



MDS-Rely

OCTOBER 2025

NEWSLETTER

Advancing materials reliability through data-driven collaboration
between academia, industry, and government

UIDP Seminar

Other Highlights

PyData Pittsburgh Talk

New Research Project
Lineup!



This issue highlights upcoming events, new collaborative projects launching in January, and ongoing efforts that connect industry and academia to advance materials reliability through data science.

IN THIS ISSUE

[Seminars](#)

[UIDP Webinar - “Advancing Materials Reliability Through Data Science”](#)

[PyData Pittsburgh Event Summary](#)

[Featured Announcements](#)

[Featured Research Projects](#)

[Ongoing](#)

[Starting January 2026](#)

[Member Engagement Opportunities](#)

[Ongoing and Completed Research Projects](#)

[Biweekly Research Project Meetings](#)

[Job Openings and Opportunities](#)


[Member Job Openings](#)

Seminars

UIDP Webinar - “Advancing Materials Reliability Through Data Science”



Strengthening
University-Industry
Partnerships

 November 19 | 11:00 AM ET | Register [here](#)

For industry R&D leaders interested in partnering with universities on data-driven materials reliability approaches.

PyData Pittsburgh Event Summary



Over 30 participants joined Dr. Satish Iyengar's talk, "MDS-Rely Center for Industry-Academic Partnerships," at PyData Pittsburgh. The session introduced the Center's research areas and opportunities for collaboration between companies and universities. We look forward to future PyData events!



Featured Announcements

Featured Research Projects

Learn more about the upcoming projects from brief proposal descriptions [here](#).

Ongoing

- 1. Enhancing Battery Degradation Analysis and Thermal Runaway Prediction**
Prof. Satish Iyengar (Pitt)
Developing data-driven statistical models for early detection of thermal runaway precursors to improve the safety of lithium-ion batteries.
- 2. Quantitative Characterization of Chemical Interaction of Solutes with Defects for Predicting Intergranular Corrosion**
Prof. Hyeji Im (Pitt)
Using additive manufacturing and modeling to study solute-defect interactions and predict corrosion behavior in advanced metal alloys.
- 3. Effects of Aerosol Jet Printing Parameters on the Lifetime Performance of Additively-Manufactured Flexible Circuits**
Prof. Janet Gbur (CWRU)
Optimizing aerosol jet printing parameters using experiments and Bayesian optimization to enhance the performance, reliability, and lifetime of flexible electronic circuits.

Starting January 2026

- 1. Multimodal ForMLation**
Prof. John Kitchin (CMU)

Integrating large language models, automation, and spectroscopy to accelerate data-driven formulation design and optimization.

2. Electrodeposition of Protective Coatings for Harsh Environment

Prof. Jung-Kun Lee (Pitt)

Developing machine learning–guided electrodeposition methods with in-situ monitoring to create durable, corrosion-resistant coatings for extreme conditions.

3. Good Vibrations: Developing a Standard for Time-Sonication Superposition to Accelerate Characterization of Aqueous Polymer Degradation

Prof. Gerald Wang (CMU) and Stefanie Sydlik (CMU)

Using sonication and machine learning to model and accelerate polymer degradation, enabling rapid lifetime prediction.

4. Explainable AI based Electrical Grid Fire Resilience Assessment and Predictive Analytics

Prof. YuAnn Li (Pitt)

Building AI models to predict and assess electrical grid fire risks through explainable, data-driven analytics.

Member Engagement Opportunities

Ongoing and Completed Research Projects

Our Project summary document provides detailed summaries of the ongoing and completed research projects. Some senior design projects are also highlighted. Please check it out [here](#).

Biweekly Research Project Meetings

Stay connected through our biweekly Zoom meetings for research updates and discussion. Contact the lead professor if you can't attend. Check the [Center Calendar](#) for meeting dates and times.

Project Title	Lead(s)	Schedule
Effects of Aerosol Jet Printing Parameters on the Lifetime Performance of Additively-Manufactured Flexible Circuits	Prof. Janet Gbur (CWRU)	Nov 12, 26 — every other Wed 3:00–4:00 PM
Non-Invasive Detection of Defects during Coatings Manufacturing	Prof. Chris Wirth (CWRU)	Nov 7, 21 — every other Fri 11:45 AM–12:15 PM
Enhancing Battery Degradation Analysis and Thermal Runaway Prediction	Prof. Satish Iyengar (Pitt)	Nov 13, 27 — every other Thu 8:30–9:00 AM
Machine Learning Methods for Optimizing and Innovating Structural Color Paints and Coatings	Profs. Paul W. Leu, Oliver Hinder, and Jungtaek Kim (Pitt)	Nov 4, 11, 18, 25 — every Tue 10:00–10:30 PM
Quantitative Characterization of Chemical Interaction of Solutes with Defects for Predicting Intergranular Corrosion	Prof. Hyeji Im (CWRU)	Nov 12, 26 — every other Wed 2:30–3:00 PM

Job Openings and Opportunities

Member Job Openings

Explore current openings and internships from MDS-Rely member organizations.

- [Eaton Careers](#)
- [LLNL Internships](#)
- [NETL Opportunities](#)
- [Parker Hannifin Jobs](#)
- [U.S. Army DEVCOM Student and Intern Opportunities](#)
- [NIST Jobs](#)
- [NNL Careers](#)
- [PPG Careers](#)

[Submit News](#)

[Submit Job Openings](#)

*For MDS-Rely members only

[Fill out a news form here!](#)

[Fill out a job opening form here!](#)

Interested in partnering with Case Western or Pitt Professors?

Please contact [Dr. Laura Bruckman](#) or [Dr. Paul Leu](#) for more information!

CONNECT WITH US!



Copyright © 2025 Materials Data Science Rely, All rights reserved.

Our mailing address is:

Case Western Reserve University
White Building, Room 538
10900 Euclid Avenue
Cleveland, OH 44106

Want to change how you receive these emails?

[Unsubscribe](#) from this list.