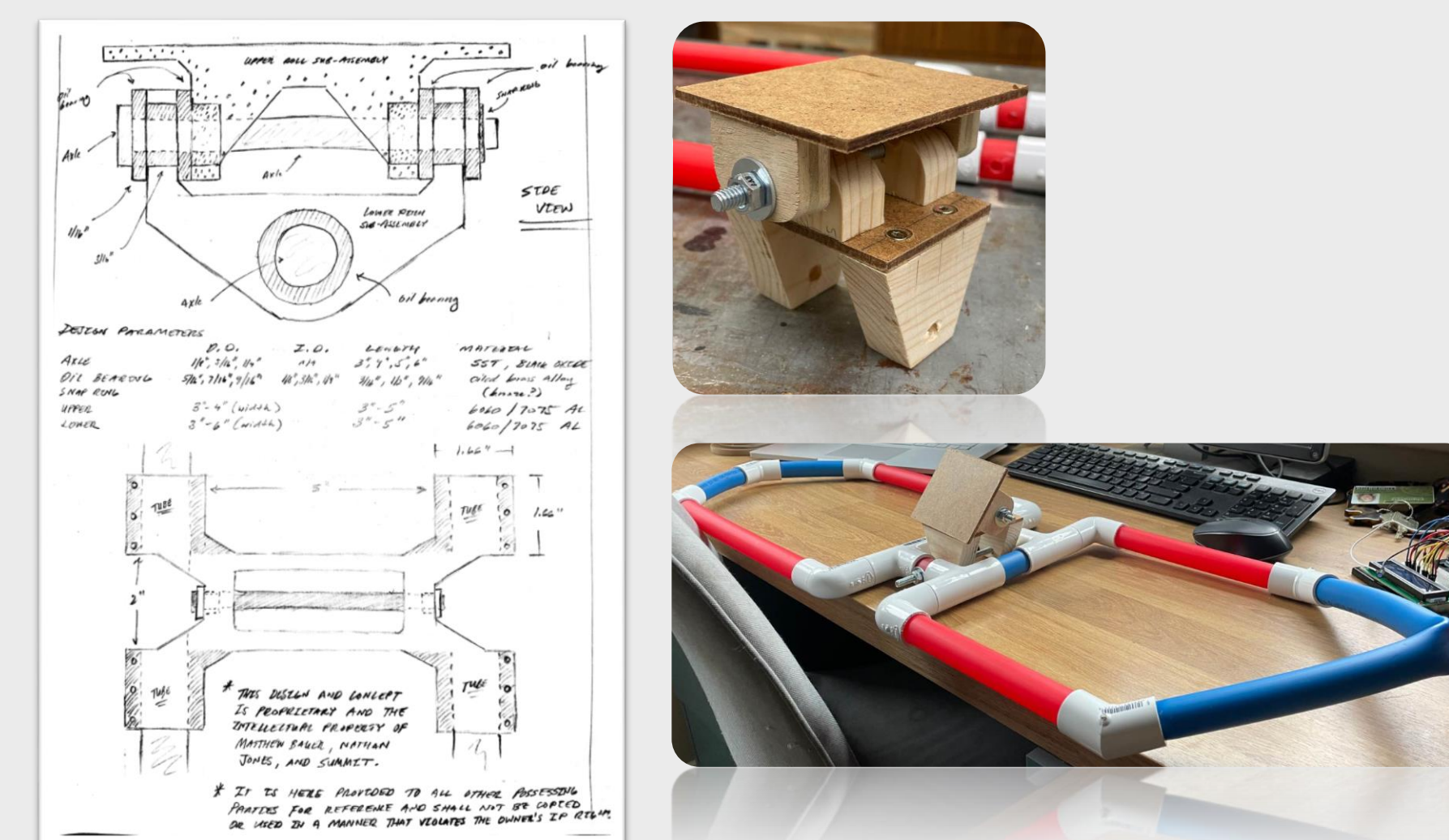
- Generated a drawing with calculated dimensions that fit the necessary engineering specifications.
- Prototyped a low-fidelity version of the system using PCV, wood, and screws.

- Modified and iterated the design using SolidWorks to further fit engineering specifications.
- Prototyped a high-fidelity version of the system using 3D printing technology and a set of snowshoe frames.
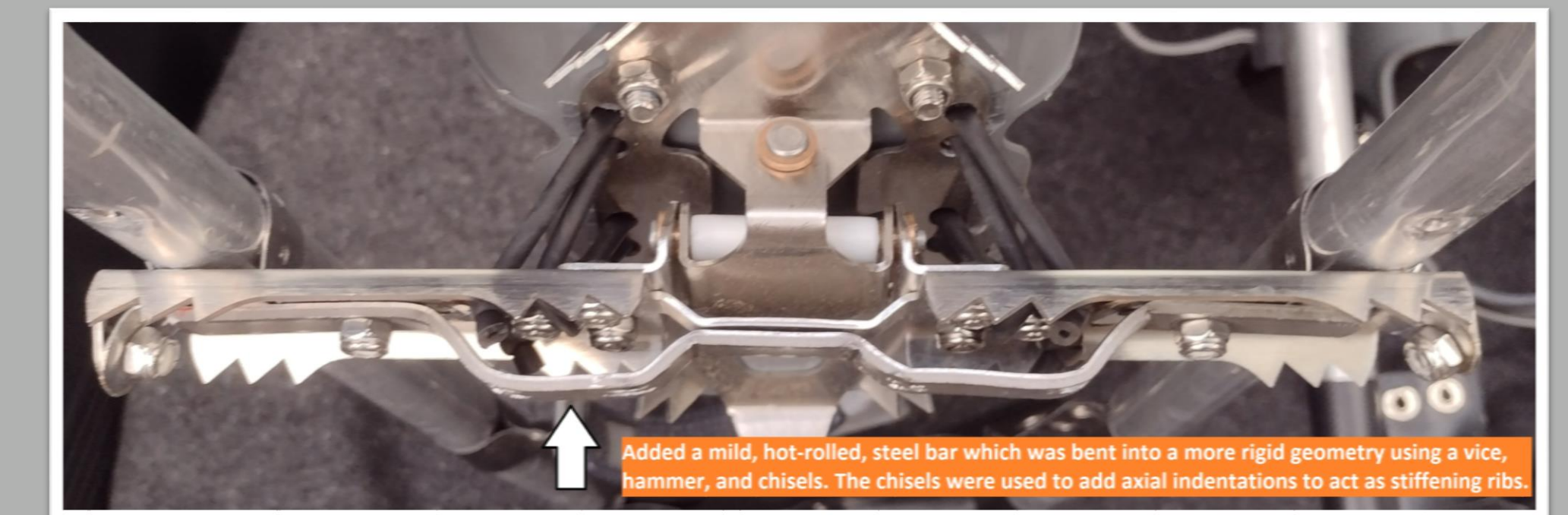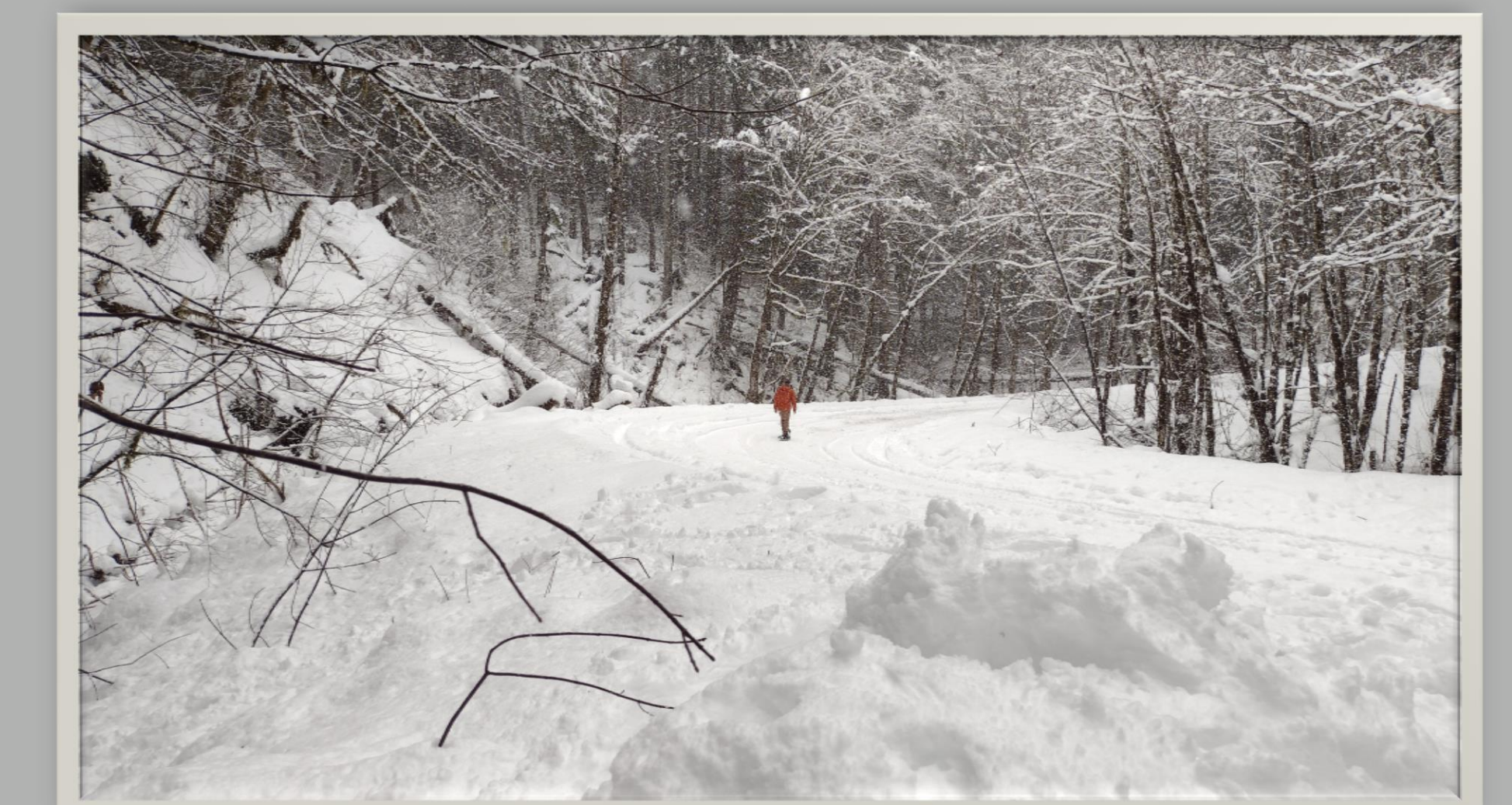
FINAL ASSEMBLY

- Used off-the-shelf hardware and components to reduce cost and improve manufacturability.
- Manufactured components using stainless steel sheet metal to reduce weight, increase strength, improve corrosion resistance, and improve manufacturability.
- Assembled the gimbaled crampon using off-the-shelf hardware and components and recycled snowshoe bindings.
- Supported the gimbaled crampon rotation using tensioned surgical tubing.
- Measured and cut shapes from rubberized nylon fabric to form the decking of the snowshoe.
- Attached the decking to the frame using grommets.

Snowshoes!

MODIFICATIONS

Added plastic spacers to the axles to prevent flange slippage.

Added a mild, hot-rolled, steel bar which was bent into a more rigid geometry using a vice, hammer, and chisels. The chisels were used to add axial indentations to act as stiffening rib.

FIELD TESTING

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