IUPUI Research Day 2014
Research and Creative Activity Matter: From IUPUI to the World

April 11, 2014
IUPUI Campus Center
9:30 AM – 3:00 PM

Research Frontiers Distinguished Lecture:

Featuring:
Richard Blanco

Acclaimed Presidential Inaugural Poet and Practicing Engineer
Born in Madrid and raised in Miami, Blanco earned a B.S. in civil engineering and an M.F.A. in creative writing from Florida International University. A practicing engineer and writer, Blanco has taught at Georgetown University and American University, among other institutions. His books, in order of publication, are: City of a Hundred Fires (1998), Directions to the Beach of the Dead (2005), Looking for the Gulf Motel (2012), One Today (2013), Boston Strong (2013), and For All of Us, One Today: An Inaugural Poet’s Journey (2013). Blanco served as the fifth inaugural poet of the United States, performing the original poem “One Today.”
Welcome

Dear Colleagues,

I would like to extend a personal welcome to each of you who are joining us at the 2014 IUPUI Research Day, on April 11th. Our theme this year is Research and Creative Activity Matter: From IUPUI to the World. Held at the Campus Center, this daylong celebration of IUPUI research and creative activity begins with a morning plenary session from 9:30 am to 11:00 am in the lower level theatre. This session starts with the announcement of the 2014 Research Frontiers Trailblazer Award recipients, who will make short presentations, followed by a student presentation, and the keynote presentation by Mr. Richard Blanco, President Obama’s 2013 Inaugural Poet. Mr. Blanco is internationally known as a poet, author, and civil engineer. He travels the world, inviting audiences to reconnect to the heart of the human experience and all of its beautiful diversity.

Research Day events also include two poster sessions, showcasing the innovative research of our faculty, staff, and graduate, professional and undergraduate students. New this year is "JagTalks", a series of short but dynamic presentations that illuminate the breadth of research and creative activity happening at IUPUI and beyond. Jag Talks is open to all Research Day attendees.

Research Day is a great way for IUPUI faculty, staff, and students, and their academic, industrial, governmental partners, along with the broader community, to learn more about the research enterprise at IUPUI, explore new collaborations, and lay the foundation for new partnerships. This is truly an exciting time for research at IUPUI.

Sincerely,

Kody Varahramyan
Vice Chancellor for Research

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Vice Chancellor for Research
IUPUI Research Day 2014

Program at a Glance

IUPUI Campus Center Theater

<table>
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<th>Time</th>
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<tr>
<td>9:30 am - 9:35 am</td>
<td>Opening Remarks and Welcome – Theater Lower Level</td>
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<tr>
<td>9:35 am - 9:40 am</td>
<td>Announcement of 2014 Trailblazer Award Winners</td>
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<tr>
<td>9:40 am - 10:10 am</td>
<td>Presentations by the 2014 Trailblazer Award Winners</td>
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<tr>
<td>10:10 am - 10:20 am</td>
<td>Student Speaker Presentation: Kendrea Joy Williams</td>
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<tr>
<td>10:20 am - 11:00 am</td>
<td>Keynote Presentation by Mr. Richard Blanco</td>
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<tr>
<td></td>
<td>“Becoming American: An Inaugural Poet’s Journey”</td>
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IUPUI Campus Center 4th Floor

<table>
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<th>Time</th>
<th>Event</th>
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<tr>
<td>11:00 am - 11:10 am</td>
<td>Move to Poster Session I - Room 450 A, B, C</td>
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<tr>
<td>11:10 am - 12:40 pm</td>
<td>Poster Session I</td>
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<tr>
<td>12:40 pm - 1:10 pm</td>
<td>Switch to Poster Session II / Break</td>
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<tr>
<td>1:00 pm - 2:30 pm</td>
<td>&quot;Jag Talks&quot; Research and Creative Activity Presentations – Room 405 (See inside back cover for speaker information.)</td>
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<tr>
<td>1:10 pm - 2:40 pm</td>
<td>Poster Session II - Room 450 A, B, C</td>
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</tbody>
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Faculty and Student Research Posters and Exhibits – Session I
11:10 am – 12:40 pm

ARTS AND HUMANITIES

1. Intersections: An Installation/Sculpture
   Anila Quayyum Agha
   Herron School of Art & Design

2. Optics and Visio Dei: Interpretations of Female Mystic Art
   Tory L. Schendel
   Herron School of Art and Design
   Mentor: Jennifer Lee, Herron School of Art and Design

3. Nature in 19th Century German Literature
   Chad L. Jones
   Liberal Arts
   Mentor: Thorsten Carstensen, Liberal Arts

4. The New Oxford Shakespeare Project at IUPUI
   Gary Taylor, Terri Bourus
   Florida State University, Liberal Arts,
   Oxford University

5. Memory and Identity on Display in a “Family Museum”: A Video Poster
   Elizabeth Wood, Erik Peterson
   Liberal Arts

6. The Genetic Portrait Project
   Stefan Petranek
   Herron School of Art and Design

7. Arabophobia and Arab-Conscious Hip-Hop
   Ryan Arron
   Liberal Arts
   Mentor: Jonathan Rossing, Liberal Arts

8. Ignorance is not Innocence: The Social Health Association of Indiana and Adolescent Sex Education, 1907-2007
   Angela Bowen Potter, Philip V. Scarpino
   Liberal Arts
   Mentors: Philip V. Scarpino, School of Liberal Arts; Michael Howe, Social Health Association of Indiana

   Aaron Ganci
   Herron School of Art and Design

10. Multidisciplinary Viewpoints on Global River Systems
    Jeremy Maxwell, Andrew Townsend
    Liberal Arts
    Mentor: Jason Kelly, Liberal Arts

PUBLIC AND ENVIRONMENTAL AFFAIRS

11. Price Ceiling: The Charitable Status of Fee-Charging Nonprofits
    Robert Katz
    Robert H. McKinney School of Law, Lilly Family School of Philanthropy

12. Fostering Public Service by Linking Benefits to Community, Campus, and Students: A Case Study
    Laura Littlepage
    Public and Environmental Affairs

13. Campus Kitchen Project at IUPUI
    Daniel W. Remington, Nancy Barton
    Public and Environmental Affairs, Physical Education and Tourism Management
    Mentor: Deborah Ferguson, IUPUI Office of Sustainability
14. The Interactive Effects of Alcohol Cravings, Cue Reactivity, and Urgency on College Student Problematic Drinking
Kenny A. Karyadi, Melissa A. Cyders
Science

15. The Effect of Alcohol Consumption History on Sensitivity and Acute Functional Tolerance to the Ataxic Effects of Alcohol in C57Bl/6J Mice
William R. Fetzer, Brandon M. Fritz, Stephen L. Boehm II
Science
Mentors: Stephen L. Boehm II, Brandon M. Fritz, Science

16. Staff Morale at Four County Counseling Center (4CCC) in Logansport, Indiana
Alicia M. Quash, Ruthie Firmin, Michelle P. Salyers
Science
Mentors: Michelle Salyers, Ruth Firmin, Science

17. Transforming Synergy Care Delivery Model into an Effective Nursing Shift Report Tool
Karen Denise Kerley, Mikyoung Lee
Nursing
Mentor: Mikyoung Lee, Nursing

18. Benefits of Integrated Care in Mental Illness Management
Kyle L. Benbow, Kelsey Bonfils, Michelle Salyers
Science
Mentors: Michelle Salyers, Kelsey Bonfils, Science

19. Introducing Biology Undergraduates to Authentic Research through Grand Challenges in Global Health: Examining Environmental Factors that Influence the Development of Zebrafish Embryos
Swapnalee Sarmah, Grady Chism, Martin Vaughan, James A. Marrs, Kathleen A. Marrs
Science
Advisors: James A. Marrs, Kathleen A. Marrs, Science

20. Teacher Evaluation in the State of Indiana: Alignment Efforts in University Based Teacher Instruction
Caris Bianne Daily, Rose Jackson, Charlie Feldhaus, John Buckwalter
Education, STEM Education Research Institute (SERI), Engineering and Technology

21. Determining Evidence Based Properties of M.O.P. Civic Education School Discipline Program
Carolyn Gentle-Genitty, Isaac Karikari, Christy Gauss, Tracy Cudjoe, Susan Nichter
Social Work

22. From Course “Management” to Course “Networking” - IUPUI CyberLab Engages Students in Developing CourseNetworking (thecn.com) for the World
IUPUI CyberLab
Engineering and Technology

23. Toward a Relevant Policy Studies and Civics Coursework for Grades 9-12
Troy Crayton, Cathy Bhathena
Education
Mentor: Brendan Maxcy, Education

Silvia Garcia, Teresa Bennett, Christine Fitzpatrick
IUPUI Solution Center
25. **Author’s Rights to Share Scholarship: A Survey of IUPUI Faculty Attitudes**  
   Jere Odell, Emily Dill, Kristi Palmer  
   IUPUI University Library, University Library  
   IUPUC

26. **Idea Density Correlates with Prior Knowledge**  
   Chanel Johnson  
   Engineering and Technology  
   Mentor: Jomo Mutegi, Education

27. **Employment and Marriage Market Tradeoffs in an LGB Sample**  
   Doug Ziebarth, Peggy Stockdale, Megan Redhead, Milena Petrovic  
   Science  
   Mentors: Peggy Stockdale, Milena Petrovic, Science

**BUSINESS**

28. **Audemes: Exploring the Market Potential of a Sound Based Educational Tool**  
   Christopher Meyer, Sheheryar Ahsan, Vinayak Gupta, Abigail Parham, Harsh Patel, Mariam Qureshi  
   Public and Environmental Affairs, Informatics and Computing, Science, Kelly School of Business  
   Mentor: Karen F. White, Office of the Vice Chancellor for Research

29. **Is China Reshaping the African Landscape?**  
   Gabrielle Rayner, Darrell E. Brown  
   Kelley School of Business  
   Mentor: Darrell E. Brown, Kelley School of Business

30. **An Analysis of Financial Performance Indicators based on Three Types of Water Utility Ownership in the State of Indiana**  
   Matt Nafziger, Dan Koo  
   Engineering and Technology

**SIGNATURE CENTER INITIATIVE**

31. **IUPUI Center for Cancer Population Analytics and Patient-Centered Informatics**  
   David A. Haggstrom, Josette Jones, Layla Baker  
   Roudebush VAMC, Medicine, Regenstrief Institute, Informatics and Computing

32. **Pancreatic Cancer Signature Center: Providing the Research Tools Necessary to Advance Pancreatic Cancer Patient Care**  
   Murray Korc, Crystal Munson, Mark R. Kelley  
   Medicine

33. **Center for Urban Health: Enhancing the Health of Cities by Focusing on Communities and the Environment**  
   Gabriel Filippelli, Daniel Johnson, Sarah Wiehe, Dennis Watson  
   Science, Liberal Arts, Medicine, Richard M. Fairbanks School of Public Health

34. **Airway Dimensions and Pathologies of Trumpet Players vs. Non-Trumpet Players**  
   KS Kula, A Imburgia, S Halum, M Van Dis, AA Ghoneima  
   Dentistry, Medicine

35. **We All Have To Do It: Purpose and Process of Literature Review**  
   Deborah Lafata, Anne Weiss, Rachel Thelin, Sheila Suess Kennedy  
   IU Center for Civic Literacy, School of Public and Environmental Affairs
42. Topology Optimization and 3D Printing of a Lightweight Protective Robotic Vehicle Structure
Kerri A. Charlton, Clayton Kello
Engineering and Technology
Mentor: Andres Tovar, Engineering and Technology

43. Design of Radio Communication Control System for Robotic Applications
Tim Allen
Engineering and Technology
Mentor: Andres Tovar, Engineering and Technology

44. The Internet Based Electronic Voting Enabling Open and Fair Election
Xukai Zou, Huian Li, Yan Sui, Wei Peng, Feng Li
Science, Engineering and Technology, UITS

45. Revocable, Interoperable and User-Centric (Active) Authentication Across Cyberspace
Yan Sui, Xukai Zou, Eliza Y. Du, Feng Li
Science, Engineering and Technology, Qualcomm

46. Navigating the Aural Web: Augmenting the User Experience for Visually Impaired and Mobile Users
Davide Bolchini, Prathik Gadde, Corey Johnson, Jennifer George-Palilonis, Romisa Rohani Ghahari
Informatics and Computing

47. Using Course Networking to Teach English Globally
Jennifer Hashem
Liberal Arts
Mentor: Mengyuan (Alice) Zhao, Sarah Zike, CourseNetworking, LLC
48. Effects of Coating on Die Components During Aluminum Extrusion Process
Tushar Bakhtiani, Jing Zhang, Hazim El-Mounayri
Engineering and Technology
Mentors: Jing Zhang, Hazim El-Mounayri, Engineering and Technology

49. Self-Healing Corrosion Resistant Coatings
Alan Jones, Lujie Ye
Engineering and Technology
Advisor: Alan Jones, Engineering and Technology

50. Development of a Microfluidic Gas Generator From an Efficient Film-Based Microfabrication Method
Y. Cao, M. R. Zamani Farahani, J. Bontrager-Singer, L. Zhu
Engineering and Technology
Mentor: Likun Zhu, Engineering and Technology

51. Study on the Structural, Thermal and Mechanical Properties of LiCoO₂ Using First Principles Method
Linmin Wu, Jing Zhang
Engineering and Technology
Mentor: Jing Zhang, Engineering and Technology

52. Phase Transition and Thermodynamic Properties Study of Zirconia Using First Principles Method
Yi Zhang, Jing Zhang
Engineering and Technology
Mentor: Jing Zhang, Engineering and Technology

53. Energy Return of Different Designs of Track Spikes
Rafael Bahamonde, Jefferson Streepey, Lance Goyke, Adrian Myers, Alan Mikesky
Physical Education and Tourism Management, Center for Physical Activity in Wellness and Prevention, Purdue University
Mentors: Alan Mikesky, Rafael Bahamonde, Jefferson Streepey, Physical Education and Tourism Management

54. Nanotechnology Research, Education, and Outreach by the Integrated Nanosystems Development Institute (INDI)
Mangilal Agarwal, Maher Rizkalla, Christoph Naumann, Ricardo Decca, Hazim El-Mounayri, Frank Witzmann
Engineering and Technology, Science, Medicine

55. Simulation of Heat Generation in a Reconstructed LiCoO₂ Cathode during Galvanostatic Discharge
Bo Yan, Zhibin Song, Cheolwoong Lim, Likun Zhu
Engineering and Technology
Mentor: Likun Zhu, Engineering and Technology

56. Advanced Materials for Rechargeable Lithium-Sulfur Batteries
Yongzhu Fu
Engineering and Technology

57. Paper-Based Flexible Lithium-Ion Batteries
Nojan Aliahamd, Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan
Integrated Nanosystems Development Institute, Engineering and Technology
Mentors: Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan, Engineering and Technology
58. Beyond Lithium Ion: Lithium Metal Batteries with High Specific Energy and Long Cycle Life
   Jian Xie
   Engineering and Technology

59. Combined Generation and Optimization of a Wind-Solar-Battery Power System
   Dan Shen, Afshin Izadian
   Engineering and Technology
   Advisor: Afshin Izadian, Engineering and Technology

60. Chemical and Phase Transformation From Vanadium Sulfide to Oxide Via a New Chemical Route for the Synthesis of $\beta'$-LixV2O5 as a High Performance Cathode
   Wen Chao Lee, Nina Mahootcheian Asl, Youngsik Kim, Likun Zhu
   Engineering and Technology
   Mentor: Likun Zhu, Engineering and Technology

61. Geometric Characteristics of 3D Reconstructed Anode Electrodes of Lithium Ion Batteries
   Cheolwoong Lim, Bo Yan, Leilei Yin, Likun Zhu
   Engineering and Technology, Shanghai JiaoTong University China, University of Illinois
   Mentor: Likun Zhu, Engineering and Technology

62. Drug Discovery Through Drug Perturbation Pathway Modeling and Network Analysis
   Tung Ho, Krista Hakola, Pragat Wagle, Evan Rouse, Mehdi Shadmand, Juyeon Han, Sara Ibrahim
   Science, Engineering and Technology, Butler University
   Mentors: Jake Chen, Xiaogang Wu, Informatics and Computing

63. When Your Boss Supports You During Your Internship: The Impact Co-op Supervisor Support on Engineering Students’ Attitudes and Career Outlook
   Toby Egan, Lila Carden, Tomika Greer
   Engineering and Technology, University of Houston

PHYSICAL SCIENCES

64. Exploring the Roots of a Massive Volcanic Eruption - Geochemical Comparison of Intrusive Rocks and Overlying Volcanic Rocks
   Joseph Robert
   Science
   Mentor: Andy Barth, Science

65. Anthropogenic Transformation at Angel Mounds: Construction, Chronology and Context for Mounds A and F
   Jeremy J. Wilson, G. William Monaghan
   Liberal Arts; Arts and Sciences, IUB

66. Solvent Azeotropes in Art Conservation
   Megan Carrison, John Goodpaster, Gregory Dale Smith
   Science, Indianapolis Museum of Art
   Mentor: John Goodpaster, Science

67. $^1$H NMR of Deep Eutectic Solvents
   J. Lincoln Wallis, Liel Sapir, Daniel Harries, Horia I. Petrache, Bruce D. Ray
   Science, Hebrew University, Israel
   Mentors: Horia I. Petrache, Bruce Ray, Science

68. Elimination of TFA-Mediated Cleavage in Distributed Drug Discovery
   Jon Carnahan, William Scott, J. Geno Samaritoni, Martin O’Donnell
   Science
   Mentors: Martin O’Donnell, William Scott, Science
69. Finding Active Ingredients in Pharmaceuticals by UV Spectrophotometry
Gabriela Figueroa, Luis A. Palacio, Bruce D. Ray, Horia I. Petrache, Alfredo Lopez-Yunez
Science, Health and Science Innovations, Inc., Alivio Medical Center
Mentor: Luis A. Palacio, Health and Science Innovations, Inc.
Advisors: Alfredo Lopez-Yunez, Alivio Medical Center; Bruce D. Ray, Horia I. Petrache, Science

70. Fluorescence Measurements of Aromatic Amino Acids in the Presence of Lipid Membranes
Sirine Khelifi, Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache
Science
Mentors: Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache, Science

71. Using Mathematics to Investigate Integrrin Activation in Inhibited Cell Migration
Lauren Lembcke, Amin Afrazi, David Hackam, Julia Arciero
Science, University of Pittsburgh
Advisor: Julia Arciero, Science

72. Investigating the Effects of Size and Shape of Anisotropic Nanostructures on the Molecular Sensor Response
Sandra Ekoma, Gayatri K. Joshi, Rajesh Sardar
Science
Mentor: Rajesh Sardar, Science

73. Supporting Healthy Lifestyles of Liver Transplant Candidates and Recipients
Jessie Halle, Katelyn LeMond, Irene Robinson, Rebecca Sloss
Health and Rehabilitation Sciences
Advisors: Patricia Scott, Emily Winslow, Health and Rehabilitation Sciences

74. Examining Influential Factors in Providers’ Chronic Pain Treatment Decisions: A Comparison of Physicians and Medical Students
Charnelle A. Free, Nicole A. Hollingshead, Samantha Meints, Stephanie Middleton, Adam T. Hirsh
Science
Mentor: Adam T. Hirsh, Science

75. Primary Care Patients who Complete Colonoscopy after Referral and Those Who Do Not: Are they Different?
Kemi Olofinkua, Susan Rawl, Barbara Habermann, Shannon Christy, Susan Perkins, Yan Tong, Netsanet Gebregziabher, Michelle Mabis, Connie Krier, Amit Mirchandani, Hala Fatima Nursing, University of Delaware, Purdue University, Simon Cancer Center
Mentor: Susan Rawl, Nursing

76. Skills Included in Self-Management Interventions to Help People with Chronic Kidney Disease
Debbie E. Drenzyk, Marcy R. Gardner, Janet L. Welch
Nursing
Mentor: Janet L. Welch, Nursing

77. Secretory Activity of Human Cyst Fluid Isolated From Polycystic Kidney Disease Patients
Gabriel M. Martinez, Bonnie L. Blazer-Yost
Science
Mentor: Bonnie L. Blazer-Yost, Science

78. Effects of Thrombopoietin (TPO) on Longitudinal Mouse Hind Limb Crush Injury Model
Greg Rothchild, Kelsey Lipking, Todd McKinley, Melissa A. Kacena, George E. Sandusky
Medicine
Mentor: George E. Sandusky, Medicine
79. Application of Salubrinal for Bone Fracture Healing  
Hiroki Yokota, Chien-Chi Lin  
Engineering and Technology

80. A Three-Dimensional Analysis of Maxillary Sinus Congestion in Unilateral Cleft Lip and Palate  
Lindsay Hale, John Starbuck, Ahmed Ghoneima, Katherine Kula  
Dentistry, Science  
Mentors: Katherine Kula, John Starbuck, Dentistry

81. Cutaneous Silent Period Characteristics are Dependent on the Organization of Upper Limb Muscles  
Nathan R. Eckert, Anthony W. Meek, Krista Smith, Jason C. Williams, Zachary A. Riley  
Physical Education and Tourism Management, Public Health  
Mentor: Zachary A. Riley, Physical Education and Tourism Management

82. Initial KAATSU Cuff Tightness: Effect of Limb Anthropometrics on Blood Flow Restriction  
Adam Heavrin, Anthony Meek, Neil A Segal, Alan E Mikesky  
Physical Education and Tourism Management, University of Iowa  
Mentor: Alan E Mikesky, Physical Education and Tourism Management

83. KAATSU Cuff Tightness and Limb Anthropometry: Effect on Blood Flow Restriction  
Anthony Meek, Adam Heavrin, Neil A Segal, Alan E Mikesky  
Physical Education and Tourism Management, University of Iowa  
Mentor: Alan E Mikesky, Physical Education and Tourism Management

84. Structure and Mechanics of Mammalian Prehensile Tail Vertebrae  
Jeffery Joll, Joseph E. Rupert, Jeremy Mihajlovich, Jason M. Organ  
Engineering and Technology, Medicine  
Mentor: Jason Organ, Medicine

85. Defining the Roles of Various Lysines and Arginines in Amot Lipid Binding  
L’eCelia Hall, Ann Kimble-Hill, Clark D. Wells, Thomas Hurley  
Medicine  
Mentor: Ann Kimble-Hill, Medicine

86. Core Body Temperature Regulation and Locomotor Activity  
Yeonjoo Yoo, Maire Kelley, Dmitry Zaretsky, Yaroslav Molkov  
Science, University of St. Thomas, Houston, Medicine  
Mentor: Yaroslav Molkov, Science

87. Effects of Aerobic Exercise Training on Diaphragm Muscle Metabolism in a Rat Model of Pulmonary Arterial Hypertension  
Angela D. Pittman, Mary Beth Brown  
Health and Rehabilitation Sciences  
Mentor: Mary Beth Brown, Health and Rehabilitation Sciences

88. Hemodynamic Responses to Acute Exercise and L-Arginine Recorded in Real-time via Implantable Telemetry in a Rat Model of Pulmonary Arterial Hypertension  
Abigail Zinn, Amanda Fisher, Robert Presson, Dmitry Zaretsky, Dan Rusyniak, Mary Beth Brown  
Health and Rehabilitation Sciences, Medicine  
Mentor: Mary Beth Brown, Health and Rehabilitation Sciences
89. **Mechanism by Which TRPV1 Activation Modulates Coronary Vascular Tone**  
S. Christopher Hiett, Sarah Flores, Meredith K. Owen, Wennan Li, Xingjuan Chen, Johnathan D. Tune, Alexander G. Obukhov  
Medicine  
Mentor: Alexander G. Obukhov, Medicine

90. **Role of Transforming Growth Factor Beta2 in Congenital Heart Disease**  
Gracelyn Bose, Abu Ahmed, Li Huang, Kirti Sarangdhar, Mohamad Azhar  
Medicine  
Mentor: Mohamad Azhar, Medicine

91. **HIV-Patient Survival as a Function of Neurocognitive Impairment (NCI) History**  
Maria Kudela, Jaroslaw Harezlak, Constantin T. Yiannoutsos  
Richard M. Fairbanks School of Public Health, Medicine  
Mentors: Jaroslaw Harezlak, Constantin T. Yiannoutsos, Richard M. Fairbanks School of Public Health, Medicine

92. **Evaluating Differences in Cognitive Function after N-Acetyl-Cysteine Treatment in a Two-Hit Rat Model of Schizophrenia**  
Nadalie K.J. Cayetano, Sarine S. Janetsian, Christopher C. Lapish  
Science, Medicine  
Mentors: Christopher C. Lapish, Sarine S. Janetsian, Science

93. **Cortex – Basal Ganglia Synchronization in Parkinson’s Disease**  
S. Elizabeth Zauber, Sungwoo Ahn, Robert M. Worth, Thomas C Witt, Leonid L. Rubchinsky  
Medicine, Science

94. **Fine Temporal Structure of Neural Synchronization**  
Sungwoo Ahn, Leonid L. Rubchinsky  
Science, Medicine

95. **Effects of Epigallocatechin-3-gallate Treatment on Cognitive Deficits in a Down Syndrome Mouse Model**  
Hardeep Dhillon, Irushi S Abeysekera, Megan Stringer  
Science  
Mentors: Randall J Roper, Charles Goodlett, Science

96. **Rescue of Adult Neurogenesis in Down Syndrome Mouse Model**  
Josh East  
Science  
Mentor: Charles Goodlett, Science

97. **EGCG From Different Sources: Differential Stability and Effects on Treating Bone Phenotypes Related to Down Syndrome**  
Jared R. Thomas, Irushi S. Abeysekera, Joshua D. Blazek, Randall J. Roper  
Ivy Tech Community College- Central Indiana, Science  
Mentor: Randall J. Roper, Science

98. **Correction of Craniofacial Deficits using Epigallocatechin-3’-gallate Treatment in a Down Syndrome Mouse Model**  
Danika M. Tumbleson, Emily M. Haley, Mariyamou Diallo, Samantha L. Deitz, Randall J. Roper  
Science  
Mentor: Randall J. Roper, Science

99. **EGCG Treatment on Ts65Dn Mice Suggests a Possible Correlation in the Cognitive Development of Mice**  
Maria Fatima Delgado Taboada, Irushi Abeysekera, Randall J. Roper  
Science  
Mentor: Randall J. Roper, Science
100. Analytical Comparison of the Effectiveness of the Diabetes Prevention Program and Weight Watchers as Media to Prevent Type II Diabetes via Weight Loss in Different Age Categories
Abdul Karim Khan, Kelly Nicole Brunson Palmer, David G. Marrero
Science, Medicine
Mentors: Kelly Palmer, Medicine; Vicki Bonds, Center for Research and Learning; Simon Atkinson, Science; David Marrero, Medicine

101. Sensitivity and Specificity of the Hemoglobin A1c Test in Predicting Type 2 Diabetes in Youth
Melissa Gronceski, Tamara Hannon
Medicine
Mentor: Tamara Hannon, Medicine

102. Do Obese Adolescents With Dysglycemia Have Impaired Sleep?
Sara Watson, Hasnaa Jalou, Sangeeta Chakroverty, Tamara Hannon
Medicine
Mentor: Tamara Hannon, Medicine

103. Fostering Awareness of the Community by Engaging Students (FACES)
Lisa Robison, Jason Stegink, Bryce Buente, Sherri Ying-Hsuan, Abby Church
Richard M. Fairbanks School of Public Health, Medicine
Mentors: Margaret Gaffney, Medicine; Dennis Watson, Gregory Wilson, Richard M. Fairbanks School of Public Health

104. Condom Use as a Function of New Young Adult Relationship Duration
Harezlak J, He F, Hensel D, Fortenberry JD
Fairbanks School of Public Health, Medicine

105. The Use of Simulation in Pre-doctoral Medical Emergencies Training
Derek Vajda, Jeffrey Bennett, Laura Romito
Dentistry
Mentors: Jeffrey Bennett, Laura Romito, Dentistry

106. Sterility of Intravenous Catheterization Tubing: Is it Safe to Remove the Sterile Cap for an Extended Period of Time?
Paige Nilles
Medicine
Mentor: Cybil Nielsen, Medicine

107. Platelet-Activating Factor-Receptor Agonists Generated By Chemotherapy Thwart Host Anti-Tumor Immunity
Ravi P. Sahu, Jesus A. Ocana, Matheus Ferracini, Christopher E. Touloukian, Raymond L. Konger, Jeffrey B. Travers
Medicine, Richard L. Roudebush V.A. Medical Center

108. Preclinical Characterization of Drug Like Glucocorticoid Induced Leucine Zipper Peptide Analogs
Srinivasan M, Blackburn C, Lahiri DK
Dentistry, Medicine

109. Activation of Dendritic Cells by Soypeptide Lunasin: Implication in Vaccine Adjuvant
Sarah Flores, Melissa Dong, Chun-Yu Tung, Hua-Chen Chang
Science
Mentors: Chun- Yu Tung, Hua-Chen Chang, Science

110. Activation of Natural Killer Cell by Lunasin and Cytokine
Sharifah Kyazike, David Lewis, Chun-Yu Tung, Ling Han, Hua-Chen Chang
Science
Mentors: Hua-Chen Chang, Chun-Yu Tang, Science
111. Gigaxonin Regulates Intermediate Filament Structure by Modulating the Ras Pathway Through the Degradation of Galectin-1
Kyle B. Martin, Samuel M. Beard, Kelsey S. Loden, R. Mark Payne
Medicine, Valparaiso University
Advisor: R. Mark Payne, Medicine

112. Touching an Aseptic Injection Site Prior to Intravenous Administration: Can Microorganisms be Introduced to the Aseptic Area?
Tina L. Ruth
Medicine
Mentors: Jack Samaritoni, Science; Cybil Nielsen, Medicine

113. Exploring Biological Property of a New Neonatal Pulp Cells
Connor Love, Zheng Huang, Fengyu Song
Science, Dentistry
Mentor: Fengyu Song, Dentistry

114. Imprinting Status Examination of the PLAGL1 Locus on Human Chromosome 6 Expressed in the Placenta
Anna Brenneman
Science
Mentor: Jill Reiter, Medicine

115. Expand Your Research: Next-Gen Sequencing, Genotyping, Gene Expression, and Epigenetics at the Center for Medical Genomics at IUSM
Xiaoling Xuei, Jeanette McClintick, Yunlong Liu, Howard J. Edenberg
Medicine

116. Population Genetics of the blow fly Phormia regina (Meigen)
John W. Whale, Christine J. Picard
Science

117. De Novo Genome Assembly of Phormia regina (Diptera: Calliphoridae)
Anne A. Andere, Christine J. Picard
Science
Mentor: Christine J. Picard, Science

118. Assessing the Depiction of Electronic Cigarettes in YouTube Videos
R. Hurwich, L. Romito
Dentistry
Mentor: Laura Romito, Dentistry

119. Validation of a Novel Neuroimaging Task to Assess Anger Inducing Situations in Youth at Low Risk for Substance Abuse
Brandon Ball, Vicky Gichina, Liliana Patino, Leslie Hulvershorn, Tom Hummer
Medicine
Mentors: Leslie Hulvershorn, Tom Hummer, Medicine

120. Assessing the Potential for Urban Produce Gardening on Vacant Land
Gloria Ekissi, Christina Mush-Brunt
Health and Rehabilitation Sciences
Mentor: Christina Mush-Brunt. Health and Rehabilitation Sciences

IMAGING

121. IUPUI Imaging Research Initiative
Mark Holland
Medicine

122. IUPUI Imaging Research Initiative: Research Center for Quantitative Renal Imaging
Mark Holland
Medicine
123. Use of Aperio Whole Slide Imaging System to Capture and Utilize Digital Virtual Slides for Pathology Education
   Samuel Capouch, Kelsey Lipking, Ronne Leigh Surface, Randy Morgan, George Sandusky
   Medicine
   Mentor: George Sandusky, Medicine

124. Cerebral Hypometabolism in Carriers of the Intron 10 +3 MAPT Mutation
   Medicine
   Mentor: Andrew Saykin, Medicine

125. Analysis of Galvanic Skin Response: Potential Relationships to Stimulus Responsivity and Brain Dopamine Signal
   Evgeny Chumin, Daniel Albrecht, Karmen Yoder
   Medicine
   Mentor: Karmen Yoder, Medicine

126. Differences in Dopamine Function in Fibromyalgia
   D.A. Albrecht, B.T. Christian, P. MacKie, K.K. Yoder
   Medicine, Science, Waisman Center Brain Imaging Laboratory University of Wisconsin-Madison
   Advisor: Karmen Yoder, Medicine

127. Ultrasound Imaging for Measuring the Material and Mechanical Properties of the Achilles Tendon: Inter-Day Reliability and Correlation with a Functional Calf Length Test
   Natalie Kowalinski, Laura Heckroth, Stuart J Warden, Amy J Bayliss
   Health and Rehabilitation Sciences

128. Indiana O’Brien Center for Advanced Microscopic Analysis
   Simon Atkinson, Kenneth Dunn, Malgorzata Kamocka, Bruce Molitoris
   Medicine

129. Indiana Center for Biological Microscopy
   Malgorzata Kamocka, Seth Winfree, Kenneth Dunn
   Medicine

130. Image Processing Techniques for Bone Cell Analysis
   Wenhan Huang, Qian Enlin
   Engineering and Technology
   Mentors: Yokota Hiroki, Paul Salama, Engineering and Technology

131. Department of Anatomy and Cell Biology
   Electron Microscopy Center
   In honor of the late Dr. V H Gattone,
   Director of the Electron Microscopy Center
   Caroline A Miller
   Medicine
Faculty and Student Research Posters and Exhibits – Session II  
1:10 pm – 2:40 pm

ARTS AND HUMANITIES

7. **Sustainable Growths**: Painting with Recycled Materials  
   Danielle Riede  
   Herron School of Art and Design

8. **Investing Public and Philanthropic Values in the Social Good of Health Care**  
   David M. Craig  
   Liberal Arts

9. **Health Matters: Reframing Design in Community Health Interventions**  
   Youngbok Hong, Helen Sanematsu, Lisa Cole, Terrell Zollinger  
   Herron School of Art and Design, IU Health, Richard M. Fairbanks School of Public Health

10. **Chronic Illness in Children and Adolescents: Research on the Impact on Their Siblings**  
    Elizabeth A. Richardson, Katherine M. Parker  
    Nursing  
    Mentor: Ukamaka M. Oruche, Nursing

PUBLIC AND ENVIRONMENTAL AFFAIRS

11. **The Rivers of the Anthropocene Literature Database and the Transmission of Environmental Concepts**  
    Keenan Salla  
    Liberal Arts  
    Mentors: Jason M. Kelly, Phil V. Scarpino, Liberal Arts

12. **Carbon, Oxygen, and Nitrogen Isotopic Analysis of Mollusca: Unionidae of the Ohio River System during the Anthropocene**  
    Chelsea L. Conduitt  
    Science  
    Advisor: Jason M. Kelly, Liberal Arts  
    Mentors: William P. Gilhooly III, Pamela Martin, Science
13. **Pilot Tap Water Sampling Project to Study Urban Drinking Water Quality in Indianapolis for Community Exposure Assessment**  
Madhura Sundararajan, Shahid Parvez  
Richard M. Fairbanks School of Public Health  
Mentor: Shahid Parvez, Richard M. Fairbanks School of Public Health

14. **Cuando Actuamos, Actuamos Juntos: Understanding the Intersections of Religion, Activism, and Citizenship Within the Latino Community in Indianapolis**  
Ryan Logan, Liberal Arts  
Indiana University-Purdue University Indianapolis, The Indianapolis Congregation Action Network (IndyCAN), and the Campaign for Citizenship  
Mentor: Wendy Vogt, Liberal Arts

15. **Two Presidents Are Better Than One: The Case for a Bipartisan Executive Branch**  
David Orentlicher  
Robert H. McKinney School of Law

**EDUCATION, SOCIAL AND BEHAVIORAL SCIENCES**

16. **American Founding Son: John Bingham and the Invention of the Fourteenth Amendment**  
Gerard N. Magliocca  
Robert H. McKinney School of Law

17. **Early Identification & Intervention: Is There “Hope” for At-Risk Law Students?**  
Allison D. Martin, Kevin L. Rand  
Robert H. McKinney School of Law, Science

18. **How Human Rights Can Build Haiti: The Lawyers, the Activists, and the Grassroots Movement**  
Fran Quigley  
Robert H. McKinney School of Law

19. **Progress through Partnership: Providing Holistic Services VIA SERVICE LEARNING to Benefit Students, the University and the Community**  
Carrie Hagan, Stephanie Boys  
Robert H. McKinney School of Law, Social Work

20. **Learning at the Nano-level: Exploring the Unseen and Accounting for Complexity in How (And Why) Secondary STEM Teachers Learn**  
Grant Fore, Brandon Sorge, Charlie Feldhaus, Mangilal Agarwal, Kody Varahramyan  
STEM Education Research Institute (SERI), Integrated Nanosystems Development Institute (INDI), Office of the Vice Chancellor for Research, Engineering and Technology, Liberal Arts

21. **Project Lead the Way: Analysis of Statewide Student Outcomes**  
Kirsten Robbins, Brandon Sorge, Rob Helfenbein, Charlie Feldhaus  
STEM Education Research Institute (SERI), Center for Urban and Multicultural Education (CUME), Engineering and Technology

22. **Understanding the INDA Student Summer Camp Experience**  
Melanie Scheive, Grant Fore, Brandon Sorge  
STEM Education Research Institute (SERI), Engineering and Technology, Liberal Arts

23. **Impacts of School Bonding on Problem Behaviors: Ethnic differences**  
Carolyn Gentle-Genitty, Isaac Karikari, Jangmin Kim, Andricus Hutcherson  
Social Work
24. Advocating the Well-Being of Children and Families Through a Culturally Responsive Community-University Partnership
Alycia M Elfreich, Robert J. Helfenbein
Center for Urban and Multicultural Education, Education

25. Indiana Systems of Care Expansion Planning Grant Processes
Pinkie Evans, Betty A. Walton
Social Work

26. Personality, Policies, and Partisanship: The Effect of Big Five Personality Traits on State-level Politics
Mary Ankenbruck, Aaron Dusso
Liberal Arts
Mentor: Aaron Dusso, Liberal Arts

27. Subject Perception of the Effectiveness of an Audio Slide Presentation as a Means of a Consent Review
Elizabeth Vasquez, Richard D Jackson, Sue Kelly
Dentistry
Mentor: Richard D Jackson, Dentistry

28. Rethinking Retail in Indy: Reconnecting East 10th Street, Reinventing Small Town Shopping, Reevaluating 1970s Shopping Malls, and Revitalizing Fountain Square
Katherine White, Jessica Chodor, Kendall Wolfe, Umara Khaliad
Liberal Arts, Public and Environmental Affairs, Social Work, Science
Mentors: Susan Hyatt, Liberal Arts; Drew Klacik, Public and Environmental Affairs

29. Validation of the Beck Motivation Inventory in a Schizophrenia Sample
Lauren Luther, Paul M. Grant, Kerry McCole, Aaron T. Beck
Science, University of Pennsylvania
Mentor: Michelle Salyers, Science

30. Benefits of Intervention in Managing Chronic Pain
Kyle L. Benbow, Megan Miller, Eric Scott, Kurt Kroenke
Science, Medicine, Roudebush VA Medical Center
Mentors: Megan Miller, Science; Eric Scott, Medicine

31. Examining the Association of Trait vs. In-Vivo Catastrophizing and Experimental Pain Sensitivity
Macey N. Miller, Anna E. Squillace, Samantha M. Meints, Adam T. Hirsh
Science
Mentor: Adam T. Hirsh, Science

32. Predictors of Colorectal Cancer Screening Adherence among Male Veterans
Leah R. Van Antwerp, Shannon M. Christy, Catherine E. Mosher, Susan M. Rawl, David A. Haggstrom
Science, Nursing, Medicine, Richard L. Roudebush V. A. Medical Center
Mentors: Catherine E. Mosher, Shannon M. Christy, Science

BUSINESS

33. HOME Investment Partnerships Program Final Rule Online University
Meridth V. Hammer, Martin White
Engineering and Technology, Informatics and Computing

34. The Direction of Black Capitalism: A Comparative Look at the Market Disparities in African American-Owned Businesses in Indiana Relative to the Aggregate United States
Isaiah R. Horne
Liberal Arts
Mentor: Rhonda Henry Anthony, Liberal Arts
35. **Brain Rehabilitation, Advanced Imaging, and Neuroscience (BRAIN): An IUPUI Signature Center Initiative**
   Flora Hammond, Andrew Saykin, James Malec, Michelle Keiski
   Medicine, Rehabilitation Hospital of Indiana

36. **Indiana Center for Breast Cancer Research**
   Harikrishna Nakshatri, David Gilley, Clark Wells, Kenneth Nephew, Milan Radovich, Theresa Guise, Casey Bales, Susan Perkins, Sunil Badve, Ioan Tudor Vladisilav, Kathy Miller
   IU Simon Cancer Center

37. **The Signature Center Initiative for the Cure of Glioblastoma**
   Karen E. Pollok, M. Reza Saadatzadeh, Mary E. Murray, Aaron Cohen-Gadol
   Medicine, Goodman Campbell Brain and Spine

38. **IUPUI Center for HPV Research: Effects of a Brief Health Messaging Intervention on HPV Vaccine Acceptability among Parents of Adolescent Sons**
   Kelly Donahue, Nathan Stupiansky, Anthony Cox, Dena Cox, Gregory Zimet
   Medicine, Business

39. **The Art of Diabetes Prevention Education in Youth**
   Julie Pike, Lisa Smith, Sarah Clapp, Tamara Hannon, Laura Kester, Dustin Lynch, Courtney Kuhstoss, Helen Senamatsu
   Riley Hospital at IU Health Youth Diabetes Prevention Clinic, IUPUI Center for Pediatric Obesity and Diabetes Prevention Research, Herron School of Art and Design

40. **Information Hiding Through Images**
   Jose H. Miranda
   Engineering and Technology
   Mentor: Brian King, Engineering and Technology

41. **A Secure and Efficient Image Transmission System for Sharing an Image with Multiple Parties**
   Feng Jiang, Vinayak Tanksale, Paul Salama, Brian King
   Engineering and Technology
   Advisors: Paul Salama, Brian King, Engineering and Technology

42. **Next-Generation Interaction with Ultra Large, Wall-sized Displays**
   Debaleena Chattopadhyay, Said Achmiz, Davide Bolchini
   Informatics and Computing
   Mentor: Davide Bolchini, Informatics and Computing

43. **Personal Information Interfaces**
   Stephen Voida, Ryan Ahmed, Alex Chambers, XinXin He, Joshua Ward
   Informatics and Computing

44. **Should I Stay or Should I Go: Two Features to Help People Stop an Exploratory Search Wisely**
   Yuan Jia, Xi Niu
   Informatics and Computing
   Mentor: Xi Niu, Informatics and Computing

45. **Collaborative Research Team**
   Usman Chaudhary, Dhanraj Choudhary, Rushikumar Oza, Mahdi Taha
   Kelley School of Business, Science
   Mentor: Clayton Nicholas, Office of the Vice Chancellor for Research
46. **Philanthropic Informatics**  
Amy Voida  
Informatics and Computing, Lilly Family School of Philanthropy

47. **Evaluating the Completeness of Data Elements of Provider Reporting on Indiana's Communicable Disease Reports**  
Patrick T.S. Lai, Kavya Gujjula, Shaun Grannis, Brian Dixon  
Informatics and Computing, Medicine, Regenstrief Institute  
Mentor: Brian Dixon, Informatics and Computing, Regenstrief Institute

48. **Smartphone Dependency and Consciousness: Observing Flow in the Everyday Life**  
Preethi Srinivas, Anthony Faiola  
Informatics and Computing  
Mentor: Anthony Faiola, Informatics and Computing

49. **Automating Provider Reporting of Communicable Disease Cases using Health Information Technology**  
Brian E. Dixon, Patrick T.S. Lai, Uzay Kirbiyik, Shaun J. Grannis  
Informatics and Computing, Regenstrief Institute, Department of Veterans Affairs, Veterans Health Administration, Health Services Research and Development Service, Richard M. Fairbanks School of Public Health, Medicine

50. **Augmenting Consciousness through Invasive Technologies: How Do Cochlear Implant Patients Engage Activity in the World?**  
Finch RJ, Srinivas P, Karanam Y, Koval O, Faiola A  
Informatics and Computing  
Mentor: Anthony Faiola, Informatics and Computing

51. **Developing New Image Registration Techniques and 3D Displays for Neuroimaging and Neurosurgery**  
Yuese Zheng, Kai-Wen Chiu, Dongcheng Jin, Sujay Chandorkar, Sarah Zajac, Emily Nicholson  
Engineering and Technology, Science, Informatics and Computing  
Mentors: Lauren Christopher, Engineering and Technology; Mihran Tuceryan, Science; Albert William, Informatics and Computing

52. **Reducing Diagnostic Error in the ICU: A Novel Approach to Clinical Workflow—Visualization-Communication Integration**  
Anthony Faiola, Preethi Srinivas, Yamini Karanam, Olesia Kovel  
Informatics and Computing

53. **Western Multi-blotting Device - Improve the Productivity of Protein Transfer**  
Stanley Chien, Hiroki Yokota  
Engineering and Technology

54. **Phase II – Biomechanics of Smooth Muscle Cell Differentiation: Experimental Study Using an Innovative In Vitro Mechanical System**  
Jessica Collins, Zahir Sheikh, Niraj Vipra, Joseph Yeoh  
Engineering and Technology, Science  
Mentors: Julie Ji, Hazim El-Mounayri, Engineering and Technology; Omar El-Mounayri, McEwen Center for Regenerative Medicine, Toronto, Ontario, Canada

55. **Development of an Automated Mapping Tool to Transform Nursing Narrative Information into Quantifiable Nursing Data**  
Mikyoung Lee, Sachin Patil, Mathew Palakal  
Nursing, Science, Informatics and Computing
56. Culturally Adapted Filmed Narratives to Promote HIV Disclosure to HIV-Infected Children in Kenya
Rachel Vreeman, Winstone Nyandiko, Colin Klein, Josephine Aluoch, Thomas Inui, Irene Marete, Thomas Lewis
Medicine, Moi University, Informatics and Computing

57. Health Educational Games and Their Effectiveness Among Children
Jacqueline Hill, Joseph Defazio
Informatics and Computing
Mentor: Joseph Defazio, Informatics and Computing

58. The Electrochemical and Corrosion Behavior of Biocompatible Magnesium Alloy in Simulated Body Fluid
Jiayang Liu
Engineering and Technology

59. Polymer Composite Sensor for Detecting Low-Concentration Acetone
Ali Daneshkhah, Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan
Integrated Nanosystems Development Institute, Engineering and Technology
Mentors: Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan, Engineering and Technology

60. Study of the Thermal and Mechanical Properties of La$_2$Zr$_2$O$_7$ Using First Principle Method
Xingye Guo, James Knapp, Li Li, Yeon-Gil Jung, Jing Zhang
Engineering and Technology, Praxair Surface Technologies Inc., Changwon National University, Korea
Mentors: Yeon-Gil Jung, Changwon National University, Korea; Jing Zhang, Engineering and Technology

61. Symmetrical Components and Power Analysis for a Two-phase Micro-grid System
M. Alibeik, E. C. dos Santos Jr.
Engineering and Technology
Mentor: Euzeli dos Santos Jr., Engineering and Technology

62. AFM-Based Fabrication of Nanofluidic Device for Medical Application
Rapeepan Promyoo, Hazim El-Mounayri, Varun Kumar Karingula
Engineering and Technology
Advisor: Hazim El-Mounayri, Engineering and Technology

63. An Electrical Capacitance Tomography Based Soot Load Estimation Method for a Diesel Particulate Filter
Ragibul Huq, Sohel Anwar
Engineering and Technology
Mentor: Sohel Anwar, Engineering and Technology

64. Control of Single Switch Inverters
Shweta Hegde, Afshin Izadian
Engineering and Technology
Mentor: Afshin Izadian, Engineering and Technology

65. Towards Training the Extended Voltage Manifold Computer (EVMC) using Particle Swarm Optimization
Michael J. Bertram, Nhan Do, Lucas Gramlin, Ken Yoshida, Paul Salama, Bryce Himebaugh
Engineering and Technology, Informatics and Computing
Mentors: Ken Yoshida, Paul Salama, Engineering and Technology
PHYSICAL SCIENCES

66. α-Tocopherol is Well Designed to Protect Polyunsaturated Fatty Acids
   Xiaoling Leng, Justin A. Williams, Drew Marquardt, Norbert Kučerka, John Katsaras, Jeffrey Atkinson, Thad A. Harroun, Scott E. Feller, Stephen R. Wassall
   Science; Brock University, Canada; National Research Council, Canada; Oak Ridge National Laboratory; Wabash College
   Mentor: Stephen R. Wassall, Science

67. The Effect of Free Amino Acids on Fibrin Formation
   Anna M. Dow, Merrell A. Johnson, Elliot D. Rosen, Bruce D. Ray, Horia I. Petrache
   Science, Medicine
   Mentors: Merrell A. Johnson, Horia I. Petrache, Bruce D. Ray, Science

68. Interaction of Model Lipid Vesicles with Alveolar Macrophages
   Robinah K. Maasa, Matthew J. Justice, Daniela N. Petrusca, Horia I. Petrache
   Science, Medicine
   Mentor: Horia I. Petrache, Science

69. Ionizing Radiation Affects Epigenetic Programming in Adolescent Mice
   Darryl S. Watkins, Marc Mendonca, Amy Lossie, Feng C. Zhou
   Medicine, Purdue University, Science
   Mentor: Feng C. Zhou, Medicine

70. Measurement of Electrostatic Forces at Submicron Scale
   Qurat-ul-Ann Mirza
   Physics
   Mentor: Ricardo Decca, Physics

71. Synthesis and Electrochemical Characterization of Ligand-Protected Molecule-Like Silver Nanoparticles
   Karl Blodgett, Meghan Teunis, Rajesh Sardar
   Science
   Mentor: Rajesh Sardar, Science

72. Correlations of Specific Ionic Effects using Ion Channels and Surface Charge Measurements
   Torri C. Roark, Oscar Teijido Hermida, Tatiana K. Rostovtseva, Philip A. Gurnev, Horia I. Petrache, Sergey M. Bezrukov
   Science, National Institutes of Health, University of Massachusetts
   Advisors: Horia I. Petrache, Science; Philip A. Gurnev, University of Massachusetts; Sergey M. Bezrukov, National Institutes of Health

73. Rivers of the Anthropocene Phase 1: A Comparative Study of the Tyne and Ohio River Valleys
   Aaron M. Stump, Broxton W. Bird, Jeremy Wilson
   Science, Liberal Arts
   Mentor: Broxton W. Bird, Science

LIFE AND HEALTH SCIENCES

74. An Inhibitor of the Mitotic Kinase, MPS1, is Selective Towards Pancreatic Cancer Cells
   Ruchi Bansal, Corrine Blackburn, Lyndsey Brown, Rachel Gasaway, Jose Victorino, Jaesik Jeong, Jesse Gore, Keith L. March, Brittney-S. Herbert, Riccardo Colombo, Murray Korc, Roger B. Slee, Brenda R. Grimes
   Medicine, California State University Dominguez Hills, Nerviano Medical Sciences, Italy
   Advisor: Brenda R. Grimes, Medicine
75. **Analysis of the Inverse Association between Cancer and Alzheimer’s Disease: Results from the Alzheimer’s Disease Neuroimaging Initiative Cohort**
Medicine

81. **Study of Sexual Partner Accrual Patterns Among Adolescent Women Via Generalized Additive Mixed Models**
Jaroslaw Harezlak, Fei He, J. Dennis Fortenberry
Medicine, Fairbanks School of Public Health

76. **Differential Expression of Telomere DNA in Blood content for Cancer Diagnostics**
Kevin Caruana, Hiromi Tanaka
Medicine
Mentor: Hiromi Tanaka, Medicine

82. **Self-efficacy and Action Control Behavior of Nutrition and Physical Activity in a Community Sample of Adults**
Kathleen Newsome, Carol Shieh
Nursing
Mentor: Carol Shieh, Nursing

77. **Comparing Virulent Breast Cancer Types in Sub-Saharan African Women and Women of African Descent**
Thomasina Watts
Liberal Arts
Mentor: Ronda Henry, Liberal Arts

83. **Using Lexical Analysis in Schizophrenia: Can the Words Patients Use Inform Our Understanding of their Internal Experiences?**
Victoria R. MacLain, Ciara L. Spencer, Kelsey A. Bonfils, Michelle P. Salyers, Kyle S. Minor
Science
Mentor: Kyle S. Minor, Science

78. **Somatosensory Amplification and Hot Flashes in Breast Cancer Survivors and Healthy Menopausal Women**
Christele M. Igega, Janet S. Carpenter
Nursing
Mentor: Janet S. Carpenter, Nursing

84. **Helping Behaviors and Recovery in Severe Mental Illness**
Ruth L. Firmin, Lauren Luther, Michelle P. Salyers
Science

79. **Association of Diethylstilbestrol Exposure and Uterine Leiomyoma in African American Women**
Kimberly T. Ho-A-Lim
Science
Mentor: Ronda Henry Anthony, Liberal Arts

85. **Outcomes of Individualized Personal Training Programs for Three Adult Siblings with Autism**
Mitch Sermersheim, Kathleen Stanton, Rachel Swinford
Physical Education Tourism Management
Mentors: Kathleen Stanton, Rachel Swinford, Physical Education Tourism Management

80. **Comparison of Pregnancy Health Information Needs, Barriers, and Information-seeking Behaviors Between First-time and Non-first-time Pregnant Women**
Kelli D. Johnson, Carol Shieh
Nursing
Mentor: Carol Shieh, Nursing

86. **Feasibility of 3-Step Workout for Life Program to Decrease ADL Disability in Vulnerable Elderly**
Chiung-ju Liu, Leah Y. Jones, Alyssa Gutierrez, Katie E. Lesniewski, Dan O. Clark
Health and Rehabilitation Sciences, Medicine
87. **Goal Development in Parents of Children with Epilepsy and Learning Disorders**
   Lindsey Keener, Wendy Miller, Janice Buelow
   Nursing, The Epilepsy Foundation
   Mentors: Wendy Miller, Janice Buelow, Nursing

88. **Do Service Dogs Improve Safety and Quality of Life in Children with Disabilities?**
   Jessica Wilson, Deborah Cullen
   Nursing
   Mentor: Deborah Cullen, Nursing

89. **Spatial Distribution of Children with an ASD Enrolled in Indiana Public Schools Compared to Quality-of-Life Indicators**
   Jeffrey L. Ashby
   Liberal Arts
   Mentor: Andrew Baker, Liberal Arts

90. **The Impact of Variable Dosage Using Robotic-assisted Task-Specific Upper Extremity Training in Children with Cerebral Palsy**
   Courtney D Mathews, Alicia R Schwipps, Ryan E Cardinal, Peter A Altenburger
   Health and Rehabilitation Sciences, Neurorehabilitation and Robotics IU Health Neuroscience Center
   Mentors: Peter A Altenburger, Ryan E Cardinal, Health and Rehabilitation Sciences

91. **What Are the Correlations Between Muscle Strength, Motor Coordination, and Daily Function of the Upper Extremities in Older Adults?**
   Keishona Roby, Chiung-ju Liu, Alyssa Gutierrez
   Ivy Tech Community College, Health and Rehabilitation Sciences
   Mentor: Chiung-ju Liu, Health and Rehabilitation Sciences

92. **Tubular Electrospun Composite Scaffolds for Potential Bone Tissue Engineering**
   Huseyin E. Arman, Jiliang Li
   Engineering and Technology, Science
   Mentor: Jiliang Li, Science

93. **Increasing Bone Regeneration in Caudal Zebrafish Fin using Glycogen Synthase Kinase 3 Beta Inhibition**
   Jennifer L. Mahin
   Science
   Mentor: James A. Marrs, Science

94. **Prevention of Glucocorticoid Induced-Apoptosis of Osteoblasts and Osteocytes by Protecting Against Endoplasmic Reticulum (ER) Stress**
   Sato A, Plotkin L, Bellido T
   Medicine, Roudebush Veterans Administration Medical Center
   Advisor: Teresa Bellido, Medicine

95. **Mice with Conditional Knock Out of c-Mpl in Megakaryocytes Exhibit Unexpected High Platelet and Bone Mass Phenotype**
   Andrew Engle, Marta Alvarez, Evan Hines, Yinhua Cheng, Melissa A. Kacena
   Medicine
   Mentor: Melissa A. Kacena, Medicine

96. **Direct Cell-To-Cell Interactions Between Osteocytes And Multiple Myeloma (MM) Cells Up-Regulate Sost And Down-Regulate OPG Expression In Osteocytes: Evidence For Osteocytic Contributions To MM-Induced Bone Disease**
   Delgado-Calle J, Bellido T, Roodman GD
   Medicine, Roudebush Veterans Administration Medical Center
   Advisors: Bellido T, Medicine; Roodman GD, Roudebush Veterans Administration Medical Center
97. **Role of CD166 in Multiple Myeloma Cell Homing to the Bone Marrow Microenvironment and Disease Progression**  
Linlin Xu, Christophe Machal, Hao Wu, Bradley Poteat, Colin Crean, Angelo A. Cardoso, John M. Chirgwin, Helmut Hanenberg, Khalid S. Mohammad, Attaya Suvannasankha, Edward F. Srour  
Medicine, Richard L. Roudebush Veterans' Administration Hospital  
Advisor: Edward Srour

98. **Comparison of Macrolide Use in Hospitalized Children with Community Acquired Pneumonia (CAP) Before and After the Publication of Clinical Practice Guidelines**  
Maheshwor Kafle, Laurie Wilkie, Tom Coffelt, James Salven  
Medicine, Riley Children’s Hospital

99. **The Effect of Retinoids on the Regenerating Axolotl Spinal Cord**  
Maia P. Kirk, Ellen A.G. Chernoff  
Science  
Mentor: Ellen A.G. Chernoff, Science

100. **Epigenetic Regulation of Astrocyte Differentiation in the Developing Murine Brain**  
Sadhna Rao, Jonathan M. Wilson, Zhiping Wang, Yunlong Liu, Teri Belecky-Adams  
Science, Medicine  
Mentors: Teri Belecky-Adams, David L. Stocum, David Skalnik, Science

101. **Role of TGF-β Activated Kinase 1(TAK1) in Chick Retinal Development**  
Vagisha Ravi, Teri Belecky-Adams  
Science  
Mentor: Teri Belecky-Adams, Science

102. **Insulin Direct Pancreatic Progenitor Cell Differentiation via Pdx1 Regulation**  
Lihua Ye, Morgan Roberson, Ryan M. Anderson  
Mentor: Ryan M. Anderson, Medicine

103. **A Compendium of Kidney Specific Regulatory Network in Mouse Uncovers Functional, Evolutionary and Disease Dynamics**  
Seyedsasan Hashemikhabir, Rajneesh Srivastava, Sarath Chandra Janga  
Informatics and Computing, Medicine  
Mentor: Sarath Chandra Janga, Informatics and Computing

104. **Wnt Signaling in Zebrafish: GSKB3β Inhibitor Effect on Cell Proliferation**  
Angelica Brannick, Jennifer L. Mahin, Mark Farrel, Courtney Curtis, Swapnalee Sarmah, Kayla Collins, Shaoyou Chu, Mas Sato, Manuel Sanchez-Felix, James A. Marrs  
Science, Lilly Research Labs  
Mentors: Jennifer L. Mahin, James A. Marrs, Science

105. **Study of Fulvic Acid: A Natural Dietary Supplement**  
Ghayasul I Syed, Richard L. Gregory, L. Jack Windsor, Fengyu Song  
Science, Dentistry, Dentistry/Medicine  
Mentor: Richard L. Gregory, Dentistry/Medicine; L. Jack Windsor, Fengyu Song, Dentistry

106. **Modulating NK-mediated Immunity by Lunakine**  
Hua-Chen Chang, Chun-Yu Tung, David Lewis, Ling Han, Mythily Srinivasan, Michael J. Robertson, Wu-Kuang “WK” Yeh  
Science, Dentistry, Medicine, Immune Peptide Therapeutics (IPT), LLC
107. Abundance of Secondary Metabolites in Human Microbiome
Vishal Sarsani, Nikhil Kulkarni, Sarath Chandra Janga
Informatics and Computing, Case Western Reserve University, Medicine
Mentor: Sarath Chandra Janga, Informatics and Computing

108. Orexinergic Neurotransmission in Temperature Responses to Amphetamines
Abolhassan Behrouzvaziri, Daniel Fu, Patrick Tan, Maria Zaretskaia, Daniel Rusyniak, Dmitry Zaretsky, Yaroslav Molkov
Science, Park Tudor School, Carmel High School, Medicine
Mentor: Yaroslav Molkov, Science

109. Effect of Nicotine on Planktonic and Biofilm Growth Phases of an Experiment
Vinayak Gupta, Richard L. Gregory
Science, Dentistry/Medicine
Advisor: Richard L. Gregory, Dentistry/Medicine

110. Effects of Tobacco Components on Streptococcus mutans and the Role of S. mutans in Apoptotic Cell Death through Macrophage Interactions
Ana Cavazos, Ghada Batarseh, L. Jack Windsor, Richard L. Gregory
Dentistry, Dentistry/Medicine
Mentors: L. Jack Windsor, Dentistry; Richard L. Gregory, Dentistry/Medicine

111. Determining the Effects of Fulvic Acid on Biofilm/Planktonic Streptococcus Mutans Growth
Mark Botros, Richard L. Gregory
Science, Dentistry/Medicine
Mentor: Richard L. Gregory, Dentistry/Medicine

112. Evaluating the Effect of Fulvic Acid on Oral Bacteria and Cancerous Oral Cells
Phillip Witcher, Richard L. Gregory, L. Jack Windsor
Science, Dentistry, Medicine
Mentors: Richard L. Gregory, Dentistry/Medicine; L. Jack Windsor, Dentistry

113. Determining the Minimum Inhibitory Concentration of Fulvic Acid on Early Streptococcus mutans Biofilm Formation
Ali Tahir, Phillip Witcher, Richard L. Gregory
Science, Dentistry/Medicine
Mentor: Richard L. Gregory, Dentistry/Medicine

114. Expanding Access to Dental Care through Dental Hygienists
Hannah Maxey, Heather Taylor
Dentistry
Mentor: Cynthia Stone, Dentistry

115. The Effects of Fulvic Acid on Established Streptococcus mutans Biofilm Formation and Human Gingival Fibroblast Cells
Emily Parker, Richard L. Gregory, L. Jack Windsor, Branko Alavanja
Science, Dentistry, Dentistry/Medicine
Mentors: L. Jack Windsor, Dentistry; Richard L. Gregory, Dentistry/Medicine

116. Ethanol Exposure Produces Defects in Gene Expression During Zygotic Genome Activation Stage Zebrafish Embryos, Which Can Be Rescued By Folic Acid
Saratalai Tinubu, Jessica Howard, Alex Farris, Rajneeesh Srivastava, Sarath Janga, Jeanette McClintick, Howard Edenberg, Swapnalee Sarmah, James Marrs
Science, Informatics and Computing, Medicine
Mentor: James Marrs, Science
117. Sex Differences in Anxiety-like Behavior on the Elevated-Plus Maze During Withdrawal From Periods of Binge Alcohol Drinking in C57BL/6J Mice
Megan Runkel, Jordan A. Masopust, Laverne C. Melón, Stephen L. Boehm, II
Science
Mentor: Stephen L. Boehm, II, Science

118. Effects of the Selective PDE4B Inhibitor TDP-003 on Ethanol Consumption
Jessica Lee Despard, Nicholas Grahame, Meredith Halcomb
Science
Mentor: Nicholas Grahame, Science

119. Development of Cross-Tolerance Between Ethanol and Baclofen in C57Bl/6J Mice
Shelby N. Blasingame, Chelsea R. Kasten, Stephen L. Boehm
Science
Mentors: Chelsea R. Kasten, Stephen L. Boehm, Science

120. DNA/RNA Degradation Rate in Fixed Tissue
Shannon Cook, Chelsea Dodge, Randy Morgan, George E Sandusky
Medicine
Mentors: Randy Morgan, George Sandusky, Medicine

121. Using Amino Acid Derivatives to Inhibit Pseudomonas aeruginosa Biofilm Formation on Cystic Fibrosis Bronchial Epithelia Cells
Jonathan LaCombe, Gregory G. Anderson, Kathleen Marrs
Science
Mentors: Gregory G. Anderson, Kathleen Marrs, Science

122. Dissecting the Function, Evolution and Disease Associations of an Atlas of Human RNA Binding Proteins
Yaseswini Neelamraju, Seyedsasan Hashemikhabir, Sarath Chandra Janga
Informatics and Computing, Medicine

IMAGING

123. IUPUI Imaging Research Initiative
Mark Holland
Medicine

124. Three-Dimensional Analyses of Craniofacial and Nasopharyngeal Phenotypes in Ts65Dn Down Syndrome Mice Treated with EGCG, a Dyrk1a Inhibitor
J. Starbuck, E. Harrington, K. Kula, A. Ghoneima, R. Roper
Dentistry, Science

125. Indiana Institute for Biomedical Imaging Sciences
Courtney Robbins
Medicine

126. Evaluation of a Hybrid Iterative Reconstruction Technique "iDose" for CT Dose Reduction and Image Quality
Yun Liang
Medicine

127. The Monetary Impact of Outpatient No-Shows in the Nuclear Medicine Department of a Pediatric Hospital
Michele L Moore
Medicine
Mentor: Jennifer Lomax, Riley Children’s Hospital

128. Reliability and Validity of the OrthoMechanics Sequential Analyzer
A. Ghoneima, S. Talaat, A. Kaboudan, K. Kula
Dentistry, Future University, Shorouk Academy

129. The Effect of Environmental Conditions on Optically Stimulated Luminescent Dosimeters
Devin Ryan
Medicine
Mentor: Trent Mays, Medicine
IUPUI CAMPUS CENTER

Research Day Facilities

4th Floor, 11:10am - 2:40pm

LEVEL 2 SKYWALK

To Cavanaugh Hall
JagTalks Presenters
1:00 PM – 2:30 PM, Campus Center Room 405

**Dr. Robin Hughes**
Associate Professor of Higher Education and Students Affairs, School of Education

**JagTalks Topic: Deconstructing ballin’: Sporting participation in education**
Dr. Hughes will discuss her research on student athletes and how they are constructed in educational and in social spaces. She will provide specific thoughts about the ways in which the Black athlete is socially constructed and how those constructions impact their collegiate experiences. Myths regarding athletes and socialization will also be discussed.

**Dr. David G. Marrero**
J.O. Ritchey Endowed Professor of Medicine, School of Medicine

**JagTalks Topic: Translating Diabetes to Public Health**
Dr. Marrero will discuss how translational research into diabetes identification and management has shown that improving risk factors depends upon tailoring disease management programs to specific populations to better address health disparities. He will explain a practical application of this work and the novel approach he and his colleagues have developed that explains the risks of cardiovascular disease and then provide education on strategies to reduce those risks. Dr. Marrero will also share how innovative intervention programs are successfully being implemented in local community organizations.

**Dr. Khadija Khaja**
Associate Professor, School of Social Work
Faculty Fellow for the Common Theme Project Find Your Voice, Hear My Voice

**JagTalks Topic: Social Service Needs of Muslim Communities**
Dr. Khaja will provide a brief snapshot of her passion for international research. She will also share some of the important findings of her study on the Social Service Needs of Muslims Living in Ontario, Canada. This qualitative research study explored the growing needs of Muslim youth, women, men and elderly populations.

**Dr. Sheila Suess Kennedy**
Professor, Law and Public Policy, School of Public and Environmental Affairs

**JagTalks Topic: Researching Our Civic Deficit**
Dr. Kennedy will discuss elements of her current research, which focuses on the personal, political and civic consequences of our “civic deficit,” and the reasons it persists. She will share how she hopes to increase understanding of the dimensions of the existing civic deficit and the effect of that deficit upon personal efficacy, civil liberties and democratic engagement.