

Agenda & Poster Map

OCTOBER 27, 2025

All sessions will take place in Room 1409.

Lunch and Research Poster Exhibition will take place in the Draper Atrium.

8:30 AM – 9:00 AM

Check-in/Registration

9:00 – 9:15 AM

Introductions

Dr. Christopher Yu | Education Director, Draper

9:15 – 10:15 AM

Keynote Speaker: STEM Workforce and the Federal Government

Dr. Arun Seraphin | Executive Director, Emerging Technologies Institute

10:15 – 11:15 AM

Draper Scholar Presentations

Augustus Richter | GA Tech

Alexander Moody | CU Boulder

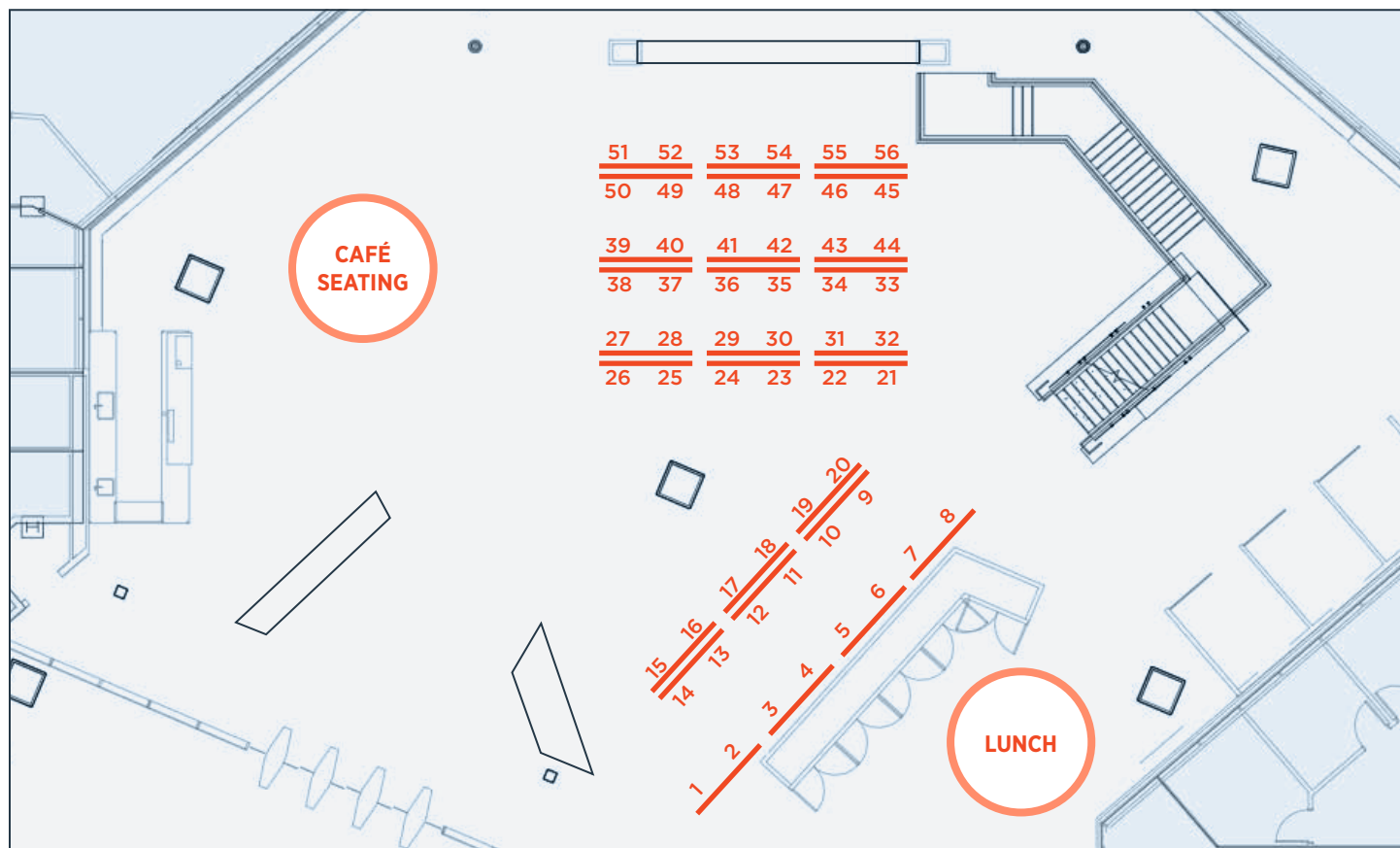
Peter Hsi | Tufts University

11:15 – 11:30 AM

Break

11:30 – 1:00 PM

Lunch & Research Poster Exhibition



Research Poster Exhibition

DRAPER SCHOLARS POSTERS

SYSTEMS ENGINEERING

1 Amarell, Kristen

Robust Guidance for Launch and Cislunar Operations

CU Boulder | PhD | AeroAstro

2 Mitard, Kyle

Laser Voltage Probe Microscopy Research Discovery: "Chypnosis: Undervolting-based Static Side-channel Attacks"

WPI | PhD | Electrical and Computer Engineering

3 Thombs, Austin

High-Order WENO Schemes for Hypersonic Aerothermodynamics

Texas A&M | PhD | AeroAstro

4 Wojciechowski, Maria

Trajectory Optimization for Cooperative Navigation by Solving the HJB Equation using PINNs

WPI | PhD | AeroAstro

5 Eckstein, Adam

Parametric Analysis of Liquid Fuel Injection into Hypersonic Vehicles Comparing RANS and LES

Purdue | MS | AeroAstro

6 Patel, Krish

Artificial Intelligence for Technical Debt in Systems Engineering Work Products

WPI | MS | EECS

7 Tommila, Christopher

Space Traffic Management System of Systems Architecture

MIT | PhD | AeroAstro

8 Zgoda, Molly

Light-Based Monitoring of Bioenergetic Organ Function: Variations in Optical Absorption Resulting from Changes in CCO Concentration

UML | PhD | Biomedical Engineering

HARDWARE DESIGN & DEVELOPMENT

9 Richter, Augustus

Fast Precision Data-Driven Denoising of Very Low Frequency Naval Communications and PNT

GA Tech | PhD | Electrical and Computer Engineering

10 St.Cyr, Melania

Highly sensitive oscillator-based microwave liquid characterization system

MIT | PhD | EECS

11 Stults, Chloe

Characterization of Secrecy Capacity of Airy Beams

Brown | PhD | Electrical and Computer Engineering

ALGORITHMS & SOFTWARE ENGINEERING

12 Cavesmith, Timothy

Improving Long-Range 6-DOF Rocket Landing Guidance

MIT | MS | AeroAstro

13 Green, Dylan

Multi-Sensor Actigraphy For Sleep State Classification

Brown | MS | Computer Science

14 Klinghoffer, Tzofi

Towards Single-Shot 3D Reconstruction from Two-Bounce Lidar

MIT | PhD | Media Arts & Sciences

15 Lee, Jiho

Hybrid Machine Learning Kalman Filters

CU Boulder | PhD | AeroAstro

16 Brown, Ireland

Enabling Lunar Surface Navigation: Surface Beacon Architecture Geometric Design Optimization

MIT | PhD | AeroAstro

17 Elias, Eric

Navigation Around Unknown Space Objects Using Visible-Thermal Fusion

MIT | MS | AeroAstro

18 Jiang, Rebecca

Improving Geometric Representations in Robotics & Control

MIT | PhD | AeroAstro

19 Leary, Sarah

The Interplay of Unobtrusiveness and Signal Quality of Wearable Electrocardiography

CU Boulder | PhD | AeroAstro

20 Liu, Eric

Identifying Malicious Shell Commands with Cyber Reasoning

MIT | MS | EECS

21 LoCricchio, Angelina

Increasing Value and Efficiency of Tradespace Exploration with Machine Learning Methods

MIT | MS | AeroAstro

22 McLaughlin, Connor

Adaptive Mixture-of-Experts for Similarity-Aware Continual Learning

NEU | PhD | Computer Engineering

23 Moody, Alexander

Machine Learning Argument of Latitude Error Model for LEO Satellite Orbit and Covariance Correction

CU Boulder | MS | AeroAstro

24 Rose, Alex Meredith

Robust Sampling-Based Covariance Steering for Aerocapture Guidance

MIT | PhD | AeroAstro

25 Sakthivel, Haripriya

Conjunctival Vessel Changes Associated with High Blood Pressure Captured via Smartphone Photos

Purdue | PhD | Biomedical Engineering

26 Macha, Amanda

ISS Control-Structure Interaction Mitigation Study

Texas A&M | MS | AeroAstro

27 Menges, Ryan

Spacecraft-to-Spacecraft Absolute and Relative Tracking (SSAT) Using Higher-Order Filtering

CU Boulder | PhD | AeroAstro

28 Naaktgeboren, Allison

PIPE-Cleaner-C2TC: Developer-centric Configurable Fuzzing for Software Vulnerability Discovery

PSU | PhD | Computer Science

29 Rossano, Benjamin

Uncertainty-Aware Multi-Robot Task Allocation With Strongly Coupled Inter-Robot Rewards

MIT | PhD | AeroAstro

30 Shakerin, Kian

Small Body Particle Tracking with Negative Information

CU Boulder | PhD | AeroAstro

31 Sheppard, Anja

A Stochastic Approach to Terrain Maps for Safe Lunar Landing

UMICH | PhD | Robotics

32 Wenger, Jeremy

Unmanned Surface Vehicle Development for Comms Aware Swarm Autonomy

MIT-WHOI | PhD | Oceanography/Applied Ocean Science & Engineering

33 Zhang, Kevin

Optimized Camera Calibration using Star Fields Enabling Precision Optical Navigation for Spacecraft

GA Tech | MS | AeroAstro

34 Sonawalla, Aneesa

Overlapping Domain Decomposition for Distributed MultiRobot Collaborative Navigation

MIT | PhD | AeroAstro

35 Wu, Kevin

Ground-Air Traversability Prediction for Autonomous Multimodal Navigation

NEU | PhD | Computer Engineering

SENSORS & ADVANCED DESIGN

36 Ali, Saleem

Learning Hypersonic Flow Fields from Sparse Data Using Multi-Fidelity Deep Operator Networks

Brown | MS | Data-Enabled Computational Engineering and Science

37 Blevins, Morgan

Engineering Quantum Materials for Infrared Light Detection

MIT | PhD | EECS

38 Mills, Brian

Solution Processing of Optical Phase Change Materials

MIT | PhD | Materials Science

39 Hilger, Laurel

Enabling Direct-Ink-Writing (DIW) of Polyimide Composites for Functionally Graded RF Devices

GA Tech | PhD | Materials Design & Development

40 Montes Mcneil, Alexander

Pushing the Limits of Diffractive Optical Neural Networks

NEU | PhD | EECS

41 Myers, Jacob

Quantum Magnetic Imaging of Integrated Circuits for Security Analysis

WPI | PhD | Physics

42 Smith, Audrey

Developing a Thermo-Kinetic Model of the Corrosion of Metal in Seawater

Brown | PhD | Chemical Engineering

43 Rayner, Oliver

Arcsecond-Accurate Capacitive Resolver Design

MIT | MS | EECS

44 Wade, Charles

3D Printing Multi-Material Gradients

CU Boulder | PhD | Computer Science

ENGINEERING

45 Cheng, Timothy

Fabricating a Micro-Stirling Engine

Tufts | PhD | Mechanical Engineering

46 Hsi, Peter

Focused ultrasound-induced cavitation model for blast traumatic brain injury (TBI)

Tufts | PhD | Biomedical Engineering

47 Ko, Allan

Characterizing Throughput Loss of Congestion Control Protocols Under Periodic Interference

MIT | PhD | EECS

48 Gaudio, Philip

*Fluid Velocimetry: Toward
Quantitative, Non-Invasive
BloodOxygenator Measurements*

**Brown | PhD | Fluids and Thermal
Sciences**

49 Justen, Lennart

*Evaluating the suitability of wastewater
metagenomic sequencing to detect
respiratory viruses*

MIT | PhD | Media Arts & Sciences

50 Lin, Zihan

*Radiation-tolerant AlScN
as a Candidate Material for
NextGeneration Rad-Hard Electronics*

MIT | PhD | Materials Science

51 Mo, William

*Repelling the Misuse of Synthetic
Biology through the Reverse-
Engineering of Unknown DNA*

**CU Boulder | PhD | Biomedical
Engineering**

52 Schneider, Jessica

*Controlling Gene Expression in
S. epidermidis for Responsive
Living Therapeutics*

MIT | PhD | Biological Engineering

53 Urban, Joseph

*A Switchable Pneumatic Pump
for Independent Control of
Liquid Transfers*

BU | PhD | Biomedical Engineering

54 Nguyen, Michelle

*Modeling Viral Infection Kinetics in
the Human Vasculature*

BU | PhD | BioMolecular Pharmacology

55 Tamragouri, Sucheta

*Innovating Pediatric Valve Testing:
Milli-PIV Analysis of the Draper
LEAP Valve*

WPI | PhD | Biomedical Engineering

56 Ventura, Giselle

*AI-Orchestrated Knowledge Network
Analysis Pipeline*

Tufts | MS | Data Science



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