

Gregory S. Hawk
University of Kentucky
Dr. Bing Zhang Department of Statistics
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Curriculum Vitae

EDUCATION

Ph.D.	University of Kentucky, Statistics <u>Dissertation Title</u> : “Deriving the Distributions and Developing Methods of Inference for R^2 -type Measures, with Applications to Big Data Analysis” <u>Advisor</u> : Professor Katherine L. Thompson	Aug 2019 – May 2022
M.S.	University of Kentucky, Statistics	Aug 2017 – Aug 2019
B.S.	Miami University, Secondary Mathematics Education	Aug 2008 – May 2012
B.A.	Miami University, Mathematics and Statistics	Aug 2008 – May 2012

RESEARCH AND TEACHING EXPERIENCE

University of Kentucky (Lexington, KY) Research Assistant Professor, Dr. Bing Zhang Department of Statistics Predictive Analytics and Data Science (PADS) Hub	Jan 2023 – present
University of Kentucky (Lexington, KY) Postdoctoral Scholar, Applied Statistics Lab	Jul 2022 – Dec 2022
University of Kentucky (Lexington, KY) Senior Research Assistant, Dr. Bing Zhang Department of Statistics RA Training Coordinator, NIH-funded Summer Training Program Lead Statistical Trainee, NIH-funded Superfund Research Center Primary Teaching Assistant, Dr. Bing Zhang Department of Statistics	Jun 2018 – Jun 2022
University of Kentucky (Lexington, KY) Graduate Teaching Assistant, Dr. Bing Zhang Department of Statistics	Aug 2017 – May 2018
North Central State College (Mansfield, OH) Adjunct Professor, Department of Mathematics and Statistics	Jan 2016 – Aug 2017

Piqua High School (Piqua, OH)
Mathematics and AP Physics Teacher
Head Varsity Boys' Tennis Coach
Marching Band Assistant Director

Aug 2012 – Dec 2015

Miami University (Oxford, OH)
Undergraduate Summer Scholars Research Fellowship

May 2011 – Aug 2011

"Teaching for America: An Explorative Analysis of Assessment Models in Urban Mathematics."

RELATED EXPERIENCE

West-Ward Pharmaceutical Corporation (Columbus, OH)
(formerly Boehringer Ingelheim Roxane, Inc.)
Laboratory Production and Coating Technician

May 2016 – Jul 2017

STATISTICAL ANALYSIS AND PROGRAMMING EXPERIENCE

- Predictive Analytics and Data Science
 - Interaction effect detection via Feasible Solutions Algorithm (FSA)
 - Data visualization techniques
 - Supervised machine learning methods (i.e. random forest, gradient boosted trees)
- Linear mixed-effects and repeated-measures modeling
 - Covariance matrix selection
 - Changepoint models
- Linear and generalized linear regression models
 - Logistic regression, with and without random effects
 - Poisson, quasi-poisson, and negative binomial regression
 - Beta regression
- Survival Analysis
- Power Analysis and Sample Size Justification
- **Programming/Software Expertise:**
 - R/RStudio
 - SAS
 - JMP
 - nQuery
 - SPSS
 - SQL
 - Cluster computing
 - Command-line, including CONTAM, Python, and R scripts
 - Cleaning and management of large-scale healthcare claims data

INVITED PRESENTATIONS

“From Data to Discovery: How Statistics and the UK PADS Hub Can Elevate Your Research!”, Doctoral Colloquium, University of Kentucky Department of Arts Administration (Lexington, KY), March 2025.

“Building Better Models with the Feasible Solutions Algorithm (FSA)”, Spinal Cord and Brain Injury Research Center (SCoBIRC), University of Kentucky College of Medicine (Lexington, KY), February 2025.

“Intro to Machine Learning/AI: With Applications to Healthcare Data”, IBS 608 Graduate Seminar, University of Kentucky College of Medicine (Lexington, KY), February 2025.

“From Data to Discovery: 10* Steps to Improve Your Statistical Collaboration”, S³ Seminar, University of Kentucky College of Dentistry (Lexington, KY), December 2024.

“Illuminating Insights: Why Statistics Matter in Collaborative Research”, Q-Club Seminar, St. Lawrence University Math, Computer Science, and Statistics Department (Canton, NY), October 2024.

“Ten Things Your Statistician Wishes You Knew About Statistics”, Resident Seminar, University of Kentucky Department of Ophthalmology (Lexington, KY), September 2024.

“Ten Things Your Statistician Wishes You Knew About Statistics”, Resident Seminar, University of Kentucky College of Dentistry (Lexington, KY), February 2024 and April 2024.

“Intro to Machine Learning/AI: With Applications to Healthcare Data”, IBS 608 Graduate Seminar, University of Kentucky College of Medicine (Lexington, KY), February 2024.

“How it Started vs. How it’s Going: Growth of the ASL into the PADS Hub”, PADS/iBike Joint Seminar Series, University of Kentucky Department of Statistics (Lexington, KY) and Charité University Institute of Biometry and Clinical Epidemiology (Berlin, Germany), November 2023. *(Co-presented with Dr. Katherine Thompson and Stacey Slone)*

“Teaming Up with Teams: The New Project Management System at PADS”, PADS/iBike Joint Seminar Series, University of Kentucky Department of Statistics (Lexington, KY) and Charité University Institute of Biometry and Clinical Epidemiology (Berlin, Germany), October 2023. *(Co-presented with Stacey Slone and Dr. Katherine Thompson)*

“Intro to PADS + Managing Data for Statistical Analysis”, Faculty Seminar, University of Kentucky Department of Radiology (Lexington, KY), October 2023.

“Introduction to the Predictive Analytics and Data Science (PADS) Hub”, Doctoral Colloquium, University of Kentucky Department of Arts Administration (Lexington, KY), August 2023.

“Improving the Efficiency and Bias of Confidence Intervals for R^2 -type Measures in Linear Regression Models”, Southern Regional Council on Statistics (SRCOS) Summer Research Conference (Waco, TX), June 2023.

“Diagnostic Tests, Odds, and Ratios”, Resident Education Seminar, University of Kentucky Department of Orthopaedic Surgery and Sports Science (Lexington, KY), April 2023.

“Power, Odds, and Odds Ratios”, Faculty Seminar, University of Kentucky Department of Radiology (Lexington, KY), April 2023.

“The Role of Statistics and Bioinformatics in the -omics Realm”, Faculty WiP Seminar, University of Kentucky Department of Physiology (Lexington, KY), February 2023. *(Co-presented with Dr. Jonathan Satin)*

“Ten Things Your Statistician Wished You Knew Before Your Consultation”, Faculty Seminar, University of Kentucky Department of Radiology (Lexington, KY), December 2022.

“Ten Things Your Statistician Wishes You Knew About Statistics”, BIO 770 Graduate Seminar, University of Kentucky Department of Biology (Lexington, KY), October 2022.

“How to Collaborate with a Statistician”, NIH-funded KY-INBRE Webinar, October 2022. *(Co-presented with Dr. Katherine Thompson and Dr. Arnold Stromberg)*

“Statistics: When Are We Ever Going to Use This?!” West Jefferson Middle School (West Jefferson, OH), May 2022, May 2023.

“Probability Fundamentals, with Applications to the Opioid Epidemic.” Shelby High School (Shelby, OH), April 2019, April 2020, April 2021, April 2022, April 2023.

“Predictive Analytics: Opioids, Ovine Heart Attacks, PGA Prediction, and Blue Waves”. BST 230 Undergraduate Seminar, University of Kentucky Department of Biostatistics (Lexington, KY), November 2018.

“Logic Puzzles that Build Spatial Reasoning.” Choose Ohio First (workshop for future mathematics and science teachers), Bowling Green State University (Bowling Green, OH), July 2013. *(Co-presented with Dr. Jeffrey J. Wanko)*

HONORS AND AWARDS

Kutner/ASA Junior Faculty Research Award, Southern Regional Council on Statistics, 2023
R.L. Anderson Outstanding Research Award, UK Department of Statistics, 2022
Boyd Harshbarger Research Award, Southern Regional Council on Statistics, 2021
University of Kentucky Royster Special Distinction Fellowship, 2017 – 2020
Boyd Harshbarger Research Award, Southern Regional Council on Statistics, 2019
University of Kentucky Alumni Graduate Excellence Award in Statistics, 2018
University of Kentucky Research Assistantship in Statistics, 2018 – 2022
University of Kentucky Teaching Assistantship in Statistics, 2017 – 2018

American Chemical Society Award in Inorganic Chemistry, 2016
Miami County (OH) Excellence in Education Award, 2014 and 2015
“Fireman” Educator of the Year Award, Piqua High School, 2013

Graduated with Departmental Honors, Department of Mathematics, Miami University, 2012
Graduated Summa Cum Laude, College of Education, Miami University, 2012
Graduated Summa Cum Laude, College of Arts and Sciences, Miami University, 2012
Miami University Undergraduate Summer Scholars Research Fellowship, 2011
William L. Putnam Mathematics Competition team member, Miami University, 2008 – 2010
Byron Smith Award for Excellence in Mathematics, Miami University, 2011
Koehler Prize for Excellence in Mathematics, Miami University, 2009
National Merit Scholarship Competition Winner, 2008

PUBLICATIONS

1. Tinius, R.A., M. Perera, **G. Hawk**, L. Powell, N. Rajendran, M.M. Blankenship, K. Furgal. July 2025. “The Relationship Between Modifiable Factors and Late Pregnancy Physical Activity on Infant Motor Development at 12 Months of Age: Findings from a Rural City in the Mid-Southern United States”. *BMJ Open* [accepted for publication].
2. Gohil, A., M.C. Graham, L.N. Erickson, E. Sagstetter, **G.S. Hawk**, B. Noehren. June 2025. “The Shocking Truth: A Survey of US Physical Therapists’ Utilization of Neuromuscular Electrical Stimulation following Anterior Cruciate Ligament Reconstruction”. *Journal of Orthopaedic & Sports Physical Therapy* [accepted for publication].
3. Thompson, K.L. and **G.S. Hawk**. January 2025. “Incorrect Model Selection Using R^2 and Akaike Information Criterion in Big Data Analyses”. *Springer Book on Big Data Analysis, Biostatistics, and Bioinformatics* [accepted for publication].
4. Schoch, K.M., D.N. Nthenge-Ngumbau, J.M. Brelsfoard, **G.S. Hawk**, K.E. Saatman. September 2025. “Ubiquitous Calpastatin Overexpression in Brain-Injured Mice Attenuates Motor and Cognitive Behavioral Deficits Without Overt Neuroprotection”.

Molecular and Cellular Neuroscience 134 [online ahead of print]. DOI: 10.1016/j.mcn.2025.104032. PMID: 40706780.

5. Gohil, A.M., **G.S. Hawk**, D.L. Johnson, C.S. Fry, B. Noehren. May 2025. "Exploring The Association of Quadriceps Peak Torque and Rate of Torque Development on Running Mechanics After Anterior Cruciate Ligament Reconstruction". *Sports Health* [online ahead of print]. DOI: 10.1177/19417381251338283. PMID: 40388121. PMCID: PMC12089110.
6. Bardgett, M.E., M.S. Griffith, K.R. Robinson, R.M. Stevens, M.A. Gannon, M.D. Knuth, **G.S. Hawk**, and J.R. Pauly. July 2024. "Early-life Risperidone Alters Locomotor Responses to Apomorphine and Quinpirole in Adulthood". *Behavioural Brain Research* [online ahead of print]. DOI: 10.1016/j.bbr.2024.115171. PMID: 39094954. PMCID: PMC11345744.
7. Lippert, A., D. Baker, **G. Hawk**, N. Gongora, J. Golding. September 2025. "Whom Would You Help? The Impact of Perpetrator and Victim Gender on Bystander Behavior During a Sexual Assault". *Violence Against Women* 31(11): 3000-3023. DOI: 10.1177/10778012241263104. PMID: 39043120.
8. Major III, E.L., H.T. Stone, J.R. Goetz, R.S. Clarkson*, **G.S. Hawk**, S.T. Duncan, J.B. Selby. August 2025. "No Difference in Early Range of Motion Between CORI Robotic-TKA and Conventional-TKA: a Single-Surgeon Series". *Arthroplasty Today* 34: 101797. DOI: 10.1016/j.artd.2025.101797.
9. Barré, A., A. Kirk, J. Grabau, M. Halsey, **G.S. Hawk**, V.W. Prusick. August 2025. "Practice Patterns Preferences Among Pediatric Orthopaedic Surgeons for the Treatment of Femoral Shaft Fractures". *Journal of the Pediatric Orthopaedic Society of North America* 12: 100211. DOI: 10.1016/j.jposna.2025.100211.
10. Wagner, S.B., M. Rincon, K.E. Keen, **G.S. Hawk**, N.E. Marshall, I. Messaoudi. July 2025. "SARS-CoV-2 Breakthrough Infection During Pregnancy Preferentially Elicits IgG4 Response and Enhanced Placental-Transfer". *Vaccine* 62: 127476. DOI: 10.1016/j.vaccine.2025.127476.
11. Blanton, M.B., H. Hemati, Q. Qiao, R. Khadka, **G. Hawk**, K.A. Grant, I. Messaoudi. June 2025. "Short-Term Heavy Drinking in a Non-human Primate Model Skews Monocytes Toward a Hypo-inflammatory Phenotype". *Frontiers in Immunology* 16: 1606092. DOI: 10.3389/fimmu.2025.1606092.
12. Llanora, J.D., **G.S. Hawk**, L.M. Harbin, S. Lee, M. Lane, M.T. Hickey, E. Pendygraft, L.A. Baldwin, M.L. Hutchcraft. March 2025. "A Comparison of Adjuvant Therapy Modality and Treatment Outcomes Between Appalachian and Non-Appalachian Patients with High-Risk Endometrial Carcinoma". *Gynecologic Oncology Reports* 58: 101725. DOI: 10.1016/j.gore.2025.101725. PMID: 40213528. PMCID: PMC11985054.

13. Owen, M.K., K.R. Casadonte, N.T. Thomas, C.M. Latham, C.R. Brightwell, K.L. Thompson, **G.S. Hawk**, C.A. Jacobs, D.L. Johnson, C.S. Fry, B. Noehren. March 2025. "Sex Differences in Quadriceps Atrophy After Anterior Cruciate Ligament Tear". *Sports Health* 17(2): 236-242. DOI: 10.1177/19417381241230612. PMID: 38436049. PMCID: PMC11569514.
14. Khurana, A., N. Chai, A.C. Gibson, J. Owen, A. Sobieh, **G.S. Hawk**, J.T. Lee. January 2025. "Association of LR Treatment Response Category with Outcome of Patients with Hepatocellular Carcinoma on Explant Pathology". *Abdominal Radiology* 50: 3488-3496. DOI: 10.1007/s00261-025-04811-4. PMID: 39863701.
15. Kutkut, A., R. White, M. Awad, J. Brown, L. Sharab, **G.S. Hawk**, C.S. Miller. October 2024. "Prevalence of Decay and Tooth Condition Changes Adjacent to Restored Dental Implants: A Retrospective Radiographic Study". *Journal of Oral Implantology* 50(5): 474-480. DOI: 10.1563/aaid-joi-D-24-00044. PMID: 39069796.
16. Salama, F., N. Thakral, V. Konjeti, C.D. Leyson, V. Konjeti, K. Benrajab, **G.S. Hawk**, H. Fouch, R. Gedaly, A. Khurana. October 2024. "Utilization of Contrast-Enhanced Ultrasound in Diagnosis of Focal Liver Lesions". *International Journal of Hepatology* 2024(1): 3879328. DOI: 10.1155/2024/3879328. PMID: 39484627. PMCID: PMC11527524.
17. Southall, W.G.S., J.T. Griffin, J.A. Foster, M.G. Wharton, M. Muhammad, C.R. Sierra, S.D. Mounce, R.D. Wright Jr., E.S. Moghadamian, P.E. Matuszewski, D.A. Zuelzer, D.D. Primm, D.C. Landy, **G.S. Hawk**, A. Aneja. September 2024. "Does Local Aqueous Tobramycin Injection Reduce Open Fracture-Related Infection Rates? A Pilot Retrospective Study". *Journal of Orthopaedic Trauma* 38(9): 497-503. DOI: 10.1097/BOT.0000000000002847. PMID: 39016433.
18. Foster, J.A., **G.S. Hawk**, D.C. Landy, J.T. Griffin, L. Xiang, A. Aneja, and the CYTOKINE Research Group. July 2024. "A Randomized Clinical Trial: Does Scheduled Low-Dose Short-Term Ketorolac Modulate Cytokine Levels Following Orthopaedic Polytrauma?". *Journal of Orthopaedic Trauma* 38(7): 358-365. DOI: 10.1097/BOT.0000000000002807. PMID: 38506517.
19. Muhammad, M., J.A. Foster, J.T. Griffin, D.L. Kinchelow, C.R. Sierra-Arce, W.G.S. Southall, F. Albitar, E.S. Moghadamian, R.D. Wright, P.E. Matuszewski, D.A. Zuelzer, D.D. Primm, **G.S. Hawk**, A. Aneja. July 2024. "Non-Operative Treatment of Humeral Shaft Fractures with Immediate Functional Bracing versus Coaptation Splinting and Delayed Functional Bracing: A Retrospective Study". *Journal of Orthopaedic Trauma* 38(7): 383-389. DOI: 10.1097/BOT.0000000000002810. PMID: 38527088.
20. White, M.S., M.C. Graham, T. Janatova, **G.S. Hawk**, K.L. Thompson, B. Noehren. June 2024. "Effect of Sampling Rate, Filtering, and Torque Onset Detection on Quadriceps Rate of Torque Development and Torque Steadiness". *Sensors* 24(13): 4250. DOI: 10.3390/s24134250. PMID: 39001029. PMCID: PMC11243863.

21. Graham, M.C., K.L. Thompson, **G.S. Hawk**, C.S. Fry, B. Noehren. June 2024. "Muscle Fiber Cross-Sectional Area is Associated with Quadriceps Strength and Rate of Torque Development After ACL Injury". *Journal of Strength and Conditioning Research* 38(6): 273-279. DOI: 10.1519/JSC.0000000000004743. PMID: 38349361. PMCID: PMC11116075.
22. **Hawk, G.S.** and K.L. Thompson. June 2024. "Deriving the Distribution and Exploring the Utility of Partial R^2 in the Era of Big Data". *Journal of Statistical Theory and Applications* 23(2): 115-128. DOI: 10.1007/s44199-024-00074-y.
23. Patel, N., J. O'Brien, C. Cockerham, **G. Hawk**, B. Parilla. March 2024. "Weaning Buprenorphine in Pregnant Patients". *Journal of Maternal-Fetal and Neonatal Medicine* 37(1): 2337711. DOI: 10.1080/14767058.2024.2337711. PMID: 38616176.
24. Rhudy, C.N., C.L. Perry, **G.S. Hawk**, D.R. Flomenhoft, J.C. Talbert, T.A. Barrett. March 2024. "Inflammatory Bowel Disease in Appalachian Kentucky: An Investigation of Outcomes and Healthcare Utilization". *Inflammatory Bowel Diseases* 30(3): 410-422. DOI: 10.1093/ibd/izad096. PMID: 37280118. PMCID: PMC10906357.
25. Schuman, D.L., J. Seals, A.J. Stromberg, **G.S. Hawk**, K.L. Thompson, S. Brown. January 2024. "Kentucky Veteran and Non-Veteran Suicide, 2010-2019: A Feasible Solution Algorithm Test of Perfect Storm Theory". *Journal of Rural Mental Health* 48(1): 1-14. DOI: 10.1037/rmh0000253.
26. Bruno, M.E.C., S. Mukherjee, J.L. Sturgill, V. Cornea, P. Yeh, **G.S. Hawk**, H. Saito, M.E. Starr. January 2024. "PAI-1 as a Critical Factor in the Resolution of Sepsis and Acute Kidney Injury in Old Age". *Frontiers in Cell and Developmental Biology* 11: 1330433. DOI: 10.3389/fcell.2023.1330433. PMID: 38304613. PMCID: PMC10830627.
27. Mukherjee, S., M.E.C. Bruno, J. Oakes, **G.S. Hawk**, A.J. Stromberg, D.A. Cohen, M.E. Starr. January 2024. "Mechanisms of $\gamma\delta$ T Cell Accumulation in Visceral Adipose Tissue With Aging". *Frontiers in Aging* 4: 1258836. DOI: 10.3389/fragi.2023.1258836. PMID: 38274288. PMCID: PMC10808514.
28. Brightwell, C.R., C.M. Latham, A.R. Keeble, N.T. Thomas, A.M. Owen, K.A. Reeves, D.E. Long, M. Patrick, S. Gonzalez-Velez, V. Abed, R.T. Annamalai, C. Jacobs, C.E. Conley, **G.S. Hawk**, A.V. Stone, J.L. Fry, K.L. Thompson, D.L. Johnson, B. Noehren, C.S. Fry. December 2023. "GDF8 Inhibition Enhances Musculoskeletal Recovery and Mitigates Posttraumatic Osteoarthritis Following Joint Injury". *Science Advances* 9(48): eadi9134. DOI: 10.1126/sciadv.adi9134. PMID: 38019905. PMCID: PMC10686569.
29. Abed, V., N.G. Lemaster, **G.S. Hawk**, K.L. Thompson, C.E.W. Conley, S.D. Mair, C.A. Jacobs. December 2023. "Patients With Depression and/or Anxiety Having Arthroscopic Rotator Cuff Repair Show Decreased Number of Prescriptions and Number of Psychotherapy Sessions in the Year After Surgery". *Arthroscopy: The Journal of Arthroscopic and Related*

Surgery 39(12): 2438-2442. DOI: 10.1016/j.arthro.2023.05.032. PMID: 37355188. PMCID: PMC10741251.

30. Foster, J.A., M.W. Kavolus, D.C. Landy, R.W. Pectol, C.R. Sneed, D.L. Kinchelow, J.T. Griffin, **G.S. Hawk**, A.C. Bernard, D.R. Oyler, A. Aneja. December 2023. "Low-Dose Short-Term Scheduled Ketorolac Reduces Opioid Use and Pain in Orthopaedic Polytrauma Patients: A Randomized Clinical Trial". *Journal of Orthopaedic Trauma* 37(12): 633-639. DOI: 10.1097/BOT.0000000000002703. PMID: 37752630.
31. Perera, M., **G.S. Hawk**, T.S. Nagpal, R.A. Tinius. December 2023. "Social Support for Exercise From Pregnancy to Postpartum and the Potential Impact of a Mobile Application: a Randomized Control Pilot Trial in Southern United States". *Preventive Medicine Reports* 36: 102485. DOI: 10.1016/j.pmedr.2023.102485. PMID: 37954963. PMCID: PMC10637991.
32. Pectol, R.W., M.W. Kavolus, A. Kiefer, C.R. Sneed, T. Womble, J.A. Foster, D.L. Kinchelow, **G.S Hawk**, P.E. Matuszewski, D.C. Landy, A. Aneja. October 2023. "Comparison of Post-Op Opioid Use and Pain Between Short and Long Cephalomedullary Nails in Elderly Intertrochanteric Fractures". *European Journal of Orthopaedic Surgery & Traumatology* 33(7): 3135-3141. DOI: 10.1007/s00590-023-03553-7. PMID: 37052677.
33. Conley, C.W., A.V. Stone, **G.S. Hawk**, K.L. Thompson, M.L. Ireland, D.L. Johnson, B.W. Noehren, C.A. Jacobs. September 2023. "Prevalence and Predictors of Postoperative Depression and Anxiety After Anterior Cruciate Ligament Reconstruction". *Cureus* 15(9): e45714. DOI: 10.7759/cureus.45714. PMID: 37868374. PMCID: PMC10590164.
34. Abed, V., **G.S. Hawk**, C. Conley, R. Akarakian, A.V. Stone. July 2023. "Epidemiological Analysis of Pediatric Baseball and Softball Concussions in United States Emergency Departments". *American Journal of Emergency Medicine* 69: 143-146. DOI: 10.1016/j.ajem.2023.04.025. PMID: 37119699.
35. Abed, V., C.D. Khalily, **G.S. Hawk**, C. Conley, D.C. Landy, A.V. Stone. June 2023. "Older Age, Female Gender, Anxiety, Substance Use Disorder, Osteoarthritis, Tibial Tubercle Osteotomy, and Opioid Familiarity Are Risk Factors for Prolonged Opioid Use Following Medial Patellofemoral Ligament Reconstruction". *Arthroscopy, Sports Medicine, and Rehabilitation* 5(3): e637-e647. DOI: 10.1016/j.asmr.2023.03.003. PMID: 37388870. PMCID: PMC10300534.
36. Abed, V., A. Dupati, **G.S. Hawk**, D. Johnson, C. Conley, A.V. Stone. May 2023. "Return to Play and Performance Following Anterior Cruciate Ligament Reconstruction in the National Women's Soccer League". *Orthopaedic Journal of Sports Medicine* 11(5). DOI: 10.1177/23259671231164944. PMID: 37162761. PMCID: PMC10164258.
37. Abed, V., **G.S. Hawk**, R. Akarakian, A.V. Stone. May 2023. "Epidemiological Analysis of Concussions in Youth Ice Hockey Players: A National Emergency Department Database

Study". *American Journal of Emergency Medicine* 67: 130-134. DOI: 10.1016/j.ajem.2023.02.023. PMID: 36871481.

38. Abed, V., R. Fine, R. Fine, **G.S. Hawk**, C. Conley, C. Jacobs, A.V. Stone. April 2023. "Return to Play, Performance, and Economic Analysis of National Football League Players After Lisfranc Injury". *Orthopaedic Journal of Sports Medicine* 11(4). DOI: 10.1177/23259671231159935. PMID: 37056454. PMCID: PMC10087650.
39. Abed, V., B.M. Sullivan, M. Skinner, **G.S. Hawk**, C. Khalily, C. Conley, A.V. Stone. April 2023. "YouTube is a Poor-Quality Source for Patient Information Regarding Patellar Dislocations". *Arthroscopy, Sports Medicine, and Rehabilitation* 5(2): e459-464. DOI: 10.1016/j.asmr.2023.01.014. PMID: 37101882. PMCID: PMC10123404.
40. Sharab, L., D. Jensen, **G.S. Hawk**, A. Kutkut. March 2023. "A Cephalometric Analysis Assessing the Validity of Camper's Plane to Establishing the Occlusal Plane in Edentulous Patients". *Dentistry* 11(3): 81. DOI: 10.3390/dj11030081. PMID: 36975578. PMCID: PMC10047553.
41. Conley, C.E., A.V. Stone, D.C. Landy, K.L. Thompson, **G.S. Hawk**, C.A. Jacobs. March 2023. "Opioid Usage and Associated Healthcare Costs in Patients with Post-Traumatic Knee Osteoarthritis". *Osteoarthritis and Cartilage* 31: S418-419.
42. Sharab, L., C. Loss, A. Kluemper, H. Nagaoka, **G. Hawk**, J. Hartsfield, C. Beeman. March 2023. "Effect of Patients' Attitude and Perception of Oral Hygiene on White Spot Lesion Development and Plaque Accumulation During Orthodontic Treatment". *Journal of Orofacial Orthopedics* 84(xx): 34-40. DOI: 10.1007/s00056-023-00463-5. PMID: 36894680.
43. Chilukuri, P., C.L. Ward, M. Ritter, C. Cockerham, **G. Hawk**, A.J. Stromberg, J. O'Brien. January 2023. "Late Preterm Glucocorticoid Administration in Subpopulations at Increased Risk". *American Journal of Obstetrics and Gynecology* 228(1): S717-718.
44. Patel, N.B., C. Cockerham, J. O'Brien, A. Shrestha, A.J. Stromberg, **G. Hawk**, B.V. Parilla. January 2023. "Weaning Buprenorphine in Pregnant Patients". *American Journal of Obstetrics and Gynecology* 228(1): S551-552.
45. Alshehri, K., **G.S. Hawk**, L.C. Su, P.D. Loprinzi, J.F. Walker. December 2022. "Body Weight Does Not Associate With Smoking Prevalence or Cigarette Consumption in Adult Women". *Clinical Health Promotion* 12(1): e22004. DOI: 10.29102/clnhp.22004.
46. Tinius, R.A., M.M. Blankenship, A.M. Colao, **G.S. Hawk**, M. Perera, N.E. Schoenberg. October 2022. "A Pilot Study on the Impact of the BumptUp Mobile App on Physical Activity During and After Pregnancy." *Sustainability* 14(19): 12801. DOI: 10.3390/su141912801. PMID: 37840967. PMCID: PMC10574187.

47. Sullivan, B., V. Abed, J. Joiner, M. Benningfield, D. Landy, **G.S. Hawk**, C. Conley, C. Jacobs, A.V. Stone. October 2022. "The Quality of Online Information for the Treatment of Knee Osteoarthritis: A Google Study". *Cureus* 14(10): e29995. DOI: 10.7759/cureus.29995. PMID: 36381839. PMCID: PMC9636897.
48. Stone, A.V., M.L. Murphy, C.A. Jacobs, C. Lattermann, **G.S. Hawk**, K.L. Thompson, C.E.W. Conley. March 2022. "Mood Disorders are Associated with Increased Perioperative Opioid Usage in Patients Undergoing Knee Cartilage Restoration Procedures." *Cartilage* 13(1): 1-10. DOI: 10.1177/19476035221087703. PMID: 35333656. PMCID: PMC9137305.
49. Alves, V.T.E., A. Al-Attar, Y. Alimova, M. Maynard, S. Kirakodu, A. Martinez-Porras, **G.S. Hawk**, J. Ebersole, S. Stamm, O. Gonzalez. March 2022. "Streptococcus gordonii-induced miRNAs Regulate CCL20 Responses in Human Oral Epithelial Cells." *Infection and Immunity* 90(3): e00586-21. DOI: 10.1128/iai.00586-21. PMID: 35099275. PMCID: PMC8929334.
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51. Honaker, A., A. Kyntchev, E. Foster, K. Clough, **G. Hawk**, E. Asiedu, K. Berling, E. DeBurger, M. Feltner, V. Ferguson, P.T. Forrest, K. Jenkins, L. Massie, J. Mullaguru, M.D. Niang, C. Perry, Y. Sene, A. Towell, C.P. Curran. December 2021. "The Behavioral Effects of Gestational and Lactational Benzo[a]pyrene Exposure Vary by Sex and Genotype in Mice with Differences at the Ahr and Cyp1a2 Loci." *Neurotoxicology and Teratology* 89: 107056. DOI: 10.1016/j.ntt.2021.107056. PMID: 34890772. PMCID: PMC8763354.
52. Zacharias, A.J., N.G. Lemaster, **G.S. Hawk**, S.T. Duncan, K.L. Thompson, K.N. Jochimsen, A.V. Stone, C.A. Jacobs. August 2021. "Psychological Healthcare Burden Lessens After Hip Arthroscopy for Those With Comorbid Depression or Anxiety." *Arthroscopy, Sports Medicine, and Rehabilitation* 3(4): e1171-e1175. DOI: 10.1016/j.asmr.2021.05.005. PMID: 34430898. PMCID: PMC8365206.
53. Cronin, K.J., J.A. Magnuson, B.R. Wolf, **G.S. Hawk**, K.L. Thompson, C.A. Jacobs, C.M. Hettrich, J.Y. Bishop, M.J. Bollier, K.M. Baumgarten, J.T. Bravman, R.H. Brophy, C.L. Cox, B.T. Feeley, R.M. Frank, J.A. Grant, G.L. Jones, J.E. Kuhn, C.B. Ma, R.G. Marx, E.C. McCarty, B.S. Miller, A.S. Neviaser, A.J. Seidl, M.V. Smith, R.W. Wright, A.L. Zhang. June 2021. "Male Sex, WOSI Score, and Sport as Predictors of Large Labral Tears of the Shoulder: A Multicenter Orthopaedic Outcomes Network (MOON) Shoulder Instability Cohort Study." *Arthroscopy: The Journal of Arthroscopic and Related Surgery* 37(6): 1740-1744. DOI: 10.1016/j.arthro.2021.01.007. PMID: 33460709.

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55. Cronin, K.J., S.D. Mair, **G.S. Hawk**, K.L. Thompson, C.M. Hettrich, C.A. Jacobs. October 2020. "Increased Healthcare Costs and Opioid Use in Patients with Anxiety and Depression Undergoing Rotator Cuff Repair." *Arthroscopy: The Journal of Arthroscopic and Related Surgery* 36(10): 2655-2660. DOI: 10.1016/j.arthro.2020.05.038. PMID: 32497659. PMCID: PMC7554073.
56. Lambert, J.W. and **G.S. Hawk**. September 2020. "Identifying Pareto-based Solutions for Regression Subset Selection via a Feasible Solution Algorithm." *International Journal of Data Science and Analytics* 10(3): 277-284. DOI: 10.1007/s41060-020-00218-0.
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59. Holzer, A., C. Roe, **G. Hawk**, L. Su, K. Thompson, D. Johnson, C. Jacobs, B. Noehren. July 2020. "Biomechanical Determinants of Return to Sport Following Anterior Cruciate Ligament Reconstruction." *Medicine & Science in Sports & Exercise* 52(75): 2.
60. Jacobs, C.A., **G.S. Hawk**, K.N. Jochimsen, C.W. Conley, A.M. Vranceanu, K.L. Thompson, S.T. Duncan. March 2020. "Depression and Anxiety Are Associated with Increased Health Care Costs and Opioid Use for Patients with Femoroacetabular Impingement Undergoing Hip Arthroscopy: Analysis of a Claims Database." *Arthroscopy: The Journal of Arthroscopic and Related Surgery* 36(3): 745-750. DOI: 10.1016/j.arthro.2019.09.048. PMID: 31924382. PMCID: PMC7060818.
61. Shirazi, E., **G.S. Hawk**, C.W. Holton, A.J. Stromberg, K.G. Pennell. February 2020. "Comparison of Modeled and Measured Indoor Air Trichloroethene (TCE) Concentrations at a Vapor Intrusion Site: Influence of Wind, Temperature, and Building Characteristics." *Environmental Science: Processes & Impacts* 22(3): 802-811. DOI: 10.1039/c9em00567f. PMID: 32129346. PMCID: PMC7153494.

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63. Neff, R.J., G. Jicha, P.N. Westgate, **G.S. Hawk**, M.L. Bush, B. McNulty. October 2019. "Neuropathological Findings of Dementia Associated with Subjective Hearing Loss." *Otology and Neurotology* 40(9): e883-e893. DOI: 10.1097/MAO.0000000000002381. PMID: 31498297.
64. Johnson, Q., J. O'Brien, **G. Hawk**, Y. Qi, & A. Critchfield. May 2019. "Buprenorphine/Naloxone vs. Buprenorphine for Medication Assisted Therapy of Opioid Use Disorder in Pregnancy". *Obstetrics and Gynecology* 133: 93S.
65. Johnson, Q., J. O'Brien, **G. Hawk**, Y. Qi, & A. Critchfield. January 2019. "Neonatal Head Circumference in Opioid-Exposed Neonates With and Without Neonatal Opioid Withdrawal Syndrome (NOWS)". *American Journal of Obstetrics and Gynecology* 220(1): S250.

PUBLICATIONS SUBMITTED OR UNDER REVIEW

1. Handel, V.A., R. Danaher, S. Kirakodu, A. Desai, D. Bellamy, **G.S. Hawk**, R.M. Arce, J.F. Lopez, O.A. Gonzalez. "Phospholipase A₂ Group IIA Promotes Oral Dysbiosis and Bone Loss". *Journal of Dental Research* [under review after revision].
2. Keeney, K., Y. Jung, Z Marschall, **G. Hawk**. "Public Benefit or Private Gain? A Comparative Analysis of Administrative Practices in Nonprofit Art Museums". *Journal of Arts Management, Law, and Society* [under review after revision].
3. Nowell, K., D. Dlugonski, E.A. DeFranco, L.E. May, **G.S. Hawk**, J. Hoch. "Relationship Between Social Determinants of Health, Health-Related Quality of Life, Health Perceptions, and Physical Activity During Pregnancy". *Women's Health* [under review after revision].
4. Demas, N., M. Naqvi, S.S. Haseley*, **G.S. Hawk**, D. Moore. "Variability in Financial Assistance Policies Across Top US Hospitals". *Health Affairs* [under review after review].
5. Jain, V., C.A. McMullen, J.I. Kimbrough, A.K. Rockich, D.L. Davenport, **G.S. Hawk**, B.S. Nikolajczyk, P.A. Kern, S.J. Fisher, J. Steiner, W.B. Inabnet III, M.E. Starr. "Preoperative Glucagon-like Peptide-1 Therapy in Bariatric Surgery Patients with Morbid Obesity (PreMO): Rationale and Study Design for a Randomized Controlled Trial". *Surgery for Obesity and Related Diseases* [in preparation].

6. Thomas, N.T., A.R. Keeble, A.M. Owen, S. Gonzalez-Velez, C.R. Brightwell, C.M. Latham, M.C. Graham, K.A. Reeves, J. Goh, D.E. Long, D.A. Harrison, P.A. Kern, **G.S. Hawk**, C.E. Conley, J.L. Fry, A.V. Stone, K.L. Thompson, D.L. Johnson, Y. Wen, B. Noehren, C.S. Fry. "HDAC4 Myonuclear Reprogramming Underlies Denervation and Weakness Following Musculoskeletal Trauma". *Science Translational Medicine* [under review].
7. Muhammad, M., G. Green, W.G.S. Southall, A.N. Musick, A.T. Gregg, T.J. Policicchio, C.R. Sierra-Arce, J.T. Griffin, J.S. Borgida, R.K. Wagner, **G.S. Hawk**, T.V. Ly, A. Aneja. "Increased Risk of Pulmonary Complications with Long Cephalomedullary Nails in Geriatric Intertrochanteric Femur Fractures: A Retrospective Review of 881 Patients". *Journal of Bone and Joint Surgery Open* [under review].
8. Mirsky, E.L., A. Boerrigter, **G. Hawk**, E. DeFranco. "Differences in Intimate Partner Violence Screening During Pregnancy for US-Born Versus Immigrant Birthing People". *American Journal of Obstetrics and Gynecology MFM* [under review].
9. Mirsky, E., C. Cockerham, W. Whitley, **G. Hawk**, A. Shrestha, J. O'Brien, B. Parilla. "Prenatal Fentanyl Exposure and Replication of a Novel Neonatal Syndrome Study at a Single Institution". *American Journal of Obstetrics and Gynecology MFM* [under review].
10. Jung, Y., R.A. Ferrell, **G.S. Hawk**. "Bridging the Gap: Understanding Non-Visitor and Visitor Engagement in Museums Through the Lens of Cultural Capital". *International Journal of Arts Management* [under review].
11. Brown, M.C., M.T.C. Wolowski, N.N. de Oliveira Rodrigues, **G.S. Hawk**, M. Larkin, C. Perez, D.L.S. Scheffel. "Dentist's Assessment and Protocol: Determining the Need for Frenotomy/Frenectomy". *Pediatric Dentistry* [under review].
12. Javid, K., X.A. Akins, **G.S. Hawk**, C.E. Conley, J.N. Liu, A.V. Stone. "Return to Play and Performance-Based Prediction of Injury in International Cricket Players". *The Physician and Sports Medicine* [under review].
13. Foley, M., **G.S. Hawk**, R. Rose, H. Tschosik, J.L. Osterhage. "A Utility Value Intervention Does Not Affect Motivation or Course Outcomes in an Introductory Biology Course That Utilizes Active Learning Practices". *Journal of Experimental Education* [under review].
14. Abed, V., X.A. Akins, K. Javid, **G.S. Hawk**, R. Akarakian, C. Conley, A.V. Stone. "The Incidence of Concussions in Pediatric Volleyball Players Was Increasing Prior to the COVID-19 Pandemic". *Injury* [under review].

PUBLICATIONS IN PREPARATION

1. **Hawk, G.S.** and K.L. Thompson. "Improving the Efficiency and Bias of Confidence Intervals for the Coefficients of Multiple and Partial Determination in Linear Regression Models". *Journal of Applied Statistics* [in preparation].
2. Lambert, J.W., **G.S. Hawk**, L.S. Park, A.J. Stromberg. "Fairness and Fit: Leveraging Pareto Optimality to Evaluate Regression Models". *Statistical Methods in Medical Research* [in preparation].
3. Capes, D.E., V.K. Stone, D.K. Winchester, J. Salazar, P.A.D. Opoku*, Y. Li*, M. Hash, R. Kumari, **G.S. Hawk**, A.N. Stewart. "Chronic Neuroinflammation After Spinal Cord Injury Regulates a Dichotomy Between Ongoing Motor and Sensory Functions". [in preparation].
4. Major, E.L., H.T. Stone, J.R. Goetz, R.S. Clarkson*, **G.S. Hawk**, S.T. Duncan, J.B. Selby. "A Comparison of Early Postoperative Outcomes: Robotic Assisted versus Conventional Total Knee Arthroplasty". [in preparation].
5. Foley, M., A. Law, **G. Hawk**, A. Drayer, D. Weisenbeck, L. Moe, S. Price, W. Haag, D.W. Weisrock. "Location Plays a Stronger Role Than Evolutionary History in Mussel Gut Microbiome Composition" [in preparation].
6. Javid, K., X.A. Akins, **G.S. Hawk**, J. Goetz, C. Dawahare, A.V. Stone. "The Impact of Socioeconomic Status on Access to Pre-Operative and Post-Operative Course of Surgical Management for Recurrent Shoulder Instability" [in preparation].
7. Young, B.A., X.A. Akins, K. Javid, C.E.W. Conley, **G.S. Hawk**, J.N. Liu, A.V. Stone. "Prevalence of Depression and Anxiety Following MPFL Reconstruction for Recurrent Patellar Instability" [in preparation].

STATISTICAL FUNDING

1R01DA059152-01 (Messaoudi, O'Brien) 08/01/23 – 02/28/25 20% effort
National Institutes of Health

POPI: Placenta, Opioids, and Perinatal Implications

The central hypothesis of this study is to determine whether the inflammation and dysregulation of the placental landscape caused by maternal opioid use disorder is linked to adverse neurocognitive outcomes in the offspring.

Role: Co-Investigator

ULRF_18-0975D-05 (Stromberg) 05/01/22 – 04/30/24 12.5% effort
National Institutes of Health (subaward from University of Louisville)

Kentucky IDeA Network of Biological Research Excellence (KY-INBRE)

The goal of the Kentucky IDeA Network of Biological Research Excellence (KY INBRE) is to develop a network of support for biomedical researchers and educators within the Commonwealth of Kentucky, for the purpose of developing infrastructure and capacity for

biomedical research and training in the state. We provide consultations, data analysis, statistical programming, guest lectures, training, and workshops to regional researchers.

Role: Co-Investigator

1R01AR078316-01A1 (Noehren) 08/01/21 – 05/31/26 0.75% effort
National Institutes of Health

Sex-based Muscular Adaptations, Capillary Dysfunction and Functional Decline Impact Knee-related Psychosocial Outcomes After Acute Knee Injury (SMACK)

This proposal seeks to test the novel hypothesis that, following an ACL injury, females experience exaggerated muscle capillary rarefaction and greater muscle fiber atrophy, hindering their recovery of muscle strength and resulting in pronounced deficits in gait mechanics and disproportionately worse psychosocial recovery compared to males.

Role: Co-Investigator

1R21NS128749-01A1 (Patel) 04/01/23 – 03/31/25 1% effort
National Institutes of Health

Development of a Novel Animal Model for Spinal Cord Injury with Sepsis

This project will develop a novel rat model of sepsis survivors following spinal cord injury, examining compromised functional recovery as well as tissue and organ damage in order to improve the quality of life for future human survivors.

Role: Co-Investigator

W81XWH-21-1-0833 (Conley) 11/01/23 – 8/31/25 5% effort
United States Department of Defense (subaward from Massachusetts General Hospital)

Does Prophylactic Local Tobramycin Injection Lower Open Fracture Infection Rates?

This double-blind randomized clinical trial aims to determine if a validated local dose of tobramycin injection, in combination with systemic antibiotic prophylaxis, will reduce the rate of deep surgical site infection after open fracture fixation surgery following traumatic orthopedic injuries. We will also seek to explore the bacterial speciation and antibiotic sensitivity among study patients who develop deep surgical site infections.

Role: Co-Investigator

W81XWH-21-1-0273 (Noehren) 08/01/21 – 07/31/24 3.33% effort
United States Department of Defense

Accelerating Recovery Following a Lower-Extremity Fracture Through Speed HIIT

The major goal is to establish the feasibility of the Speed HIIT program leading to significant improvements over baseline in the knee extensor moment, peak ground reaction force, quadriceps muscle strength as compared to standard of care. As a secondary objective, we hypothesize that the Speed HIIT walk program will lead to a significant improvement in pain self-efficacy and fear of movement over baseline as compared to the standard of care.

Role: Co-Investigator

PON2 605 2200002485 (Souleyrette) 07/01/23 – 06/30/24 7.5% effort
Kentucky Transportation Cabinet

PL 49: A Method to Estimate Missing ATR Data

Methods of handling and estimating missing data will be implemented to augment and improve the use of automatic traffic recorder data for traffic forecasting, as part of the Kentucky Transportation Cabinet's average daily traffic monitoring program.

Role: Vice Project Investigator

JBBI 2023 002 (Berron)

08/01/23 – 12/31/24

2.5% effort

Beam Suntory Inc.

Tyloses, Vapor Filtration, Partial Stats, and Partial Diffusion

Based on historical data, machine learning and statistical models will be utilized to predict how the warehouse environment affects bourbon maturation recovery yield.

Role: Co-Investigator

Pending:

(Thompson)

05/01/24 – 04/30/29

22% effort (avg)

National Institutes of Health

Kentucky IDeA Network of Biological Research Excellence (KY-INBRE)

The goal of the KY IDeA Network of Biological Research Excellence (KY INBRE) is to develop a network of support for biomedical researchers and educators within the Commonwealth of Kentucky. The purpose of the network is to develop infrastructure and capacity for biomedical research and training in the state.

Role: Co-Investigator

(Stone, Jacobs)

09/01/24 – 08/31/28

7.5% effort

United States Department of Defense

Losartan to Improve Outcomes After Multi-Ligament Knee Injury (LION Trial)

This double-blind, randomized clinical trial aims to re-purpose an FDA-approved medication to improve a person's ability to return to work or sport, improve pain levels and range of motion, and resolve persistent inflammation after multi-ligament knee injuries.

Role: Co-Investigator

(Stone)

03/01/24 – 02/28/28

5% effort

United States Department of Defense

A Combined Senolytic and MechanOBioLogic Program to Enhance Recovery and Return to Duty after Meniscal Repair (MOBILE-Fisetin)

The objective of this study is to assess the efficacy of a dual approach of fisetin and novel physical therapy techniques to limit the effects of post-traumatic osteoarthritis (PTOA) and rapidly return personnel to active duty.

Role: Co-Investigator

(Wood)

04/01/24 – 03/31/29

5% effort

National Heart, Lung, and Blood Institute

Mechanisms of HIV-Associated Thrombosis

The purpose of this project is to study the link between HIV-1 infection and life-threatening thrombotic events, even after antiretroviral therapy. We also will investigate the mechanisms which lead to thrombosis via platelet blood cell component analysis.

Role: Co-Investigator

(Hawk) 12/01/24 – 11/30/26 10% effort

National Institutes of Health (subaward from University of Cincinnati)

Identification and Evaluation of Complex Factors Preceding Suicide in Construction and Extraction Worker Decedents

Using the National Violent Death Reporting System (2003-2021), this effort will estimate the suicide mortality of construction and extraction workers decedents, assess the personal and occupational risks associated with their suicides, and explore their possible interactions with environmental factors.

Role: Co-Investigator (Site PI for subaward)

(Wood) 06/01/24 – 05/31/25 5% effort

National Institute of Health

Hemostatic Dysfunction and Microclot Formation in PASC

The purpose of this project is to investigate the relationship between symptom persistence in patients with symptomatic Post-Acute Sequelae of SARS-CoV-2 (PASC) and various biological factors, including microclots, protein S activity, and fibrinolytic activity.

Role: Co-Investigator

(Jung) 06/01/24 – 05/31/26 3% effort

National Endowment for the Humanities

Subjective Art v. Objective Law: Copyright Implication from Photography to Artificial Intelligence

This project will investigate how the American judiciary has approached arts-related cases over time and as technologies have changed, particularly with regard to copyright issues. As artificial intelligence continues to become more prevalent across all facets of society, it is imperative that we understand the modern legal implications of these historical patterns on the arts.

Role: Co-Investigator

(Shoemaker) 06/01/24 – 05/31/28 2.5% effort

Burroughs Wellcome

Aldosterone-mediated Subtypes of Pre-eclampsia and Neonatal Outcomes

The objective of this study is to link blood markers of the renin-angiotensin-aldosterone system to the underlying causes of pre-eclampsia, directly informing clinical care for at-risk mothers by assisting with early detection and treatment/prevention.

Role: Co-Investigator

CONTRIBUTED STATISTICAL PRESENTATIONS

1. Lambert, J., G. Hawk, L. Park, A. Stromberg (May 2023). "Fair Frontiers: Leveraging Fisher's Information and AIC Toward More Fair and Equitable Statistical Models". Symposium on Data Science & Statistics; St. Louis, MO.

2. **Hawk, G.** (June 2021). "Interpreting Linear Models in the Era of Big Data: Deriving the Distribution and Exploring the Utility of the Coefficient of Partial Determination". National Institute of Statistical Science (NISS) Graduate Student Research Conference; Virtual (due to COVID-19).
3. **Shirazi, E., G. Hawk, C. Holton, K. Pennell** (November 2019). "Modeling Tools to Predict Temporally Variable Volatile Organic Compound (VOC) Indoor Air Concentrations: Consideration of Wind, Temperature, and Building Characteristics". Superfund Research Program Annual Meeting; Seattle, WA.
4. **Wanko, J. J. & G. Hawk** (October 2012). "Challenge Your Mind: Puzzles for Your Classroom". Ohio Council of Teachers of Mathematics Annual Conference; Columbus, OH.
5. **Wanko, J. J. & G. Hawk** (April 2011). "It Figures!: Logic Puzzles Powered by Geometry". National Council of Teachers of Mathematics (NCTM) Annual Meeting & Exposition; Indianapolis, IN.

STATISTICAL POSTER PRESENTATIONS

1. **Hawk, G.** and K. Thompson (June 2023). "Improved Confidence Intervals for Partial R^2 ". Southern Regional Council on Statistics (SRCOS) Summer Research Conference; Waco, TX.
2. **Lambert, J., G. Hawk, L. Park, A. Stromberg** (May 2023). "Fair Frontiers: Leveraging Fisher's Information and AIC Toward More Fair and Equitable Statistical Models". Symposium on Data Science & Statistics; St. Louis, MO. [e-poster]
3. **Hawk, G.** and K. Thompson (October 2021). "Distribution and Utility of Partial R^2 in the Era of Big Data". Southern Regional Council on Statistics (SRCOS) Summer Research Conference; Jekyll Island, GA.

PROFESSIONAL SERVICE AND MEMBERSHIPS

Statistical Reviewer: Journal of Periodontology, Journal of Ophthalmology, Journal of Physical Activity and Health, BMJ Open Journal

Undergraduate Program Co-chair, Southern Regional Council on Statistics (SRCOS), 2025
 Undergraduate Program Co-chair, Southern Regional Council on Statistics (SRCOS), 2024
 Reviewer, Osteoarthritis Alliance of Kentucky (OAK) Student Research Fellowship, 2023
 Undergraduate Program Co-chair, Southern Regional Council on Statistics (SRCOS), 2023
 Undergraduate Program Co-chair, Southern Regional Council on Statistics (SRCOS), 2021
 Member, Osteoarthritis Alliance of Kentucky (OAK), 2020 – present
 Member, Department of Statistics Chair Search Committee, University of Kentucky, 2019

Undergraduate Program Co-chair, Southern Regional Council on Statistics (SRCOS), 2019
Member, University of Kentucky Superfund Research Center, 2018 – 2019
Member, American Statistical Association, 2017 – present

CITI Responsible Conduct of Research (RCR) Trained, 2020 – present
CITI Human Subjects Research (HSR) Trained, 2017 – present
Certified Lean Six Sigma Black Belt, 2018 – present
Certified Lean Six Sigma Green Belt, 2018 – present

Life Member, United States Tennis Association (USTA), 2013 – present
Member, Center Point Church Worship Ministry, 2023 – present
Member, Southland Christian Church Worship Ministry, 2018 – 2023
Assistant Instructor, I Am Third Youth Tennis Camps, 2020
Member, University of Kentucky Wildcat Marching and Athletic Bands, 2017 – 2018
Member, American Modeling Teachers Association (AMTA), 2015 – 2016
Coordinator and Lead Instructor, Tecumseh Woods Youth Tennis Camps, 2015
Member, Piqua City Schools Calendar Steering Committee, 2013 – 2015
Member, Ohio Council of Teachers of Mathematics (OCTM), 2009 – 2015
Member, National Council of Teachers of Mathematics (NCTM), 2010 – 2011
Member, Miami University Council of Teachers of Mathematics (MUCTM), 2008 – 2012
National Representative, 2011
Member, Tau Beta Sigma Honorary Service Fraternity, 2008 – 2012
North Central District Delegate, 2010 and 2011
Member, Miami University Marching, Concert, and Athletic Bands, 2008 – 2012
Mellophone Squad Leader, 2010 – 2012
Principal Horn, Tippecanoe (OH) Community Concert Band, 2012 – 2014

TEACHING CORE

University of Kentucky			
Semester	Course Title	Credits	Students
Fall 2020	STA 210 – Intro to Statistical Reasoning	3	30
Spring 2020	STA 210 – Intro to Statistical Reasoning	3	22
Spring 2018	STA 210 – Intro to Statistical Reasoning (TA)	3	132
Fall 2017	STA 210 – Intro to Statistical Reasoning (TA)	3	132

North Central State College (adjunct)			
Semester	Course Title	Credits	Students
Summer 2017	STAT 1010 – Probability and Statistics (online)	3	21
Spring 2017	STAT 1010 – Probability and Statistics (online)	3	18
Fall 2016	STAT 1010 – Probability and Statistics (online)	3	41
Summer 2016	STAT 1010 – Probability and Statistics (online)	3	19
Spring 2016	STAT 1010 – Probability and Statistics	3	27
	MATH 1030 – Variable Relationships	3	10
	MATH 1010 – Business Mathematics	3	12

Piqua High School			
School Year	Course Title	Grade	Students
Fall 2015	AP Physics 1	11, 12	21
	AP Calculus BC	12	18
	Senior Financial Mathematics Seminar	12	117
	Algebra I Intervention	9, 10	7
	Algebra II Intervention	10, 11	7
2014–2015	AP Physics 1	11, 12	18
	AP Physics C: Mechanics; Electricity/Magnetism	12	12
	AP Calculus BC	12	18
	Senior Financial Mathematics Seminar	12	75
2013–2014	AP Calculus BC	12	14
	Senior Financial Mathematics Seminar	12	63
	Algebra II	9-12	73
2012–2013	Senior Financial Mathematics Seminar	12	35
	Integrated Mathematics II	10, 11	31
	Algebra I	9, 10	50
	NovaNet Credit Recovery Program	9-12	15

(Cincinnati) Robert E. Taft I.T. High School - student teaching			
Semester	Course Title	Grade	Students
Spring 2012	AP Calculus AB	12	12
	Algebra II	11, 12	96