MORGAN
STATE UNIVERSITY

2022
SOE SUMMER RESEARCH SYMPOSIUM SCHEDULE

DEAN
DR. OSCAR BARTON, JR.

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GENERAL PROGRAM
THURSDAY, AUGUST 4, 2022

10:00 AM - 10:15 AM   Introduction/Greetings
                                 Dean Barton

10:15 AM - 11:45 AM   Morning Sessions

11:45 AM - 12:15 PM   Break

12:15 PM - 1:30 PM   Afternoon Sessions

SESSION CHAIRS

SESSION 1: INDUSTRIAL, SYSTEMS ENGINEERING AND ROCKETRY APPLICATIONS
DR. GUANGMING CHEN

SESSION 2: STEM PROJECTS IN THE SCHOOL OF ENGINEERING
DR. MULUGETA DUGDA

SESSION 3: ARTIFICIAL INTELLIGENCE AND SUSTAINABLE ENGINEERING
DR. JAMES HUNTER

SESSION 4: TRANSPORTATION AND INFRASTRUCTURE ENGINEERING
DR. YOUNG-JAE LEE

Session 1 Schedule: Industrial, Systems Engineering and Rocketry Applications	
10:15 - 10:30 a.m.	**Process Flow Modeling for an In-time Aviation Safety Management System** Presenter: *Seydou Mbaye*
10:30 - 10:45 a.m.	**RockOn 2022: Integration of Avionics Bay for NASA's Terrier-Improved Orion Sounding Rocket** Presenters: *Marc Caballes, Samuel Oludayo*
10:45 - 11:00 a.m.	**A Model-Based Systems Engineering Evaluation of the Evolution to an In-Time Aviation Safety Management System** Presenter: *Seydou Mbaye*
11:00 - 11:15 a.m.	**Design and Analysis of Morgan State University's Liquid Propellant Rocket** Presenter: *Nykeia Bowens*
11:15 - 11:30 a.m.	**Reliability and Failure Analysis of Computer Numerical Control (CNC) Lathe Based on Operation Data** Presenter: *Raphael Isaac*
11:30 - 11:45 a.m.	**Avionics Design and Integration into MSU Liquid Propellant Rocket** **Marc Caballes, Jr.**
11:45 a.m. - 12:15 p.m.	**BREAK**

Session 1 Schedule (continued)	
12:15 -12:30 p.m.	**Design, Construction and Testing of a Fluidized Bed Combustion System** Presenters: *Fadipe Opeyemi Lukuman, Mohammed Muye Haruna, Raji Nasirudeen Kolawale and Sam Oludayo Alamu*
12:30 - 12:45 p.m.	**Exergy Analysis of Poultry Litter-to-Energy Combustion System** Presenter: *Samuel O. Alamu*
12:45 - 1:00 p.m.	**Mathematical Model for Allocation of PPE in a Pandemic** Presenter: *Margaret Ajuwon*
1:00 - 1:15 p.m.	**Computational Fluid dynamics analysis of heat transfer for biomass in Advanced fluidized bed combustion** Presenters: *Opeyemi Lukuman Faipe, Adebakin Osoja, Isaac Raphel, Mohammed Muye, Raji Nasirudeen, Oludayo Samuel Alamu*
1:15 - 1:30 p.m.	**Experiment and Performance Based on Innovative Approach to Teaching Industrial Engineering Courses in a Hybrid Learning Environment** Presenter: *Oladayo Akinpelu, Oludayo Sam Alamu*

Session 2 Schedule: STEM Projects in the School of Engineering	
10:15 - 10:30 a.m.	**Changepoint Detection in Stochastic Dynamical Systems** Presenter: *Trent Washington*
10:30 - 10:45 a.m.	**On goal-oriented multi-objective embedded optimization for system performance assessment** Presenter: *Cynthia Nosiri*
10:45 - 11:00 a.m.	**Application of Clustering in Direct Analysis in Real Time-Mass Spectrometry (DART-MS) Censored Forensic Data** Presenter: *Dan Anyumba*
11:00 - 11:45a.m.	**Integrating Experimental Centric Pedagogy in Computer Science Courses** Presenter: *Opeyemi Taiwo Adeniran* **Adapting Experiment-Centric Teaching Approach to Enhance Student Motivation and Success Rate in Physics (ETA-STEM)** Presenter: *Efe Frank*

Session 2 Schedule (continued)	
11:00 - 11:45a.m. (continued)	**Adapting an Experiment-Centric Teaching Approach to Increase Student Achievement in Chemistry** Presenters: *Adebayo Olude, Temileye Ibirinde* **Adapting an Experiment-Centric Approach to Increase Student Achievement in Biology** Presenters: *Olude Adebayo Iyanuoluwa, ADEIKA, Blessing Isoyiza* **Evaluation of Students' Acceptance and Ease of Use of Arduino and M1k/M2k kits as a Data Acquisition System for Laboratory Experiments** Presenter: *Chukwuemeka Duru*
11:45 a.m. - 12:15 p.m.	**BREAK**
12:15 -12:30 p.m.	**ML/AI for Earthquake Aftershock Prediction** Presenter: *Amanuel Seifu*
12:30 - 12:45 p.m.	**Telemetry Network Testbed Virtualization and Vulnerabilities** Presenters: *Perry Jordan, Favour Okonkwo*

Session 2 Schedule (continued)	
12:45 - 1:00 p.m.	**Development of Big Seismic Data Processing and Management Tools** Presenter: *Alemayehu B. Kassa*
1:00 - 1:15 p.m.	**Light Gradient Boosted Trees Classifier with Early Stopping based Intrusion Detection and Prevention System for Denial of Distributed Service (DDoS) Event Dependency** Presenter: *Olanrewaju Bucknor*
1:15 - 1:30 p.m.	**Application of AOFDM for Power Efficiency** Presenter: *Musa Jokotogun*

Session 3 Schedule: Artificial Intelligence and Sustainable Engineering	
10:15 - 10:30 a.m.	**Using Convolutional Neural Networks to Categorize Facial Expressions** Presenters: *Alliaya Ottley, Breahna Fox, Thomas Goodman, Femi Epps*
10:30 - 10:45 a.m.	**Displaying the Top 100 Words and Clustering Data** Presenters: *Jaden Robinson, Brianna Murel, Tobi Owolabi, Laila Amin*
10:45 - 11:00 a.m.	**Classifying Letters using Neural Networks** Presenters: *Alexander Aybar, Ishmail Scott, Tyrell Green, Talaya Sherdon*
11:00 - 11:15 a.m.	**Using Recurrent Neural Networks (RNNs) to Predict Next Fibonacci Sequence** Presenters: *DeAndre Charity, Donald Davis, Xavier Johnson, Takia Eastmon*
11:15 - 11:30 a.m.	**Neural Networks to Develop a Movie Recommendation Systems** Presenters: *Samuel Adeleye, Nasir Barnes, Jermaine Lennon, Antoine Teague*

Session 3 Schedule (continued)	
11:30 - 11:45 a.m.	**Testing the Efficacy of Neural Networks Models on the Detection of Spam** Presenters: *Teqwon Norman, Moja Williams, Emmanuel Lewis, Travis Jones*
11:45 a.m. - 12:15 p.m.	**BREAK**
12:15 -12:30 p.m.	**Social Media Account Analysis** Presenters: *Kaleb Yacob, Derrick Cook*
12:30 - 12:45 p.m.	**From Floyd to Florence: Impacts of Extreme Hurricane Events on the Tar-Pamlico River Basin and Rocky Mount, North Carolina** Presenter: *Tamara L. Battle*
12:45 - 1:00 p.m.	**Evaluating Strategies for Urban Stormwater and Watershed** Presenter: *Ajibola Ayanbeku*
1:00 - 1:15 p.m.	**Implementing Stream Restoration Projects to Improve the Physical & Biological Health Condition of Urban Stream** Presenter: *Jalil Abdul*
1:15 - 1:30 p.m.	**Long-Term Hydrologic Impact Assessment of Prince George's County** Presenter: *Camille Smith*

Session 4 Schedule: **Transportation and Infrastructure Engineering**	
10:15 - 10:30 a.m.	**Hands-on Learning Pedagogy in Teaching Concepts Relevant to the Analysis, Design, and Maintenance of Transportation Infrastructure Systems** Presenter: *Hannah Abedoh, Pelumi Abiodun*
10:30 - 10:45 a.m.	**E-bikes' Effect on Mode and Route Choice: A Cast Study of Richmond, VA Bike Share** Presenter: *Nashid K. Khadem*
10:45 - 11:00 a.m.	**Effects of Complete Street Implementation on Harford Road** Presenter: *Nkiruka Jane Nwachukwu*
11:00 - 11:15 a.m.	**Multi-Modal Public Transport Network Redesign by Suggesting an Optimization Model Based On Mobility-As-A-Service (MAAS) Concept** Presenter: *Alireza Ansariyar*
11:15 - 11:30 a.m.	**Drivers' Reaction to Connected and Automated Vehicle Safety Applications in the Vicinity of a Work Zone: A Driving Simulator Study** Presenters: *Nashid Khadem, Joseph Abujana, Md Muhib Kabir*

Session 4 Schedule (continued)	
11:30 - 11:45 a.m.	**Immigrant Residential and Mode Choice Decisions to Work in the DC Metropolitan Area** Presenter: *Martin Ndegwa*
11:45 a.m. - 12:15 p.m.	**BREAK**
12:15 -12:30 p.m.	**Discovering Solutions to Deteriorating Infrastructure using Air-engraining Agents and the Biomineralization of Encapsulated Bacteria Discovering Solutions** Presenter: *Victoria Dada*
12:30 - 12:45 p.m.	**Finite Element Analysis of RC Beams Strengthened by Carbon Fiber Reinforced Polymer (CFRP) Laminates** Presenter: *Opeyemi Lukuman Fadipe*
12:45 - 1:00 p.m.	**Relative Sea Level Rise from Four Long-term Tide Gauge Records along the Western Coast of the Chesapeake Bay** Presenter: *Xin Zhou*

Session 4 Schedule (continued)	
1:00 - 1:15 p.m.	**Relative Sea Level Rise In Inner Harbor, Baltimore** Presenter: *Robert Long, Jr.*
1:15 - 1:30 p.m.	**Maximizing Stormwater Treatment Effectiveness in Best Management Practices** Presenter: *Edward Brown*