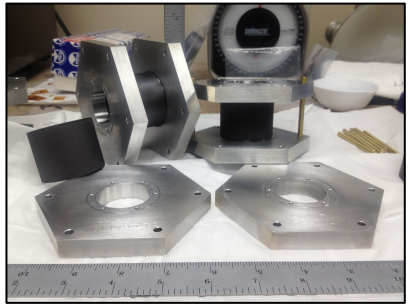
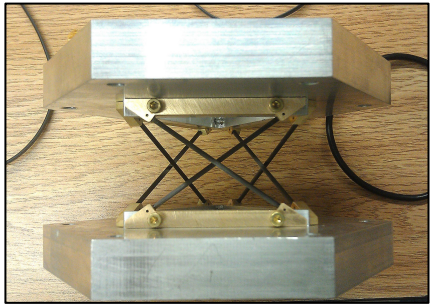
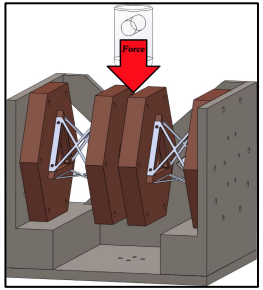
Erik Kramer | SuperCDMS SNOLAB Support Tower Standoffs

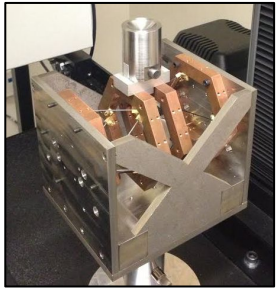
Project → A multi-temperature stage support structure for cryogenic dark matter detectors
Tasks → Design, delivery and qualification of structural thermal standoffs for multiple temperature stages

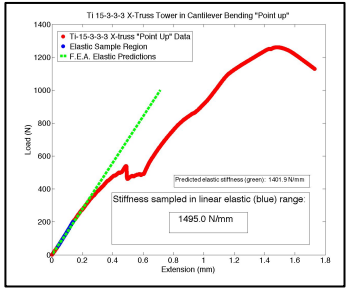


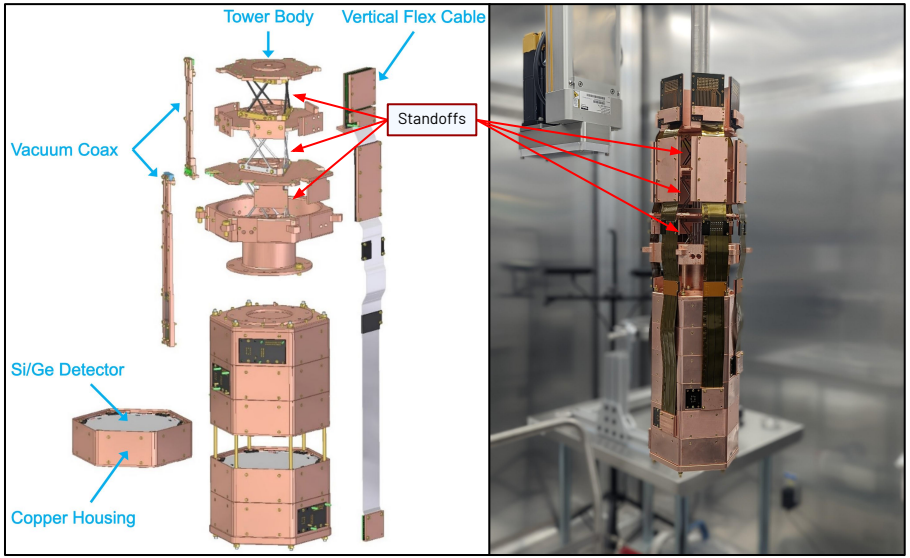


Design Trades, Analysis, and Testing









Final Design Integration

SUPER CDMS Cryogenic Dark Matter Search

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Objectives

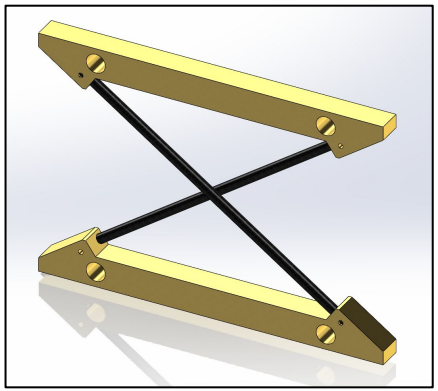
- ➔ Design standoffs to structurally support multiple temperature stages for the SuperCDMS SNOLAB experiment tower
- ➔ Fabricate hardware and qualify based on structural and thermal requirements

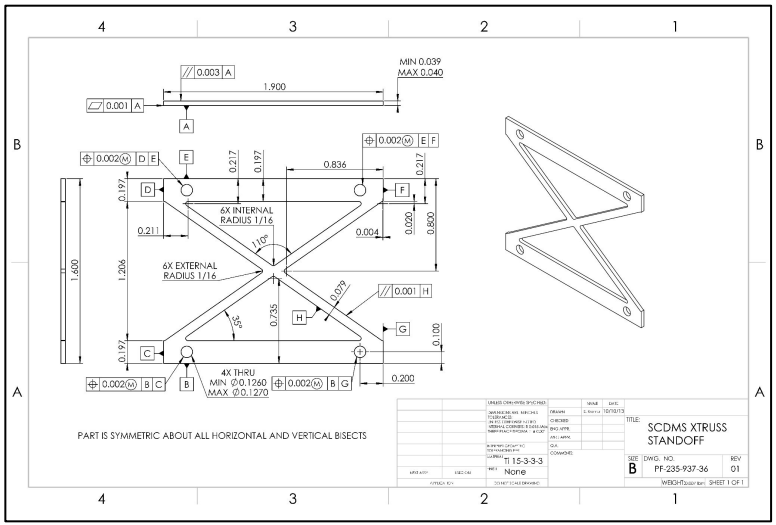
Process

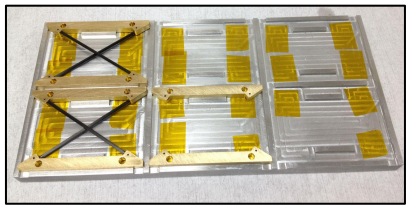
- ➔ Used SolidWorks and MATLAB to design and model both structural and thermal properties
- ➔ Produced ASME Y14.5 GD&T standard drawings and oversaw fabrication of hardware and test equipment
- ➔ Performed qualification testing

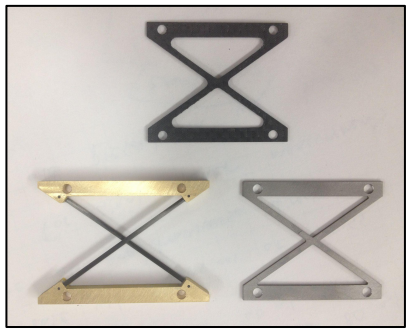
Results

- ➔ Timely delivery of 2 final hardware designs that meet requirements
- ➔ Standoffs are now in active use as part of the SuperCDMS SNOLAB experiment









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