

Cole Brokamp

CONTACT INFORMATION	Division of Biostatistics and Epidemiology Cincinnati Children's Hospital Medical Center Cincinnati, OH 45229 USA	<i>E-mail:</i> cole.brokamp@gmail.com <i>ORCID:</i> 0000-0002-0289-3151 <i>Website:</i> https://colebrokamp.com
RESEARCH INTERESTS	Causal inference for machine learning, Geoinformatics, Environmental and Population Health, Fairness in Precision Medicine	
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 University of Cincinnati Department of Pediatrics Division of Biostatistics & Epidemiology Assistant Professor, 2017 - present	
PUBLICATIONS	Sharad I. Wadhwani, Cole Brokamp , Erika Rasnick, John C. Bucuvalas, Jennifer C. Lai, Andrew F. Beck. Neighborhood Socioeconomic Deprivation, Racial Segregation, and Organ Donation Across 5 States. <i>American Journal of Transplantation</i> . Online. 2020. Jaron Arbet, Cole Brokamp , Jareen Meinzen-Derr, Katy E. Trinkley, Heidi M Spratt. Lessons and Tips for Designing a Machine Learning Study Using EHR Data. <i>Journal of Clinical and Translational Science</i> . Online. 2020. Todd Florin, Lilliam Ambroggio, Cole Brokamp , Yin Zhang, Mantosh Rattan, Eric Crotty, Michael A Belsky, Sara Krueger, Thomas N Epperson, Andrea Kachelmeyer, Richard Ruddy, Samir S Shaw. Biomarkers and Disease Severity in Children with Community-Acquired Pneumonia. <i>Pediatrics</i> . Online. 2020. Rhonda Szczesniak, Jessica L. Rice, Cole Brokamp , Patrick Ryan, Teresa Pestian, Yizhao Ni, Eleni-Rosalina Andrinopoulou, Ruth H. Keogh, Emrah Gecili, Rui Huang, John P. Clancy, Joseph M. Collaco. Influences of Environmental Exposures On Individuals Living with Cystic Fibrosis. <i>Expert Review of Respiratory Medicine</i> . online. 2020. Zana Percy, Cole Brokamp , Jennifer M McAllister, Patrick Ryan, Scott L Wexelblatt, Eric Hall. Subclinical and Overt Newborn Opioid Exposure: Prevalence and First Year Healthcare Utilization. <i>Journal of Pediatrics</i> . online. 2020. Sharad Wadhwani, John Bucuvalas, Cole Brokamp , Ravinder Anand, Ashutosh Gupta, Stuart Taylor, Eyal Shemesh, Andrew Beck. Association Between Neighborhood-level Socioeconomic Deprivation and the Medication Level Variability Index for Children Following Liver Transplantation. <i>Transplantation</i> . Online. 2020.	

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Robert M. Rossi, Chris Wolfe, **Cole Brokamp**, Jennifer M. McAllister, Scott Wexelblatt, Carri R. Warshak, Eric S. Hall. Reported Prevalence of Maternal Hepatitis C Virus Infection in the United States. *Obstetrics & Gynecology*. 135. 1-10. 2020.

Rhonda D. Szczesniak, Weiji Su, **Cole Brokamp**, Ruth H. Keogh, John P. Pestian, Michael Seid, Peter J. Diggle, John P. Clancy. Dynamic Predictive Probabilities to Monitor Rapid Cystic Fibrosis Disease Progression. *Statistics in Medicine*. 39. 740-756. 2020.

Sarah Orkin, **Cole Brokamp**, Toshifumi Yodoshi, Andrew T. Trout, Chunyan Liu, Syeda Meryum, Stuart Taylor, Christopher Wolfe, Rachel Sheridan, Aradhna Seth, Mohammad Alfrad Nobel Bhuiyan, Sanita Ley, Ana Catalina Arce-Clachar, Kristin Bramlage, Robert Kahn, Stavra Xanthakos, Andrew F. Beck, Marialena Mouzaki. Community Socioeconomic Deprivation and Non-Alcoholic Fatty Liver Disease Severity. *Journal of Pediatric Gastroenterology and Nutrition*. . 2019.

Cole Brokamp, Jeffrey R. Strawn, Andrew F. Beck, Pat Ryan. Pediatric Psychiatric Emergency Department Utilization and Fine Particulate Matter: A Case-Crossover Study. *Environmental Health Perspectives*. 127(9). 2019. [Download](#).

Erica Andrist, **Cole Brokamp**, Stuart Taylor, Carley Riley, Andrew Beck. Neighborhood Poverty and Pediatric Intensive Care Use. *Pediatrics*. . 2019.

Cole Brokamp, Eric B. Brandt, Patrick H. Ryan. Assessing Exposure to Outdoor Air Pollution for Epidemiological Studies: Model-based and Personal Sampling Strategies. *Journal of Allergy and Clinical Immunology*. . 2019. [Download](#).

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Rebecca Gernes, **Cole Brokamp**, Glenn Rice, J. Michael Wright, Michelle Kondo, Yvonne Michael, Geoffrey Donovan, Demetrios Gatzliolis, David Bernstein, Grace LeMasters, James Lockey, G. Khurana Hershey, Patrick Ryan. Using high-resolution residential greenspace measures in an urban environment to assess risks of allergy outcomes in a cohort of children. *Science of the Total Environment*. 668. 2019. [Download](#).

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Juliana Madzia, Patrick Ryan, Kimberly Yolton, Zana Percy, Nick Newman, Grace LeMasters, **Cole Brokamp**. Residential Greenspace Is Associated with Childhood Behavioral Outcomes. *Journal of Pediatrics*. . 2018. [Download](#).

Cole Brokamp. DeGAUSS: Decentralized Geomarker Assessment for Multi-Site Studies. *Journal of Open Source Software*. Online. 2018. [Download](#).

Rhonda D. Szczesniak, **Cole Brokamp**, Weiji Su, Gary L. McPhail, John Pestian, and John P. Clancy. Improving Detection of Rapid Cystic Fibrosis Disease Progression—Early Translation of a Predictive Algorithm into a Point-of-Care Tool. *IEEE Journal of Translational Engineering in Health and Medicine*. 7(1); 1-8. 2019. [Download](#).

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. *Prehospital Emergency Care*. Online. 2018. [Download](#).

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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. *Clinical Infectious Diseases*. ciy031; 1-29. 2018. [Download](#).

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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*. 196(4); 471-478. 2017. [Download](#).

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*. 140(3); e20170310. 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](#).

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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](#).

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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*. . 2016. [Download](#).

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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](#).

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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](#).

PATENTS

Assem Ziady, Rhonda Szczesniak, John Clancy, **Cole Brokamp**, inventors; Cincinnati Children's Hospital Medical Center, assignee. Compositions and methods for treatment of lung function. United States patent application US 15/927,575. 2018 Sep 27

Decentralized Geomarker Assessment for Multi-Site Studies (DeGAUSS). *UseR! 2020 Conference (Conference Canceled)*. St. Louis, MO. 2020.

Decentralized and Reproducible Geocoding and Characterization of Community and Environmental Exposures at Scale. *University of Cincinnati Introduction to Medical Informatics course guest lecture*. Cincinnati, OH. 2020. [Download](#).

Pediatric Psychiatric Emergency Department Utilization and Fine Particulate Matter: A Case-Crossover Study. *University of Cincinnati Department of Epidemiology Seminar*. Cincinnati, OH. 2020. [Download](#).

Using Twitter for Academic Networking. *Cincinnati Children's Faculty Career Development Seminar Series*. Cincinnati, OH. 2019. [Download](#).

Causal Inference Machine Learning Methods for Identifying Subpopulations Susceptible to the Health Effects of Air Pollution. *Cincinnati Children's Machine Learning Focus Group*. Cincinnati, OH. 2019. [Download](#).

Non-Parametric and Data-Driven Methods for Identifying Subpopulations Susceptible to the Health Effects of Air Pollution. *International Biometric Society (Eastern North American Region) Spring Meeting*. Philadelphia, PA. 2019. [Download](#).

Decentralized and Reproducible Geocoding and Characterization of Community and Environmental Exposures at Scale. *Center for Clinical & Translational Science & Training Grand Rounds*. Cincinnati, OH. 2019. [Download](#).

Decentralized and Reproducible Geocoding and Characterization of Community and Environmental Exposures at Scale. *Northwestern Institute for Public Health and Medicine Seminar Series*. Chicago, IL. 2018.

Introduction to Geoinformatics for Precision Population Health. *University of Cincinnati Introduction to Medical Informatics course guest lecture*. Cincinnati, OH. 2018. [Download](#).

Reproducible Research in R: Geoinformatics, Epidemiology, and Publicly Available Health and GIS Data. *Workshop at the American College of Epidemiology Annual Meeting*. Cincinnati, OH. 2018. [Download](#).

Climate Change and Health Disparities in the Urban Environment. *University of Cincinnati Research and Innovation Week*. Cincinnati, OH. 2018.

Geoinformatics for Environmental Epidemiology. *Biomedical Informatics (BMIN8001) Practicum Lecture*. Cincinnati, OH. 2018.

Hot Topics in Pediatric Research Methodology: CART and Random Forest. *Pediatric Academic Society Annual Meeting*. Toronto, ON. 2018.

Ensemble Machine Learning for Air Pollution Exposure Assessment. *American Statistical Association, Cincinnati Chapter Meeting*. Cincinnati, OH. 2018. [Download](#).

Combined Sewer Overflow Events and Childhood Emergency Department Visits: A Case-Crossover Study. *University of Cincinnati Environmental Health Seminar*. Cincinnati, OH. 2017. [Download](#).

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.

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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 PM_{2.5} with Machine Learning and Remote Sensing. *International Society of Exposure Science Annual Meeting.* Research Triangle Park, NC. 2017. [Download](#).

Assessing Daily Exposure to PM_{2.5} 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. *University of Cincinnati Biomedical Informatics (BMIN8001) Practicum course guest lecture.* 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 PM_{2.5} Accurately Represent the Elemental Composition of Personal PM_{2.5}? *University of Cincinnati Division of Epidemiology Seminar Series.* Cincinnati, OH. 2014.

Assessing Personal PM_{2.5} Exposure Prediction Improvement After Addition of Indoor PM_{2.5} Exposure and Personal Characteristics to Outdoor PM_{2.5} 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.

AWARDS AND MEMBERSHIPS

CCHMC Division of Biostatistics & Epidemiology Top Publication	2020
CCHMC Division of Biostatistics & Epidemiology Top Research Achievement	2020
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 - International Society of Environmental Epidemiology	2017 – present
	Choose Ohio First Scholarship Recipient	2010 – 2015
	University Graduate Scholarship Recipient	2010 – 2016
	Distinguished Honors Scholar, UC Engineering	2010
	University of Cincinnati Alumni Scholarship	2008 – 2009
	University Cincinnati Scholar Recipient	2005 – 2010
LEADERSHIP AND SERVICE	Founder and leader of CCHMC R Users Group	2020
	Member of Divisional Faculty Career Development Committee, CCHMC	2019 – 2020
	Member of Divisional Strategic Plan Steering Committee, CCHMC	2017 – 2020
	Member of Divisional Research Committee, CCHMC	2017 – 2020
	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 Environmental Health, University of Cincinnati	2013
	Student Representative to Graduate Education Committee, Department of Pharmacology, University of Cincinnati	2010 – 2011
	Journal Reviewer for:	
	Academic Pediatrics	
	Annals of Epidemiology	
	Environmental Health Perspectives	
	Environment International	
	Environmental Modeling & Assessment	
	Environmental Pollution	
	Environmental Science & Technology	
	Health & Place	
	International Journal of Environmental Research and Public Health	
	International Journal of Epidemiology	
	Journal of Exposure Science and Environmental Epidemiology	
	Journal of Open Source Software	
	Pediatrics	
	PLOS ONE	
	Stochastic Environmental Research and Risk Assessment	
	The Science of the Total Environment	
	Grant Reviewer for:	
	NIH SIEE Study Section, Early Career Reviewer	October 2019
	University of Michigan M-LEEd Center Pilot Projects	2020
	Ohio State University CCTS Pilot Projects	2020
	Puerto Rico Science, Technology & Research Trust	2017
	Arnold S. Strauss Fellowship Award, Cincinnati Children's	2018 – 2020
	University of Rochester Processes and Methods Grant	2018 – 2020
	Ohio State University CCTS Pilot Translational & Clinical Studies Program	2020
	Abstract Reviewer for:	

International Society of Exposure Science Annual Meeting
International Society of Environmental Epidemiology Annual Meeting

2018 – 2019
2018, 2020