7:30	**Registration - East Atrium**			
8:00 - 9:00	**Continental Breakfast and Exhibition - East Atrium**			
Room	Alvarado A	Alvarado F	Alvarado G	Alvarado H
Session	AI/ML of Materials + Theory, Modeling and Prediction	Electronics, Magnetics and Photonic Materials & Devices	Advanced and Printed Manufacturing	Energy/Nuclear Materials & Sustainability
Chair	Allie Roth	Devika Mehta	Mary Louise Gucik	Tyra Douglas
9:00	**INIVTED - AutoSciLab: A Self-Driving Laboratory for Interpretable Scientific Discovery,** *Desai*	**Atomic Precision Advanced-Manufactured (APAM) FET-based sensor for ultrasensitive charge sensing,** *Mendez*	**Process-structure-property effects of debinding and sintering for an additively manufactured silica,** *Bezek*	**Oxygen Non-Stoichiometry and Thermochemical Hydrogen Production in Novel Machine Learned Oxides,** *Douglas*
9:15		**Nickel-Based Single-Atom Catalyst for Methane Pyrolysis,** *Helsel*	**Electroplated LPBF and BPE Additive Manufactured 17-4 Stainless Steel,** *Saiz*	**Effects of External Magnetic Field on Mechanical properties and irradiation resistance of F/M Steels,** *Yang*
9:30	**Discovery of Conductive Nanoparticle Inks for Printed Electronics using an Autonomous Ecosystem,** *Roth*	**INVITED - Focused Ion Beam Low Energy Implantation,** *Belianinov*	**Post-Processing Techniques for AM Metals,** *Gucik*	**A direct upcycling approach for spent lithium ion battery materials via microwave exfoliation,** *Chin*
9:45	**Impact of Thermal Gradient on Interfacial Energy and its Anisotropy in Al-Cu Alloy,** *Swamy*		**Additively Manufactured Mixed Potential Sensors for Methane and Hydrogen Emissions Monitoring,** *Tsui*	**Development and Construction of Liquid Lead-Lithium Loop at UNM,** *Angus*
10:00	**Robust Data-Driven Run-to-Run Control for Automated Serial Sectioning,** *Oakley*	**Optical Response of MXene Nanoantennas Under Left and Right Circularly Polarized Illumination,** *Karimi*	**A New Processing Parameter Paradigm for Blown Powder Laser Beam Directed Energy Deposition (L-DED),** *Roper*	**INVITED - Designing New Materials Based on Barium Niobates For the Electrochemical Oxidative Coupling of Methane,** *Ramaiyan*
10:15	**Full-Field Micromechanical Modeling of 3D Polycrystals with Recurrent Neural Networks,** *Lenau*	**Probing Charge Trapping of High k Dielectric Stacks under Ionizing Radiation,** *Mehta*	**The Effect of Processing Parameters on the Microstructure and Mechanical Behavior of Ti5553,** *Olivier*	
10:30	**Computationally-efficient DFT calculations for elastic properties of refractory binary alloys,** *Bijjala*	**Imaging Photonic Modes of a TiO2 Metasurface via Photoelectron Emission Microscopy,** *Kim*	**The Effect of Microstructure on Thermal and Electrical Conductivity of 14WYT NFA,** *Justice*	**Stability analysis of Single Atom Platinum Catalyst synthesized using a Plasmon-enhanced method,** *Jeyashang*
10:45	**Break - East Atrium**			
11:00	**Kreidl Lecture - Alvarado E**			
12:00	**Lunch - Alvarado E**			
1:00	**Poster Session/Sponsor Exhibition - South (posters) and East Atrium (exhibitors)**			

Session	Electronics, Magnetics and Photonic Materials & Devices + 2D & Quantum Materials	Structural Materials and Failure Mechanisms	Theory, Modeling and Prediction	Energy/Nuclear Materials & Sustainability
Room	Alvarado A	Alvarado F	Alvarado G	Alvarado H
Chair	James Loveless	Zahra Ghanbari		Kerry-Ann Stirrup
2:00	**A new approach to the surveillance of electronic components and circuits,** *Buchheit*	**Evaluation of bend ductility in Ta-W alloys,** *Ghanbari*	**INVITED - Effects of Environmental Species on Tribological Properties of MoS2: Using Simulations to Interpret Experimental Observations,** *Bobbit*	**INVITED - Evaluation of Ba(Al,Fe)2O4, a Machine Learned Compound, for Solar Thermochemical Hydrogen Production,** *Bishop*
2:15	**Carrier Lifetime Control Through the Quantum Confined Stark Effect,** *Loveless*	**Antibacterial sustainable concrete with waste plastic and natural materials,** *Jain*		
2:30	**Remote Epitaxy on Nonuniform Surfaces and the Influence of Imperfections,** *de Jesus Lopez*	**INVITED - Data-Driven Optimization of Interlocking Metasurface Design,** *Brown*	**Resolving local structure in alloys through thermodynamic ensembles of pair distribution functions,** *Meschke*	**Analytical Electrochemistry of Nickel and Platinum Electrolytes,** *Troche*
2:45	**Solder Joint Reliability in Fine Pitch BGAs,** *Fowler*		**Structural and electronic properties of structural refractory binary alloys,** *Bijjala*	**Predicting the corrosion rate of 316L stainless in 10 M HCl,** *Nwokocha*
3:00		**Oxidation Behavior of Niobium and Tantalum-rich Refractory Complex Concentrated Alloys,** *Prasad*	**Mesoscale Modeling of Fiber-Reinforced Composites for Marine Energy Environments,** *Creveling*	**Effect of Pore Shape on Collapse Behaviors in Explosives,** *Stirrup*
3:15	**Break / Refreshments - East Atrium**			
Session	Biological and Soft Materials	AI/ML of Materials + Theory, Modeling and Prediction	Advanced and Printed Manufacturing	Methods for Analyzing Structural Materials
Room	Alvarado A	Alvarado F	Alvarado G	Alvarado H
Chair	Mark Foster	Kyle Dorman	Paul Chao	Landon Schnebly
3:30	**INVITED - Harnessing Carbon Dots for Multifunctional Materials: From Synthesis to Applications,** *Ghosh*	**Hydrogen Diffusion In Oversaturated EPDM Rubber: The Effect Of Induced Strain,** *Dedmon*	**INVITED - The effect of laser remelting on the microstructure and chemistry of additively manufactured MoNbTaTi RHEA,** *Barrick*	**Structural and failure mechanisms - Automated Calibration of Displacement Sensors,** *Haulenbeek*
3:45		**Entrapment of Volatile Organic Compounds in MOF UiO-66: An ab initio molecular dynamics study,** *Boyd*		**Improved Kovar Quantification Using LA-ICP-MS,** *Coleman*
4:00	**A Bidirectional Reciprocating Experiment for Macroscale Friction Measurement,** *Foster*	**How to Feed AI: Creating a Cu-Ag Alloy Nanocrystalline Thin Films Library for Materials Informatics,** *Dorman*	**Enabling Ductile Failure Prediction in Additively Manufactured Metals via 3D Characterization,** *Chao*	**Characterization of oxidation in tantalum and cracking susceptibility at high temperatures using AES,** *Lam*
4:15	**Monitoring impact of photothermal heating on light induced Diel's-Alder reaction: Thermoset recycle,** *Saha*	**CO_2 Adsorption at Metal Nodes of Mg-MOF-74 : An Ab Initio Molecular Dynamics Study,** *Beltran*	**Custom cathode optimization for electropolishing additively manufactured 316L stainless steel,** *Escarcega*	**Effect of Dry Electropolishing on Electron Backscatter Diffraction of Dissimilar Titanium Welds,** *Schnebly*
4:30	**Award & Scholarship Announcements - East Atrium**			
5:00	**End**			