



## IN THIS ISSUE

### [Meme of the Month!](#)

### [LATEST NEWS](#)

[Spring 2023 Meeting at Pitt Next Week!](#)

### [FACULTY-FEATURED PROJECTS](#)

[Comparative Analysis of Machine Learning Techniques in Predicting Structure Property Relationships for Composite Dielectric Materials by Ina Martin Laura Bruckman, and Alp Sehirlioglu](#)

### [UPCOMING EVENTS](#)

[Biweekly Project Meetings Available To All Members](#)

### [JOB OPENINGS AND OPPORTUNITIES](#)

[Research Experiences for Undergraduates](#)

[NNL Fellowship Opportunities](#)

[NNL Internship and Co-op Opportunities](#)

[Assistant Professor of Industrial Engineering, Tenure Stream](#)

[Member Summer Internship Opportunities](#)

## Meme of the Month!

---



## LATEST NEWS

---

### Spring 2023 Meeting at Pitt Next Week!

A banner for the Spring 2023 Meeting. The background is dark blue with a network of white lines and dots. On the left, the text "April 17-18" is at the top, "Spring 2023 Meeting" is in large white font, and "Pittsburgh, PA" is below it. On the right, there is a logo for NSF (National Science Foundation) at the top, followed by the MDS-RELY logo (with "MATERIALS DATA SCIENCE" above "RELY"), and "REGISTER NOW!" at the bottom right.

April 17-18

**Spring 2023 Meeting**

Pittsburgh, PA

NSF

MATERIALS DATA SCIENCE  
**RELY**

REGISTER NOW!

Our Spring MDS-Rely Center Meeting is in one week on **April 17-18** in-person on the University of Pittsburgh Campus. Attend faculty project updates, a poster session, and network with Pitt and Case faculty and graduate students and other industrial and government lab members. Dinner is planned at Porch restaurant Monday night. Find more information about the Spring 2023 meeting [here](#).

[Register Here!](#)

## FACULTY FEATURED PROJECTS

---

### Comparative analysis of machine learning techniques in predicting structure property relationships for composite dielectric materials

[Ina Martin](#) (PI) | [Alp Sehirlioglu](#) (co-PIs) | *Antonia Sikon, MS Student* | *Department of Materials Science and Engineering, Case Western Reserve University*

Ina Martin, Laura Bruckman, and Alp Sehirlioglu's project "Comparative analysis of machine learning techniques in predicting structure property relationships for composite dielectric materials" focuses on dielectric coating applications. These applications are myriad, ranging from heatsinks, to waveguides, to electrostatic clutches. As with many materials systems, understanding structure-property relationships and relating them to fabrication, performance and lifetime is essential to optimize deployment in an application. While data science has accelerated and deepened our ability to extract knowledge from data sets, some types of data remain more challenging to deconvolute. This project follows a data science approach that allows creation of a generalizable model for relating composite materials structural and optical properties to the capacitance that is critical to function at both local and macroscopic scales.

[Read the full article here!](#)

## UPCOMING EVENTS

---

### Biweekly Project Meetings Available To All Members

If you are interested in attending any biweekly project meeting, please visit our Members portal, which can be accessed via the link at the top right of our Center website. You can also go to a specific project and raise a request to get access to the Zoom links to attend any of these meetings. You can also access prior recordings and presentations of any biweekly meetings.

#### **1. netSEM Modeling for Service Life Prediction of Polymers**

*Prof. Laura Bruckman*

May 2... Tuesdays 1 - 1:30 PM

#### **2. Achieving Reliable Laser Powder Bed Fusion based Additive Manufacturing via Machine Learning of in-situ Optical Profilometry Monitoring Data**

*Prof. Xiayun Zhao*

April 21, May 5... Fridays 4:15 - 4:45 PM

### **3. Image Machine Learning of Printed Metal Films for EMI Shielding**

*Profs. Leu, French, Iyengar*

April 12, 26...Wednesdays 1:30 - 2 PM

### **4. Comparative analysis of Machine Learning techniques in predicting structure property relationships for composite dielectric materials**

*Profs. Sehirlioglu, Martin*

April 10, 24 ...Mondays 10:30 - 11 AM

### **5. Effects of Aerosol Jet Printing Parameters on the Lifetime Performance of Additively-Manufactured Flexible Circuits**

*Prof. Janut Gbur*

April 14, 28...Fridays 1:00-1:30 PM

**[Check out our calendar here!](#)**

## **JOB OPENINGS AND OPPORTUNITIES**

---

### **Research Experiences for Undergraduates**

If you are an undergraduate interested in a research experience because you are interested in graduate school, going beyond classwork, and working with a faculty and graduate student mentors, please email David Ruvolo ([david.ruvolo@pitt.edu](mailto:david.ruvolo@pitt.edu)) about which of our projects you might be interested in.

---

### **NNL Fellowship Opportunities**

#### **The Admiral Hyman Rickover Graduate Fellowship Program**

**Description:** This program in Nuclear Engineering prepares graduate students for roles in the Naval Nuclear Propulsion Program as it supports the broader objective of advancing fission energy development through the research efforts of Fellows.

#### **Department of Energy Computational Science Graduate Fellowship Program**

**Description:** Computational Science Graduate Fellows are given opportunities to develop improved algorithms for parallel computer architectures, advanced visualization, advanced data management, etc, etc. You could be involved in new developments within several broad categories, including but not limited to reactor

physics, materials science (including semiconductor applications), two-phase flow, and radiation shielding.

Learn more about both opportunities [here](#). Feel free to contact the Fellowship Coordinator Dr. Jake Ballard ([jake.ballard@unnpp.gov](mailto:jake.ballard@unnpp.gov)) with any questions.

---

### NNL Internship and Co-op Opportunities

NNL has begun posting their available internships and co-ops for 2024.

\***Co-op** positions include: Electric/Computer Engineering, Mechanical Engineering, Software Engineering, and Thermal Hydraulic Modeling Engineering.

\***Internship** positions include: Business (IT), Chemistry/Chemical Engineering, Compliance Engineering, Cybersecurity, and Data Science.

Click [here](#) for more information on each position.

---

### Member Summer Internship Opportunities

If you are a Center member interested in offering summer internship opportunities to our graduate or undergraduate students, please contact David Ruvolo ([david.ruvolo@pitt.edu](mailto:david.ruvolo@pitt.edu)) and we will be sure to feature the opportunity in our next newsletter and distribute information to students.

#### Submit News

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

#### Submit Job Openings

\*For MDS-Rely members only

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

### Interested in partnering with Case Western or Pitt Professors?

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

### CONNECT WITH US!



*Copyright © 2023 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.