

Biostatistics and Epidemiology

Division Photo



Division Data Summary

Research and Training Details

Number of Faculty	13
Number of Joint Appointment Faculty	6
Number of Research Students	5
Number of Support Personnel	24
Direct Annual Grant Support	\$1,041,869
Direct Annual Industry Support	\$332,219
Peer Reviewed Publications	66

Significant Publications

Altaye M, Holland SK, Wilke M, Gaser C. (2008). Infant brain probability templates for MRI segmentation and normalization. *Neuroimage*, 43(4), 721-730, PMID: 18761410, PMC.

In this study Dr. Altaye and colleagues constructed the first infant probability template which is used to spatially normalize and the segment infant brain as the basis for imaging research on the infant brain. This is the first such template for infants. The template has been downloaded from our web site more than 100 times by researchers across the globe.

Meinzen-Derr J, Lim LH, Choo DI, Buyniski S, Wiley, S (2008). Pediatric hearing impairment caregiver experience: impact of duration of hearing loss on parental stress. *Int J Pediatr Otorhinolaryngol*, 72(11), 1693-1703, PMID: 18819718, PMC.

The diagnosis of a hearing loss is a critical life event with profound effects on parents and the family system. For the first time, Dr. Meinzen-Derr and colleagues delineated different forms of stress in parents of children who are deaf/hard of hearing and have shown that this stress changes over time. This knowledge can go a long way to

better anticipate areas of need and support for the families we serve, with the goal of strengthening the parent-child relationship and improving child outcomes.

Woo JG, Guerrero ML, Altaye M, Ruiz-Palacios GM, Martin LJ, Dubert-Ferrandon A, Newburg DS, Morrow AL. (2009). Human milk adiponectin is associated with infant growth in two independent cohorts. Breastfeed Med, 4(2), 101-109, PMID: 19500050, PMC.

Dr. Woo recently published a novel study of the relationship between a human milk component and infant development. The paper, published in the May 2009 issue of Breastfeeding Medicine, reports that higher levels of human milk adiponectin is associated with lower infant weight and thinner body proportionality during the first six months of life in two independent cohorts of breastfeeding infants. Since adiponectin is associated with lower obesity and improved health in adults, these findings suggest that exposure to human milk adiponectin may be protective in infants, as well.

Woo JG, Zeller MH, Wilson K, Inge T. (2009). Obesity Identified by Discharge ICD-9 Codes Underestimates the True Prevalence of Obesity in Hospitalized Children. J Pediatr, 154(3), 327-331, PMID: 18950792, PMC.

Dr. Woo also explored the utility of administrative hospital datasets to identify the prevalence of obesity and obesity-related comorbidities in hospitalized pediatric patients. Published in the Journal of Pediatrics in March 2009, Dr. Woo found that ICD-9 discharge codes for obesity vastly underestimated the prevalence of true obesity, ascertained by measured height and weight. In addition, using ICD-9 codes to identify obese patients also resulted in misrepresentation of their comorbid conditions. Thus, extreme caution is warranted when using obesity diagnoses to study healthcare utilization by obese children.

Cassedy A, Fairbrother G, Newacheck PW. (2008). The impact of insurance instability on children's access, utilization, and satisfaction with health care. Ambul Pediatr, 8(5), 321-328, PMID: 18922506, PMC.

Dr. Amy Cassedy and faculty in the Division of Clinical Effectiveness described the instability of health insurance coverage for children aged 2 to 17 and found that children with gaps in insurance coverage were less likely than insured children to have a usual source of care and receive well-child care. Thus insurance gaps are critical events in child health nationwide.

Division Highlights

Bin Huang

Dr. Huang continued her R01 on statistical modeling of puberty and mediation/surrogacy effects. Through this grant award, she validated a novel approach to assessment of pubertal timing via statistical modeling. The primary publication from this study was accepted for publication this year and is now in press. She had another methodologic paper accepted this year, which proposes a more efficient method for assessing surrogacy effect for a continuous measure in a randomized clinical trial setting. The application of validated statistical methods to standardization of clinical assessment of puberty has important application to adolescent care and research protocols.

Jane Khoury, Judy Bean

Dr. Khoury and Dr. Bean led the biostatistical core of the renewal of the large stroke grant awarded to Dr. Joseph Broderick, Chair, Department of Neurology, University of Cincinnati College of Medicine. This 5-year grant was for a Specialized Program of Translational Stroke Research (SPOTRIAS). The program is comprised of two clinical trials and five cores. The Core is responsible for the working with the investigators on the design and implementation of the trials, data management, monitoring of the trials, and reporting of the results. The CLEAR-ER trial is a multi-center trial of intravenous t-PA combined with eptifibatid in patients within 3 hours of the onset of acute stroke. The Biostatistics Core working with the Division of Biomedical Informatics has implemented a Web site for randomization of the participants and the entry of data collected. This trial is underway and has enrolled patients using the Web. The STOP-IT trial is a multi-center, randomized controlled pilot clinical trial of Factor VIIa, and the Biostatistical Core is responsible for considering changes in the design of this trial.

Jareen Meizen-Derr

This year, Dr. Meizen-Derr was awarded an outcomes research grant from CCHMC to study language and functional outcomes among deaf children with developmental disabilities who have received a cochlear implant. Dr. Meizen-Derr followed 20 children with hearing loss and another disability who received a cochlear implant before 54 months of age and matched hearing patients. The cognitive abilities of children with initial hearing loss was a strong predictor of the outcomes of cochlear implant, more so than the child's disability. This is the first longitudinal study ever conducted on the post-implant outcomes of children with multiple disabilities. The study has already had impact on the treatment of some children, and received press attention at the Pediatric Academic Societies meeting, where the data were

presented.

Jessica Woo, Lisa Martin

This past year, Dr. Daniel Woo of the Department of Neurology, University of Cincinnati College of Medicine, was awarded a grant on the Genetic and Environmental Risk Factors for Hemorrhagic Stroke (GERFHS) grant, which is a multi-year genome-wide association study of hemorrhagic stroke. Dr. Jessica Woo and Dr. Lisa Martin were awarded a subcontract for the statistical genetics core of that grant. Preliminary results from 192 cases and 472 controls have identified several promising associations, which were presented in June at the International Stroke Genetics Consortium meeting in Munich, Germany.

Richard Ittenbach, Shelia Salisbury, Mi-Ok Kim

These faculty led different arenas of biostatistical and study design consulting this year that has the potential to strengthen biostatistical consulting at CCHMC. Dr. Ittenbach led the initial planning process in the division this year for data management development, and for the development of the newly established Heart Institute's biostatistics core. During the past year, this division also collaborated with Dr. James Heubi and others in the development of the Center for Clinical and Translational Sciences and Training (CCTST). The CCTST was approved for NIH funding this past year. Dr. Salisbury provided substantial support to assist the development of the CCHMC biostatistical consulting component of that major award. In addition, Dr. Kim led development of the division's Webinar series for continuing education in biostatistics. These seminars are held monthly and now involve attendees from across the campus. She also led the biostatistics core for the Translational Research Initiative and the Cancer and Experimental Hematology Divisions, leading to planning for a robust biostatistics core as part of the future Cancer and Blood Disease Institute being developed by CCHMC and UC.

Division Collaboration

Collaboration with Adolescent Medicine

Collaborating Faculty: Dr. Frank Biro; Dr. Lorah Dorn; Dr. Jessica Kahn; Dr. Jill Huppert; Dr. Chris Kraus; Dr. Lea Widdice

Statistical support by Dr. Bin Huang and Dr. Shelia Salisbury

Collaboration with Allergy and Immunology

Collaborating Faculty: Dr. Marc Rothenberg

Statistical and research support by Dr. Lisa J. Martin

Collaboration with Anesthesiology

Collaborating Faculty: Dr. Dean Kurth; Dr. Joel Gunter; Dr. Anna Varughese; Dr. Anne Boat; Dr. Clifford Hoffman; Dr. Matthias Konig; Dr. Andreas Loepke; Dr. Mohamed Mahmoud; Dr. John McAuliffe; Dr. Mario Patino; Dr. Senthikumar Sadhasivam; Dr. Thomas Sheckleford; Dr. Alexandra Szabova

Statistical support by Dr. Todd Nick and Dr. Shelia Salisbury

Collaboration with Asthma Research and Personalized & Predictive Medicine

Collaborating Faculty: Dr. Neeru Hershey; Dr. Melinda Butsch-Kovacic

Statistical support by Dr. Shelia Salisbury and Todd Nick

Research by Dr. Melinda Butsch Kovacic and Dr. Lisa J. Martin

Collaboration with Behavioral Medicine and Clinical Psychology

Collaborating Faculty: Dr. Lori Stark; Dr. Scott Powers; Dr. Dennis Drotar; Dr. Avani Modi; Dr. Korey Hood; Dr. Kevin Hommel; Dr. Ahna Pai; Christina Ramey; Dr. Robert Ammerman; Dr. Jeffrey Epstein; Dr. Joshua Langberg; Dr. Kelly Byars

Statistical support by Drs. Judy Bean, Richard Ittenbach, Mekibib Altaye, Todd Nick, Lisa J. Martin

Collaboration with Biomedical Informatics

Collaborating Faculty: Dr. Jun Ma; Dr. Michael Wagner; Dr. Jarek Meller

Statistical support by Dr. Rhonda VanDyke, Dr. Jane Khoury, Dr. Lisa J. Martin, Dr. Ardythe L. Morrow

Informatics consultation provided by BMI to Drs. Lisa J. Martin, Ardythe L. Morrow, Jessica Woo

Collaboration with Cardiology

Collaborating Faculty: Dr. Woody Benson; Dr. Thomas Kulik; Dr. Brad Marino; Dr. William Gottliebson; Dr. Kan Hor; Dr. Erik Michelfelder; Dr. Jeanne James; Dr. Elaine Urbina; Dr. John Morrison; Dr. Shelly Kirk

Statistical support by Drs. Richard Ittenbach, Rhonda VanDyke

Genetic research with Dr. Lisa J. Martin, Dr. Todd Nick, Dr. Jessica Woo

Collaboration with Clinical Pharmacology

Collaborating Faculty: Dr. Sander Vinks; Dr. Michael Spigarelli; Dr. Shannon Saldana

Statistical support by Dr. Todd Nick, Dr. Shelia Salisbury

Collaboration with Developmental Disabilities & Behavioral Pediatrics

Collaborating Faculty: Dr. Tanya Froehlich; Dr. Patty Manning; Dr. Donna Murray; Dr. Susan Wiley; Dr. Sandra Grether; Dr. Bonnie Patterson; Dr. Michelle Zimmer; Dr. Heidi Castillo; Dr. Cynthia Molloy

Autism research collaboration

Hearing and deafness research collaboration with Dr. Jareen Meinzen-Derr, Dr. Lisa J. Martin

Collaboration with Emergency Medicine

Collaborating Faculty: Dr. Melinda Mahabee-Gittens

Statistical support by Dr. Bin Huang, Dr. Jane Khoury

Collaboration with Endocrinology

Collaborating Faculty: Dr. Larry Dolan; Dr. Nancy Crimmins; Dr. Debra Elder; Dr. Philippe Backeljauw; Dr. Meilan Rutter; Dr. Susan Rose; Dr. Iris Little; Dr. Amy Shah

Research with Dr. Jessica Woo, Dr. Lisa J. Martin, Dr. Shelia Salisbury

Statistical support by Dr. Jane Khoury

Collaboration with Every Child Succeeds

Collaborating Faculty: Dr. Robert Ammerman

Statistical collaboration with Dr. Mekibib Altaye

Collaboration with Experimental Hematology

Collaborating Faculty: Dr. Susanne Wells; Dr. James Mulloy; Dr. Tim Cripe; Dr. Nancy Ratner; Dr. Punam Malik; Dr. Marie-Dominique Filippi; Dr. Jose Cancelas-Perez; Dr. Pan Dao

Statistical support by Dr. Mi-Ok Kim

Collaboration with Gastroenterology, Hepatology & Nutrition

Collaborating Faculty: Dr. Lee Denson; Dr. Kathleen Campbell; Dr. Ajay Kaul

Research collaboration with Dr. Cynthia Molloy and Dr. Ardythe L. Morrow

Collaboration with General and Community Pediatrics

Collaborating Faculty: Dr. Robert Kahn; Dr. Kieran Phelan; Dr. Kim Yolton; Dr. Sheela Geraghty; Dr. Richard Hornung

Statistical support by Dr. Bin Huang, Dr. Jane Khoury

Research with Dr. Ardythe Morrow

Collaboration with General Clinical Research Center

Collaborating Faculty: Dr. James Heubi et al

Study design, review, and analysis support by Drs. Judy Bean, Shelia Salisbury, Ardythe Morrow, and Jane Khoury

Collaboration with Global Child Health

Collaborating Faculty: Dr. Adekunle Dawodu; Dr. Mark Steinhoff

Statistical support by Drs. Shelia Salisbury, Mekibib Altaye

Research with Dr. Ardythe L. Morrow

Collaboration with Health Policy and Clinical Effectiveness

Collaborating Faculty: Dr. Jacqueline Grupp-Phelan; Dr. Ed Donovan

Statistical support by Drs. Jane Khoury, Shelia Salisbury, Dr. Jareen Meinzen-Derr

Collaboration with Hematology-Oncology

Collaborating Faculty: Dr. Frank Smith; Dr. Tim Cripe; Dr. Nancy Ratner; Dr. Rajaram Nagarajan; Dr. Rebecca Marsh; Dr. Denis Adams; Dr. James Geller; Dr. John Perentesis; Dr. Lisa Filipovich; Dr. Maryam Fouladi; Stella Davies

Statistical support by Dr. Mi-Ok Kim

Research by Dr. Melinda Butsch Kovacic

Collaboration with Human Genetics

Collaborating Faculty: Dr. Greg Grabowski; Dr. Cindy Prows; Dr. Dan Prows; Dr. Brad Tinkle; Dr. Min Xin

Guan; Dr. Mehdi Keddache; Dr. Qi Xiaoyang; Dr. Kejian Zhang; Dr. Bill Nichols; Dr. Betty Schorry; Dr. Nancy Leslie

Research collaborations with Dr. Lisa J. Martin
Research collaborations with Dr. Cynthia Molloy
Statistical support by Dr. Todd Nick

Collaboration with Immunobiology

Collaborating Faculty: Dr. Marsha Wills-Karp

Research with Dr. Lisa Martin and Dr. Cynthia Molloy

Collaboration with Infectious Disease

Collaborating Faculty: Dr. Xi Jiang; Dr. Mary Staat; Dr. David Bernstein

Statistical support by Dr. Mekibib Altaye, Dr. Shelia Salisbury
Research with Dr. Ardythe L. Morrow

Collaboration with Molecular Immunology

Collaborating Faculty: Dr. Clare Chougnat

Statistical support by Dr. Bin Huang

Collaboration with Nephrology and Hypertension

Collaborating Faculty: Dr. John Bissler; Dr. Jens Goebel; Dr. David Hooper; Dr. Mark Mitsnefes

Statistical support by Drs. Shelia Salisbury and Todd Nick

Collaboration with Neurology

Collaborating Faculty: Dr. Tracy Glauser; Dr. Douglas rose; Dr. Diego Morita; Dr. Andrew Hershey; Dr. Brenda Wong

Statistical support by Drs. Rhonda VanDyke and Todd Nick

Collaboration with Orthopaedics

Collaborating Faculty: Dr. Eric Wall

Statistical support by Dr. Todd Nick

Collaboration with Otolaryngology

Collaborating Faculty: Dr. David Brown; Dr. Dan Choo; Dr. John Greinwald; Dr. Ellis Arjmand; Dr. Lisa Hunter

Research with Dr. Jareen Meizen-Derr

Collaboration with Pediatric Dentistry

Collaborating Faculty: Dr. Erwin G. Turner

Teaching residents by Dr. Todd Nick

Collaboration with Pediatric General and Thoracic Surgery

Collaborating Faculty: Dr. Thomas Inge; Dr. Gregory Tiao; Dr. Timothy Crombleholme

Statistical support by Dr. Judy Bean, Dr. Shelia Salisbury, Dr. Jane Khoury
Research with Dr. Jessica Woo

Collaboration with Pediatric Physical Medicine and Rehabilitation

Collaborating Faculty: Dr. Shari Wade

Statistical supports by Drs. Shelia Salisbury, Lisa Martin, Jane Khoury and Judy Bean

Collaboration with Psychiatry

Collaborating Faculty: Dr. Robert Kowatch

Statistical support by Dr. Judy Bean

Collaboration with Pulmonary Medicine

Collaborating Faculty: Dr. Michael Seid; Dr. Raouf Samy Amin; Dr. Daniel Grosseohme; Dr. Jamie Woolridge

Research with Dr. Jessica Woo
Statistical support by Dr. Bin Huang, Dr. Rhonda VanDyke, Dr. Shelia Salisbury

Collaboration with Radiology

Collaborating Faculty: Dr. Scott Holland; Dr. Robert Fleck; PNR

Research collaboration with Dr. Mekibib Altaye

Statistical support by Dr. Rhonda VanDyke

Collaboration with Rheumatology

Collaborating Faculty: Dr. Ed Giannini; Dr. Dan Lovell

Statistical support by Dr. Bin Huang

Collaboration with Schmidlapp Center

Collaborating Faculty: Dr. Lorah Dorn

Schmidlapp awardee - Drs. Lisa J. Martin and Jessica Woo

Mentorship and committee service by Dr. Ardythe L. Morrow

Collaboration with Section of Neonatology, Perinatal and Pulmonary Biology

Collaborating Faculty: Dr. Kurt Schibler; Dr. Tanya Cahill; Dr. James Greenberg; Dr. Andrew South; Dr. Henry Akinbi; Dr. Heather Kaplan; Dr. Vivek Narendran

Statistical and teaching support by Dr. Jareen Meinzen-Derr, Dr. Lisa J. Martin, Dr. Mekibib Altaye

Research collaboration and mentorship by Dr. Ardythe L. Morrow

Research collaboration with Dr. Sheela Geraghty

Collaboration with Sports Medicine

Collaborating Faculty: Dr. Timothy Hewett; Dr. Gregory Myer; Dr. Mark Paterno

Statistical support by Drs. Jane Khoury and Todd Nick

Faculty Members

Ardythe L. Morrow, PhD, Professor ; *Division Director*

Research Interests: Molecular epidemiology of human milk, epidemiologic methods, prevention of infectious disease, predictive biomarkers of neonatal outcomes

Mekibib Altaye, PhD, Research Assistant 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.

Judy A. Bean, PhD, Professor Emeritus

Research Interests: General biostatistics consulting

Bin Huang, PhD, Research Assistant Professor

Research Interests: Application motivated statistics development include statistical modeling of mediation or surrogacy effect, censored outcome and measurement errors, statistics evaluation of gene by environment intera

Richard F. Ittenbach, PhD, Research Associate Professor

Research Interests: Scale development and analysis; Rausch analysis

Jane C. Khoury, PhD, Research Assistant Professor

Research Interests: Experimental design of cohort studies and trials

Mi-Ok Kim, PhD, Assistant Professor

Research Interests: Cancer Biostatistics: Advancing statistical methods frequently applied in clinical and preclinical cancer studies.

Lisa J. Martin, PhD, Research Associate Professor

Research Interests: Genetic Epidemiology, Obesity, Heart Malformations

Jareen Meinzen-Derr, PhD, Research Assistant Professor

Research Interests: Hearing and deafness, neonatal outcomes

Todd G. Nick, PhD, Professor

Research Interests: Development of reliable statistical models with particular emphasis in statistical genetics and pharmacogenetics

Shelia R. Salisbury, PhD, Research Assistant Professor

Research Interests: Cancer research: Design and analysis of correlated longitudinal data

Rhonda VanDyke, PhD, Research Assistant Professor

Research Interests: Mixture Models and Functional Data Analysis, integration of fMRI and MEG modalities; classification of arterial pressure waveform data from children through Bayesian statistics

Jessica G. Woo, PhD, Research Assistant Professor

Research Interests: Molecular epidemiology, with a particular research interest in pediatric obesity

Joint Appointment Faculty Members

Melinda Butsch-Kovacic, PhD, Assistant Professor

Personalized & Predictive Medicine
Epidemiologic methods

Adekunle Dawodu, MD, Professor

Center for Global Child Health
Vitamin D and child healthMer

Sheela Geraghty, MD, Associate Professor

General & Community Pediatrics
Breastfeeding research

Richard Hornung, DrPH, Professor

General & Community Pediatrics
Statistical methods

Cynthia A. Molloy, MD, Research Assistant Professor

Neurology
Molecular epidemiology of autism

Jennie G. Noll, PhD, Associate Professor

Behavioral Medicine & clinical Psychology
Statistical methods

Trainees

- **Meredith Tabangin, MPH**,
- **Stephanie Donauer, MS**,
- **Matthew Fenchel, MS**,
- **Chen Chen, MS**,
- **Lili Ding, MS**,
- **Trisha Herbers, MS**,
- **Dandan Li, BS**,
- **Yan Ren, MS**,
- **Yang Xiao, MS**,

Significant Accomplishments

Statistical Genetics Program

Drs. Lisa Martin, Mi-Ok Kim, and Jessica Woo have been developing this research program over the past six years in collaboration with the Division of Human Genetics and others. Faculty in this program conduct independent and collaborative studies of genomic risk factors/modifiers for disease and drug metabolism. Areas of research include family based linkage, population based association, microarray, and pharmacogenetic studies. The program collaborates with a diverse group of investigators from the Heart Institute, Allegy and Immunology, Anesthesia, Pediatric Rehabilitation, Human Genetics, Biomedical Informatics, and Endocrinology. In the past year, there have been several notable accomplishments. First, Drs. Jessica Woo and Lisa Martin were awarded a substantial NIH subcontract for genome wide association analysis for ischemic stroke. Drs. Woo and Martin are utilizing the web based genotyping interface (established by The Statistical Genetics Program in conjunction with the Division of Biomedical Informatics) to perform genotype calling and ensure that only the highest quality data moves forward for statistical genetic analysis. Second, Dr. Martin in collaboration with Drs. Hinton and Benson published the first report localizing genomic regions responsible for Hypoplastic Left Heart Syndrome. This is the first critical step in identifying the genes responsible for this devastating condition. In addition to these accomplishments, we are gearing up our expertise to examine copy number variants in the genome. These copy number variants are distributed across the genome and are thought to be responsible for disease.

Human Milk and Perinatal Epidemiology Program

Human milk feeding provides powerful protection against infectious diseases, and optimizes infant nutrition and health. This program focuses on human milk components that may explain the protective effects of human milk, in order to develop novel strategies to improve child health based on human milk components. The Human Milk Program Project (P01 HD13021, Morrow, PI) underwent competitive review, received an excellent score (5th percentile), and was approved by the National Institute for Child Health and Human Development (NICHD) Council. Research on that program

project involves the bioactive properties of human milk. During this year, Drs. Pengwei Huang, Xi Jiang, and Ardythe Morrow found that human milk protection against norovirus infection requires both the high molecular weight proteins of human milk (notably, mucins) and the oligosaccharides (sugars) that decorate those large molecules. Dr. Jareen Meinzen-Derr reported that human milk feeding is associated with lower risk of necrotizing enterocolitis (NEC) or death. In a second study, she reported that NEC tends to cluster in time in premature infants, supporting the role of infectious agents. These studies provided the baseline for a major new collaboration with the Perinatal Institute on human milk and on NEC. A new R01 was approved and awarded from NICHD (Morrow and Schibler, co-PIs) on novel biomarkers in NEC; this study interacts with the research of the human milk program project to determine infants at high risk of NEC and how human milk oligosaccharides may help protect against NEC. In another research publication, Dr. Jess Woo et al reported that human milk adiponectin is associated with infant growth in two collaborative sites in Mexico and Cincinnati. In addition, Dr. Sheela Geraghty et al continued research on the chemicals that can be found in mother's milk, and reported that providing mothers with test results on environmental chemicals in their milk could result in premature weaning. In addition, a new perinatal epidemiology faculty member, Dr. Laurie Nommsen-Rivers, joined the division as a secondary appointment (primary in neonatology), strengthening the overall campus capacity in lactation research. This program also became a major component of the Perinatal Institute this year. Thus, this unique program has achieved international recognition for its research on the bioactive components of human milk, and is developing a strong reputation in factors affecting mothers' ability to breastfeed.

Statistical and Epidemiologic Methods Research

A major ongoing contribution and focused activity of this division is methodologic studies that advance our ability to conduct research on child health. This year, Dr. Mekibib Altaye published a study with Dr. Scott Holland et al providing the first infant brain templates for magnetic resonance imaging – fundamental for important studies of brain imaging in infancy. Research on child growth and obesity are a focus of this division and internationally. Dr. Jess Woo published two noteworthy papers on methodologic issues in obesity studies, reporting that in severely obese adolescents, the body mass index Z-score can be a poor measure, and that the true prevalence of obesity is not systematically captured in the hospital data system. Another methodologic study published by faculty and colleagues of this division (Olsen et al) reported that in preterm infants, monitoring growth by weight alone (as is the current practice) is inadequate, as it fails to document that some normal weight preterm infants are short and have higher than normal weight for length. She thus recommended measuring body length and proportionality in preterm infants as a routine part of care. In other arenas of research and care, Dr. Meinzen-Derr conducted a meta-analysis of studies and found that Amplitude-Integrated EEG Is Useful in Predicting Neurodevelopmental Outcome in Full-Term Infants with Hypoxic-Ischemic Encephalopathy. Dr. Bin Huang continued her R01 on statistical modeling of puberty and mediation/surrogacy effect. She proposed and validated a new easy to use approach for assessing pubertal timing via statistical model. Dr. Mi-Ok Kim continued research on quantile regression and other methods in cancer research, and submitted several statistical grant applications to NIH and to the National Science Foundation. Together, these papers identify a number of nationally important opportunities for improvement in research on children and pediatric clinical care.

Division Publications

1. Han X, Uchida K, Jurickova I, Koch D, Willson T, Samson C, Bonkowski E, Trauernicht A, Kim MO, Tomer G, Dubinsky M, Plevy S, Kugathasan S, Trapnell BC, Denson LA. [Granulocyte-macrophage colony-stimulating factor autoantibodies in murine ileitis and progressive ileal Crohn's disease](#). *Gastroenterology*. 2009; 136: 1261-71, e1-3.
2. Huang P, Huang B, Weng H, Nakayama K, Morimoto K. [Effects of lifestyle on micronuclei frequency in human lymphocytes in Japanese hard-metal workers](#). *Prev Med*. 2009; 48: 383-388.
3. Vannest JJ, Karunanayaka PR, Altaye M, Schmithorst VJ, Plante EM, Eaton KJ, Rasmussen JM, Holland SK. [Comparison of fMRI data from passive listening and active-response story processing tasks in children](#). *J Magn Reson Imaging*. 2009; 29: 971-6.
4. Page SJ, Levine P, Khoury JC. [Modified constraint-induced therapy combined with mental practice: thinking through better motor outcomes](#). *Stroke*. 2009; 40: 551-4.
5. Wiley S, Meinzen-Derr J. [Access to cochlear implant candidacy evaluations: Who is not making it to the team evaluations?](#). *Int J Audiol*. 2009; 48: 74-79.
6. Chadehumbe MA, Khatri P, Khoury JC, Alwell K, Szaflarski JP, Broderick JP, Kissela BM, Kleindorfer DO. [Seizures are common in the acute setting of childhood stroke: a population-based study](#). *J Child Neurol*. 2009; 24: 9-12.
7. Dickson JM, Richter GT, Meinzen-Derr J, Rutter MJ, Thompson DM. [Secondary airway lesions in infants with laryngomalacia](#). *Ann Otol Rhinol Laryngol*. 2009; 118: 37-43.
8. How HY, Khoury JC, Sibai BM. [Cervical dilatation on presentation for preterm labor and subsequent preterm birth](#). *Am J Perinatol*. 2009; 26: 1-6.

9. Inge TH, Miyano G, Bean J, Helmrath M, Courcoulas A, Harmon CM, Chen MK, Wilson K, Daniels SR, Garcia VF, Brandt ML, Dolan LM. [Reversal of type 2 diabetes mellitus and improvements in cardiovascular risk factors after surgical weight loss in adolescents](#). *Pediatrics*. 2009; 123: 214-22.
10. Meinzen-Derr J, Poindexter B, Wrage L, Morrow AL, Stoll B, Donovan EF. [Role of human milk in extremely low birth weight infants' risk of necrotizing enterocolitis or death](#). *J Perinatol*. 2009; 29: 57-62.
11. Myer GD, Ford KR, Barber Foss KD, Liu C, Nick TG, Hewett TE. [The relationship of hamstrings and quadriceps strength to anterior cruciate ligament injury in female athletes](#). *Clin J Sport Med*. 2009; 19: 3-8.
12. Saadi HF, Dawodu A, Afandi B, Zayed R, Benedict S, Nagelkerke N, Hollis BW. [Effect of combined maternal and infant vitamin D supplementation on vitamin D status of exclusively breastfed infants](#). *Matern Child Nutr*. 2009; 5: 25-32.
13. Schwalbe-Terilli CR, Hartman DH, Nagle ML, Gallagher PR, Ittenbach RF, Burnham NB, Gaynor JW, Ravishankar C. [Enteral feeding and caloric intake in neonates after cardiac surgery](#). *Am J Crit Care*. 2009; 18: 52-7.
14. Woo D, Khoury J, Haverbusch MM, Sekar P, Flaherty ML, Kleindorfer DO, Kissela BM, Moomaw CJ, Deka R, Broderick JP. [Smoking and family history and risk of aneurysmal subarachnoid hemorrhage](#). *Neurology*. 2009; 72: 69-72.
15. Burrow TA, Saal HM, de Alarcon A, Martin LJ, Cotton RT, Hopkin RJ. [Characterization of congenital anomalies in individuals with choanal atresia](#). *Arch Otolaryngol Head Neck Surg*. 2009; 135: 543-7.
16. Geraghty SR, Morrow AL, Lanphear B. [The heart of the matter on breastmilk and environmental chemicals: essential points for healthcare providers and new parents](#). *Breastfeed Med*. 2009; 4: 125-6; author reply 127.
17. Kahn JA, Ding L, Huang B, Zimet GD, Rosenthal SL, Frazier AL. [Mothers' intention for their daughters and themselves to receive the human papillomavirus vaccine: a national study of nurses](#). *Pediatrics*. 2009; 123: 1439-45.
18. Woo JG, Guerrero ML, Altaye M, Ruiz-Palacios GM, Martin LJ, Dubert-Ferrandon A, Newburg DS, Morrow AL. [Human milk adiponectin is associated with infant growth in two independent cohorts](#). *Breastfeed Med*. 2009; 4: 101-9.
19. Ammerman RT, Putnam FW, Altaye M, Chen L, Holleb LJ, Stevens J, Short JA, Van Ginkel JB. [Changes in depressive symptoms in first time mothers in home visitation](#). *Child Abuse Negl*. 2009; 33: 127-38.
20. Bathke A, Kim M-O, Zhou M. [Combined multiple testing by censored empirical likelihood](#). *J Stat Plan Inference*. 2009; 139: 814-827.
21. Dorn LD, Negriff S, Huang B, Pabst S, Hillman J, Braverman P, Susman EJ. [Menstrual symptoms in adolescent girls: association with smoking, depressive symptoms, and anxiety](#). *J Adolesc Health*. 2009; 44: 237-43.
22. Lee KH, Larson DA, Shott G, Rasmussen B, Cohen AP, Benton C, Halsted M, Choo D, Meinzen-Derr J, Greinwald JH, Jr.. [Audiologic and temporal bone imaging findings in patients with sensorineural hearing loss and GJB2 mutations](#). *Laryngoscope*. 2009; 119: 554-8.
23. Lomenick JP, Reifschneider KL, Lucky AW, Adams D, Azizkhan RG, Woo JG, Backeljauw PF. [Prevalence of adrenal insufficiency following systemic glucocorticoid therapy in infants with hemangiomas](#). *Arch Dermatol*. 2009; 145: 262-6.
24. Sadhasivam S, Cohen LL, Szabova A, Varughese A, Kurth CD, Willging P, Wang Y, Nick TG, Gunter J. [Real-time assessment of perioperative behaviors and prediction of perioperative outcomes](#). *Anesth Analg*. 2009; 108: 822-6.
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Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct / Project Period Direct

BEAN, J

Recanalization Therapies and Markers of Outcomes in Acute Ischemic Stroke

National Institutes of Health (University of Cincinnati)

P50 NS 044283

08/01/08 - 04/30/13

\$100,440 / \$502,200

HUANG, B

Innovative Modeling of Puberty and Substance Use Risk

National Institutes of Health

R01 DA 019965

04/10/06 - 12/31/09

\$150,325 / \$603,257

Innovative Modeling Of Puberty and Substance Use Risk

National Institutes of Health

R01 DA 019965 (supplement)

06/01/09 - 10/31/09

\$10,000 / \$10,000

KHOURY, J

Hemorrhagic and Ischemic Stroke Among Black and Whites

National Institutes of Health (University of Cincinnati)

R01 NS 030678

11/01/05 - 06/30/09

\$50,482 / \$60,359

KIM, M

Empirical Likelihood and Censored Quantile Regression

National Science Foundation (University of Kentucky)

604920

08/01/06 - 05/31/09

\$12,132 / \$28,125

MORROW, A

Novel Genetic and Salivary Glycan Biomarkers for Risk of NEC in ELBW Infants

National Institutes of Health

R01 HD 059140

01/15/09 - 12/31/13

\$568,882 / \$2,905,073

CTSA: Design, Biostatistics and Ethics

National Institutes of Health (University of Cincinnati)

UL1 RR026314

04/03/09 - 03/31/14

\$33,851 / \$33,851

NICK, T

Epithelial Genes in Allergic Inflammation

National Institutes of Health

U19 AI 070235

09/01/08 - 08/31/09

\$79,250 / \$79,250

WOO, J

Genetic and Environmental Risk Factors for Hemorrhagic Stroke

National Institutes of Health (University of Cincinnati)

R01 NS 036695

09/30/08 - 06/30/13

\$36,507 / \$182,535

Current Year Direct

\$1,041,869

Industry Contracts

Morrow, A

Bristol-Myers Squibb

\$ 332,219

Current Year Direct Receipts

\$332,219

Total \$1,364,088
