

# 2024 Vehicle Technologies Office Annual Merit Review

## Decarbonization of Offroad, Marine, and Aviation (DORMA) Oral Presentation Detailed Schedule

Tuesday, June 4, 2024	
9:00 AM	<b>DORMA022 (ACE184):</b> Development of a Flex-Fuel Mixing Controlled Combustion System for Gasoline/Ethanol Blends Enabled by Prechamber Ignition, Adam Dempsey, Marquette University
9:15 AM	
9:30 AM	<b>DORMA026 (ACE183):</b> Articulated Dump Truck (ADT) Electrification - Greenhouse Gas Reductions and Commercialization of New Technology, Brij Singh, John Deere
9:45 AM	
10:00 AM	<b>DORMA025 (ACE182):</b> Fully Electric Powered, Hydraulic Assisted, Compact Track Loader, Perry Li, University of Minnesota
10:15 AM	
10:30 AM	<b>DORMA040:</b> Optimized Low Carbon Fuel Range Extender (HyREX), Jon Dickson, Cummins
10:45 AM	
11:00 PM	<b>DORMA010:</b> Off-Road Decarbonized Fuel Transient Performance, Muni Biruduganti, ANL
11:15 PM	
11:30 PM	<b>Time Buffer</b>
11:40 PM	<b>Lunch Break</b>
1:10 PM	<b>DORMA004:</b> Mixing-controlled compression-ignition combustion with low-lifecycle-CO2 fuels, Sandia
1:25 PM	
1:40 PM	<b>DORMA005:</b> Alcohol spray and H2 jet experiments and modeling, Lyle Pickett, Sandia
1:55 PM	
2:10 PM	<b>DORMA006:</b> Low Lifecycle Carbon Fuel (LLCF) combustion and emission models, LLNL
2:25 PM	
2:40 PM	<b>DORMA002:</b> Alcohol combustion in CI engines - understanding mixing, ignition and pollutant emissions, Dario Lopez-Pintor, Sandia
2:55 PM	
3:10 PM	<b>Time Buffer</b>
3:15 PM	<b>Break</b>
3:45 PM	<b>DORMA001:</b> Overcoming key barriers to H2ICEs – mixing, pre-ignition, and ultra-lean operation, Ales Srna, Sandia
4:00 PM	
4:15 PM	<b>DORMA021 (ACE171):</b> Simultaneous Greenhouse Gas and Criteria Pollutants Emissions Reduction for Off-Road Powertrains, James McCarthy, Eaton
4:30 PM	
4:45 PM	<b>DORMA041:</b> Low greenhouse gas NOx control, Dhruva Dekka, PNNL
5:00 PM	
5:15 PM	<b>Day 1 Ends</b>

Wednesday, June 5, 2024	
9:00 AM	<b>DORMA027 (ACE170):</b> Control of aldehyde emissions from alcohol-fueled non-road engines, Sreshtha Sinha Majumdar, ORNL
9:15 AM	
9:30 AM	<b>DORMA029 (ACE172):</b> Fast Simulation of Real Driving Emissions from Heavy-duty Diesel Vehicle Integrated with Advanced Aftertreatment System, Hailin Li, WVU
9:45 AM	
10:00 AM	<b>DORMA043:</b> Low-load cycle emission control, Yong Wang, PNNL
10:15 AM	
10:30 AM	<b>DORMA028 (ACE173):</b> Comprehensive Integrated Simulation Methodology for Enabling Near-Zero Emission Heavy-Duty Vehicles, Andrea Strzelec, UW Madison
10:45 AM	
11:00 PM	<b>DORMA042:</b> Unforeseen challenges with renewable fuels, Konstantin Khivantsev, PNNL
11:15 PM	
11:30 PM	<b>Time Buffer</b>
11:40 PM	<b>Lunch Break</b>
1:10 PM	<b>DORMA030 (ACE187):</b> Opposed-Piston 2-Stroke Hybrid Commercial Vehicle System, Ming Huo, Achates Power
1:25 PM	
1:40 PM	<b>DORMA014:</b> Implementing low lifecycle carbon fuels on locomotive engines – CRADA with Wabtec, Dean Edwards, ORNL
1:55 PM	
2:10 PM	<b>DORMA012:</b> Enabling Hydrogen Combustion for Large-Bore Locomotive Engines through Advanced CFD Modeling, Muhsin Ameen, ANL
2:25 PM	
2:40 PM	<b>DORMA016:</b> Renewable methanol-fueled engines for marine and off-road applications, Jim Szybist, ORNL
2:55 PM	
3:10 PM	<b>Time Buffer</b>
3:15 PM	<b>Break</b>
3:45 PM	<b>DORMA046:</b> Ammonia for 4-stroke Marine Dual Fuel and Gas Engines (Retrofits and New), Scott Curran, ORNL
4:00 PM	
4:15 PM	<b>DORMA008 (ACE158):</b> Slashing Platinum Group Metal (PGM) in Catalytic Converters: An Atoms-to-Autos Approach, Kevin Gu, GM
4:30 PM	
4:45 PM	<b>DORMA045:</b> Biodiesel poisoning of close-coupled SCR catalysts for off-road engines, Todd Toops, ORNL
5:00 PM	<b>DORMA015:</b> Enabling H2 and Methanol Combustion, Riccardo Scarcelli, ANL
5:15 PM	
5:30 PM	<b>Day 2 Ends</b>

Thursday, June 6, 2024	
9:00 AM	<b>DORMA052:</b> Simulation of Jet Engine Performance using SAF Blends, Shashank Yellapantula, NREL
9:15 AM	
9:30 AM	<b>DORMA051:</b> Fuel effects on aviation engine emissions – a modeling tool for SAF screening, Dario Lopez-Pintor, Sandia
9:45 AM	
10:00 AM	<b>DORMA038:</b> Towards Accurate Combustion and Emissions Modeling of Sustainable Aviation Fuels, Debolina Dasgupta, ANL
10:15 AM	
10:30 AM	<b>DORMA020:</b> Sustainable Aviation Fuel (SAF) Contrail Modeling, LLNL
10:45 AM	
11:00 PM	<b>DORMA019:</b> Multi-phase flow studies of SAFs for industry-relevant conditions and geometries, Brandon Sforzo, ANL
11:15 PM	
11:30 PM	<b>Time Buffer</b>
11:40 PM	<b>Lunch Break</b>
1:10 PM	<b>DORMA018:</b> SAF Combustion and Contrail Formation Research, Julien Manin, Sandia
1:25 PM	
1:40 PM	<b>DORMA003:</b> Soot Predictions from DNS of a lab-scale combustor with sustainable aviation fuels, Bruno Souza Soriano and Jackie Chen, Sandia
1:55 PM	
2:10 PM	<b>DORMA037:</b> Sustainable Aviation Fuel Characterization, Gina Fioroni, NREL
2:25 PM	
2:40 PM	<b>DORMA047:</b> High-Efficiency Mixing Controlled Compression Ignition Combustion of Propane Dimethyl Ether Blends, Sage Kokjohn, UW
2:55 PM	<b>DORMA048:</b> Medium Duty Off-Road DME Engine Achieving High Efficiency And Ultra Low Emissions, Andre Boehman, U-Michigan
3:10 PM	
3:15 PM	<b>Time Buffer</b>
3:45 PM	<b>DORMA033 (ACE180):</b> High Pressure Fast Response Direct Injection System for Liquified Gas Fuels Use in Light-Duty Engines, William de Ojeda, WM International Engineering
4:00 PM	
4:15 PM	<b>DORMA032 (ACE185):</b> High Efficiency, Ultra Low Emissions Heavy-Duty 10L Natural Gas Engine Project, Tim Lutz, Cummins
4:30 PM	<b>DORMA049 (ACE174):</b> Plasma-Assisted Pre-Chamber Ignition System for Highly Dilute Stoichiometric Heavy-Duty Natural Gas Engines, Will Northrup, University of Minnesota
4:45 PM	
5:00 PM	<b>DORMA050:</b> A Low Greenhouse Gas Advanced Spark Ignition Engine that can Operate on Natural Gas and Natural Gas-Hydrogen Blends with Diesel, Jeff Naber, Michigan Technical University
5:15 PM	
5:15 PM	<b>Day 3 Ends</b>