

Division Photo



First Row (left to right): Bob Siegel, Robert Beekman, Kan Hor, Angela Lorts, Jeffrey Towbin, Jeff Anderson, Lisa Lee, Haleh Heydarian, Second Row: Tom Kimball, Shelley Kirk, Catherine Krawczeski, Jeanne James, Holly Ippisch, Linda Cripe, Karen Uzark, Jim Cnota Third Row: Robert Spicer, Russel Hirsch, D. Woodrow Benson, Rick Czosek, Tim Knifans, Stephanie Ware, Robert Hinton. Absent from picture: Randy Claytor, Allison Divanovic, Bill Gottliebson, Ryan Leahy, Brad Marino, Richard Meyer, Erik Michelfelder, Elaine Urbina

Division Data Summary

Research and Training Details

Number of Faculty	25
Number of Joint Appointment Faculty	2
Number of Support Personnel	79
Direct Annual Grant Support	\$1,085,841
Direct Annual Industry Support	\$38,760
Peer Reviewed Publications	73

Clinical Activities and Training

Number of Clinical Staff	2
Number of Clinical Fellows	10
Inpatient Encounters	2005
Outpatient Encounters	11,212

Division Highlights

Anderson

Anderson J, Beekman R, Uzark K, Marino BS Predictors of poor interstage growth in infants with a single ventricle. *Congenital Heart Disease* 2009;4:63-65.

(National presentation at the Section on Cardiology and Cardiac Surgery of the American Academy of Pediatrics National Conference and Exhibition, Boston, MA, 2008, 1st Place Young Investigator Competition)

Marino

Tomlinson RS, Ittenbach R, Wernovsky G, Helfaer MA, Mahony L, Newburger J,

Mussatto K, Tong E, Jacobs JP, Buchakjian E, Drotar D, Marino BS.

Indicators of disease severity predict long-term quality of life in the pediatric cardiac surgical population. *Ped Crit Care Med* 2009 (In Press)

(National presentation at the 7th Pediatric Cardiac Intensive Care Symposium, Miami, FL, 2008, Awarded Outstanding Abstract for Poster Presentation)

Faculty Members

Towbin Jeffrey, MD, FAAP, FACC, FAHA, Professor ; *Executive Co-Director, The Heart Institute; Director and Chief, Division of Cardiology*

Research Interests: Cardiomyopathy and Genetics

Robert Beekman, MD, Professor ; *Co-Medical Director, Cardiology*

Research Interests: Cardiac Catheterization & Intervention, Quality Improvement, Coarctation of the Aorta

D. Woodrow Benson, MD, PhD, Professor ; *Director, Cardiovascular Genetics*

Research Interests: Cardiovascular Genetics

Randal Claytor, PhD, Adjunct Associate Professor

James F. Cnota, MD, Associate Professor Clinical

Research Interests: Fetal Cardiology

Linda H. Cripe, MD, Associate Professor Clinical

Research Interests: Cardiomyopathies, Neuromuscular Disorders, Echocardiography

Richard Czosek, MD, Assistant Professor

Research Interests: Cardiac pacing devices in pediatric and congenital heart disease patients and arrhythmia risk stratification in the pediatric population

William Gottliebson, MD, Assistant Professor Clinical ; *Director, MRI Cardiology*

Research Interests: Cardiac MRI techniques to evaluate myocardial function, synchrony, and energetics.

Haleh Heydarian, MD, Instructor Clinical

Research Interests: Echocardiography synchrony/strain imaging

Robert B. Hinton, MD, Assistant Professor

Research Interests: Cardiovascular Genetics & Developmental Biology

Russel Hirsch, MD, Associate Professor Clinical ; *Director, Cardiac Catheterization Lab*

Research Interests: Cardiac Catheterization & Intervention, Device Development

Kan Hor, MD, Assistant Professor Clinical

Research Interests: MRI technology to diagnose and follow heart disease, in particular DMD cardiomyopathy.

Holly M. Ippisch, MD, Instructor Clinical

Research Interests: Echocardiography, preventative cardiology and pediatric obesity.

Thomas R. Kimball, MD, Professor ; *Co-Medical Director, Cardiology; Director, Cardiac Ultrasound; Director, Cardiovascular Imaging Core Research Lab*

Research Interests: Echocardiography, Ventricular function, Cardiovascular Effects of Obesity and Type II Diabetes.

Shelley Kirk, PhD, RD, LD, Assistant Professor Clinical

Research Interests: The efficacy, safety and feasibility of interventions for the management of pediatric obesity.

Timothy Knilans, MD, Associate Professor Clinical ; *Director, Electrophysiology & Pacing*

Research Interests: Identification and risk stratification of causes of sudden death.

Catherine Krawczeski, MD, Associate Professor Clinical ; *Director, CICU*

Research Interests: The effects of cardiopulmonary bypass and postoperative physiology on extra-cardiac organ systems in the pediatric cardiac surgical patient.

Ryan Leahy, MD, Instructor Clinical

Angela Lorts, MD, Assistant Professor Clinical

Research Interests: Heart failure and myocardial remodeling

Bradley S. Marino, MD, MPP, MSCE, Associate Professor ; *Director, Heart Institute Research Core*

Research Interests: Outcomes Research

Richard A. Meyer, MD, Adjunct Professor

Research Interests: Adult Congenital Heart Disease and Marfan/EDS

Erik Michelfelder, MD, Associate Professor ; *Director, Fetal Cardiology*

Research Interests: Fetal Cardiology and Echocardiography

Robert Spicer, MD, Professor ; *Co-Director Fellowship Program; Medical Director, Cardiac Transplantation Program*

Research Interests: Heart Failure Transplant

Elaine Urbina, MD, Associate Professor

Research Interests: Relating non-invasive vascular measures of carotid ultrasound, arterial stiffness and endothelial function to conditions such as CV risk factors, obesity, diabetes, renal disease and sleep disorders.

Karen Uzark, PhD, Associate Professor ; *Director, Cardiac Process Improvement & Clinical Effectiveness*

Research Interests: Heart Transplant, Quality of Life, Outcomes in Children with Heart Disease

Joint Appointment Faculty Members

Jeanne James, MD, Research Associate Professor

Molecular Cardiovascular Biology

Molecular cardiology and animal models of cardiac disease.

Ware Stephanie, MD, Assistant Professor

Human Genetics

Cardiovascular Genetics

Clinical Staff Members

- **Lisa Lee, MD**

Trainees

- **Jeff Anderson, MD**, PL7, UNC Hospital, Chapel Hill, NC
- **Allison Divanovic, MD**, PL7, Cincinnati Children's Hospital/University of Cincinnati
- **Jamie Sutherell, MD**, PL7, Washington University/St. Louis Children's, MO
- **John Hambrook, MD**, PL6, Eastern Virginia Medical School, Norfolk, VA
- **David Crowley, MD**, PL5, Barbara Bush Children's Hospital, Portland, ME
- **Sean Hagenbuch, MD**, PL5, Baystate Medical Center, Springfield, MA
- **Steven Kindel, MD**, PL5, Children's Memorial Hospital, Chicago, IL
- **Chike Madueme, MD**, PL4, Cincinnati Children's Hospital/University of Cincinnati
- **Mark Norris, MD**, PL6, Cincinnati Children's Hospital/University of Cincinnati
- **Matt Zussman, MD**, PL4, UNC, Chapel Hill, NC

Significant Accomplishments

The Heart Institute Research Core (HIRC)

In the 2008-2009 Fiscal Year, The Heart Institute (HI) began strategic planning for the Heart Institute Research Core (HIRC).

The Vision of HIRC is "HIRC will accelerate innovative clinical and translational research to make the HI the world leader in improving outcomes for pediatric cardiovascular disease and disease risk".

The Mission of HIRC is "HIRC supports innovative clinical and translational science by facilitating the design of research processes, the implementation of research plans, the dissemination and application of findings and the development of research professionals".

The goals for HIRC include:

Increase productivity of high quality innovative research.

Develop national and international reputation for the Heart Institute.

Facilitate research that will ultimately improve patient outcomes and experiences.

HIRC will become increasingly self supporting over time.

Develop a clearly defined research process that supports the education, development and productivity of HIRC professionals.

Develop guidelines, approved by Heart Institute research leadership, to equitably allocate resources.

Design and implement a dynamic infrastructure, including the identification of current and future space needs that facilitates the achievement of research and scholarly goals.

Facilitate collaboration among specialties within the HI, as well as across the medical center and pediatric community worldwide.

Develop the personnel both within HIRC and the HI who will provide teaching and education support for translational and clinical research.

HIRC's organization design team is currently researching best practices with internal and external organizations to create a robust infrastructure for the conduct of pediatric cardiovascular research. HI investigators will have access to HIRC resources beginning Fall 2009.

The Development of the The Center for Better Health and Nutrition

The Center for Better Health and Nutrition is the comprehensive obesity treatment, management and prevention of arm of the Heart Institute at Cincinnati Children's. The center will focus on patient care, education and research. Prior to the new center, overweight children were seen in several different clinics, including the Comprehensive Weight Management program, HealthWorks! and the Abnormal Weight Gain Clinic. All these services will now fall under the umbrella of the new center. It is planned to have clinics of the Center of Better and Nutrition at the satellite facilities of CCHMC to make the program more accessible. It is the goal to develop the Center for Better Health and Nutrition into a nationally recognized center for excellence in obesity management, clinical obesity research and education and clinical services for health and activity.

New Programs

New programs have been developed in the Division of Cardiology including the Pediatric Cardiomyopathy and Heart Failure Service directed by Dr. Jeffrey Towbin, Cardiovascular Genetics Service co-Directed by Dr. Stephanie Ware and Dr. Towbin, and the Better Health and Nutrition Program directed by Dr. Bob Siegel. In addition, the Cardiovascular Diagnostic Laboratory, which will provide genetic testing for cardiovascular disease as well as viral genome testing of heart for myocarditis and transplant rejection, as well as other tissue and fluid specimens, has been developed under the direction of Drs. Towbin and Ware. Dr. Cong Liu has been recruited as Associate Scientific Director of this Laboratory.

Division Publications

1. Balasa V, Smith FO, Marino BS. **"Hematology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 117-142.
2. Border W, Marino BS. **"Syncope."** *Schwartz's clinical handbook of pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 863-868.
3. Burns KC, Nagarajan R, Smith FO, Marino BS. **"Oncology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 260-279.
4. Cohen M, Marino BS. **"Gastroenterology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 88-105.
5. Elder D, Handwerger S, Marino BS. **"Endocrinology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 66-80.
6. Hor K, Marino BS. **"Chest pain."** *Schwartz's Clinical Handbook of Pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 229-236.
7. Knilans TK. **"Arrhythmias."** *Cardiovascular pediatric critical illness and injury*. London: Springer; 2009: 203-215.
8. Lorts A, Krawczeski CD, Marino BS. **"Cardiology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 22-50.
9. Marino BS, Claybon E. **"Emergency management: evaluation of the critically ill or injured child."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 1-10.
10. Marino BS, Claybon E. **"Genetic disorders."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 106-116.
11. Marino BS, Kaltman JR, Tanel RE. **"Rogers' handbook of pediatric intensive care."** *Rogers' Handbook of Pediatric Intensive Care*. Philadelphia, PA: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 392-404.

12. Marino BS, Mellion K, Greenberg JM. **"Neonatology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 185-217.
13. Perman M, Lucky A, Marino BS. **"Dermatology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 56-65.
14. Ramaciotti C, Marino BS. ["Schwartz's clinical handbook of pediatrics."](#) *Schwartz's Clinical Handbook of Pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 288-295.
15. West C, Fine KS, Marino BS. **"Ophthalmology."** *Blueprints pediatrics*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2009: 280-286.
16. Bigham MT, Amato R, Bondurant P, Fridriksson J, Krawczeski CD, Raake J, Ryckman S, Schwartz S, Shaw J, Wells D, Brill R. [Ventilator-associated pneumonia in the pediatric intensive care unit: characterizing the problem and implementing a sustainable solution](#). *J Pediatr*. 2009; 154: 582-587 e2.
17. Hor KN, Wansapura J, Markham LW, Mazur W, Cripe LH, Fleck R, Benson DW, Gottliebson WM. [Circumferential strain analysis identifies strata of cardiomyopathy in Duchenne muscular dystrophy: a cardiac magnetic resonance tagging study](#). *J Am Coll Cardiol*. 2009; 53: 1204-10.
18. Brothers JA, McBride MG, Marino BS, Tomlinson RS, Seliem MA, Pampaloni MH, Gaynor JW, Spray TL, Paridon SM. [Exercise performance and quality of life following surgical repair of anomalous aortic origin of a coronary artery in the pediatric population](#). *J Thorac Cardiovasc Surg*. 2009; 137: 380-4.
19. Dawkins TN, Barclay CA, Gardiner RL, Krawczeski CD. [Safety of intravenous use of ketorolac in infants following cardiothoracic surgery](#). *Cardiol Young*. 2009; 19: 105-8.
20. Marino BS, Kruger LE, Cho CJ, Tomlinson RS, Shera D, Weinberg PM, Gaynor JW, Rychik J. [Parachute mitral valve: morphologic descriptors, associated lesions, and outcomes after biventricular repair](#). *J Thorac Cardiovasc Surg*. 2009; 137: 385-393 e4.
21. Hsu DT, Mital S, Ravishankar C, Margossian R, Li JS, Sleeper LA, Williams RV, Levine JC, McCrindle BW, Atz AM, Servedio D, Mahony L. [Rationale and design of a trial of angiotensin-converting enzyme inhibition in infants with single ventricle](#). *Am Heart J*. 2009; 157: 37-45.
22. Puchalski MD, Williams RV, Askovich B, Sower CT, Hor KH, Su JT, Pack N, Dibella E, Gottliebson WM. [Late gadolinium enhancement: precursor to cardiomyopathy in Duchenne muscular dystrophy?](#). *Int J Cardiovasc Imaging*. 2009; 25: 57-63.
23. Rossano JW, Denfield SW, Kim JJ, Price JF, Jefferies JL, Decker JA, Smith EO, Clunie SK, Towbin JA, Dreyer WJ. [Assessment of the Cylex ImmuKnow cell function assay in pediatric heart transplant patients](#). *J Heart Lung Transplant*. 2009; 28: 26-31.
24. Lorts A, Schwanekamp JA, Elrod JW, Sargent MA, Molkentin JD. [Genetic manipulation of periostin expression in the heart does not affect myocyte content, cell cycle activity, or cardiac repair](#). *Circ Res*. 2009; 104: e1-7.
25. Khoury PR, Mitsnefes M, Daniels SR, Kimball TR. [Age-specific reference intervals for indexed left ventricular mass in children](#). *J Am Soc Echocardiogr*. 2009; 22: 709-14.
26. McBride KL, Zender GA, Fitzgerald-Butt SM, Koehler D, Menesses-Diaz A, Fernbach S, Lee K, Towbin JA, Leal S, Belmont JW. [Linkage analysis of left ventricular outflow tract malformations \(aortic valve stenosis, coarctation of the aorta, and hypoplastic left heart syndrome\)](#). *Eur J Hum Genet*. 2009; 17: 811-9.
27. Urbina EM, Kimball TR, McCoy CE, Khoury PR, Daniels SR, Dolan LM. [Youth with obesity and obesity-related type 2 diabetes mellitus demonstrate abnormalities in carotid structure and function](#). *Circulation*. 2009; 119: 2913-9.
28. Gavri S, Hirsch R, DiSessa T, Beekman RH. [Transcatheter closure of a peripheral arteriovenous fistula: a unique use of a covered stent in a child with complex congenital heart disease](#). *Congenit Heart Dis*. 2009; 4: 115-119.
29. Hersberger RE, Lindenfeld J, Mestroni L, Seidman CE, Taylor MR, Towbin JA. [Genetic evaluation of cardiomyopathy--a Heart Failure Society of America practice guideline](#). *J Card Fail*. 2009; 15: 83-97.
30. Morrison JA, Glueck CJ, Horn PS, Schreiber GB, Wang P. [Homeostasis model assessment of insulin resistance*body mass index interactions at ages 9 to 10 years predict metabolic syndrome risk factor aggregate score at ages 18 to 19 years: a 10-year prospective study of black and white girls](#). *Metabolism*. 2009; 58: 290-5.
31. Weaver DJ, Jr., Kimball TR, Koury PR, Mitsnefes MM. [Cardiac output and associated left ventricular hypertrophy in pediatric chronic kidney disease](#). *Pediatr Nephrol*. 2009; 24: 565-70.
32. Mohapatra B, Casey B, Li H, Ho-Dawson T, Smith L, Fernbach SD, Molinari L, Niesh SR, Jefferies JL, Craigen WJ, Towbin JA, Belmont JW, Ware SM. [Identification and functional characterization of NODAL rare variants in heterotaxy and isolated cardiovascular malformations](#). *Hum Mol Genet*. 2009; 18: 861-71.
33. Hinton RB, Martin LJ, Rame-Gowda S, Tabangin ME, Cripe LH, Benson DW. [Hypoplastic left heart syndrome links](#)

- [to chromosomes 10q and 6q and is genetically related to bicuspid aortic valve](#) . *J Am Coll Cardiol*. 2009; 53: 1065-71.
34. Glueck CJ, Morrison JA, Goldenberg N, Wang P. [Coronary heart disease risk factors in adult premenopausal white women with polycystic ovary syndrome compared with a healthy female population](#) . *Metabolism*. 2009; 58: 714-21.
35. Singh HR, Yang Z, Siddiqui S, Pena LS, Westerfield BH, Fan Y, Towbin JA, Vatta M. [A novel Alu-mediated Xq28 microdeletion ablates TAZ and partially deletes DNL1L in a patient with Barth syndrome](#) . *Am J Med Genet A*. 2009; 149A: 1082-5.
36. Ware SM, El-Hassan N, Kahler SG, Zhang Q, Ma YW, Miller E, Wong B, Spicer RL, Craigen WJ, Kozel BA, Grange DK, Wong LJ. [Infantile cardiomyopathy caused by a mutation in the overlapping region of mitochondrial ATPase 6 and 8 genes](#) . *J Med Genet*. 2009; 46: 308-14.
37. Sund KL, Roelker S, Ramachandran V, Durbin L, Benson DW. [Analysis of Ellis van Creveld syndrome gene products: implications for cardiovascular development and disease](#) . *Hum Mol Genet*. 2009; 18: 1813-24.
38. Bennett MR, Ravipati N, Ross G, Nguyen MT, Hirsch R, Beekman RH, Rovner L, Devarajan P. [Using proteomics to identify preprocedural risk factors for contrast induced nephropathy](#) . *Proteomics Clin Appl*. 2008; 2: 1058-1064.
39. Miyano G, Inge TH, Daniels SD, Ippisch HM. [Bariatric surgery for treatment of morbid obesity in an adolescent with marfan syndrome](#) . *Prog Pediatr Cardiol*. 2008; 25: 183-189.
40. Wheeler DS, Dent CL, Devarajan P, Kooy NW. ["Acute kidney injury following cardiopulmonary bypass."](#) *Pediatric nephrology in the ICU*. Berlin ; London: Springer; 2008: 261-274.
41. Nathan AT, Marino BS, Hanna B, Nicolson SC. [Novel use of dexmedetomidine in a patient with pulmonary hypertension](#) . *Paediatr Anaesth*. 2008; 18: 782-4.
42. Nguyen MT, Dent CL, Ross GF, Harris N, Manning PB, Mitsnefes MM, Devarajan P. [Urinary aprotinin as a predictor of acute kidney injury after cardiac surgery in children receiving aprotinin therapy](#) . *Pediatr Nephrol*. 2008; 23: 1317-26.
43. Perrin JM, Friedman RA, Knilans TK. [Cardiovascular monitoring and stimulant drugs for attention-deficit/hyperactivity disorder](#) . *Pediatrics*. 2008; 122: 451-3.
44. Wilson AC, Urbina E, Witt SA, Glascock BJ, Kimball TR, Mitsnefes M. [Flow-mediated vasodilatation of the brachial artery in children with chronic kidney disease](#) . *Pediatr Nephrol*. 2008; 23: 1297-302.
45. Cooper DS, Jacobs JP, Chai PJ, Jagers J, Barach P, Beekman RH, Krogmann O, Manning P. [Pulmonary complications associated with the treatment of patients with congenital cardiac disease: consensus definitions from the Multi-Societal Database Committee for Pediatric and Congenital Heart Disease](#) . *Cardiol Young*. 2008; 18 Suppl 2: 215-21.
46. Czosek RJ, Berul CI. [Congenital long-QT syndrome concealed by hypercalcemia in Williams Syndrome](#) . *J Cardiovasc Electrophysiol*. 2008; 19: 1322-4.
47. Jenkins KJ, Beekman RH, Bergersen LJ, Everett AD, Forbes TJ, Franklin RC, Klitzner TS, Krogman ON, Martin GR, Webb CL. [Databases for assessing the outcomes of the treatment of patients with congenital and paediatric cardiac disease--the perspective of cardiology](#) . *Cardiol Young*. 2008; 18 Suppl 2: 116-23.
48. Kaufman BD, Shaddy RE, Shirali GS, Tanel R, Towbin JA. [Assessment and management of the failing heart in children](#) . *Cardiol Young*. 2008; 18 Suppl 3: 63-71.
49. Michelfelder E, Polzin W, Hirsch R. [Hypoplastic left heart syndrome with intact atrial septum: Utilization of a hybrid catheterization facility for cesarean section delivery and prompt neonatal intervention](#) . *Catheter Cardiovasc Interv*. 2008; 72: 983-7.
50. Hor KN, Border WL, Cripe LH, Benson DW, Hinton RB. [The presence of bicuspid aortic valve does not predict ventricular septal defect type](#) . *Am J Med Genet A*. 2008; 146A: 3202-5.
51. Qian L, Mohapatra B, Akasaka T, Liu J, Ocorr K, Towbin JA, Bodmer R. [Transcription factor neuromancer/TBX20 is required for cardiac function in Drosophila with implications for human heart disease](#) . *Proc Natl Acad Sci U S A*. 2008; 105: 19833-8.
52. Hehir DA, Dominguez TE, Ballweg JA, Ravishankar C, Marino BS, Bird GL, Nicolson SC, Spray TL, Gaynor JW, Tabbutt S. [Risk factors for interstage death after stage 1 reconstruction of hypoplastic left heart syndrome and variants](#) . *J Thorac Cardiovasc Surg*. 2008; 136: 94-9, 99 e1-3.
53. Mays WA, Border WL, Knecht SK, Gerdes YM, Pfriem H, Claytor RP, Knilans TK, Hirsch R, Mone SM, Beekman RH, 3rd. [Exercise capacity improves after transcatheter closure of the Fontan fenestration in children](#) . *Congenit Heart Dis*. 2008; 3: 254-61.
54. McMullan DM, Reddy VM, Gottliebson WM, Silverman NH, Perry SB, Chan F, Hanley FL, Riemer RK. [Morphological studies of pulmonary arteriovenous shunting in a lamb model of superior cavopulmonary anastomosis](#) .

55. Roessler E, Ouspenskaia MV, Karkera JD, Velez JI, Kantipong A, Lacbawan F, Bowers P, Belmont JW, Towbin JA, Goldmuntz E, Feldman B, Muenke M. [Reduced NODAL signaling strength via mutation of several pathway members including FOXH1 is linked to human heart defects and holoprosencephaly](#). *Am J Hum Genet.* 2008; 83: 18-29.
56. Cook AL, Cnota JF. [Fetal echocardiographic imaging of ventricular noncompaction](#). *Cardiol Young.* 2008; 18: 351-2.
57. Ganame J, Pignatelli RH, Eidem BW, Claus P, D'Hooge J, McMahon CJ, Buyse G, Towbin JA, Ayres NA, Mertens L. [Myocardial deformation abnormalities in pediatric hypertrophic cardiomyopathy: are all etiologies identical?](#). *Eur J Echocardiogr.* 2008; 9: 784-90.
58. Mulvagh SL, Rakowski H, Vannan MA, Abdelmoneim SS, Becher H, Bierig SM, Burns PN, Castello R, Coon PD, Hagen ME, Jollis JG, Kimball TR, Kitzman DW, Kronzon I, Labovitz AJ, Lang RM, Mathew J, Moir WS, Nagueh SF, Pearlman AS, Perez JE, Porter TR, Rosenbloom J, Strachan GM, Thanigaraj S, Wei K, Woo A, Yu EH, Zoghbi WA. [American Society of Echocardiography Consensus Statement on the Clinical Applications of Ultrasonic Contrast Agents in Echocardiography](#). *J Am Soc Echocardiogr.* 2008; 21: 1179-201; quiz 1281.
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60. Gudauskas TM, Hirsch R, Khoury PR, Beekman RH, 3rd. [Comparison of two transcatheter device strategies for occlusion of the patent ductus arteriosus](#). *Catheter Cardiovasc Interv.* 2008; 72: 675-80.
61. Glueck CJ, Morrison JA, Wang P. [Insulin resistance, obesity, hypofibrinolysis, hyperandrogenism, and coronary heart disease risk factors in 25 pre-perimenarchal girls age > or =14 years. 13 with precocious puberty. 23 with a first-degree relative with polycystic ovary syndrome](#). *J Pediatr Endocrinol Metab.* 2008; 21: 973-84.
62. Habli M, Michelfelder E, Livingston J, Harmon J, Lim FY, Polzin W, Crombleholme T. [Acute effects of selective fetoscopic laser photocoagulation on recipient cardiac function in twin-twin transfusion syndrome](#). *Am J Obstet Gynecol.* 2008; 199: 412 e1-6.
63. Hinton RB, Andelfinger G, Sekar P, Hinton AC, Gendron RL, Michelfelder EC, Robitaille Y, Benson DW. [Prenatal head growth and white matter injury in hypoplastic left heart syndrome](#). *Pediatr Res.* 2008; 64: 364-9.
64. Ly S, Marcus FI, Xu T, Towbin JA. [A woman with incidental findings of ventricular aneurysms and a desmosomal cardiomyopathy](#). *Heart Rhythm.* 2008; 5: 1455-7.
65. Ohye RG, Gaynor JW, Ghanayem NS, Goldberg CS, Laussen PC, Frommelt PC, Newburger JW, Pearson GD, Tabbutt S, Wernovsky G, Wruck LM, Atz AM, Colan SD, Jagers J, McCrindle BW, Prakash A, Puchalski MD, Sleeper LA, Stylianou MP, Mahony L. [Design and rationale of a randomized trial comparing the Blalock-Taussig and right ventricle-pulmonary artery shunts in the Norwood procedure](#). *J Thorac Cardiovasc Surg.* 2008; 136: 968-75.
66. Shah AD, Border WL, Crombleholme TM, Michelfelder EC. [Initial fetal cardiovascular profile score predicts recipient twin outcome in twin-twin transfusion syndrome](#). *J Am Soc Echocardiogr.* 2008; 21: 1105-8.
67. Benson DW. [Thar's tendons in them thar valves!](#). *Circ Res.* 2008; 103: 914-5.
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69. McCoy CE, Urbina EM, Khoury PR, Kimball TR. [Age, race, and gender influence internal carotid artery doppler velocities in children](#). *J Vasc Ultrasound.* 2008; 32: 137-140.
70. Morrison JA, Glueck CJ, Horn PS, Schreiber GB, Wang P. [Pre-teen insulin resistance predicts weight gain, impaired fasting glucose, and type 2 diabetes at age 18-19 y: a 10-y prospective study of black and white girls](#). *Am J Clin Nutr.* 2008; 88: 778-88.
71. Urbina E, Alpert B, Flynn J, Hayman L, Harshfield GA, Jacobson M, Mahoney L, McCrindle B, Mietus-Snyder M, Steinberger J, Daniels S. [Ambulatory blood pressure monitoring in children and adolescents: recommendations for standard assessment: a scientific statement from the American Heart Association Atherosclerosis, Hypertension, and Obesity in Youth Committee of the council on cardiovascular disease in the young and the council for high blood pressure research](#). *Hypertension.* 2008; 52: 433-51.
72. McBride KL, Riley MF, Zender GA, Fitzgerald-Butt SM, Towbin JA, Belmont JW, Cole SE. [NOTCH1 mutations in individuals with left ventricular outflow tract malformations reduce ligand-induced signaling](#). *Hum Mol Genet.* 2008; 17: 2886-93.
73. Ippisch HM, Daniels SD. [Hypertension in overweight and obese children](#). *Prog Pediatr Cardiol.* 2008; 25: 177-182.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct / Project Period Direct

BENSON, W

Genetic Mechanisms of Cardiac Disease in the Young

National Institutes of Health

K24 HL 069712

06/01/06 - 05/31/11

\$161,893 / \$803,810

Preoperative Therapy for Prevention of Postoperative Low Cardiac Output Syndrome

National Institutes of Health

U01 HL 085057

09/04/06 - 08/31/11

\$194,200 / \$1,000,000

Pediatric Heart Disease Clinical Research Network

National Institutes of Health (New England Research Institute)

U01HL68270

12/1/06 - 12/31/12

\$52,942 / \$52,942

Benson, W

Trial of Beta Blocker Therapy
vs Angiotensin II Receptor
Blocker Therapy in Individuals
with Marfan Syndrome

45,833

Krawczeski, C

Single Ventricle
Reconstruction Extension
Study II

7,109

Musculoskeletal Ancillary Study

National Marfan Foundation (Johns Hopkins University)

01/01/09 - 12/31/09

\$18,750 / \$18,750

HINTON, R

Genetic and Developmental Basis of Pediatric Aortic Valve Disease Pathogenesis

National Institutes of Health

K23 HL 085122

08/03/06 - 04/30/11

\$122,815 / \$618,000

KIMBALL, T

Chronic Renal Insufficiency in NAPRTCS Patients

National Institutes of Health (Children's Mercy Hospital - Kansas City)

U01 DK 066143

08/01/08 - 07/31/13

\$55,222 / \$276,110

MARINO, B

Testing in Pediatric Cardiac Quality of Life Inventory

National Institutes of Health

K23 HD 048637

01/01/08 - 12/31/09

\$148,400 / \$434,449

IPPISCH, H

Effects Dietary Fat on Post-Prandial Vascular Function

National Institutes of Health

K23 HL 091174

09/01/08 - 07/31/13

\$125,019 / \$627,746

SCHMIDT, M

CALERIE Phase II Study

National Institutes of Health (Duke University)

U01 AG 022132

09/01/08 - 09/30/08

\$3,213 / \$122,192

CALERIE Phase II Study

National Institutes of Health (Tufts University)

U01 AG 020480

10/01/08 - 4/30/10

\$55,290 / \$103,162

URBINA, E

Vascular Dysfunction In Obesity And Metabolic Syndrome

National Institutes of Health

K23 HL 080447

06/01/06 - 05/31/11

\$128,157 / \$613,894

Modifying Dietary Behavior in Adolescents with Elevated Blood Pressure

Current Year Direct**\$ 1,085,841****Industry Contracts**

Beekman, R

Johns Hopkins University

\$ 8,501

Cripe, L

MedImmune Inc.

\$ 14,365

Hirsch, R

AGA Medical , LLC

\$ 15,894

Current Year Direct Receipts**\$ 38,760**

Total
\$
1,124,601
