

# Michael Buhnerkempe, Ph.D.

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## Current Position(s)

Research Assistant Professor, Department of Internal Medicine  
Southern Illinois University School of Medicine  
Springfield, IL

## Education

Postdoctoral Fellow, University of California – Los Angeles, Los Angeles, CA, and National Institutes of Health, Bethesda, MD (joint appointment)	2013-2015
Ph.D. in Zoology, Colorado State University, Fort Collins, CO	2007-2013
M.S. in Statistics, Colorado State University, Fort Collins, CO	2010-2012
B.S. in Integrative Biology and Statistics (summa cum laude), University of Illinois – Urbana/Champaign, Champaign, IL	2003-2007

## Academic Appointments

Research Assistant Professor Department of Internal Medicine Southern Illinois University School of Medicine Springfield, IL	2017- Present
Assistant Project Scientist Department of Ecology and Evolutionary Biology University of California – Los Angeles Los Angeles, CA	2016-2017

## Professional Positions and Experience

Academic Researcher Illinois Natural History Survey University of Illinois – Urbana/Champaign Champaign, IL	2016-2017
Assistant Project Scientist Department of Ecology and Evolutionary Biology University of California – Los Angeles Los Angeles, CA	2016-2017
Research Assistant Department of Biology Colorado State University Fort Collins, CO	2010-2012
Guest Researcher Centers for Disease Control and Prevention Fort Collins, CO	2009-2012

Teaching Assistant  
Department of Biology  
Colorado State University  
Fort Collins, CO

2009

## Professional Development

Attended annual AHA Hypertension Sessions	2017-2020, '22
Attended annual AHA Scientific Sessions	2021
Attended the SIU Center for Clinical Research Clinical Trials Course	2018
Attended the Springfield Committee for Research Involving Human Subjects' (SCRIHS) Education Lunch Hour "How many types of IRB reviews could there possibly be?"	2017
Attended the Springfield Committee for Research Involving Human Subjects' (SCRIHS) Education Lunch Hour "Informed consent, they just sign something right? Wrong."	2017

## Professional Memberships and Activities

<i>American Heart Association</i> Member	2017-Present
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## Editorial Board Appointments

<i>Editorial Board Member</i> American Journal of Hypertension	2022-Present
<i>Statistical Editor</i> American Journal of Hypertension	2020-2021
<i>Statistical Reviewer</i> Hypertension (1 manuscript)	2021
The Lancet Planetary Health (2 manuscripts)	2020-2021
<i>Reviewer</i> Hypertension (4 manuscripts)	2021, 2023
Journal of Multidisciplinary Healthcare (1 manuscript)	2022
Scientific Reports (1 manuscript)	2022
BMC Primary Care (1 manuscript)	2022
JACC Heart Failure (1 manuscript)	2022
Applied Artificial Intelligence (1 manuscript)	2022
Risk Management and Healthcare Policy (1 manuscript)	2021
BMC Medicine (1 manuscript)	2021
Journal of Human Hypertension (1 manuscript)	2021
Ecology and Evolution (2 manuscripts)	2021
Ecology Letters (1 manuscript)	2020
Ecology (1 manuscript)	2019
PLoS Computational Biology (8 manuscripts)	2013-2019
American Naturalist (3 manuscripts)	2014-2018
Ecological Applications (3 manuscripts)	2016-2018
Journal of the Royal Society Interface (3 manuscripts)	2014-2017
Journal of Animal Ecology (1 manuscript)	2016
Emerging Microbes and Infections (1 manuscript)	2016
Journal of Applied Ecology (2 manuscripts)	2016
PLoS Neglected Tropical Diseases (1 manuscript)	2016
PLoS ONE (3 manuscripts)	2013-2015

Parasitology (1 manuscript)	2015
Bulletin of Mathematical Biology (1 manuscript)	2015
Epidemics (1 manuscript)	2014
Journal of Theoretical Biology (1 manuscript)	2013
Biological Conservation (2 manuscripts)	2012-2013
Theoretical Population Biology (1 manuscript)	2011

## Committee Assignments and Administrative Services

### *Local*

Reviewer, SIU System Collaborative Grant	2022
Director, Research Analytics (TouchWorks reporting for clinical trial recruitment, retrospective research projects, and feasibility studies) – 78 one-time and 14 recurring (daily/biweekly) reports generated	2020-Present
Member, Springfield Committee on Research Involving Human Subjects,	2020-2022
Alternate, Institutional Animal Care and Use Committee	2020-Present
Member, Dept. of Internal Medicine Research/Scholarship Working Group	2020

### *National*

Member, Institute for Infectious Diseases' Proposal Review External Advisory Panel, Texas A&M University (World Organization for Animal Health Collaborating Center)	2014
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## Clinical Research / Quality Improvement Activities

### *Local*

Title: SIU School of Medicine Primary Aldosteronism Registry Effort: 5% Goal: Improve screening, testing, and outcomes for primary aldosteronism in the Hypertension and Endocrinology clinics. This is done by capturing all patients screened and tested for primary aldosteronism in the SIU Hypertension and Endocrinology Clinics; this registry captures a sizeable number of patients with non-suppressible renin independent primary aldosteronism after 3-day oral salt loading. We track their responses to surgical and medical therapy, the required intensity of drug therapy, and medical outcomes. Responsibilities: Establishing and maintaining the registry in a REDCap database. Developing and implementing quarterly update protocols to identify patients for inclusion. Supervising data entry into the registry by medical students.	2020-Present
Title: SIU School of Medicine Pediatric Outpatient Antibiotic Stewardship Effort: 2% Goal: Improve prescribing practices for antibiotics in pediatric patients. Responsibilities: Querying the EHR to identify all pediatric antibiotic prescriptions as well as all visits associated with infection ICD codes. Developing and implementing quarterly update protocols to merge and clean data and provide reports on antibiotic usage.	2020-Present

## Educational Activities

### *Course and Curriculum Development*

Course: Department of Internal Medicine Faculty Research Development Course 2022-Present  
Role: Course Development Committee Member and Instructor  
Description: This course aims to increase faculty participation in research by providing intensive training in research project development over seven two-hour sessions. Participants will receive support to complete the development and submission of a research protocol during the course.

### *Didactic Sessions*

#### Fellows

Biostatistics, Division of Endocrinology Research Conference 2017-2021

#### Residents

Biostatistics, Internal Medicine Research Conference 2017, 2019-23

Retrospective Research Design, Internal Medicine Research Conference 2018, 2020-23

Data Collection and Management, Psychiatry Research Conference 2021, 2023

Data Sources for Retrospective Research, Internal Medicine Research Conference 2019

Data Collection and Management, Internal Medicine Research Conference 2017-2018

#### Graduate Students

Outlier Detection, Pharmacology Graduate Statistics 2018, '20, '22

Introduction to R, Pharmacology Graduate Statistics 2018, '20, '22

#### Faculty/Staff

Introduction to Bootstrapping, Center for Clinical Research Statistics Division 2018

### *Advances/Innovations in Assessment*

Course: Certified Recovery Support Specialist (CRSS) Pipeline Program 2022-Present

Role: Program Evaluator

Description: This program aims to increase the number of CRSS's in Illinois by providing free CRSS coursework, personal support, supervised work experience, and stipends. Program assessment includes participant tracking of educational outcomes, apprenticeship and job placement, ongoing needs assessments, and course evaluations. Assessment makes use of online surveys implemented in REDCap to support online learning.

### *Mentoring*

Mentee Name and Rank: Stephen Roy, Post-Doctoral Fellow 2021-Present

Institution: Southern Illinois University School of Medicine

Project Titles: 1) Impact of Non-Invasive Vascular Abnormalities on the J-curve Association Between Blood Pressure and Cardiovascular Risk in the Framingham Heart Study. 2) Center for Clinical Research Grant Writing Initiative

Mentor Role: Faculty advisor providing guidance in the conduct of statistical consulting, analysis of large data sets, grant writing at SIU, and general career and professional development advice.

Mentee Role: Drafting and submitting study protocols as assigned, overseeing data collection efforts on multiple studies, consulting on study design, and formulating a framework for a proposed grant writing initiative at SIU School of Medicine.

Outcome: Steve has progressed to independent analysis of data he obtained from the Framingham Heart Study. He has also developed a grant writing

framework to set expectations for faculty seeking assistance. Finally, he has taken over supervision of two medical student research projects and is co-advising two faculty members on ongoing research projects.

Mentee Name and Rank: Elizabeth Nielsen, Fellow 2021-Present  
Institution: Southern Illinois University School of Medicine  
Project Title: Lung Cancer Screening in Primary Care versus Pulmonology Office: a Retrospective Study.  
Mentor Role: Advised in study design, protocol development, protocol submission, data collection, and statistical analysis.  
Mentee Role: Drafting and submitting study protocol, overseeing data collection.  
Outcome: Study protocol has been approved and data collection is ongoing

Mentee Name and Rank: Zachary Settlemyer, Medical Student 2022-Present  
Institution: Southern Illinois University School of Medicine  
Project Title: Clinical risk prediction scores for primary aldosteronism  
Mentor Role: Advised Zach as part of the CARE and Research Scholar Pathway programs. This included weekly meetings to discuss steps in the research process including study design, protocol development, protocol submission, data collection, and statistical analysis.  
Mentee Role: Conducting literature review, formulating hypotheses, drafting and submitting study protocol, collecting data, learning basic statistical programming, analyzing data, and synthesizing and presenting results.  
Outcome: Study protocol has been approved; data collection is complete; and statistical analysis is ongoing. Abstract accepted for 2023 Trainee Research Symposium.

Mentee Name and Rank: Alikem (Miriam) Agamah, Medical Student 2022-Present  
Institution: Southern Illinois University School of Medicine  
Project Title: A descriptive analysis of hypertensive patients with Liddle Syndrome phenotype  
Mentor Role: Advised Miriam on general research practices. This included regular meetings to discuss steps in the research process including study design, protocol development, protocol submission, data collection, and dissemination of results  
Mentee Role: Conducting literature review, drafting and submitting study protocol, collecting data, and synthesizing and presenting results.  
Outcome: Study protocol has been approved; data collection is complete; and statistical analysis is ongoing. Abstract accepted for 2023 Trainee Research Symposium.

Mentee Name and Rank: Alaine Nixon, Pharmacy Student 2022  
Institution: Southern Illinois University School of Medicine/Southern Illinois University Edwardsville School of Pharmacy  
Project Title: Assessing Adherence to Guideline Recommendations on Initial Selection of Pharmacological Treatment for Hypertension at a General Internal Medicine Clinic in Metropolitan Central Illinois  
Mentor Role: Co-advised (with Amber Fifer) Alaine on research practices and interpretation of hypertension guidelines related to diagnosis and treatment. This included regular meetings to discuss steps in to complete proposed project including hypothesis generation, study design, protocol development, protocol submission, data collection, and dissemination of results  
Mentee Role: Conducting literature review, drafting and submitting study protocol, collecting data, and synthesizing and presenting results.

Outcome: Abstract was presented at the ASHP Midyear Clinical Meeting and Exhibition in Dec. 2022

### *Teaching*

Providing non-mentored or co-mentored project guidance to medical students, residents, fellows, and faculty members who are new to research, including protocol development, IRB submission processes, data collection and management, interpreting analysis results, and presentation of results – 6 medical student, 4 resident, 3 fellow, and 2 faculty projects 2017-Present

## **Honors and Awards**

Center for Clinical Research February 2023 Employee of the Month 2023  
Research and Policy in Infectious Disease Dynamics (RAPIDD) Postdoctoral Fellowship, National Institutes of Health, Bethesda, MD 2013

## **Grants and Contract Awards**

### *Internal Grants*

#### Funded

Title: Biochemical establishment of hypertension treatment adherence (BEHTA): a pilot study

Role on Grant: PI

Calendar Months of Effort: 0 (faculty salary support not allowed)

Source of Funding: SIU School of Medicine Seed Grant

Time Span of the Funding: 1/2022 – 12/2022

Total Dollar Amount: \$11,111

Scope/Purpose of the Grant: Establish and validate protocols with the Roy J. Carver Biotechnology Center at the University of Illinois to test blood samples for antihypertensive medications and/or their metabolites.

Title: SIU School of Medicine Primary Aldosteronism Registry

Role on Grant: Co-PI

Calendar Months of Effort: 0.6

Source of Funding: SIU School of Medicine Department of Internal Medicine

Time Span of Funding: 1/2020 – Present

Scope/Purpose of the Grant: Identify novel biomarkers that can predict development of primary aldosteronism and lateralization of the disease in the adrenal glands. As recommendations for screening and diagnostic testing for primary aldosteronism move towards inclusion of all hypertensive individuals, the ability to diagnose and treat primary aldosteronism without invasive, costly, time-consuming procedures has the potential to alleviate healthcare burdens both at the individual and institutional levels.

### *External Grants*

#### Funded

Title: Certified Recovery Support Specialist Success Program

Role on Grant: Program evaluator

PI Name: Kari Wolf

Calendar Months of Effort: 0.6

Source of Funding: Illinois Department of Human Services

Time Span of the Funding: 12/2021 – 6/2022

Total Dollar Amount: \$344,910 (\$287,425 direct / \$57,485 indirect)

Scope/Purpose of the Grant: The goal of this project is to develop and implement a Certified Recovery Support Specialist training and internship program in Northern Illinois

Title: Certified Recovery Support Specialist Training and Apprenticeship Program

Role on Grant: Program evaluator

PI Name: Kari Wolf

Calendar Months of Effort: 1.5

Source of Funding: Health Resources and Services Administration

Time Span of the Funding: 9/2021 – 8/2025

Total Dollar Amount: \$2,215,965 (\$2,130,708 direct / \$85,257 indirect)

Scope/Purpose of the Grant: The goal of this project is to develop and implement a Certified Recovery Support Specialist training and internship program in Central and Southern Illinois

#### Submitted – Under Review

Title: Closing the gap: a prospective framework to improve early identification and management of perinatal hepatitis C infection in children

Role on Grant: Co-I

PI Name: Ezzeldin Saleh

Calendar Months of Effort: 0.6

Source of Funding: National Institutes of Health

Proposed Time Span of the Funding: 7/2023-6/2025

Total Dollar Amount: \$401,206 (\$275,000 direct / \$126,206 indirect)

Scope/Purpose of the Grant: Develop an effective, scalable intervention that significantly enhances the identification of children perinatally exposed to HCV infection and facilitate access to direct-acting antiviral therapy which is now recommended for children 3 years and older

#### Submitted - Not Funded

Title: Non-suppressible renin-independent aldosterone excretion as a continuum to understand clinical outcomes and treatment efficacy for hypertension in the Jackson Heart Study

Role on Grant: Co-I

PI Name: John Flack

Calendar Months of Effort: 3

Source of Funding: National Institutes of Health

Proposed Time Span of the Funding: 7/2022 – 6/2024

Total Dollar Amount: \$221,250 (\$150,000 direct / \$71,250 indirect)

Scope/Purpose of the Grant: Use observational data from the Jackson Heart Study to identify novel phenotypes based on commonly collected clinical data that can serve as proxies for a primary aldosteronism diagnosis.

Title: Impact of objectively measured antihypertensive medication adherence on the CVD-renal/mortality risk attributable to hypertension phenotypes in CKD patients

Role on Grant: Co-I

PI Name: John Flack

Calendar Months of Effort: 0.6

Source of Funding: Chronic Renal Insufficiency Cohort Opportunity Pool Program

Proposed Time Span of the Funding: 1/2021 – 12/2021

Total Dollar Amount: \$74,923 (\$50,795 direct / \$24,128 indirect)

Scope/Purpose of the Grant: The goal of this project was to use objective measurement of medication non-adherence via biochemical screening of plasma samples to determine the relationship between antihypertensive non-adherence and health outcomes in CRIC

Title: Maximizing Hypertension Treatment Effectiveness (MHyTE) Study

Role on Grant: Co-I

PI Name: John Flack

Calendar Months of Effort: 0.6

Source of Funding: National Institutes of Health  
Proposed Time Span of the Funding: 7/2020 – 6/2025  
Total Dollar Amount: \$2,495,750 (\$1,750,000 direct / \$745,750 indirect)  
Scope/Purpose of the Grant: The goal of this project was to use online learning and interaction with hypertension specialists to improve patient blood pressure and provider knowledge and job satisfaction in rural areas.

Title: Biological screening for medication adherence in SPRINT

Role on Grant: Co-I

PI Name: John Flack

Calendar Months of Effort: 1.1

Source of Funding: National Institutes of Health

Proposed Time Span of the Funding: 6/2020 – 5/2022

Total Dollar Amount: \$186,634 (\$149,701 direct / \$36,933 indirect)

Scope/Purpose of the Grant: The goal of this project was to use blood samples to determine adherence to blood pressure medications in the landmark SPRINT trial to determine the effect of non-adherence on study outcomes.

Title: Physiological profiling in individuals with primary aldosteronism

Role on Grant: Co-I

PI Name: John Flack

Calendar Months of Effort: 0.6

Source of Funding: William E. McElroy Charitable Foundation

Proposed Time Span of the Funding: 5/2020 – 4/2022

Total Dollar Amount: \$45,696 (\$45,696 direct / \$0 indirect)

Scope/Purpose of the Grant: The goal of this project was to establish a registry of individuals with primary aldosteronism at SIU and to identify physiological profiles associated with primary aldosteronism.

## Peer-Reviewed Publications (\* indicates resident or fellow author, underlined indicates medical student author)

### During SIU Employment

- 1) Flack, J.M., **M.G. Buhnerkempe**, K.T. Moore. *Submitted*. Resistant hypertension: disease burden and emerging treatment options. *Current Hypertension Reports*.
- 2) Al-Akchar, M., M. Alhajji, K. Sawalha, O.E.L. Garcia, O. Tarabichi, **M. Buhnerkempe**, M. Bhattarai, Y. Elmasry, A. Agarwal, M. Labedi. In press. Outcomes of cardioversion during pregnancy: a retrospective analysis of the National Inpatient Sample. *Journal of Clinical Gynecology and Obstetrics*.
- 3) Campbell, K.\*, N. Cosenza, R. Meech, **M. Buhnerkempe**, J. Qin, L. Rybak, D. Fox. 2023. D-methionine administered as late as 36 hours post-noise exposure rescues from permanent threshold shift and dose-dependently increases serum antioxidant levels. *Internal Journal of Audiology*. 62(2) 151-158.
- 4) Ibrahim, F.\*, S. Menezes, **M. Buhnerkempe**, A. Fifer, K. Meyer, H. Allam. 2022. Systemic white blood cell count as a biomarker for malignant cerebral edema in large vessel ischemic MCA stroke. *Journal of Stroke and Cerebrovascular Diseases*. 31(8): 106550.
- 5) Flack, J.M.\*, **M.G. Buhnerkempe**. 2022. Race and antihypertensive drug therapy: edging closer to a new paradigm. *Hypertension*. 79(2): 349-351.
- 6) Campbell, K.\*, N. Cosenza, R. Meech, **M. Buhnerkempe**, J. Qin, L. Rybak, D. Fox. 2021. Preloaded D-methionine protects from steady state and impulse noise-induced hearing loss and induces long-term cochlear and endogenous antioxidant effects. *PLoS ONE*. 16(12): e0261049.
- 7) Matos, S., B. Sturm, **M. Buhnerkempe**, R. Larson, M. Wilson\*. 2021. Risk factors for infection after minor dermatologic procedures: a case-control study. *Dermatologic Surgery*. 47(12): 1562-1565.
- 8) Campbell, K.C.\*, A. Rehemtulla, P. Sunkara, D. Hamstra, **M. Buhnerkempe**, B. Ross. 2021. Oral D-methionine protects against cisplatin-induced hearing loss in humans: phase 2 randomized clinical trial in India. *International Journal of Audiology*. 1-11.



- 9) Campbell, K.\* , N. Cosenza, R. Meech, **M. Buhnerkempe**, J. Qin, L. Rybak, D. Fox. 2021. D-methionine immediate and continued rescue after noise exposure does not prevent temporary threshold shift but alters cochlear and serum antioxidant levels. *Internal Journal of Audiology*. 1-9.
- 10) **Buhnerkempe, M.G.**, V. Prakash, A. Botchway, B. Adekola, J.B. Cohen, M. Rahman, M.R. Weir, A.C. Ricardo, J.M. Flack\*. 2021. Adverse health outcomes associated with refractory and treatment-resistant hypertension in the Chronic Renal Insufficiency Cohort. *Hypertension*. 77(1): 72-81.
- 11) Sawalha, K.\* , M. Al-Akchar, A. Ibrahim, **M. Buhnerkempe**, C. Koester, M. Salih, M. Bhattarai, N. Tandan, D.L. Bhatt, A.M. Hafiz. 2020. Impact of chronic kidney disease on in-hospital outcomes and readmission rate after edge-to-edge transcatheter mitral valve repair. *Catheterization and Cardiovascular Interventions*. 97: E569-E579.
- 12) Helman, S.K.\*, R.O. Mummah, K.M. Gostic, **M.G. Buhnerkempe**, K.C. Prager, J.O. Lloyd-Smith. 2020. Estimating prevalence and test accuracy in disease ecology: how Bayesian latent class analysis can boost or bias imperfect test results. *Ecology and Evolution*. 10: 7221-7232.
- 13) Prager, K.C.\* , **M.G. Buhnerkempe**, D.J. Greig, A.J. Orr, E.D. Jensen, F. Gomez, R.L. Galloway, Q. Wu, F.M.D. Gulland, J.O. Lloyd-Smith. 2020. Linking longitudinal and cross-sectional biomarker data to understand host-pathogen dynamics: *Leptospira* in California sea lions (*Zalophus californianus*) as a case study. *PLoS Neglected Tropical Diseases*. 14. E0008407.
- 14) Botchway, A., **M.G. Buhnerkempe**, V. Prakash, M. Al-Akchar, O. Adekola, J.M. Flack\*. 2020. Serious adverse events cluster in participants experiencing the primary composite cardiovascular endpoint: a post-hoc analysis of the SPRINT trial. *American Journal of Hypertension*. 33: 528-533.
- 15) **Buhnerkempe, M.G.\***, A. Botchway, V. Prakash, M. Al-Akchar, C.E. Nolasco Morales, D.A. Calhoun, J.M. Flack. 2019. Prevalence of refractory hypertension in the United States from 1999 to 2014. *Journal of Hypertension*. 37: 1797-1804.
- 16) Siddiqui, F.M.\*, M.W. Weber, S. Dandapat, S. Scaife, **M. Buhnerkempe**, S. Ortega-Gutierrez, N. Aksan, A. Elias, J.M. Coutinho. 2019. Endovascular thrombolysis or thrombectomy for cerebral venous thrombosis: study of Nationwide Inpatient Sample 2004-2014. *Journal of Stroke and Cerebrovascular Diseases*. 28: 1440-1447.
- 17) Lorenson, J.\*, M. Cusumano, A. Stewart, **M. Buhnerkempe**, D. Sanghavi. 2019. Fixed-rate insulin for adult diabetic ketoacidosis is associated with more frequent hypoglycemia than rate-reduction method: A retrospective cohort study. *International Journal of Pharmacy Practice*. 27: 380-385.
- 18) Bhandari, B.\*, M. Regmi, A. Ibrahim, B. Al-bast, C. Koester, P. Parajuli, M. Al-Akchar, **M. Buhnerkempe**, A. Worix, A. Kulkarni. 2019. General anesthesia versus conscious sedation in transcatheter aortic valve replacement: experience from a growing structural cardiology program in the Midwest. *Interventional Cardiology*. 11: 154-160.
- 19) Hermann, T., **M.G. Buhnerkempe**, M. Wilson\*. 2019. Initiation of methotrexate with or without a test dose: a retrospective toxicity study. *Journal of the American Academy of Dermatology*. 80: 1160-1162.
- 20) **Buhnerkempe, M.G.**, A. Botchway, C.E. Nolasco Morales, V. Prakash, L. Hedquist, J.M. Flack\*. 2018. Predicting the risk of apparent treatment resistant hypertension: a longitudinal, cohort study in an urban hypertension referral clinic. *Journal of the American Society of Hypertension*. 12: 809-817.
- 21) Ginnetti, M., **M. Buhnerkempe**, M. Wilson\*. 2018. The staining of clothing by sunscreens: a pilot study. *Journal of the American Academy of Dermatology*. 79: 562-564.

#### Prior to SIU Employment

- 22) Dorak, S.J., M.L. Green, M.M. Wander, M.O. Ruiz, **M.G. Buhnerkempe**, T. Tian, J.E. Novakofski, N.E. Mateus-Pinilla\*. 2017. Clay content and pH: soil characteristic associations with the persistent presence of chronic wasting disease in northern Illinois. *Scientific Reports*. 7: 18062.
- 23) **Buhnerkempe, M.G.\***, K.C. Prager, C.C. Strelloff, D.J. Greig, J.L. Laake, S.R. Melin, R.L. DeLong, F. Gulland, and J.O. Lloyd-Smith. 2017. Detecting signals of chronic shedding to explain pathogen persistence: *Leptospira interrogans* in California sea lions. *Journal of Animal Ecology*. 86: 460-472.
- 24) Pepin, K.\*, S. Kay, B. Golas, S. Shriner, A. Gilbert, R. Miller, A. Graham, S. Riley, P. Cross, M. Samuel, M. Hooten, J. Hoeting, J. Lloyd-Smith, C. Webb, and **M. Buhnerkempe**. 2017. Inferring infection hazard in wildlife populations by linking data across individual and population scales. *Ecology Letters*. 20: 275-292
- 25) Schakner, Z.A.\*, **M.G. Buhnerkempe**, M.J. Tennis, R.J. Stansell, B.K. Van Der Leeuw, J.O. Lloyd-Smith, and D.T. Blumstein. 2016. Epidemiological models to control the spread of information in marine mammals. *Proceedings of the Royal Society London: Series B*. 283: 20162037.

- 26) Gorsich, E.E.\*, A.D. Luis, **M.G. Buhnerkempe**, D.A. Grear, K. Portacci, R.S. Miller, and C.T. Webb. 2016. Mapping US cattle shipment networks: spatial and temporal patterns of trade communities from 2009 to 2011. *Preventive Veterinary Medicine*. 134: 82-91.
- 27) **Buhnerkempe, M.G.\***, C.T. Webb, A. Merton, J. Buhnerkempe, G. Givens, R. Miller, and J. Hoeting. 2016. Identification of migratory bird flyways in North America using community detection on biological networks. *Ecological Applications*. 26: 740-751.
- 28) **Buhnerkempe, M.G.\***, K. Gostic, M. Park, P. Ahsan, and J.O. Lloyd-Smith. 2015. Mapping influenza transmission in the ferret model to transmission in humans. *eLife*. 4: e07969.
- 29) Prager, K.C.\*, D.P. Alt, **M.G. Buhnerkempe**, D.J. Greig, R.L. Galloway, Q. Wu, F.M.D. Gulland, and J.O. Lloyd-Smith. 2015. Antibiotic efficacy in eliminating leptospirosis in California sea lions (*Zalophus californianus*) stranding with leptospirosis. *Aquatic Mammals*. 41: 203-212.
- 30) **Buhnerkempe, M.G.\***, M.G. Roberts, A.P. Dobson, H. Heesterbeek, P.J. Hudson, and J.O. Lloyd-Smith. 2015. Eight challenges in modelling disease ecology in multi-host, multi-agent systems. *Epidemics*. 10: 26-30.
- 31) Pepin, K.M.\*, C.B. Leach, C. Marques-Toledo, K.H. Laass, K.S. Paixao, A.D. Luis, D.T.S. Hayman, N.G. Johnson, **M.G. Buhnerkempe**, S. Carver, D.A. Grear, K. Tsao, A.E. Eiras\*, and C.T. Webb. 2015. Utility of mosquito surveillance data for spatial prioritization of vector control against dengue viruses in three Brazilian cities. *Parasites and Vectors*. 8: 98.
- 32) **Buhnerkempe, M.G.\***, M.J. Tildesley, T. Lindström, D.A. Grear, K. Portacci, R.S. Miller, J. Lombard, M. Werkman, M.J. Keeling, U. Wennergren, and C.T. Webb. 2014. The impact of movements and animal density on continental scale cattle disease outbreaks in the United States. *PLoS ONE* 9: e91724.
- 33) **Buhnerkempe, M.G.**, D.A. Grear\*, K. Portacci, R.S. Miller, J.E. Lombard, and C.T. Webb. 2013. A national-scale picture of U.S. cattle movements obtained from Interstate Certificate of Veterinary Inspection data. *Preventive Veterinary Medicine* 112: 318-329.
- 34) Portacci, K.\*, R.S. Miller, P.D. Riggs, **M.G. Buhnerkempe**, and L.M. Abrahamsen. 2013. Assessment of paper interstate certificates of veterinary inspection to support disease tracing in cattle. *Journal of the American Veterinary Medical Association* 243: 555-560.
- 35) Lindström, T.\*, D. Grear, **M. Buhnerkempe**, C. Webb, R. Miller, K. Portacci, and U. Wennergren. 2013. A Bayesian approach for modeling cattle movements in the United States: scaling up a partially observed network. *PLoS ONE* 8(1): e53432. doi:10.1371/journal.pone.0053432.
- 36) **Buhnerkempe, M.\***, R. Eisen, B. Goodell, K. Gage, M. Antolin, and C. Webb. 2011. Transmission shifts underlie variability in population responses to *Yersinia pestis* infection. *PLoS ONE* 6(7): e22498. doi:10.1371/journal.pone.0022498.
- 37) **Buhnerkempe, M.**, N. Burch, S. Hamilton, K.M. Byrne, E. Childers, K.A. Holfelder, L.N. McManus, M.I. Pyne, G. Schroeder, and P.F. Doherty. 2011. The utility of transient sensitivity for wildlife management and conservation: Bison as a case study. *Biological Conservation* 144: 1808-1815. doi: 10.1016/j.biocon.2011.03.012.
- 38) Pyne, M.I.\*, K.M. Byrne, K.A. Holfelder, L. McManus, **M. Buhnerkempe**, N. Burch, E. Childers, S. Hamilton, G. Schroeder, and P.F. Doherty Jr. 2010. Survival and breeding transitions for a reintroduced bison population: a multi-state approach. *Journal of Wildlife Management*. 74: 1463-1471.

## Oral Presentations (\* indicates presenting author)

### *Invited Presentations*

### Prior to SIU Employment

- 1) **Buhnerkempe, M.G.\***, K.C. Prager, A. Guglielmino, and J.O. Lloyd-Smith. Challenges in modeling wildlife disease systems with multiple hosts. *Symposium on Quantitative Approaches to Wildlife Disease at The Wildlife Society's 22<sup>nd</sup> Annual Conference*. Winnipeg, Canada. Oct. 19, 2015.
- 2) **Buhnerkempe, M.G.\*** Modeling leptospirosis in California sea lions. *UCLA Quantitative Computational Biology Seminar Series*. Los Angeles, CA. Aug. 21, 2015
- 3) **Buhnerkempe, M.G.\*** Integrating antibody kinetics with serosurveillance data. *RAPIDD Workshop on Translating Serology Data to Disease Dynamics*. Fort Collins, CO. Jan. 28-30, 2015.
- 4) **Buhnerkempe, M.G.\*** Models for managing acute and chronic diseases in U.S. livestock. *Meeting of the Subcommittee on Foreign Animal Disease Threats of the President's National Science and Technology Council*. Washington, DC. May 8, 2014.

- 5) **Buhnerkempe, M.G.\***, C.T. Webb, M. Tildesley, U. Wennergren. Disease spread on transport networks of U.S. cattle. *Ecological Society of America 98<sup>th</sup> Annual Meeting*. Minneapolis, MN. Aug. 4-9, 2013.
- 6) **Buhnerkempe, M.G.\***, D.A. Gear, T. Lindström, R. Miller, K. Portacci, M. Tildesley, C. Webb, U. Wennergren. Using ICVIs to understand US cattle movements. *RAPIDD Workshop on Modeling Foot-and-Mouth Disease in the USA*. Fort Collins, CO. Sept. 1-2, 2012.
- 7) **Buhnerkempe, M.G.\***, R. Eisen, B. Goodell, K. Gage, M. Antolin, and C. Webb. Transmission shifts underlie variability in population responses to plague. *RAPIDD Workshop on Underserved Vector Modeling*. State College, PA. Jan. 30-31, 2012.

#### National/International Meetings

#### During SIU Employment

- 1) **Buhnerkempe, M.G.\***, A. Botchway, C. Nolasco Morales, V. Prakash, L. Hedquist, J.M. Flack. Predicting the risk of apparent treatment resistant hypertension: a retrospective, longitudinal, cohort study in an urban hypertension referral clinic setting. *AHA Joint Hypertension Scientific Sessions 2017*. San Francisco, CA. Sept. 14-17, 2017.

#### Prior to SIU Employment

- 2) **Buhnerkempe, M.G.\***, K.C. Prager, C.C. Strelloff, F.M.D. Gulland, J.O. Lloyd-Smith. Disentangling time-scales to explore persistence of leptospirosis in California sea lions. *Ecological Society of America 99<sup>th</sup> Annual Meeting*. Sacramento, CA. Aug. 10-15, 2014.
- 3) **Buhnerkempe, M.G.\***, K.C. Prager, C.C. Strelloff, F.M.D. Gulland, J.O. Lloyd-Smith. Disentangling time-scales to explore seasonality and persistence of leptospirosis in California sea lions. *Epidemics*4. Amsterdam, Netherlands. Nov. 19-22, 2013.
- 4) **Buhnerkempe, M.G.\***, K.C. Prager, F.M.D. Gulland, J.O. Lloyd-Smith. Maximizing the potential of serology data: a model of *Leptospira* antibody dynamics in California sea lions. *Ecological Society of America 98<sup>th</sup> Annual Meeting*. Minneapolis, MN. Aug. 4-9, 2013.
- 5) **Buhnerkempe, M.G.\***, C.T. Webb, M. Boots. Asymmetries in dispersal alter coevolutionary trajectories for host resistance and parasite virulence in a metapopulation. *Ecological Society of America 97<sup>th</sup> Annual Meeting*. Portland, OR. Aug. 5-10, 2012.

## Poster Presentations (\* indicates presenting author, underline indicates trainee author)

#### National/International Meetings

#### During SIU Employment

- 1) Chauhan, K.\*, **M. Buhnerkempe**, S. Scaife. Understanding the economic impact of autoimmune eye disease in the United States. American College of Rheumatology Convergence 2023. San Diego, CA. Nov. 10-15, 2023.
- 2) Cheema, A.\*, **M. Buhnerkempe**, A. Botchway, V. Prakash, Z. Settelmyer, K. King, S. Roy, O. Adekola, J. Flack. Sodium, potassium, and calories: implications for implementing a recommended diet in adults with hypertension – a cross sectional analysis of NHANES 1999-2020. *AHA Joint Hypertension Scientific Sessions 2023*. Boston, MA. Sept. 7-10, 2023.
- 3) Settelmyer, Z.\*, **M. Buhnerkempe**, V. Prakash, A. Botchway, S. Roy, K. King, O. Adekola, A. Cheema, V. Williams, M. Jakoby, J. Flack. Clinical risk prediction scores for primary aldosteronism. *AHA Joint Hypertension Scientific Sessions 2023*. Boston, MA. Sept. 7-10, 2023.
- 4) Sagalov, A.\*, W. Ullah, E. Brailovsky, **M. Buhnerkempe**, S. Scaife, A. Kulkarni, M. Labedi, S. Hegde. Cardiac amyloidosis versus other restrictive cardiomyopathies: a retrospective analysis of cardiovascular outcomes and arrhythmic burden. *10th Annual Meeting of the North American Section of the International Academy of Cardiovascular Sciences*. Tampa, FL, Sept. 7-9, 2023.
- 5) Sagalov, A.\*, M.A. Sheikh, Z. Niaz, **M. Buhnerkempe**, S. Scaife, A. Kulkarni, A. Hafiz. Transcatheter edge-to-edge repair versus annuloplasty in the treatment of functional mitral valve regurgitation: an analysis of mortality and complications in patients with heart failure with reduced ejection fraction. *10th*

*Annual Meeting of the North American Section of the International Academy of Cardiovascular Sciences.* Tampa, FL, Sept. 7-9, 2023.

- 6) Williams, V.\* , J. Thiede, A. Botchway, **M. Buhnerkempe**, M.G. Jakoby. Impact of COVID-related clinic disruption in patients with type 2 diabetes. *ADA Scientific Sessions 2023*. San Diego, CA. June 23-26, 2023.
- 7) Rathinamanickam, H.\* , Y.Y. Hu, K. Coakley, **M Buhnerkempe**, S. Roy, M. Graves, A. Botchway. An analysis of association of non-alcoholic fatty pancreas with vitamin D deficiency and associated comorbidities. *Digestive Disease Week 2023*. Chicago, IL. May 6-9, 2023.
- 8) Sheikh, M.\*, **M. Buhnerkempe**, S. Scaife, M Regmi, R. Patel, S. Hegde. Transcatheter aortic valve replacement in patients with cardiac amyloidosis - national outcomes and readmissions. ACC.23 Together With WCC. New Orleans, LA. March 4-6, 2023.
- 9) Sheikh, M.\*, **M. Buhnerkempe**, S. Scaife, M. Regmi, R. Patel, S. Hegde. Outcomes of TAVR in patients with and without amyloidosis - a National Inpatient Database study. ACC.23 Together With WCC. New Orleans, LA. March 4-6, 2023.
- 10) Patel, R.\*, **M. Buhnerkempe**, S. Scaife, S. Hegde. Incidence and outcome of spontaneous coronary artery dissection in pregnancy. ACC.23 Together With WCC. New Orleans, LA. March 4-6, 2023.
- 11) Sagalov, A.\*, M. Shnoda, **M. Buhnerkempe**, S. Scaife, A. Kulkarni. Impella versus intra-aortic balloon pump: a retrospective analysis of inpatient mortality and readmission rates as a bridge to heart transplant. ACC.23 Together With WCC. New Orleans, LA. March 4-6, 2023.
- 12) Nixon, A.\*, A. Catalano, A. Fifer, **M. Buhnerkempe**, M. Meinke, J. Flack. Assessing adherence to guideline recommendations on initial selection of pharmacological treatment for hypertension at a general medicine clinic in metropolitan central Illinois. *ASHP Midyear 2022*. Las Vegas, NV. Dec. 4-8, 2022.
- 13) Rathinamanickam, H., **M Buhnerkempe**, S. Roy\*. An analysis of association of non-alcoholic fatty liver disease and cataracts. *AASLD Liver Meeting 2022*. Washington D.C. Nov. 4-8, 2022.
- 14) Jakoby, M.\* , V. Williams, S. Ward, S. Lee, **M. Buhnerkempe**, K. Izuora. Glycemic control is not an independent predictor of mortality or length of stay for patients hospitalized with coronavirus 2019 (COVID-19). *ADA Scientific Sessions 2021*. Virtual Meeting. June 25-29, 2021.
- 15) **Buhnerkempe, M.\***, V. Prakash, A. Botchway, B. Adekola, J.M. Flack. The magnitude, and not direction, of blood pressure change influences the risk of serious adverse events in SPRINT. *AHA Joint Hypertension Scientific Sessions 2020*. Virtual Meeting. Sept. 10-13, 2020.
- 16) Vest, B.\*, **M. Buhnerkempe**, K. Minielly, R. Larson. Utility of tuberculosis screening in psoriasis patients treated with biologics and traditional immunosuppressant medications: experience at a single US institution. *Medical Dermatology Society Annual Meeting 2020*. Denver, CO. March 18, 2020.
- 17) Lanzotti, N.\*, N. Jahangir, K. Gollon, M. Farooqi, **M. Buhnerkempe**, F.M. Siddiqui, A. Elias. A simplified novel stroke prognostication scale for patients receiving mechanical thrombectomy. *AHA International Stroke Conference 2020*. Los Angeles, CA. Feb. 19-21, 2020.
- 18) Jahangir, N.\*, N. Lanzotti, K. Gollon, M. Farooqi, **M. Buhnerkempe**, R. Shastri, A. Elias, F.M. Siddiqui. External validation of stroke prognostication scales – a retrospective cohort study. *AHA International Stroke Conference 2020*. Los Angeles, CA. Feb. 19-21, 2020.
- 19) Bhandari, B.\*, M. Regmi, A. Ibrahim, **M. Buhnerkempe**, M. Labedi. Risk factors and management of left atrial appendage thrombus (LAAT) prior to atrial fibrillation ablation. *AHA Scientific Sessions 2019*. Philadelphia, PA. Nov. 16-18, 2019.
- 20) Botchway, A.\* , **M.G. Buhnerkempe**, V. Prakash, M. Al-Akchar, O. Adekola, J.M. Flack. Experiencing the primary composite cardiovascular outcome is more strongly associated with serious adverse events than intensive treatment in Systolic Blood Pressure Intervention Trial. *AHA Joint Hypertension Scientific Sessions 2019*. New Orleans, LA. Sept. 5-8, 2019.
- 21) Prakash, V.\* , **M.G. Buhnerkempe**, A. Botchway, M. Al-Akchar, O. Adekola, J.M. Flack. Renal, cardiovascular, and mortality impacts of refractory hypertension in patients with chronic kidney disease: insights from the Chronic Renal Insufficiency Cohort. *AHA Joint Hypertension Scientific Sessions 2019*. New Orleans, LA. Sept. 5-8, 2019.
- 22) **Buhnerkempe, M.G.\***, A. Botchway, C. Nolasco Morales, V. Prakash, J.M. Flack. Prevalence of refractory hypertension in the U.S., 1999-2014. *AHA Joint Hypertension Scientific Sessions 2018*. Chicago, IL. Sept. 6-9, 2018.
- 23) **Buhnerkempe, M.G.\***, A. Botchway, C. Nolasco Morales, V. Prakash, J.M. Flack. Predicting the risk of refractory hypertension. *AHA Joint Hypertension Scientific Sessions 2018*. Chicago, IL. Sept. 6-9, 2018.

Prior to SIU Employment

- 24) **Buhnerkempe, M.G.\***, K.C. Prager, and J.O. Lloyd-Smith. *Maximizing the value of serosurveillance data for outbreak detection. Ecology and Evolution of Infectious Diseases*. Ithaca, NY. June 3-5, 2016.
- 25) **Buhnerkempe, M.G.\***, K. Gostic, M. Park, P. Ahsan, and J.O. Lloyd-Smith. Mapping influenza transmission in the ferret model to transmission in humans. *Ecology and Evolution of Infectious Diseases*. Athens, GA. May 26-29, 2015.
- 26) **Buhnerkempe, M.G.\***, C.T. Webb, R. Eisen, B. Goodell, M. Antolin, and K. Gage. Transmission Shifts Explain Variability in Population Responses to Plague. *Clinic on the Meaningful Modeling of Epidemiological Data*. Cape Town, South Africa. May 27-June 8, 2012.

#### Local Meetings

#### During SIU Employment

- 1) Agamah, A.M.\*, J. Flack, S. Roy, Z. Settelmyer, V. Williams, M. Jakoby, M. Buhnerkempe. A descriptive analysis of hypertensive patients with Liddle Syndrome phenotype. *Southern Illinois University School of Medicine Annual Trainee Research Symposium*. Springfield, IL. April 18, 2023.
- 2) Settelmyer, Z.\*, **M. Buhnerkempe**, V. Prakash, V. Williams, M. Jakoby, J. Flack. Clinical risk prediction scores for primary aldosteronism. *Southern Illinois University School of Medicine Annual Trainee Research Symposium*. Springfield, IL. April 18, 2023.
- 3) Roberts, N.\*, A. Marsh, C.A. Mirto, J. Houser, C.B. Chambers, **M. Buhnerkempe**, D.S. Torry, A. Wilber. Neutralizing function of serum IgG antibodies to SARS-CoV-2 SPIKE protein following vaccination or recovery from infection. *Southern Illinois University School of Medicine Annual Trainee Research Symposium*. Springfield, IL. April 18, 2023.
- 4) Ayegbusi, O.\*, L. Miedwig, C. Burns, A. Hill, V. Williams, S. Parveen, M.M. Ali, S. Imtiaz, A. Botchway, M. Buhnerkempe, J. Flack, D. Steward, M. Jakoby. Family healthcare advocate integrated with medical specialists to improve cardiometabolic health (FISH). *Southern Illinois University School of Medicine Annual Trainee Research Symposium*. Springfield, IL. April 18, 2023.

### Other Scholarly Products

#### *Other Evidence Not Included Elsewhere*

Co-Investigator on the SHARPS-OP benchmarking collaborative to characterize nationwide pediatric antibiotic use	2021-Present
Implemented electronic judging in REDCap for the Annual Trainee Research Symposium	2021-Present
Moderated a session on primary aldosteronism at the 2021 AHA Scientific Sessions	2021
Participated in the planning and implementation of REDCap databases to guide quality improvement for the Illinois Department of Corrections overseen by the Office of Correctional Medicine	2020-Present

#### *SIU Medicine IRB Research Protocols*

- 1) Factors predicting significant improvement in glycemic control with baseline HbA1c >10% in patients with type 2 diabetes mellitus. Type: Exempt. PI: Vanessa Williams. Role: Co-investigator. Approved: 2023.
- 2) Evaluating the impact of cardiac rehabilitation on heart failure patients' knowledge of lifestyle factors and self-care behavior. Type: Exempt. PI: Shruti Hegde. Role: Co-investigator. Approved: 2023.
- 3) High-sensitivity troponin impact on inpatient cardiology resources: a retrospective study and literature review. Type: Exempt. PI: Shruti Hegde. Role: Co-investigator. Approved: 2023.
- 4) Outcomes of device detected silent atrial fibrillation. Type: Exempt. PI: Mohamed Labedi. Role: Co-investigator. Approved: 2023.
- 5) SuperSkin educational program: promoting skin health and acceptance in elementary-aged children, a pilot study. Type: Expedited. PI: Lucinda Buescher. Role: Co-investigator. Approved: 2023.
- 6) Predictive score for malignant cerebral edema after MCA ischemic stroke. Type: PI: Hesham Allam. Type: Exempt. Role: Sub-investigator. Approved: 2023.

- 7) Investigating psychosocial predictors of cardiovascular disease in the CARDIA study: a structural equation modeling approach. Type: Non-human subject research. PI: Albert Botchway. Role: Co-investigator. Approved: 2023.
- 8) Retrospective chart review for hypothesized etomidate/COVID outcome association. Type: Exempt. PI: Jonathan Fagg. Role: Biostatistician. Approved: 2022.
- 9) Vaccine disparities in central Illinois. Type: Non-human subject research. PI: Shreepada Tripathy. Role: Co-investigator. Approved: 2022.
- 10) Identifying the care gap between 2017 ACC/AHA hypertension guidelines and current practices at SIU Family Medicine/Internal Medicine clinics. Type: Expedited. Role: **Principal investigator**. Approved: 2022.
- 11) Clinical risk prediction scores for primary aldosteronism. Type: Expedited. Role: **Principal investigator**. Approved: 2022.
- 12) A descriptive analysis of hypertensive patients with Liddle Syndrome phenotype. Type: Expedited. Role: **Principal investigator**. Approved: 2022.
- 13) Understanding orthostatic hypotension and how it might impact clinical decision making in management of hypertension. Type: Exempt. Role: **Principal investigator**. Approved: 2022.
- 14) Impact of cardiometabolic risk factors associated with disease progression between metabolic dysfunction associated fatty liver disease (MAFLD) and non-alcoholic fatty liver disease (NAFLD). Type: Non-human subject research. PI: Albert Botchway. Role: Co-investigator. Approved: 2022.
- 15) Prevalence of vitamin D deficiency in patients with fatty pancreatic disease. Type: Expedited. PI: Harini Rathinamanickam. Role: Co-investigator. Approved: 2022.
- 16) Prevalence of hypo functioning gallbladder in patients with non-alcoholic fatty liver disease undergoing cholecystectomy. Type: Expedited. PI: Harini Rathinamanickam. Role: Co-investigator. Approved: 2022.
- 17) Impact of non-invasive vascular abnormalities on the J-curve association between blood pressure and cardiovascular risk in the Framingham Heart Study. Type: Expedited. Role: **Principal investigator**. Approved: 2021.
- 18) Biochemical establishment of hypertension treatment adherence (BEHTA): a pilot study. Type: Expedited. Role: **Principal investigator**. Approved: 2021.
- 19) Secondary analyses of data from the Treatment of Mild Hypertension Study. Type: Non-human subject research. PI: John Flack. Role: Co-investigator. Approved: 2021.
- 20) Non-suppressible renin-independent aldosterone excretion as a continuum to understand clinical outcomes and treatment efficacy for hypertension. Type: Expedited. PI: John Flack. Role: **Additional principal investigator**. Approved: 2021.
- 21) Lung cancer screening in primary care versus pulmonology office: a retrospective study. Type: Expedited. PI: Elizabeth Nielsen. Role: Co-investigator. Approved: 2021.
- 22) Evaluation of incidental adrenal masses after initial radiographic diagnosis. Type: Exempt. PI: Michael Jakoby. Role: Co-investigator. Approved: 2021.
- 23) Secondary analysis of the Multi-Ethnic Study of Atherosclerosis (MESA) study. Type: Non-human subject research. PI: Albert Botchway. Role: Co-investigator. Approved: 2021.
- 24) Consequences of virus-related clinic disruption in diabetes mellitus type 2. Type: Exempt. PI: Vanessa Williams. Role: Co-investigator. Approved: 2021.
- 25) Characterization of opioid use at SIU SOM GIM and development of a management database of vulnerable patients. Type: Non-human subject research. PI: Mark Graves. Role: Co-investigator. Approved: 2021.
- 26) Family healthcare advocate integrated with medical specialists to improve cardiometabolic health (FISH). Type: Expedited. PI: Michael Jakoby. Role: Co-investigator. Approved: 2021.
- 27) Individual patient IND – Plenadren. Type: Single patient IND. PI: Sanobar Parveen. Role: Study coordinator. Approved: 2020.
- 28) Secondary analysis of data from the action to control cardiovascular risk in diabetes (ACCORD) trial. Type: Non-human subject research. PI: Albert Botchway. Role: Co-investigator. Approved: 2020.
- 29) Characterization of lipid profiles, triglyceride levels, and lipid management medications in medicare age patients with coronary artery disease (CAD), peripheral vascular disease (PVD), and cerebrovascular disease (CVD). Type: Expedited. PI: Mark Graves. Role: Co-investigator. Approved: 2020.
- 30) Retrospective identification of medications to treat COVID-19. Type: Exempt. PI: Benjamin Richardson. Role: Co-investigator. Approved: 2020.
- 31) Effect of COVID-19 pandemic on annual influenza vaccine adherence. Type: Non-human subject research. PI: Sameer Vohra. Role: Sub-investigator. Approved: 2020.

- 32) Relationship between diastolic blood pressure and cardiovascular disease in the systolic hypertension in the elderly program (SHEP). Type: Non-human subject research. Role: **Principal investigator**. Approved: 2020.
- 33) Research initiative to sponsor and empower women in medicine and science. Type: Non-human subject research. PI: Vidhya Prakash. Role: Biostatistician. Approved: 2020.
- 34) Glycemic control and clinical outcomes in patients hospitalized with SARS-CoV-2 (COVID-19) infection. Type: Expedited. PI: Michael Jakoby. Role: Co-investigator. Approved: 2020.
- 35) Hypertension phenotype study. Type: Expedited. PI: John Flack. Role: Co-investigator. Approved: 2020.
- 36) Systemic white blood cell count as a biomarker for malignant cerebral edema in massive MCA stroke. Type: Expedited. PI: Hesham Allam. Role: Sub-investigator. Approved: 2020.
- 37) Biological screening for medication adherence in SPRINT. Type: Non-human subject research. PI: John Flack. Role: Co-investigator. Approved: 2019.
- 38) Studying cardiac outcomes in breast cancer patients receiving conventional breast cancer treatment regimen. Type: Expedited. PI: Abhishek Kulkarni. Role: Data manager. Approved: 2019.
- 39) Predictors and correlates of serious adverse events in the systolic blood pressure intervention trial (SPRINT). Type: Non-human subject research. PI: Albert Botchway. Role: Co-investigator. Approved: 2019.
- 40) Infection rate and risk factors associated with skin biopsies and excisions in a dermatology clinic. Type: Expedited. PI: Morgan Wilson. Role: Biostatistician. Approved: 2019.
- 41) Impacts of diuretic use and multidrug interactions on antihypertension treatment effectiveness in the antihypertensive and lipid-lowering treatment to prevent heart attack trial (ALLHAT). Type: Non-human subject research. Role: **Principal investigator**. Approved: 2018.
- 42) General anesthesia versus conscious sedation in transcatheter aortic valve replacement. Type: Exempt. PI: Bishal Bhandari. Role: Biostatistician. Approved: 2018.
- 43) A structural equation modeling approach to data from the chronic renal insufficiency cohort (CRIC) study. Type: Non-human subject research. PI: Albert Botchway. Role: Co-investigator. Approved: 2018.
- 44) Prevalence and risk factors for hypertensive phenotypes in the United States. Type: Non-human subject research. Role: **Principal investigator**. Approved: 2018.
- 45) Secondary analyses of a de-identified clinical data set to characterize hypertensive phenotypes and blood pressure control strategies. Type: Non-human subject research. Role: Principal investigator. Approved: 2018.
- 46) A structural equation modeling approach to data from the atherosclerosis risk in communities (ARIC) study. Type: Non-human subject research. PI: Albert Botchway. Role: Co-investigator. Approved: 2018.
- 47) Determining treatment strategies for controlling hypertension using a retrospective, secondary analysis of electronic health record data. Type: Exempt. Role: **Principal investigator**. Approved: 2017.

## Professional Community Activities

Presented to eighth graders at University Laboratory High School in Urbana, IL on research data collection.

2019