

Spring 2021 ENGINEERING DESIGN EXPO
Technical Presentations

All attendees must register to attend here: <https://www.uidaho.edu/engr/events/expo/projects/registration>

Session-Time	Link	Project Name	Project Sponsor	Facilitator
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Thursday, April 29, 2021 (2:00 – 5:00 pm)

Session 1 (ME) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session1> M. Swenson

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| • 2:00 pm | Thumb Exoskeleton Mechanical Design | UI ME Dept. |
| • 2:30 pm | Smooth Shaving Device for Arthroscopic Surgeries | Dr. Hiller |
| • 3:00 pm | Carriage Bounce Control System | Hyster-Yale |
| • 3:30 pm | Fuel Cell VOC Filtration Monitoring System | Hyster-Yale |
| • 4:00 pm | Sheet Metal Fatigue Fixture | SEL (CS) |

Session 2 (ECE) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session2> Feng Li

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| • 2:00 pm | Satellite Attitude Determin., Comm., and Contr. with AI NASA (CS) - Group I | UI ME Dept. |
| • 2:30 pm | Satellite Attitude Determin., Comm., and Contr. with AI NASA (CS) - Group II | Dr. Hiller |
| • 3:00 pm | Electroencephalogram Headset for Human and Rat | UI ChemE |
| • 3:30 pm | Development of Low Cost Pyranometer | KiloWatts |
| • 4:00 pm | FPGA Data Acquisition and Control | ThorLabs (CompE) |
| • 4:30 pm | Tangible Object Recognition System | AIS (CompE) |

Session 3 (CEE) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session3> F. Fiedler

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| • 2:30 pm | Sewer Pipeline Reroute and Pathway Realignment | City of Boise |
| • 2:50 pm | Steel Warehouse at McNary Dam | US Army Corps of Engineers |
| • 3:10 pm | Deep Creek Bridge Replacement | Idaho Transportation Department |
| • 3:30 pm | Outfall Pipeline Redesign | J-U-B Engineers |
| • 3:50 pm | Harbor Freight Tools Building | Tamarack Grove Engineering |
| • 4:10 pm | UIEF Timber Bridge and Stream Restoration | UI Experimental Forest |
| • 4:30 pm | Indiana Ave and Homedale Rd Intersection | Six Mile Engineering |
| • 4:50 pm | Ponderosa Lift Station | T-O Engineers |

Friday, April 30, 2021 (2:00 – 5:30 pm)

Session 4 (CS) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session4> B. Bolden

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| • 2:00 pm | Cloud-Based Lab Instrumentation System | UI BE Dept. |
| • 2:30 pm | Raspberry Pi Real Time Image Processing | UI BE Dept. |
| • 3:00 pm | Smart Trip Planning | UI CS Dept. |
| • 3:30 pm | LakeNet LoRa Mesh Network | UI CS Dept. |
| • 4:00 pm | Mechanical Engineering Scheduling Software | UI ME Dept. |
| • 4:30 pm | Enterprise Virtualization in Minecraft | UI CS Dept. |
| • 5:00 pm | Electric Power Flow Modeling in Minecraft | UI CS Dept. |

Session 5 (ECE) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session5> H. Hess

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| • 2:00 pm | Directional Antenna Alignment Contr. System | Bayview |
| • 2:30 pm | Infrasonic Wildfire Detection | Stanley Solutions |
| • 3:00 pm | Tesla Coil Based Security System | UI ECE Dept. (ME) |
| • 3:30 pm | RTDS Simulation of Solar Energy in a Small Power Sys. | UI ECE Dept. |
| • 4:00 pm | Development of Industrial Control System Lab. Ex. | UI ECE Dept. |
| • 4:30 pm | Independ. Ran Renewable Integr. System for Crossw. | UI ECE Dept. |

Session 6 (BE) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session6>

D. Shrestha

- 2:00 pm Quail Egg ICU Monitor CCTDI (CS)
- 2:30 pm Low-cost, Controllable Hypoxia Chamber for... UI BE department
- 3:00 pm Instrumentation and Data Collection for a Debaler Forest Concepts
- 3:30 pm Dehydrating Mustard Seed Extract UI BE Dept.
- 4:00 pm Single-Stage Water Filter with Dual Sand Media Sizes G. Moller

Session 7 (ME) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session7>

M. Maughan

- 2:00 pm Stream Velocity Measurement Device USDA Forest Service (EE)
- 2:30 pm Marching Band Mobile Platform UI ME & Marching Band
- 3:00 pm Manuf. Process for Infection-preventing Foley Catheter UI ME & CBE
- 3:30 pm Automated Center of Gravity Measurement Device SEL
- 4:00 pm Compact Glovebox Tensile Testing System Idaho Nat. Lab.
- 4:30 pm Ember Generator for Forest Fire Testing UI CNR (BE)

Session 8 (ChE/MSE) - <https://www.uidaho.edu/engr/events/expo/schedule/pass/expo2021-session8>

M. Bernards

- 2:00 am Testing Bacteria Resistant Polymers Onboard the... NASA SPOCS
- 2:30 pm Oil Refinery Update Design and Economic Analysis AIChE Competition
- 3:00 pm Produced Water Treatment Using Hydrocyclone Techn. WERC Competition
- 3:30 pm Recovering Precious Metals From Electr. Waste... UI ChemE Dept.
- 4:00 pm Evaluation of nanotechnology coatings for... SEL