Objective:
- Generate, optimize, and evaluate microchannel heat sink (MCHS) designs with complex features that can be produced by 3D printing.

Approach:
- Design a MCHS with complex features by using the design freedom brought by AM.
- Develop a high-fidelity model for the new MCHS design (PMM).
- Optimize the new design and compare to the benchmark: optimized straight microchannel heat sink, at different operating conditions.
- Fabricate and experimentally demonstrate the optimized design.

Impact:
- Show the added benefit of using AM in design and fabrication of MCHSs.
- Result in a new MCHS design that has improved thermal performance over the benchmark.