2019 PURDUE FALL UNDERGRADUATE RESEARCH EXPO

NOVEMBER 18, 2019
West Lafayette, Indiana
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<td>12:45 — 1:30 PM</td>
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<td>1:30 — 3:30 PM</td>
<td>Poster Symposium</td>
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Oral presentation session schedule and poster numbers are found later in this program.

Refreshments are available throughout the oral presentations and poster symposium.

We encourage participants to provide feedback to the poster presenters. Oral presentations will receive feedback from a panel of judges.

To submit feedback to poster presenters, please use the QR code or link (bit.ly/2019fallexpo).
ORAL PRESENTATIONS

SESSION 1: 8:30 am - 9:30 am

Room: STEW 214A

8:30  Therapeutic immunomodulation of the post-injured spinal cord using Î±-gal nanoparticles
Manjari Lokender, Noah Burket
Research Mentor(s): Jianming Li, Bhavani Gopalakrishnan

8:50  Using Muons Produced in Neutrino Interactions to Perform Planetary Tomography
Robert Andrew Gustafson
Research Mentor(s): Dr. Rob Davies

9:10  Signatures of Selection for Cattle Docility
Kate Watkins
Research Mentor(s): Dr. Luiz Brito, Amanda Alvarenga, Hinayah Rojas de Oliveira

Room: STEW 214B

8:30  Increasing Mid-Adult Women’s Protection through Vaccination against HPV (IMPROVE HPV)
Allissa Russell
Research Mentor(s): Dr. Monica Kasting

8:50  Crowdsourcing Detection of Sampling Biases in Image Datasets
Xiao Hu, Haobo Wang, Anirudh Vegesana, Somesh Dube, Kaiwen Yu, Gore Kao
Research Mentor(s): Ming Yin, Yung-Hsiang Lu

9:10  Physiological Adaptation of the Genus Silphium across different Hydrologies
Joshua Randall
Research Mentor(s): Scott McAdam, Timothy Batz

Room: STEW 214C

9:10  A Sequence Model Based Approach to Unknown Words Identification
Yi Zhang
Research Mentor(s): Xiaonan Jing
SESSION 2 : 9:30 am - 10:30 am

Room: STEW 214A

9:30  Therapeutic immune modulation of microglial cells using alpha gal nanoparticles
      August Dunbar
      Research Mentor(s): Jianming Li, Bhavani Gopalakrishnan

9:50  A method to improve the homogeneity of protein samples intended for high-resolution cryo-electron microscopy
      Hannah Pletcher
      Research Mentor(s): Frank Vago, Wen Jiang

10:10 An Examination of Multilevel Barriers to Hepatitis C Virus Screening among Baby Boomers in Primary Care
      Kaitlyn Gabhart
      Research Mentor(s): Dr. Monica Kasting

Room: STEW 214B

9:30  Global Air Quality Trekkers: Nandi Clean Kitchen Study
      Stephanie R Schiavo, Sam Dykhuis, Avalin Senefeld
      Research Mentor(s): Brandon Boor

9:50  Spaceflight Testing of Small Satellite Micropropulsion Management
      Adithye Menon, Daniel Mayper, Anirudh Govindhan, Noah Franks, Samantha Kiddy, Jordan Soberg, Benjamin Lumpp, Tristan Shahin
      Research Mentor(s): Alina Alexeenko, Kate Fowee, Steven Pugia

10:10 AI Powered Video Querying Over Cameras
      Bryan Jimenez, Anthony Yu Hou, Wen-Hsiang Shih
      Research Mentor(s): Felix Lin

Room: STEW 214C

9:30  Anisotropy of Cellulose Nanocrystal Thin Films
      Nolan A. Miller
      Research Mentor(s): Chelsea Davis

9:50  Effects of Varying Confluency on Schwann Cell Alignment in an Electric Field
      Mary Lang
      Research Mentor(s): Jianming Li, Spencer Bunn, Bhavani Gopalakrishnan
SESSION 3 : 10:30 am -11:30 am

Room: STEW 214A

10:30 Real-Time Facial Detector and Encryption on Embedded Devices
Isha Ghodgaonkar, Ziyad Alajmi, Jackson Moffet, Fischer Bordwell, Arnav Ballani
Research Mentor(s): Dr. Yung-Hsiang Lu

10:50 A comparative analysis of classifiers within the DP system
Xuan Hu, Paula Rodríguez-guez
Research Mentor(s): Elena E. Benedicto, Pin-Hsi Chen

11:10 Genetics of Soybean Leaf Morphology
Jamie Arabshahi
Research Mentor(s): Karen Hudson, Militza Carrero-Colon

Room: STEW 214B

10:30 Characterization of neutrophil aging during inflammation using a fluorescent Timer Protein
Mansoorah Kermani
Research Mentor(s): Ramizah Syahirah, Qing Deng, Alan Hsu

10:50 Extracellular signal-regulated protein kinases 1 and 2 (ERK1/2) signaling by non-canonical GPCR pathways
Angel Lin
Research Mentor(s): Richard van Rijn, Mee Jung Ko

11:10 Complement C3 contributes to status epilepticus induced hippocampal synaptic protein loss
Vishal Bhimarasetty
Research Mentor(s): Amy L. Brewster, Alexandra L. Sommer

Room: STEW 214C

10:30 Economic Feasibility of Low-Input Sod Production: A Financial Case Study
Sanchez Philocles
Research Mentor(s): Ariana Torres

10:50 Human and Robots in the Operating Room: Collaborating to save patients
David Wu
Research Mentor(s): Denny Yu, Jackie Cha

11:10 Fatigue in collegiate aviation
Erik Levin
Research Mentor(s): Dr. Flavio Mendonca
SESSION 4 : 11:30 am - 12:30 pm

Room: STEW 214A

11:30 Occupancy Sensing with Chair-Appended Thermocouples
Aayush Mathur, Nhi T. Khuu
Research Mentor(s): Dr. Brandon E. Boor, Danielle N. Wagner

11:50 Approximative Commutation of Matrices
Garrett Mulcahy
Research Mentor(s): Dr. Thomas Sinclair

12:10 Lightweight RISCV SoC with Dynamic Sparsity Optimizations for ML Applications
Vadim Vadimovich Nikiforov, Wengyan Chan
Research Mentor(s): Dr. Mark C. Johnson, Dr. Timothy Rogers, Dr. Matthew Swabey

Room: STEW 214B

11:30 Chemical modification of Reverse osmosis membranes for extended performance
Alyssa McNarney
Research Mentor(s): John Howarter

11:50 Devastating Effects of the Bubonic Plague Due to Poor Communication between Officials and the Public
Hetvi Desai
Research Mentor(s): Caitlin Fendley

12:10 Effects of Aging on Genes involved in Photoreceptor Survival
Kimaya Bakhle
Research Mentor(s): Dr. Vikki Weake, Juan Jauregui

Room: STEW 214C

11:30 Public Engagement after the Most Destructive and Deadliest Wildfire in California’s History: Drinking Water and Plumbing Safety
Qi Erica Wang, Tolu Odimayomi, Christian Ley, Yoorae Noh
Research Mentor(s): Dr. Andrew Whelton

11:50 Siblings’ Role in Infant and Young Child Feeding and Care in Rural Tanzania
Morgan Boncyk
Research Mentor(s): Nilupa Gunaratna

12:10 Teaching an Old Drug a New Trick: Repurposing Fenamic Acids to Treat Multi-Drug Resistant N. Gonorrhoeae
Amr Kais
Research Mentor(s): Dr. Mohamed Seleem
SESSION 5 : 12:30 pm - 1:30 pm

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12:30  DeepFake Video detection using Convolutional Neural Networks
       Austin Chen, Bekbolat Abdikanov, Edmund Chau, Prekshaa Veeraragavan, Tsung Lin Hsia, Tri Van Nguyen
       Research Mentor(s): Edward J Delp, Carla B Zoltowski

12:50  Earth Remote Sensing
       Renaissa Ghosh
       Research Mentor(s): James Garrison, Carla Zoltowski

1:10  Theoretical Assessment of Surface Waviness on Work Function
      Jacqueline Malayer
      Research Mentor(s): Dr. Allen Garner

Room: STEW 214B

12:30  Survey of Data Ownership and Access in Digital Agriculture Products
       Nakul Chhabra, Glaris Lancia Raja Arul
       Research Mentor(s): Ida B. Ngambeki, John Springer, Austin Toombs

12:50  Symbolism of the Violin in Russian Literature
       Caroline Peterson
       Research Mentor(s): Olga Lyanda-Geller

1:10  Enhancing Energy Efficiency of Membrane Distillation using Nanofluids
      Ryan Madhu Jacob, Prashant Menon
      Research Mentor(s): David Warsinger

Room: STEW 214C

12:30  System on Chip Extension Technologies
       Minh Tran, Christopher Priebe, Yupei Cao, Cole Stecyk, Radhika Jain, Vivekanandan Kulumani Rajarajan
       Research Mentor(s): Mark Johnson, Matthew Swabey, Jacob Covey

12:50  Development and Characterization of Orally Disintegrating Films Loaded with High Levels of Ibuprofen Nanoparticles
       Rohit Harapanhalli
       Research Mentor(s): Rutesh Dave, Ph.D., Sawani Talekar, Ph.D., Pal Thangam, Ph.D.

1:10  Improving Efficience of PhiV10 Production Using Regulatory Genes
      Theresa Bottorff
      Research Mentor(s): Bruce Applegate
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158 EHV Geology Website 

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161 An Anomaly Detection Model to Identify Changes in Student Classroom Performance 

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User Experiences of Persons with Disabilities on CATME Web Interface
Jiaxin Wang, Zhibo Hou, Jia Lin Cheoh, Siqing Wei, Behzad Beigpourian
Research Mentor(s): Prof. Daniel Ferguson, Prof. Matthew Ohland

Phase-Locked Loop Design for SoC Applications
Evelyn Ware, Matthew Olinde
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New England Aquarium Necropsy Sampling Techniques for Use in Marine Mammals
Gabrielle Weinert
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Testing of Physics Informed Neural Networks
Daniel Weld, Praneeth Medepalli, Zachery Berg, Niharika Bhardwaj
Research Mentor(s): Guang Lin

Investigating Place-Making at Northend Community Center or MatchBOX
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Annual Modulation of Muons in XENON1T
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Enhancing Sustenance through Food Quality Monitoring via Smart Tupperware
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Autonomous System Against Space Meteorites and Space Debris
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Bio-inspired Aerial Robots
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Integer-Only Machine Learning Benchmark for Low-Resource Devices
James Zampa, Tucker Swan
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Building and Running a Customer Support Function
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Pagewide Printer Characterization and Simulation
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Region of Interest Extraction for Image Quality Assessment
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Census Data Visualization
Allen Zheng
Research Mentor(s): Dr. Vetria Byrd

Investigating Gender Bias in First-year Engineering Classroom
Chuhan Zhou
Research Mentor(s): Behzad Beigpourian
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