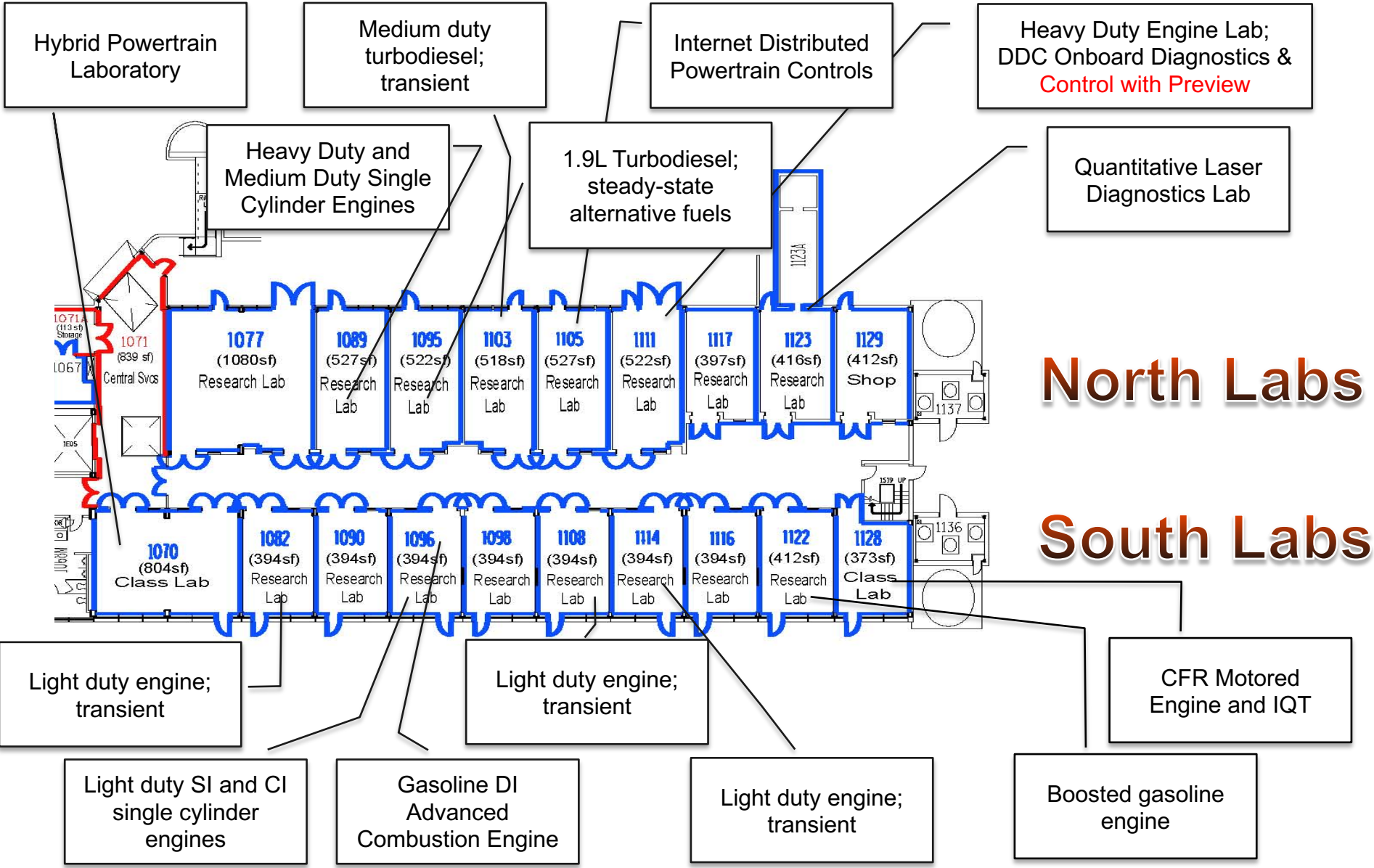


UM Autolab Virtual Tour



South Labs

North Labs

- Hybrid Powertrain Laboratory; 1070 Autolab
 - Prof. Huei Peng, Prof. Andre Boehman
 - Education lab that supports two courses: modeling and control of hybrid electric vehicles, and internal combustion engines. Designed for testing small engines and electric machines and study their integration into hybrid powertrains through simulations
- Scalable Battery Systems lab (moved in 2016 to new space); 1015 Autolab
 - Prof. Anna Stefanopoulou, Dr. Jason Siegel
 - Electrothermal Battery Diagnostics, Dynamics and Management
 - Observability of Cell-to-Cell Imbalance in Battery Packs
 - Electrochemical models & estimation
 - Stress and Strain Dynamics from expansion
- Engine Cell for Light-Duty Engines, 1082 Autolab
 - Opposed piston engine – directly coupled electricity generation
- Optical, GDI and DME Single cylinder engines, 1096 Autolab
 - Prof. Margaret Wooldridge, Prof. Andre Boehman
 - Multiple single cylinder engines, some are modified commercial engines and some are dedicated research engines
- Micro/Mild-Hybrid Engine, 1108 Autolab
 - Prof. Anna Stefanopoulou, Dr. Jason Siegel:
 - eBoosting & electric-turbogeneration, waste energy recovery
 - EGR architectures, dynamic modeling, estimation, and control
 - Start-stop and micro-hybrid
- Engine Cell for High Efficiency Light-Duty Vehicles, 1114 Autolab
 - Prof. Margaret Wooldridge, Prof. Andre Boehman
 - Advanced light duty PFI and DI engines, In-cylinder imaging
- Boosted gasoline engine, 1122 Autolab
 - Prof. Margaret Wooldridge, Prof. André Boehman
 - Knock limit extension for high efficiency boosted GDI engines
- Fuel Characterization Lab, 1128 Autolab
 - Prof. André Boehman
 - Motored engine and cetane rating instruments for fuel autoignition studies
- Single Cylinder Medium and Heavy Duty Engines, 1089 Autolab
 - Prof. Anna Stefanopoulou, Prof. André Boehman
 - High efficiency engine and combustion
 - Natural gas supply systems for CNG and precision NG mixtures
- Light Duty Turbodiesel and Small Diesel Genset, 1089/1095
 - Prof. André Boehman
 - Studies of fuel effects on conventional and advanced combustion
 - Dual fuel combustion processes
- Medium Duty Turbodiesel Engine, 1103 Autolab
 - Prof. André Boehman, Prof. Anna Stefanopoulou
 - Fuels, air path, engine control and emission controls
 - Warm-up strategies
 - In-cylinder pressure sensing for closed loop combustion
- ARC Internet Distributed Powertrain Controls, 1103/1105 Autolab
 - Dr. Tulga Ersal
 - Internet-enabled framework to integrate geographically distributed hardware-in-the-loop setups in real-time for concurrent, high-fidelity, systems-level engineering with application to powertrain controls
- DDC Diesel Engine, 1111/1105 Autolab
 - Prof. Anna Stefanopoulou, Dr. Tulga Ersal
 - Real time controls for fuel variability with advanced sensing
 - Diagnostics and On-board Calibration of EGR Recirculation
 - Real-time coordination of engine and aftertreatment
 - Load preview for fuel efficiency and emission control
- Quantitative Laser Diagnostics Laboratory, 1123 Autolab
 - Prof. Volker Sick
 - High-speed imaging for turbulence, misfire, and boundary layer (heat transfer) studies
 - Large-Eddy Simulation Working Group