

# 2014 Research Annual Report

## Endocrinology



### Division Summary

#### RESEARCH AND TRAINING DETAILS

Number of Faculty	18
Number of Joint Appointment Faculty	3
Number of Support Personnel	18
Direct Annual Grant Support	\$1,737,085
Direct Annual Industry Support	\$79,628
Peer Reviewed Publications	28

#### CLINICAL ACTIVITIES AND TRAINING

Number of Clinical Staff	52
Number of Clinical Fellows	11
Inpatient Encounters	3,529
Outpatient Encounters	14,258

### Division Photo



Row 1: V Hwa, I Gutmark-Little, S Rose, D Elder, A Sanghavi Shah, J Howell  
Row 2: S Corathers, J Wells, M Rutter, N Yayah Jones, P Backeljauw, T Nakamura  
Row 3: S Lawson, L Dolan, D Klein

## Significant Accomplishments

### Disorders of Sex Development (DSD) Center Joins Translational Research Network

**Meilan Rutter, MD**, Endocrinology, and the Disorders of Sex Development (DSD) Center at Cincinnati Children's have joined the national DSD Translational Research Network, the first network of its kind in North America. DSDs are congenital conditions in which development of chromosomal, gonadal or anatomic sex is atypical, resulting in severe consequences for behavioral health, fertility, cancer risk and quality of life. The new research network seeks to improve understanding of DSD, identify novel genetic mechanisms, deliver standardized clinical tools, and more. Our team already has started using the network's standardized forms in clinic and will soon be enrolling patients into a DSD registry.

### Septo-Optic Dysplasia (SOD) Clinic Launched

The clinical needs of those with Septo-Optic Dysplasia (SOD) involve many subspecialties including Endocrinology, Ophthalmology, Genetics, and Behavioral Medicine. Patients also depend on occupational, physical, and speech therapists as well as resources from the Cincinnati Association for the Blind and Visually Impaired. Our SOD clinic, started in December 2013, was designed to incorporate all subspecialty patient needs into a centralized location. The new clinic also provides a base for expanded research for this understudied population. Our team plans to work with colleagues at the University of Pennsylvania to identify genetic mutations associated with SOD.

## Significant Publications

Gordon SM, Davidson WS, Urbina EM, **Dolan LM**, Heink A, Zang H, Lu LJ, **Shah AS**. The effects of type 2 diabetes on lipoprotein composition and arterial stiffness in male youth. *Diabetes*. 2013 62;(8):2958-67.

High density lipoproteins (HDL) are known to have potent anti-atherogenic, anti-inflammatory and anti-oxidative functions. However, these functions are not represented in the HDL cholesterol number. In this study, the Shah laboratory demonstrated a depletion of apoE enriched large HDL subclass in adolescents with type 2 diabetes that was associated with an increase in pulse wave velocity (PWV), a noninvasive measure of vascular stiffness and hence a surrogate of atherosclerosis. These results begin to provide new insights into the molecular heterogeneity of HDL and how dysfunctional HDL may contribute to early atherosclerosis in youth with type 2 diabetes.

**Backeljauw PF**, Kuntze J, Frane J, Calikoglu AS, Chernausek. Adult and near-adult height in patients with severe insulin-like growth factor-I deficiency after long-term therapy with recombinant human insulin-like growth factor-I. *Horm Res Paediatr*. 2013 80;(1):47-56.

This study is the culmination of two decades of IGF-I therapy for patients with severe IGF-I deficiency (growth hormone resistance). Dr. Backeljauw was a lead investigator for this study, which led to the FDA-approval of recombinant human IGF-1 for the therapy of this syndrome of growth hormone resistance leading to severe growth failure and short stature.

Sisley S, Trujillo MV, Khoury J, **Backeljauw PF**. Low incidence of pathology detection and high cost of screening in the evaluation of asymptomatic short children. *J Pediatr*. 2013 163(4):1045-51.

Dr. Backeljauw also published a key paper on the evaluation of idiopathic short stature. Together with his co-authors, the findings from a large retrospective study challenged the guidelines currently available to pediatricians for the evaluation of idiopathic short stature. They concluded that a history-based and physical exam-based approach is as efficient, and more cost-effective than a work-up based on a screening algorithm using laboratory testing.

**Corathers, SD**, Kichler J, **Jones NH**, Houchen A, Jolly M, Morwessel N, Crawford P, **Dolan LM**, Hood KK. Improving depression screening for adolescents with type 1 diabetes. *Pediatrics*. 2013 132;(5):e1395-402.

The described quality improvement initiative to implement routine depression screening for adolescents with type 1 diabetes addresses a significant gap between national recommendations and widespread clinical practice. Nearly 20% of individuals screened endorsed moderate or high levels of depressive symptoms and 7% endorsed suicidal ideation. There was a positive correlation between higher depression scores and worse diabetes outcomes, supporting the hypothesis that depression screening provides an indication of youth at risk for suboptimal diabetes-specific health outcomes.

Chen J, Gutmark E, Mylavarapu G, **Backeljauw PF**, **Gutmark-Little I**. Numerical investigation of mass transport through patient-specific deformed aortae. *J Biomech*. 2014 47(2):544-52.

This article uses computational methods to study simulated flow through diseased aorta of patients with Turner syndrome. We find differences in clinically significant parameters of blood flow between normal and diseased aortae. These types of blood flow disturbances are known to lead to vessel wall pathology.

## Division Publications

1. Auble BA, Bollepalli S, Makoroff K, Weis T, Khoury J, Colliers T, Rose SR. **Hypopituitarism in pediatric survivors of inflicted traumatic brain injury**. *J Neurotrauma*. 2014; 31:321-6.
2. Backeljauw PF, Kuntze J, Frane J, Calikoglu AS, Chernausek SD. **Adult and near-adult height in patients with severe insulin-like growth factor-I deficiency after long-term therapy with recombinant human insulin-like growth factor-I**. *Horm Res Paediatr*. 2013; 80:47-56.

3. Chen J, Gutmark E, Mylavarapu G, Backeljauw PF, Gutmark-Little I. **Numerical investigation of mass transport through patient-specific deformed aortae.** *J Biomech.* 2014; 47:544-52.
4. Chuang J, Vallerie A, Breech L, Saal HM, Alam S, Crawford P, Rutter MM. **Complexities of gender assignment in 17beta-hydroxysteroid dehydrogenase type 3 deficiency: is there a role for early orchiectomy?** *Int J Pediatr Endocrinol.* 2013; 2013:15.
5. Chuang J, Zeller MH, Inge T, Crimmins N. **Bariatric surgery for severe obesity in two adolescents with type 1 diabetes.** *Pediatrics.* 2013; 132:e1031-4.
6. Corathers SD, Kichler J, Jones NH, Houchen A, Jolly M, Morwessel N, Crawford P, Dolan LM, Hood KK. **Improving depression screening for adolescents with type 1 diabetes.** *Pediatrics.* 2013; 132:e1395-402.
7. Dabelea D, Talton JW, D'Agostino R, Jr., Wadwa RP, Urbina EM, Dolan LM, Daniels SR, Marcovina SM, Hamman RF. **Cardiovascular risk factors are associated with increased arterial stiffness in youth with type 1 diabetes: the SEARCH CVD study.** *Diabetes Care.* 2013; 36:3938-43.
8. Gordon SM, Davidson WS, Urbina EM, Dolan LM, Heink A, Zang H, Lu LJ, Shah AS. **The effects of type 2 diabetes on lipoprotein composition and arterial stiffness in male youth.** *Diabetes.* 2013; 62:2958-67.
9. Hilliard ME, Lawrence JM, Modi AC, Anderson A, Crume T, Dolan LM, Merchant AT, Yi-Frazier JP, Hood KK, Group SfDiYS. **Identification of minimal clinically important difference scores of the PedsQL in children, adolescents, and young adults with type 1 and type 2 diabetes.** *Diabetes Care.* 2013; 36:1891-7.
10. Jaacks LM, Bell RA, Dabelea D, D'Agostino RB, Jr., Dolan LM, Imperatore G, Klingensmith G, Lawrence JM, Saydah S, Yi-Frazier J, Mayer-Davis EJ, Group SfDiYS. **Diabetes self-management education patterns in a US population-based cohort of youth with type 1 diabetes.** *Diabetes Educ.* 2014; 40:29-39.
11. Jaacks LM, Crandell J, Liese AD, Lamichhane AP, Bell RA, Dabelea D, D'Agostino RB, Jr., Dolan LM, Marcovina S, Reynolds K, Shah AS, Urbina EM, Wadwa RP, Mayer-Davis EJ. **No association of dietary fiber intake with inflammation or arterial stiffness in youth with type 1 diabetes.** *J Diabetes Complications.* 2014; 28:305-10.
12. Jaiswal M, Fingerlin TE, Urbina EM, Wadwa RP, Talton JW, D'Agostino RB, Jr., Hamman RF, Daniels SR, Marcovina SM, Dolan LM, Dabelea D. **Impact of glycemic control on heart rate variability in youth with type 1 diabetes: the SEARCH CVD study.** *Diabetes Technol Ther.* 2013; 15:977-83.
13. Jaiswal M, Urbina EM, Wadwa RP, Talton JW, D'Agostino RB, Jr., Hamman RF, Fingerlin TE, Daniels SR, Marcovina SM, Dolan LM, Dabelea D. **Reduced heart rate variability is associated with increased arterial stiffness in youth with type 1 diabetes: the SEARCH CVD study.** *Diabetes Care.* 2013; 36:2351-8.
14. Mottl AK, Lauer A, Dabelea D, Maahs DM, D'Agostino RB, Jr., Dolan LM, Gilliam LK, Lawrence JM, Rodriguez B, Marcovina SM, Imperatore G, Kanakatti Shankar R, Afkarian M, Reynolds K, Liese AD, Mauer M, Mayer-Davis EJ, Group SfDiYS. **Albuminuria according to status of autoimmunity and insulin sensitivity among youth with type 1 and type 2 diabetes.** *Diabetes Care.* 2013; 36:3633-8.
15. Nakamura T, Arduini A, Baccaro B, Furuhashi M, Hotamisligil GS. **Small-molecule inhibitors of PKR improve glucose homeostasis in obese diabetic mice.** *Diabetes.* 2014; 63:526-34.
16. Namjou B, Keddache M, Marsolo K, Wagner M, Lingren T, Cobb B, Perry C, Kennebeck S, Holm IA, Li R, Crimmins NA, Martin L, Solti I, Kohane IS, Harley JB. **EMR-linked GWAS study: investigation of variation landscape of loci for body mass index in children.** *Front Genet.* 2013; 4:268.
17. Patton SR, Dolan LM, Powers SW. **Does eating during television viewing affect mealtimes in young children with type 1 diabetes mellitus?** *J Pediatr Nurs.* 2013; 28:364-8.
18. Patton SR, Dolan LM, Smith LB, Brown MB, Powers SW. **Examining mealtime behaviors in families of young children with type 1 diabetes on intensive insulin therapy.** *Eat Behav.* 2013; 14:464-7.

19. Pihoker C, Gilliam LK, Ellard S, Dabelea D, Davis C, Dolan LM, Greenbaum CJ, Imperatore G, Lawrence JM, Marcovina SM, Mayer-Davis E, Rodriguez BL, Steck AK, Williams DE, Hattersley AT, Group SfDiYS. **Prevalence, characteristics and clinical diagnosis of maturity onset diabetes of the young due to mutations in HNF1A, HNF4A, and glucokinase: results from the SEARCH for Diabetes in Youth.** *J Clin Endocrinol Metab.* 2013; 98:4055-62.
20. Rose SR, Kim MO, Korbee L, Wilson KA, Ris MD, Eyal O, Sherafat-Kazemzadeh R, Bollepalli S, Harris R, Jeng MR, Williams DA, Smith FO. **Oxandrolone for the treatment of bone marrow failure in Fanconi anemia.** *Pediatr Blood Cancer.* 2014; 61:11-9.
21. Shah AS, Gao Z, Urbina EM, Kimball TR, Dolan LM. **Prediabetes: the effects on arterial thickness and stiffness in obese youth.** *J Clin Endocrinol Metab.* 2014; 99:1037-43.
22. Shah AS, Tan L, Long JL, Davidson WS. **Proteomic diversity of high density lipoproteins: our emerging understanding of its importance in lipid transport and beyond.** *J Lipid Res.* 2013; 54:2575-85.
23. Shah AS, Urbina EM, Khoury PR, Kimball TR, Dolan LM. **Lipids and lipoprotein ratios: contribution to carotid intima media thickness in adolescents and young adults with type 2 diabetes mellitus.** *J Clin Lipidol.* 2013; 7:441-5.
24. Shankar RK, Ellard S, Standiford D, Pihoker C, Gilliam LK, Hattersley A, Dolan LM. **Digenic heterozygous HNF1A and HNF4A mutations in two siblings with childhood-onset diabetes.** *Pediatr Diabetes.* 2013; 14:535-8.
25. Sisley S, Trujillo MV, Khoury J, Backeljauw P. **Low incidence of pathology detection and high cost of screening in the evaluation of asymptomatic short children.** *J Pediatr.* 2013; 163:1045-51.
26. The NS, Crandell JL, Thomas J, Couch SC, Shah AS, Maahs DM, Dabelea D, Marcovina SM, D'Agostino RB, Jr., Mayer-Davis EJ, Group SfDiYS. **Correlates of medical nutrition therapy and cardiovascular outcomes in youth with type 1 diabetes.** *J Nutr Educ Behav.* 2013; 45:661-8.
27. Urbina EM, Dabelea D, D'Agostino RB, Jr., Shah AS, Dolan LM, Hamman RF, Daniels SR, Marcovina S, Wadwa RP. **Effect of type 1 diabetes on carotid structure and function in adolescents and young adults: the SEARCH CVD study.** *Diabetes Care.* 2013; 36:2597-9.
28. Valenzuela JM, Seid M, Waitzfelder B, Anderson AM, Beavers DP, Dabelea DM, Dolan LM, Imperatore G, Marcovina S, Reynolds K, Yi-Frazier J, Mayer-Davis EJ, Group SfDiYS. **Prevalence of and Disparities in Barriers to Care Experienced by Youth with Type 1 Diabetes.** *J Pediatr.* 2014; 164:1369-1375 e1.

## Faculty, Staff, and Trainees

### Faculty Members

**Lawrence M Dolan, MD**, Professor

**Leadership** Division Director, Robert and Mary Shoemaker Professor of Pediatrics

**Research Interests** Diabetes mellitus; non-insulin dependent diabetes; sexual development disorders; growth disorders; disorders of the thyroid; goiters; hypoglycemia

**Philippe Backeljauw, MD**, Professor

**Leadership** Director, Cincinnati Turner Syndrome Center

**Research Interests** Growth disorders; disorders of bone and calcium metabolism; Turner Syndrome

**Sarah Corathers, MD**, Assistant Professor

**Research Interests** Transition to adult care; Type 1 diabetes in adolescents and adults; Quality Improvement

**Nancy Crimmins, MD**, Assistant Professor

**Research Interests** Diabetes; obesity

**Deborah Elder, MD**, Assistant Professor

**Research Interests** Diabetes; growth disorders; precocious puberty; calcium disorders

**Iris Gutmark-Little, MD**, Assistant Professor

**Research Interests** Airway and great vessel disorders in Turner syndrome

**Stuart Handwerger, MD**, Professor

**Leadership** Professor of Cancer and Cell Biology

**Research Interests** Growth and thyroid disorders; perinatal endocrinology

**Jonathan Howell, MD, PhD**, Assistant Professor

**Research Interests** Using human stem cell derived intestinal tissue to understand human gut hormone development and function in order to facilitate new therapeutic options for diabetes

**David J Klein, MD, PhD**, Associate Professor

**Research Interests** Diabetes mellitus; intensive diabetes management programs; early detection of renal disease; effects of diabetes mellitus on renal proteoglycan synthesis

**Sarah Lawson, MD**, Assistant Professor

**Research Interests** Turner syndrome; Septo-optic dysplasia; endocrine abnormalities related to oncology and its treatments

**Takahisa Nakamura, PhD**, Assistant Professor

**Research Interests** Focus on endogenous dsRNA pathways to address questions concerning why and how inflammatory responses are initiated and thus involved in the pathogenesis of obesity.

**Susan Rose, MD**, Professor

**Research Interests** Hypothalamic pituitary function; thyroid disorders; disorders of growth or puberty; endocrine function in cancer survivors; endocrine function after head injury

**Meilan Rutter, MD**, Assistant Professor

**Research Interests** Calcium disorders; endocrine function in childhood cancer survivors; endocrine function in muscular dystrophy

**Amy Shah, MD**, Assistant Professor

**Research Interests** Type 2 diabetes; pre-diabetes; insulin resistance; obesity; lipid disorders

**Peggy Stenger, DO**, Assistant Professor

**Research Interests** Disorders of bone and calcium metabolism; Growth disorders; disorders of sexual development; pubertal disorders; disorders of the thyroid; goiter

**Nana-Hawa Yayah Jones, MD**, Assistant Professor

**Research Interests** Adherence/compliance in type 1 diabetes

#### Joint Appointment Faculty Members

**Jonathan Katz, PhD**, Professor (Immunobiology)

**Research Interests** The immunology of type 1 diabetes mellitus

**Jane Khoury, PhD**, Associate Professor (Biostatistics & Epidemiology)

**Research Interests** Diabetes in pregnancy and effect on offspring; stroke



**James Wells, PhD**, Professor (Developmental Biology)

**Research Interests** Vertebrate gut development, stem cells, mammal

## Trainees

- **Cassandra Brady, MD**, PL-5, Vanderbilt University
- **Marjorie Golekoh, MD**, PL-5, Cincinnati Children's Hospital Medical Center
- **Pranati Jha, MBBS**, PL-6, Albany Medical Center
- **Jose Jimenez-Vega, MD**, PL-4, University of Minnesota Medical School
- **Christel Keefe, MD**, PL-5, Cincinnati Children's Hospital Medical Center
- **Manasa Mantravadi, MD**, PL-4, Northwestern University McGaw Medical Center
- **Arti Shah, MBBS**, PL-6, University at Buffalo Program
- **Nicole Sheanon, MD**, PL-7, University of Massachusetts
- **Allison Smego, MD**, PL-4, Vanderbilt University
- **Halley Wasserman, MD**, PL-5, Cincinnati Children's Hospital Medical Center

## Division Collaboration

Clinical Collaboration - Disorders of Sex Development Clinic; DSD Center of CCHMC (Meilan Rutter, MD)

**Adolescent Gynecology** » Lesley Breech, MD

**Pediatric Urology** » Pramod Reddy, MD, Curtis Sheldon, MD, and Brian Vanderbrink, MD

**Human Genetics** » Robert Hopkin, MD and Howard Saal, MD

Gender Dysphoria Clinical Team (Meilan Rutter, MD; Sarah Corathers, MD)

**Adolescent and Transition Medicine** » Lee Ann Conard, MD

Depression screening in type 1 diabetes clinical care and research projects; Transition to adult care, clinical care and quality improvement (Sarah Corathers, MD)

**Behavioral Medicine and Clinical Psychology** » Jessica Kichler, PhD

Comparative study of readiness to transition to adult care across 5 different patient populations (Sarah Corathers, MD)

**Behavioral Medicine and Psychology** » Sarah Beal, PhD

Research - Microarray-based Gene Expression Analysis of Endocrine Systems: Principles of Experimental Design and Interpretation (Stuart Handwerker, MD)

**Biomedical Informatics** » Bruce Aronow, PhD and Anil Jegga, MS, DVM

Clinical management protocol for cardiac disease in Turner syndrome (Philippe Backeljauw, MD; Sarah Lawson, MD; Iris Gutmark-Little, MD; Sarah Corathers, MD)

**Cardiology** » Elaine Urbina, MD and Thomas Kimball, MD

The epidemiology of peripheral cardiovascular disease/central (heart) cardiovascular disease in youth with a specific emphasis on the role of obesity insulin resistance and diabetes (Lawrence Dolan, MD; Amy Shah, MD, MS)

**Cardiology** » Elaine Urbina, MD and Thomas Kimball, MD

HDL Subspecies and Vascular Function (Amy Shah, MD, MS; Lawrence Dolan, MD)

**Cardiology** » Elaine Urbina, MD

Research - Trajectories of blood sugar control in adolescents with type 1 diabetes (Lawrence Dolan, MD)

**Center for Adherence and Self-Management** » Denny Drotar, PhD

Contribution of genetics to obesity in adolescents (Lawrence Dolan, MD)

**Human Genetics** » Lisa Martin, PhD

The effect of maternal type 1 diabetes on adolescents and young adult offspring with a focus on obesity and carbohydrate metabolism (Lawrence Dolan, MD)

**Biostatistics and Epidemiology** » Jane Khoury, PhD and Heidi Sucharew, PhD

**Human Genetics** » Lisa Martin, PhD

Creation of clinical database for the Comprehensive Weight Management Center (Nancy Crimmins, MD, MS)

**Biostatistics and Epidemiology** » Jessica Woo, PhD

Study of Clinical Efficacy of Three Month Depot GnRH Agonist in Suppression of Central Puberty (Susan Rose, MD; Deborah Elder, MD; Nana-Hawa Yayah Jones, MD; Mandi Cafasso, CNP)

**Biostatistics and Epidemiology** » Jane Khoury, PhD and Lindsey Hornung

Study of birth length, growth patterns and GH therapy in patients with Diamond Blackfan anemia (Susan Rose, MD; Jonathan Howell, MD, PhD)

**Biostatistics and Epidemiology** » Jane Khoury, PhD and Lindsey Hornung

Development of reference growth curves for Fanconi Anemia (Susan Rose, MD; Jonathan Howell, MD, PhD)

**Biostatistics and Epidemiology** » Jane Khoury, PhD and Lindsey Hornung

Analysis of Prospective Annual Adrenocorticotropin (ACTH) Stimulation Testing among Survivors of Intracranial Tumor, a retrospective study (Susan Rose, MD)

**Biostatistics and Epidemiology** » Jane Khoury, PhD and Lindsey Hornung

**Oncology** » Maryam Fouladi, MD and Karen C. Burns, MD, MS

**Bone Marrow Transplantation and Immune Deficiency** » Kasiani Myers, MD

Late Endocrine effects despite reduced intensity chemotherapy for bone marrow transplantation in children (Susan Rose, MD)

**Biostatistics and Epidemiology** » Adam Lang

Study of the effects of growth hormone on patients with Crohn's disease (David Klein, MD, PhD)

**Gastroenterology, Hepatology and Nutrition** » Lee Denson, MD

Phase 4 HOME study: Impact of PBDE & PFC exposures on internalizing behaviors and neuroimaging outcomes (Susan Rose, MD)

**General and Community Pediatrics** » Maria Britto, MD, MPH and Kimberly Yolton, PhD

Hereditary Cancer Predisposition Clinic (Susan Rose, MD)

**Human Genetics** » Nancy Leslie, PhD

Center for Better Health and Nutrition clinical collaboration (Nancy Crimmins, MD, MS)

**Healthworks; Preventive Cardiology; Gastroenterology** » Holly Ippisch, MD, Robert Siegel, MD, and Stavra Xanthakos, MD, MS

Research, database, and multicenter care of patients with Fanconi Anemia and other bone marrow failure syndromes (Susan Rose, MD)

**Bone Marrow Transplantation and Immune Deficiency** » Stella Davies, MD and Parinda Mehta, MD

Late endocrine effects despite reduced intensity chemotherapy for bone marrow transplantation in children (Susan Rose, MD)

**Bone Marrow Transplantation and Immune Deficiency** » Sonata Jodele, MD and Kasiani Myers, MD

Study of endocrine effects after new treatment modality for high risk medulloblastoma (Susan Rose, MD)

**Oncology** » Maryam Fouladi, MD

Pediatric tectal plate gliomas: a review of clinical outcomes, endocrinopathies, and neuropsychiatric sequelae (Susan Rose, MD; Meilan Rutter, MD)

**Oncology** » Maryam Fouladi, MD and David Glass, MD

**Neuromuscular Center** » Mary Sutton, MD

**Physical Medicine and Rehabilitation** » David Pruitt, MD

Translational study of bariatric surgery and vagotomy in hypothalamic obesity (Susan Rose, MD)

**Pediatric General and Thoracic Surgery** » Thomas H. Inge, MD, PhD, FACS, FAAP

Preclinical Cerebrovascular Disease in Adolescents with Type 2 Diabetes (Lawrence Dolan, MD; Amy Shah, MD, MS)

**Neuroimaging Research Consortium** » Scott Holland, PhD, Jennifer Vannest, PhD, and Gregory Lee, PhD

IGF-1 therapy and muscle function in Duchenne Muscular Dystrophy research study (Meilan Rutter, MD; Philippe Backeljauw, MD)

**Comprehensive Neuromuscular Center** » Brenda Wong, MD, James Collins, MD, and Irina Rybalsky, MD

Studies of osteoporosis in Duchenne Muscular Dystrophy (Meilan Rutter, MD)

**Comprehensive Neuromuscular Center** » Brenda Wong, MD and Irina Rybalsky, MD

Studies of endocrine therapies (growth hormone, metformin, testosterone) in Duchenne Muscular Dystrophy (Meilan Rutter, MD)

**Comprehensive Neuromuscular Center** » Brenda Wong, MD and Irina Rybalsky, MD

Research, database and interdisciplinary team care of patients with Duchenne Muscular Dystrophy (Meilan Rutter, MD)

**Comprehensive Neuromuscular Center** » Brenda Wong, MD and James Collins, MD



## **Biostatistics and Epidemiology » Jane Khoury, PhD**

Quantative analysis of description factors in normal and pathologic placentas (Stuart Handwerger, MD)

**Pathology and Laboratory Medicine » Jerzy Stanek, MD, PhD and Rachel Sheridan, PhD**

Project to see if Metformin given at the initiation of anti-psychotic treatment can prevent weight accretion, which occurs commonly in children on these agents (David Klein, MD, PhD)

**Psychiatry » Michael Sorter, MD and Mary Matias-Akhtar, MD**

Impaired Fasting Glucose and Indeterminate Glucose Tolerance in a Cystic Fibrosis Population (Two and Four Year Clinical Outcomes) (Deborah Elder, MD)

**Pulmonary Medicine » Gary McPhail, MD**

Blood Glucose Monitoring in the hospitalized patient with Cystic Fibrosis - Validation of the expert opinion using Continuous Glucose Monitoring (Deborah Elder, MD)

**Pulmonary Medicine » Gary McPhail, MD**

NIH funded grant of Triptorelin therapy in lupus patients (Susan Rose, MD)

**Rheumatology » Hermine Brunner, MD**

Physical Fitness in Childhood and Longterm Cardiovascular Disease (Lawrence Dolan, MD)

**Sports Medicine » Gregory Myer, PhD**

Bariatric surgery in youth: safety, efficacy, and effect on carbohydrate and cardiovascular outcomes (Lawrence Dolan, MD; Susan Rose, MD)

**Pediatric General and Thoracic Surgery » Thomas H. Inge, MD, PhD, FACS, FAAP**

International Hypothalamic Obesity Registry (Susan Rose, MD)

**Pediatric General and Thoracic Surgery » Thomas H. Inge, MD, PhD, FACS, FAAP**

HDL subspecies and their changes post bariatric surgery (Amy Shah, MD; Lawrence Dolan, MD)

**Pediatric General and Thoracic Surgery » Thomas H. Inge, MD, PhD, FACS, FAAP**

Translational study of bariatric surgery and vagotomy in hypothalamic obesity (Susan Rose, MD)

**Pediatric General and Thoracic Surgery » Thomas H. Inge, MD, PhD, FACS, FAAP**

## **Grants, Contracts, and Industry Agreements**

Grant and Contract Awards

Annual Direct

BRADY, C

**A Pilot Study to Assess Pre-clinical Cerebrovascular Disease in Youth with Type 2 Diabetes**

Endocrine Fellows Foundation

05/01/14-04/30/15

\$7,500

DOLAN, L

<b>Air Pollution, Subclinical CVD and Inflammatory Markers in the SEARCH Cohort</b>		
National Institutes of Health(University of Maryland)		
R01 ES 019168	09/27/11-06/30/15	\$16,299
<b>SEARCH for Diabetes in Youth, Phase 3: Registry Study</b>		
Centers for Disease Control and Prevention		
U18 DP 002709	09/30/10-09/29/15	\$399,829
<b>GUTMARK LITTLE, I</b>		
<b>Assessment of Risk for Progression of Aortic Dilatation in Turner Syndrome Using Computational Fluid Dynamics</b>		
Chester County Community Foundation		
	04/01/14-03/31/17	\$35,000
<b>GUTMARK I / AMIN R / FLECK R / SHOTT S (MPI)</b>		
<b>Dynamic Computational Modeling of Obstructive Sleep Apnea in Down Syndrome</b>		
National Institutes of Health		
R01 HL 105206	09/17/10-08/31/15	\$702,133
<b>HANDWERGER, S</b>		
<b>Transcriptional Control of Human Placental Differentiation</b>		
National Institutes of Health		
R01 HD 065339	02/01/11-01/31/16	\$210,299
<b>NAKAMURA, T</b>		
<b>Analysis of Pathogenic Double-Stranded RNA in Chronic Inflammatory Disease</b>		
Japan Science and Technology Corporation		
	02/11/13-03/31/16	\$112,420
<b>Functional Analysis of PKR, JNK, and RISC in Metabolic Inflammation and Homeostasis</b>		
American Heart Association		
11SDG5270010	01/01/13-12/31/14	\$70,000
<b>SHAH, A</b>		
<b>Cerebrovascular Changes in Youth with Type 2 Diabetes</b>		
University of Cincinnati		
	09/01/13-06/13/14	\$40,000
<b>Understanding the Role of HDL Subspecies in Adolescents</b>		
National Institutes of Health		
K23 HL 118132	04/15/14-03/31/19	\$143,605
<b>Current Year Direct</b>		<b>\$1,737,085</b>
<b>Industry Contracts</b>		
<b>BACKELJAUW, P</b>		

Eli Lilly and Company	\$4,287
Novo Nordisk Pharmaceuticals	\$10,975
Versartis, Inc	\$3,850
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<b>DOLAN, L</b>	
Jaeb Center for Health Research Inc.	\$11,781
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<b>KLEIN, D</b>	
Novo Nordisk Pharmaceuticals	\$15,951
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<b>ROSE, S</b>	
Debiopharm SA	\$14,580
Pfizer, Inc.	\$18,204
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<b>Current Year Direct Receipts</b>	
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<b>\$79,628</b>	
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<b>Total</b>	
<b>\$1,816,713</b>	