2024 Spring Meeting
Biannual Meeting Agenda

MDS³
CENTER OF EXCELLENCE

TUESDAY, APRIL 2

TINKHAM VEALE UNIVERSITY CENTER – BALLROOM C

9:00 am	Check-in & Breakfast
9:30 am	Welcome & Opening Remarks
	Prof. Roger French, MDS³ Director
	State of the Center – Administrative Overview
	Jonathan Steirer, MDS³ Managing Director
	State of the Center – Technical Overview
	Prof. Laura Bruckman, MDS³ Co-Director
10:00 am	Morning Technical Session
	Various Presenters
12:00 pm	Lunch
1:00 pm	Afternoon Technical Session
	Various Presenters
5:40 pm	Break

GEORGE S. DIVELY BUILDING

6:00 pm	Poster Session & Reception
7:00 pm	Dinner & Networking

WEDNESDAY, APRIL 3

TINKHAM VEALE UNIVERSITY CENTER – BALLROOM C

9:00 am	Check-in & Breakfast
9:30 am	Research Portal Tutorial
	Rosalind Madorsky, Student and Administrative Coordinator
	Data-Enabled Workforce (DEW) Pipeline Updates
	Prof. Kris Davis, DEW Thrust Lead | Tariq Shabazz, Program Manager
10:15 am	Breakout Groups | Closed Advisory Meeting
	Breakout A: Building AI Systems using Ontologies and FAIRification
	Breakout B: Making Your data AI ready: CRADLE
	Breakout C: Actualizing data-driven Digital Twins: Graph Foundation Models
12:00 pm	Lunch

WHITE BUILDING, THINKBOX

1:00 pm	Facility Tours

ATTENDEES

ARGONNE NATIONAL LABORATORY

Dr. Hemant Sharma
Computational Scientist

KANSAS CITY NATIONAL SECURITY CAMPUS

Dr. Daniel Bowen
Chief Scientist

Mitchell Morrow
Test & Measurement COE Lead

LOS ALAMOS NATIONAL LABORATORY

Dr. Jim Ahrens
Director of Information Science & Technology Institute

Dr. Robert W. Margevicius
Division Leader

Dr. Marianne Francois
Division Leader

SANDIA NATIONAL LABORATORIES

Dr. Samuel Moran
Data Engineering for Materials

Lee Gill
Project Lead/A&L GaN Degradation

Dr. Elliott Fowler
Principal Member of the Technical Staf

CASE WESTERN RESERVE UNIVERSITY

Prof. Shane Parker
Assistant Professor of Chemistry

Prof. Hyeji Im
Assistant Professor in Materials Science & Engineering

PACIFIC NORTHWEST NATIONAL LABORATORY

Eric Machorro
Senior Technical Advisor

LAWRENCE LIVERMORE NATIONAL LABORATORY

Robert Cerda
Engineer, Materials Engineering Division

Brian Au
Engineer, Materials Engineering Division

Dr. Jayvic Cristian Jimenez
Postdoctoral Scholar

NATIONAL NUCLEAR SECURITY ADMINISTRATION

Dr. Sakun Duwal
R&D Technical Advisor

Col. David Coy
Program Support Engineer

Y-12 NATIONAL SECURITY COMPLEX

Samuel Franco
Mechanical Engineer

Kevin Lamb
Metal AM Research Lead

UNIVERSITY OF ROCHESTER

Prof. Niaz Abdolrahim
Associate Professor of Mechanical Engineering

To see all MDS³ Researchers, go to mds3-coe.org/people & mds3-coe.org/students

MORNING TECHNICAL SESSION

10:05 am Enriching Research Data for AI Using Ontologies & FAIRification
Priyan Rajamohan & Alexander Harding-Bradley (MDS³ Graduate Researchers)

10:25 am FAIR Implementation Discussion
Moderator: Prof. Erika Barcelos (MDS³ Faculty)

10:40 am Geometric Compensation for Additive Manufacturing
Samuel Franco (Y12)

11:00 am Polymer DIW at LLNL
Brian Au (LLNL)

11:20 am Developing a DIW Study Protocol: Case Study
Dr. Jay Jimenez (LLNL) & Hein Htet Aung (MDS³ Graduate Researcher)

11:40 am Study Protocol Discussion
Moderator: Prof. Laura Bruckman (MDS³ Co-Director)

AFTERNOON TECHNICAL SESSION

COMPUTING INFRASTRUCTURE

1:00 pm   CRADLE: A Distributed, Data-centric Approach
Arafath Nihar (MDS³ Graduate Researcher)

1:10 pm   Progress on a Containerized CRADLE for Testing
Rounak Chawla (MDS³ Graduate Researcher)

1:20 pm   Materials Data Segmentation Benchmark
Prof. Vipin Chaudhary (MDS³ Thrust Lead); Maliesha Sumudumalie & Rounak Chawla (MDS³ Graduate Researchers)

1:30 pm   Accelerating Materials Data Science with CRADLE Data Explorer
Thomas Ciardi (MDS³ Graduate Researcher)

1:40 pm   Towards Intelligent Systems using Knowledge Graphs
Priyan Rajamohan (MDS³ Graduate Researcher)

1:50 am   Ontology, Knowledge Graphs & Inductive Reasoning
Prof. Roger French (MDS³ Director)

2:00 pm   CRADLE Q&A
Moderator: Prof. Roger French

AI/ML APPLICATIONS ROUND TABLE

2:15 pm   Level Setting: Leveraging st-GNN Modeling for PV Performance Analysis
Raymond Wieser (CWRU Graduate Researcher)

2:30 pm   Geospatiotemporal Data Discovery & Integration
Prof. Yinghui Wu (MDS³ Co-Director) & Olatunde Akanbi (MDS³ Graduate Researcher)

2:50 pm   Spatio-temporal Graph Models as Data-driven Digital Twins
Prof. Roger French

3:00 pm   Data-driven Digital Twins in Process Monitoring and Control
Prof. Robert Gao (MDS³ Faculty)

3:10 pm   FLASK LDRD AT LLNL
Dr. Brian Van Essen (Lawrence Livermore National Laboratory)

3:30 pm   Discussion
Moderator: Prof. Roger French

COFFEE BREAK

ELECTRONIC COMPONENTS

4:20 pm   Passive, Capacitive, Interdigitated Comb Sensors
Dr. Elliott Fowler (Sandia National Laboratory)

4:40 pm   Electronics Reliability Project
Prof. Kris Davis (MDS³ Thrust Lead)

5:00 pm   Gallium Nitride (GaN) Power Semiconductor Reliability Assessment Approach
Lee Gill (Sandia National Laboratory)

5:20 pm   Efficient Classification of Big X-ray Diffraction Data through Deep Learning Models
Prof. Niaz Abdolrahim (University of Rochester)