Biostatistics and Epidemiology

Division Photo

L to R: J. Khoury, E. King, L. Martin, M. Kim, M. Altaye, B. Huang, A. Morrow, S. Salisbury, J. Woo, J. Meinzen-Derr, R. Ittenbach

Division Data Summary

Research and Training Details

Number of Faculty	13
Number of Joint Appointment Faculty	4
Number of Research Fellows	2
Number of Research Students	9
Number of Support Personnel	24
Direct Annual Grant Support	$503,256
Direct Annual Industry Support	$22,546
Peer Reviewed Publications	68

Significant Publications

Huang, B., Biro, F. M., & Dorn, L. D. (2009). Determination of relative timing of pubertal maturation through ordinal logistic modeling: evaluation of growth and timing parameters. J Adolesc Health, 45(4), 383-388, PMID: 19766943, PMC.

The timing of puberty is known to have a major impact on growth and psychosocial outcomes. Multiple methods have been used to determine pubertal timing, but all of the current methods have important limitations. This publication proposed a method of deriving relative timing of puberty utilizing statistical modeling. The proposed method is easy to implement, and has good validity and reliability.

Ittenbach, R. F., Cassedy, A. E., Marino, B. S., Spicer, R. L., & Drotar, D. (2009). Adherence to Treatment Among Children with Cardiac Disease. Cardiol Young, 1-7, PMID: 19849874, PMC.

This research publication reviews the literature regarding to medication treatment adherence for children with congenital and acquired heart disease. Clinical outcomes associated with nonadherence for children undergoing transplantation included mortality, acute episodes of rejection, lower levels of Cyclosporine A, and lower values for

the International Normalised Ratio of prothrombin. Recommendations are provided in this publication to maximize the impact and scientific rigor of future studies, including obtaining quantitative and qualitative measures of adherence, identifying primary and secondary endpoints, and more rigorous planning of studies.

Martin, L. J., Gao, G., Kang, G., Fang, Y., & Woo, J. G. (2009). Improving the signal-to-noise ratio in genome-wide association studies. Genet Epidemiol, 33 Suppl 1, S29-32, PMID: 19924719, PMC.

Genome-wide association studies employ hundreds of thousands of statistical tests to determine which regions of the genome may likely harbor disease-causing alleles. Such large-scale testing simultaneously requires stringent control over type I error and maintenance of sufficient power to detect true associations. Thus, the challenge is develop methods to improve the detection of a few true effects in the presence of many unassociated loci. This paper reviews cutting edge statistical methods to adjust for multiple tests while simultaneously using information about the structure of the genome to improve the detection of true positives.

Meinzen-Derr, J., Wiley, S., Grether, S., & Choo, D. I. (2009). Language performance in children with cochlear implants and additional disabilities. Laryngoscope, PMID: 19950380, PMC.

Dr. Meinzen-Derr is currently conducting a longitudinal language study on children with developmental disabilities who have received cochlear implants for their hearing loss. For many children who are deaf, a cochlear implant offers an opportunity for auditory stimulation and subsequent oral communication. However, very little evidence exists regarding the effectiveness of cochlear implants among children who have a disability in addition to hearing loss. Dr. Meinzen-Derr's team has been spearheading this research, providing the first solid evidence that this special group of children make significant language progress post-implant. Her team has also quantified the "gap" in language relative to their hearing and cognitively-matched peers, which is a first and necessary step in addressing appropriate expectations for this cohort of children.

Tabangin, M. E., Woo, J. G., & Martin, L. J. (2009). The effect of minor allele frequency on the likelihood of obtaining false positives. BMC Proc, 3 Suppl 7, S41, PMID: 20018033, PMC.

Determining the most promising single-nucleotide polymorphisms (SNPs) presents a challenge in genome-wide association studies, when hundreds of thousands of association tests are conducted. Further there is concern that rare SNPs may be more likely to be false positive associations than common SNPs. We found that rare SNPs did not have higher than expected false positive rates. However, we also found that for common SNPs there were fewer than expected false positives, suggesting the typical Bonferroni correction for genome wide association is too conservative.

Division Highlights

Dr. Jessica Woo

Early nutrition affects lifelong risk of obesity, type 2 diabetes and cardiovascular disease. Dr. Jessica Woo is researching the methylation of DNA as a compelling new paradigm for how early infant nutrition can impact later obesity. DNA methylation is repeatedly proposed as a mechanism for nutritional programming of obesity, but few studies have been conducted of its role in human obesity. Dr. Woo has conducted a preliminary study of DNA methylation across the genome using DNA from 24 children and adults, comparing methylation status in obese and lean individuals. These results highlighted some promising genes for further exploration, including some sites previously associated with intrauterine growth, obesity, and metabolic regulation. Planned future studies will focus on the relationship between blood and adipose tissue methylation and the role of infant feeding on methylation status. Breastfeeding is a prime candidate for early nutrition influencing obesity. Breastfed infants are 20-30% less likely to develop obesity than formula-fed infants later in life, providing an epidemiological link between early nutrition and later obesity. Evidence from animal models suggests that breastfeeding may plausibly lower obesity risk by altering methylation of obesity-related genes. Dr. Woo is using data and samples from several Cincinnati cohort studies to pursue this novel and important line of investigation.

Dr. Mi-Ok Kim

Dr. Kim was awarded a National Science Foundation grant and a Center for Clinical and Translational Science and Training (CCTST) Methods Pilot grant from CCHMC. On the NSF grant, Dr. Kim will investigate novel methods to incorporate high throughput data such as genetic profile data in building a better statistical model to more accurately predict a patient survival. Instead of predicting only an "average" person's survival, the type of models to be investigated will allow prediction for "top 10%, or "bottom 10%", while allowing the survivals can be very differently impacted by the gene profile. On the CCTST grant, Dr. Kim will investigate the impact of surrogacy on the benefits of a response adaptive randomization (RAR) clinical study design, a new invention that is known to maximize patient benefits in the course of a clinical trial while maintaining the scientific rigor of the trial. RAR requires a readily assessable response, which may not always be available. In cases where a readily assessable surrogate endpoint is used instead, Dr. Kim will investigate the efficiency of a RAR design under the surrogacy. Dr. Kim continued her R03 on Bayesian statistical modeling of censored outcomes. The primary publication from this study was submitted for publication.

Dr. Jareen Meinzen-Derr

Dr. Meinzen-Derr led the statistical analysis for a systematic review and meta-analysis on anetenatal use of betamethasone for fetal lung development. Betamethasone, an antenatal corticosteroid, is standard of care for pregnant women with imminent preterm labor. However, like many older drugs used for pediatric (or fetal) indications, the Food and Drug Administration (FDA)-approved labeling does not reflect current consensus. This Best Pharmaceuticals for

Children Act Project, conducted by the Lewin Group and in collaboration with NICHD, was geared towards obtaining scientific evidence supporting the addition of pediatric indications for betamethasone on the FDA label. Results from this work are consistent with previous studies and current consensus, affirming the efficacy of antenatal betamethasone in reducing incidence of RDS and mortality in preterm infants. A final report is currently being submitted to the FDA for review. Manuscripts for publication are in the final stages of editing.

Dr. Eileen King

Dr. Eileen King joined the biostatistics faculty at the rank of Associate Professor in November, 2009 after a distinguished history of biostatistics leadership at Procter & Gamble. Dr. King brought to Children's depth of expertise in clinical trials, multi-site studies, and experience in integrating data management into the clinical research pathway leading to data analysis. Since joining the faculty, she has been working closely with investigators in comparative effectiveness research, the CCTST, the Heart Institute, the Digestive Health Center, and pharmacology. She ably leads the data management unit of the division, oversees several biostatistics staff, and teaches biostatistics in the UC College of Pharmacy. Nationally, Dr. King achieved several major distinctions this year, serving as Chair-Elect of the American Statistical Assoc. (ASA) Council of Sections Governing Board, and the Associate Editor of the Journal of Statistics Education. Dr. King has been, in short, an outstanding addition and we are proud to have her as a member of our faculty.

Division Collaboration

Collaboration with Adolescent Medicine
Collaborating Faculty: Dr. Frank Biro; Dr. Jessica Kahn; Dr. Jill Huppert
Statistical support by Dr. Bin Huang
Collaboration with Allergy and Immunology
Collaborating Faculty: Dr. Marc Rothenberg; Dr. James Franciosi; Dr. Charles DeBrosse
Statistical support by Dr. Lisa J. Martin; Dr. Eileen King

Research with Dr. Lisa J. Martin

Collaboration with Anesthesiology
Collaborating Faculty: Dr. Dean Kurth; Dr. Joel Gunter; Dr. Mohamed Mahmoud; Dr. John McAuliffe; Dr. Mario Patino; Dr. Senthikumar Sadhasivam; Dr. Thomas Sheckleford; Dr. Alexandra Szabova; Dr. Fay Jou; Dr. Judy Margolis; Dr. Mark Meyer; Dr. Paul Samuels; Dr. Jon Tomasson; Dr. Junzheng Wu
Statistical support by 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

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; Dr. Christina Ramey; Dr. Robert Ammerman; Dr. Jeffrey Epstein; Dr. Joshua Langberg; Dr. Kelly Byars
Statistical support by Dr. Judy Bean; Dr. Richard Ittenbach; Dr. Eileen King; Dr. Jessica Woo; Dr. Mekibib Altaye
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 Dr. Lisa J. Martin; Dr. Ardythe L. Morrow; Dr. Jessica Woo

Collaboration with Bone Marrow Transplantation
Collaborating Faculty: Dr. Alexandra Flipovich; Dr. Chu Ri
Statistical support by Dr. Mi-Ok Kim
Collaboration with Center for Clinical and Translational Science and Training
Collaborating Faculty: Dr. James Heubi et al.
Study design, review, and analysis support by Dr. Ardythe L. Morrow; Dr. Jane Khoury; Dr. Mekibib Altaye; Dr. Bin Huang; Dr. Eileen King
Collaboration with Center for Professional Excellence Research and Evidence-Based Practices
Collaborating Faculty: Dr. Myra Huth; Dr. Nancy Daraiseh
Statistical support by Dr. Shelia Salisbury
Collaboration with Critical Care Medicine
Collaborating Faculty: Dr. Hector Wong
Statistical support by Dr. Shelia Salisbury
Collaboration with Dermatology
Collaborating Faculty: Dr. Anne Lucky

Statistical support by 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

Autism research collaboration by Dr. Lisa J. Martin

Hearing and deafness research collaboration with Dr. Jareen Meinzen-Derr

Collaboration with Emergency Medicine

Collaborating Faculty: Dr. Melinda Mahabee-Gittens

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

Collaboration with Endocrinology

Collaborating Faculty: Dr. Larry Doland; 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

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 and Cancer Biology

Collaborating Faculty: Dr. Punam Malik; Dr. Yi Zheng; Dr. Nancy Ratner

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. Ardythe L. Morrow; Dr. Lisa J. Martin; Dr. Eileen King; Dr. Mi-Ok Kim

Collaboration with General and Community Pediatrics

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

Statistical support by Dr. Mekibib Altaye; Dr. Bin Huang; Dr. Jane Khoury;

Research with Dr. Ardythe L. Morrow

Collaboration with Global Child Health

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

Statistical support by Dr. Mekibib Altaye; Dr. Jareen Meinzen-Derr

Research with Dr. Ardythe L. Morrow

Collaboration with Health Policy and Clinical Effectiveness

Collaborating Faculty: Dr. Jacqueline Grupp-Phelan; Dr. Ed Donovan; Dr. Peter Margolis; Dr. Carole Lannan

Statistical support by Dr. Eileen King; Dr. Rhonda VanDyke

Research with Dr. Jareen Meinzen-Derr

Collaboration with Heart Institute Research Core

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; Dr. Bob Siegel; Dr. Karen Uzark; Dr. Jeffrey Anderson; Dr. Thomas Kimball; Dr. James Cnota; Dr. Richard Czosek; Dr. Jeffrey Shuhaiber; Dr. Peter Manning; Dr. Stephanie Ware; Dr. Catherine Krawczeski

Study Design and Analysis Unit: Director - Dr. Jessica Woo; Dr. Eileen King; Dr. Richard Ittenbach; Dr. Rhonda VanDyke

Genetic research with Dr. Lisa J. Martin

Collaboration with Hematology-Oncology

Collaborating Faculty: Dr. Frank Smith; Dr. Tim Cripe; Dr. Clinton Joiner; Dr. Susanne Wells; Dr. Karen Kalinyak

Statistical support by Dr. Mi-Ok Kim

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

Collaboration with Immunobiology

Collaborating Faculty: Dr. Marsha Wills-Karp; Dr. Lee Grimes
Statistical support by Dr. Mi-Ok Kim

Research with Dr. Lisa J. Martin

Collaboration with Infectious Disease

Collaborating Faculty: Dr. Xi Jiang; Dr. Mary Staat; Dr. David Bernstein; Dr. Beverly Connelly
Statistical support by Dr. Mekibib Altaye; Dr. Shelia Salisbury

Research with Dr. Ardythe L. Morrow

Collaboration with Molecular Immunology

Collaborating Faculty: Dr. Clare Chougnet
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 Dr. Shelia Salisbury

Research with Dr. Jessica Woo

Collaboration with Neurology

Collaborating Faculty: Dr. Tracy Glauser; Dr. Douglas Rose; Dr. Diego Morita; Dr. Andrew Hershey; Dr. Brenda Wong; Dr. Jennifer Vannest; Dr. Cynthia Molloy
Statistical support by Dr. Mekibib Altaye; Dr. Rhonda VanDyke; Dr. Lisa J. Martin

Collaboration with Orthopaedics

Collaborating Faculty: Dr. Shital Parikh
Statistical support by Dr. Shelia Salisbury

Collaboration with Otolaryngology

Collaborating Faculty: Dr. David Brown; Dr. Dan Choo; Dr. John Greinwald; Dr. Ellis Arjmand; Dr. Lisa Hunter; Dr. Sally Shott
Statisitcal support by Dr. Shelia Salisbury

Research with Dr. Jareen Meinzen-Derr

Collaboration with Pediatric General and Thoracic Surgery

Collaborating Faculty: Dr. Thomas Inge; Dr. Gregory Tiao; Dr. Timothy Crombleholme; Dr. Jose Vuletin; Dr. Mounira Habli
Statistical support by Dr. Judy Bean; Dr. Shelia Salisbury; Dr. Mi-Ok Kim

Research with Dr. Jessica Woo

Collaboration with Pediatric Ophthalmology

Collaborating Faculty: Dr. Walker Motley; Dr. Michael Yang
Statistical support by Dr. Shelia Salisbury

Collaboration with Pediatric Physical Medicine and Rehabilitation

Collaborating Faculty: Dr. Shari Wade; Dr. Jilda Vargus-Adams
Statistical support by Dr. Shelia Salisbury; Dr. Lisa J. Martin; Dr. Judy Bean

Collaboration with Pulmonary Medicine

Collaborating Faculty: Dr. Michael Seid; Dr. Raouf Samy Amin; Dr. Daniel Grossoehme; Dr. Jamie Woolridge
Statistical support by Dr. Bin Huang; Dr. Rhonda VanDyke; Dr. Shelia Salisbury; Dr. Eileen King

Collaboration with Radiology

Collaborating Faculty: Dr. Scott Holland; Dr. Robert Fleck; Dr. Alan Brody; Dr. Lane Donnelly; Dr. Kathleen Emery; Dr. Michael Gelfand; Dr. Marilyn Goske; Dr. Gary Halverson; Dr. Steven Kraus; Dr. Tal Laor; Dr. David Larson; Dr. Jennifer Nicholas; Dr. Dan Podberesky; Dr. Brenton Reading; Dr. Susan Sharp; Dr. Alexander Tobin; Dr. Norma S. Costa; Dr. Charles Dumoulin
Research with Dr. Mekibib Altaye

Statistical support by Dr. Rhonda VanDyke

Collaboration with Rheumatology

Collaboration with Section of Neonatology, Perinatal and Pulmonary Biology
Statistical and teaching support by Dr. Mekibib Altaye

Research with Dr. Ardythe L. Morrow; Dr. Jareen Meinzen-Derr

Collaboration with Sports Medicine

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

Designated research units

This year the division launched five designated research units to advance the work and capacity of existing research programs and the academic focus and leadership of DBE faculty. The leading academic unit is the Genetic Epidemiology and Statistics Unit headed by Lisa J. Martin, PhD, whose growing group studies genetic factors that influence health. In FY10, this program established the capacity to conduct genome-wide association studies (GWAS).

In the past year, Martin collaborated with Marc Rothenberg, MD, and Children's Hospital of Pennsylvania to conduct a GWAS study, published in Nature Genetics that identified a novel susceptibility locus for eosinophilic esophagitis. To follow-up these exciting findings, Martin will lead the statistical analysis for an NIH grant to identify additional susceptibility loci. Funded by NIH, Martin and Jessica Woo, MHSA, PhD, have collaborated to perform GWAS analysis in stroke. Martin also performed a GWAS study of autism in collaboration with Cynthia Molloy, MD, MS. This project focuses on detailed characterization of autism cases, thereby improving identification of genetic susceptibility. These studies are breaking new ground, and have could lead to better strategies for preventing or treating severe diseases.

Another new research unit is the Scales Development and Validation Unit directed by Richard Ittenbach, PhD, which uses powerful new statistical methods for clinical studies.

Three more research units were initiated to strengthen partnerships with new institutes at Cincinnati Children's: The Heart Institute Biostatistics and Epidemiology Unit, directed by Woo; the Perinatal Institute Biostatistics and Epidemiology Unit, directed by Jareen Meinzen-Derr, PhD; and the Cancer and Blood Diseases Institute Biostatistics Unit, directed by Mi-Ok Kim, PhD. These collaborations will provide a strong accountability and matrix research design to enable the growth of these institutes and our mission to improve child health.

Data Management Center

Our Division will lead the way this year to develop Cincinnati Children's new Data Management Initiative. The Initiative is an institution-wide effort to develop state-of-the-art data management services to medical center investigators. DBE faculty and staff - Richard Ittenbach, Eileen King, Ardythe Morrow, and Rachel Akers - worked with colleagues throughout Cincinnati Children's this past year to evaluate existing operations and make recommendations to medical center leadership that will enable Cincinnati Children's to become the national leader in this domain of clinical and translational research. The overall plan will establish good clinical data management policies and practices in the overall institution. Planning for this initiative occurred in FY10, while roll-out of new data management policies and practices are

scheduled to begin in FY11.

Student Programs

The Graduate Biostatistics Internship Program at Cincinnati Children's, launched in 2007, is a collaboration with the University of Cincinnati's department of mathematical sciences. This year, the institutions agreed to include five students per year on an ongoing basis. The program allows students to work on biomedical research projects as well as in statistical methodology development, under the close supervision of faculty statisticians. Students are involved in research in rheumatology, imaging, adolescent medicine, pulmonary medicine, and cancer. The program is led by Bin Huang, PhD, Division of Biostatistics and Epidemiology, and professors Siva Sivaganesan and James Deddens from UC.

The division also has launched two new award mechanisms for students and staff:

• The Frank C. Woodside, Dinsmore & Shohl fellowship is for pre-doctoral students. This was the second year of the pre-doctoral fellowship, which was awarded to Yan Ren. She is conducting her dissertation on a clustering method using a Bayesian approach for high dimensional multilevel time series data.

• The W. William Luxion travel trainee award is directed towards staff and students who are being mentored by a DBE faculty member. This award was given to Resmi Gupta, a doctoral student in biostatistics working under the supervision of Richard Ittenbach. Gupta's work is on statistical methods for zero-inflated clinical data. Her paper was accepted for presentation at the Joint Statistical Meeting in August.

Division Publications

1. :

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		
University of Cincinnati (National Institutes of Health)		
P50 NS 044283	08/01/08 - 04/30/13	$229,242 / $325,998
Khoury, J		
Hemorrhagic & Ischemic Stroke Among Blacks and Whites		
University of Cincinnati (National Institutes of Health)		
R01 NS 030678	07/01/09 - 06/30/14	$38,660 / $38,660
Kim, M		
Risk Stratification and Identification of Immunogenetic and Microbial Markers of Complicated Disease Course in Pediatric Crohn's Disease		
Emory University (Crohn's & Colitis Foundation of America)		
	07/01/09 - 06/30/13	$12,115 / $12,115
Empirical Bayes Analysis of Quantile Regression Model		
National Institutes of Health		
R03 CA 133944	07/01/09 - 06/30/11	$55,413 / $111,042
Martin, L		
Epithelial Genes in Allergic Inflammation - Scientific Core		
National Institutes of Health		
U19 AI 070235	09/15/06 - 08/31/11	$87,474 / $87,474
Morrow, A		
Cincinnati Center for Clinical & Translational Sciences and Training - Design/Biostatistics/Ethics		
University of Cincinnati (National Institutes of Health)		
UL1 RR 026314	04/03/09 - 03/31/14	$37,010 / $70,861
Woo, J		
Genetic and Environmental Risk Factors for Hemorrhagic Stroke		
University of Cincinnati (National Institutes of Health)		
R01 NS 036695	09/30/08 - 06/30/13	$43,342 / $79,849

	Current Year Direct	**$503,256**

Industry Contracts

Woo, J

Mead Johnson & Co.		$ 22,546

	Current Year Direct Receipts	**$22,546**

Funded Collaborative Efforts

Altaye, M

fMRI of Normal Language Development in Children
National Institutes of Health

Holland, S	08/01/06 - 06/30/11	6 %

High Prevalence of Rickets and Subclinical Maternal Health
Thrasher Foundation

Dawodu, A	01/01/08 - 06/30/11	5 %

Neurobehavior Effects of Insecticide Exposure in Pregnancy
National Institutes of Health

Yolton, K	09/14/09 - 06/30/11	17 %

Pediatric Functional Neuroimaging Research Network
National Institutes of Health

Holland, S	09/28/09 - 09/27/14	18 %

The Role of Human Milk in Infant Nutrition and Health
National Institutes of Heath

Morrow, A	08/01/2009 - 07/31/2014	5 %

Bean, J

Behavioral and Nutrition Therapies to Help CF Preschoolers Grow
National Institutes of Health

Powers, S	07/01/05 - 07/31/10	18 %

Improving Mental Health Outcomes of Child Brain Injury
National Institutes of Health

Wade, S	08/01/06 - 05/31/11	11 %

Drug and Non-drug Treatment of Pediatric Chronic Headache
National Institutes of Health

Powers, S	07/01/06 - 06/30/10	13 %

A Randomized Clinical Trial in Juvenile Fibromyalgia
Ntl Inst of Arth & Musculo & Skin Dis

Kashikar-Zuck,S	07/01/2004 - 06/30/2011	13 %

Huang, B

Early Aggressive Therapy in Juvenile Idiopathic Arthritis
Children's Hospital & Regional Medical Center - Seattle

Lovell, D	09/01/06 - 04/30/11	16 %

Impact of Peripubertal Exposure to Xenohrmones on Fat Distribution and Cytokines
National Institutes of Health

Biro, F	04/01/10 - 03/31/12	10 %

Enhancing PROMIS in Pediatric Pain, Rheumatology, and Rehabilitation Research
National Institutes of Health

Morgan-DeWitt, E	09/30/09 - 07/31/13	5 %

Multidisciplinary Clinical Research Center
National Institutes of Health

Seid, M	08/18/08 - 07/30/13	14 %

Behavioral & Virologic Impact of HPV Immunization
National Institutes of Health

| Kahn, J | 01/15/07 - 12/31/12 | 5 % |

IL-1 Trap for Treatment of Familial Mediterranean Fever
Cleveland Clin Lerner Col of Med of CWRU

| Lovell,D | 03/01/2009 - 02/28/2011 | 4 % |

Multidisciplinary Clinical Research Center
National Institutes of Health

| Glass, D/Lovell, D | 08/18/2008 - 07/31/2013 | 4 % |

Improving Parent/Adolescent Communication about Tobacco
National Cancer Institute

| Mahabee-Gittens, M | 07/01/2006 - 06/30/2011 | 5 % |

Ittenbach, R

Self-Management of Type 1 Diabetes During Adolescence
National Institutes of Health

| Drotar, D | 08/01/07 - 07/31/11 | 13 % |

Khoury, J

Exploring the Role of Race/Ethnicity & Family Influences to Reduce Youth Smoking
National Institutes of Health

| Mahabee-Gittens, M | 07/01/09 - 06/30/11 | 6 % |

Neurobehavior Effects of Insecticide Exposure in Pregnancy
National Institutes of Health

| Yolton, K | 09/14/09 - 08/30/11 | 16 % |

Neuromuscular Intervention Targeted to Mechanisms of ACL Load in Female Athletes
National Institutes of Health

| Hewett. T | 09/01/08 - 08/31/12 | 8 % |

Low Level Tobacco Exposure and Infant Wheeze
Pennsylvania State University

| Yolton, K | 07/01/07 - 06/30/10 | 10 % |

Role of Environmental Chemicals on Lactation Outcomes
National Institutes of Health

| Geraghty,S | 06/01/2006 - 05/31/2011 | 5 % |

Kim, MO

Virotherapy for Neuroblastoma Stem Cells
National Institutes of Health

| Cripe, T | 08/01/08 - 07/31/10 | 5 % |

Biomarkets for Inflammatory Bowel Disease Behavior and Treament Responses
National Institutes of Health

| Denson, L | 04/01/09 - 03/31/13 | 10 % |

Cincinnati NF1 Preclinical Testing Center
The Children's Tumor Foundation

| Cripe, T | 07/01/08 - 05/31/11 | 10 % |

Fanconi Anemia and HPV Transformation
National Cancer Institute

| Wells,S | 09/28/2009 - 08/31/2014 | 5 % |

King, E

Pursuing Perfection in Pediatric Therapeutics
Agency for Healthcare Research and Quality

| Margolis, P | 09/01/07 - 08/31/11 | 7 % |

A Multi-center Clinical Trial of Fluticasone vs Placebo
Ntl Inst of Allergy & Infections Dis

| Rothenberg, M | 09/26/2009 - 08/31/2011 | 5 % |

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