

## Solar Thermal Energy Laboratory

Leadership:

Dr. Justin Lapp  
Assistant Professor  
Mechanical Engineering  
(207) 581-2167  
[justin.lapp@maine.edu](mailto:justin.lapp@maine.edu)



Researchers in the Solar Thermal Energy Laboratory (STEL) seek to harness sunlight as a source of energy for key applications in the world, including generating electricity, heating homes and offices, and providing heat for industry. The STEL houses high power electric lamps which can provide concentrated thermal radiation, similar to sunlight, to heat materials and devices to over 1000°C. The laboratory is used for fabrication and testing of prototype devices to capture sunlight, after it has been concentrated to many times its normal intensity, and convert it into heat that may drive a turbine or power a chemical reaction. The STEL team investigates the transfer of heat through solids, gases, and liquids, including complex materials for energy systems, and high temperature heat transfer by thermal radiation. The team performs fundamental and applied heat transfer experiments, along with computer modeling and analysis.