

2019 IUPUI Student Research and Engagement Day

Schedule

CE Theater Level (Lower Level)

- 9:30 am - 11:00 am **Welcome**
Simon Atkinson, Vice Chancellor for Research
Nasser Paydar, IUPUI Chancellor
Keynote Address
Danny Brassell, California State University
The Power and Importance of Engaged Learning
Award-Winning Master Thesis Presentation
Miji Um
- 2:00 pm - 4:00pm **JagStart Idea Pitch Competition**

CE 1st Floor

- 10:30 am - 2:30pm **Live Music**
IUPUI Electronic Music Artists
German Student Brass Quintet: **BRAWÜSSimo**
- 11:00 am - 2:30pm **IUPUI Student Clubs and Chapters Fair**

CE 4th Floor

- 11:00 am - 1:30pm **Posters: Student Research, Study Abroad** - 450AB *
Scavenger Hunts - 450AB
- 11:00 am - 2:00pm **International Photo Booth** - 450C
- 11:00 am - 2:00pm **Creative Activities** – 405*
- 3:00 pm - 5:00pm **Life and Health Sciences Internship Program** - 450ABC

* Individual student presenters are listed on the following pages

IUPUI Student Research and Engagement Day

Student Presentation Schedule

Research, Room CE 450 AB

Session I 11:00 am – Noon

- P 1** **Bundles, Gillian** - Engineering Virtual Labs
- P 2** **Coleman, Blaire** - E-Learning Application Development Standards for a mobile Application: EASEL
- P 3** **Abufares, Sabria** - Effect of Mechanical Loading on Osteoblasts in vitro
- P 4** **Ekwealor, Arinze** - Manufacturing of NdFeB/Nylon-12 Composite Magnets
- P 5** **Gulhane, Abhilash** - Computational Modeling of Thermophysical Properties of Thermal Swing Coating
- P 6** **Hatch, Jennifer** - Effects of Estrogen Loss on Type I Collagen in Rat Tendon
- P 7** **Kussow, Seth** - Research to determine the optimal blend of recycled plastics and additives to be used in additive manufacturing
- P 8** **Parab, Prapti Niteen** - Designing, Fabricating & Testing a Device to Eliminate the Use of Anesthesia During External Beam Radiotherapy
- P 9** **Pohlman, Nicholas** - Residential Energy Management System
- P 10** **Thompson, Elysa** - Renewable Energy's Present and Future Outlook
- P 11** **Yang, Xuehui** - Additive Manufacturing of Polymer Derived Oxides
- P 12** **Almatooq, Ahmed** - Oral Surgical Scope Clamp Support Device
- P 13** **Capulong, Jiva** - Designing Food Prep & Management Apps for College Students
- P 14** **Zachary, Cochran** - PT-Symmetric Electronics with Meminductor
- P 15** **Canner, Samuel** - A role for lipid-lipid interactions in vitamin E's function as a membrane antioxidant
- P 16** **Gavankar, Rutuj** - Use of Digital Image Correlation to Determine the Position of an Object in Motion with High Precision
- P 17** **Kukoyi, Kiyomi** - Electrochemical Detection of Chlorate Using Paper-based Devices for Crime Scene Investigation
- P 18** **Mattingly, Grace** - Magnetically Levitating Magnet over Elliptical Hole in Superconductor
- P 19** **Peoples, John** - The Effect of Lipid Structure on Membrane Domain Formation
- P 20** **Reynolds, Rebekah** - Developing Synthetic Methods for the Preparation of Unnatural, Unsaturated Fatty Acids for Elucidation of the Structure and Functions of Desaturase and Acetylenase Enzymes
- P 21** **Phillips, Alexander** - Unsaturated Lipid Structure and Effects on Membrane Domain Formation
- P 22** **Rydberg, Magnus** - Towards low activity silica gas-solid 20 μm micropacked capillary gas chromatography
- P 23** **Seitz, Clayton** - Machine Learning Methods for Image-Based Transcriptomics at Single-Molecule Resolution
- P 24** **Boone, Joseph** - Using Dual Gene Knockdown of p65 (NF- κ B, RelA) and PDK2 via siRNA to increase pancreatic cancer radiation sensitivity
- P 25** **Chittajallu, Supriya** - Prostaglandin E2 Administered as a Radioprotectant Inhibits Development of Cardiovascular Delayed Effects of Acute Radiation Exposure
- P 26** **Christopher, Steve** - Validity and Reliability of the SC sprint Test
- P 27** **Davis, Symphony** - Researching a Pharmaceutical Treatment For Hydrocephalus
- P 28** **Coe, Kalee** - Repeated mild traumatic brain injury causes chronic glial activation in the cortex of adult male mice.
- P 29** **Evans, Eric** - Active Gaming: It's Not Just for Young People
- P 30** **Gaviola, Micaela** - Estimating the Effect of the Affordable Care Act on Unintended Teenage Pregnancies in the United States
- P 31** **Goldfarb, Micah** - Patient Perceptions of Erosive Tooth Wear
- P 32** **LaCombe, Jonathan** - Dyrk1a-Related Appendicular Skeletal Phenotypes in Ts65Dn Down Syndrome Mice Arise Prior to Adolescence
- P 33** **Mahal, Veer** - Understanding variable reduction of a biophysically realistic cortical network model
- P 34** **Meek, Anthony** - Performance of a dexterous timing-based video game with complementary transcranial direct current stimulation of the primary motor cortex and the cerebellum
- P 35** **Mellene, Kelly** - Deviating from the Standard Protocol Meal in Gastric Emptying Studies Effect on Gastric Emptying Rates
- P 36** **Ovalle, Gabriela** - Causes of Sudden Cardiac Death in Central Indiana from 2013-2017
- P 37** **Perez, Joselyn** - Variant Target Effects on Motor Learning through tDCS
- P 38** **Rearden, Brittney** - Indiana Jones and the Temple of Food: The effect of Peer Teaching on Assessment Scores
- P 39** **Roy, Josh** - Exploring the Need for Quantifiable Soft Tissue Manipulation in Experienced Manual Therapists

- P 40 Sanchez, Juan** - Synaptic Expression of NP2 and AMPA receptor in contextual and cued fear conditioning
- P 41 Sefcsik, Victoria** - Issues in Tissue Processing and Identification for Genomic Sequencing in Riley Hospital for Children Pediatric Sarcoma Patients
- P 42 Shields, Priya** - hPSC-derived RGCs Display Target Specificity Towards dLGN Explants
- P 43 Tariq, Dua** - Design, Build, and Test Nanoparticle Delivery Systems in Head and Neck Cancers
- P 44 Thomas, Jared** - Sexual Dimorphism in Skeletal Abnormalities in Down Syndrome Mice
- P 45 Valdez, Sinai** - Short-term pharmacologic inhibition of RAGE suppresses bone
- P 46 Weiss, Justina** - Accuracy of Attenuation Correction in SPECT/CT, Myocardial Perfusion Imaging
- P 47 Winter, Christian** - The Crosstalk Between Neurons and Osteocytes for Mutual Growth
- P 48 Wolfe, Mackenzie** - Cerebellar tDCS improves performance of a timing-based video game more than M1 tDCS or practice alone
- P 49 Audu, Aishat** - Clinician Perspective-Taking in Ethics Consultation
- P 50 Jackson, Rachel** - Sleeping Less and Eating More: Is Insomnia Associated with Increased Attention to Food Cues?
- P 51 Williams, Jamani** - Perceptions of volunteering as a means of career advancement
- P 52 Strzeszkowski, Sasha** - Mental Accounting in the Gig Economy
- P 53 Cunningham, Ronald** - When Nice White Ladies Attack: The White Female Neoliberal Assault on Black Male K-12 Educators
- P 54 Ewing, Payten** - How Paper and Digital Children's Books Support Student Understanding
- P 55 Evans, Renita** - Active Gaming: It's Not Just for Young People
- P 56 Lance, Howard** - Examining the Effectiveness of a Community Lecture on Black Racial Identity
- P 57 Bingham, Jerome** - 1890's Dystopian Fiction versus 1960's Utopian Heroes: A Study of the Time Machine and Doctor Who
- P 58 Bidwell, Elzbieta** - Unforgetting Poland's Forgotten Survivors: Critical Reflection on Survivor Narratives
- P 59 Dubrovensky, Toni** - Uplifting and Oppressive: Black Women's Religious Identities in Corporate America
- P 60 Hurley, Jennifer** - Unraveling the Tapestries
- P 61 Meschi, Maria** - Engaging with Urban Congregations: People-Centered Design, Health Equity, and the Healthy Indiana Plan
- P 62 Alvarez, Aliyah** - The Art of Mexico's Muralism and The Artists' Who Painted Them
- P 63 Smith, Jaden** - Comparative Analysis of the Educational Systems of the United States and Costa Rica
- P 64 Hargrove-Wiley, Ebony** - Role of RhoX10 in Ovarian Cancer
- P 65 Osborn, Emily** - Sabanero Culture and Farming in Guanacaste, Costa Rica
- P 66 Pollard, Lily** - Social Welfare in Costa Rica: Exploring the Healthcare and Education Systems

Engineering and Technology

Physical Sciences

Health and Life Sciences

Social and Behavioral Sciences

Business

Education

Arts and Humanities

Study Abroad

Research, Room CE 450 AB

Session II 12:30 – 1:30 pm

- P 1 **Bansode, Swapnil** - Multibody dynamics modeling in Formula SAE handling analysis
- P 2 **Collier, Christian** - Mixed Reality For CNC Machine Training
- P 3 **Dhamade, Harshal** - Creep Simulation of 3D Printed Inconel718
- P 4 **Dhulipalla, Anvesh** - Modeling of Electron Beam Physical Vapor Deposition Process for Fabricating Thermal Barrier Coating
- P 5 **Dube, Tejesh** - Metal Organic Framework and Zeolite Conformal Coatings for Emission Control
- P 6 **Meng, Lingbin** - Process Optimization of Laser Powder Bed Fusion Using Gaussian Process Based Machine Learning Model
- P 7 **Muzquiz Garcia, Maria** - Parametrizing Low Frequency Alternating Current Nerve Block
- P 8 **Nisi, Timothy** - Design, 3D-Print, and Test Modular Mouthpiece for Effective Radiation Therapy
- P 9 **Ochoa Medina, Celia** - UV-NBS Photocrosslinking of Antibodies Utilizing Various Light Intensities
- P 10 **Parker, Evan** - Localization of Magnetic Nanoparticles in Ophthalmologic Surgery
- P 11 **Skaggs, Cayla** - The Effects of Raloxifene-Analog on Murine Bone Architecture and Fracture Toughness
- P 12 **Sikder, Orthi** - Room Temperature Quantum Memory Array
- P 13 **Whitaker, Taylor** - Photobiomodulation of Fibroblasts
- P 14 **Zhang, Jian** - Removal and Repair Methods for Damaged Thermal Barrier Coatings
- P 15 **Adebowale, Iyunade** - LC-MS/MS Detects Urobilinoids from Feces in Fly Guts
- P 16 **Dawodu, Olabode** - Exploring Small Molecule Interactions with APE1
- P 17 **Asher, Travis** - Maximal results with minimal effort: blow flies as vertebrate resource indicators
- P 18 **Gordon, Heather** - Analysis of Common Adulterants of Cocaine Using Gas Chromatography-Vacuum Ultraviolet Spectroscopy
- P 19 **Nealy, Cameron** - Hydroclimate Trends in the Midwest During the Transition from the Late Glacial Period to the Modern Holocene Era Revealed Through Analysis of Lacustrine Sediments
- P 20 **Powell, Lindsey** - A New Cretaceous-Paleogene Impact Spherule Locality from the Hell Creek Formation in South Western North Dakota, USA
- P 21 **Simpson, Jonathon** - Site-Directed Mutagenesis of a Fatty Acid Elongase Condensing Enzyme
- P 22 **Stinnett, Maggie** - Development of Aminoxy Reagents for Analysis of Carbonyl-Containing AHAS and ALS Biosynthetic Products
- P 23 **West, Payton** - Analysis of Trace Explosives Using Gas Chromatography/Vacuum Ultraviolet Spectroscopy
- P 24 **Wood, Jacob** - Identification of amino acids essential to the structure/catalytic properties of ELOs through site directed mutagenesis
- P 25 **Echegaray, Amanda** - LiftMe-A Motivational Application to Support Underrepresented Students in Informatics
- P 26 **Fischer, Payton** – Modeling Suitable Habitat for the Common Mudpuppy (*Necturus maculosus maculosus*) in Indiana, USA Utilizing Regional Data and Environmental DNA
- P 27 **Lee, Jeongwon** - Quantitative Analysis of Stereocilia Lengthening in Mice During Development
- P 28 **Aidoo, Opeibea** - Perinatal Expression of DYRK1A in Male and Female Down Syndrome Mice
- P 29 **Allman, Elysa** - Establishment of the Role of Aberrant Tau Oligomer Interactors on Toxicity In Vivo
- P 30 **Allsop, Anna** - Influence of Astrocytes on Retinal Ganglion Cell Maturation and Disease When Derived From Human Pluripotent Stem Cells
- P 31 **Blackwell, Matthew** - Identifying Influential Trisomic Genes in Addition to Dyrk1a that Contribute to Skeletal Phenotypes Found in Down Syndrome
- P 32 **Borden, Anne** - Psychological Factors in Exercise Goal Attainment
- P 33 **Cadle, Rachel** - Preparation of Bioinks and Cells for 3D Bioprinting
- P 34 **Dent, Shaquitta** - The effect of music on virtual reality induced postural sway
- P 35 **Devanathan, Nirupama** - Using Lipidomics to Identify Biomarkers for Hyperglycemic Onset Breast Cancer
- P 36 **Fagnon, Mahussi** - Comparing Thromboelastography (TEG) and Turbidity Measurements to Monitor Clot Formation of Native and FITC-Tagged Fibrinogen
- P 37 **Gallardo, Edgar** - Differential Effects of Varying Doses of Dietary Nitrate on Muscle Function and Blood Pressure in Older Subjects
- P 38 **Patton, Shelby** - Evaluating Online Information on Dysmenorrhea
- P 39 **Goss, Dante** - Skeletal Muscle Fatigue Curve Analysis Using MATLAB
- P 40 **Gritt, Jonathan** - Determining the Role of Amot130 NTD-ACCH Association in Regulating Membrane Association
- P 41 **Hartman, Clarissa** - An Optimized Method of DNA Extraction from FTA™ Classic Card for Downstream Sequence Analysis

- P 42 Johnson, Crystal** - Spinophilin Protein-Protein Interactions in the Striatum Subsequent to Psychostimulant Administration
- P 43 Jones, Jia** - The Effects of Transcranial Direct Current Stimulation on Conditioned Pain Modulation in Healthy Older Adults and Healthy Younger Adults
- P 44 Lentsch, Kelly** - Genome Engineering Human Stem Cells for In Vitro Modeling of Neurodegenerative Diseases
- P 45 Lindsay, Allison** - Assessment of TLR-2 Expression in Salivary Epithelial Cells for Early Identification of Periodontitis
- P 46 Martin, Christina** - The Genomics of Development Rate Variation in *Chrysomya rufifacies* and *Phormia regina*
- P 47 Powlen, Kristina** - Potential Role of Sire Age Affecting Birth Weight of Offspring in Down Syndrome Mice
- P 48 Ramos Solis, Nicole** - TLR3 deficiency exacerbates the loss of epithelial barrier function during genital tract *Chlamydia muridarum* infection
- P 49 Roberts, TyLynn** - Determining accurate DYRK1A Levels in Down Syndrome mice
- P 50 Sears, Seth** - Determining the Residues that Mediate Angiotensin Coiled-Coil Homology Domain Vesicle Fusion Activity
- P 51 Swafford, Katie** - Analysis of Osteoporosis Research
- P 52 Ulrich, Carter** - Effect of Nicotine on *Fusobacterium nucleatum* Biofilm Formation on Titanium Surfaces
- P 53 Velchek, Madison** - Optimizing Aerosolized Intranasal Drug Delivery at the Preclinical Level Using Multifunctional Nanocarriers and Advanced Neuroimaging
- P 54 Thomas-Morris, StaShanna** - Decreasing infant mortality and Increasing Prenatal Care
- P 55 Scriven, Kristin** - From Summer Orientation to Spring Finals: Tracking First-Year IUPUI Students as they Transition into College to Monitor their Utilization of Resources, Level of Involvement and Engagement, and Overall Success
- P 56 Chavan, Swapnali** - Older Women and Discrimination at Work
- P 57 Anderson, Madison** - Dockless Scooter-Sharing in Indianapolis
- P 58 Sheehan, Clare** - Revisioning the Rococo through the Art of Maurice Quentin De La Tour
- P 59 Beliles, Kerby** - Women in STEM Receive More Backlash After Delivering Negative Feedback
- P 60 Bogan, Brittany** - Differences in Effects on Behavior of Silencing the Medial Amygdala-Lateral Septum Projection in Male and Female Wistar Rats
- P 61 Bullard, Ciara** - The Science of Black Hair
- P 62 Kline, Gabrielle** - Transferrable skills gained from experience as a peer-leader in a PLTL program: Development of a quantitative
- P 63 Kriech, Amber** - The Association Between Bullying, Weapon Carrying, and Mental Health – Results from a Nationally Representative Survey of High School Students
- P 64 Di Martino, Daniel** - Inflationary and Output Effects of Price and Currency Exchange Controls in Venezuela
- P 65 Revilla, Rebecca** - Reliability and Validity of The Behavioral Indicator of Resiliency to Distress Task in Community Adolescents

Engineering and Technology

Physical Sciences

Health and Life Sciences

Arts and Humanities

Social and Behavioral Sciences

Creative Activities, Room CE 405

Session 1 11:00 am – Noon

Musical Performances

Asher, Galileo - Performance of “Weird Breakfast” (2019) for Electronics

Chaubey, Harry - Standalone Binary

Lamb, Michael - Creating a Modular, Interactive Music Experience Using Environmental Sensors and Machine Automation

McConnell, Shannon - The Circle (musical performance on live technology-based instruments)

Parker, Ben - 84 (musical performance on live technology-based instruments)

Sridharan, Srikrishnan - Electro-Organic Live Performance

Turley, Chris - The Sight of Sound

Session 2 12:15 pm – 2:00 pm

2D- and 3D- Art, Immersive Interactions, Posters

Akre, Gabriel - Expression Observed

Chase, Kionna and Knauber, April - Casting in Metal

David, Arun and Edwin, Berty - Gesture based Controller for Real-time Audio Processing

Elliot, Jacob - Timbre Corrective Brass Instrument Mute

Jandernoa, Andrea - Sugar Works: an artistic exploration of diabetes

Knauber, April - Multiple Sensory Sculptures

Koontz, Madysen L - Found Materials Assemblage

Mendoza, Abigail L - Sino (Who?)

Schulte, Christine - The Islands of Langerhans – A Serious Game/Simulation

Stille, Joelle A - Modern Alchemy: Transmuting Complex Difficult Emotions into Social Gold

Vice, Matthew C - Controlling Analog Synthesizers Over Local and Wide Area Networks

Wang, Xiaochang - A Pedagogical Approach to Undergraduate Level Sound Design

Williams, Paul - Utilizing Digital Fabrication in my Process

Williams, Stephanie R - A Changed Landscape

Wright, Samantha - Portal