



Department of  
**ELECTRICAL & COMPUTER ENGINEERING**  
THE UNIVERSITY OF UTAH

**2022 Technical Open House  
Senior Presentation Schedule**

**Tuesday April 26, 2022 1-4 pm | WEB Catmull Gallery**



**Presentation Video Folder**  
<https://bit.ly/3jNrE2N>



**Student Judging Form**  
<https://bit.ly/3uyKxMZ>



**Industry/Faculty Judging Form**  
<https://bit.ly/3uzQSrx>

**Available 1-2:30 pm**

Group 1: Corning Clinic: “Ceramic Particulate Filter Depth Measurements” by Prachi Karna, Erik Nelson (Faculty Advisor: Blair)

Group 3: Rocky Mountain Power Clinic: “Arc Fault Detection & Load Reduction” by Brenen Iverson, Matt Jones, Kurt Latham, Colin Payne, Andrew Silver (Faculty Advisor: Parvania, Rocky Mountain Power Advisors: Stephen Petersen, Rohit Nair)

Group 7: “Implantable Antennas and Deep Brain Stimulation (DBS) for Depression” by Bryce Cheek, Lacy Parrish, Daniela Penunuri (Furse)

Group 12: “Machine Learning Accelerator” by Emma Dingman, Stephen Ehlert (Tajalli)

Group 15: “Wireless Proximity and Pressure Sensor System for Detecting Driving Pedals for Individuals with Lower-Limb Sensory Loss” by Yusaf Alhawiti, Oscar Chen, Kevin Portocarrero, Anthony Vera (George)

Group 16: “Focused Ultrasound (FUS) Neuromodulation for Epilepsy” by Braden Brown (Wilcox)

Group 17: “Wireless Power Transfer Through Soil Over a Range of Moisture Levels for In-Situ Soil Health Monitoring” by Aidan Jackson (Young)

Group 18: “Field Focusing for Implantable Antennas” by Carter Christensen, Jason Howard, Shaun McKellar (Furse)

Group 21: “Telemetry Communication System for UCubesat Team” by Blazye Ashurst, Bennett Ferguson

Group 24: “Hydroponics Testbed” by Kevin Asay, James Mellor (Rasmussen)

Group 25: “EVSE Open Build” by Baqer Abdullah, Ali Esfahani (Parvania)

Group 26: “CP-DSSS Transceiver Synched to 4G LTE Downlink” by Dallin Hansen (Farhang)

**Available 1-2 pm and 3:30-4:00 pm**

Group 5: Raytheon Clinic: “Signal Discovery with CNN” by Marlo Esperson, Erik Graham, Joshua Miraglia, Ryan Procarione (UofU Advisor: Orange, Raytheon Advisors: David DeTienne, Kerry Courtright)

Group 9: Zeta Clinic: “Creating an OFDM Modem” by Greyson Mitra (Faculty Advisor: Farhang, Zeta Advisor: Scott Talbot)

**Available 2-3:30 pm**

Group 6: Raytheon Clinic: “Device Discovery on the POWDER Network” by Nathan Dixon, Joshua Jacob, Mark Khramov, Darren Rou, Nathan Sartnurak (UofU Advisor: Orange, Raytheon Advisor: David DeTienne, Kerry Courtright)

**Available 2:30-4 pm**

Group 2: “Avalanche Beacon Triangulation” by Brad West, Sawaiz Zaka

Group 4: Sandia Clinic: “Information Leakage Mitigation on RISC-V Processor” by Ian Lavin, Luke Majors, McKay Mower, Eldon Michaels (Faculty Advisor: Gaillardon, Sandia Advisors: T.J. Mannos, Brian Dziki)

Group 8: “Improved Retention for ECE Freshmen Through Integrating Math Skills” by Linda Baker (Furse)

Group 10: “Improving Technology: Real Time PV Measurements and Fabricating Transistors” by Olivia Lam (Yoon, Gaillardon)

Group 11: “Hardware Secutiry” by Braxton Chappell, Hayley Tankersley (Tajalli)

Group 14: “Power Consumption of Integrated Circuits” by Max Moffat, Harrison Rogers (Tajalli)

Group 20: “Improving SSTDR Testing” by Derek Dyreng (Furse)

Group 21: “Ground Faults in PV Systems” by Julio Gutierrez (Furse)

Group 22: “WiFi Interference at 5.9GHz on V2X Communication” by Jacob Bills

Group 23: CE Undergraduate Thesis by Colin Pollard

Group 27: “Nonlinear Pre-Distortion Using Machine Learning” by Eldar Muhic, Riley Richards, Jack Sorensen (Faculty Advisor: Mingyue Ji, L3Harris Advisors: Osama S. Haddadin, Brent Berry)

Group 2: 2:30-4pm	Avalanche Beacon Triangulation
Group 23: 2:30-4 pm	CE Undergraduate Thesis
Group 22: 2:30-4 pm	CE Undergraduate Thesis: WiFi Interference at 5.9GHz on V2X Communication
Group 1: 1-2:30 pm	Corning Clinic: Ceramic Particulate Filter Depth Measurements
Group 26: 1-2:30 pm	Farhang: CP-DSSS Transceiver Synched to 4G LTE Downlink
Group 18: 1-2:30 pm	Furse: Field Focusing for Implantable Antennas
Group 7: 1-2:30 pm	Furse: Implantable antennas and Deep Brain Stimulation (DBS) for Depression
Group 8: 2:30-4pm	Furse: Improved Retention for ECE Freshmen Through Integrating Math Skills
Group 20: 2:30-4pm	Furse: Improving SSTDR Testing
Group 15: 1-2:30pm	George: Wireless Proximity and Pressure Sensor System for Detecting Driving Pedals for Individuals with Lower-Limb Sensory Loss
Group 24: 1-2:30 pm	Hydroponics Testbed
Group 27: 2:30-4 pm	L3Harris Clinic: Nonlinear Pre-distortion Using Machine Learning
Group 25: 1-2:30 pm	Parvania: EVSE Open Build
Group 6: 2-3:30 pm	Raytheon Clinic: Device Discovery on the POWDER Network
Group 5: 1-2, 3:30-4	Raytheon Clinic: Signal Discovery with CNN
Group 3: 1-2:30 pm	Rocky Mountain Power: Arc Fault Detection & Load Reduction
Group 4: 2:30-4 pm	Sandia National Labs Clinic: Information Leakage Mitigation on RISC-V Processor
Group 11: 2:30-4pm	Tajalli: Hardware Security
Group 12: 1-2:30pm	Tajalli: Machine Learning Accelerator
Group 14: 2:30-4pm	Tajalli: Power Consumption of Integrated Circuits
Group 21: 1-2:30 pm	Telemetry communication system for UCubesat team
Group 16: 1-2:30pm	Wilcox: Neuromodulation FUS
Group 10: 2:30-4pm	Yoon and Gaillardon: Improving technology: Real Time PV Measurements and Fabricating Transistors
Group 17: 1-2:30 pm	Young: Wireless Power Transfer Through Soil Over a Range of Moisture Levels for In-Situ Soil Health Monitoring
Group 9: 1-1:45,3:30-4	Zeta Clinic: Creating an OFDM Modem