Cole Brokamp

CONTACT INFORMATION

Division of Biostatistics and Epidemiology
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RESEARCH INTERESTS

Geoinformatics, remote sensing, environmental health, statistical computing, statistical inference for machine learning algorithms

EDUCATION

Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio USA

Postdoctoral Research Fellow, Biostatistics & Epidemiology, 2016 – 2017

University of Cincinnati, Cincinnati, Ohio USA

Ph.D., Biostatistics and Bioinformatics, 2016

University of Cincinnati, Cincinnati, Ohio USA

B.S., Biomedical Engineering, 2010

ACADEMIC EXPERIENCE

Cincinnati Children's Hospital Medical Center
Biostatistics & Epidemiology

Assistant Professor, 2017 - present

PUBLICATIONS

Lauren C. Riney, **Cole Brokamp**, Andrew F. Beck, Wendy Pomerantz, Hamilton Schwartz, Todd A. Florin. Emergency Medical Services Utilization is Associated with Community Deprivation in Children; a Geospatial Analysis. *In Preparation.*

Cole Brokamp, Roman Jandarov, Monir Hossain, Patrick Ryan. Predicting Daily Urban Fine Particulate Matter Concentrations Using Random Forest. *Under Review.*

Andrew F. Beck, Carley L. Riley, Stuart Taylor, **Cole Brokamp**, Robert S. Kahn. Toward a Culture of Health in Hospitals: Pervasive population disparities in inpatient bed-day rates across conditions and subspecialties. *Under Review.*

Todd A. Florin, **Cole Brokamp**, Rachel Mantyla, Bradley DePaoli, Richard Ruddy, Samir S. Shah, Lilliam Ambroggio. Validation of the IDSA/PIDS Severity Criteria in Children with Community-Acquired Pneumonia. *Under Review.*

Rhonda Szczesniak, **Cole Brokamp**, Weiji Su, Gary L. McPhail, John Pestian, John P. Clancy. Early Detection of Rapid Cystic Fibrosis Disease Progression Tailored to Point of Care: A Proof-of-Principle Study. *IEEE Journal of Translational Engineering on Health and Medicine. In Press.*

Rebecca Gernes, **Cole Brokamp**, Glenn Rice, J. Michael Wright, Michelle Kondo, Yvonne Michael, Geoffrey Donovan, Demetrios Gatziolis, David Bernstein, Grace LeMasters, James Lockey, G. Khurana Hershey, Patrick Ryan. Using medium- and high-resolution residential greenspace measures to assess risks of allergy outcomes in a cohort of children residing near Cincinnati, Ohio. *Under Review.*

Cole Brokamp, MB Rao, Patrick Ryan, Roman Jandarov. A comparison of resampling and recursive partitioning methods in random forest for estimating the asymptotic variance using the infinitesimal jackknife. *Stat. In Press.*

Rhonda D. Szczesniak, Dan Li, Weiji Su, **Cole Brokamp**, John Pestian, Michael Seid, John P. Clancy. Phenotypes of Rapid Cystic Fibrosis Lung Disease Progression during Adolescence and Young Adulthood. *American Journal of Respiratory And Critical Care Medicine. In Press.*

Todd Florin, Lilliam Ambroggio, **Cole Brokamp**, Mantosh S. Rattan, Eric J. Crotty, Andrea Kachelmeyer, Richard M. Ruddy, Samir Shah. Reliability of Examination Findings in Suspected Community-Acquired Pneumonia. *Pediatrics. In Press.*

Cole Brokamp, Chris Wolfe, Todd Lingren, John Harley, Patrick Ryan. Decentralized and Reproducible Geocoding and Characterization of Community and Environmental Exposures for Multi-Site Studies. *Journal of American Medical Informatics Assocation.* 0(0). 1-6. 2017. *Download*.

Cole Brokamp, Andrew F. Beck, Louis Muglia, Patrick Ryan. Combined Sewer Overflow Events and Childhood Emergency Department Visits: A Case-Crossover Study. *Science of the Total Environment.* 607-608. 1180-1187. 2017. *Download*.

Patrick Ryan, James E. Lockey, Brad Black, Carol H. Rice, Jeff Burkle, Tim Hilbert, Linda Levin, **Cole Brokamp**, Roy McKay, Ted Larson, Grace K. LeMasters. Childhood exposure to libby amphibole asbestos and respiratory symptoms in young adulthood. *Environmental Research.* 158. 470-479. 2017. *Download*.

Lusine Yaghjyan, R Aroa, **Cole Brokamp**, E O'Meara, B Sprague, G Ghita, Patrick Ryan. Association of air pollution with mammographic breast density in the Breast Cancer Surveillance Consortium. *Breast Cancer Research.* 19:36. 1-10. 2017. *Download*.

Cole Brokamp, Roman Jandarov, MB Rao, Grace LeMasters, Patrick Ryan. Exposure assessment models for elemental components of particulate matter in an urban environment: A comparison of regression and random forest approaches. *Atmospheric Environment.* 151. 1-11. 2017. *Download*.

Hong Ji, Jocelyn M Biagini Myers, Eric B Brandt, **Cole Brokamp**, Patrick H Ryan, Gurjit K Khurana Hershey. Air pollution, epigenetics, and asthma. *Allergy, Asthma & Clinical Immunology.* 12(1). 51. 2016. *Download*.

Jennifer Kannan, **Cole Brokamp**, David I. Bernstein, Grace K. LeMasters, Gurjit K. Khurana Hershey, Manuel Villareal, James E. Lockey, Patrick Ryan. Parental Snoring and Environmental Pollutants, but Not Aeroallergen Sensitization, Are Associated with Childhood Snoring in a Birth Cohort. *Pediatric Allergy, Immunology, and Pulmonology.* 0. 2016. *Download*.

Cole Brokamp, Grace LeMasters, Patrick Ryan. Residential mobility impacts exposure assessment and community socioeconomic characteristics in longitudinal epidemiology studies. *Journal of Exposure Science and Environmental Epidemiology.* 26(4). 428-34. 2016. *Download*.

Kanistha C. Coombs, Ginger L. Chew, Christopher Schaffer, Patrick H. Ryan, **Cole Brokamp**, Sergey A. Grinshpun, Gary Adamkiewicz, Steve Chillrude, Curtis Hedman, Meryl Colton, Jamie Ross, Tiina Reponen. Indoor air quality in green-renovated vs. non-green low-income homes of children living in a temperate region of US (Ohio). *Science of The Total Environment.* 554-555. 178-185. 2016. *Download*.

Patrick Ryan, **Cole Brokamp**, Z-H Fan, MB Rao. Analysis of personal and home characteristics associated with the elemental composition of PM2.5 in indoor, outdoor, and personal air in the RIOPA study. *Health Effects Institute Research Report 185.* 2015. *Download*.

Kelly J Brunst, Patrick H Ryan, **Cole Brokamp**, David Bernstein, Tiina Reponen, James Lockey, Gurjit K Khurana Hershey, Linda Levin, Sergey A Grinshpun, Grace LeMasters. Timing and

duration of traffic-related air pollution exposure and the risk for childhood wheeze and asthma. *American Journal of Respiratory and Critical Care Medicine.* 192(4). 421-427. 2015. *Download*.

Patrick H Ryan, Sang Young Son, Christopher Wolfe, James Lockey, **Cole Brokamp**, Grace LeMasters. A field application of a personal sensor for ultrafine particle exposure in children. *Science of The Total Environment.* 508. 366-373. 2015. *Download*.

Cole Brokamp, MB Rao, Tina Zhihua Fan, Patrick H Ryan. Does the elemental composition of indoor and outdoor PM2.5 accurately represent the elemental composition of personal PM2.5?. *Atmospheric Environment.* 101. 226-234. 2015. *Download*.

Cole Brokamp, Jacob Todd, Carlo Montemagno David Wendell. Electrophysiology of single and aggregate Cx43 hemichannels. *PLoS ONE.* 7(10):e47775. 2012. *Download*.

Sheryl E Koch, Xiaoqian Gao, Lauren Haar, Min Jiang, Valerie M Lasko, Nathan Robbins, Wenfeng Cai, **Cole Brokamp**, Priyanka Varma, Michael Tranter, Yong Liu, Xiaoping Ren, John N. Lorenz, Hong-Sheng Wang, W Keith Jones, Jack Rubinstein. Probenecid: novel use as a non-injurious positive inotrope acting via cardiac TRPV2 stimulation. *Journal of Molecular and Cellular Cardiology.* 53(1). 134-144. 2012. *Download*.

Michael Tranter, Robert N Helsley, Waltke R Paulding, Michael McGuinness, **Cole Brokamp**, Lauren Haar, Yong Liu, Xiaoping Ren, W Keith Jones. Coordinated post-transcriptional regulation of HSP70. 3 gene expression by microRNA and alternative polyadenylation. *Journal of Biological Chemistry.* 286(34). 29828-29837. 2011. *Download*.

Talks

The Cincinnati Childhood Allergy and Air Pollution Study: An Overview and New Approaches to Exposure Assessment. *Harvard School of Public Health Air, Climate & Energy Center Research Meeting.* Boston, MA. 2017.

Decentralized and Reproducible Geocoding and Characterization of Community and Environmental Exposures for Multi-Site Studies. *International Society of Exposure Science Annual Meeting.* Research Triangle Park, NC. 2017. *Download.*

Assessing Daily Exposure to PM2.5 with Machine Learning and Remote Sensing. *International Society of Exposure Science Annual Meeting.* Research Triangle Park, NC. 2017. *Download.*

Assessing Daily Exposure to PM2.5 with Machine Learning and Remote Sensing. *Cincinnati Children's Hospital Medical Center Division of Biostatistics and Epidemiology Seminar.* Cincinnati, OH. 2017.

Using GRAPPH to Leverage Geoinformatics for Innovative Research, Place-based Clinical Care, and Community-Centered Quality Improvement. *Cincinnati Children's Hospital Medical Center Mayerson Center for Safe and Healthy Children Quarterly Research Meeting.* Cincinnati, OH. 2017. *Download.*

Combined Sewer Overflow Events and Childhood Emergency Department Visits: A Case-Crossover Study. *Cincinnati Children's Hospital Medical Center Postdoc and Research Associate Meeting.* Cincinnati, OH. 2017. *Download.*

Geocoding to Characterize Community and Environmental Exposures for Multi-site Studies. *Cincinnati Children's Hospital Medical Center Division of Biomedical Informatics Hutton Lecture Series.* Cincinnati, OH. 2017. *Download.*

GIS Tools for Environmental Epidemiology. *Biomedical Informatics (BMIN8001) Practicum Lec-*

ture. Cincinnati, OH. 2017. *Download.*

Building A Platform for Data Sharing. *Cincinnati Children's Hospital Medical Center Academy Health Site Visit.* Cincinnati, OH. 2017. *Download.*

Land Use Models for Elemental Components of Particulate Matter in an Urban Environment: A Comparison of Regression and Random Forest Models. *International Society of Exposure Science Annual Meeting.* Utrecht, NL. 2016. *Download.*

Predictive Comparisons: Interpreting Input Effects for Any Supervised Learner. *Cincinnati Children's Hospital Medical Center Division of Biostatistics & Epidemiology Journal Club.* Cincinnati, OH. 2016. *Download.*

Land Use Models for Elemental Components of Particulate Matter in an Urban Environment: A Comparison of Regression and Random Forest Models. *University of Cincinnati Division of Biostatistics and Bioinformatics Seminar Series.* Cincinnati, OH. 2016. *Download.*

Data Visualization for Population Health Initiatives. *All In Data Visualization Webinar.* Cincinnati, OH. 2016. *Download.*

Using Machine Learning and Interactive Dashboards to Understand How Children's Health is Impacted by their Community and Surrounding Environment. *University of Cincinnati Institute for Analytics Innovation Showcase and Networking Event.* Cincinnati, OH. 2016. *Download.*

Combined Sewer Overflow and Childhood Hospital Admissions. *Cincinnati Children's Hospital Medical Center Division of Biostatistics & Epidemiology Seminar Series.* Cincinnati, OH. 2016. *Download.*

Land Use Random Forests for Estimation of Exposure to Elemental Components of Particulate Matter. *University of Cincinnati Division of Biostatistics and Bioinformatics Doctoral Dissertation Defense.* Cincinnati, OH. 2016. *Download.*

Geospatial Data for Environmental Epidemiology. *Cincinnati Children's Hospital Medical Center Environmental Epidemiology Shared Interest Group Seminar Series.* Cincinnati, OH. 2016. *Download.*

Confidence Intervals for Random Forest Predictions Using the Infinitesimal Jackknife. *University of Cincinnati Division of Biostatistics and Bioinformatics Seminar Series.* Cincinnati, OH. 2015. *Download.*

Childhood Residential Changes are Associated with Decreased Traffic Exposure and Improved Neighborhood Characteristics. *International Society of Exposure Science Annual Meeting.* Las Vegas, NV. 2015. *Download.*

R Studio and R Markdown: An integrated IDE and report generator for R. *University of Cincinnati BE7022 (Intro To Biostatistics) Guest Lecture.* Cincinnati, OH. 2015. *Download.*

Does the Elemental Composition of Indoor and Outdoor PM2.5 Accurately Represent the Elemental Composition of Personal PM2.5?. *University of Cincinnati Division of Epidemiology Seminar Series.* Cincinnati, OH. 2014.

Assessing Personal PM2.5 Exposure Prediction Improvement After Addition of Indoor PM2.5 Exposure and Personal Characteristics to Outdoor PM2.5 Exposure Measurements. *Joint Statistical Meeting.* Boston, MA. 2014.

Exact Sampling and Counting for Fixed-Margin Matrices. *University of Cincinnati Division of Epidemiology Seminar Series.* Cincinnati, OH. 2013.

Small Molecule Disruption of G Beta Gamma Signaling Inhibits the Progression of Heart Failure. *University of Cincinnati Department of Pharmacology and Biophysics Seminar Series.* Cincinnati, OH. 2011.

Ultrasound-Targeted Microbubble Destruction to Deliver Nucleic Acid to the Heart. *University of Cincinnati Department of Pharmacology and Biophysics Seminar Series.* Cincinnati, OH. 2011.

An academic research cooperative education experience. *University of Cincinnati BME321 Guest Lecture.* Cincinnati, OH. 2011.

COMPUTER SKILLS   *Statistical Packages:* R (including GIS packages: sf, rgdal, rgeos, sp, raster)

Languages: Python, Unix shell scripting, R Markdown

Applications: R Shiny, Knitr, LaTeX, Vim, MS Office, qGIS, ArcGIS, GEOS, LSF

Operating Systems: Unix/Linux, Mac, Windows

SOFTWARE   **DeGAUSS**
A family of standalone software packages designed for Decentralized Geomarker Assessment for multi Site Studies. Allows for coordinate extraction from addresses and estimation of environmental exposures and community characteristics without exposing private health information outside of the institution.
https://github.com/cole-brokamp/DeGAUSS

hamilton
A package for R that uses exact address files from CAGIS to geocode addresses in Cincinnati, Ohio and link to address based information from the City of Cincinnati and the Hamilton County Auditor's Office.
https://github.com/cole-brokamp/hamilton

OfflineGeocodeR
R wrapper around calling a Docker container (DeGAUSS/geocoder_slim) to geocode addresses from R without exposing PHI to the internet.
https://github.com/cole-brokamp/OfflineGeocodeR

automagic
Automagically install packages necessary to run R code.
https://github.com/cole-brokamp/automagic

rize
Dockerize R shiny apps.
https://github.com/cole-brokamp/rize

RFinfer
A package for R that implements novel versions of the random forest from my dissertation research, produces confidence intervals and prediction variances.
https://cran.r-project.org/web/packages/RFinfer/index.html

aiRpollution
A package for R that assesses exposure to air pollution components in Cincinnati, Ohio. Also

includes other convience functions for extracting Cincinnati GIS variables.
https://github.com/cole-brokamp/aiRpollution

`geocoder`
A software package for linux that geocodes using TIGER/Line data. Offline geocoding is useful when dealing with private health information. This software is also implemented on a internal server, available to researchers at CCHMC.
https://github.com/cole-brokamp/geocoder

`R Shiny`
Several R Shiny Applications.
http://colebrokamp.com/shiny

AWARDS AND MEMBERSHIPS	CCHMC Division of Biostatistics & Epidemiology Top Research Achievement	*2017*
	CCHMC Division of Biostatistics & Epidemiology Top Publication	*2017*
	CCHMC Division of Biostatistics & Epidemiology Travel Award	*2016*
	CCHMC Arnold W. Strauss Fellowship Award	*2016*
	Member - International Society of Exposure Science	*2014 – present*
	Member - American Statistical Assocation	*2013 – present*
	Choose Ohio First Scholarship Recipient	*2010 – 2015*
	University Graduate Scholarship Recipient	*2010 – present*
	Distinguished Honors Scholar, UC Engineering	*2010*
	University of Cincinnati Alumni Scholarship	*2008 – 2009*
	University Cincinnatus Scholar Recipient	*2005 – 2010*

LEADERSHIP AND SERVICE

Journal Reviewer for:
Journal of Exposure Science and Environmental Epidemiology
Environmental Science & Technology
Environmental Pollution
International Journal of Environmental Research and Public Health
Academic Pediatrics
PLOS ONE
Annals of Epidemiology
Environmental Modeling & Assessment
Stochastic Environmental Research and Risk Assessment

Grant Reviewer for:
Puerto Rico Science, Technology & Research Trust

Member of Strategic Plan Steering Committee,
Division of Biostatistics & Epidemiology, Cincinnati Children's Hospital Medical Center   *2017*

Member of Research Committee,
Division of Biostatistics & Epidemiology, Cincinnati Children's Hospital Medical Center   *2017*

Chair of the Ensemble Learning for Air Pollution Exposure Assessment Session,
International Society of Exposure Science Annual Meeting   *2017*

Chair of the Land Use Regression Modeling Session,
International Society of Exposure Science Annual Meeting   *2016*

Co-founded Biostatistics Student Journal Club,
Department of Biostatistics, University of Cincinnati   *2013*

Student Representative to Graduate Education Committee,

GRANT SUPPORT

Active

Internal Processes and Methods Award - Center for Clinical & Translational Science & Training
Using Machine Learning to Supplement Electronic Health Record databases with Individual Socioeconomic Status
Brokamp, PI (9/1/17 - 12/31/17)
Retrospective epidemiological studies are often created using electronic health record databases. Although these records are "wide", they are not "deep" with respect to individual level demographic data. We propose a novel machine learning based approach that uses open city and auditor databases to predict individual level income and family socioeconomic status. This will solve the urgent problem of unconfounding for individual SES in the execution of EHR based research.
Role: PI

NIH/NIEHS 1R01ES019890-01
Neurobehavioral and Neuroimaging Effects of Traffic Exposure in Children
Ryan, PI (7/1/12 - 3/31/18)
The association between exposure to traffic-related air pollutants (TRAP) during early childhood and neurobehavioral and neuroimaging outcomes has not been thoroughly examined. The objective of the proposed study is to determine if children exposed to increased levels of TRAP during critical time periods of brain development have altered neurobehavior in childhood as measured by a battery of valid and reliable tests and to assess the physiologic impact of TRAP exposure on brain structure, organization, and function using quantitative magnetic resonance imaging (MRI). These results will fill important gaps in current scientific knowledge related to the relationship between TRAP exposure and neurobehavior and central nervous system effects.
Role: Biostatistician

NIH 5K23AI121325
Biomarkers and Risk Stratification in Pediatric Community
Florin, PI (01/01/16 - 12/31/19)
The extensive variation in care, in addition to the lack of evidence-based decision aids, highlights the critical need for an improved understanding of disease severity and tools to guide management for pediatric CAP. The proposed research will address this important knowledge and practice gap.
Role: Biostatistician

NIH/NINDS R01 NS030678
Comparison of Hemorrhagic & Ischemic Stroke Among Blacks and Whites
Kleindorfer, PI (04/01/15 - 03/31/20)
Tracking of population-based stroke incidence in the Greater Cincinnati and Northern Kentucky region, with special emphasis on stroke in the young and stroke recurrence.
Role: Biostatistician

U01HG008666
EMERGE: Better Outcomes for Children: Promoting Excellence in Healthcare Genomics to Inform Policy
Harley, PI (09/01/15 - 05/31/19)
We have developed algorithms for the electronic health record (EHR), led the Pediatric Workgroup, developed pharmacogenomics, evaluated the preferences of parents and caregivers to advance genomic medicine and assimilated technical advances into our EHR. The eMERGE effort has become

the basic fabric of the institutional initiative to incorporate the extraordinary advances of genetics, genomics and the electronic medical record into healthcare.
Role: Biostatistician

Internal ARC - Cincinnati Children's Hospital
Mother Infant Data Hub
Marsolo, PI (7/1/15 - 7/1/18)
The goals of this award are to create a research database of comprehensive clinical coverage for neonates born throughout the greater Cincinnati area including linkage of medical records to external data sets at the individual- and area-level during the first year of life.
Role: Biostatistician

Internal ARC - Cincinnati Children's Hospital
CARPE DIEM
Ambroggio, PI (7/1/15 - 7/1/18)
The goals of this award are to develop a diagnostic tool based on the urinary metabolome that can differentiate between viral and bacterial community-acquired pneunomia in children.
Role: Biostatistician

Pending

NIH/NIEHS
Lifetime Exposure to Ambient Air Pollution and Adolescent Cardiometabolic Health
Braun/Ryan, PI (3/1/18 - 2/28/22)
The objective of this proposal is to determine whether exposure to air pollution during critical periods of growth and development is associated with altered growth trajectories, increased adiposity, altered lipid profiles, and vascular dysfunction during adolescence.
Role: Biostatistician

NIH R01FP00013153
Mapping Environmental Contributions to Rapid Lung Disease Progression in Cystic Fibrosis
Sczcesniak, PI (4/1/18 - 3/31/23)
This project will incorporate established environmental contributors and novel data on community characteristics into functional data analysis and joint longitudinal modeling in order to transform dynamic prediction and clinical surveillance of rapid pulmonary decline.
Role: Co-I

NIH R01CA221960
AltAnalyze-CisBP: A comprehensive solution for splicing pathway discovery in cancer
Salomonis, PI (9/1/17 - 8/31/22)
We are building a powerful toolkit to identify a relatively new class of therapeutic targets for cancer therapy. In cancer, the abnormal splicing of gene products can initiate cancer and lead to worse outcomes. With the completion of these aims, cancer researchers will be able to evaluate and understand the causes of aberrant gene splicing to target new pathways in diverse cancers.
Role: Biostatistician

NIH R01GM126109
CellHarmony: Integration and analysis of single-cell compendiums
Salomonis, PI (9/1/17 - 8/31/20)
Our understanding of human disease is being transformed by new technologies to examine the genomes of individual cells. We are developing novel ultra-sensitive approaches for finding rare populations of cells, distinguished by novel gene signatures that could predispose to human disease

and ultimately lead to crucial diagnostics.
Role: Biostatistician

NIH R01FD006021
Predictive Molecular Marks of Lung Function Decline in CF
Ziady, PI (3/1/17 - 2/28/22)
Given our compelling cross-sectional proteomic and statistical modeling data we propose to produce an algorithm for lung function decline that is based on the integration of longitudinal behavior of novel disease markers with novel Functional Data (FD) analysis of FEV1.
Role: Biostatistician

Internal ARC - Cincinnati Children's Hospital
Geospatial Research Accelerator for Precision Population Health (GRAPPH)
Beck/Ryan, PI (7/1/17 - 6/30/20)
We propose a new shared facility to meet the needs of researchers, clinicians, and community partners in the pursuit of precision population health.
Role: Co-I

Internal Innovative Core Award - Center for Clinical & Translational Science & Training
Geospatial Research Core
Brokamp, PI (7/1/18 - 6/30/19)
We will establish local infrastructure as a CCTST core service in order to support clinical, translational, and community-engaged research that effectively utilizes data on the social and environmental determinants of health.
Role: PI

Transplantation and Immunology Research Network Fellowship Research Grant - American Society of Transplantation
The Ecology of Nonadherence in in Pediatric Liver Transplant
Wadhwani, PI (7/1/18 - 6/30/21)
Determine whether neighborhood-based measures are associated with lower adherence in the transplant setting.
Role: Biostatistician

PAR-16-367 - NIH Research Project Grant (R21/R33)
A Novel Research Infrastructure Enabling Life-Course Studies of Healthy Aging
Bazzano, PI (7/1/18 - 6/30/23)
Evaluate the use of historical residence information within a multi-cohort study to reconstruct place-based environmental and sociodemographic exposures over the lifecourse.
Role: Biostatistician

Complete

Internal Arnold W. Strauss Fellowship Award - Cincinnati Children's Hospital
Assessing Exposure to Air Pollution Across Time and Space
Brokamp, PI (7/1/16 - 6/30/17)
The primary objective of this award is to combine satellite-based measurements, land use characteristics, and meteorologic data to create a hybrid spatiotemporal model for ground level exposure to particulate matter using exact addresses and dates.
Role: PI

Internal Processes and Methods Award - Center for Clinical & Translational Science & Training
Validating a Geocoding Approach for Multi Site Studies
Brokamp, PI (1/24/17 - 6/30/17)
The primary objective of this award is to compare the geocoding (assigning latitude and longitude coordinates to addresses) accuracy of our software DeGAUSS (DEcentralized Geomarker Assessment for mUlti Site Studies) to with other common geocoding software. Furthermore, each method will be evaluated based on it ability to correctly estimate environmental exposures and community-level characteristics.
Role: PI

Academy Health
Community Health Peer Learning Program: Participant Community
Beck, PI (2/1/16 - 6/30/17)
The goals of this project are to reduce by 10% the inpatient bed-day rate for one high risk neighborhood in Cincinnati through interventions promoted by shared data and improved data visualization.
Role: Biostatistician

Internal - University of Cincinnati
Epidemiology of Rural/Urban Disparities in Stroke
Jasne, PI (1/1/17 - 6/31/17)
The goal of this project is to identify stroke incidence disparities among rural and urban geographic areas.
Role: Co-I

HEI 4784-RFA08-1/09-5
Analysis of Personal and Home Characteristics Associated with the Elemental Composition of PM2.5 in Indoor, Outdoor, and Personal Air in the RIOPA Study
Ryan, PI (12/1/12 - 11/30/13)
The purpose of this study is to assess the relationship between concurrent measurements of the elemental composition of PM2.5 in indoor, outdoor, and ambient air and the elemental composition of indoor, outdoor and personal air across individuals and cities. The study will also identify personal, home, and environmental factors significantly associated with specific elements or clusters of elements in PM2.5.
Role: Biostatistician

Gerber Pediatric Research Grant, Gerber Foundation
Clinical Prediction Model for Community-Acquired Pneumonia
Florin, PI (1/1/14 - 12/31/16)
This project will use clinical data and the biomarker procalcitonin to develop a severity score used to predict the development of severe disease and complications in children with community-acquired pneumonia, the most common serious bacterial infection children and leading killer of children worldwide.
Role: Biostatistician