

Division Details

Division Data Summary

Research and Training Details

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|-------------------------------------|-----------|
| Number of Faculty | 16 |
| Number of Joint Appointment Faculty | 5 |
| Number of Research Students | 8 |
| Number of Support Personnel | 34 |
| Direct Annual Grant Support | \$725,431 |
| Peer Reviewed Publications | 113 |

Division Photo



Row 1: B Huang, M Macaluso, S Salisbury
Row 2: M Kim, H Sucharew, J Khoury, E King
Row 3: J Woo, M Altaye, J Meinzen-Derr
Row 4: P Ryan, B Zhang, R Ittenbach

Significant Accomplishments

Research and Education

Our faculty and staff contributed to 113 scientific articles, 50 percent more than in FY2011. Collaborative papers ranged across all pediatric subspecialties, 15 involved the development or application of novel quantitative methods, and DBE faculty were first authors of 11. We participated in 77 active research grants, with annual direct costs totaling \$45.5 million (direct costs: \$4.7 million). Our faculty led independent research in statistical methods development and application and in areas of epidemiologic research. Examples include the NSF grant "Extension of Censored Quantile and Empirical Likelihood" led by Mi-Ok Kim, PhD; the biostatistical core of the NIH grant "Hemorrhagic & Ischemic Stroke Among Blacks & Whites," led by Jane Khoury, PhD; the HRSA grant "Impact of Cognition on Language in Pediatric Hearing Loss," led by Jareen Meinzen-Derr, PhD; and the NIH grant "Neurobehavioral and Neuroimaging Effects of Traffic Exposure in Children," led by Patrick Ryan, PhD, MS. Our faculty taught in the Colleges of Medicine, Pharmacy and Arts and the MS program in Clinical Science sponsored by the Center for Clinical and Translational Science and Training (CCTST). Our Graduate Statistics Internship Program led by Bin Huang, PhD, and Siva Sivaganesan, PhD, UC Department of Mathematical Sciences, provided educational and research opportunities for PhD students and was beneficial to research projects in eight divisions at Cincinnati Children's. During FY2012, seven graduated students participated, and five more will join the program next year.

Capacity Building

We recruited five new faculty in the past year: Lili Ding, PhD, a biostatistician interested in Bayesian modeling and inference and its application in statistical genetics, population pharmacokinetics and pharmacodynamics, multivariate survival analysis, and multilevel latent variable modeling; Heidi Sucharew, PhD, a biostatistician interested in structural equation modeling, latent profile analysis and latent variable modeling and their application in infant neurobehavior, stroke severity, adolescent menstrual symptoms and depression, and glucose control during pregnancy; Patrick Ryan, PhD, MS, an epidemiologist interested in the development of devices and methods for assessing environmental exposures, the health effects of indoor and traffic-related air pollution and of asbestos, including childhood asthma and neurobehavioral development, and interventions to reduce the impact of traffic-related air pollution at schools; Monir Hossain, PhD, MSc, a biostatistician interested in developing statistical methods for complex biomedical applications who has developed spatial and spatiotemporal models for cluster detection for small area health data in environmental health and health economics; and Bin Zhang, PhD, a biostatistician interested in developing methods for clinical trials, survival analysis, longitudinal data analysis and optimal design, with applications in cancer, infectious diseases, asthma, cardiovascular diseases and health behavior.

Infrastructure Development

Our growing Data Management Center (DMC) supported 45 studies, up from 22 in FY2011. Services offered by the DMC include grant application review, budgeting and resourcing for data management operations, protocol review, case report form design and development, database entry and development as well as documentation, data cleaning and preparation for analysis. Eileen King, PhD, acting director, and Rachel Akers, MPH, manager of operations, lead the DMC, which is staffed with five Clinical Research Data Specialists, four Clinical Research Database Developers, and four Data Coordinators, five more than in FY2011. DMC staff members are required to participate in continuing education programs and are active in a number of different professional societies: three are Certified Clinical Data Managers. The DMC launched its website in 2012. The Biostatistics Consulting Unit (BCU) was established in 2012 to expedite access to biostatistical consulting and collaboration at Cincinnati Children's. The BCU works in alignment with the CCTST as part of "Research Central." Mekibib Altaye, PhD, director, and Matthew Fenchel, MS, manager, lead the BCU, which includes three master's level statisticians. The BCU has expertise in study design including sample size estimation, grant preparation, statistical analysis and manuscript preparation. Its primary emphasis is to ensure appropriate use of statistical methods in research design and data analysis.

Division Highlights

Maurizio Macaluso, M.D., Dr.P.H., Professor and Director

Dr. Macaluso continued to lead the expansion of the division by strengthening its infrastructure and recruiting new faculty. The Data Management Center grew in FY2012, doubling the number of projects supported, and The Biostatistics Consulting Unit was established in 2012 to expedite access to biostatistical consulting and collaboration at CCHMC. Five new faculty joined DBE. In 2011-2012 Dr. Macaluso published 12 peer-reviewed articles and submitted 15 abstracts. Of note is a paper in press in the journal *Obstetrics and Gynecology* (Joshi N, Anderson J, Kissin D, Session D, **Macaluso M**, Jamieson D: Trends and correlates of good perinatal outcomes among singleton infants conceived through ART in the United States, 2000-2008. *Obstet Gynecol* 2012: In Press), which describes the determinants of a "good perinatal outcome" (term delivery, normal birth weight infant) in pregnancies occurring after in vitro fertilization. The results provide strong evidence that

promotion of elective single embryo transfer to women who use IVF is likely to substantially improve pregnancy outcomes. Dr. Macaluso is co-director of the Biostatistics, Epidemiology, and Research Design Core of the NIH-funded CCHMCH Center for Clinical and Translational Science and Training. During 2011-2012 he participated in the submission of three applications for funding. In addition to providing guidance and advice to the DBE faculty, Dr. Macaluso mentored a postdoctoral fellow and two junior faculty members in other CCHMC divisions.

Mekibib Altaye, Ph.D., Associate Professor

In 2011-2012 Dr. Altaye published 9 peer-reviewed articles and submitted 6 abstracts. He is actively participating as a co-investigator and collaborator in 8 NIH funded researches, and in 2011 he participated in the submission of 4 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.

Lili Ding, Ph.D., Assistant Professor

Dr. Ding joined DBE as Assistant Professor in July 2011. She is a statistician with interests in the development and application of statistical methods especially Bayesian statistics in various fields of biomedical research, including statistical genetics, population pharmacokinetics and pharmacodynamics, multivariate survival analysis, and multilevel latent variable modeling. Dr. Ding has been actively involved in collaborative research with faculty members from Adolescent Medicine, Asthma Research, Human Genetics, and Anesthesia on the design, plan, statistical analysis and report of medical research studies. In the past year, Dr. Ding published 9 peer-reviewed research papers and submitted 6 abstracts. Of note is a paper published in BMC Genomic (**Ding L, Wiener H, Abebe T, Altaye M, Go PRC, Kercksmar C, Grabowski G, Martin LJ, Hershey KG, Chakorborty R, Baye TM. Comparison of measures of marker informativeness for ancestry and admixture mapping, BMC Genomics 2011, 12:622**). In this paper, more than one million SNPs from HapMap databases and simulated data were interrogated in admixed populations and various measures of ancestry informativeness to select SNP markers for ancestry inference were compared to determine the accuracy of AIM panels selected by each measure in estimating the contributions of the ancestors to the admixed population. Dr. Ding has been involved in several NIH sponsored grants and was awarded a 2012 CCTST methods grant. Dr. Ding serves as Review Editor for the Journal of Frontiers in Genetics and Reviewer for the Journal of Pediatric Research and the Journal of Statistical Theory and Practice. Dr. Ding mentors junior faculty, fellows and students in DBE and several other divisions within the hospital.

Jessica Graus Woo, Ph.D., Associate Professor

In 2011-2012 Dr. Woo published 6 peer-reviewed articles, presented 10 abstracts, and gave an invited symposium on childhood growth charts to The Obesity Society in October 2011. Her research focuses on the developmental pathways leading to pediatric obesity and its comorbidities. Of note is a paper published in the *Journal of Pediatric Gastroenterology and Nutrition* (**Woo JG, Guerrero ML, Guo F, Martin LJ, Davidson BS, Ortega H, Ruiz-Palacios GM, Morrow AL. Human milk adiponectin affects infants' weight trajectory during the second year of life. JPGN 54(4):532-9. 2012**) in which Dr. Woo and colleagues determined that a component of human milk is associated with infant growth patterns even after the period of active breastfeeding. Dr. Woo received the CCHMC Schmidlapp Women Scholars award in 2010, was 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 also contributes to the Biostatistics and Epidemiology modules of the Pediatrics Fellowship Core curriculum and has taught “Introduction to Epidemiology” in the graduate program in Biostatistics and Epidemiology in the Department of Environmental Health, where she holds a secondary appointment.

Md. Monir Hossain, Ph.D., Assistant Professor

Dr. Hossain joined the faculty of the Division of Biostatistics and Epidemiology in January 2012 as an Assistant Professor. Dr. Hossain is a Biostatistician with research focus on developing innovative statistical methods motivated by complex biomedical and environmental applications. In 2012, Dr. Hossain published 7 peer-reviewed journal articles, and a peer-reviewed journal commentary. Of particular interest is his paper published in the *Journal of Environmental and Ecological Statistics* (Hossain MM, Lawson AB, Cai B, Choi J, Liu J, and Kirby RS). The paper proposes a space-time stick-breaking process as a novel approach for the disease cluster estimation. The dependencies for spatial and temporal effects are introduced by using space-time covariate dependent kernel stick-breaking processes. The relative performance of this model is compared with the space-time standard random effect model by checking each model’s ability in terms of cluster detection of various shapes and sizes. This comparison was made for real and simulated data. For the simulated data, we have observed that space-time stick-breaking process performs better in detecting medium- and high-risk clusters. For the real data, county specific low birth weight incidences for the state of South Carolina for the years 1997–2007, we have illustrated how the proposed model can be used to find grouping of counties of higher incidence rate. In 2012, Dr. Hossain has submitted 1 R21 NIH grant application and continues to be an *ad hoc* reviewer of several top statistical journals.

Bin Huang, Ph.D., Associate Professor

In 2011-2012 Dr. Huang published 5 peer-reviewed articles and gave two invited talks and three 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 in 2011 she participated in the submission of 10 new grant applications. 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, Ph.D., Professor

In 2011-2012 Dr. Ittenbach published 7 peer-reviewed articles and submitted 5 abstracts. Dr. Ittenbach continued to lead the CCHMC-wide effort to establish state-of-the-art clinical data management operations across the institution, a key activity recognized as a priority in the CCHMC Strategic Plan. Of note are also his efforts to develop a scale development unit, particularly with respect to the way multi-item scales are developed and used in pediatric research, which led to the development of four grant applications and the publication of four scale-development related papers. Dr. Ittenbach also co-chairs an initiative of the CCTST to strengthen the focus of research ethics and empirical bioethics across the academic medical center. Dr. Ittenbach continues to mentor staff, junior investigators and trainees in multiple academic units; he teaches seminars throughout the year to academic medical center faculty and staff, and remains active in the American Statistical Association’s Section on Statistical Consulting.

Jane C. Khoury, Ph.D., Associate Professor

In 2011-2012 Dr. Khoury published 18 peer-reviewed articles and submitted over 20 abstracts, presenting 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 2 clinical trials, a registry and a basic science project. She is also PI of a CCHMC sub-contract to UC for the Stroke epidemiology R01. Dr Khoury is a co-investigator on five other NIH-funded projects and in 2011 participated in the submission of 10 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.

Mi-Ok Kim, Ph.D., Associate Professor

In 2011-2012 Dr. Kim published 6 peer-reviewed articles and submitted 6 abstracts. Of note is a paper in the Journal American Statistical Association (**Kim MO** and Yang Y. Semiparametric Approach to a Random Effects Quantile Regression Model. *JASA*. 106(496), 1405-1417.). In this article in the most renowned journal in statistics Dr. Kim proposed an innovative methodology for quantile regression analysis of clustered data. 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 and by an intramural research grant awarded by the CCTST. She is also interested in adaptive clinical trials design and designed a trial using a response adaptive randomization design in a FDA grant application. Dr. Kim leads the Cancer and Blood Disease Institute Biostatistics Unit and is the biostatistics director of the NIH-funded Cincinnati Center for Excellence in Molecular Hematology (Zheng, PI). In 2011 Dr. Kim participated in the submission of 24 new grant applications including three as a PI. Dr. Kim continues to mentor staff, junior investigators and trainees in multiple academic units.

Eileen King, Ph.D., Associate Professor

Dr. King joined the DBE in 2009 after a distinguished career as a statistician in the pharmaceutical industry, where she last directed the Department of Biometrics and Statistical Sciences at Procter and Gamble. In 2011-2012 Dr. King published 7 peer-reviewed articles and 5 abstracts. Her research focuses on outcomes research, digestive diseases, asthma 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 6 NIH-funded projects and participated in the submission of two new applications in 2011-12. She submitted a R01 Data Coordinating Center application as the PI, in coordination with a proposal for a multi-site clinical trial of interventions for patients with asthma. Dr. King serves as the director of the Data Management Center, a key part of the CCHMC-wide effort to establish state-of-the-art quality standards in data management, recognized as a priority in the CCHMC Strategic Plan. 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 chairs the Council of Sections Governing Board within the American Statistical Association and in 2011 was awarded the H. O. Hartley Award for Distinguished Service to the Profession by the Department of Statistics at Texas A&M University.

Jareen Meinzen-Derr, Ph.D., Assistant Professor

In 2011-2012 Dr. Meinzen-Derr published 10 peer-reviewed articles and submitted 15 abstracts. Of note is a paper in the journal Research in Developmental Disabilities (**Meinzen-Derr J**, Wiley S, Grether S, Choo DI. Children with cochlear implants and developmental disabilities: a language skills study with developmentally matched hearing peers. *Research in developmental disabilities*. 32(2); 757-767.), in which Dr. Meinzen-Derr and her research team define the "appropriate" control population and provide a quantitative assessment of the

cognitive-linguistic gap that is often qualitatively described by clinicians. Dr. Meizen-Derr's research focus is on developmental disabilities associated with hearing loss and on perinatal health outcomes. In 2011, her work led to the award of a Maternal and Child Health Research Grant funded by HRSA, and has also gained the group resonance in the field of deafness and additional disabilities. The CCHMC cochlear implant team is viewed as a leader in implantation of multiply complex children mainly due to the research efforts and clinical care of these children. Dr. Meizen-Derr mentored staff, junior investigators and trainees in multiple academic units. She contributed to the Biostatistics and Epidemiology modules of the Pediatrics Fellowship Core curriculum and leads the Experimental Design lectures in Neonatology and Developmental and Behavioral Pediatrics. She was the primary instructor of "Introduction to Epidemiology" in the graduate program in Biostatistics and Epidemiology in the Department of Environmental Health and developed an online curriculum for the same program and for the CCTST.

Patrick H. Ryan, Ph.D., Assistant Professor

Dr. Ryan joined the faculty of the Division of Biostatistics and Epidemiology in November 2011 as an Assistant Professor. Dr. Ryan is an environmental epidemiologist with research interests in the fields of air pollution epidemiology, exposure assessment, and environmental exposure to asbestos. Since joining Cincinnati Children's, Dr. Ryan has published 7 peer-reviewed articles, presented his research at 3 national meetings, and been an invited speaker at the NIEHS/EPA Children's Centers Annual Meeting. Of particular interest is his paper published in the journal *Pediatric Allergy and Immunology* (Sebastian KJ, **Ryan PH**, Lockey JE, Bernstein DI, McKay RY, Hershey GK, et al. Unraveling the relationship between aeroallergen sensitization, gender, secondhand smoke exposure and impaired lung function. *Pediatr Allergy Immunol.* 2012; 23(5):479-87) which found that the impact of second hand smoke exposure on lung function is greater in girls with allergic sensitization compared to boys. In 2012 Dr. Ryan has submitted 2 grant applications for internal funding, 2 NIH grant applications, and received funding for a new study of neurobehavioral and neuroimaging effects of traffic exposure in children (R01ES019890). This year Dr. Ryan was also invited to serve on 2 NIH workgroups related to birth cohort studies of asthma and health impacts of nanoparticle exposure, served as an ad hoc member of the NIH IRAP study section, and was recently appointed an associate editor of the *Journal of Exposure Science and Environmental Epidemiology*.

Shelia Salisbury, Ph.D., Assistant Professor

In 2011-2012 Dr. Salisbury published 8 peer-reviewed articles. She serves as a statistician for the Divisions of Infectious Diseases, Anesthesiology and Radiology. She is a co-investigator on 4 NIH-funded projects, 4 industry-sponsored projects and 4 division-supported research studies. Dr. Salisbury continued to mentor junior faculty, staff and students in multiple academic units. She has taught "Introduction to Biostatistics" in the graduate program in Biostatistics and Epidemiology in the Department of Environmental Health where she holds a secondary appointment, and invited lectures in the Departments of Radiology and Physical Medicine & Rehabilitation.

Heidi Sucharew, Ph.D., Instructor

Dr. Heidi Sucharew joined the faculty in the Division of Biostatistics and Epidemiology in August 2011 as research instructor. In 2011-2012, Dr. Sucharew published 3 peer-reviewed articles and submitted 14 abstracts. Of note is a paper published in the March 2012 edition of *Pediatric Allergy and Immunology* which was highlighted as Editor's Choice. In a novel application of item response theory (IRT) to skin prick test (SPT) responses, Sucharew et al. show the benefits of this method over traditional approaches for evaluating atopy. This paper shows that the IRT modeling approach to the SPT panel can be successful in identifying allergens associated with atopy predisposition and therefore can be used to determine the best allergens to include in the

SPT panel for the age of the children to be tested. The IRT modeling approach was also successful in estimating atopy scores that predicted later allergic symptoms. In addition to continued collaboration on several research projects with faculty in the Divisions of General and Community Pediatrics and Hospital Medicine, she continues to serve as one of the biostatisticians for the Greater Cincinnati and Northern Kentucky Stroke Team and co-Director of the Biostatistical Core for the Special Program of Translational Research in Acute Stroke. Dr. Sucharew continues to be the primary instructor of "Introduction to Biostatistics" online course that she developed with the UC course development team in the graduate program in Biostatistics and Epidemiology in the Department of Environmental Health.

Rhonda Szczesniak, Ph.D., Assistant Professor

In 2011-2012 Dr. Szczesniak published 5 peer-reviewed articles and submitted 7 abstracts. She directs the Pulmonary Biostatistical Core for the Division of Pulmonary Medicine. Her methodologic research interests are Bayesian dynamic models, nonparametric and semiparametric regression. She is also interested in applying novel methods to study outcomes of children with cystic fibrosis and obstructive sleep apnea. She was recently a finalist for the KL2 scholarship award to develop adaptive statistical models for forecasting the clinical course of cystic fibrosis. She provides biostatistical support on 5 NIH-funded projects as well as other foundation awards and internal projects, and she participated in the submission of several new grant applications this year. Dr. Szczesniak continued to mentor junior faculty, staff and students in multiple academic units. She also served as Associate Chair for the entire research program of the International Biometric Society's meeting for the Eastern North American Region.

Bin Zhang, PhD, Assistant Professor

Dr. Zhang joined the faculty in January 2012 as an assistant professor. His research interests include clinical trials, survival analysis, longitudinal data analysis and optimal designs. In 2011-2012 Dr. Zhang published 5 peer-reviewed articles and submitted 2 abstracts. Of note is the paper published in *Journal of Hematology and Oncology* (Shanmugam, C; Hines, RB; Jhala, NC; Katkooi, VR; **Zhang, B**; Posey, JA; Bumpers, HL; Grizzle; WE; Eltoun, IE; Siegal, GP; Manne, U. 'Evaluation of lymph node numbers for adequate staging of Stage II and III colon cancers'. *Journal of Hematology and Oncology* May 28; 4(1): 25. PMID: 21619690.), which shows that for patients with Stage II or III colon cancer, examination of 12 lymph nodes (LNs) was not significantly associated with recurrence or mortality although evaluation of at least 12 LNs is recommended as the minimum number of nodes required for accurate staging of colon cancer patients. This article was accessed over 2000 times within 9 months. Dr. Zhang was a deputy director of the Statistical and Data Management Center for Mycoses Study Group and was involved in several other NIH funded studies. He did not submit grant applications as PI in 2011 but did submit several grants with collaborators at UAB among which three were funded by NIH.

Significant Publications

Kim MO and Yang Y. **Semiparametric Approach to a Random Effects Quantile Regression Model.** *JASA.* 106(496), 1405-1417. 2012.

In this article published by the most renowned statistical journal Dr. Kim and her colleague propose an innovative methodology for quantile regression analysis of clustered data. Dr. Kim's methodologic research on quantile regression continues to be supported by the National Science Foundation and by an intramural research grant awarded by the CCTST.

Sebastian KJ, **Ryan PH**, Lockey JE, Bernstein DI, McKay RY, Hershey GK, et al. **Unraveling the relationship between aeroallergen sensitization, gender, secondhand smoke exposure and impaired lung function.**

Pediatr Allergy Immunol. 23(5):479-87. 2012.

In this paper, Dr. Ryan and colleagues report that the impact of second hand smoke exposure on lung function is greater in girls with allergic sensitization compared to boys.

Sucharew, H., Khoury, J. C., Rao, M., Succop, P., Bernstein, D., **Ryan, P. H.,** & LeMasters, G. *Pediatric Allergy and Immunology*, 23(2), 195-201. 2012.

In a novel application of item response theory (IRT) to skin prick test (SPT) responses, Sucharew et al. show that the approach can be successful in identifying allergens associated with atopy predisposition and can be used to determine the best allergens to include in the SPT panel for the age of the children to be tested. This article was highlighted as Editor's Choice.

Ding L, Wiener H, Abebe T, **Altaye M**, Go PRC, Kercksmar C, Grabowski G, Martin LJ, Hershey KG, Chakorborty R, Baye TM. **Comparison of measures of marker informativeness for ancestry and admixture mapping,** *BMC Genomics*, 12:622. 2011.

In this paper, more than one million SNPs from HapMap databases and simulated data were interrogated in admixed populations and various measures of ancestry informativeness to select SNP markers for ancestry inference to assess the contributions of the ancestors to the admixed population.

Woo JG, Guerrero ML, Guo F, **Martin LJ**, Davidson BS, Ortega H, Ruiz-Palacios GM, Morrow AL. **Human milk adiponectin affects infants' weight trajectory during the second year of life.** *JPGN* 54(4):532-9. 2012.

In this paper, Dr. Woo and colleagues determined that a component of human milk is associated with infant growth patterns even after the period of active breastfeeding.

Division Publications

1. Acelajado MC, Pisoni R, Dudenbostel T, Dell'Italia LJ, Cartmill F, Zhang B, Cofield SS, Oparil S, Calhoun DA. **Refractory hypertension: definition, prevalence, and patient characteristics.** *J Clin Hypertens (Greenwich)*. 2012; 14:7-12.
2. Anderson JE, Jamieson DJ, Warner L, Kissin DM, Nangia AK, Macaluso M. **Contraceptive sterilization among married adults: national data on who chooses vasectomy and tubal sterilization.** *Contraception*. 2012; 85:552-7.
3. Anderson JE, Warner L, Macaluso M. **Condom Use Among US Adults at Last Sexual Intercourse, 1996-2008: An Update From National Survey Data.** *Sexually Transmitted Diseases*. 2011; 38:919-921.
4. Armour AD, Khoury JC, Kagan RJ, Gottschlich MM. **Clinical Assessment of Sleep Among Pediatric Burn Patients Does Not Correlate With Polysomnography.** *Journal of Burn Care & Research*. 2011; 32:529-534.
5. Baye TM, He H, Ding L, Kurowski BG, Zhang X, Martin LJ. **Population structure analysis using rare and common functional variants.** *BMC Proc*. 2011; 5 Suppl 9:S8.
6. Birkemeier KL, Podberesky DJ, Salisbury S, Serai S. **Breathe in... breathe out... stop breathing: does phase of respiration affect the Haller index in patients with pectus excavatum?** *AJR Am J Roentgenol*. 2011; 197:W934-9.
7. Bovell L, Shanmugam C, Katkoori VR, Zhang B, Vogtmann E, Grizzle WE, Manne U. **miRNAs are stable in colorectal cancer archival tissue blocks.** *Front Biosci (Elite Ed)*. 2012; 4:1937-40.
8. Brinkman WB, Hartl J, Rawe LM, Sucharew H, Britto MT, Epstein JN. **Physicians' Shared Decision-Making Behaviors in Attention-Deficit/Hyperactivity Disorder Care.** *Archives of Pediatrics & Adolescent Medicine*. 2011; 165:1013-1019.

9. Broderick JP, Bonomo JB, Kissela BM, Khoury JC, Moomaw CJ, Alwell K, Woo D, Flaherty ML, Khatri P, Adeoye O, Ferioli S, Kleindorfer DO. **Withdrawal of Antithrombotic Agents and Its Impact on Ischemic Stroke Occurrence.** *Stroke*. 2011; 42:2509-2514.
10. Cai B, Lawson AB, Hossain MM, Choi J. **Bayesian latent structure models with space-time dependent covariates.** *Statistical Modelling*. 2012; 12:145-164.
11. Choi J, Lawson AB, Cai B, Hossain MM. **Evaluation of Bayesian spatiotemporal latent models in small area health data.** *Environmetrics*. 2011; 22:1008-1022.
12. Clark JF, Ellis JK, Bench J, Khoury J, Graman P. **High-performance vision training improves batting statistics for university of cincinnati baseball players.** *PLoS ONE*. 2012; 7:e29109.
13. Cnota JF, Gupta R, Michelfelder EC, Ittenbach RF. **Congenital Heart Disease Infant Death Rates Decrease as Gestational Age Advances from 34 to 40 Weeks.** *Journal of Pediatrics*. 2011; 159:761-765.
14. Crandall WV, Margolis PA, Kappelman MD, King EC, Pratt JM, Boyle BM, Duffy LF, Grunow JE, Kim SC, Leibowitz I, Schoen BT, Colletti RB. **Improved Outcomes in a Quality Improvement Collaborative for Pediatric Inflammatory Bowel Disease.** *Pediatrics*. 2012; 129:E1030-E1041.
15. Dawodu A, Kochiyil J, Altaye M. **Pilot study of sunlight exposure and vitamin D status in Arab women of childbearing age.** *Eastern Mediterranean Health Journal*. 2011; 17:570-574.
16. DeBrosse CW, Franciosi JP, King EC, Butz BKB, Greenberg AB, Collins MH, Abonia JP, Assa'ad A, Putnam PE, Rothenberg ME. **Long-term outcomes in pediatric-onset esophageal eosinophilia.** *Journal of Allergy and Clinical Immunology*. 2011; 128:132-138.
17. Ding L, Baye TM, He H, Zhang X, Kurowski BG, Martin LJ. **Detection of associations with rare and common SNPs for quantitative traits: a nonparametric Bayes-based approach.** *BMC Proc*. 2011; 5 Suppl 9:S10.
18. Ding L, Wiener H, Abebe T, Altaye M, Go RC, Kercksmar C, Grabowski G, Martin LJ, Khurana Hershey GK, Chakorborty R, Baye TM. **Comparison of measures of marker informativeness for ancestry and admixture mapping.** *BMC genomics*. 2011; 12:622.
19. Divanovic A, Cnota J, Ittenbach R, Tan X, Border W, Crombleholme T, Michelfelder E. **Characterization of Diastolic Dysfunction in Twin-Twin Transfusion Syndrome: Association between Doppler Findings and Ventricular Hypertrophy.** *Journal of the American Society of Echocardiography*. 2011; 24:834-840.
20. Duerr A, Gallo MF, Warner L, Jamieson DJ, Kulczycki A, Macaluso M. **Assessing Male Condom Failure and Incorrect Use.** *Sexually Transmitted Diseases*. 2011; 38:580-586.
21. Elder DA, Herbers PM, Weis T, Standiford D, Woo JG, D'Alessio DA. **beta-Cell Dysfunction in Adolescents and Adults with Newly Diagnosed Type 2 Diabetes Mellitus.** *Journal of Pediatrics*. 2012; 160:904-910.
22. Epstein JN, Langberg JM, Lichtenstein PK, Kolb R, Altaye M, Simon JO. **Use of an Internet Portal to Improve Community-Based Pediatric ADHD Care: A Cluster Randomized Trial.** *Pediatrics*. 2011; 128:E1201-E1208.
23. Epstein TG, Lemasters GK, Bernstein DI, Ericksen MB, Martin LJ, Ryan PH, Biagini Myers JM, Butsch Kovacic MS, Lindsey MA, He H, Reponen T, Villareal MS, Lockey JE, Bernstein CK, Khurana Hershey GK. **Genetic variation in small proline rich protein 2B as a predictor for asthma among children with eczema.** *Ann Allergy Asthma Immunol*. 2012; 108:145-150 e4.
24. Epstein TG, Ryan PH, Lemasters GK, Bernstein CK, Levin LS, Bernstein JA, Villareal MS, Bernstein DI. **Poor asthma control and exposure to traffic pollutants and obesity in older adults.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*. 2012; 108:423-428.e2.
25. Fauci JM, Whitworth JM, Schneider KE, Subramaniam A, Zhang B, Frederick PJ, Kilgore LC, Straughn JM. **Prognostic significance of the relative dose intensity of chemotherapy in primary treatment of epithelial ovarian cancer.** *Gynecologic Oncology*. 2011; 122:532-535.

26. Feghali M, Khoury JC, Shveiky D, Miodovnik M. **Association of vaginal delivery efforts with retinal disease in women with type I diabetes.** *Journal of Maternal-Fetal & Neonatal Medicine.* 2012; 25:27-31.
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Faculty, Staff, and Trainees

Faculty Members

Maurizio Macaluso, MD, DrPH, Professor

Leadership Division Director

Research Interests Design and analysis of correlated data, including developing inference procedures for intraclass correlation, and kappa statistic for binary and polynomial outcomes.

Mekibib Altaye, PhD, Associate Professor

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

Lili Ding, PhD, Assistant Professor

Research Interests Nonparametric Bayes, and its applications in various fields of biomedical research including statistical genetics, population pharmacokinetics and pharmacodynamics, multivariate survival analysis, and multilevel latent variable modeling.

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.

Md. Monir Hossain, PhD, Assistant Professor

Research Interests Development of statistical methods for modeling spatial-temporal disease clusters, spatial structure equation modeling, mixture models, inter-rater reliability, multi-level modeling, health services and patient outcomes, and clinical trials.

Bin Huang, PhD, Associate Professor

Research Interests Mediation analysis, statistical causal inference, item response modeling, and modeling of geospatial correlated data.

Richard F. Ittenbach, PhD, Professor

Research Interests Development, validation and analysis of scales for measurement of biomedical and biobehavioral factors.

Jane C. Khoury, PhD, Associate Professor

Research Interests Epidemiology of stroke, 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 Using quantiles to better depict the rate of decline in a key pulmonary functional measurement in cystic fibrosis patients. Principal area of application is blood diseases and cancer.

Eileen King, PhD, Associate Professor

Research Interests Design and analysis of clinical trials for health care and pharmaceutical research studies.

Jareen Meinzen-Derr, PhD, Assistant Professor

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

Patrick Ryan, PhD, Assistant Professor

Research Interests Air pollution epidemiology and exposure assessment, indoor pollutants, and environmental exposure to asbestos.

Shelia R. Salisbury, PhD, Assistant Professor

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

Heidi Sucharew, PhD, Instructor

Research Interests Structural and equation modeling, latent profile analysis, and latent variable modeling.

Rhonda Szczesniak, PhD, Assistant Professor

Research Interests Functional data analysis applications, classification methods, self-modeling regressions, instrumental variables regression, and outcomes research for children with cystic fibrosis and obstructive sleep apnea.

Bin Zhang, PhD, Assistant Professor

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

Joint Appointment Faculty Members

Melinda Butsch Kovacic, MPH, PhD, Assistant Professor (Personalized & Predictive Medicine)

Research Interests Molecular, genetic and environmental epidemiology, biomarkers of environmental exposure and disease severity

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

Research Interests Vitamin D and International child health outcomes

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

Research Interests Genetic Epidemiology, Obesity, Heart Malformations

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

Trainees

- **Chen Chen, PhD**, 2011, University of Cincinnati
- **Baole Fan, MS**, 2009, Hunan University
- **Dandan Li, MS**, 2009, University of Cincinnati
- **Yongchao Liu, MS**, 2010, University of Cincinnati
- **Xiangxiang Meng, PhD**, 2012, University of Cincinnati
- **Yan Ren, PhD**, 2012, University of Cincinnati

- **Yang Xiao, PhD**, 2012, University of Cincinnati
- **Yuanshu Zou, MS**, 2007, Sichuan University

Division Collaboration

Adolescent Medicine » Frank Biro, Jessica Kahn, Tanya Mullins, and Lea Widdice

Lili Ding, Ph.D. – Dr. Ding collaborates with Dr. Kahn on her RO1 entitled behavioral and virologic impact of HPV immunization. She works with Drs. Jessica Kahn, Lea Widdic and Tanya Mullins and provides statistical support for analysis plan, statistical analysis, abstract and manuscript preparation.

Bin Huang, Ph.D. – Dr. Huang collaborates with Dr. Biro on two NIH funded projects (UO1 & R21), investigating the relationship between puberty and cancer initiation, and understanding the role of pubertal developmental process to the development of childhood obesity. She collaborates with Dr. Kahn on her RO1 entitled behavioral and virologic impact of HPV immunization.

Allergy and Immunology » Mark Rothenberg

Eileen King, Ph.D. – Dr. King provides statistical support for study design, data base creation, statistical analysis, and abstract and manuscript preparation for research studies.

Anderson Center for Health Systems Excellence » James Heubi, Carole Lannon, Peter Margolis, and Kieran Phelan

Jane Khoury, Ph.D. – Dr. Khoury has been collaborating with Dr. Phelan over the past ten years, providing statistical support. In particular we work together on interpretation of the analyses and preparation of abstracts and manuscripts.

Eileen King, Ph.D. – Dr. King provides leadership for the Data Coordinating Center activities for the multi-site learning networks. She leads all data management support including data base creation, cleaning and maintenance and also leads the statistical support for abstract and manuscript development.

Maurizio Macaluso, M.D., Dr.P.H. – Dr. Macaluso participates in the activities of the Health Services Research Matrix and collaborates with the Anderson Center faculty on faculty recruitment, on mentoring for junior faculty and on training grant initiatives.

Anesthesia » Vidya Chidambaran, Smokey Clay, Charles Eastwood, James Furstein, Nancy Hagerman, George Istaphanous, Fay Jou, Dean Kurth, Mahamed Mahmoud, John McAuliff, Mark Meyer, David Moore, Pornswan Ngamprasertwong, Mario Patino, J Nick Pratap, Senthilkumar Sadhasivan, Paul Samuels, Rajeev Subramanyam, Alexandra Szabova, Anna Varughese, Luigi Viola, Junzheng Wu, and Eric P Wutkugel

Lili Ding, Ph.D. – Dr. Ding collaborates with the above listed faculty and provides statistical support for various research studies on study design, protocol development, statistical analysis and preparation of abstracts and manuscripts.

Md. Monir Hossain, Ph.D. – Dr. Hossain collaborates with faculty in Anesthesia on several clinical research projects including pilot studies of new technologies , retrospective and prospective observational comparisons of diagnostic and treatment protocols, the design and analysis of randomized trials, the development of statistical models for improving surgical patient and procedure scheduling, and the evaluation of quality improvement processes such as increasing procedural competency through video-assisted assessment of pediatric airway management, and improving quality of service through a nurse practitioner-assisted preoperative assessment program.

Asthma Research » Tesfaye M Baye

Lili Ding, Ph.D. – Dr. Ding collaborates with Dr. Baye on the development of research methods for statistical genetics, provides statistical support for genetic data analysis, abstract and manuscript preparation, and grant development.

Audiology » David Brown and Lisa Hunter

Jareen Meinzen-Derr, Ph.D. – Dr. Meinzen-Derr collaborates with Dr. Hunter as a co-investigator, providing study design and statistical support for her grants. She also provides statistical support for study design, statistical analysis, abstract, and manuscript preparation for research projects conducted within Audiology.

Behavioral Medicine and Clinical Psychology » Robert Ammerman, Dennis Drotar, Jeff Epstein, Kevin Hommel, Josh Langburg, Ahna Pai, Lori Stark, and Leanne Tamm

Mekibib Altaye, Ph.D. – Dr. Altaye collaborates with Drs Ammerman, Epstein, Lagburg and Tamm. He provides statistical support for study design, grant development, statistical analysis, and abstract and manuscript preparation for various studies.

Richard Ittenbach, Ph.D. – Dr. Ittenbach collaborates with researchers in the Adherence Center on methodologic issues related to medication treatment adherence and self-management issues.

Center for Professional Excellence Research and Evidence-Based Practice » Nancy Daraiseh

Maurizio Macaluso, M.D., Dr.P.H. – Dr. Macaluso collaborates with Dr. Daraiseh on injury surveillance and prevention research in selected professional groups at CCHMC, and serves as Dr. Daraiseh's research mentor.

Child Psychiatry » Elana Harris

Rhonda Szczesniak, Ph.D. – Dr. Szczesniak collaborates with Dr. Elana Harris on statistical techniques to assess neuronal activity in children with obsessive compulsive disorder using magnetoencephalography (MEG) imaging.

Critical Care Medicine » Hector Wong

Shelia Salisbury, Ph.D. – Dr. Salisbury has ongoing collaboration with Dr. Hector Wong in developing a biomarker risk model for pediatric septic shock.

Developmental and Behavioral Pediatrics » Susan Wiley

Jareen Meinzen-Derr, Ph.D. – Dr. Meinzen-Derr has an ongoing collaboration with Dr. Wiley (as co-principal investigators) and Dr. Grether on studies regarding co-existing hearing impairment and developmental disabilities. She also provides study design and statistical support to the clinical fellows as needed.

Education and Learning » Daniel McLinden

Richard Ittenbach, Ph.D. – Dr. Ittenbach collaborates with the Educational and Organizational Effectiveness department with respect to the statistics and study design components the Data Management Curriculum.

Emergency Medicine » Melinda Mahabee-Gittens

Jane Khoury, Ph.D. – Dr. Khoury has an ongoing collaboration with Dr. Mahabee-Gittens focusing on the initiation and potential family influences on youth cigarette smoking. Dr. Khoury provides statistical support together with, Yang Xiao, a graduate student. Support is given for analysis interpretation for abstracts and manuscripts, and also for grants proposals.

Endocrinology » Nancy Crimmins, Lawrence Dolan, Deborah Elder, Susan Rose, and Meilan Rutter

Jessica Graus Woo, Ph.D. – Dr. Woo has ongoing collaborations with Dr. Meilan Rutter on the use of growth hormone in Duchenne Muscular Dystrophy patients, with Dr. Deborah Elder on the assessment of beta cell function in newly-diagnosed adolescents with Type 2 diabetes, and with Dr. Nancy Crimmins on the

assessment of metabolic dysregulation in obese toddlers.

Jane Khoury, Ph.D. – Dr. Khoury has an ongoing collaboration with Dr. Dolan working on an RO1 grant submission, to examine the long-term effects of in-utero exposure to diabetes. She has worked with Dr Rose characterizing children with Fanconi Anemia and Shwachman-Diamond Syndrome, with Dr Rutter assessing fractures in Duchenne Muscular Dystrophy patients. Dr Khoury also serves on the SOC committee.

Gastroenterology, Hepatology, and Nutrition » Conrad Cole, James Franciosi, Adam Mezoff, and Stavra Xanthakos

Eileen King, Ph.D. – Dr. King provides statistical support for study design, data base creation, statistical analysis, and abstract and manuscript preparation for research studies.

General and Community Pediatrics » Bill Brinkman, Kristen Copeland, Robert Kahn, Heidi Kalkwarf, Nicholas Newman, Kieran Phelan, and Kimberly Yolton

Mekibib Altaye, Ph.D. – Dr. Altaye collaborates with Dr. Yolton on her insecticide exposure study provide statistical analysis, abstract and manuscript preparation services.

Jessica Graus Woo, Ph.D. – Dr. Woo has an ongoing collaboration with Dr. Kalkwarf to jointly conduct data management and statistical analysis using the Epidemiology of BMI Rebound dataset.

Bin Huang, Ph.D. – Dr. Huang collaborates with Dr. Robert Kahn on his RO1 aimed to understand racial disparity in child asthma morbidity. She collaborates with Dr. Phelan on his RO1 that evaluating an injury intervention program in young children.

Jane Khoury, Ph.D. – Dr. Khoury has ongoing collaboration with Drs. Copeland and Yolton, providing help with study design and statistical support. Dr. Khoury has also been involved with overseeing data management and very involved with abstract and manuscript preparation.

Patrick Ryan, Ph.D. – Dr. Ryan collaborates with Dr. Kahn on a NIH funded study of factors associated with asthma hospitalizations in Cincinnati. Dr. Ryan works with Drs. Yolton and Newman on a NIH funded study of the impact of childhood exposure to traffic-related air pollution and neurobehavioral development in childhood.

Heidi Sucharew, Ph.D. – Dr. Sucharew has ongoing collaborations with the division providing statistical support for study design, statistical analysis, abstract and manuscript preparation, and grant applications for all faculty and fellows within the division. Dr. Sucharew collaborates with Dr. Yolton on her insecticide exposure in pregnancy and early childhood study providing statistical analysis and other research studies making use of the HOME study cohort. Dr. Sucharew collaborates with Dr. Brinkman on his K23 award providing statistical analyses for research studies focusing on ADHD medication adherence.

Global Child Health » Adekunle Dawodu

Mekibib Altaye, Ph.D. – Dr. Altaye collaborates with Dr. Dawodu on his randomized controlled trial to investigate the impact of different doses of Vitamin D on the mother and child outcome.

Jessica Graus Woo, Ph.D. – Dr. Woo collaborates with Dr. Dawodu to assess the vitamin D status in breastfed infants and their mothers.

The Heart Institute » Jeffrey Anderson, Jim Cnota, Robert Hinton, Kan Hor, John Jeffries, Shelley Kirk, Catherine Krawczeski, Bradley Marino, Robert Siegel, and Jeffrey Towbin

Jessica Graus Woo, Ph.D. – Dr. Woo is the statistical manager of the Heart Institute Research Core, including active collaborations with Drs. Robert Hinton, James Cnota, Catherine Krawczeski, Robert Siegel, Shelley Kirk,

and others.

Richard Ittenbach, Ph.D. – Dr. Ittenbach collaborates with a number of different HIRC investigators with respect to statistical and study design related issues, particularly serving children with congenital heart disease and hypoplastic left heart syndrome.

Eileen King, Ph.D. – Dr. King provides statistical support for study design, data base creation, statistical analysis, and abstract and manuscript preparation for research studies.

Hematology/Oncology » Cancer and Blood Diseases Institute

Jane Khoury, Ph.D. – Dr. Khoury collaborates with Dr. Jodele. Dr. Khoury provides statistical support and is involved in interpretation for abstract and manuscript preparation and also in writing grant applications.

Mi-Ok Kim, Ph.D. - Dr. Mi-Ok Kim collaborates with the Cancer and Blood Diseases Institute (CBDI) on the design and analysis of clinical and preclinical studies generally, with a special focus on determining the antitumor effects in models of malignant peripheral nerve sheath tumors of drugs or drug combinations identified as potentially important in NF1-related cell signaling.

Hospital Medicine » Lilliam Ambroggio, Patrick Brady, Samir Shah, and Jeffrey Simmons

Md. Monir Hossain, Ph.D. – Dr. Hossain collaborates with Dr. Shah and other faculty on developing comparative effectiveness research projects by using the PHIS and PHIS+ databases.

Maurizio Macaluso, M.D., Dr.P.H. – Dr. Macaluso collaborates with Dr. Shah on faculty recruitment, on mentoring for junior faculty and on training grant initiatives. He serves as a co-mentor for Dr.Lilliam Ambroggio and collaborates on the development of comparative effectiveness research projects.

Heidi Sucharew, Ph.D. – Dr. Sucharew has ongoing collaborations with the division providing statistical support for study design, statistical analysis, abstract and manuscript preparation for all faculty and fellows within the division.

Infectious Diseases » Mary Staat

Eileen King, Ph.D. – Dr. King provides statistical support for the validation of a clinical ELISA assay.

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Dr. Mary Staat on a number of research studies involving vaccine effectiveness, burden of Staphylococcus aureus in the Cincinnati area, burden of acute respiratory infections in Hamilton County, rotavirus disease burden and trends, intussusception, intestinal parasite detection in internationally adopted children, immunization verification in internationally adopted children, and norovirus outbreak. She provides statistical support for study design, data base creation, statistical analysis, and preparation of abstracts and manuscripts.

Mass Spectrometry Laboratory » Ken Setchell

Eileen King, Ph.D. – Dr. King provides statistical support for data base creation, statistical analysis, and abstract and manuscript preparation for research studies.

Molecular Immunology » Claire Chougnnet

Eileen King, Ph.D. – Dr. King provided support for statistical analysis and abstract and manuscript preparation for evaluating the effect of antiretroviral therapy (HAART) on regulatory T cells.

Neonatology and Pulmonary Biology » Laurel Bookman, Neera Goyal, James Greenberg, Suhas Kallapur, Beena Kamath, Stephanie Merhar, Ardythe Morrow, Louis Muglia, Vivek Narendran, Laurie Nommsen-Rivers, Kurt Schibler, Andrew South, and Laura Ward

Mekibib Altaye, Ph.D. – Dr. Altaye collaborates with Drs. Morrow and Schibler in their investigation of characterizing and comparing microbiome of the gut in different infant groups. He provides study design and statistical analysis support for different projects.

Jessica Graus Woo, Ph.D. – Ongoing collaboration with Dr. Ardythe Morrow on an international birth cohort of breastfed infants.

Bin Huang, Ph.D. – Dr. Huang collaborates with Dr. Nommsen-Rivers on understanding relationship between maternal obesity and the poor lactation outcomes.

Maurizio Macaluso, M.D., Dr.P.H. – Dr. Macaluso collaborates with Drs. Greenberg and Muglia on prematurity research and population-based initiatives to reduce infant mortality.

Jareen Meinzen-Derr, Ph.D. – Dr. Meinzen-Derr has ongoing collaborations with Drs. Bookman (tongue-based obstruction studies), Greenberg (neonatal outcomes related to prematurity), Goyal (factors related to ECS enrollment), Morrow and Ward (human milk studies in premature infants), Kurt Schibler (NEC in premature infants), South (Gastroschisis and imaging studies). She also provides epidemiologic and statistical support, abstract and manuscript preparation for research studies.

Nephrology » John Bissler, Stuart Goldstein, and Mark Mitsnerefes

Jessica Graus Woo, Ph.D. – Ongoing collaboration with Dr. Goldstein on projects regarding biomarker evaluation for acute kidney injury after cardiopulmonary bypass in children.

Eileen King, Ph.D. – Dr. King provides statistical support for study design, data base creation, statistical analysis, and abstract and manuscript preparation for research studies.

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Dr. John Bissler on two studies regarding angiomyolipomata therapy in patients with Tuberous Sclerosis Complex, and several studies with Dr. Mark Mitsnerefes regarding markers of cardiovascular disease in children with chronic kidney disease. She provides statistical support for study design, data base management, statistical analysis, and abstract and manuscript preparation.

Neurology » Douglas Rose, Jennifer Vannest, Brenda Wong, and Jing Xiang

Mekibib Altaye, Ph.D. – Dr. Altaye collaborates with Dr. Vannest providing study design and statistical analysis support for her grant that examines how seizures and abnormal brain activity affect language skills in children with centro-temporal spikes.

Jessica Graus Woo, Ph.D. – Dr. Woo collaborates with Dr. Brenda Wong on use of growth hormone in Duchenne Muscular Dystrophy patients.

Rhonda Szczesniak, Ph.D. – Dr. Szczesniak collaborates with Drs. Douglas Rose and Jing Xiang on MEAG research.

Ophthalmology » Michael Gray and William Motley

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Drs. Michael Gray and William Motley to examine the strabismus surgery outcomes in children with Down syndrome. She provides statistical support for the statistical analysis, and preparation of abstract and manuscript.

Otolaryngology » Ellis Arjmand, Daniel Choo, Allesandro deAlarcon, Ravi Elluru, John Greinwald, Charles Myer, Michael Rutter, and Sally Schott

Jareen Meinzen-Derr, Ph.D. – Dr. Meinzen-Derr collaborates with Dr. Choo, Greinwald, and Arjmand regarding

research directly related to pediatric hearing loss. She collaborates with Drs. Elluru, deAlarcon, and Rutter on projects that are related to airway reconstruction. She also provides support to Drs. deAlarcon and Myer for education of fellows and ENT residents. She provides ongoing epidemiologic and statistical support for research projects.

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Dr. Sally Schott to develop a functional model of the upper airway in children with Down syndrome. She provides statistical support for the study design, data base creation, statistical analysis, and preparation of abstract and manuscript.

Pediatric Neuroimaging Research Consortium » Mark DiFrancesco, Scott Holland, Janaka Wansapura, and Weihong Yuan

Mekibib Altaye, Ph.D. – Dr. Altaye collaborates with Drs. Holland, Yuan and DiFrancesco in study design and statistical analysis of MRI, fMRI and DTI imaging projects.

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Dr. Janaka Wansapura regarding angiomyolipomata therapy in patients with Tuberous Sclerosis Complex. She provides statistical analysis, and abstract and manuscript preparation.

Pediatric Neurosurgery » Francesco Mangano and Todd Maugans

Mekibib Altaye, Ph.D. Dr. Altaye collaborates with Dr. Mangano in his project investigating the DTI measurements of pediatric Hydrocephalus.

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Dr. Todd Maugans regarding tranexamic acid use in minimally invasive versus open craniosynostosis procedures. She provided the statistical analysis and preparation of abstracts and manuscript.

Physical Medicine and Rehabilitation » Jilda Vargus-Adams

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Dr. Jilda Vargus-Adams. She provided the statistical analysis and preparation of abstracts and manuscript in a study involving children with CP. The study examined perspectives of the child's functioning from the viewpoint of the child, parent and medical professional. She also provided statistical support in the design and preparation of a grant protocol looking at robotic gait Training in children with CP.

Plastic Surgery » Donna Jones

Md. Monir Hossain, Ph.D. – Dr. Hossain collaborates with Dr. Jones on geometric morphometrics and shape analysis.

Pulmonary Medicine » Raouf Amin, Paul Boesch, Barbara Chini, Joseph Crisalli, Matthew Ednick, Daniel Grosseohme, Bill Hardie, Carolyn Kercksmar, Karen McDowell, Gary MdPhail, Hemant Sawnani, Michael Seid, Abu Shamsuzzaman, Narong Simakajornboon, and Bruce Trapnell

Bin Huang, Ph.D. – Dr. Huang collaborates with Dr. Seid on his RO1 evaluating health related quality of life in JIA patients.

Eileen King, Ph.D. – Dr. King provides statistical support for study design, data base creation, statistical analysis, and abstract and manuscript preparation for research studies.

Shelia Salisbury, Ph.D. – Dr. Salisbury collaborates with Dr. Raouf Amin to develop a functional model of the upper airway in children with Down syndrome. She provides statistical support for the study design, data base creation, statistical analysis, and preparation of abstract and manuscript.

Rhonda Szczesniak, Ph.D. – Dr. Szczesniak collaborates with investigators in Pulmonary Medicine on extramural grants and publications for asthma, neuromuscular dystrophy, cystic fibrosis, rare lung disease and sleep apnea research. She oversees the Pulmonary Biostatistical Core, which acts to advance all facets of pulmonary research through biostatistical consulting and collaboration with excellence in education, collaborative research and methodologic research.

Radiology » Alan Brody, Kim Cecil, Charles Dumoulin, John Egelhoff, Kthy Emery, Robert Fleck, Beth Kline-Fath, Blaise Jones, Jennifer Kucerea, David Larson, James Leach, Sally O'Hara, Daniel Podberesky, Amy Rowell, Alexander Towbin, Andrew Trout, Janaka Wansapura, and Weihong Yuan

Mekibib Altaye, Ph.D. –Dr. Altaye collaborated with Dr. Cecil in her study of the effect of lead in spectroscopy measures and Dr. Yuan in his study of longitudinal DTI measurements.

Patrick Ryan, Ph.D. - Dr. Ryan works with Dr. Cecil 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.

Rhonda Szczesniak, Ph.D. – Dr. Szczesnaik collaborates with Drs. Janaka Wansapura and Robert Fleck on cardiac MRI research.

Bin Zhang, Ph.D. – Dr. Zhang collaborates with Drs. Chris Anton, Alan Brody, Kathy Emery, Robert Fleck, Beth Kline-Fath, Blaise Jones, Jennifer Kucerea, David Larson, James Leach, Sally O'Hara, Daniel Podberesky, Amy Rowell, Alexander Towbin and Andrew Trout by providing statistical support for approximately 22 various research studies to include study design, data base creation, statistical analysis, and preparation of abstracts and manuscripts.

Rheumatology » Ed Giannini, Dan Lovell, and Esi Morgan Dewitt

Bin Huang, Ph.D. – Dr. Huang collaborates with Dr. Lovell on his RO1 investigate biology of responses to TNF blockage in JRA patients; she also collaborate with Dr. Lovell on several other NIH funded RO1 projects that involves randomized clinical trials in autoimmune disease patients. She collaborates with Dr. Dewitt on her UO1entitled enhancing PROMIS in pediatric pain, rheumatology and rehabilitation research. Dr. Huang serves as the principal statistician to P60 methodological core PI by Dr. Giannini, serving number of Rheumatology investigators.

Speech Pathology » Ann Kummer

Jareen Meinzen-Derr, Ph.D. – Dr. Meinzen-Derr collaborates with Dr. Kummer on speech, language, and voice-related projects specific to velopharyngeal insufficiency.

Sports Medicine » Nicholas Edwards, Kevin Ford, Tim Hewett, Greg Myer, Mark Paterno, and Laura Schmitt

Jessica Graus Woo, Ph.D. – Dr. Woo collaborates with Dr. Nicholas Edwards regarding physical activity in the BMI rebound cohort.

Bin Huang, Ph.D. – Dr. Huang collaborates with Drs. Hewett, Paterno and Schmitt investigating risk factors related to second onset of ACL injury after ACL reconstruction surgery, and success return to sports.

Jane Khoury, Ph.D. – Dr. Khoury collaborates with Dr. Ford, Dr. Hewett and Dr. Myer regarding ACL injury in female adolescent athletes. Dr. Khoury provides statistical support and is involved in interpretation for abstract and manuscript preparation and also in writing grant applications.

Trauma Services » Richard Falcone

Eileen King, Ph.D. – Dr. King provides statistical support for study design, statistical analysis, and abstract and manuscript preparation for research studies.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct

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 \$61,299

Recanalization Therapies and Markers of Outcomes in Acute Stroke

National Institutes of Health(University of Cincinnati)

P50 NS 044283 08/01/08-04/30/13 \$115,332

KIM, M

Extension of Quantile Regression and Empirical Likelihood Analysis for Censored Data

National Science Foundation

NSF 1007666 10/01/10-09/30/13 \$26,706

MACALUSO, M

Cincinnati Center for Clinical/Translational Sciences & Training

National Institutes of Health(University of Cincinnati)

UL1 RR 026314 04/03/09-03/31/14 \$90,282

MEINZEN-DERR, J

Impact of Cognition on Language in Pediatric Hearing Loss

Health Resources & Services Administration

R40 MC 21513 02/01/11-01/31/14 \$177,780

RYAN, P

The Libby Community Childhood Health Investigation and Exposure Follow-up Study

National Institutes of Health(University of Cincinnati)

R21 ES017939 12/01/11-06/30/12 \$10,627

Recruitment and Health Assessments and Procedures Associated with Asthma in Children

Centers for Disease Control(University of Cincinnati)

200-2010-37369/HHSI-11-S-1002 12/01/11-06/13/12 \$6,136

Synergistic Effect of Home Exposure to Aeroallergens and Traffic-Related Air Pollution in the Development of Children's Asthma

US Department of Housing and Urban Development

OHLHH0226 12/01/11-03/31/13 \$5,265

Impact of Traffic-Related Particles on Asthma for Students

National Institutes of Health

R21 ES017957 06/05/12-07/31/13 \$146,444

Field Validation of a Personal Sensor for Ultrafine PM in Asthmatic Children

National Institutes of Health(University of Cincinnati)

R01 ES 230387 12/01/11-08/31/13 \$34,048

WOO, J

Ethnic/Racial Variation in Interacerebral Hemorrhage

National Institutes of Health(University of Cincinnati)

U01 NS069763 04/23/12-07/31/12 \$5,900

Genetic and Environmental Risk Factors for Hemorrhagic Stroke

National Institutes of Health(University of Cincinnati)

R01 NS 036695 09/30/08-06/30/13 \$45,612

Current Year Direct

\$725,431

Funded Collaborative Efforts

ALTAYE, M.**Imaging the Effect of Centrottemporal Spikes and Seizures**

National Institutes of Health

Vannest, J.

9/15/2011-6/30/2016

10%

ITTENBACH, R.**Telehealth Enhancement of Adherence to Medication in Pediatric IBD (TEAM Study)**

National Institutes of Health

Hommel, K.

08/01/2011-07/31/2016

10%

KIM, M.**Enhancement of Human Hematopoietic Engraftment Mediated by CCT Placenta Derived Stem Cells**

Celgene Cellular Therapeutics

Mulloy, J.

07/01/2011-06/30/2012

4.5%

Cincinnati Center for Neurofibromatosis Research

NIH

Ratner, N.

07/01/2011-06/30/2013

4%

Cincinnati NF1 Preclinical Testing Center

The Children's Tumor Foundation

Cripe, T.

07/01/2011-06/30/2013

8%

Lineage Determination and Tissue Homeostasis in the Aged

National Institute on Aging

Zheng, Y.

08/01/2011-07/31/2016

2.7%

PLGF-HIF1a-miR Axis in Sickle Pulmonary Hypertension

University of Southern California

Malik, P.

01/01/2012-12/31/2016

3%

KING, E.**Digestive Health Center: Bench to Bedside Research in Pediatric Digestive Disease**

National Institutes of Health

Bezerra, J.

06/01/2012-05/31/2017

5%

Traumatic Brain Injury Symptom Screening and Resolution

Ohio Department of Public Safety

Falcone, R.

07/01/2011-12/31/2012

13%

Centers for Education and Research on Therapeutics (CERT)

Agency for Healthcare Research and Quality

Lannon, C.

09/30/2011-08/31/2016

13%

Total**\$725,431**