

Center for Clinical and Translational Research



Principal Investigators

William E. Smoyer, MD, Director

Jennifer Dyer, MD

Dana S. Hardin, MD

Richard Ransom, PhD

Expansion of clinical and translational research is a strategic priority for The Research Institute at Nationwide Children's Hospital. Existing strengths in basic laboratory and health services research and an outstanding infrastructure for clinical research ideally position Nationwide Children's Hospital for further growth of clinical and translational research initiatives.

Established in 2007, the Center for Clinical and Translational Research is the newest of the The Research Institute's Centers of Emphasis. The Center's faculty are uniquely poised to identify new approaches for the prevention, diagnosis and treatment of childhood diseases, taking research discoveries from the laboratory to the patient's bedside. In addition, state-of-the-art approaches for collection of patient information and biological samples are being used to develop new research initiatives.

Clinical, Teaching And Research Interests

William E. Smoyer, MD, is Director of the Center for Clinical and Translational Research at The Research Institute at Nationwide Children's Hospital and Vice President of Clinical Research at Nationwide Children's Hospital. He holds the C. Robert Kidder Endowed Chair in Pediatric Research. Dr. Smoyer received his engineering and medical degrees from the University of Florida and completed his residency in pediatrics at the University of Texas Medical Branch in Galveston. He also completed a nephrology fellowship at Children's Hospital of Philadelphia and a research fellowship at the University of Pennsylvania. Dr. Smoyer is a basic and clinical scientist with expertise in podocyte biology and newer treatments for nephrotic syndrome. He is on the Steering Committee for a regional pediatric nephrology research network and also has a long-standing history of National Institutes of Health and other extramural funding.

Jennifer Dyer, MD, is an investigator in the Center for Clinical and Translational Research at The Research Institute at Nationwide Children's Hospital, a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and an Assistant Professor of Pediatrics at The Ohio State University College of Medicine. Her research interests are focused on furthering the understanding of the development of type 2 diabetes by studying the effects of nutrition during fetal development and during early postnatal life. Dr. Dyer's current proposals are focused on the study of insulin sensitivity in newborn babies in relation to maternal weight gain. Additional proposals include the study of insulin sensitivity in healthy inner-city toddlers as it relates to maternal nutritional patterns. Her long-term research goal is to develop specific standards of nutrition backed by evidence-based research that prevent the development of type 2 diabetes. In collaboration with Dr. Dana S. Hardin, Dr. Dyer's lab studies patients in a clinical research environment using stable isotopes and hyperinsulinemic euglycemic clamps. Specimens collected from patients in the research laboratory are analyzed for measures of inflammation and insulin function. Dr. Dyer is also in active collaboration with Dr. Matthew Kennedy and Dr. Lynette Rogers, both principal investigators at The Research Institute, for close assessment of both lipid oxidation and breast-milk lipid content. Furthermore, Dr. Dyer is actively collaborating with Dr. Richard Steckel, a leading economic historian at The Ohio State University who has been studying historical heights as a measure of health and socioeconomic disparities since 1975, for analysis of economic contributions to nutrition and subsequently, the fetal origins of diabetes.

Dana S. Hardin, MD, is an investigator in the Center for Clinical and Translational Research at The Research Institute at Nationwide Children's Hospital, an Associate Professor of Pediatrics at The Ohio State University College of Medicine and has an appointment in the Center for Human Nutrition at The Ohio State University. Dr. Hardin is board certified by the American Academy of Pediatrics, the American Academy of Pediatric Endocrinology and the American Board of Physician Nutrition Specialists. She obtained her medical degree from Indiana University in 1986, where she then went on to complete her fellowship and residency finishing in 1993. She has been honored as one of the Best Doctors in America in 2006 and as one of top Pediatricians in 2004, 2005, 2006 and 2007. Dr. Hardin has become well known for her research and teaching. Clinical and research interests include growth disorders, osteoporosis, and

diabetes in the chronically ill. She has multiple grants for studies on chronic illness including the National Institutes of Health (NIH), the National Cystic Fibrosis Foundation, Elizabeth Glaser Pediatric Aids Foundation and other organizations. She has more than 50 peer-reviewed publications and multiple book chapters. She is also an international consultant for growth disorders and a national consultant for the Pediatric Aids Clinical Trial Group. She was recently appointed as a Chair for the NIH Endocrine and Metabolism SBIR Study Section.

Richard Ransom, PhD, is an investigator in the Center for Clinical and Translational Research at The Research Institute at Nationwide Children's Hospital and is an Assistant Professor of Pediatrics at The Ohio State University College of Medicine. Dr. Ransom received his PhD in biochemistry from Purdue University and completed postdoctoral studies in pediatric nephrology at the University of Michigan. His research is focused on the molecular mechanisms underlying both the development of and therapy for nephrotic syndrome, a common kidney disease in both adults and children. His work is based on the hypothesis that glucocorticoids, the most commonly used treatment for nephrotic syndrome, act directly on glomerular podocytes to induce changes in podocyte protein expression, changes that are partly or wholly responsible for the therapeutic action of glucocorticoids.

Research Funding (Over \$50,000)

Dana S. Hardin, MD

Increased Gluconeogenesis Is One Cause of CFRD, National Institute of Diabetes & Digestive & Kidney Diseases, \$360,000

Growth Hormone Registry, Anonymous, \$69,983

Growth Hormone Treatment in Children with JRA, Anonymous, \$59,209

William E. Smoyer, MD

Regulation of Podocyte Structure by the Hsp27 Binding Protein, Hic-5-R56, National Institute of Diabetes & Digestive & Kidney Diseases, \$182,573

Metal Toxicant Effects on Small Heat-Shock Protein Function, University of Michigan/ National Institute of Environmental Health Sciences, \$163,920

Publications

Cramer CH 2nd, Mills M, Valentini RP, Smoyer WE, Haftel H, Brophy PD. Clinical presentation and outcome in a cohort of paediatric patients with membranous lupus nephritis. *Nephrology Dialysis Transplantation* 22(12): 3495-500, 2007 (Epub, July 29, 2007).

Dyer JS, Rosenfeld CR, Rice J, Rice M, Hardin DS. Insulin resistance in Hispanic large-for-gestational-age neonates at birth. *Journal of Clinical Endocrinology and Metabolism* 92(10): 3836-43, 2007.

Gbadegesin R, Smoyer WE. Idiopathic nephrotic syndrome. In: *Clinical Pediatric Nephrology* (Geary D, Schafer F, eds.), 2007.

Hardin DS. Controversial debate: growth hormone and glucose metabolism. *Hormone Research* 67 Suppl 1: 32, 2007.

Hardin DS. A review of the management of two common clinical problems found in patients with cystic fibrosis: Cystic fibrosis-related diabetes and poor growth. *Hormone Research* 68(S5): 113-16, 2007.

Hardin DS, Kemp SE, Allen DB. Twenty years of recombinant human growth hormone in children: relevance to pediatric care providers. *Clinical Pediatrics* 46(4): 279-86, Review, 2007.

Hardin DS, Woo J, Butsch R, Huett B. Current prescribing practices and opinions about growth hormone therapy: results of a nationwide survey of paediatric endocrinologists. *Clinical Endocrinology* 66(1): 85-94, 2007.

Reddy GR, Pushpanathan MJ, Ransom RF, Holzman LB, Brosius FC 3rd, Diakonova M, Mathieson P, Saleem MA, List EO, Kopchick JJ, Frank SJ, Menon RK. Identification of the glomerular podocyte as a target for growth hormone action. *Endocrinology* 148(5): 2045-55, 2007 (Epub, February 1, 2007).

