



2021 LSMRCE Virtual Poster Competition

October 22-24, 2021

***“Empowering Diverse
STEM Innovators”***

A virtual event at:

<https://bit.ly/LSMRCE2021>



LSMRCE

Louis Stokes Midwest Regional
CENTER OF EXCELLENCE



#LSMRCE2021 @LSMRCE



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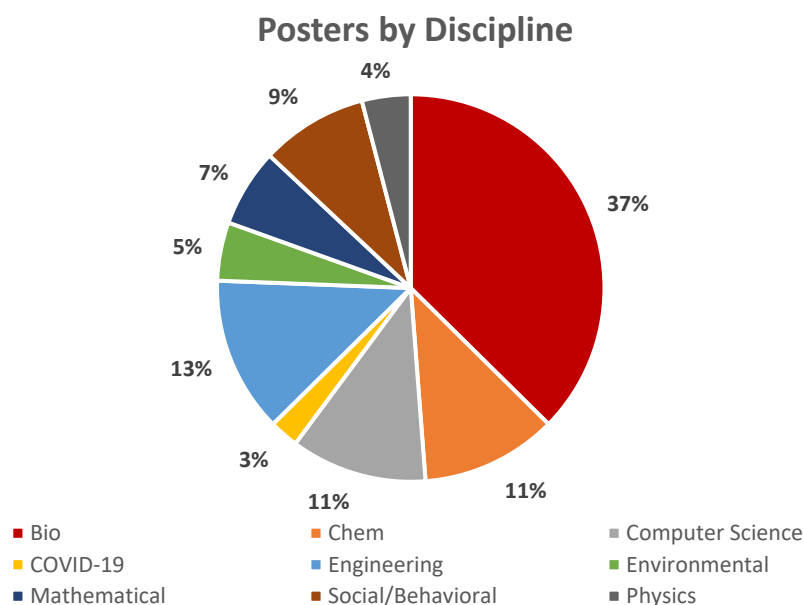
Competitive Poster Session

Online, Saturday, October 23, 1-3p ET

We have **119 abstracts** being presented by talented undergraduate and graduate students that are from **59 colleges and universities across the world including the Philippines, Micronesia, Palau, Guam, and Hawaii.**

The students have recorded their poster presentation to showcase the outcomes of their hands-on research and learning under the mentorship of faculty members in Science, Technology, Engineering, and Mathematics (STEM) and related disciplines at their institutions.

One of LSMRCE's goals for the conference is to highlight the value of student research and to provide underrepresented minority students the opportunity to showcase their scholarly accomplishments and personal commitment to disciplinary learning. The poster session offers (even in this virtual world) a unique opportunity for students to learn from each other, network, engage with faculty and administrators in career development opportunities, and to experience the essence of disciplinary professionalization.



Presenter	Grade Level	Abstract Title	Oral Group
Aguilar-Medina, Michelle Concordia University Chicago	Sophomore/ Second Year	Annotation of the Insulin Signaling foxo Gene in Drosophila sechellia	
Akpan, Carol Prairie View A&M University	Junior	Flexible Graphene Interdigitated Strain Sensor for Early Diagnosis of Deep Vein Thrombosis	Group 4
AL-Robaee, Hasan Indiana University South Bend	Junior	Projecting changes in the societal burdens of cancer with the obesity epidemic	
Alemayehu, Edom Ball State University	Sophomore/ Second Year	CRISPER Genome Editing with Candida Albicans DNA Sequencing Regions	
Ali, Maslah Augsburg University	Senior	Tracking Your Every Move.	
Alvarez, Victor Elmhurst University	Junior	A DFT Study on the Formation Energetics of Carbon Dioxide and Formaldehyde from Acetylene Ozonolysis.	Group 3
Andrade, Mercedes Indiana University Northwest	Senior	Understanding the role of the gut microbiota on Alzheimer's disease pathogenesis	
Armanious, Abanoub Rutgers University - New Brunswick	Junior	Binge-like Eating Promotes Behaviors Reminiscent of 'Food Addiction' in Obese Female Rats	Group 5
Artiglio, Giovanni Arizona State University	Senior	The Emergence of League and Sub-League Structure in Large Scale Multiplayer Resource Allocation Games	
Avila, Andres Elmhurst University	Senior	Opuntia humifusa Not Immediately Affected by Shade Competition	
Banks, Destiny Columbus State University	Senior	Effects of Drug Treatment on Lung Cancer Cell Proliferation Rates	Group 1
Barberena, Eduardo Laredo College	Freshman/ First Year	Password security: How Different Password Policies Differ Between Government Employees and Company Employees	
Barrera, Emily Indiana University South Bend	Sophomore/ Second Year	Electroanalytical Performance of Antimony Modified Glassy Carbon Electrode in Detecting Lead and Cadmium	
Benson, Diamond Indianapolis University Purdue University Indianapolis	Senior	Development of a Reference DNA Database for Identification	
Blevins, Kadijah Ball State University	Junior	Do Microplastics Impair Dominance Interactions in Fish? A Test of the Vector Hypothesis	
Boakye, Barry University of Dayton and Sinclair Community College	Sophomore/ Second Year	Influence of Process Parameters on Mechanical Properties of Desktop 3D-Printed NinjaTek Cheetah Elastomer	
Boateng, Samuel Lewis University	Senior	Using Earth to Build Structures on Earth	Group 4
Bornkamp, Allison Ball State University	Junior	Paleoecology of Benthic Foraminifera from the Claiborne and Lower Jackson Groups (Eocene; Lutetian and Bartonian) of Little Stave Creek, Clarke County, Alabama	
Brown, Yovonda Valdosta State University	Senior	COVID-19 Effects on The Academic Performance of students in higher education	
Bujan, Reynaldo R Arizona State University	Senior	Identification of Pseudomonas stutzeri that Aid in the Colonization and Biodegradation of Environmental Microplastics	
Callejas Soriano, Itzel North Central College	Senior	Oxycodone Self-Administration leads to an Increase in Neural Activity in the Prelimbic Prefrontal Cortex	Group 5
Campos-Chavez, Harvey Lewis University	Sophomore/ Second Year	Predictive Modeling for Hockey Analytics Utilizing Markov Chains	

Carnero, Warner Montclair State University	Senior	Using Spectroscopy to Investigate Photoprotection Mechanism between MTHF and FAD in DNA Photolyase	
Chepkwony, Dan Ball State University	Junior	Identifying Particle Species in Heavy Ion Collisions	
Choay, Muturwan University of Guam	Senior	STEM Journeys of Pacific Islander Students Across the Islands of Opportunity Alliance (IOA)	Group 5
Chung, Halin University of Iowa	Ph.D. Student	STEM Interest and Civic Engagement Among Community College Students	
Coghiel, David Syracuse University	Senior	Real-time Streamflow Monitoring of Skaneateles Lake Creeks	
Concepcion, Julie North central College	Sophomore/ Second Year	The Effect of Manganese on the Root Colonization by Arbuscular Mycorrhizal Fungi of Big Bluestem	Group 2
Cosillo, Morgan College of DuPage	Junior	Freshmen Navigation App Using Cordova Software	
Costa, Isabela Augustana College	Senior	The Effects of Diosmetin and Primuletin on MDA-MB-231 Breast Cancer Cells	
Crawford, Isabella Indiana University - Purdue University Indianapolis	Senior	Differences in sex and developmental time are important for the involvement in Dyrk1a related skeletal deficits associated with Down syndrome	
Dabson, Feona Ball State University	Junior	Monosubstituted Malononitriles: Improving Yield and Efficiency of the One-Pot Reductive Alkylation of Aromatic Aldehydes	
De La Cruz Sanchez, Kevin The Ohio State University	Sophomore/ Second Year	Targeting CD74 in Mantle Cell Lymphoma	
DePriest, Essex Lincoln University (MO)	Junior	Glass Advanced Manufacturing	Group 3
Derisse, Samantha IUPUI	Sophomore/ Second Year	Assessment of compulsive drinking in C57BL/6J head-fixed mice with a drinking history in comparison to those without one.	
Dunn, Simeon Indiana University-Purdue University Indianapolis	Junior	Comprehensive Health Record Collection based on Blockchain	Group 3
Easton, Aurora Indiana University South Bend	Senior	Projecting Changes in Societal Burden of Diabetes Mellitus and Cardiovascular Disease with Rising Obesity Rates	
Echeumuna, Kelechi Indiana University - Purdue University Indianapolis	Junior	Alcohol and Water Drinking Patterns in Mice	Group 1
Egbuna, Arinzechukwu Benedictine University	Junior	Deletion of an rgg gene in Lactobacillus acidophilus	
Egermeier, Mason Oklahoma State University	Junior	Microplastic Extraction from Sediments with a Continuous Flow Elutriation Process	Group 4
Elmacioglu, Park-Kaufmann, Okandan, Ceyhun, Hannah, Melin Lafayette College, Barnard College, Bilkent University	Sophomore/ Second Year	Minimal Presentation Sizes of Numerical Semigroups	
Esguerra, Marion Agatha University of Santo Tomas, Philippines	Senior	Association between ABO Blood Groups and Type 2 Diabetes Mellitus: A Meta-analysis	Group 1
Eshak, John Indiana University Northwest	Junior	In Silico CRISPR-induced Point Mutation me31B Gene Editing in Drosophila	

Estrada, Angel Saint Xavier University	Junior	Virtual reality and education	
Evans, Daevon IUPUI	Senior	A novice users' assessment of facial segmentation automation	
Eze, Ngozi Ball state University	Senior	Analyzing the Effects of G-quadruplex helicase, G4R1 on Cognitive/ Motor Function and Brain Morphology in Adult Mice.	
Figueroa, Natalie Benedictine University	Senior	Characterization of modulatory quorum sensing molecules in Streptococcus pyogenes	
Fionah, Abelline University of Kentucky	Ph.D. Student	Functionalization of Poly-ether ether ketone for Improved Membrane Performance in Water Treatment	
Gallegos, Nathaniel University of Arizona	Ph.D. Student	Gray Matter Volumetric Differences in Healthy Older Adults at Risk for Alzheimer's Disease	
Gamboa, Emily The University of Chiago	Junior	Direct Double-Stranded Break (DSB) Detection Can Differentiate DNA Repair and Signalling in Cancer Cells	Group 1
Gongora, Sara College of Dupage	Sophomore/ Second Year	Virtual Reality for STEM Education	
Granda Acaro, Jonathan County College of Morris	Junior	Studying Electric Field's Effect on Reducing PM2.5 Pollution	Group 4
Grass, Diana Rutgers University Newark	Senior	Blood-Based Biomarkers for Alzheimer's Disease May Be Associated with Poorer Cognitive Performance in Older African Americans	
Greene, Nina University of Cincinnati	Sophomore/ Second Year	Improving Adherence to Pap Screening Among At-Risk Women: Formative Research in Cervical Cancer Prevention	Group 5
Guerrier, Kahleel Valdosta State University	Junior	Using Sonogashira Carbon-Carbon Bond Coupling Towards Further Modification of the Polyoxotungstate Anion, a-[PW12O39(NC6H4-I)]3-	
Hernandez, Angelica Indiana University - Purdue University Indianapolis	Junior	Dynamic Tuning of Hydrogels: Elasticity and Viscoelasticity	
Hinojosa, Isabella Oklahoma State University	Junior	Sulfur Protecting Groups and Oxidative Cyclization	
Ililau, Adrian Palau Community College	Junior	Effects of Heat Stress on Coral Bleaching	
Inchauregui, Rose Indiana University South Bend	Junior	Changes in Canopy and Understory Asimina triloba (Paw paw) Abundance in an Old Growth Indiana Forest	
Ishimwe, Melyse IUSB	Junior	Structure-Based Design of PhuZ Mutants for Polymerization Analysis.	
Jimenez Carrillo, Victor Dominican University	Senior	Graphene: Synthesis and Application in Lithium-ion Batteries	
Johnson, Alexandria University of South Florida	Senior	Comparing Prostate Specific Antigen Dynamics Between Black Patients and White Patients	
Johnson, Nathan Lewis University	Sophomore/ Second Year	The Effects of Beta Alanine and Copper on Alzheimer's Disease	
Jones, Brendan Ball State University	Senior	Determining the Role of Hypoxia and SOX17 in Coronary Vessel Development	Group 1
Jones, Gabrielle Oklahoma State University	Senior	A GWAS Study of Color and Texture on Natto Soybeans	
Kapadia, Ashni Rutgers University	Sophomore/ Second Year	Computational Modeling and Intracellular Drug Metabolism	

Lujan, Frank University of Guam	Post-Bachelor's	The Impact of Climate Change on Economic and Health of Coral Reefs throughout Micronesia	Doctoral
Maestas, Jade Benedictine University	Senior	Probiotics May Play a Role in Alleviating Bile Acid Malabsorption-Associated Diarrhea	Group 1
Manuel, Brian Dominican University	Junior	Mathematical Model of Invasive Asian Carp	
Manzanares, Maricela University of Cincinnati	Junior	Experiences of Women of Color in Engineering	
Marangon, Andressa New Jersey Institute of Technology	Junior	Engineering the Carrier Dynamics of III-Nitride Blue Light-Emitting Diodes	
Martinez, Roberto Arizona State University	Senior	Investigating Failure Modes in Flexible Batteries for Wearable Applications	
McCoy, Daeshe' Valdosta State University	Senior	"Extraction and Purification of phytochemicals from Tropical Plants"	
McMichael, Kelia Wright State University	Sophomore/ Second Year	ENaC is a Zn ²⁺ Sensitive Renal Na ⁺ reabsorption pathway that Mediates ZnD-induced Hypertension.	Group 4
Medrano, Israel Western Michigan University	Senior	Advanced Adhesive Classification and Application to Enhance Wood Structures' Resilience	
Mendoza, George			
Mendoza Hermosillo, Daniel Hawaii Pacific University	Senior	Nemo: An Underwater Rover Attachment for Controlled Plankton Collection	
Miao, Bernadette University of Chicago	Junior	Staining and Imaging Protocols to Investigate Mitochondrial Dynamics upon Bioelectronic Stimulation	Group 3
Mince, Bowen Grinnell College	Senior	Machine Learning in the Courtroom: Evaluating the Effectiveness of Algorithms to Predict Likelihood of Recidivism	Group 5
Morales, Britney Saint Xavier University	Junior	The Effects of DNA damaging agents on Alternate Splicing of BRCA2 mRNA	
Mustafaoglu, Zelal University of Illinois Springfield	Senior	Convolutional Neural Network Model for Malicious Data Flow Detection	
Mustafaoglu, Zelal University of Illinois Springfield	Senior	Application of Text Analysis to Company Financial Statements	
Nshuti, Adeline Sinclair Community College	Sophomore/ Second Year	Recovery of Planarian's Chemotactic Ability Post Amputation	
Ordóñez, Andrea Indiana University-Purdue University-Indianapolis (IUPUI)	Junior	Effects of Tagged FITC-Human Fibrinogen on Whole Blood Clotting Dynamics	
Owens, Austin IUPUI	Junior	Effect of Infill Patterns on the Mechanical Properties of 3D Printed Parts by Fused Deposition Modeling	
Paddock, Kayleigh University of Arizona	Junior	Noise-induced sleep disruption reduces orexin, orexin 1 receptor, and heme-regulated inhibitor mRNA in female rats	Group 2
Pais, Danielle Arizona State University	Senior	New online accommodations are not enough: Mismatch between student needs and support for students with disabilities during COVID-19	Group 2
Perez, Arturo Augustana College	Junior	Using a Quartz Crystal Microbalance to Measure the Formation of a Self Assembled Monolayer	
Portillo, Marla College of DuPage	Sophomore/ Second Year	Comparison of Graphwave Network Embeddings to Link Analysis Techniques for Role Discovery in Networks.	Group 3

Ramadan, Bassil University of Arizona	Post-Bachelor's	VISTATM: Visual Impairment Subtle Touch AidTM	
Ramirez, Giannina Indiana University Purdue University Indianapolis (IUPUI)	Senior	Reconstructing the History of Anoxia and Climate Change in Laguna Encantada in Chetumal, Q.R., Mexico	Group 2
Ramirez, Ruby Arizona State University	Senior	Exploration of Truncation to Improve Image Restoration Methods	
Randal, Matthew The University of Texas at Austin	Ph.D. Student	The Effects of COVID-19 on Auditory Function	
Rawal, Unsh HCCS	Sophomore/Second Year	Solar Powered Urban Farming	
Rivas, Mirsa Dominican University	Senior	Alkyl Hydroperoxide Reductase in <i>Vibrio fischeri</i>	
Rivera, Tiffany Chaminade University of Honolulu	Senior	Heart Disease Cardiac Resource Availability by the Counties in the State of Hawai'i	
Robles-Magallanes, Daisy IU Bloomington	Junior	Heterochromatin Modifications Effects on Neurogenesis	Group 5
Ryder, Staci Phoenix College	Junior	Researching propagation and germination techniques for a native Sonoran Desert Pollinator Garden	
Sanchez, Xitlali Benedictine University	Sophomore/Second Year	Carrier-lifetime in Dye-Sensitized Solar Cells with Blackberry and Raspberry Dyes	
Segura, Joshua Lewis University	Senior	Measuring Odonate Biodiversity: A Comparative Study between Larval and Adult Life Stages	Group 2
Shelton, Brendon Indiana University-Purdue University-Indianapolis	Junior	Effect of the infill pattern in the mechanical properties of 3D printed parts	
Shelton, Mya Ball State University	Sophomore/Second Year	Variable Star Research	
Shroyer, Rochelle College of DuPage	Junior	Web Logs: The Biggest Target	
Smith, Alphonzo Indiana University Northwest	Junior	A Comparative Study of Supervised Learning Algorithms: Does Deep Learning Really Improve Customer Churn Analysis?	
Spahr, Brock Ball State University	Junior	Behavioral and Morphological Analysis of the Carry Over Effects of Embryonic Learning in Adult Fathead Minnow	
Takahashi, Yuki Grinnell College	Senior	Lifting methods in mass partition problems	
Torlop, Noah University of Cincinnati	Sophomore/Second Year	How does service-learning affect students	
Truong, David Valdosta State University	Senior	Fault Containment Algorithms in Distributed System	
Vaka, Michael Brigham Young University	Junior	Magnetic Domain Properties of Co/Pt Multilayer Thin Films	
Valencia, Paul College of Micronesia-FSM	Junior	Several Reasons Why I Choose Conservation Society of Pohnpei (CSP) to Study Conservation as an Intern.	
Verges, Ariana IUPUI	Senior	Multi-Level classification of Traumatic Brain Injury	
Vester, Eric Ball State University	Senior	Experimenting with Automated Unit Testing of a VisTrails Module Using Jenkins and Ptest	

Villalobos, Vanessa IUPUI	Junior	Gametocyte Densities in Asymptomatic Infections of Plasmodium falciparum in the Highlands of Kenya with unstable transmission	
Washington, Davion Lincoln University	Junior	Flexible Optical Filters for Health Monitoring Devices Using Pulse Oximetry and Fluorescence Spectroscopy	Group 4
Watts, Ryan Ball State University	Senior	Solvent and Ionic atmosphere effect on halogen bonding	
White, Alexandria Columbus State University	Senior	ALS cells and the effects of the TDP-43 Protein	
Winters, Aaliyah Ball State University	Senior	Optimization and mechanistic insights of the allylation of phenols with allyloxypyridinium triflate	
Woo, Kyung University of Texas at Tyler	Junior	Kirigami-inspired Net-like Graphene Strain Sensor for Motion Detection	Group 4
Zarate, Maria North Central College	Senior	Neural activation of the infralimbic prefrontal cortex increases after oxycodone self-administration and forced abstinence	Group 5
Zhang, Xuechao Northern Illinois University	Senior	SwissDock as an Educational Tool for Drug Discovery	

Thank you to our Judges!

Dr. Tuncay Aktosun, University of Texas at Arlington
Dr. Edison Amah, Intel Corporation
Prof. Jean Andino, Arizona State University
Prof. Jamillah Boyd, University of Missouri St. Louis
Dr. Rafael Bahamonde, IUPUI
Dr. Asha Brunings, FL-C LSRCE
Dr. George Brusch, Oklahoma State University
Dr. Kasey Clear, Indiana University South Bend
Dr. Bryan Dosono, iSchool Inclusion Institute
Dr. Jim Fackenthal, Benedictine University
Ms. Gwendolynn Fine, IISPIRE LSAMP ALU Committee; Johnson & Johnson
Dr. Natividad Fuentes, MD Anderson Cancer Center
Mr. John Fynn, Polk State College Winter Haven Florida
Dr. Chhavi Goenka, Massachusetts General Hospital Wellman Center
Mrs. Dominique Graham, Rutgers University Newark
Dr. Danielle Harper, Wellman Center for Photomedicine
Dr. Marie Kelly-Worden, Ball State University
Miss Stephanie Leon Quinonez, Cleveland Clinic/ Case Western Reserve University
Dr. Kristy Mardis, Chicago State University
Dr. Grace Muna, Indiana University South Bend
Prof. SUBIR NAGDAS, Fayetteville State University
Dr. Tiara Perez Morales, Benedictine University
Ms. Cristina Preston, Cornell University
Dr. Jayashree Sarathy, Benedictine University
Dr. Justin Seffernick, Sinclair college
Dr. Bikram Sharma, Ball State University
Dr. Shrestha Sinha Ray, Research Institute at Nationwide Children's Hospital
Dr. Lee Ann Smith, Benedictine University
Mrs. Gabriela Solis-Cavazos, Laredo College
Dr. Ron Stamper, Mott Community College
Ms. Jeffey Stear, Houston Community College
Prof. Shawana Tabassum, The University of Texas at Tyler
Dr. Ranya Taqieddin, Saint Charles Community College
Dr. Kerri Shelton Taylor, Columbus State University
Dr. U Sunday TIM, Iowa State University
Dr. Hongwei Wang, Texas A&M International University
Dr. Kristen Williams, LS-PAC MODELS Center