

2014 Research Annual Report

Biostatistics and Epidemiology



Division Summary

RESEARCH AND TRAINING DETAILS

Number of Faculty	22
Number of Joint Appointment Faculty	14
Number of Research Fellows	1
Number of Research Students	7
Number of Support Personnel	64
Direct Annual Grant Support	\$913,303
Peer Reviewed Publications	177

CLINICAL ACTIVITIES AND TRAINING

Division Photo



Row 1: L Ding, M Hossain, M Macaluso, S Salisbury, K Bowers
Row 2: B Huang, P Horn, J Khoury, H Sucharew, N Zhang
Row 3: M Altaye, P Lin, J Woo, S Ehrlich, P Ryan, R Ittenbach
Row 4: M Kim, J Meinzen-Derr, E King, B Zhang, N Ollberding, L Fei, R Szczesniak

Significant Accomplishments

Research and Education

Our five-year strategic plan envisions playing a lead role as a catalyst for trans-disciplinary research and increased prominence in producing big data for little children. Our faculty and staff contributed to 178 scientific articles in the past year, up 32 percent from the prior year, including 38 published in high-impact journals and 18 that involved the development or application of novel quantitative methods. Our faculty or staff members were first authors of 24 papers and senior authors of 14. We participated in 88 research grants and contracts, with annual direct costs totaling \$28M.

Our faculty's independent research included a stroke study led by [Jane Khoury, PhD](#); a hearing loss study led by [Jareen Meinzen-Derr, PhD](#); and a traffic pollution study led by [Patrick Ryan, PhD, MS](#). Meinzen-Derr also received the 2014 Charlotte R. Schmidlapp Woman Scholar Award.

High-level data management and statistical support

Our Data Management Center, led by Rachel Akers, MPH, Cyndie Baker, and Matthew Fenchel, MS, supported 75 studies by assisting with grant application and protocol review, budgeting and resourcing for data management, case report form design, database development, data entry and documentation, discrepancy management, data cleaning and preparation for analysis. We also began four projects in Medidata Rave, a state-of-the-art clinical data management system acquired in FY13.

Our Biostatistical Consulting Unit, led by **Mekibib Altaye, PhD**, director, and Matthew Fenchel, MS, manager, supported 138 projects in 26 Cincinnati Children's divisions and UC departments. The unit offers specialized expertise in meta-analysis, statistical process control, pharmacokinetics modeling and spatial-temporal data modeling. The team collaborates closely with the Data Management Center, the Division of Biomedical Informatics, and with the CCTST as part of "Research Central."

Our Scale Development Unit, led by **Richard Ittenbach, PhD, PSTAT**, assists investigators with the creation and validation of new measures for use in medical settings. During the past year, this unit grew to include five primary faculty/staff members and four affiliated faculty members and collaborated with investigators on 32 research projects in 13 divisions and institutes. Ittenbach also helped introduce modern theory techniques to empirical bioethics at UC.

A growing team

Our newest faculty members include **Nanhua Zhang, PhD**, whose research has covered clinical trial design and meta-analysis in studying environmental health and health disparities; and **Lilliam Ambroggio, PhD**, an infectious disease epidemiologist with interests in community-acquired pneumonia, metabolomics and antibiotic resistance.

We also added nine staff members including James Decker, MS, who led the Statistical Computing Group of P&G Pharmaceuticals; Yuanshu Zou, PhD, a statistician; and Nusrat Harun, PhD, who joined us from the MD Anderson Cancer Center in Houston.

Our faculty taught in the Colleges of Medicine, Pharmacy, and Arts and Sciences, and in the MS program in Clinical Science sponsored by the CCTST. Six students participated in the Graduate Statistics Internship Program led by **Bin Huang, PhD**, and Siva Sivaganesan, PhD, UC Department of Mathematical Sciences. We also are developing curriculum for a fellowship in Epidemiology and Biostatistics in Pediatrics. The first fellow selected was Samrat Yeramemeni, PhD.

Research Highlights

Maurizio Macaluso, MD, DrPH

Dr. Macaluso continued to lead the expansion of the division by strengthening its infrastructure and recruiting new faculty. The Data Management Center grew in FY14: the DMC implemented new SOPs and a state-of-the-art data capture system, and supported 75 research projects throughout the institution. The Biostatistics Consulting Unit was established in 2012 to expedite access to biostatistical consulting and collaboration at Cincinnati Children's and continued to grow in FY14, supporting 138 projects in 26 Cincinnati Children's divisions. Dr. Macaluso led the strategic planning process and the preparation of the division for a Scientific Advisory Council (SAC) review. The SAC recognized DBE's fast growth and progress and recommended continued pursuit of our goals. In FY14 Dr. Macaluso published 11 peer-reviewed articles and submitted 10 abstracts. Of note is a paper published in the New England Journal of Medicine (Kulkarni AD, Jamieson DJ, Jones HW Jr, Kissin DM, Gallo MF, Macaluso M, Adashi EY. The Multiple Births Epidemic: Evolving Role of Assisted Reproductive Technology and Ovulation Induction and Ovarian Stimulation. *N Engl J Med*. 2013 369:2218-25), which describes the evolution of multiple birth rates in the USA and highlights the declining contribution of in vitro fertilization and other assisted reproductive technologies to high-order multiple births and the proportional increase in multiple births that are attributable to ovarian stimulation and other non-ART infertility treatments. Dr. Macaluso is co-director of the Biostatistics, Epidemiology, and Research Design Core of the NIH-funded Center for Clinical and Translational Science and Training. During FY14 he participated in the submission of five applications for research funding. In addition to providing guidance and

advice to the DBE faculty, Dr. Macaluso mentors postdoctoral fellows and junior faculty in other Cincinnati Children's divisions.

Mekibib Altaye, PhD

In 2013-2014, Dr. Altaye published eight peer-reviewed articles and submitted nine abstracts. He is actively participating as a co-investigator and collaborator in eight NIH funded projects, and he participated in the submission of five new grant applications. His research focuses on statistical modeling of correlated data particularly data generated from fMRI and MRI experiments. He closely collaborated with researchers from the Pediatric Neuroimaging Research Consortium (PNRC) in which he is one of the primary faculty members. Dr. Altaye serves as the director of the newly created Biostatistics Consulting Unit (BCU) within our division which aims to serve as a portal and facilitate access of researchers to the biostatistical and epidemiological expertise they need. Dr. Altaye continues to mentor staff, junior investigators, trainees and students in multiple academic units.

Katherine Bowers, PhD

In 2013-2014, Dr. Bowers published eight peer-reviewed articles and submitted three abstracts. She is actively participating as a co-investigator and collaborator on NIH funded projects, and she participated in the submission of three new grant applications. Dr. Bowers' research interests include the genetic epidemiology of autism spectrum disorders, and the impact of pre-pregnancy and gestational diabetes on pregnancy outcomes and maternal health. Her research has been funded by the National Institutes of Health and has led to publications in prestigious journals.

Lili Ding, PhD

In 2013-2014, Dr. Ding published eight peer-reviewed research papers, submitted four abstracts, and presented at four national meetings. She is actively participating as a co-investigator and collaborator in two NIH funded researches, and she participated in seven new grant applications. Her research focuses on Bayesian statistics and its applications in biomedical research, including statistical genetics, population pharmacokinetics and pharmacodynamics (PK/PD), latent variable modeling, and survival analysis. Dr. Ding was awarded a 2013 CCTST methods grant entitled "Modeling of multivariate longitudinal phenotypes in family genetic studies with Bayesian multiplicity adjustment". Dr. Ding has been actively involved in collaborative research with faculty members from Adolescent Medicine, Communication Sciences Research Center, Asthma Research, Human Genetics, and Anesthesia on the design, plan, statistical analysis and report of medical research studies. Dr. Ding serves as Review Editor for the Journal of Frontiers in Genetics and Reviewer for the Journal of Pediatric Research, the Journal of Statistical Theory and Practice, Human Genetics, and PLOS ONE. Dr. Ding mentors junior faculty, fellows and students in the Division of Biostatistics and Epidemiology and several other divisions within the hospital.

Shelley Ehrlich MD, MPH, MSc, ScD

In 2013-2014, Dr. Ehrlich published four peer-reviewed research papers, submitted five abstracts, and presented at three national meetings. She participated in four new grant applications. Her research has focused on environmental and reproductive epidemiology, more specifically on the association between environmental exposures to endocrine disruptors such as bisphenol A (BPA) and phthalates and fertility and pregnancy outcomes. Her research has also focused on translational molecular epidemiology, to better understand the underlying mechanisms for the observed associations at the level of the population. She is the co-leader of a BPA and reproductive health working group at the National Institute of Environmental Health Sciences (NIEHS).

Lin Fei, PhD

In 2013-2014, Dr. Fei published one peer-reviewed research paper, submitted nine abstracts, and presented at one national meeting. He is actively participating as a co-investigator and collaborator in two NIH funded grants, and he participated in two new grant applications. Dr. Fei has been actively involved in collaborative research with faculty members from Gastroenterology, Critical Care Medicine, and The Cancer and Blood Diseases Institute. His research interests include clinical trial design, categorical data analysis, probability models in ranking and selection. Dr. Fei continues his volunteering at the University of Cincinnati's annual high school science and engineering expo as a judge, and as a proctor and grader at the Annual Ohio Mathematics contest at Wright State University. He maintains active membership in several professional societies, and serves as a reviewer for journals and research funding organizations.

Md Monir Hossain, PhD

In 2013-2014, Dr. Hossain published six peer-reviewed journal articles and submitted six abstracts. He participated in four grant submissions as a co-investigator and initiated one grant submission as a principal investigator. His research focuses on spatial and spatio-temporal statistics for point process and area level data. The applications involve the datasets generated from childhood cancer incidences linking with the environmental pollution; hospital utilization records with cost information; eye-tracking data for autistic kids; and asthma exacerbations linking with the demographic, environmental and utilization cost information. Dr. Hossain serves as the lead statistician for the Division of Anesthesia, and mentors student and staff in various roles. He continues with his membership to the International Statistical Institute (ISI), The Netherlands.

Bin Huang, PhD

In 2013-2014, Dr. Huang published eight peer-reviewed articles and gave two presentations at national conferences. Dr. Huang's methodological research aims to develop/enhance methodologies for statistical causal inference, mediation analysis, and modeling of pubertal development. She is active in NIH-funded research, and she participated in the submission of five NIH or PCORI grant applications as principal investigator, co-investigator or statistical mentor. Dr. Huang continues to mentor staff, junior investigators and trainees in multiple academic units, and leads an internship program developed in collaboration with the UC Department of Mathematics. She also serves as a special panel reviewer for NIDA secondary data analyses RFA.

Richard Ittenbach, PhD

In 2013-2014, Dr. Ittenbach published four peer-reviewed articles and submitted five abstracts for professional presentations. Of particular importance is his publication on development of clinical data management standard operating procedures for use in academic medical centers (Ittenbach RF, Baker CL, Corsmo JJ. Development of a quality assurance review process of clinical data management standard operating procedures in an academic medical center. *Acad Med.* 2014 89;(5):745-8). The process began with a group of 16 practicing clinical data managers tasked with developing standard operating procedures (SOP) for clinical research. The SOPs were then evaluated by a team of eight senior faculty and research professionals, reworked and re-evaluated, and then evaluated by a team of three national clinical data management experts. These experts evaluated the SOPs using both academic and industry standards, and were asked to evaluate the SOPs against national, good clinical data management practice (GCDMP) guidelines. Dr. Ittenbach continues to advise groups such as the US Department of Labor, the Society of Clinical Data Management, and the Association of Clinical and Translational Statisticians on the training and development of clinical data managers as well as the interface between data management and biostatistics.

Jane Khoury, PhD

In 2013-2014, Dr. Khoury published 20 peer-reviewed articles and collaboratively submitted over 15 abstracts. In addition she presented at national and international meetings. Her research focuses on diabetes, obesity and cardiovascular disease and stroke. She serves as the principal investigator of the biostatistical core for Special Program of Translational Research in Acute Stroke, which includes two clinical trials, a registry and a basic science project. She is also PI of a Cincinnati Children's sub-contract to UC for the Stroke epidemiology R01. Dr Khoury is a co-investigator on five other NIH-funded projects and in 2013 participated in the submission of eight new grant applications. She continues to mentor staff, junior investigators and trainees in multiple academic units, and is the lead instructor of classes in the UC Department of Environmental Health, where she holds a secondary appointment. She also has a joint appointment in the division of Endocrinology, and collaborates with many of the faculty and fellows and serves on the division scholarly oversight committee.

Mi-Ok Kim, PhD

In 2013-2014, Dr. Kim published eight peer-reviewed articles and submitted six abstracts. Dr. Kim's methodologic research focuses on quantile regression, for which she is continues to be supported by an award by the National Science Foundation. She is also interested in comparative effectiveness research and propensity score methods, and submitted three extramural grant applications on related research topics as a PI. In 2013, Dr. Kim participated in the submission of eight new grant applications. Dr. Kim continues to mentor staff, junior investigators and trainees in multiple academic units.

Eileen King, PhD

In 2013-2014, Dr. King published nine peer-reviewed articles and seven abstracts. Her research focuses on outcomes research, digestive health, obesity and cardiovascular diseases. She serves as a faculty statistician for the Anderson Center, the Heart Institute Research Core, the CCTST and the Digestive Health Center. She serves as a statistician on five NIH-funded projects and participated in the submission of seven new applications as Co-Investigator and/or statistician. Dr. King submitted a U01 Data Management and Coordinating Center application as the PI for the Rare Diseases Clinical Research Network and a U01 Data Coordinating Center application as the PI for the Collaborative Pediatric Critical Care Research. Dr. King continues to mentor staff, junior investigators and trainees in multiple academic units, and is the lead instructor of "Statistical Principles for Clinical Research Studies" in the UC College of Pharmacy, where she holds an adjunct faculty position. Dr. King serves as a member of the Committee on Nominations for president and vice president of the American Statistical Association, associate editor of the Journal of Statistical Education, and statistical reviewer for Journal of Allergy and Clinical Immunology – In Practice. Dr. King has made four internal and two external presentations on topics in statistical principles, statistics education and data management and presents the statistical training module for the Core Clinical Research Training program which is held three times per year. Dr. King also coordinates the statistical review for the Pilot and Feasibility studies for the Digestive Health Center and provides statistical review for the Place Outcomes Research Awards.

Ping-I Lin, MD, PhD

In 2013-2014, Dr. Lin published one peer-reviewed journal article, and he participated in two grant submissions as a co-investigator and initiated five grant submissions as a principal investigator. His research interests have been focused on the identification of genetic variants associated with the risk of neurological and psychiatric diseases, such as bipolar disorder, Alzheimer's disease, schizophrenia, and autism. Particularly, Dr. Lin has been interested in research methods of dissecting genetic heterogeneity, endophenotypes, and paradoxical locus-trait associations. His publications in the past seven years have received nearly 450 citations.

Dr. Lin has been actively involved in collaborative research with faculty members from the Division of Child and Adolescent Psychiatry at Cincinnati Children's and the Department of Psychiatry and Neurobehavioral Science at the University of Cincinnati College of Medicine. A study in press entitled "Correlations of tumor necrosis factor gene pathway, corticolimbic functional activity, and aggression in adolescents with bipolar disorder: a preliminary study", led by Dr. Lin, examined the relationships among genetic and neurobiological pathways to aggressive tendencies in pediatric bipolar disorder. He has been invited to present his pioneering work in the genetics of autism at the Texas Autism Research Conference. Dr. Lin also mentors graduate students and junior faculty members of other divisions. He is building a strong academic service record, maintaining active memberships in several professional societies, and serving as a reviewer for scientific journals in the area of human genetics and psychiatry, and is an editorial member of World Journal of Psychiatry. Dr. Lin also serves as a member of the Autism Treatment Network Scientific Review Committee, and was invited to attend the 12th Annual National Academies Keck Futures Initiative (NAKFI) Conference, Collective Behavior: From Cells to Societies, which is an exclusively invitation-based conference.

Jareen Meinzen-Derr, PhD

In 2013-2014, Dr. Meinzen-Derr published 13 peer-reviewed articles and submitted over 15 abstracts. As part of her ongoing research, Dr. Meinzen-Derr and her research team have received funding from the March of Dimes to expand her current work on language and functional skill outcomes among children who are deaf or hard of hearing to infants and toddlers. In 2014, Dr. Meinzen-Derr became the Schmidlapp Woman Scholar at Cincinnati Children's Hospital Medical Center. With this award, she is transitioning her research towards the first necessary phase of developing language-based interventions using technology tailored to the cognitive level of children who are deaf or hard of hearing. Dr. Meinzen-Derr is dedicated to the mentoring of staff, junior investigators and trainees in multiple academic units. She contributes to the Experimental Design lectures in Neonatology and Developmental and Behavioral Pediatrics. She continues to be the primary instructor of "Introduction to Epidemiology" in the graduate program in Biostatistics and Epidemiology in the Department of Environmental Health, in which she developed an online curriculum for the same program and for the CCTST.

Nicholas Ollberding, PhD

In the 2013-2014, Dr. Ollberding published seven peer-reviewed research papers and submitted three abstracts. His publication conducted with fellow Cincinnati Children's and UC collaborators (Ollberding NJ, Couch SC, Woo JG, Kalkwarf HJ. Within- and Between-Individual Variation in Nutrient Intake in Children and Adolescents. *J Acad Nutr Diet.* 2014) is particularly noteworthy. For this study, the within- to between-individual variance ratios and number of 24-hour recalls required to rank-order children and adolescents on usual intake for select macro- and micronutrients was examined for participants in the 2007-2010 National Health and Nutrition Examination Survey (NHANES). It was found that a total of six to nine and three to six 24-hour recalls were typically sufficient to rank-order children and adolescents, respectively, on usual intake with an accuracy of $r=0.8$. Additional recalls were required to achieve the same accuracy for energy-adjusted nutrients. Variance ratios were similar for adolescents across racial/ethnic groups, but highly variable in children. This study provides important information for nutrition professionals and researchers, as it will allow them to better plan, conduct, and interpret studies utilizing this dietary assessment instrument.

Dr. Ollberding serves as an ad-hoc reviewer for numerous nutrition journals and is a member of the steering committee for the Nutritional Epidemiology Research Interest Section of the American Society for Nutrition. Since joining the DBE, Dr. Ollberding has also been involved in the mentoring a postdoctoral fellow conducting nutritional epidemiology research.

Patrick Ryan, PhD

In 2013-2014, Dr. Ryan published 11 peer-reviewed research papers, submitted six abstracts, and presented at four national/international meetings and conferences. Of note is a paper published in *Environmental Science: Processes Impacts* (Ryan PH, Reponen T, Simmons M, Yermakov M, Sharkey K, Garland-Porter D, Eghbalnia C, Grinshpun S. The Impact of an Anti-Idling Campaign on Outdoor Air Quality at Four Urban Schools. *Environmental Science: Processes Impacts*. 2013 15(11):2030-7 which describes the impact of anti-idling policies on air quality at schools. Dr. Ryan's research interests include air pollution epidemiology (focusing on respiratory and neurobehavioral outcomes in children) and exposure assessment.

Dr. Ryan is currently the PI of three NIH-funded projects including studies of personal exposure to ultrafine particles in children with asthma, the impact of anti-idling campaigns on air quality near schools, and the association between early childhood exposure to diesel exhaust particles and neurobehavioral and neuroimaging outcomes in the CCAAPS cohort. In the past year, Dr. Ryan also contributed to the Department of Environmental Health's training program as an instructor ("Design and Management of Field Studies in Epidemiology, Spring 2013) as well as serving as primary advisor to PhD and MS students.

Heidi Sucharew, PhD

In 2013-2014, Dr. Sucharew published 11 peer-reviewed research papers and submitted 12 abstracts. Of note is a paper in *Stroke* (Sucharew H, et al. *Stroke*. 2013 44(8):2182-7), examining whether grouping strokes by presence of individual National Institutes of Health Stroke Scale (NIHSS) symptoms could provide prognostic information additional or alternative to the NIHSS total score. Dr. Sucharew and her research team used latent profile analysis and identified six NIHSS symptom profile patterns. In particular, two symptom profiles with identical median NIHSS total score were observed with widely disparate outcomes, which may prove useful both clinically and for research studies as an enhancement to the overall NIHSS score.

Dr. Sucharew's research focuses on stroke, epidemiology and clinical trials, and the impact of environmental exposures on child health, with methodology interest in latent variable modeling. She was awarded a CCTST innovative methodologic research grant to develop a latent variable SuperImposition by Translation and Rotation (SITAR) model for early growth. She is one of the biostatisticians for the Greater Cincinnati and Northern Kentucky Stroke Team and she continues to serve as co-Director of the Biostatistical Core for the Special Program of Translational Research in Acute Stroke with a recent successful completion of the Phase II combined approach to lysis utilizing eptifibatide and rt-PA in acute ischemic stroke clinical trial (Pancioli A, et al. *Stroke*. 2013 44(9):2381-7).

Dr. Sucharew mentors junior faculty, fellows and students in DBE and other divisions within the hospital. She has assisted in the development of and has served as the primary instructor of "Introduction to Biostatistics" online course and as an invited lecturer in the "Design and Management of Field Studies in Epidemiology" course in the graduate program in Biostatistics and Epidemiology in the Department of Environmental Health.

Rhonda Szczesniak, PhD

In 2013-2014, Dr. Szczesniak published six peer-reviewed articles and collaborated on 12 abstracts. She directs the Pulmonary Biostatistical Core for the Division of Pulmonary Medicine. Her methodologic research interests are functional data analysis and semiparametric models with application to medical monitoring. She is also interested in applying novel methods to study outcomes of children with cystic fibrosis and obstructive sleep apnea. She is a biostatistical collaborator on eight extramural awards, including six NIH-funded projects as two foundation awards. She also collaborates on several internal projects, and she participated in the submission of several new grant applications this year. Dr. Szczesniak applied for her own career development award (NIH/NHLBI K25) to enable her career development from statistician into clinical and translational researcher in quantitative biomedicine. She continued to mentor junior faculty, staff and students

in multiple academic units. She was again invited to serve as Chair of the Biostatistics Epidemiology Session for the North American Cystic Fibrosis Conference.

Jessica Woo, PhD

In 2013-2014, Dr. Woo published 11 peer-reviewed articles, presented five abstracts, and was listed in the 67th Edition of *Who's Who in America*. Her research focuses on the developmental pathways leading to pediatric obesity and its comorbidities. Dr. Woo is the PI of a research contract with Mead Johnson and the PI of a subcontract of an NIH R01 to examine genetic and environmental risk factors for hemorrhagic stroke. In addition, Dr. Woo leads the Biostatistics unit of the Heart Institute Research Core and continues to mentor staff, junior investigators and trainees in multiple academic units. She gives lectures on study design and biostatistical analysis to MD fellows and staff in the Heart Institute and lectures for "Introduction to Epidemiology" in the graduate program in Biostatistics and Epidemiology in the Department of Environmental Health, where she holds a secondary appointment.

Bin Zhang, PhD

In 2013-2014, Dr. Zhang published eight peer-reviewed research papers and he submitted two abstracts. His research interests include clinical trials, survival analysis, longitudinal data analysis and optimal designs. Of note is the paper published in *Communications in Statistics-Theory and Methods* (**Zhang B**, Tong XW, Zhang J, Wang CJ, Sun J. Efficient estimation for linear transformation models with current status data. *Communications in Statistics-Theory and Methods*. 42(17): 2491-503), which developed an innovative method to estimate the treatment effect in the most efficient way for a special case of time to event data. This study filled a gap to use a flexible statistics model to fit the survival data which provides an estimate with the smallest variance. Dr. Zhang was the principal investigator of NIH funded research 'Semiparametric methods for interval-censored data with Bayesian approach', he was also a sub-PI of an NIH funded R01 grant 'Mechanisms of Refractory Hypertension' and was involved in several other NIH funded studies.

Nanhua Zhang, PhD

Dr. Zhang joined DBE as Assistant Professor in August 2013. He is a statistician with interests in missing data, comparative effectiveness research, clinical trial design, and behavioral intervention. Dr. Zhang has been actively involved in collaborative research with faculty members from Pulmonary Medicine. In the past year, Dr. Zhang published two peer-reviewed research papers and submitted three abstracts. Dr. Zhang serves as a peer reviewer for the Journal of Royal Statistical Society, Statistics in Medicine, American Journal of Public Health, and Transplantation.

Significant Publications

Bao W, **Bowers K**, Tobias DK, Hu FB, Zhang C. **Prepregnancy dietary protein intake, major dietary protein sources, and the risk of gestational diabetes mellitus: a prospective cohort study.** *Diabetes Care*. 2013 36(7):2001-8.

This analysis of the Nurses' Health Study II cohort found that higher intake of animal protein, in particular red meat, was significantly associated with a greater risk of gestational diabetes mellitus (GDM). By contrast, higher intake of vegetable protein, specifically nuts, was associated with a significantly lower risk. Substitution of vegetable protein for animal protein, as well as substitution of some healthy protein sources for red meat, was associated with a lower risk of GDM.

Brandt EB, Kovacic MB, Lee GB, Gibson AM, Acciani TH, Le Cras TD, **Ryan PH**, Budelsky AL, Khurana Hershey GK. **Diesel exhaust particle induction of IL-17A contributes to severe asthma.** *J Allergy Clin Immunol*. 2013 132(5):1194-1204.

This study found that diesel exhaust particle (DEP) and house dust mite co-exposure in a mouse model significantly increased airway hyperresponsiveness with a mixed Th2/Th17 immunologic response compared to house dust mite exposure alone. Similar findings were observed in children; those with high exposure to DEP had significantly increased asthma symptoms compared to children with low DEP exposure. Furthermore, children exposed to high levels of DEP had nearly 6-fold increased levels of IL-17A compared to low DEP exposed children.

Ehrlich S, Calafat AM, Humblet O, Smith T, Hauser R. **Handling of Thermal Receipts as a Source of Exposure to Bisphenol A**. *JAMA*. 2014 311(3):859-60.

This study examined the effect of handling thermal receipts on urinary levels of bisphenol A (BPA), a ubiquitous endocrine disrupting chemical associated with adverse effects on reproductive function in adults and on neurodevelopment in children. A significant threefold increase in urinary BPA concentrations was observed after continuously handling receipts for 2 hours without gloves, but no significant increase when the participants used gloves. These findings may be of concern for occupationally exposed groups such as cashiers, many of whom are young women of reproductive age.

Kulkarni AD, Jamieson DJ, Jones HW, Jr., Kissin DM, Gallo MF, **Macaluso M**, Adashi EY. **Fertility treatments and multiple births in the United States**. *N Engl J Med*. 2013 5;369(23):2218-25.

This article describes the evolution of multiple birth rates in the USA and highlights the declining contribution of in vitro fertilization and other assisted reproductive technologies to high-order multiple births and the proportional increase in multiple births that are attributable to ovarian stimulation and other non-ART infertility treatments.

Walters TD, **Kim MO**, Denson LA, Griffiths AM, Dubinsky M, Markowitz J, Baldassano R, Crandall W, Rosh J, Pfefferkorn M, Otley A, Heyman MB, LeLeiko N, Baker S, Guthery SL, Evans J, Ziring D, Kellermayer R, Stephens M, Mack D, Oliva-Hemker M, Patel AS, Kirschner B, Moulton D, Cohen S, Kim S, Liu C, Essers J, Kugathasan S, Hyams JS, Pro-Kiids Research Group. **Increased effectiveness of early therapy with anti-tumor necrosis factor-alpha vs an immunomodulator in children with Crohn's disease**. *Gastroenterology*. 2014 146(2):383-91.

This analysis of the RISK study employed propensity score matching to compare the effectiveness of early anti-TNFalpha therapy, early immunomodulator, or no early immunotherapy. Accounting for therapy after 3 months, early treatment with anti-TNFalpha remained superior to early treatment with an immunomodulator, whereas early immunomodulator therapy was no different than no early immunotherapy with respect to achieving corticosteroid and surgery-free remission and growth at 1 year.

Division Publications

1. Adeoye O, Knight WA, Khoury J, Schmit PA, Sucharew H, Broderick JP, Pancioli AM, Investigators C-E. **A matched comparison of eptifibatide plus rt-PA versus rt-PA alone in acute ischemic stroke**. *J Stroke Cerebrovasc Dis*. 2014; 23:e313-5.
2. Adeoye O, Walsh K, Woo JG, Haverbusch M, Moomaw CJ, Broderick JP, Kissela BM, Kleindorfer D, Flaherty ML, Woo D. **Peripheral monocyte count is associated with case fatality after intracerebral hemorrhage**. *J Stroke Cerebrovasc Dis*. 2014; 23:e107-11.
3. Amin MR, Khoury JC, Assa'ad AH. **Food-specific serum immunoglobulin E measurements in children presenting with food allergy**. *Ann Allergy Asthma Immunol*. 2014; 112:121-5.
4. Ammerman RT, Putnam FW, Altaye M, Stevens J, Teeters AR, Van Ginkel JB. **A clinical trial of in-home CBT for depressed mothers in home visitation**. *Behav Ther*. 2013; 44:359-72.
5. Ammerman RT, Putnam FW, Altaye M, Teeters AR, Stevens J, Van Ginkel JB. **Treatment of depressed**

- mothers in home visiting: impact on psychological distress and social functioning.** *Child Abuse Negl.* 2013; 37:544-54.
6. Aschebrook-Kilfoy B, Caces DB, Ollberding NJ, Smith SM, Chiu BC. **An upward trend in the age-specific incidence patterns for mantle cell lymphoma in the USA.** *Leuk Lymphoma.* 2013; 54:1677-83.
 7. Auble BA, Bollepalli S, Makoroff K, Weis T, Khoury J, Colliers T, Rose SR. **Hypopituitarism in pediatric survivors of inflicted traumatic brain injury.** *J Neurotrauma.* 2014; 31:321-6.
 8. Bao W, Bowers K, Tobias DK, Hu FB, Zhang C. **Prepregnancy dietary protein intake, major dietary protein sources, and the risk of gestational diabetes mellitus: a prospective cohort study.** *Diabetes Care.* 2013; 36:2001-8.
 9. Bao W, Bowers K, Tobias DK, Olsen SF, Chavarro J, Vaag A, Kiely M, Zhang C. **Prepregnancy low-carbohydrate dietary pattern and risk of gestational diabetes mellitus: a prospective cohort study.** *Am J Clin Nutr.* 2014; 99:1378-1384.
 10. Bao W, Hu FB, Rong S, Rong Y, Bowers K, Schisterman EF, Liu L, Zhang C. **Predicting risk of type 2 diabetes mellitus with genetic risk models on the basis of established genome-wide association markers: a systematic review.** *Am J Epidemiol.* 2013; 178:1197-207.
 11. Basu RK, Wang Y, Wong HR, Chawla LS, Wheeler DS, Goldstein SL. **Incorporation of biomarkers with the renal angina index for prediction of severe AKI in critically ill children.** *Clin J Am Soc Nephrol.* 2014; 9:654-62.
 12. Basu RK, Zappitelli M, Brunner L, Wang Y, Wong HR, Chawla LS, Wheeler DS, Goldstein SL. **Derivation and validation of the renal angina index to improve the prediction of acute kidney injury in critically ill children.** *Kidney Int.* 2014; 85:659-67.
 13. Beck AF, Huang B, Simmons JM, Moncrief T, Sauers HS, Chen C, Ryan PH, Newman NC, Kahn RS. **Role of financial and social hardships in asthma racial disparities.** *Pediatrics.* 2014; 133:431-9.
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Faculty, Staff, and Trainees

Faculty Members

Maurizio Macaluso, MD, DrPH, Professor

Leadership Division Director; Co-Director, Biostatistics, Epidemiology and Research Design Core, UC Center for Clinical and Translational Science and Training

Research Interests Epidemiologic research methods; cancer epidemiology; occupational epidemiology; health effects of sexual, reproductive and contraceptive behavior; acceptability, efficacy and safety of contraceptive and assisted reproductive technology; infectious disease epidemiology; surveillance systems.

Mekibib Altaye, PhD, Associate Professor

Leadership Director, Biostatistical Consulting Unit

Research Interests Design and analysis of correlated, clustered and longitudinal data. Design and analysis of functional and structural brain image data and inference procedures for reliability data.

Katherine Bowers, PhD, Assistant Professor

Research Interests Perinatal epidemiology, maternal genetic and environmental exposures and offspring neurodevelopment including autism spectrum disorders.

Lili Ding, PhD, Assistant Professor

Research Interests Bayesian statistics and its applications in biomedical research, including statistical genetics, population pharmacokinetics and pharmacodynamics (PK/PD), latent variable modeling, and survival analysis.

Shelley Ehrlich, MD, MPH, MSc, ScD, Assistant Professor

Research Interests Environmental exposures to endocrine disruptors and perinatal and reproductive health outcomes. Fetal programming of childhood diseases. Molecular epidemiology (epigenetics, gene-environment interactions). Global health.

Lin Fei, PhD, Associate Professor

Research Interests Clinical trial design and analysis, probability models in ranking and selection, categorical data analyses.

Md. Monir Hossain, PhD, Associate Professor

Research Interests Spatial and spatial-temporal point process and area level modeling, Mixture models, Inter-rater reliability, Multi-level modeling, and Health services and outcomes research.

Bin Huang, PhD, Associate Professor

Research Interests Mediation analysis, statistical causal inference, and Bayesian statistics modeling.

Richard F. Ittenbach, PhD, Professor

Leadership Director, Scale Development Unit

Research Interests Development, validation and analysis of scales for measurement of biomedical and bio-behavioral factors.

Jane C. Khoury, PhD, Associate Professor

Research Interests Epidemiology of stroke with special emphasis on childhood stroke and stroke in those with diabetes. The effect of intra-uterine exposure to type 1 diabetes on childhood growth, metabolism and cardiac function.

Mi-Ok Kim, PhD, Associate Professor

Research Interests Extension of propensity score methods to multilevel observational data and a high-dimensional big data setting, and use of quantiles to better depict the rate of decline in a key pulmonary functional measurement in cystic fibrosis patients. Principle area of application is inflammatory bowel disease and cancer.

Eileen King, PhD, Associate Professor

Research Interests Design and analysis of clinical trials for health care and pharmaceutical research studies. Comparative effectiveness research using clinical data from large multi-site registries.

Ping-I Lin, MD, PhD, Assistant Professor

Research Interests Genetic epidemiology, imaging genetics, pharmacogenomics, eye tracking tests, and biostatistical methods focused on structural equation modeling, clustering algorithms and admixture analysis.

Jareen Meinzen-Derr, PhD, Associate Professor

Research Interests Hearing and deafness, developmental disabilities, neonatal outcomes.

Nicholas Ollberding, PhD, Assistant Professor

Research Interests The role of diet in the etiology and the survival of cancer, dietary assessment and analysis methodology, molecular epidemiology, gut microbial structure and function.

Patrick Ryan, PhD, Associate Professor

Research Interests Air pollution epidemiology and exposure assessment, pediatric respiratory health, neurobehavioral development, indoor air pollutants, and environmental exposure to elongated mineral fibers.

Shelia R. Salisbury, PhD, Professor Emerita

Research Interests Design, analysis, and interpretation of results from clinical trials and observational studies.

Heidi Sucharew, PhD, Assistant Professor

Research Interests Stroke, epidemiology and clinical trials, environmental exposures and child health, structural equation modeling, latent profile analysis, and latent variable modeling.

Rhonda Szczesniak, PhD, Associate Professor

Research Interests Her biostatistical interests are functional data analysis applications, including self-modeling, semiparametric and nonparametric regressions; her epidemiologic interests include diabetes in pregnancy and outcomes research for children with cystic fibrosis and obstructive sleep apnea.

Jessica Graus Woo, PhD, Associate Professor

Research Interests Developmental pathways leading to pediatric obesity, and specific metabolic complications of obesity, such as insulin resistance and dyslipidemia.

Bin Zhang, PhD, Assistant Professor

Research Interests Statistical methods in clinical trials, survival analysis, longitudinal data analysis and optimal designs.

Nanhua Zhang, PhD, Assistant Professor

Research Interests Missing data; comparative effectiveness; clinical trial design; meta-analysis; scale development; joint modeling; environmental health; community-based intervention; health disparity; behavioral intervention; health psychology.

Joint Appointment Faculty Members

Lilliam Ambroggio, PhD, Assistant Professor (Hospital Medicine)

Research Interests To improve the health of children through improved diagnostic methods for common serious infections.

Melinda Butsch Kovacic, MPH, PhD, Assistant Professor (Asthma Research)

Research Interests Environmental and community-based epidemiology; genetic, epigenetic, and

environmental biomarkers of chronic disease with emphasis on asthma and cancer; assessment and symptom prevention via multimedia intervention approaches.

Cnota James F., MD, Associate Professor (Cardiology)

Research Interests Multicenter trials in pediatric heart disease, fetal cardiology, perinatal outcomes in congenital heart disease.

Nancy Daraiseh, PhD, Assistant Professor (Center for Professional Excellence Research & EBP)

Research Interests Occupational health and safety; human factors; patient safety; health outcomes; stress.

Adekunle Dawodu, MD, Professor (Center for Global Child Health)

Research Interests Vitamin D and International child health outcomes

Donna Carlson Jones, PhD, Assistant Professor (Plastic Surgery)

Research Interests Bone development and shape, and how ontogeny, function, and evolution of craniofacial morphology influence disease states such as mandibular hypoplasia.

Long Lu, PhD, Assistant Professor (Biomedical Informatics)

Research Interests Using quantitative approaches, to address fundamental questions in molecular biology and human diseases, in particular, deciphering the human genetic blueprint, modeling complex biological systems, and facilitating drug discovery and development.

Lisa J. Martin, PhD, Associate Professor (Human Genetics)

Research Interests Statistical genetics, statistical methods to improve genotype quality, obesity, cardiovascular genetics, allergic diseases.

Ardythe L. Morrow, PhD, Professor (Director, Center for Interdisciplinary Research in Human Milk and Lactation)

Research Interests Molecular Epidemiology of Human Milk, Epidemiologic Methods, Prevention of Infectious Disease, Predictive Biomarkers of Neonatal Outcomes

Jennie G. Noll, PhD, Professor (Behavioral Medicine & Clinical Psychology)

Research Interests Developmental effects of childhood abuse, longitudinal methods, multivariate, dynamic modeling.

Sunghee Oh, PhD, Assistant Professor (Human Genetics)

Research Interests Temporal dynamic methods in gene expression profiles, bayesian inference of genetic regulatory networks, and statistical and computational methods on hierarchical structures on post transcriptional process.

James L. Peugh, PhD, Assistant Professor (Behavioral Medicine & Clinical Psychology)

Research Interests Cross-sectional, longitudinal, and multilevel latent variable mixture modeling; missing data handling; pedagogical manuscripts.

Joseph R. Rausch, PhD, Associate Professor (Behavioral Medicine & Clinical Psychology)

Research Interests Longitudinal data analysis; longitudinal RCTs; design and analysis of behavioral interventions; adherence to treatment regimens.

Chad E. Shenk, PhD, Assistant Professor (Behavioral Medicine & Clinical Psychology)

Research Interests Childhood maltreatment, psychological and physiological mediators of stress and trauma exposure, research design and methodology, and statistical modeling.

- **Mohammad Bhuiyan, MS**, 2012, University of Cincinnati, Cincinnati, OH
- **Cole Brokhamp, BS**, 2010, University of Cincinnati, Cincinnati, OH
- **Li Duan, MS**, 2011, University of Cincinnati, Cincinnati, OH
- **Dan Li, MS**, 2011, Uppsala University, Sweden
- **Yongchao Liu, MS**, 2010, University of Cincinnati, Cincinnati, OH
- **Samrat Yeramaneni, PhD**, 2013, University of Cincinnati, Cincinnati, OH
- **Huaiyu Zhang, MS**, 2012, University of Cincinnati, Cincinnati, OH
- **Yue Zhang, MS**, 2011, DePaul University, Chicago, IL

Division Collaboration

Treatment of maternal depression in home visitation: Mother and Child impacts. Co-Investigator on this study which seeks to build upon what has been learned about IH-CBT and to extend research on this treatment approach, and provide the statistical support for study design, grant development, abstract and manuscript preparation. (Mekibib Altaye, PhD.)

Behavioral Medicine and Clinical Psychology » Robert Ammerman, PhD

Multisite Study of School Based Treatment Approaches for ADHD Adolescents. Biostatistician providing the statistical support necessary to develop the study design and analysis needed to examine the costs and benefits of multiple levels of school-based intervention for adolescents with ADHD. (Mekibib Altaye, PhD)

Behavioral Medicine and Clinical Psychology » Josh Langburg, PhD

Variations in Care and Outcomes for Children with Traumatic Brain Injury. Co-Investigator on this study where we aim to characterize care practices, morbidity, and mortality for children with TBI and then assess the effects of these care practices, as well as injury characteristics and hospital characteristics, on in-hospital outcomes, while controlling for hospital and patient level. (Mekibib Altaye, PhD)

Emergency Medicine » Tara Rhine, MD

Provide design and statistical support for the grant on the impact of PBDE and PFC exposures on internalizing behaviors and Neuroimaging outcomes. (Mekibib Altaye, PhD)

General and Community Pediatrics » Kimberly Yolton, PhD

Balance of Th17 Cells and Regulatory T Cells in Candidal Vaginal Colonization in Pregnant Macaques and Humans. Biostatistician providing study design and statistical analysis support on this project to why vaginal therapy for asymptomatic candida colonization in pregnant women < 24 weeks' gestation reduces preterm birth by 25-55%. (Mekibib Altaye, PhD)

Infectious Diseases » Margaret Hostetter, MD

Imaging the effect of centrottemporal spikes and seizures on language in children. Biostatistician to provide study design and statistical analysis support on this project which will examine how seizures and abnormal brain activity affect language skill in children with Benign Childhood Epilepsy with Centro-Temporal Spikes (BECTS). (Mekibib, Altaye, PhD)

Neurology » Jennifer Vannest, PhD

Collaborations investigating the DTI measurements of pediatric Hydrocephalus. (Mekibib Altaye, PhD)

Neurosurgery » Francesco Mangano, DO

Aerobic Training for Management of Post-concussion Syndrome in Adolescents. Consultant on this study to systematically evaluate the effects of an aerobic training intervention for management of PCS and to evaluate cerebral blood flow correlates of PCS in adolescents, providing support for study design and analysis.

Efficacy of Methylphenidate for Management of Long-Term Attention Problems after Pediatric Traumatic Brain Injury. Co-Mentor to Dr. Kurowski on this study, providing support for study design to determine the efficacy and dose-response of methylphenidate treatment of attention problems after pediatric TBI and to provide a better understanding of whether a prior history of ADHD, ADHD subtypes, executive functioning, and attentional control influence treatment response. (Mekibib Altaye, PhD)

Physical Medicine and Rehabilitation » Brad Kurowski, MD, MS

National Center for Research Resources, Center for Clinical and Translational Science and Training. Biostatisticians, on the national consortium of medical research institutions working together to improve the way biomedical research is conducted across the country, and providing support to the Director/Co-Director of the BioMetrics Core section of the CCTST grant. (Mekibib Altaye, PhD; Md. Monir Hossain, PhD; Richard Ittenbach, PhD; Eileen King, PhD; Bin Zhang, PhD)

The Center for Clinical and Translational Science and Training » James E Heubi, MD

Pediatric Functional Neuroimaging Research Network. Biostatistician on this project, providing statistical support to build basic methods, software, and network tools for a pediatric functional neuroimaging research network for the NICHD. Deliverables include methods for ASL and fMRI in children, neurostimulation paradigms, software for image analysis and tools for a web-based database to access shared data(.

Children's MR Imaging on Neuro-Development and Disease (CMINDD). Co-Director of the biostatistics and data management core. (Mekibib Altaye, PhD)

The Pediatric Neuroimaging Research Consortium » Scott Holland

Imaging the Blood-Brain Barrier in Childhood-onset Neuropsychiatric Lupus. Co-Investigator on this project, providing study design and statistical analysis to implement noninvasive imaging techniques combining arterial spin labeling (ASL) and diffusion-weighted imaging (DWI) that have recently been developed that allow direct regional measure of capillary permeability associated with BBB integrity. We will relate this measure of the BBB to antibody assessments, medication use, and disease status of NPSLE patients. (Mekibib Altaye, PhD)

The Pediatric Neuroimaging Research Consortium » Mark DiFrancesco, PhD

Provides study design and statistical analysis support on many different projects in the investigation of characterizing and comparing microbiome of the gut in different infant groups. (Mekibib Altaye, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » Ardythe Morrow, PhD and Kurt Schibler, MD

Collaborations in the study of the Longitudinal DTI Study in Children Treated for Congenital Hydrocephalus. Co-investigator on this project providing design and statistical analysis. (Mekibib Altaye, PhD)

Radiology » Weihong Yuan, PhD

Identification of autism spectrum disorder patient subgroups using latent profile analysis. The objectives of this research are two-fold. First, using the AS-ATN we will replicate findings from a motivating prior study, which employed principle component combined with hierarchical cluster analysis on medical and clinical characteristics to

identify four symptom clusters in a small (n=245) Italian ASD sample. Second, we will identify novel patient clusters using additional ASD characteristics using principle components and latent profile analysis. (Katherine Bowers, PhD)

Developmental and Behavioral Pediatrics » Patricia Manning, MD

The prevalence of autism spectrum disorder and other developmental disabilities among children who have congenital heart defects This project uses data from the CDC to determine whether children with heart conditions have an increased prevalence of developmental disorders. (Katherine Bowers, PhD)

Developmental and Behavioral Pediatrics » Julia Anixt, MD

A comprehensive database of autism spectrum disorder, developmental disabilities and controls from the CCHMC electronic medical records. This initiative aims to collect and organize the data on every autism spectrum disorder case from CCHMC since the launch of EPIC as well as multiple potential controls. There are 6 initial specific aims with IRB approval to be tested in the database. (Katherine Bowers, PhD)

Developmental and Behavioral Pediatrics » Julia Anixt, MD

Neurology » Jamie Capal, MD

Biomedical Informatics » Keith Marsolo, PhD

Home visiting service on the recognition of developmental delays. Place Outcomes Award funded study to determine whether home visiting services decrease the time to detection of developmental delays and what factors predict those delay. Additional objectives include identifying risk factors that predict early intervention utilization and development of an intervention to increase early intervention utilization. (Katherine Bowers, PhD)

Developmental and Behavioral Pediatrics » Jennifer Ehrhardt, MD

Behavioral Medicine and Clinical Psychology » Robert Ammerman, PhD

Pulmonary Biology » Eric Hall, PhD

The impact of home visiting services on the prevention of unintentional injury. Study funded by the Ohio Department of Public Safety to determine whether home visiting services, including the dosage of services, is a viable strategy for the reduction of unintentional injury during early childhood. (Katherine Bowers, PhD)

Emergency Medicine » Judith Dexheimer, PhD

Behavioral Medicine and Clinical Psychology » Robert Ammerman, PhD

The Divisions of Psychiatry and Biostatistics and Epidemiology Developmental Disabilities Clinic Repository (DDCR): A Personalized Medicine-based Repository of Biological Samples, Genetic and Clinical Data from Individuals with Developmental Disabilities and Non-Developmentally Disabled Controls. This project aims to develop a biorepository of children with development disabilities, who are comprehensively phenotyped, neurotypical controls and their families.

Immune exposures in pregnancy and ASD. Pilot study of maternal immune exposures in pregnancy and offspring autism spectrum disorder compared with developmental disability and neurotypical controls- a project supplementary to an ongoing study of an autism biomarker. (Katherine Bowers, PhD.)

Psychiatry » Craig Erickson, MD

Impact of introduction of a rapid trichomoniasis test in an emergency department on rates of testing and treatment of trichomoniasis. () Biostatistician providing statistical support for analysis plan, statistical analysis, abstract and manuscript preparation on this study. (Lili Ding, PhD)

Adolescent and Transition Medicine » Lea Widdice, MD and Jennifer Reed, MD

Collaborations with faculty and fellows, providing statistical support for various research studies on study design, protocol development, statistical analysis and preparation of abstracts and manuscripts. (Lili Ding, PhD)

Anesthesia » Smokey Clay, MD, David Moore, MD, Pomsuan Ngamprasertwong, MD, MSc, Senthilkumar Sadhasivam, MD, MPH, and Rajeeve Subramanyam, MD, MS

Collaborations on the development of research methods for statistical genetics, providing statistical support for genetic data analysis, abstract and manuscript preparation, and grant development. (Lili Ding, PhD)

Asthma » Tesfaye Baye, PhD

Collaborations with faculty and fellows, providing statistical support on study design, proposal development and data analysis. (Lili Ding, PhD)

Otolaryngology » David R. Moore, PhD

HOME Study – PFC in drinking water and birth outcomes; Urinary BPA and birth outcomes. The goal of this collaboration is to examine the association between Perfluorinated chemicals in drinking water and serum concentrations in pregnant women in the Greater Cincinnati area. The second part of the project is to examine the association between maternal serum PFC concentrations and birth weight and birth timing. (Shelley Ehrlich, MD, MPH, MSc, ScD; Jane Khoury, PhD)

Hospital Medicine » Kimberly Yolton, PhD

Interpregnancy Interval, Gestational Weight Gain and preterm birth. This study is using the Ohio Department of Health birth registry data to determine the association between short interpregnancy interval, gestational weight gain and preterm birth. (Shelley Ehrlich, MD, MPH, MSc, ScD)

The Perinatal Institute, Neonatology, Center for Prevention of Pre-Term Birth » Louis Muglia, MD, PhD

Various collaborations on studies of biomarker response in patients with severe sepsis and septic shock, sepsis with obesity, and quantification of lactate with sweat patch in critically ill patients. Also, to develop methods to measure fat with an ultrasonic device to correlate with CT scan results in a repeated measurement setting. (Lin Fei, PhD)

Critical Care Medicine » Jennifer Kaplan, MD, Hector Wong, MD, and Basilia Zingarelli, MD, PhD

Various collaborations on spinal fusion and lung regeneration research study, pulse oxygen vs arterial saturated oxygen difference as an indication for mortality in critically ill pediatric bone marrow transplant patients. To develop prediction models for abstract submission. (Lin Fei, PhD)

Critical Care Medicine » Brian Varisco, MD

Non-alcoholic Fatty Liver Disease Study. Collaborating with team members on this study proposal. (Lin Fei, PhD)

Endocrinology » Nancy Crimmins, MD

Gastroenterology, Hepatology and Nutrition » Stavra Xanthakos, MD, MS

Childhood Liver Disease Research and Education Network (ChiLDREN). Collaborates with this team on this ancillary study providing statistical support for biomarkers, clinical outcome analyses, and abstract preparation. (Lin Fei, PhD)

Gastroenterology, Hepatology and Nutrition » Jorge Bezerra, MD

Pancreatitis Registry and the In-House GI Physician Survey. Provides statistical support on planning, analysis, and inference of survey results as well as preparation of abstracts. (Lin Fei, PhD)

Gastroenterology, Hepatology and Nutrition » Maisam Abu-El-Haija, MD, Tom Lin, MD, and Joseph Palermo, MD, PhD

PCORI Research study proposal to conduct a randomized diet trial to evaluate efficacy of the elimination of one food vs multiple foods in eosinophilic esophagitis patients. Therefore to potentially simplify dietary complexity. (Lin Fei, PhD)

Gastroenterology, Hepatology and Nutrition » Vincent Mukkada, MD

Gaucher Disease. Collaborating by providing statistical analysis sections to the grant application project on Gaucher Disease mouse stem cell transplantation model. (Lin Fei, PhD)

The Cancer and Blood Disease Institute, Experimental Hematology » Dao Pan, PhD

Phase 2 study of Dirolumas treatment of complicated vascular anomalies. Collaborating by providing statistical support on this on-going study. (Lin Fei, PhD)

The Cancer and Blood Disease Institute, Oncology » Denise Adams, MD

Comparison of analgesic efficacy. Collaborate on designing a randomized prospective clinical trial for the comparison of analgesic efficacy of surgeon performed Iliioinguinal/Iliohypogastric blockade with ultrasound-guided TAP blockade in pediatric patients undergoing unilateral herniorrhaphy on an outpatient basis.

Effect of naloxone on respiratory events. Collaborate on the study of retrospective review of hospital-wide critical respiratory events requiring naloxone in a pediatric institution.

Comparison of anesthetic techniques. Collaborate on the comparison of two anesthetic techniques in children undergoing magnetic resonance imaging.

Developing predictive model. Collaborate on the study of factors predictive of postoperative respiratory events after anesthesia for surgery and radiology.

Effect of failed extubation. Collaborate on the study of patient and procedural characteristics for successful and failed immediate tracheal extubation in the operating room following cardiac surgery in infancy.

Reliability and efficiency of noninvasive hemoglobin monitoring tools. Collaborate on the study of trending and accuracy of noninvasive hemoglobin monitoring in pediatric perioperative patients.

Palliative care of cancer patients. Collaborate on the study of racial and ethnic differences in hospice enrollment among children with cancer.

Opioid effects. Collaborate on quantifying opioid sparing effects to objectively assess success of regional anesthesia in children.

Sedation effects. Collaborate on the evaluation of Bradycardia during dexmedetomidine sedation in children: should we pretreat with anticholinergics or not?

Epilepsy. Collaborate on clonal analysis of newborn dentate granule cells in epilepsy.

Developing predictive model. Collaborate on development and validation of a statistical model to predict cancellation on day of a scheduled surgery at CCHMC Burnet Avenue campus.

Evaluation tool: Delphi technique. Collaborate on measuring the efficiency and reliability of Delphi technique.

Epidural blood patches. Collaborate on the assessment of epidural blood patches for post-dural puncture headaches.

Anesthesia for spine surgery. Collaborate on the evaluation of functional near infrared spectroscopy to detect pain in children under general anesthesia for spine surgery. (Md. Monir Hossain, PhD.)

Anesthesia » Vidya Chidambaram, MD, Junzheng Wu, MD, ScD, Rajeeve Subramanyam, MD, MS, Jeff Miller, MD, Mario Patino, MD, Rachel Thienprayoon, MD, David Moore, MD, Mohamed Mahmoud, MD, Nick Pratap, MB BCHir, Michael Sikora, MD, and Luigi Viola, MD

Surgical and medical problems of intestinal failure. Collaborate on this project on 3 year consecutive prospective evaluation of the adaptive process in common surgical and medical problems of intestinal failure. (Md. Monir Hossain, PhD)

Pediatric General and Thoracic Surgery » Michael Helmrath, MD, MS

Transfer of baby-wipe lotion to skin. Collaborates on this study developing statistical models and finding significant risk factors that introduce variability in the transfer.

Geometric Morphometrics in combination with spatial statistics. Collaborates on this project to find how the shape changes with the growth by using the methods developed in geometric morphometrics. (Md. Monir Hossain, PhD)

Plastic Surgery » Marty Visscher, PhD and Donna Jones, PhD

Spatial cluster analysis. Cluster analysis of US myositis registry data. (Md. Monir Hossain, PhD)

Rheumatology » Hermine Brunner, MD, MSc

Continued Studies of Environment on Puberty. Collaborating by providing statistical support on this project that will evaluate the interactions of environmental exposures, diet and activity, and genes on pubertal markers and components of metabolic syndrome. (Bin Huang, PhD)

Adolescent and Transition Medicine » Frank Biro, MD

Epidemiologic Impact of HPV Vaccination. Biostatisticians providing statistical support on this proposal to further characterize the community-level impact of HPV vaccine introduction, in men as well as women, by determining changes in vaccine-type HPV, characterizing herd protection, and investigating possible type replacement during the first nine years after HPV vaccine introduction. (Bin Huang, PhD; Lili Ding, PhD)

Adolescent and Transition Medicine » Jessica Kahn, MD, MPH and Tanya Mullins, MD

Physician Attitudes toward New Biomedical HIV Prevention Interventions in Youth. Mentor providing support on this study that will define the factors that influence physician intention to recommend microbicides and PrEP to adolescents. (Bin Huang, PhD)

Adolescent and Transition Medicine » Tanya Mullins, MD

Explaining Racial Disparities in Child Asthma Morbidity. Co-Investigator on this study to examine children hospitalized with asthma to explore how race shapes social and environmental factors which, in turn, may

influence the likelihood of re-admission for asthma.

The Cincinnati Home Injury Prevention (CHIP) Trial. Biostatistician on this randomized intervention trial which is aimed to evaluate the effect of a home injury hazard reduction intervention program in a low-income high risk population. (Bin Huang, PhD)

General and Community Pediatrics » Robert Kahn, MD, MPH and Kieran Phelan, MD, MSc

Health related quality of life in JIA patients. Collaborates on this project by providing statistical support and data analysis. (Bin Huang, PhD)

Pulmonary Medicine » Michael Seid, PhD

Rheumatology » Hermine Brunner, MD, MSc, Edward Giannini, MSc, DrPH, and Daniel Lovell, MD, MPH

Enhancing PROMIS in Pediatric Pain, Rheumatology and Rehabilitation Research. Biostatistician on this project that will test the accuracy and responsiveness to change of the PROMIS tool for assessment of health in children with Juvenile Idiopathic Arthritis, Cerebral Palsy, and Chronic Pain. The project also aims to improve assessment of pain in children by creating new PROMIS pain measures.

Multidisciplinary Clinical Research Center. Biostatistician on this project to utilize advanced MRI techniques coupled with candidate serum biomarker measurements to heighten the understanding of how cSLE affects the CNS and results in cSLE-NCD. (Bin Huang, PhD)

Rheumatology » Esi Morgan DeWitt, MD and Daniel Lovell, MD, MPH

ACL injury after ACL reconstruction surgery. Collaborating on this project to investigate the risk factors related to the second onset of ACL injury and the successful return to sports. (Bin Huang, PhD)

Sports Medicine » Timothy Hewett, PhD, Gregory Myer, PhD, and Mark Paterno, PhD, MBA

Tele-health Enhancement of Adherence to Medication in Pediatric IBD (Team Study). Co-Investigator and Biostatistician of this study which will test the efficacy of a tele-health behavioral treatment on medication adherence program as compared with a standard educational program, as it relates to disease severity, health-related quality of life, and health care utilization in children and adolescents with IBD. (Richard Ittenbach, PhD)

Behavioral Medicine and Clinical Psychology » Kevin Hommel, PhD and Dennis Drotar, PhD

Bone Mineral Accretion in Young Children. Co-Investigator and Biostatistician providing methodologic leadership and statistical support to develop reference data for bone mineral content and density for healthy children 1 to 5 years of age, and to determine the influences of growth, body composition, physical activity and gross motor skills on bone accrual. (Richard Ittenbach, PhD)

General and Community Pediatrics » Heidi Kalkwarf, PhD and Kimberly Yolton, PhD

Gastroenterology, Hepatology and Nutrition » James Heubi, MD

Learner Self-Assessment Study. Principle Investigator and Biostatistician evaluating knowledge and skill competencies of clinical data managers and clinical data management professionals associated with an enterprise-wide (CITI) training program. (Richard Ittenbach, PhD)

Learning and Development » Daniel McLinden, EdD

Clinical Detection of Post-Concussion Impairments in Children and Adolescents. Mentor on this project which will test the utility of several different measures of upper extremity function, lower extremity function, and postural

sway complexity related to concussion among healthy and injured children, adolescents, and young adults.

(Richard Ittenbach, PhD)

Sports Medicine » Caherine Quatman-Yates, PhD, Gregory Myer, PhD, Timothy Hewitt, PhD, and Mark Paterno, PhD

Exploring a Cessation Intervention for Low Income Smokers in an Emergency Setting. Co-Mentor on this study which seeks to develop and test a smoking cessation intervention for low-income smokers recruited from the PED. Cessation outcomes will be assessed on parents who have children with and without a secondhand smoke exposure-related complaint, Also co-investigator on grant assessing cessation intervention. (Jane Khoury, PhD)

Emergency Medicine » Melinda Mahabee-Gittens, MD, MS

SEARCH for Diabetes in Youth, Phase 3: Registry Study. Biostatistician on this study which will exploit the size and ethnic diversity of the study population to identify differences in both processes of care and health outcomes by traditional, clinical diabetes type; by the major race/ethnic groups in the US; and by employing a novel approach to segregate traditional clinical diabetes types by pathophysiologic dimensions. (Jane Khoury, PhD)

Endocrinology » Lawrence Dolan, MD

Collaborating on multiple projects such as long-term effects of in-utero exposure to diabetes, early metabolic effects of type 2 diabetes in youth, Fanconi Anemia, Shwachman-Diamond Syndrome, Duchenne Muscular Dystrophy, and beta cell function in Turners' Syndrome. Continue to provide statistical support and interpretation of the analyses, as well as grant, abstract and manuscript preparation. (Jane Khoury, PhD)

Endocrinology » Philippe Backeljauw, MD, Deborah Elder, MD, Lawrence Dolan, MD, Sarah Lawson, MD, Susan Rose, MD, Meilan Rutter, MD, and Amy Shah, MD

Collaborating on multiple projects, such as gestational and childhood environmental toxin exposure related to neurodevelopment, physical activity and diet in children in day care, providing statistical support and study design, overseeing data management, and abstract and manuscript preparation. (Jane Khoury, PhD)

General and Community Pediatrics » Kristen Copeland, MD, Heidi Kalkwarf, PhD, RD, and Kimberly Yolton, PhD

Collaborating together with the UC stroke team examining childhood stroke incidence, exploring potential for describing etiology and follow-up, and abstract and manuscript preparation. (Jane Khoury, PhD)

Neurology » Paul Horn, PhD, Katrina Peariso, MD, and J. Michael Taylor, MD

Collaborating on multiple projects regarding injury in female adolescent athletes in particular ACL injury mechanism and prevention, by providing statistical support, interpretation for abstract and manuscript preparation, and writing grant applications. (Jane Khoury, PhD)

Sports Medicine » Timothy Hewett, PhD, Adam Kiefer, PhD, and Gregory Nyer, PhD

Collaborating on multiple projects, providing statistical support, involved in interpretation for abstract and manuscript preparation, and writing grant applications. (Jane Khoury, PhD)

The Cancer and Blood Disease Institute, Bone Marrow Transplantation and Immune Deficiency » Sonata Jodele, MD

Collaborating on multiple projects, such as home injury prevention in early childhood and maternal supervisory

behavior, providing statistical support and interpretation of the analyses and preparation of abstracts and manuscripts. (Jane Khoury, PhD)

The James M. Anderson Center for Health Systems Excellence » Kieran Phelan, MD, MSc

Risk Stratification & Identification of immunogenic and microbial markers of rapid disease progression in children with Crohn's disease. Co-Investigator on this multi-center project which will define genetic, genomic, microbial, and immune markers of disease progression in newly diagnosed pediatric CD.

Causes and Consequences of Neutrophil Dysfunction in Pediatric Crohns Disease. Biostatistician on this project providing statistical support on this ancillary study to the CCFA-sponsored RISK inception cohort study will determine the effects of novel rare genetic mutations associated with early onset pediatric CD upon neutrophil function. (Mi-Ok Kim, PhD)

Gastroenterology, Hepatology and Nutrition » Lee Denson, MD

Surgical Site Infection Prevention Continuum Development. Biostatistician providing statistical support on this project to discover if extending SSI prevention efforts to the pre- and the post-operative period will enhance SSI prevention by facilitating safe patient-centered care and coordination of care across microsystems, and in-crease value by avoiding SSI-associated costs. (Mi-Ok Kim, PhD)

Hospital Medicine » Joshua Schaffzin, MD, PhD

Macrophage Based Gene Therapy for Hereditary Pulmonary Alveolar Proteinosis. Co-Investigator on this project with a goal to evaluate a novel therapeutic approach, pulmonary macrophage transplantation (PMT). Preliminary data show that GM-R deficient (GM-RKO) mice develop hPAP lung disease that is identical to hPAP in humans including an increased level of pulmonary GM-CSF, which confers a selective survival advantage to AMs with functional GM-Rs. (Mi-Ok Kim, PhD)

Pulmonary Medicine » Bruce Trapnell, MD

Fanconi Anemia and HPV Transformation. Biostatistician on this project providing statistical support on the design and analysis to characterize the mechanism(s) by which FA pathway loss stimulates HPV-driven tumorigenesis. (Mi-Ok Kim, PhD)

The Cancer and Blood Disease Institute, Oncology » Suszanne Wells, PhD

Cincinnati Center for Excellence in Molecular Hematology. Biostatistician on this project providing statistical support on the design and analysis with the long term goal of the Cincinnati Center of Excellence in Molecular Hematology (CCEMH) to understand and correct at the molecular level diseases with gene/environmental interactions affecting cells derived from hematopoietic stem cells.

Lineage Determination and Tissue Homeostasis in the aged Hematopoietic System. Biostatistician on this study to determine, on a clonal level, the cellular and molecular basis for decreased efficiency in hematopoiesis upon aging, with the long-term goal to translate this knowledge into therapies to ameliorate or even revert unwanted age-associated phenotypes in the hematopoietic system. (Mi-Ok Kim, PhD)

The Cancer and Blood Disease Institute, Experimental Hematology and Cancer Biology » Yi Zheng, PhD

Neurofibroma Preclinical Therapeutics. Co-Investigator on the project with a goal to conduct preclinical drug screening studies in animal models of tumors that occur in patients with neurofibromatosis, specifically malignant peripheral nerve sheath tumors and neurofibromas. (Mi-Ok Kim, PhD)

The Cancer and Blood Disease Institute, Experimental Hematology and Cancer Biology » Nancy Ratner, PhD

Quercetin: Novel Targeted Chemoprevention for Fanconi Anemia Patients. Co-Investigator on this project with the long term goal to interdict the progression of marrow failure in FA and decrease the associated morbidity and mortality. (Mi-Ok Kim, PhD)

The Cancer and Blood Disease Institute, Bone Marrow Transplantation and Immune Deficiency » Parinda Mehta, MD

Collaborations, providing statistical expertise and support for grant development, study design, data base creation, statistical analysis, and abstract and manuscript preparation for various research studies. (Eileen King, PhD)

Allergy and Immunology » Marc Rothenberg, MD, PhD

Digestive Health Center: Bench to Bedside Research in Pediatric Digestive Disease. Biostatistician for the clinical core with a major goal to provide statistical and data management expertise and support including study design, analysis, and manuscript preparation to advance digestive disease research at Cincinnati Children's Hospital Medical Center and the University of Cincinnati. (Eileen King, PhD)

Gastroenterology, Hepatology and Nutrition » Jorge Bezerra, MD and Stavra Xanthakos, MD, MS

Collaborations, providing statistical support for data analysis and manuscript preparation for various research studies. (Eileen King, PhD)

Pathology and Laboratory Medicine » Kenneth Setchell, PhD

Comparative Effectiveness of Family Problem-Solving Therapy (F-PST) for Adolescent TBI. Co-Investigator on this project to provide statistical and data management guidance and support in order to examine the comparative effectiveness of three versions of family problem solving therapy (therapist-guided, face-to-face; therapist-guided, online; and self-guided, online) in improving patient-reported behavioral functioning and quality of life in adolescents with traumatic brain injury. (Eileen King, PhD)

Physical Medicine and Rehabilitation » Shari Wade, PhD

FL3X: An Adaptive Intervention to Improve Outcomes for Youth with Type 1 Diabetes. Co-Investigator on this project with the goal to test the efficacy of the FL3X intervention to improve adherence and outcome for youth with type 1 diabetes through a multi-site adaptive randomized control design.

Collaborations, providing statistical support on health services research projects. (Eileen King, PhD)

Pulmonary Medicine » Michael Seid, PhD

Collaborations, providing statistical expertise and support for study design, database creation, statistical analysis, and abstract and manuscript preparation for various research studies. Member of the Scientific Oversight Committee for HI Fellows. Head of Data Coordinating Center for the Pediatric Obesity Weight Evaluation Registry (POWER). (Eileen C. King, PhD)

The Heart Institute » Jeffrey Anderson, MD, MPH, John Lynn Jeffries, MD, MPH, Chesney Castleberry, MD, David Cooper, MD, MPH, Allison Divanovic, MD, Samuel Hanke, MD, Robert Siegel, MD, Elaine Urbina, MD, MS, Shelley Kirk, PhD, RD, LD, Bradley Marino, MD, and Thomas Ryan, MD, PhD

Open Source Science: Transforming Chronic Illness Care. Provide statistical and data management expertise and

support on this project that will join patients and physicians together in a collaborative innovation network to design, prototype and optimize, and evaluate a system for improving the chronic illness care system. If successful, this project will lead to improved care and self-management.

Pursuing Perfection in Pediatric Therapeutics. Internal Consultant for statistics and data management of CERTs projects with the CERTs Research Center (RC) focusing on improving outcomes for children by optimizing the use of therapeutics. Additional sub-themes, with expected impact beyond pediatrics, are pharmacogenomics and personalized medicine, patient safety, and quality improvement methodology. (Eileen King, PhD)

The James M. Anderson Center for Health Systems Excellence » Peter Margolis, MD, PhD and Carole Lannon, MD, MPH

Collaborations, providing statistical expertise and support for grant development, study design, database creation, statistical analysis, and abstract and manuscript preparation for various research studies. (Eileen King, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » Heather Kaplan, MD

Collaborations, providing statistical support for data analysis, and abstract and manuscript preparation for various research studies. (Eileen King, PhD)

Trauma Services » Richard Falcone, MD, MPH

Interactions between prenatal exposure to drugs and genes in autism. Principal Investigator which will combine multi-modal studies (i.e., computational screening and animal models) to investigate the role of gene-drug interactions in the risk of autism. (Daniel (Ping-I) Lin, MD, PhD)

Human Genetics » Ying Sun, PhD

Biomedical Informatics » John Hutton, MD

Identification of Genetic Predispositions for Bipolar disorder in children. Co-Investigator on this study to identify rare coding variants that contribute to the bipolar disorder in multiplex families using exome sequencing. (Daniel (Ping-I) Lin, MD, PhD)

Psychiatry » Drew Barzman, MD

Collaborates on a project that studies the joint effect of immune-related genes and social cognition on aggressive behaviors in high-functioning autism. (Daniel (Ping-I) Lin, MD, PhD)

Psychiatry » Craig Erickson, MD

Developmental and Behavioral Pediatrics » Amie Duncan, PhD

Autism Spectrum Disorder Bio-repository. Principal Investigator on this project which aims to thoroughly phenotype and biobank individuals with autism spectrum disorder and developmental disabilities. (Daniel (Ping-I) Lin, MD, PhD)

Psychiatry » Craig Erickson, MD

Collaborates with Dr. Shah on faculty recruitment, on mentoring for junior faculty and on training grant initiatives. Also serves as a co-mentor for Dr. Lilliam Ambroggio and collaborates on the development of comparative effectiveness research projects. (Maurizio Macaluso, MD, DrPH)

Hospital Medicine » Samir Shah, MD and Lilliam Ambroggio, PhD

Blood Pressure Control after Kidney Transplant and Quality Improvement Initiatives. To assess variability of blood

pressure control strategies, individual risk factors for out-of-control blood pressure and the impact of system-wide quality improvement measures on blood pressure control and graft survival in a cohort of renal transplant recipients at CCHMC. (Maurizio Macaluso, MD, DrPH)

Nephrology » David Hooper, MD

Assess the feasibility of establishing a surveillance system for Hemophagocytic Lymphohistiocytosis (HLH) and measuring incidence and mortality from HLH in a geographically defined population. (Maurizio Macaluso, MD, DrPH)

The Cancer and Blood Disease Institute, Bone Marrow Transplantation and Immune

Deficiency » Alexandra Filipovich, MD, Zeynep "Yesim" Kucuk, MD, and Michael Jordan, MD

Biomedical Informatics » Keith Marsolo, PhD

National Center for Research Resources, Center for Clinical and Translational Science and Training. Director/Co-Director of the BioMetrics Core section of the CCTST grant. This national consortium of medical research institutions, funded through Clinical and Translational Science Awards (CTSAs), which is working together to improve the way biomedical research is conducted across the country, reduce the time it takes for laboratory discoveries to become treatments for patients, engage communities in clinical research efforts, and train the next generation of clinical and translational researchers. (Maurizio Macaluso, MD, DrPH)

The Center for Clinical and Translational Science and Training » James Heubi, MD

Participates in the activities of the Health Services Research Matrix (HSR) and collaborates with the Anderson Center faculty on faculty recruitment, on mentoring for junior faculty, on training grant initiatives, and is responsible for Epidemiology in the newly established Health Services Research Core. (Maurizio Macaluso, MD, DrPH)

The James M. Anderson Center for Health Systems Excellence » Peter Margolis, MD, PhD

Just-In-Time Methods for Understanding Near-Misses, Injuries and Risk Factors. This project determines the frequency and type of near-misses and injuries among PHCPs and assess the feasibility of using a real-time data collection method as the basis for active injury surveillance in healthcare organizations. A secondary objective is to assess the relationship of individual and work factors with these events. (Maurizio Macaluso, MD, DrPH)

The James M. Anderson Center for Health Systems Excellence, Center for Professional Excellence

Research and Evidence-Based Practice » Nancy Daraiseh, PhD

Surveillance of Psychiatric Patients to Improve Safety. The purpose of this novel study is to assess the feasibility and effectiveness of using video camera monitoring of high-risk adolescents on psychiatric units to improve patient and staff safety. (Maurizio Macaluso, MD, DrPH; Bin Zhang, PhD)

The James M. Anderson Center for Health Systems Excellence, Center for Professional Excellence

Research and Evidence-Based Practice » Nancy Dariaseh, PhD

Psychiatry » Drew Barzman, MD

Improving Patient Safety by Medication Reconciliation. Co-Investigator on this study regarding a semi-automated Electronic Health Record (EHR) based medication reconciliation intervention coupled with human intelligence will reduce harm and improve clinical outcome for infants and children with special needs while transitioning between hospital and home care settings. (Jareen Meinzen-Derr, PhD)

Biomedical Informatics » Imre Solti, MD, PhD

Shared Decision Making to Improve Care and Outcomes for Children with Autism. Co-Investigator on this proposal to understand decision making in the context of medication management for children with autism spectrum disorders. (Jareen Meinzen-Derr, PhD)

Developmental and Behavioral Pediatrics » Julia Anixt, MD

Ongoing collaborations on studies regarding co-existing hearing impairment and developmental disabilities, autism spectrum disorders screening and referral access, and providing study design and statistical support as needed. (Jareen Meinzen-Derr, PhD)

Developmental and Behavioral Pediatrics » Julia Anixt, MD, Jennifer Ehrhardt, MD, Patraicia Manning, MD, and Susan Wiley, MD

Procalcitonin and Risk Stratification in Pediatric Pneumonia. Co-Investigator on this project which 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. (Jareen Meinzen-Derr, PhD)

Emergency Medicine » Todd Florin, MD

Collaborates on projects focuses on intubation in the emergency room, providing statistical support for study design, statistical analysis, abstract, and manuscript preparation. (Jareen Meinzen-Derr, PhD)

Emergency Medicine » Benjamin Kerrey, MD and Andrea Rinderknecht, MD

Ongoing collaborations providing epidemiology and statistical support, abstract and manuscript preparation for research studies on projects regarding research directly related to pediatric hearing loss, and airway reconstruction. (Jareen Meinzen-Derr, PhD)

Otolaryngology » Ellis Arjmand, MD, PhD, Daniel Choo, MD, Allesandro de Alarcon, MD, MPH, Ravi Elluru, MD, PhD, John Greinwald, MD, Catherine Hart, MD, Stacey Ishman, MD, MPH, Charles Myer, MD, and Michael Rutter, MD

Reducing Loss to Follow-up in a Newborn Hearing Screening Program. Co-Investigator on a project to improve follow-up rates of infants who fail newborn hearing screening by implementing a follow-up re-screening program for at-risk children at WIC sites.

Wideband Clinical Diagnosis and Monitoring of Middle Ear and Cochlear Function. Co-Investigator on this study to improve accuracy of newborn hearing screening to identify sensorineural and conductive hearing loss; use a new test battery to predict persistent, recurrent otitis media; predict conductive hearing loss in children with intellectual disability; monitor ototoxicity for sensorineural hearing loss; and improve diagnosis of adults with middle ear disorders.

Collaboration Between WIC and EHDI to Improve Follow-Up of Newborn Hearing Screening in Greater Cincinnati. Co-Investigator on this proposal to improve follow-up rates of infants who are referred from newborn hearing screening and enrolled in a targeted intervention group by implementing a highly integrated follow-up re-screening program for at-risk children in the Greater Cincinnati area (Hamilton County, Ohio) Women, Infants and Children (WIC) program. (Jareen Meinzen-Derr, PhD)

The James Anderson Center for Health Systems Excellence, Center for Professional Excellence Research and Evidence-Based Practice » Lisa Hunter, PhD

Patterned Experience for Preterm Infants. Co-Investigator to test an approach to caregiving in the NICU designed to result in improved neurobehavioral outcomes. (Jareen Meinzen-Derr, PhD)

The James M. Anderson Center for Health Systems Excellence, Center for Professional Excellence Research and Evidence-Based Practice » Rita Pickler, PhD

Impact of Home Visitation on Neonatal Outcomes. Co-Investigator on this project which will pair ECS enrollment data with Ohio vital statistics and Ohio Hospital Association discharge records to determine the association of home visitation dosage on preterm birth, birth weight, and readmission after discharge, using multivariable regression analysis to adjust for clinical and sociodemographic covariates. (Jareen Meinzen-Derr, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » Neera Goyal, MD, MSc

Improvement in Outcomes for Neonates with Tongue-Based Airway Obstruction. Co-Investigator on this project to validate a prediction tool for tongue-based airway obstruction. (Jareen Meinzen-Derr, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » Laurel Bookman, MD and Kristen Melton, MD

Ongoing collaborations providing epidemiology and statistical support, abstract and manuscript preparation for research studies on projects regarding neonatal outcomes related to prematurity, brain injury and imaging, human milk studies in premature infants, NEC in premature infants, and Gastroschisis and imaging studies. (Jareen Meinzen-Derr, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » James Greenberg, MD, Beena Kamath-Rayne, MD, MPH, Stephanie Merhar, MD, MS, Ardythe Morrow, PhD, Kurt Schibler, MD, Andrew South, MD, and Laura Ward, MD

Collaborations, providing methodologic support for grants regarding imaging research, specifically in neonates and premature infants. (Jareen Meinzen-Derr, PhD)

Radiology » Jean Tkach, PhD

Minimally-invasive lipid-phase micronutrient biomarker development project. This project aims to develop a minimally-invasive method to measure fat-soluble micronutrients in capillary plasma collected via a finger stick.

Within- and between-individual variation in nutrient intake in children and adolescents. This project is focused on determining the number of 24-hour diet recalls required to rank-order children and adolescents on usual intake for a given level of precision.

Validation of a calcium food frequency questionnaire (FFQ). This project will validate a FFQ designed to measure calcium intake in a national sample of children and adolescents.

Dietary intake in tweens and teens pilot study. This pilot study will examine whether the self-reported dietary intake of adolescents collected using the new web-based ASA24-Kids-2014 will decline over time relative to an interviewer administered 24-hour dietary recall. (Nicholas Ollberding, PhD)

General and Community Pediatrics » Heidi Kalkwarf, PhD, RD

Global Exploration of Human Milk Study. This project is examining the contribution of breast milk, and constituents of breast milk, on infant growth, health, and gut microbial composition. (Nicholas Ollberding, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » Ardythe Morrow, PhD

Collaboration on studies of diesel exhaust particles on allergic sensitization, epigenetic effects, and asthma susceptibility. (Patrick Ryan, PhD)

Asthma Research » Neeru Hershey, MD, PhD, Jocelyn Biagini Myers, PhD, and Hong Ji, PhD

Mediators of Disparities Differences in Asthma Severity. Collaborations on this project that will examine the extent to which specific environmental and psychosocial factors explain racial disparities in asthma morbidity, specifically related to higher rates of readmission. The public health significance lies in its focus on excess asthma in disadvantaged children and its emphasis on the potentially remediable factors that drive that excess morbidity. (Patrick Ryan, PhD)

General and Community Pediatrics » Robert Kahn, MD, MPH

Collaboration on a study of the impact of traffic-related air pollution on brain development. Dr. Cecil is leading the effort to perform MRIs on children enrolled in the study. Dr Yolton is leading the neurobehavioral assessment portion of the study. (Patrick Ryan, PhD)

Radiology » Kim Cecil, PhD

General and Community Pediatrics » Kimberly Yolton, PhD

Collaboration on a project focusing on longitudinal relations between depressive and menstrual symptoms in adolescent girls. (Heidi Sucharew, PhD)

Behavioral Medicine and Clinical Psychology » Sarah Beal, PhD

Medication Continuity in Children Treated for ADHD. Biostatistician on this project to understand medication continuity in children with ADHD cared for in primary care settings.

Developing New Technologies to Improve ADHD Medication. Biostatistician on this project with the overall objective to develop and test new technologies to deliver a multi-component intervention to enable families to actively partner with practice teams to optimize medication effectiveness and maintain child medication continuity. (Heidi Sucharew, PhD)

General and Community Pediatrics » William Brinkman, MD, MEd

Ongoing collaborations providing statistical support for study design, statistical analysis, and abstract and manuscript preparation as well as grant preparation on studies such as, ADHD medication continuity, environmental exposures and child neurobehavior using the HOME study cohort, and impact of duty hour standards on intern education and experience. (Heidi Sucharew, PhD)

General and Community Pediatrics » Kimberly Yolton, PhD, Heidi Kalkwarf, PhD, RD, Nicholas Newman, DO, MS, William Brinkman, MD, MEd, Melissa Klein, MD, MEd, Nick DeBlasio, MD, and Courtney Brown, MD

Improving post-discharge outcomes by facilitating family-centered transitions from hospital to home. Co-Investigator on this project with a goal to improve the outcomes of hospital to home transitions for acutely ill hospitalized children and their families. (Heidi Sucharew, PhD)

Hospital Medicine » Samir Shah, MD

Identifying Etiology of Childhood Pneumonia with Metabolomics. Biostatistician on this project with the goal to determine distinct metabolite profile for major classes of pathogens that cause CAP in children. (Heidi Sucharew, PhD)

Hospital Medicine » Lilliam Ambroggio, PhD

Ongoing collaborations providing statistical support for study design, statistical analysis, and abstract and manuscript preparation as well as grant preparation on projects related to resident education, medical team roles and family satisfaction, and duty hour restrictions. (Heidi Sucharew, PhD)

Hospital Medicine » Samir Shah, MD, Jeffrey Simmons, MD, Jennifer O'Toole, MD, MEd, Karen Jeradi, MD, MEd, Katherine Auger, MD, MSC, Patrick Brady, MD, MSC, Ndidi Unaka, MD, Angela Statile, MD, MEd, Brian Volck, MD, Amy Guiot, MD, Grant Mussman, MD, MHSA, Erin SHaughnessy, MD, and Joshua Schaffzin, MD, PhD

Centers for Education and Research on Therapeutics (CERTs) Evaluating Huddle Effectiveness. Biostatistician on this study to determine huddle behaviors associated with improved treatment of patient deterioration and to employ videotaped feedback to bring all CCHMC huddles to the highest possible performance. (Heidi Sucharew, PhD)

The James M. Anderson Center for Health Systems Excellence » Patrick Brady, MD, MSc and Carole Lannon, MD, MPH

Collaboration on projects and grant preparation for studies on sport related concussion rates and mechanisms that lead to patellofemoral dysfunction. (Heidi Sucharew, PhD)

Sports Medicine » Gregory Myer, PhD

Ongoing collaborations on MEG data analyses. (Rhonda Szczesniak, PhD)

Neurology » Douglas Rose, MD and Jing Xiang, MD, PhD

Parental adherence to CF homecare: Research chaplaincy commitment. Advisor to this award to develop research independence for the PI and to study factors affecting parental adherence to their child's CF homecare regimen using the theory of reasoned action.

Social networks and adherence in adolescents with CF. Co-Investigator on this study to improve adherence motivation in adolescents with CF and determine the potential effect size of an enhanced motivational interviewing intervention based upon social network analysis and the constructed meaning of having a life-shortening disease. (Rhonda Szczesniak, PhD)

Pulmonary Medicine » Daniel Grossoehme, MDiv

Pediatric Sleep Research Program. Biostatistician/Mentor to sustain a research program aimed at developing young investigators in sleep medicine.

Dynamic Computational Modeling of Obstructive Sleep Apnea. Co-Investigator on this project to validate the functional model's ability to predict Pcrit and surgical outcome in children with Down syndrome who have OSA despite previous T&A.

Glucagon-Like Peptide-1 in Sleep Disordered Breathing. Co-Investigator in this proposal involving a new drug which is FDA approved for the treatment of type 2 Diabetes Mellitus. This study will test the hypothesis that the mechanism by which this drug improves Diabetes control will also have an effect on SDB. This new discovery will revolutionize the management of this highly prevalent disorder.

Passive Stretch of the Chest Wall in Patients with Congenital Muscular Dystrophy. Co-Investigator in the study to test the feasibility and efficacy of passive stretch of the chest wall by lung hyperinsufflation on the onset of respiratory failure and the quality of life of patients and their care givers. (Rhonda Szczesniak, PhD)

Pulmonary Medicine » Raouf Amin, MD

MR predictors of infection, inflammation, and structural lung damage in CF. Biostatistician on this study to put forward the notion that magnetic resonance imaging (MRI) of the lung and pulmonary circulation has the potential to address many of these limitations, and can be correlated with core peripheral biomarkers of CF using an unbiased, metabolomic and proteomic-based approach. (Rhonda Szczesniak, PhD)

Pulmonary Medicine » John Clancy, MD

Preventing rapid decline in Cystic Fibrosis. Biostatistician on this project to develop statistical methods for early detection and prediction of rapid lung function decline in cystic fibrosis. (Rhonda Szczesniak, PhD)

Pulmonary Medicine » John Clancy, MD and Raouf Amin, MD

Evaluation of Endobronchial Interventions for COPD via CT and 3HE MRI. Biostatistician on this study to identify CT and MR-imaging techniques that will best guide and inform the two minimally-invasive surgical therapies for COPD which are under development around the world: endobronchial stent-supported conduits from conducting airways to emphysematous parenchyma, and endobronchial one-way exit valves to effect volume reduction in severely emphysematous lung regions. (Rhonda Szczesniak, PhD)

Pulmonary Medicine » Jason Woods, PhD

Cardiac Structure and Function in Early Familial Cardiomyopathy. Biostatistician/Mentor on this project to develop expertise in the fields of cardiac-physiology and genetics in the context of a research plan investigating cardiomyopathy in a genetically engineered mouse model of muscular dystrophy. (Rhonda Szczesniak, PhD)

Radiology » Janaka Wansapura, PhD

Ongoing collaborations with outcomes research investigators on latent variable analysis methods for assessing treatment effectiveness on cystic fibrosis. (Rhonda Szczesniak, PhD)

The James M. Anderson Center for Health Systems Excellence, Health Outcomes and Quality Care Research » Michael Seid, PhD and Adam Carle, MA, PhD

Ongoing collaborations on fMRI and DTI data analyses.

(Rhonda Szczesniak, PhD)

The Pediatric Neuroimaging Research Consortium » Mark DiFrancesco, PhD

Late Preterm Birth, Ureaplasma Species and Childhood Lung Disease. Biostatistician on this project to test the hypothesis that acute or chronic fetal exposure to Ureaplasma spp. modulates fetal immune responses and increases the risk for lung disease in early childhood. (Rhonda Szczesniak, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » Alan Jobe, MD, PhD and Suhas Kallapur, MD

Ongoing collaborations on the assessment of beta cell function in newly-diagnosed adolescents with Type 2 diabetes, on the assessment of metabolic dysregulation in obese toddlers, and working to develop a comprehensive obesity biorepository for the study of genetics and environment in this population. (Jessica G. Woo, PhD)

Endocrinology » Nancy Crimmins, MD and Deborah Elder, MD

Ongoing collaborations to jointly conduct data management and statistical analysis using the Epidemiology of BMI Rebound dataset, and co-developed a project to re-contact and follow-up the BMI Rebound cohort. (Jessica G.

Woo, PhD; Nicholas Ollberding, PhD)

General and Community Pediatrics » Heidi Kalkwarf, PhD, RD

Collaborations to assess the vitamin D status in breast-fed infants and their mothers. (Jessica G. Woo, PhD)

Global Health Center » Adekunle Dawodu, MBBS

Collaborations, conducting translational research on an immunological protein related to obesity. (Jessica G. Woo, PhD)

Immunobiology » Senad Divanovic, PhD

Ongoing collaborations on projects regarding biomarker evaluation for acute kidney injury after cardiopulmonary bypass in children. (Jessica G. Woo, PhD)

Nephrology » Stuart Goldstein, MD

Collaborations on projects relating to bariatric surgery cohorts. (Jessica G. Woo, PhD)

Surgery, Surgical Weight Loss Program for Teens » Thomas Inge, MD, PhD

Collaborations regarding analysis and follow-up of physical activity in the BMI rebound cohort. (Jessica G. Woo, PhD)

Sports Medicine » Nicholas Edwards, MD, MPH

Statistical manager of the Heart Institute Research Core, and maintain numerous collaborations with both faculty and fellows in the Heart Institute, Co-Principal Investigator on a large-scale follow-up of the NHLBI Growth and Health Study and other large childhood cardiovascular cohorts, and working to develop an international collaboration with Denmark regarding congenital heart disease registries. (Jessica G. Woo, PhD; Eileen King, PhD)

The Heart Institute » James Cnota, MD, Robert Hinton, MD, Ilias Iliopoulos, MD, Lynn Jefferies, MD, Shelley Kirk, PhD, RD, Catherine Krawczeski, MD, Angela Lorts, MD, Nicholas Madsen, MD, MPH, Bradley Marino, MD, Wayne Mays, MD, Thomas Ryan, MD, Robert Siegel, MD, Animesh Tandon, MD, Elaine Urbina, MD, and Gruschen Veldtman, MD

Collaborations regarding analysis and follow-up of the Princeton Lipid Study and the NHLBI Growth and Health Study. (Jessica G. Woo, PhD; Heidi Sucharew, PhD; Mi-Ok Kim, PhD)

The Heart Institute » Elaine Urbina, MD and John Morrison, PhD

Innovative studies of human milk and infant feeding. Epidemiologists on this project to evaluate the impact of and international differences in feeding patterns and growth during the first two years of life. (Jessica G. Woo, PhD)

The Perinatal Institute, Neonatology, Perinatal and Pulmonary Biology » Ardythe Morrow, PhD

Field Trial of maternal influenza immunization in Asia (Mother's Gift 241 Field Trial). Biostatistician on this project which will design and carry out a field trial to assess the safety and effectiveness of maternal immunization with influenza vaccine in reduction of maternal and infant morbidity in Asia. (Bin Zhang, PhD)

Global Health Center » Mark Steinhoff, MD and Elizabeth Schlaudecker, MD, MPH

Ongoing collaborations providing statistical support for various research studies to include study design, database creation, statistical analysis, and preparation of abstracts and manuscripts. (Bin Zhang, PhD)

Radiology » Todd Abruzzo, MD, Christopher Anton, MD, Diane Babcock, MD, Alan Brody, MD, Charles Dumoulin, PhD, Kathleen Emery, MD, Robert Fleck, MD, Marilyn Goske, MD, Beth Kline-Fath, MD, Blaise Jones, MD, David Larson, MD, James Leach, MD, Sara O'Hara, MD, Daniel Podberesky, MD, Alex Towbin, MD, Andrew Trout, MD, and Daniel Wallihan, MD

Advancing the Emergency Department Care of Very Young Children with Traumatic Brain Injury. This objective of this project is to improve the current management at a large Level 1 Trauma pediatric institution for young children at intermediate to high risk for ciTBI, based on the PECARN decision rule, via implementation of an evidence-based care pathway. (Nanhua Zhang, PhD)

Emergency Medicine » Tara Rhine, MD

Online Family Problem-Solving Therapy for Pediatric Traumatic Brain Injury (TBI). This project examines the efficacy of Counselor Assisted Problem Solving (CAPS) in improving long-term functional outcomes of adolescents with TBI relative to a control group that received access to internet resources (IRC) only. (Nanhua Zhang, PhD)

Physical Medicine and Rehabilitation » Shari Wade, PhD

Grants, Contracts, and Industry Agreements

Grant and Contract Awards	Annual Direct
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KHOURY, J

Hemorrhagic & Ischemic Stroke Among Blacks and Whites

National Institutes of Health(University of Cincinnati)

R01 NS 030678	07/01/09-06/30/14	\$63,219
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Recanalization Therapies and Markers of Outcomes in Acute Ischemic Stroke

National Institutes of Health(University of Cincinnati)

P50 NS 044283	08/01/08-04/30/15	\$106,210
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MACALUSO, M

Cincinnati Center for Clinical and Translational Sciences and Training - Design, Biostatistics & Ethics

National Institutes of Health(University of Cincinnati)

UL1 TR 000077	04/03/09-03/31/15	\$80,219
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MEINZEN-DERR, J

Early Language and Functional Expectations (LIFE) Study of Infants and Toddlers with Hearing Loss

March of Dimes

#12-FY14-178	06/01/14-05/31/17	\$78,169
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RYAN, P

Green Housing Study: Measures of Housing Factors and Pediatric Respiratory Health

National Institutes of Health(University of Cincinnati)

U01 EH 000990	07/01/12-06/30/14	\$14,551
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Neurobehavioral and Neuroimaging Effects of Traffic Exposure in Children

National Institutes of Health

R01 ES 019890	07/01/12-03/31/17	\$487,945
SZCZESNIAK, R		
CFF Research Development Program - P&F Study		
Cystic Fibrosis Foundation		
R457-CR11	03/01/12-06/30/15	\$65,000
ZHANG, B		
Mechanisms of Refractory Hypertension		
National Institutes of Health(University of Alabama-Birmingham)		
R01 HL 113004	04/07/14-03/31/19	\$17,990
Current Year Direct		\$913,303
Total		\$913,303