



2004 Annual Report

Faculty

Dennis M. Bier, M.D., Center Director
 Steven A. Abrams, M.D.
 Cheryl B. Anderson, Ph.D.
 Janice C. Baranowski, M.P.H.
 Tom Baranowski, Ph.D.
 Douglas G. Burrin, Ph.D.
 Nancy F. Butte, Ph.D.
 Joan B. Carter, M.B.A.
 Ning-Hui Cheng, Ph.D.*
 Brian S. Conklin, Ph.D.
 Orla M. Conneely, Ph.D.
 Austin J. Cooney, Ph.D.
 Karen W. Cullen, Dr.P.H.
 Sonia A. Cunningham, Ph.D.
 Teresa A. Davis, Ph.D.
 Debby K. Demory-Luce, Ph.D.
 Kenneth J. Ellis, Ph.D.
 Marta L. Fiorotto, Ph.D.
 Jennifer O. Fisher, Ph.D.
 John P. Foreyt, Ph.D.*
 Ian J. Griffin, M.B., Ch.B.
 Michael A. Grusak, Ph.D.
 Darryl L. Hadsell, Ph.D.
 Peter M. Haney, M.D., Ph.D.
 Morey W. Haymond, M.D.
 William C. Heird, M.D.
 Karen K. Hirschi, Ph.D.
 Kendal D. Hirschi, Ph.D.
 Judy M. Hopkinson, Ph.D.
 Russell P. Jago, Ph.D.*
 Farook Jahoor, Ph.D.
 Craig L. Jensen, M.D.

Heidi E. Karpen, M.D.
 Gerard Karsenty, M.D., Ph.D.
 Alexandre A. Lapillonne, M.D.,
 Ph.D.
 Carlos H. Lifschitz, M.D.
 Ronald L. McNeel, M.S.
 Harry J. Mersmann, Ph.D.
 David D. Moore, Ph.D.
 Kathleen J. Motil, M.D., Ph.D.
 Paul A. Nakata, Ph.D.
 Buford L. Nichols, M.D.
 Theresa A. Nicklas, Dr.P.H.
 Sharon I. O'Donnell, Ph.D.*
 Monique Rijnkels, Ph.D.*
 Jeffrey M. Rosen, Ph.D.
 Robert J. Schwartz, Ph.D.
 Partha Sen, Ph.D.
 Robert J. Shulman, M.D.
 Roman J. Shypailo, B.S.
 C. Wayne Smith, M.D.
 E. O'Brian Smith, Ph.D.
 Janice E. Stuff, Ph.D.
 Agneta L. Sunehag, M.D., Ph.D.
 Agus Surwayan, Ph.D.*
 Deborah I. Thompson, Ph.D.
 Mary P. Thotathuchery, M.A.
 Qiang Tong, Ph.D.
 Chermaine L. Tyler, Ph.D.*
 Ignatia B. Van den Veyver, M.D.
 Robert A. Waterland, Ph.D.*
 William W. Wong, Ph.D.
 Issa F. Zakeri, Ph.D.

*New Faculty

New Faculty

Ning-Hui Cheng, Ph.D.

Instructor

Children's Nutrition Research Center

Prior Appointment: Research Associate, Children's Nutrition Research Center , Department of Pediatrics, Baylor College of Medicine

John P. Foreyt, Ph.D.

Professor

Children's Nutrition Research Center

Primary Appointment: Professor, Department of Medicine, Baylor College of Medicine

Russell P. Jago, Ph.D.

Instructor

Children's Nutrition Research Center

Prior Appointment: Postdoctoral Associate, Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine

Sharon I. O'Donnell, Ph.D.

Instructor

Children's Nutrition Research Center

Prior Appointment: Postdoctoral Fellow, Department of Economics, University of Houston

Monique Rijnkels, Ph.D.

Assistant Professor

Children's Nutrition Research Center

Prior Appointment: Research Associate, Department of Cellular and Molecular Biology, Baylor College of Medicine

Agus Surwayan, Ph.D.

Instructor

Children's Nutrition Research Center

Prior Appointment: Research Associate, Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine

Chermaine L. Tyler, Ph.D.

Instructor

Children's Nutrition Research Center

Prior Appointment: Research Coordinator II, Children's Nutrition Research Center , Department of Pediatrics, Baylor College of Medicine

Robert A. Waterland, Ph.D.

Assistant Professor

Children's Nutrition Research Center

Prior Appointment: Research Fellow in Nutrition Science
Department of Radiation Oncology
Duke University Medical Center

2004 Postdoctoral Fellows

Tung-Mei Chang, M.D.

Jeremy Cottrell, Ph.D.

Jeffrey Escobar, Ph.D.

Paz Etcheverry, Ph.D.

Jason Frank, Ph.D.

Lauren Goldie, Ph.D.

Stéphane Häys, M.D.

Leslie Law-Harris, M.D.

Frances Lynch, M.D.

William Oliver, Ph.D.

Jorge Ordonez, M.D.

Oluyemisi Oyafemi, M.D.

Heather Patrick, Ph.D.

Claudia Robayo, M.D.

Tong Shi, Ph.D.

John Stephens, M.D.

Marta Vasconcelos, Ph.D.

Fei Wang, Ph.D.

2004 Faculty Research Summaries

Steven A. Abrams, M.D.

Dr. Abrams' research focuses on the mineral nutritional needs of infants, children and adolescents. His first major area of interest is in calcium and bone mineral requirements of children. The goal of this work is to evaluate methods for optimizing bone mass in childhood, using stable isotopes to measure calcium absorption and bone kinetics. His second area of interest is in identifying the optimal forms and amount of iron and zinc to provide to small children, especially those who live in developing countries. In these countries, iron deficiency anemia and zinc deficiency are extremely common and strategies must be developed for fortifying food sources and providing complementary foods with adequate amounts of bioavailable minerals. His team frequently travels to other countries to assess these issues and assist in developing research programs using iron and zinc stable isotopes.

Cheryl B. Anderson, Ph.D.

Dr. Anderson's research is aimed at promoting regular physical activity through understanding its determinants, including self-identity as a motivational factor in health behavior. A primary focus is the description and measurement of athletic identity and its relation to physical activity in children, adolescents, and parents, as well as factors that contribute to identity formation, stability, and change. Another focus of her research is the development of psychometrically valid and reliable measurement instruments of attitudes and behaviors, as well as the statistical evaluation of existing measurement instruments that are used in behavioral research.

Janice Baranowski, M.P.H., R.D., L.D.

Ms. Baranowski is interested in dietary and physical activity health promotion, and obesity and chronic disease prevention among children and their families. She designs, implements and evaluates programs to help children and their families change dietary and physical activity behaviors. Ms. Baranowski currently is co-principal investigator on a diet and physical activity badge program for Boy Scouts, and an investigation of influences on availability of fruit, juice and vegetables in the home, and a diabetes prevention trial among middle-school students.

Tom Baranowski, Ph.D.

Dr. Baranowski is interested in obesity and chronic disease prevention among children and their families. Toward this end, he develops and tests new measures of diet and physical activity; assesses correlates of diet and physical activity; and designs, implements and evaluates programs to help children and their families change dietary and physical activity behaviors. He currently is principal investigator on an obesity prevention project among African-American girls, a diet and physical activity badge program for Boy Scouts, a diabetes prevention trial among middle-school students, and an investigation of influences on availability of fruit, juice and vegetables in the home.

Dennis M. Bier, M.D.

Dr. Bier's primary research interest is the integrated regulation of interorgan transport of metabolic fuels; specifically, substrate and hormonal regulation of the macronutrient fuels, glucose, fatty acids, ketones, and proteins/amino acids. This work has contributed broadly to the endocrine, nutritional and physiological regulation of endogenous fuel availability for biochemical and nutritional functions in otherwise healthy infants born very prematurely, normal newborn infants born at term, growing children, maturing adolescents, and healthy young and elderly adults. Further, his laboratory has helped both define and refine assessment of the altered metabolic fates of ingested, exogenous fuels under various pathophysiological circumstances that detrimentally change nutritional homeostasis, for example the metabolic fuel derangements accompanying diabetes and renal failure. In these endeavors, his laboratory has developed and employed a wide variety of stable isotope tracer kinetic methods that have now become the standards in the field for quantifying substrate flux, metabolism, precursor-product relationships, and irreversible oxidation to exhaled or excreted end products.

Douglas G. Burrin, Ph.D.

Dr. Burrin's major research goal is to elucidate the critical cellular and hormonal signals mediating the stimulatory effects of enteral nutrition on the growth and function of the neonatal intestine. Current studies examine the physiological and clinical significance of GLP-2 and enteral nutrition, and how they impact intestinal nutrient metabolism in his neonatal pig model. Current studies are designed to quantify the intestinal metabolism of sulfur amino acids, methionine and cysteine, and their impact on epithelial cell function. Isotope tracers coupled with arteriovenous organ balance and blood flow measurements are

used to quantify the intestinal absorption and metabolism of amino acids provided either enterally or parenterally. Several studies are also aimed at establishing the neuroendocrine cellular signals that mediate the stimulation of intestinal blood flow and enhanced epithelial cell survival in response to enteral nutrition and GLP-2 treatment. The cellular localization of the GLP-2 receptor and intercellular signaling networks involved in receptor function are being characterized using in situ hybridization and confocal microscopy. In addition the intracellular signaling pathways that mediate the effect of GLP-2 on mucosal epithelial cell protein turnover, proliferation and programmed cell death rates.

Nancy F. Butte, Ph.D.

Genetic and environmental causes of childhood obesity are the current focus of Dr. Butte's research. A genomic scan for loci associated with the development of obesity is being performed in 1,600 Hispanic individuals from 300 nuclear families. Extensive phenotyping of the children includes measurements of body composition, food intake, eating behavior, energy partitioning during growth, energy expenditure, physical fitness and activity, and serum hormones and metabolites. Extensive research on the food intake, energy expenditure and body composition of infants and children preceded this work on childhood obesity. Other major interests include the functional consequences of variations in energy balance on pregnancy outcome, postpartum weight retention, lactation performance, and infant growth and development.

Joan Carter, R.D., M.B.A.

Ms. Carter's focus is the dissemination of information about the research activities of the USDA/ARS Children's Nutrition Research Center through print and electronic materials describing the center's mission, organization, and research efforts. She is editor of the CNRC's award-winning consumer-oriented newsletter, *Nutrition & Your Child*, and webmaster for the center's web site, www.kidsnutrition.org, as well as for related faculty and research project web sites. She also serves as the center's liaison to the public, the media, and Baylor College of Medicine communications personnel.

Ning-Hui Cheng, Ph.D.

Regulation of calcium transporters is essential for modulating Ca²⁺ signaling and/or Ca²⁺ homeostasis that are involved in the growth and adaptation of all organisms. Dr. Cheng's research focus is to study the molecular mechanism underlying the regulation of plant ion transporters, such as particular calcium transporters (Ca²⁺ exchanger, CAX). He recently identified and isolated multiple regulatory proteins that can post-translationally modulate CAX-mediated Ca²⁺ transport and may play a vital role in integrating Ca²⁺ signaling with other cellular processes. He is also investigating the regulation of those ion transporter genes under normal and stress condition. Using a genetic tool, he is performing a genome-wide screening for the genes that can transcriptionally regulate CAX expression. These studies will elucidate how the regulatory networks modulate Ca²⁺ signaling and homeostasis and also provide insights in developing new strategies to manipulate the nutritional quality of plant foods.

Brian S. Conklin, Ph.D.

Dr. Conklin is a bioengineer currently studying the effects of shear stress on the permeability of endothelium, specifically the permeability of endothelium in arteries to the passage of LDL. These studies involve the development of in vitro and ex vivo models that establish authentic arterial pulse waves with physiologically relevant wall shear stresses for the study of functional and gene expression effects on endothelial cells.

Orla M. Conneely, Ph.D.

Dr. Conneely's research concerns the role of the iron-binding protein, lactoferrin (LF), in the regulation of homeostasis, growth and development of the gastrointestinal tract and in protection against bacterial infection and inflammation. Lactoferrin is a multifunctional protein found at very high levels in milk and in the body secretions that interface with the external environment. The second most abundant protein in human breast milk, LF is inactivated in infant formulae. Studies in LF-deficient mice generated by Dr. Conneely indicate that LF is not required for intestinal iron uptake, but plays a critical role in preventing excessive iron absorption during the neonatal period of development. She plans to continue her studies on the neonatal iron sequestration role of LF, and to examine its role in prevention against bacterial infections. She will also examine the consequences of LF ablation on intestinal inflammation, using mouse models of Crohn's disease and ulcerative colitis.

Austin J. Cooney, Ph.D.

Dr. Cooney's research goal is to understand the mechanism by which the transcription factor GCNF regulates embryonic gene expression, and the influence of the maternal diet on its activity. His research

focuses on identifying GCNF- responsive target genes expressed during embryogenesis and studying the GCNF mode of regulation of these genes. To date, he has been able to identify HNF4 as a GCNF-responsive gene that is silenced in somatic cells after gastrulation by GCNF. Using a yeast two-hybrid screen, he has identified DNA methyl transferases as interacting partners of GCNF. Methylation of DNA around genes has been implicated in the silencing of genes, so this would be the first example of regulated and targeted DNA methylation by specific recruitment of a DNA methyltransferase. His laboratory is using knockout mouse models and the multipotent embryonic carcinoma cell P19 to study GCNF's regulation of HNF4 expression via DNA methylation.

Karen Weber Cullen, Dr. P.H.

Dr. Cullen's research focuses on two main areas: promoting healthy school food environments, and enabling families to provide healthy food environments and appropriate parenting about food. Current projects include developing and implementing a school-based program for the prevention of Type 2 diabetes among youth, conducting a feasibility study on an Internet-based dietary behavior change program for families, and developing and implementing a family based intervention in conjunction with the Texas Cooperative Extension program.

Sonia A. Cunningham, Ph.D.

Dr. Cunningham is studying the contributions of adhesion molecules to the migration of leukocytes from blood into tissue, a potentially important step in the accumulation of macrophages in adipose tissue. These studies deal with the molecular interactions of adhesion molecules in a newly discovered family referred to as junctional adhesion molecules (JAMs). She has discovered two new members of this family and has developed mice that are selectively deficient in the expression of these two new JAM family members. These mice are currently being evaluated for phenotypic characteristics associated with the deletion of these genes.

Teresa A. Davis, Ph.D.

Dr. Davis' research goal is to identify the mechanisms by which hormones and nutrients interact to regulate the high rate of skeletal muscle protein deposition in the neonate. To achieve this objective, her research focuses on five main areas: the role of insulin, amino acids, and glucose in the regulation of protein synthesis in the neonate; the role of insulin, amino acids, and glucose in the regulation of the insulin and nutrient signaling pathways that lead to translation initiation in the neonate; the role of hormones, cytokines, and nutrients in the regulation of muscle protein synthesis during sepsis in the neonate; the role of development in the regulation of the protein synthetic response to dietary protein, and the role of nutrient intake and insulin in the anabolic response to growth hormone.

Debby Demory-Luce, Ph.D.

Two focal points of interest of Dr. Demory-Luce are the eating habits of preschool children and pediatric nutrition education for primary care providers. A current research area involves the examination of how preschool children's eating habits are affected by environmental factors and their parents' personal characteristics, such as weight and health-related beliefs.

Kenneth J. Ellis, Ph.D.

A primary goal of Dr. Ellis' research is to establish reference standards for body elemental composition in infancy, childhood and adolescence. This research focuses on the development and application of nuclear-based techniques for in vivo studies of human body composition. This approach provides knowledge of changes in growth and body composition that reflect the body's cumulative response to basic physiologic and metabolic processes. Detection of these changes often requires unique instrumentation like the CNRC's whole body counter, which monitors ⁴⁰K, a naturally occurring isotope in the human. Dr. Ellis has continued to develop in vivo neutron activation techniques for clinical research and postmortem examinations, and he has extended the use of dual-energy X-ray absorptiometry to the examination of infants and children.

Marta L. Fiorotto, Ph.D.

The focus of Dr. Fiorotto's research is the regulation of muscle growth rate during early postnatal life and its impact on muscle function in adulthood. The major objective is to identify how the developmental stage of muscle tissue influences both the short- and the long-term response of the muscle to two of the primary regulators of muscle growth: nutrient availability and endocrine factors (GHRH, growth hormone, and insulin-like growth factors). In addition to overall growth and body composition effects, Dr. Fiorotto is also examining the rate of muscle protein turnover, the expression of muscle-specific protein genes and transcription factors, satellite cell replication and accretion. For these studies, she uses animal models,

such as transgenic mice with altered muscle growth and growth factor expression, as well as gene-transfer techniques in which an exogenous gene for GHRH is administered postnatally, or prenatally to the mother.

Jennifer Orlet Fisher, Ph.D.

Dr. Fisher's research investigates the development of food preferences and the controls of food intake during infancy and early childhood. The broad goal of her research program is to understand how early eating environments modify young children's eating behavior and health outcomes. Of particular interest is the role of parents in selecting foods of the family diet, in serving as models of eating behavior, and in making child-feeding decisions that affect child food preferences, selection, and intake patterns. Currently studies are being conducted to understand the influence of maternal feeding practices on the development of food intake regulation and growth during infancy. Another line of research evaluates the role of maternal feeding practices and family eating styles in problematic food intake regulation and overweight among Hispanic children. Finally, experimental research is being conducted to determine the effects of large portions on daily intake in young children and their mothers.

John P. Foreyt, Ph.D.

The Family Lifestyle Overweight (FLOW) Prevention Program is designed to determine the effectiveness of a self-help intervention versus a community-based, instructor-led, multi-component physical activity and nutrition intervention for 10-15 year-old children and adolescents who are at risk for obesity. Both interventions involve a behavioral approach to weight management and both stress the importance of balancing exercise and healthy nutrition in a family-based environment. The interventions consist of 12 weeks of intensive training followed by 9 months of maintenance sessions and measurement visits. Each child and adolescent completes a baseline physical (i.e., height, weight, triceps skinfold, pulse, blood pressure, and fasting lipid profile) and psychosocial (i.e., eating disorder, quality of life) measures and returns for these measurements at 6-and 12-month follow-up visits.

Ian J. Griffin, M. B., Ch. B.

Dr. Griffin's work focuses on understanding the mechanisms by which humans regulate zinc metabolism, particularly the metabolic adaptations to low zinc intakes, and the importance of marginal zinc status in human disease. His research uses stable nonradioactive isotopes and mathematical modeling techniques to describe zinc metabolism in health and disease.

Michael A. Grusak, Ph.D.

Dr. Grusak's laboratory is involved in both plant physiology and human nutrition research. His plant physiology research is focused on the mechanisms and regulation of nutrient transport in plants. His long-term goals are to characterize the dynamics of nutrient flow within plants in order to determine the biophysical/molecular signals that regulate source-to-sink nutrient partitioning, and ultimately to use this information to enhance the nutritional quality of plant foods for human consumption. With regard to his human nutrition research, his laboratory group has developed hydroponic growth facilities and various protocols to intrinsically label plant foods with stable isotopes of important nutrients; these are then used to assess nutrient bioavailability and metabolism in humans.

Darryl L. Hadsell, Ph.D.

Insulin-like growth factors (IGFs) are necessary for mammary gland development and lactation. Despite this, the mechanisms by which these peptides regulate mammary gland function are poorly understood. The focus of Dr. Hadsell's research is to understand the specific signaling mechanisms through which the IGF-I receptor (IGF-IR) regulates mammary gland development and lactation. Transgenic and/or gene targeting strategies are used to modify the activity of key IGF-IR signaling pathway intermediates within the mammary gland. These strategies have demonstrated: 1) that IGF-IR regulates early mammary ductal development through the ability to regulate cell cycle progression within specialized structures called terminal endbuds; 2) that IGF-I also acts during lactation to maintain mammary cell survival; 3) that specific intracellular scaffolding proteins, termed insulin receptor substrates (IRS), are important to both the cell survival actions and to other potential actions of IGF-I on the regulation of milk volume and composition during early lactation.

Peter M. Haney, M.D., Ph.D.

Dr. Haney's research goal is to understand the molecular cell biology of lactation. Current work focuses on glucose transport in the lactating mammary gland. Dr. Haney is studying the regulation of GLUT1, the only glucose transporter isoform identified in the mammary gland and in established and primary mammary epithelial cell lines in humans and rodents. He has shown that GLUT1, normally a plasma

membrane protein, is diverted to the intracellular site of lactose synthesis in lactating mammary epithelial cells, suggesting that these cells have a unique and nutritionally important mechanism to alter GLUT1 targeting. Efforts are under way to elucidate this mechanism by identifying structural determinants of intracellular GLUT1 targeting in mammary epithelial cells. Video confocal microscopy demonstrates that intracellular GLUT1 targeting is highly dynamic and can be altered with certain drugs. Dr. Haney is also examining how GLUT1 gene expression and subcellular targeting regulate the synthesis of lactose.

Morey W. Haymond, M.D.

Dr. Haymond's primary area of investigation has been the hormonal regulation of nutrient oxidation and metabolic control of glucose and protein metabolism. He has been instrumental in the development of models to measure in vivo rates of protein synthesis, proteolysis, glucose production and gluconeogenesis using stable isotopic tracers. Since the initial development of stable isotope dilution method by Dr. Bier, Dr. Haymond has applied this method and developed a number of other methods and models. Since then, he has carried out a number of investigations in a variety of conditions examining the mechanism of glucose regulation in a variety of hypoglycemic conditions in infants and children. In addition, he has investigated the impact of a variety of glucoregulatory hormones on amino acid and glucose homeostasis. In utilizing these recently developed isotope dilution methods to increase gluconeogenesis, Drs. Haymond and Sunehag are exploring the regulation of glucose production and gluconeogenesis in normal children and in children with type 1 and type 2 diabetes, obesity, hyperinsulinemic hypoglycemia and other conditions associated with hypoglycemia in children. In addition, they are studying metabolic adaptation to lactation. With a better understanding of the factors that impact the regulation of glucose homeostasis in the diabetic, the hypoglycemic, and normal child, we will be able to develop better strategies and new therapeutic interventions to normalize glucose homeostasis in both the conditions of hyper- and hypoglycemia.

William C. Heird, M.D.

Dr. Heird's research interests focus on the nutrient needs of low-birth-weight infants and other infants and children with special needs, including the specific amino acid needs of those who depend upon parenterally delivered nutrients, as well as ways of meeting these needs. An additional interest concerns the metabolism of essential fatty acids during infancy and childhood and the role of long-chain polyunsaturated fatty acids in infant development.

Karen Hirschi, Ph.D.

Dr. Karen Hirschi's goal is to understand, at the cellular and molecular level, the events leading to blood vessel formation. She is interested in elucidating regulators of vascular cell recruitment, proliferation and differentiation needed for blood vessel assembly and maintenance. One aim is to define mechanisms by which soluble effectors, such as retinoids and TGF-beta, and cell-cell junctional components such as gap junctions, modulate vascular cell phenotype and cell cycle progression. Another focus is to investigate the potential of adult stem cells to contribute to neovascularization in response to tissue injury and growth. The mechanisms by which adult stem cells are recruited, induced to differentiate into vascular cells, and are functionally integrated into existing vascular networks, are of particular interest. Insights gained from such studies are applied to the optimization of clinically relevant treatments, including autologous vascular cell and gene therapy, assembly of blood vessels grafts, and vascularization of engineered tissues.

Kendal D. Hirschi, Ph.D.

Plants cannot run from environmental stresses; they must adapt. Dr. Kendal Hirschi is studying the mechanisms by which plants sequester nutrients and toxic metals into the plant vacuole to cope with environmental challenges. At the molecular level, his goal is to understand the structure, biological function, and regulation of transporter proteins that control trafficking into and out of the plant vacuole. Another major goal is to learn how to manipulate the expression and function of these transporters to increase the nutritional content of crop plants, improve plant productivity, and cleanse polluted soils. He views these objectives as integral components of the Green Revolution, the global agricultural movement whose aim is to end world hunger by developing innovative ways of increasing grain yields, particularly via the use of genetically improved food plant varieties.

Judy A. Hopkinson, Ph.D.

Dr. Hopkinson's research goal is to define physiological and behavioral factors associated with optimal breastfeeding practices. To achieve this goal, her research focuses on the following areas: the impact of lactation on maternal and infant physiology, with special emphasis on bone metabolism; the identification of cultural factors that limit breastfeeding duration and/or exclusivity; the characterization and etiology of

breast and nipple discomfort encountered by breastfeeding women; and the evaluation of intervention strategies and counseling techniques designed to increase optimal breastfeeding behaviors.

Russell P. Jago, Ph.D.

Dr. Jago's research focuses on the prevention of obesity and associated chronic diseases among children and adolescents through the promotion of physical activity. Of particular interest are understanding the environmental and personal factors that influence the physical activity levels of children and adolescents and designing and evaluating programs that are designed to increase the physical activity levels of these groups. Current projects include examining whether the environment affects the physical activity levels of adolescent boys, examining the relationship between the physical activity levels and chronic diseases risks of young children and developing a school-based program for the prevention of type 2 diabetes among middle school students.

Farook Jahoor, Ph.D.

Dr. Jahoor's research focuses on the metabolic alterations of specific nutrient transport and acute-phase proteins, amino acids, carbohydrate and lipids in response to different pathologies, including undernutrition, diabetes mellitus, sickle cell disease and chronic infections. He also studies glutathione metabolism and its relationship to oxidant damage of lipids and proteins in conditions of oxidative stress.

Craig L. Jensen, M.D.

Dr. Jensen's research is directed toward determining the optimal intakes of polyunsaturated fatty acids for term and preterm infants. The ability of infants to synthesize longer-chain n-3 and n-6 polyunsaturated fatty acids from their precursors, alpha-linolenic and linoleic acids, respectively, is being investigated using stable isotope techniques. The effects of different dietary intakes of essential fatty acids on biochemical and functional outcomes in both term and preterm infants are being assessed.

Heidi E. Karpen, M.D.

Dr. Karpen's research involves the study of Patched, a tumor suppressor gene responsible for Gorlin Syndrome. Patched is a member of the Sonic Hedgehog signaling pathway, critical for early embryonic patterning and development. Dr. Karpen is using mutations identified in Gorlin patients and sporadic basal cell carcinomas to define functional domains important for protein trafficking and function. The goal of this research is to better understand mechanisms of aberrant embryonic development and cancer formation so that targets for intervention may be identified.

Gerard Karsenty, M.D., Ph.D.

Dr. Karsenty's research focus is on the regulation of bone remodeling by hormones that also affect body weight and reproduction. To that end, Dr. Karsenty is using mutant mouse strains in which either specific hormones or their receptors are deleted. He currently is studying how leptin controls bone mass. He hopes to determine whether leptin acts through a different set of secondary messengers to regulate body weight and bone mass, using mouse models generated in the laboratory. He also is exploring the concept that antagonizing the leptin pathway may be a way to treat osteoporosis without affecting body weight. Lastly, he is studying other hormones that may regulate body weight and bone mass.

Alexandre A. Lapillonne, M.D., Ph.D.

Dr. Lapillonne's research interest is to determine whether, and how, early nutritional events affect long-term growth, metabolic function and development. His work has focused on the effect of intrauterine growth on body composition and postnatal growth, the effects of specific nutrients on gene transcription, and how alterations in gene transcription affect growth and body composition. Current research focuses specifically on the effect of n-3 polyunsaturated fatty acids on weight gain, body composition, fat oxidation, energy expenditure and transcription of genes controlling lipid oxidation and thermogenesis. He is also planning to assess how and when in early life, optimization of protein intake can maximize catch-up growth and neurological development of very-low-birth-weight infants. The overall goal of Dr. Lapillonne's research is to optimize the nutritional management of extremely low-birth-weight infants in order to overcome long-lasting effects on growth and development.

Carlos H. Lifschitz, M.D.

Dr. Lifschitz's research relates to nutrient gut interaction and intestinal adaptation. The current project consists on the investigation of the effect of glutamine supplementation in neonatal infection of low birthweight infants.

Ronald L. McNeel, Dr. P.H.

Dr. McNeel's research interests include evaluation of the role of dietary supplements and macronutrients in disease prevention and in reduction of risk factors associated with disease. Specific interests include the effects of macronutrients and dietary supplements (including herbals) on whole body lipid metabolism and energy homeostasis with emphasis on lipid metabolism of the adipocyte. The goal is to obtain a more complete understanding of the molecular mechanisms of action of macronutrients and dietary supplements as they relate to fat mass accretion. Special emphasis is given to the role of the peroxisome proliferator-activated receptor family, including PPAR alpha, PPAR beta, and PPAR gamma as well as their target genes in response to nutrient signaling. This understanding is critical for the development of new health promotion strategies and therapeutic approaches (nutritional, alternative herbal, and pharmacological) to the management and prevention of nutritional obesity.

Harry J. Mersmann, Ph.D.

Adipocyte growth and differentiation are regulated by various hormones and growth factors and may be altered by dietary components. Dr. Mersmann's laboratory has studied the influence of the stage of development and of dietary factors on adipocyte beta-adrenergic receptors. Currently, the focus of his efforts is on adipocyte development. Porcine adipocyte precursor cells may be isolated from adipose tissue and when grown in culture in vitro under the proper conditions, differentiate to adipocytes. He has used this system to evaluate factors regulating the differentiation process and the influence of dietary components of differentiation. In addition to mRNA for the beta-adrenergic receptors, mRNA for various transcription factors that regulate differentiation (e.g., C/EBP-alpha or PPAR-gamma) and mRNA for key proteins that characterize the adipocyte (e.g., lipoprotein lipase and aP2) are being measured. He is particularly interested in the role of individual fatty acids in the stimulation or inhibition of adipocyte differentiation.

David D. Moore, Ph.D.

The receptors for retinoic acid, thyroid hormone, steroids, and other potent biological regulators belong to a nuclear hormone receptor superfamily. This family also includes a number of additional proteins called orphan receptors, which do not have known ligands. The conventional receptors regulate a variety of processes in developing and adult animals. The orphans are less well characterized, but it is thought that they also play important roles in diverse areas. The broad-ranging effects of these proteins are a consequence of their function as ligand-dependent, or in some cases, ligand-independent transcription factors. The main goal of Dr. Moore's laboratory is to understand the mechanisms of action of the members of this superfamily. Toward this aim, he has identified a number of proteins that **interact with both conventional and orphan receptors, and he is characterizing their functions.**

Kathleen J. Motil, M.D., Ph.D.

Dr. Motil's studies focus on estimating dietary protein and amino acid needs of lactating women and adolescents and elucidating the mechanisms that underlie increased nutrient needs for milk production. She has found that lean body mass of adult women is preserved during lactation, suggesting that nutrient conservation occurs because of the needs of milk production. In contrast, lean body mass of adolescents increases during lactation at the expense of a reduction in milk production. Dr. Motil's studies also focus on estimating the dietary protein and energy needs of girls with Rett syndrome and elucidating the mechanisms that underlie the universal finding of growth failure in this disorder. She has found that involuntary motor movements associated with Rett syndrome do not increase rates of energy expenditure, and that poor growth results from reduced dietary energy intakes associated with oropharyngeal and gastroesophageal dysfunction.

Paul A. Nakata, Ph.D.

Calcium in plants is sequestered as a complex with other substances such as oxalates, phytates, fiber, fatty acids, proteins and other anions. Some of these substances (oxalates and phytates) are considered antinutrients, and render the calcium in plant foods unavailable for nutritional absorption by the human. The purpose of Dr. Nakata's research program is to elucidate the mechanism regulating calcium partitioning and sequestration in plants. The acquired information will be applied toward the rational design of strategies to enhance calcium abundance and bioavailability in plant food products.

Buford L. Nichols, M.D.

Dr. Nichols' research project focuses on the interactions of nutrients and genes, especially the regulation of genes as they contribute to the development of diet associated with degenerative diseases, such as diabetes and atherosclerosis. Our research objective is to determine the mechanisms by which dietary starch interacts with the gene expressing maltase-glucoamylase (MGAM). Maltase-glucoamylase is the

gate-keeping enzyme that determines small intestinal starch digestion into glucose. The function and regulation of maltase-glucoamylase is under investigation in knockout mice and children with deficient starch digestion. Epidemiological reports indicate that about 15-30% of US children suffer from chronic abdominal pain. Twenty-six percent of children with chronic abdominal pain have deficiencies of maltase-glucoamylase enzyme activity and poor small intestinal starch digestion.

Theresa A. Nicklas, Dr. P.H.

Dr. Nicklas' research focuses on nutritional epidemiology and intervention aspects of chronic disease prevention and health promotion: specifically, how eating behaviors and other lifestyles influence the development of chronic disease risk factors early in life and the behavioral factors influencing the development of adverse lifestyles in childhood. Current areas of research include a detailed investigation of the relationship among eating patterns, diet quality, and obesity in children and young adults; an examination of environmental influences on fruit, juice, and vegetable consumption and body mass index of Head Start preschool children; development of a valid and reliable computerized food preference measure for use with preschool children; and examination of predictors of children's serving sizes and mealtime intake. Planned studies include a behavior-based intervention aimed at favorably influencing food preferences and consumption by African- and Hispanic-American preschool children attending Head Start; and a behavioral-based family intervention designed to increase fruit, fruit juice, and vegetable consumption by preschool children.

Sharon I. O'Donnell, Ph.D.

Dr. O'Donnell's research interests focus on the role of the market on food and physical activity choices. Spatial disparities in the local market's availability of nutritious foods can result in higher total food costs for some households. Using data that describes the full Houston market, her research has found that the locations of grocery stores are not the outcome of a competitive market and there is an association between the concentration of specific ethnic groups and spatial concentration of higher quality food stores. Planned studies includes economic analysis to determine if there exists spatial disparities in physical activity resources for children and a study to determine if low income, economically "at risk" households (households in markets with higher than average housing and transportation costs) increase their nutrient intake by participating in the Food Stamps Program.

Monique Rijnkels, Ph.D.

Dr. Rijnkels' primary research goal is to understand the regulation of the casein genes, encoding major nutritional proteins in milk, and the genomic domain in which these genes reside. The Genomics approach used to study the transcriptional regulation of the casein gene cluster region combines three lines of research: The study of the chromatin structure and remodeling in the casein gene cluster region related to tissue type and development, using e.g. Chromatin Immuno-Precipitation (ChIP) assays; Computational approaches to identify evolutionary conserved regions with potential regulatory function and the transacting factors that might bind them; The functional analysis of potential regulatory regions in transgenic mice. In addition, the non-casein genes in this genomic domain are studied as they potentially share functional properties and spatial expression patterns (expressed in mammary gland) as well as evolutionary ancestry.

Jeffrey M. Rosen, Ph.D.

Dr. Rosen's research objectives are to elucidate the mechanisms regulating the normal development of the mammary gland and to determine how these regulatory mechanisms deviate in breast cancer. Studies of the role of systemic hormones and local growth factors on critical periods of development in the mouse mammary gland are under way. Transgenic and knockout mouse models are being used to examine the roles of specific transcription factors and their dominant-negative isoforms, postnatal mammary gland development, and the changes in normal signal transduction pathways that are involved in the progression from the normal mammary gland to preneoplasias, as well as the role of mutant p53 in genomic instability and the development of aneuploidy. In addition, methods that permit the analysis of both gain and loss of specific gene function selectively in the mammary gland have been developed.

Robert J. Schwartz, Ph.D.

Dr. Schwartz conducts research focused on defining the molecular basis underlying the establishment and maintenance of skeletal, cardiac and smooth muscle differentiation. Of special interest is Nkx2-5, a transcription factor instrumental in the patterning of the embryonic heart. The heart appears to develop as a modular organ, such that a distinct transcriptional regulatory program controls each anatomical region. Consistent with this notion, the heart tube can be divided into segments that form the atria, left ventricle, right ventricle, and ventricular outflow tract. Precursors of these regions appear to originate from separate

lineages, which develop according to their positions along the anteroposterior axis of the embryo. Recent studies have revealed cis-regulatory elements that direct cardiac transcription specifically in the left or right ventricular chambers and atria, which could be important for the physiologic and functional differences of the chambers of the adult heart.

Partha Sen, Ph.D.

Dr. Partha Sen is the director of the Child Health Research Center (CHRC) Molecular Core Laboratory. The laboratory provides DNA sequencing and DNA synthesis services to the CHRC awardees and their mentors and Baylor faculty at large. Dr. Sen is also involved in research related to alveolar capillary dysplasia (ACD). This is a genetic disorder that causes misalignment of lung blood vessels, and is also characterized by a severe reduction of capillaries in the lungs of the patient. The relentless course of the disease culminates in the death of the neonate despite intensive therapy. The inheritance of the disease is presumed to be autosomal recessive. The primary goal of the research project is to identify the causative gene for this human disorder.

Robert J. Shulman, M.D.

Dr. Shulman is investigating the factors regulating gastrointestinal function. His studies include examination of the roles of diet and feeding regimen on the developing gastrointestinal tract of the preterm infant. In addition, Dr. Shulman is researching the factors contributing to the expression of recurrent abdominal pain in older children including the role of diet and alterations in intestinal bacterial flora.

Roman J. Shypailo, B.S.

The unprecedented growth of technology during the past decade has created challenges for researchers. Powerful computers and data acquisition equipment enable rapid accumulation of information that requires processing. The CNRC Body Composition Laboratory houses sophisticated instruments designed to measure the elemental composition of the human body using nuclear-based techniques. Each instrument is in a dynamic state of evolution. New measurement systems are being developed, including a multiparameter whole-body counter capable of isolating and measuring a signal coming from a specific site in the body, and a portable 40 K counter for use in a hospital setting. Coordinating these efforts and incorporating new technology are the primary focus of Mr. Shypailo's work.

C. Wayne Smith, M.D.

Dr. Smith's research deals with the effects of dietary fat on the inflammatory processes in adipose tissue, liver and blood. There are two main goals of this work. The first is to determine the role played by macrophages in adipose tissue. Studies are underway to determine the kinetics of macrophage accumulation in different fat pads in animals on diets differing in lipid composition, the origins of these macrophages and the consequences of blocking their accumulation. These studies address the hypothesis that macrophage/adipocyte interactions play a role in the proinflammatory responses seen in obesity. The second major goal is to determine the role of the hepatic response to dietary lipids in the systemic inflammatory response seen in obesity. A component of these studies deals with the development of steatohepatitis and a potential contribution of portal endotoxemia. Animal models in rats and mice have been developed for these studies.

E. O'Brian Smith, Ph.D.

Dr. E. O'Brian Smith provides statistical design, analysis, and teaching support to the USDA/ARS Children's Nutrition Research Center, the General Clinical Research Center, the Pediatrics Department, and Baylor College of Medicine investigators. This support includes teaching statistical methods, developing grant applications, the design of research protocols, statistical analysis, interpretation, and manuscript preparation. His support services range from basic consultation to extensive involvement in a project.

Janice E. Stuff, Ph.D.

Dr. Stuff's interest is nutritional epidemiology and the role of nutrition in chronic diseases and public health problems. One emphasis is to understand dietary carcinogen and chemopreventive exposure, the genetic susceptibility to dietary carcinogens, and their interaction as determinants for cancer. Dr. Stuff is developing and validating databases of N-nitroso compounds and isothiocyanate compounds in foods in order to investigate their role in the development and prevention of cancer. Another interest is to investigate the role of diet, body composition, and hormone levels in the development of risk factors for breast cancer. Dr. Stuff also collaborates with the USDA/ARS Delta NIRI (Nutrition Intervention Research Initiative), an initiative designed to measure the nutrition and health status of individuals and communities

in the Lower Mississippi Delta region, and to develop interventions. This project also investigates the impact of food insecurity on the health, nutritional requirements and nutritional status of children.

Agneta L. Sunehag, M.D., Ph.D.

The focus of Dr. Sunehag's research is carbohydrate metabolism in infants and children. In particular, she is interested in the metabolism of very premature infants during their first days of life. The aim of her studies is to determine how these infants utilize their gluconeogenic pathway to produce glucose from parenterally administered lipid and amino acid solutions. The ultimate goal of these studies is to optimize the composition of neonatal parenteral nutrition solutions to prevent both hypo- and hyperglycemia, while providing a sufficient energy intake for normal growth. She is also investigating which factors regulate glucose metabolism, particularly gluconeogenesis, in sick newborns (represented by Extremely Low Birth Weight Infants, Infants with Respiratory Distress Syndrome and Infants with Congenital Heart Disease). Her other major research interest is to determine the effects of dietary macronutrient intake, obesity, exercise and ethnicity on parameters of glucose metabolism, particularly insulin sensitivity in children and adolescents. Dr Sunehag is also involved in studies of glucose metabolism in lactating women and in children with diabetes.

Agus Suryawan, Ph.D.

Early postnatal period is characterized by rapid growth, particularly in skeletal muscle. Our previous observations indicate that higher rate of skeletal muscle protein synthesis in neonates is partly due to increased activation of insulin signaling components leading to translation initiation. Despite tremendous efforts, the factors that regulate high rate of skeletal muscle protein synthesis are not completely understood. My research focuses on understanding the role of TGFbeta family and their binding proteins in the regulation of skeletal muscle growth in neonate. Recent studies have focused on the effect of follistatin (an activin binding protein) on the regulation of skeletal muscle growth by determining its effects on protein synthesis and the activation of insulin signaling proteins and translation initiation factors.

Deborah I. Thompson, Ph.D.

Dr. Thompson is interested in children's problem solving to overcome barriers to physical activity and in the design, development, and evaluation of interactive multi media programs promoting healthy nutrition and physical activity behaviors to youth. Dr. Thompson is studying the use of Dual Code Theory and how to best design interactive multi media programs to promote health behavior change, as well as the impact of monetary incentives on log-on rates to electronic media promoting diet and physical activity change. She helped design an interactive multi media program promoting healthy nutrition behaviors to parents of minority youth and is a member of the team developing an interactive multi media game promoting healthy diet and physical activity behaviors to youth. Dr. Thompson also coordinates qualitative research for a large, multi-site study to prevent type 2 diabetes among middle school youth and provides mentorship for the qualitative data coordinator for a Small Business Industrial Grant to develop an interactive multi media game promoting healthy nutrition and physical activity behaviors to middle school youth.

Qiang Tong, Ph.D.

The study of adipose tissue development may reveal clues about the molecular mechanisms of metabolic diseases, such as type 2 diabetes and cardiovascular disease. Dr. Tong has established the mammalian GATA transcription factors as molecular gatekeepers in the early stages of adipogenesis. He demonstrated that both GATA-2 and GATA-3 transcription factors are negative regulators of adipocyte differentiation. This effect is mediated through direct suppression of the promoters of adipogenic factors PPARg and C/EBPa by GATA factors and protein-protein interactions between GATA and C/EBPa or C/EBPb. Currently he is investigating the regulation of GATA factors at the protein level, with the goal of characterizing the identity and dynamics of the GATA protein complexes during adipogenesis, and the role of GATA in the lineage determination of adipogenic progenitor cells. He also plans to identify new regulators of adipogenesis and to develop mouse models to study the roles of these genes in obesity.

Chermaine L. Tyler, Ph.D.

Dr. Tyler is interested in studying the effectiveness of community-based, instructor-led, multi-component physical activity and nutrition intervention for 10-15 year-old children and adolescents who are at risk for obesity. Both interventions involve a behavioral approach to weight management and both stress the importance of balancing exercise and healthy nutrition in a family-based environment.

Ignatia B. Van den Veyver, M.D.

The neurodevelopmental disorder Rett syndrome is caused by mutations in a gene on the X chromosome, MECP2. This gene encodes methyl-CpG-binding protein 2, thought to be a transcriptional repressor that binds to methylated CpGs in DNA. Based on this, we propose the more general hypothesis that DNA methylation is important for regulation of gene expression during development, especially of the brain. There is evidence that DNA methylation can be influenced by methyl-donor enriched diets, containing substances such as folic acid and betaine. We are investigating in animal and cell culture models whether this treatment can alter DNA methylation and gene expression in the brain. This is not only important for conditions such as Rett syndrome, but may also provide a better understanding for the role of such agents in other prenatally-onset disorders and birth defects, such as neural tube defects or for the fetal origin of adult-onset disorders.

Robert A. Waterland, Ph.D.

Research in the Waterland laboratory aims to understand how nutrition during prenatal and early postnatal development affects individual susceptibility to various adult-onset chronic diseases. We have focused on nutritional influences on developmental epigenetics as a likely mediating mechanism. Epigenetic gene regulatory mechanisms regulate tissue-specific patterns of gene expression, and are established during development. Cytosine methylation is an epigenetic mechanism of particular interest to us because mammalian one-carbon metabolism, which supplies the methyl groups for DNA methylation, is intimately dependent on dietary methyl donors and cofactors.

William W. Wong, Ph.D.

Dr. Wong's main research interests include strategies to prevent childhood obesity and the use of dietary supplementation to prevent chronic diseases. Based on the data he collected in the Houston Independent School District to document the prevalence and risk factors of childhood obesity, a grant application designed to determine the appropriateness and effectiveness of an after-school physical activity program to prevent obesity among Hispanic children is going to be submitted to the National Institutes of Health. With respect to projects related to the use of dietary supplements to prevent chronic diseases, Dr. Wong is currently investigating the safety, efficacy, and optimal dosage of soy isoflavones to prevent osteoporosis in postmenopausal women and the effects of soy isoflavones on nitric oxide production and blood pressure in postmenopausal women with high-normal blood pressure.

Issa F. Zakeri, Ph.D.

Dr. Zakeri is interested in Nutrimetrics, the application of statistical methods to problems in nutrition. His goal is to advance, develop and apply more accurate and computationally flexible statistical techniques to analyze and better understand many complex problems in nutrition, particularly behavioral nutrition. His primary research interests in statistics are time series analysis, multivariate analysis, sequential analysis, and statistical pattern recognition.

2004 Faculty Recognition & Awards

Tom Baranowski, Ph.D.

Recognized, Who's Who in America, 59th Edition, 2005.

Recognized, Dictionary of International Biography, 31st Edition, 2004.

Recognized, 2000 Eminent Scientists of Today – 1st Edition, 2003.

Dennis M. Bier, M.D.

Appointed member, McDonald's Corporation Global Scientific Advisory Council, July 2003.

Appointed independent science expert media resource, International Food Information Council, January 2004.

Elected fellow, American Association for the Advancement of Science, February 2004.

Awarded, Distinguished Service Award, Washington University, St. Louis, March 2004.

Appointed member, External Advisory Board, Pennington Biomedical Research Center, Louisiana State University, April 2004.

Appointed member, Institute of Medicine Committee on Adolescent Health and Development, April 2004.

Elected president-elect, American Society for Nutritional Sciences, April 2004.

Douglas Burrin, Ph.D.

Appointed member, American Society of Nutritional Sciences Long-range Planning Committee, July 2003.

Reappointed member, editorial board, Journal of Nutrition, July 2003.

Appointed member, NIH-NIDDK Study Section, Small Clinical Research Grants in Digestive Diseases and Nutrition, November 2003.

Nancy F. Butte, Ph.D.

Appointed member, editorial board, American Journal of Clinical Nutrition, July 2003.

Appointed member, Start Healthy Feeding Guidelines for Infants and Toddlers panel, American Dietetic Association and Gerber Foods, July 2003.

Appointed member, working group on Human Protein Requirements, WHO/FAO/UNU, 2002-2004.

Elected treasurer, American Society of Clinical Nutrition, July 2001-2004.

Appointed chair, Growth References for Preadolescents and Adolescents, FAO/WHO/UNU, July 2003.

Teresa A. Davis, Ph.D.

Appointed member, editorial board, Journal of Animal Science, July 2003.

Elected, Counselor, American Society for Nutritional Sciences, July 2003.

Appointed member, Integrative Nutrition and Metabolic Processes Study Section, NIH, June 2004.

Kenneth Ellis, Ph.D.

Appointed co-editor, International Journal of Body Composition Research, December 2003.

Jennifer Orlet Fisher, Ph.D.

Appointed scientific advisor, International Life Science Institute (ILSI) Lifestyles and Weight Management committee, September 2003.

Michael A. Grusak, Ph.D.

Appointed adjunct member, graduate faculty, Department of Horticulture, Texas A&M University, College Station, TX, June 2004.

Morey W. Haymond, M.D.

Appointed member, books committee, American Diabetes Association, July 2003.

Appointed member, editorial board, Diabetes, January 2004.

William C. Heird, M.D.

Elected fellow, American Society for Nutritional Sciences, May 2004.

Karen K. Hirschi, Ph.D.

Recipient, Established Investigator Award, AHA Foundation, 2004 – 2009.

Theresa A. Nicklas, Dr.P.H.

Appointed member, Dietary Guidelines Advisory Committee, July 2003.

Appointed member, DMI Scientific Advisory Committee, July 2003.

Robert Shulman, M.D.

Awarded, Texas Children's Hospital Foundation Endowed Chair in Pediatric Gastroenterology, January 2004.

Appointed member, John P. McGovern Museum of Health and Medical Science Medical Advisory Committee, July 2003.

Elected member, American Board of Pediatrics, July 2003.

Elected chairman, Subboard in Pediatric Gastroenterology, American Board of Pediatrics, July 2003.

Ignatia B. Van den Veyver, M.D.

Recipient, Aicardi Syndrome Foundation donation for research on Aicardi syndrome, January 2004.

Recipient, Certificate of Appreciation for Excellence in Resident Education, Baylor College of Medicine Senior Ob-Gyn Residents, June 2004.

2004 Faculty Academic Activities

Steven A. Abrams, M.D.

Instructor: "Course on Neonatal Resuscitation," Royal Victorian Teaching Hospital, Banjul, The Gambia, September 2003.

Speaker: "Stable Isotope Methods in Micronutrient Research," International Atomic Energy Agency, Bangkok, Thailand, September 2003.

Speaker: "Approaches to Micronutrient Malnutrition," Hospital Luis "Chico" Fábrega, Santiago de Veraguas, Panamá, December 2003.

Speaker: "Getting Started: Tools and Issues for the NICU Dietitian," Neonatal Nutrition Conference, Houston, TX, March 2004.

Speaker: "Nutrición Neonatal," Neonatal Integrated Management of Childhood Illness (IMCI) Conference, Houston, TX, March 2004.

Speaker: "Atención Integrada a Las Enfermedades Prevalentes de la Infancia Componente Neonatal," Neonatal Integrated Management of Childhood Illness (IMCI) Conference, Houston, TX, March 2004.

Speaker: "Human Milk for Premature Infants," St. John's Medical College, Bangalore, India, January 2004.

Speaker: "Neonatal Nutrition in the Intensive Care Setting," North West University, Potchefstroom, South Africa, January 2004.

Speaker: "Calcium and Bone Health in Children," North West University, Potchefstroom, South Africa, January 2004.

Speaker: "Nutrición Del Neonato: Una Perspectiva del IMCI (Atención Integrada a Las Enfermedades Prevalentes de la Infancia, Aiepi)," Curso Internacional de Avances en Neonatología, Santa Cruz De La Sierra, Bolivia, June 2004.

Speaker: "Problemas Respiratorios en el Recién Nacido," Curso Internacional de Avances en Neonatología, Santa Cruz De La Sierra, Bolivia, June 2004.

Speaker: "Nutrición Del Neonato: Una Perspectiva del IMCI (Atención Integrada a Las Enfermedades Prevalentes de la Infancia, Aiepi)," Pediatric Society Meeting, La Paz, Bolivia, June 2004.

Speaker: "Problemas Respiratorios en el Recién Nacido," Pediatric Society Meeting, La Paz, Bolivia, June 2004.

Instructor: "Manejo del Neonato Críticamente Enfermo," Instituto Especializado Materno Perinatal, Lima, Perú, June 2004.

Cheryl A. Anderson, Ph.D.

Speaker: "The Athletic Identity Questionnaire for Children: Initial Validation Among Hispanic 5th Grade Children," International Society of Behavioral Nutrition and Physical Activity Annual Meeting, Québec City, Canada, July 2003.

Speaker: "Turning Professional: Making the Most of Your Postdoctoral Experience," University of Houston Department of Psychology, Houston, TX, March 2004.

Speaker: "The Role of Athletic Identity in Physical Activity Behavior," School of Public Health, Department of Epidemiology & Biostatistics, University of South Carolina, Columbia, SC, April 2004.

Janice Baranowski, M.S.

Speaker: "Family Grocery Shopping, Food Availability and Food Choices: How to Get Kids to Eat Fruit and Vegetables," Texas WIC Nutrition and Breastfeeding Annual Conference, Austin, TX, April 2004.

Tom Baranowski, Ph.D.

Speaker: "Why Combine Diet And Physical Activity in One Professional Society?" International Society of Behavioral Nutrition and Physical Activity Annual Meeting, Québec City, Canada, July 2003.

Speaker: "How Much Physical Activity is Necessary to Change Metabolic Syndrome in Children?" International Society of Behavioral Nutrition and Physical Activity Annual Meeting, Québec City, Canada, July 2003.

Speaker: "Innovative Methods for Obesity Prevention," Society of Nutrition Education Annual Meeting, Philadelphia, PA, July 2003.

Speaker: "Programs to Promote Physical Activity Among Children," 60th Anniversary Celebration Seminar on Malnutrition and Obesity, Ibero-American University, Mexico City, Mexico, September 2003.

Speaker: "Theories of Behavior Change in Obesity Prevention," Karolinska Institute, Program in Public Health Nutrition, Stockholm, Sweden, October 2003.

Speaker: "Innovative Obesity Prevention Programs for Children," Karolinska Institute, Program in Public Health Nutrition, Stockholm, Sweden, October 2003.

Speaker: "How to Help Children Change Their Dietary Habits," Victoria Lyceum Lecture, Victoria, TX, October 2003.

Speaker: "Innovative Programs for Children's Obesity Prevention," Victoria College, Victoria, TX, October 2003.

Speaker: "Overview of Physical Activity Measures," Physical Activity Measurement Workshop, National Children's Study, Crystal City, VA, November 2003.

Member: Obesity Grant Application Review Study Section, Canadian Institutes for Health Research, Ottawa, Canada, March 2004.

Chair: Symposium on Measurement of Psychosocial Variables for the 21st Century, The Society of Behavioral Medicine Annual Meeting, Baltimore, MD, March 2004.

Testified: Chronic Disease Prevention, U.S. Senate Committee on Appropriations, Washington, D.C., April 2004.

Speaker: "Interactive Multimedia for Children's Diet and Physical Activity Change to the Kids," Nutrition 2004 Conference, Chicago, IL, April 2004.

Speaker: "Interactive Multimedia for Children's Diet and Physical Activity Change to the Kids," Childhood Obesity Conference, Case Western Reserve University, Cleveland, OH, April 2004.

Chair: Working Group Discussion on School Nutrition and Physical Activities Policies, National Evaluation and Meeting, San Francisco, CA, May 2004.

Speaker: "Eating Behaviors in Children: Recent Innovations in Assessment and Promoting Change," American Heart Association-sponsored 2nd scientific Conference on Compliance in Healthcare and Research, Washington, D.C., May 2004.

Speaker: "Interactive Multi-Media Education and Physical Activity Changes Among Children," Youth Activity and Chronic Disease Research Network, School of Education, Ohio State University, Columbus, OH, May 2004.

Speaker: "Are Current Health Behavior Change Models Helpful in Guiding Prevention of Obesity?" Youth Activity and Chronic Disease Research Network, School of Education, Ohio State University, Columbus, OH, May 2004.

Speaker: "Interactive Multimedia for Diet and Physical Activity Change Among Children," NIH Behavioral and Social Sciences Research Lecture, Washington, D.C., June 2004.

Co-chair: "Advances in Health Outcomes Measurement, Exploring the Current State and the Future Applications of Item Response Theory, Item Banks, and Computer-Adaptive Testing," Behavior Science Sub-meeting, National Cancer Institute, Washington, D.C., June 2004.

Dennis M. Bier, M.D.

Invited Participant: USAID/Wellcome Trust Meeting, "Improving Maternal and Infant Nutrition: When, How, What? A Public Health Opportunity," London, U.K., July 2003.

Speaker: "Effects of Dietary Fat and Carbohydrate Content on Energy Balance, Glucose Metabolism, Insulin Secretion and Sensitivity in Children and Adolescents," World Health Organization Collaborating Centre Meeting, Dunedin, New Zealand, March 2004.

Session Chair: "Physiology of Metabolism," Symposium on Arginine, Hamilton, Bermuda, April 2004.

Douglas Burrin, Ph.D.

Chair: American Society of Nutritional Sciences, Energy and Macronutrient Metabolism-Research Interest Section, July 2003.

Speaker: "Current Protein and Amino Acid Methodology," Milk Specialties Inc., Dundee, IL, December 2003.

Chair: American Society for Nutritional Sciences-Energy and Macronutrient Metabolism-Research Interest Section, "Hot Topics in Metabolism" Lectures, Experimental Biology Annual Meeting, Washington, D.C. April 2004.

Speaker: "Role of Glucagon-like Peptides on Intestinal Function and Metabolism," Department of Nutrition, Ohio State University, Columbus, OH, April 2004.

Speaker: "New Insights into Intestinal GLP-2 Receptor Function," Gulf Coast GI Research Forum, League City, TX, May 2004.

Chair: American Society for Animal Science (ASAS), Program Organizing Committee for Growth and Developmental Section, National Meeting, St. Louis, MO, 2004, June 2004.

Chair: Growth and Development Symposium: Emerging Roles of Gut Peptides in the Regulation of Appetite and Metabolism, American Society for Animal Science Annual Meeting, St. Louis, MO, July 2004.

Chair: Scientific Workshop: Perspectives, Insights and Tools for Animal Scientists to Obtain USDA and NIH Funding, American Society for Animal Science Annual Meeting, St. Louis, MO, July 2004.

Nancy F. Butte, Ph.D.

Speaker: "Human Protein Requirements," WHO/FAO/UNU Meeting, Boston, MA, September 2003.

Panel member: Start Healthy Feeding Guidelines for Infants and Toddlers Meeting, American Dietetic Association and Gerber Foods, Short Hills, NJ, September 2003.

Treasurer: Budget and Finance Meeting, American Society of Clinical Nutrition, Bethesda, MD, October 2003.

Participant: Phenotyping Obesity Meeting, NIDDK, Bethesda, MD, October 2003.

Appointed chair: "Growth References for Preadolescents and Adolescents," FAO/WHO/UNU, Rome, Italy, December 2003.

Participant: Dairy Council of California Meeting on Individualizing Treatment for Obesity, Redwood City, CA, January 2004.

Speaker: "The Impact of Maternal Nutrition on the Offspring," Nestle Nutrition Workshop, Beijing, China, April 2004.

Speaker: "Innovated Noninvasive Measurement of Energy Expenditure in Ambulatory Subjects," Dallas, TX, May 2004.

Joan B. Carter, M.B.A., R.D.

Speaker: "Nutritional Issues of Children in Poverty," Casey Institute of Journalism, University of Maryland, College Park, MD, March 2004.

Ning Hui Cheng, Ph.D.

Speaker: "Regulation of Calcium Transporters: A Role of a Nuclear-Localized CAX-Interacting Protein, CXIP4," American Society of Plant Biologist Annual Meeting, Orlando, FL, July 2004.

Orla Conneely, Ph.D.

Speaker: "Progesterone Signaling in Mammary Gland Development," American Association for Cancer Research Meeting, Huntington Beach, CA, October 2003.

Speaker: "NR4 Nuclear Receptors as Tumor Suppressors in Myelopoiesis," Elwood Jensen Symposium on Nuclear Receptors and Endocrine Disorders, University of Cincinnati, Cincinnati, OH, December 2003.

Speaker: "Regulation of Nor-1 and Nurr1 by the Ubiquitin Proteasome System," Michael J. Fox Meeting, Las Vegas, NV, January 2004.

Speaker: "Progesterone Signaling in the Female Reproductive Tract," Wyeth Novel Approaches to Contraception Research Meeting, February 2004.

Speaker: "Essential and Redundant Roles of Nor-1 and Nur77 in Regulation of Myelopoiesis," Neuroendocrine Regulators Session Keystone Symposia: Joint Meeting Nuclear Receptors: Orphan Brothers/Nuclear Receptors: Steroid Sisters, Keystone, CO, February 2004.

Speaker: "Mechanisms for Tissue Selective, Estrogen Free Contraception," Ernst Schering Research Foundation Workshop, Berlin, Germany, March 2004.

Speaker: "Sex Steroids: An Update on Estrogen and Progesterone Actions," EPRM Congress 2004, Montpellier, France, April 2004.

Austin J. Cooney, Ph.D.

Speaker: "Validation of GCNF as a Contraceptive Target," Organon Inc., The Netherlands, October 2003.

Texas Area Coordinator: Bio-Link Meeting, New York, NY, October 2003.

Participant: NIH Special Emphasis Panel Study Section, November 2003

Participant: Second Annual Steering Committee Meeting for the Orphan Atlas Consortium, Houston, TX, November 2003.

Speaker: "Regulation of Gametogenesis," National Institute of Environmental Health Science (NIEHS), NC, December 2003.

Speaker: "Cre-lox Knockout of GCNF in the Oocyte," University of California at Los Angeles, Los Angeles, CA, February 2004.

Speaker: Specialized Cooperative Centers Program in Reproductive Research (SCCPRR) Meeting, Oregon Regional Primate Center, Portland, OR, February 2004.

Member: NIH Study Section, Postdoctoral Fellowship Special Emphasis Panel, March 2004.

Speaker: "Regulation of Pluripotency by the Orphan Receptors LHR1 and GPR107," Imperial College, London, England, March 2004.

Speaker: "Regulation of Pluripotency by the Orphan Receptors LHR1 and GPR107," Kansas University Medical Center, Kansas City, KS, April 2004.

Member: American Heart Association (AHA) Western Review Consortium Peer Review panel, Las Vegas, NV, April 2004.

Karen W. Cullen, Dr.P.H.

Member: Psychosocial Risk and Disease Prevention Study Section, National Institutes of Health, 2002-2003.

Speaker: "Moderating/Mediating Factors in Adolescent Interventions," Annual Meeting: International Society for Behavioral Nutrition and Physical Activity, Québec, Canada, July 2003.

Speaker: "Can school environmental cafeteria interventions promote dietary change?" Annual Meeting: International Society for Behavioral Nutrition and Physical Activity, Québec, Canada, July 2003.

Speaker: "Middle School Prevention of Chronic Disease and Obesity," Texas Department of Agriculture, Education Service Center Staff Meeting, Austin, TX, September 2003.

Speaker: "Marketing Fruit and Vegetables to Middle School Students," American School Food Service, Association Child Nutrition and Industry Conference, Newport Beach, CA, January 2004.

Speaker: "Environmental Influences on Obesity," American Diabetes Association Postgraduate Course, San Francisco, CA, February 2004.

Speaker: "Evaluation of Quality Control Procedures for 24-Hour Dietary Recalls," Society of Behavioral Medicine, Baltimore, MD, March 2004.

Speaker: "Overcoming Barriers for School Food Service," Annual Meeting, Society for Nutrition Education, Philadelphia, PA, July 2004.

Teresa A. Davis, Ph.D.

Reviewer: Special Emphasis Panel, ZRG1 REB, National Institutes of Health, July 2003.

Speaker: "Somatotropin Regulation of Skeletal Muscle Protein Deposition in Pigs," American Society of Animal Science, Phoenix, AZ, July 2003.

Reviewer: Maryland Agricultural Experiment Station, March 2004.

Speaker: "Developmental Regulation of Hormone and Nutrient Signaling Impacts Muscle Protein Synthesis," Wake Forest School of Medicine, Winston-Salem, NC, March 2004.

Reviewer: Texas Agricultural Experiment Station grants, USDA, May 2004.

Reviewer: United States Department of Agriculture National Research Initiative, Animal Growth, Development, and Nutrient Utilization, May 2004.

Member: Muscle Function Research & Muscular Dystrophy Panel, American Institute of Biological Sciences, United States Army Research and Materiel Command, Congressionally-Directed Peer Reviewed Medical Research Program, June 2004.

Kenneth Ellis, Ph.D.

Chair: Body Composition sessions, Experimental Biology 2004, Washington, D.C., April 2004.

Marta Fiorotto, Ph.D.

Member: Nominating Committee, American Society of Nutritional Sciences, April 2004.

Member, NIH Skeletal Muscle and Exercise Physiology IRG study section, Washington, D.C., March 2004.

John P. Foreyt, Ph.D.

Speaker: "Trends in the Management of Obesity," The Food and Drug Law Institute, Science, Policy and Regulations Conference, Washington, D.C., January 2004.

Speaker: "Diet, Nutrition, Exercise, Obesity and Cancer," 9th Biennial Symposium on Minorities, The Medically Underserved and Cancer, Washington, D.C., March 2004.

Speaker: "Behavioral Changes to Prevent and Treat Obesity," Marqueta C. Huyck Lecture, Wayne State University, April 2004.

Ian J. Griffin, M. B., Ch. B.

Speaker: "Combining Iron and Zinc: Effects on Bioavailability," John Hopkins School of Public Health symposium, Baltimore, MD, November 2003.

Speaker: "Iron and Zinc: Are There Any Interaction?" John Hopkins School of Public Health symposium, Baltimore, MD, November 2003.

Speaker: "Using Stable Isotopes to Study Zinc Metabolism in Humans and Piglets," Endocrine Grand Rounds, University of California at San Francisco, San Francisco, CA, January 2004.

Michael A. Grusak, Ph.D.

Speaker: "Plant Foods as Sources of Nutrients for Humans: Research at the Interface of Plant and Human Nutritional Sciences," The University of Texas - San Antonio, Department of Biology, San Antonio, TX, September 2003.

Speaker: "Nutritional Genomics," HarvestPlus Rice Workshop, International Rice Research Center (IRRI), Los Banos, The Philippines, October 2003.

Panelist: "Biology of Soybean Genomics," National Science Foundation-sponsored Workshop, St. Louis, MO, October 2003.

Speaker: "Plant Improvement for Health/Nutritional Benefits," University of Alberta, Edmonton, Alberta, Canada, November 2003.

Speaker: "Improving the Nutritional Value of Plant Foods," W.M. Keck Foundation Symposium on Foods for the Future: Genomics of Bioengineered Foods, David Geffen School of Medicine, University of California at Los Angeles, Los Angeles, CA, November 2003.

Speaker: "Shoot-Root Communication: How Are Whole-Plant Processes Integrated?" 12th International Symposium on Iron Nutrition and Interactions in Plants, University of Tokyo, Tokyo, Japan, April 2004.

Speaker: "What is OSQR and Why Is It Important?" USDA/ARS Southern Plains Area New Scientist Workshop, College Station, TX, April 2004.

Speaker: "Outside Funding: Sources and Issues," USDA/ARS Southern Plains Area New Scientist Workshop, College Station, TX, April 2004.

Speaker: "Novel Approaches to Improve Legume Seed Mineral Nutrition," 5th European Conference on Grain Legumes, 2nd International Conference on Legume Genomics and Genetics, Dijon, France, June 2004.

Speaker: "Status of *Medicago truncatula* as a Model for Seed and Pod Development in Legumes," 5th European Conference on Grain Legumes, 2nd International Conference on Legume Genomics and Genetics, Dijon, France, June 2004.

Darryl Hadsell, Ph.D.

Panel Member: Special National Institute of Environmental Health Science study section, Breast Cancer and the Environment Research Centers review, Research Triangle Park, NC, July 2003.

Ad Hoc Reviewer: USDA CSREES Study Section on Animal Growth and Development, Washington, D.C., June 2004.

Peter Haney, M.D., Ph.D.

Speaker: "Hypoglycemia and Hyperglycemia," Annual Neonatal Nutrition Conference, Houston, TX, March 2004.

Morey W. Haymond, M.D.

Speaker: "Application of Stable Isotopes and Isotope Dilution Methodology in the Exploration of Human Physiology and Pathophysiology," Grinnell University, Iowa City, IA, October 2003.

Speaker: "From Whence Comes the Milk of Life - Maternal Metabolic Adaptation to Lactation," Metabolism Research Seminar, University of Washington, St. Louis, MO, March 2004.

Speaker: "Glucose Homeostasis in Infants and Children - New Insight into an Old Problem," Julio Santiago Memorial Lecture, University of Washington, St. Louis, MO, March 2004.

Speaker: "Protein Metabolism in Lactation," Amino-Acid/Protein Metabolism in Health and Disease (AA/PM) International Congress, Milano, Italy, March 2004.

Speaker: "Metabolic Adaptation to and Control of Lactation in Humans," Joslin Diabetes Center, Boston, MA, April 2004.

Speaker: "Regulation of Glucose Metabolism in Children," Massachusetts General Hospital, Boston, MA, April 2004.

Reviewer: GCRC Site Visit, Children's National Medical Center, Washington, D.C., April 2004.

William C. Heird, M.D.

Member: External Review Committee, Department of Foods and Nutrition, Purdue University, West Lafayette, IN, September 2003.

Member: "Research into Mechanisms of Fetal Growth Restriction," NICHD Special Emphasis Review Group, Bethesda, MD, November 2003.

Reappointed Member: Clinical Nutrition Research Unit, External Advisory Committee, University of Colorado Health Sciences Center, Denver, CO, January 2004.

Member: Clinical Trials and Training Review Group, NHLBI Special Emphasis Review Panel, Chevy Chase, MD, February 2004.

Reappointed Member: Child Health and Nutrition, Advisory Committee, International Association of Infant Food Manufacturers, , January 2004..

Past President: Board of Directors, Life Sciences Research Organization, Bethesda, MD, January 2004.

Moderator: "Pediatric Nutrition and Metabolism: Minerals," Poster Symposium, Pediatric Academic Societies Annual Meeting, San Francisco, CA, May 2004.

Ad Hoc Member: NIH Pregnancy and Neonatal Study Section, Bethesda, MD, June 2004.

Karen K. Hirschi, Ph.D.

Symposium Chair: "Bioengineering Blood Vessels," Angiogenesis and Microcirculation Gordon Conference, Newport, RI, August 2003.

Speaker: "Vascular Progenitors in Adult Tissues," XIIIth International Symposium on Atherosclerosis, Kyoto, Japan, October 2003.

Speaker: "Vascular Progenitors in Adult Tissues," Imperial College London Tissue Engineering and Regenerative Medicine Centre, London, England, October 2003.

Speaker: "Vascular Progenitors in Adult Tissues," Third International Meeting on Myocardial Ischemia: From Molecular Adaptation to Cellular Repair, Capri, Italy, October 2003.

Symposium Chair: "Endothelial Progenitor Cells and Angiogenesis," American Heart Association Scientific Sessions 2003, Orlando, FL, November 2003.

Speaker: "Origins and Fates of Vascular Progenitor Cells," British Atherosclerosis Society Spring Meeting, Oxford, England, March 2004.

Panelist: Vascular Repair Break Out Panel Session, UK/Texas Symposium: Tissue Engineering and Regenerative Medicine, London, England, March 2004.

Speaker: "Biologic Potential of Adult Stem Cells," The Clinical Science of Bone Repair Maintenance and Regeneration, Cleveland, OH, May 2004.

Speaker: "Vascular Progenitors for Tissue Engineering," The Cell-Based Therapies and Tissue Engineering (CTTE-2004), Cleveland, OH, May 2004.

Speaker: "Vascular Progenitors in Adult and Embryonic Tissues," XIIIth International Vascular Biology Meeting, Toronto, Canada, June 2004.

Kendal D. Hirschi, Ph.D.

Colloquium Speaker: "Contributions of Genomics to Human Nutrition," American Society for Horticultural Sciences, Providence, RI, October 2003.

Speaker: "A recipe for Crop Improvement: A dash of yeast and a pinch of weeds," North Carolina Biotechnology Center, Raleigh, NC, October 2003.

Speaker: "Regulation and Function of Calcium Transporters," Proceedings of the International Symposium, Dynamic Vacuoles in Plants, Okazaki, Japan, November 2003.

Speaker: "CAX genes and Calcium Homeostasis," NSF Calcium in Plants Workshop, San Antonio, TX, March 2004.

Speaker: "Plant Calcium Homeostasis and the CAX Transporters," Dartmouth, Hanover, NH, April 2004.

Speaker: "Update on Calcium Fortified Plants," Vegetable and Fruit Improvement Center Retreat, Houston, TX, June 2004.

Speaker: "Reduction of the Cadmium Content of Tobacco," Philip Morris USA Genomics Symposium, Richmond, VA, June 2004.

Speaker: "Regulation of Membrane Transport," 13th International Workshop on Plant Membrane Biology, Montpellier, France, July 2004.

Judy A. Hopkinson, Ph.D.

Presenter: Breastfeeding Management Workshop, Texas Department of Health, San Antonio, TX, July 2003.

Organizer: 2003 Harris County World Breastfeeding Day Celebration, Houston, TX, August 2003.

Speaker: "Problem Management in Lactation," Texas Woman's Health Network, Houston, TX, August 2004.

Speaker: "Scientific Basis of Breastfeeding," Houston Pediatric Nutrition Practice Group, Houston, TX, August 2003.

Presenter: Breastfeeding Management Workshop, Texas Department of Health, September 2003.

Speaker: "Scientific Basis for Breastfeeding Promotion," University of Texas School of Public Health, Houston, TX, September 2003.

Presenter: Principals of Lactation Management workshop, Texas Department of Health, Corpus Christi, TX, November 2003.

Farook Jahoor, Ph.D.

Appointed: External Examiner, Postgraduate Nutrition, Tropical Medicine Research Institute, Faculty of Medicine, University of the West Indies, Mona, Kingston, Jamaica, November 2003.

Reviewer: NIH Fellowship Applications, Endocrinology, Metabolism, Nutrition and Reproductive Sciences, November 2003.

Reviewer: 2003 Child Health Research Center Grant Applications, Department of Pediatrics, Baylor College of Medicine, Houston, TX, November 2003.

Gerard Karsenty, M.D., Ph.D.

Speaker: "Cell Signaling and Bone," Pittsburgh Bone Symposium 2003, Pittsburgh, PA, August 2003.

Speaker: Samuel Lunenfeld Research Institute Seminar Series, Toronto, Canada, October 2003.

Speaker: "Regulation of RunX2 Function," Midwest Connective Tissue Workshop, Rush University Medical Center, Chicago, IL, November 2003.

Speaker: "Regulation of Osteoblast Differentiation," Orthopedic Research Seminar Series 2003-2004, Children's Hospital, Boston, MA, February 2004.

Keynote Speaker: "Keynote address for the 10th Workshop on Cell Biology," 10th Workshop on Cell Biology, Switzerland, March 2004.

Speaker: "Central Control of Bone Remodeling" Visiting Professor for the Bone and Mineral Unit, Division of Endocrinology/Diabetes and Clinical Nutrition, Oregon Health and Science University, Portland, Oregon, April 2004.

Speaker: "Transcriptional Control of Osteoblast Differentiation," Visiting Professor for the Bone and Mineral Unit, Division of Endocrinology/Diabetes and Clinical Nutrition, Oregon Health and Science University, Portland, Oregon, April 2004.

Speaker: "Sackler Colloquium on The Biology of RNAi," Washington, D.C., May 2004.

Speaker: "The Neuronal Control of Bone Formation," American Society of Bone and Mineral Research Meeting, Bethesda, MD, May 2004.

Speaker: "Future Discussions in Skeletal Anabolic Research," American Society of Bone and Mineral Research Meeting, Bethesda, MD, May 2004.

Speaker: "Central Control of Bone Mass Biology and Medical Implications," 31st European Symposium on Calcified Tissues, Nice, France, June 2004.

Speaker: "The Neuronal Control of Bone Mass, Leptin as a Regulator, the Sympathetic Tone as a Mediator," The Endocrine Society 86th Annual Meeting, New Orleans, LA, June 2004.

Speaker: "ATF4 as a Regulator of Bone Formation," Bone and Tooth Society Meeting, Oxford, U.K., June 2004.

Carlos H. Lifschitz, M.D.

Speaker: "Gastroesophageal Reflux," Pan American Congress of Gastroenterology, Montevideo, Uruguay, October 2003.

Speaker: "Feeding Disorders in Infants," Pan American Congress of Gastroenterology, Montevideo, Uruguay, October 2003.

Speaker: "Feeding Disorders in Infants," King Chulalongkorn Memorial Hospital Medical Center, Bangkok, Thailand, November 2003.

Speaker: "Prevention and Treatment of Allergy in Infants," PanPacific Congress of Pediatrics, Bangkok, Thailand, November 2003.

Speaker: "Gastroesophageal Reflux," Course in Pediatric Gastroenterology, Caracas, Venezuela, June 2004.

Instructor: "Feeding Disorders in Infants," Course in Pediatric Gastroenterology, Caracas, Venezuela, June 2004.

David D. Moore, Ph.D.

Speaker: "Nuclear Hormone Receptors," Hepatotoxicity Assessment for Botanical Dietary Supplements Meeting, Bethesda, MD, September 2003.

Speaker: "Functions of CAR," University of Texas-San Antonio Health Science Center, San Antonio, TX, September 2003.

Speaker: Hyman Zimmerman State of the Art Lecture, "Nuclear Receptors in the Regulation of Drug Metabolism," American Association for the Study of Liver Disease Annual Meeting, Boston, MA, September 2003.

Participant: Nuclear Receptors and Bile Acid Regulation Research Workshop, American Association for the Study of Liver Disease Annual Meeting, Boston, MA, September 2003.

Speaker: "Xenobiotic Stress Induces Hepatomegaly and Liver Tumors via the Nuclear Receptor CAR," Elwood Jensen Symposium on Nuclear Receptors and Endocrine Disorders, University of Cincinnati, Cincinnati, OH, December 2003.

Speaker: "Adaptive and Maladaptive Functions of the Xenobiotic Receptor CAR," University of Texas Medical Branch at Galveston, Galveston, TX, December 2003.

Participant: "The Role of Nuclear Receptors in Carcinogenesis," US-Japan Workshop, Honolulu, HI, March 2004.

Buford L. Nichols, M.D.

Plenary Speaker: "Developmental Upregulation of Soluble Maltase-glucoamylase (Mgamso) Message In Membrane Maltase-glucoamylase (Mgamme) Null and WT Mice," NASPGHN Meeting, Montréal, Canada, October 2003.

Speaker: "Of Maize, Mice and Men," Department of Food Science, Purdue University, West Lafayette, IN, December 2003.

Theresa A. Nicklas, Dr.P.H.

Appointed Member: Cadbury Scientific Advisory Committee, August 2003.

Speaker: "Family and Social Determinants of Children's Eating Patterns and Diet Quality," American College of Nutrition Annual Meeting, Nashville, TN, October 2003.

Speaker: "Nutrition as the Major Environmental Factor for Cardiovascular Risk: Alterations of Diet and Prevention of Heart Disease and Health Ahead/Heart Smart Program," Tulane University Health Sciences Center, School of Public Health & Tropical Medicine, Center for Cardiovascular Health, New Orleans, LA, November 2003.

Speaker: "Getting a Handle on Childhood Obesity," 22nd Annual Physician Assistant Academy of Vermont Winter Continuing Medical Education Conference, Stowe, VT, January 2004.

Member: ad hoc study section, National Institute of Health, National Institute of Environmental Health Sciences Program Project Review, Washington, D.C., February 2004.

Speaker: "Eating Patterns and Childhood Obesity," Food Assistance and Nutrition Research Program Findings and Priority-Identification Conference, Economic Research Service, United States Department of Agriculture, Washington, D.C., March 2004.

Appointed Member: Brands Global Advisory Council, March 2004.

Appointed Member: United States Potato Board's Scientific Advisory Panel, March 2004.

Speaker: "The Impact of Fat on Health," Canola Conference, Puerto Villerta, Mexico, March 2004.

Speaker: "Family and Social Determinants of Children's Eating Patterns," Improve Your Face Value 2004 Annual Meeting & Exhibition. Colorado Dietetic Association, Lakewood, CO, April 2004.

Speaker: "Getting a Handle on Childhood Obesity," Montana Dietetic Association and Idaho Dietetic Association Conference. Missoula, MO, May 2004.

Monique Rijnkels, Ph.D.

Speaker: "Functional Genomics of the Casein Genes," XXI Patton Wilderness Conference, King Gap, PA, October 2003.

Speaker: "Functional Genomics of the Casein Gene Region," Department of Dairy and Animal Science, Pennsylvania State College of Agricultural Sciences, Pennsylvania State University, College Park, PA, October 2003.

Speaker: "Functional Genomics of Caseins," 18th Annual J.R. Brunner Symposium, Michigan State University, East Lansing, MI, May 2004.

Jeffrey M. Rosen, Ph.D.

Speaker: "Stem Cells in Normal Mammary Development and Breast Cancer," University of Texas Southwestern Medical School, Dallas, TX, September 2003.

Participant: Molecular Endocrinology Editorial Board Meeting, Taos, NM, September 2003.

Speaker: "Stem Cells in Normal Mammary Development and Breast Cancer," American Association of Cancer Researchers on Advances in Breast Cancer Meeting, October 2003.

Speaker: "Stem Cells and Cancer," National Cancer Institute-sponsored US/Japan Cooperative Cancer Research Program Symposium: Molecular Cancer Therapeutics, Bethesda, MD, March 2004.

Co-Chair: New Concepts in Breast Cancer Research Session, American Association of Cancer Researchers (AACR) Meeting, Orlando, FL, March 2004.

Speaker: Department of Molecular Genetics and Microbiology, University of Texas at Austin, Austin, TX, April 2004.

Robert J. Schwartz, Ph.D.

Speaker: "Role of LIM only CRP1 and CRP2 as Potent Smooth Muscle Differentiation Cofactors," 13th International Symposium on Atherosclerosis, Kyoto, Japan, September 2003.

Speaker: "Role of Serum Response Factor and Cofactors that Establish Cardiovascular Cell Lineages," Department of Pathology, University of Pittsburgh, Pittsburgh, PA, October 2003.

Speaker: "Serum Response Factor and Lim Proteins in Specification of Cell Phenotype," American Society of Nephrology 36th Annual Meeting and Scientific Exposition, San Diego, CA, November 2003.

Participant: Kardia Therapeutics, Inc., Scientific Advisory Board, Boston, MA, December 2003.

Member: Heart, Lung, and Blood Special Review Committee, Program for Genomic Applications (PGA), March 2004.

Speaker: "Serum Response Factor, a Master Cardiogenic Regulatory Platform and a Novel Phosphorylatable Gene Switch Target," 2004 Keystone Symposium: Cardiac Development and Congenital Heart Disease, Keystone Resort, Keystone, CO, March 2004.

Speaker: "Regulatory Hierarchies in Cardiac Development," Institute of Biosciences and Technology (IBT), March 2004.

Participant: Joint UK/Texas Symposium "Tissue Engineering and Regenerative Medicine," Imperial College London, United Kingdom, March 2004.

Member: American Heart Association (AHA) Western Review Consortium Peer Review Panel, Las Vegas, NV, April 2004.

Speaker: "The Role of SRF in Mesoderm Lineage Specification: Phosphorylation of the MADS Box," German Genetics Society (GfG) Spring Academy Meeting: SRF and Friends: Partnership in Gene Control, Tübingen, Germany, April 2004.

Robert Shulman, M.D.

Abstract Reviewer: 2nd World Congress of Pediatric Gastroenterology, Hepatology, and Nutrition, Paris, France, July 2004.

Speaker: "Gastrointestinal Motility Development: Implications for Feeding," Neonatal Nutrition Post-graduate Course, Houston, TX, March 2004.

Speaker: "Gastrointestinal Development: Implications for Feeding," Neonatal Nutrition Post-graduate Course Houston, TX, March 2004.

Speaker: "What Every Pediatrician Should Know about Breast Feeding and Formula," Grand Rounds, Texas Children's Hospital, Houston, TX, January 2004.

Speaker: "Gastroesophageal Reflux in Infants and Children," Grand Rounds, Hermann-Memorial Hospital West, Houston, TX, August 2003.

Speaker: "Glucose in Parenteral Nutrition," 12th Workshop on Home Parenteral Nutrition in Infants and Children, Frankfurt, Germany, November 2003.

Speaker: "New Tests of Gastrointestinal Function," Grand Rounds, Texas Children's Hospital, Houston, TX, November 2003.

Speaker: "Update on Parenteral Nutrition," North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition Annual Meeting, Montréal, Canada, October 2003.

Agneta L. Sunehag, M.D., Ph.D.

Speaker: "Infusion Rate of Glucose is the Major Predictor of Hyperglycemia in Very Premature Infants Receiving Total Parenteral Nutrition," Society of Pediatric Research Annual Meeting, San Francisco, CA, May 2004.

Deborah I. Thompson, Ph.D.

Speaker: "School Based Obesity Prevention," International Society of Behavioral Nutrition and Physical Activity, Québec City, Canada, July 2003.

Speaker: "Factors Influencing Log-On Rate to an eHealth Obesity Prevention Program Promoting Healthy Eating and Physical Activity to 8-10 Year Old African American Girls," Robert Wood Johnson eHealth Technologies Grantee Meeting, San Francisco, CA, October 2003.

Speaker: "Factors Influencing Log-On Rate to an eHealth Obesity Prevention Program Promoting Healthy Eating and Physical Activity to 8-10 Year Old African American Girls," eHealth Evaluation Research Opportunities: A Dialogue, Bethesda, MD, April 2004.

William Wong, Ph.D.

Speaker: "Soy Isoflavone and Childhood Obesity Intervention Studies," University of Nuevo Leon, Monterrey, Mexico, July 2003.

Speaker: "Stable Isotope Methods: Effects of Soy Isoflavones on Bone Metabolism and Nitric Oxide Production," Department of Physiology, the University of Hong Kong, China, October 2003.

Speaker: "Dietary Supplements to Prevent Osteoporosis," Department of Medicine, Chiang Mai University, Chiang Mai, Thailand, October 2003.

Speaker: "Safety, Efficacy, and Optimal Dosage of Soy Isoflavones to Prevent Osteoporosis," Functional Foods and Biotechnology: A Critical Interaction Workshop, USDA/CSREES Headquarters, Washington, DC, October 2003.

Speaker: "Intervention Strategies to Prevent Childhood Obesity and Obesity-Related Diseases," the University of Texas Pan American, McAllen, TX, November 2003.

Speaker: "Soy Isoflavone Supplementation to Prevent Osteoporosis and Hypertension in Postmenopausal Women," the University of Texas Pan American, McAllen, TX, November 2003.

Speaker: "USDA/ARS Children's Nutrition Research Center," University of Texas - Pan American, McAllen, TX, November 2003.

Reviewer: NIH Center for Scientific Review Special Emphasis Panel, "ZRG1 BPC-H (40) A Resource for Biomedical Mass Spectrometry," Washington University, St. Louis, MO, March 2004.

Chair: Soy and Potential Health Benefits Mini-Symposium, Experimental Biology 2004 Annual Meeting, Washington, D.C., April 2004.

2004 Publications

Journal Articles

Abramowitz J, Dai C, Hirschi KK, Dmitrieva RI, Doris PA, Liu L, Allen JC. Ouabin- and marinobufagenin-induced proliferation of human umbilical vein smooth muscle cells and a rat vascular smooth muscle cell line, A7r5. *Circulation* 108:3048-3053, 2003.

Abrams SA, Atkinson SA. Calcium, magnesium, phosphorus and vitamin D fortification of complementary foods. *J Nutr* 133:2994S-2999S, 2003.

Abrams SA, Griffin IJ, Hicks PD, Gunn SK. Pubertal girls only partially adapt to low calcium intakes. *J Bone Min Res* 19(5):759-763, 2004.

Abrams SA. Normal acquisition and loss of bone mass. *Horm Res* 80(Suppl 3):71-76, 2003.

Al-Hussaini TK, Abd el-Aal DM, Van den Veyver IB. Recurrent pregnancy loss due to familial and non-familial habitual molar pregnancy. *Int J Gynaecol Obstet* 83(2):179-186, 2003.

Anakk S, Kalsotra A, Kikuta Y, Huang W, Zhang J, Staudinger JL, Moore DD, Strobel HW. CAR/PXR provide directives for Cyp3a41 gene regulation differently from Cyp3a11. *Pharmacogenomics J* 4(2):91-101, 2004.

Anderson CB. Athletic identity and its relation to exercise behavior: scale development and initial validation. *J Sport Exerc Psychol* 26:39-56, 2004.

Anderson CB. When more is better: number of motives and reasons for quitting as correlates of physical activity in women. *Health Educ Res* 18:525-537, 2003.

Aries A, Paradis P, Lefebvre C, Schwartz RJ, Nemer M. Essential role of GATA-4 in cell survival and drug-induced cardiotoxicity. *Proc Natl Acad Sci USA* 101(18):6975-6980, 2004.

Assem M, Schuetz EG, Leggas M, Sun D, Yasuda K, Reid G, Zelcer N, Adachi M, Strom S, Evans RM, Moore DD, Borst P, Schuetz JD. Interactions between hepatic Mrp4 and Sult2a as revealed by the constitutive androstane receptor and Mrp4 knockout mice. *J Biol Chem* 279(21):22250-22257, 2004.

Balasubramanyam A, Sekhar RV, Jahoor F, Jones PH, Pownall HJ. Pathophysiology of dyslipidemia and increased cardiovascular risk in HIV lipodystrophy: a model of 'systemic steatosis' *Curr Opin Lipidol* 15(1):59-67, 2004.

Baranowski T, Cullen KW, Nicklas TA, Thompson DI, Baranowski JC. Are current health behavior change models helpful in guiding prevention of weight gain efforts? *Obes Res* 11::23S-43S, 2003.

Baranowski T, Klesges LM, Cullen KW, Himes JH. Measurement of outcomes, mediators, and moderators in behavioral obesity prevention research. *Prev Med* 38:S1-S13, 2004.

Baranowski T. Commentary: why combine diet and physical activity in the same international research society? *Int J Behav Nutr Phys Activity* 1:2, 2004.

Bialek P, Kern B, Yang X, Schrock M, Sosic D, Hong N, Wu H, Yu K, Ornitz DM, Olson EN, Justice MJ, Karsenty G. A twist code determines the onset of osteoblast differentiation. *Dev Cell* 6(3):423-435, 2004.

Birch LL, Fisher JO, Davison KK. Learning to overeat: maternal use of restrictive feeding practices promotes girls' eating in the absence of hunger. *Am J Clin Nutr* 78:215-220, 2003.

Bohnsack BL, Hirschi KK. Molecular regulation of vascular development. *ASNR* 100:1-6, 2003.

Bohnsack BL, Lai L, Dolle P, Hirschi KK. Signaling hierarchy downstream of retinoic acid that independently regulates vascular remodeling and endothelial cell proliferation. *Genes Dev* 18:1345-1358, 2004.

Bos C, Stoll B, Fouillet H, Gaudichon C, Guan X, Grusak MA, Reeds PJ, Tome D, Burrin DG. Intestinal lysine metabolism is driven by the enteral availability of dietary lysine in piglets fed a bolus meal. *Am J Physiol* 285:E1246-E1257, 2003.

Brooks GA, Butte NF, Rand WM, Flatt JP, Caballero B. Chronicle of the institute of medicine physical activity recommendation: how a physical activity recommendation came to be among dietary recommendations. *Am J Clin Nutr* 79:921S-930S, 2004.

Brown CO 3rd, Chi X, Garcia-Gras E, Shirai M, Feng XH, Schwartz RJ. The cardiac determination factor, Nkx2-5, is activated by mutual cofactors GATA-4 and Smad1/4 via a novel upstream enhancer. *J Biol Chem* 279(11):10659-10669, 2004.

Brunelli S, Tagliafico E, De Angelis FG, Tonlorenzi R, Baesso S, Ferrari S, Niinobe M, Yoshikawa K, Schwartz RJ, Bozzoni I, Ferrari S, Cossu G. Msx2 and necdin combined activities are required for smooth muscle differentiation in mesoangioblast stem cells. *Circ Res* 94(12):1571-1578, 2004.

Burrin DG, Davis TA. Proteins and amino acids in enteral nutrition. *Curr Opin Clin Nutr Metab Care* 7:79-87, 2004.

Burrin DG, Guan X, Stoll B, Petersen YM, Sangild PT. Glucagon-like peptide 2: a key link between nutrition and intestinal adaptation in neonates? *J Nutr* 133(11):3712-3716, 2003.

Burrin DG, Stoll B, Chang X, Van Goudever JB, Fujii H, Hutson S, Reeds PJ. Parenteral nutrition results in impaired lactose digestion and hexose absorption when enteral feeding is initiated in infant pigs. *Am J Clin Nutr* 78:461-470, 2003.

Butte NF, Cobb K, Dwyer J, Graney L, Heird WC, Rickard K. The start healthy feeding guidelines for infants and toddlers. *J Am Diet Assoc* 104:442-454, 2004.

Butte NF, Ellis KJ, Wong WW, Hopkinson JM, Smith EO. Composition of gestational weight gain impacts maternal fat retention and infant birth weight. *Am J Obstet Gynecol* 189:1423-1432, 2003.

Butte NF, Ellis KJ. Comment on "Obesity and the environment: where do we go from here?" *Science* 301:598b, 2003.

Butte NF, Wong WW, Treuth MS, Ellis KJ, Smith EO. Energy requirements during pregnancy based on total energy expenditure and energy deposition. *Am J Clin Nutr* 79:1078-1087, 2004.

Chang J, Wei L, Otani T, Youker KA, Entman ML, Schwartz RJ. Inhibitory cardiac transcription factor, SRF-N, is generated by caspase 3 cleavage in human heart failure and attenuated by ventricular unloading. *Circulation* 108(4):407-413, 2003.

Chen Z, Griffin IJ, Kriseman YL, Liang LK, Abrams SA. Inductively coupled plasma mass spectrometric analysis of calcium isotopes in human serum: a low-sample-volume acid-equilibration method. *Clin Chem* 49:2050-2055, 2003.

Cheng NH, Liu JZ, Nelson RS, Hirschi KD. Characterization of CXIP4, a novel Arabidopsis protein that activates the H⁺/Ca²⁺ antiporter, CAX1. *FEBS Letters* 559:99-106, 2004.

Cheng NH, Pittman JK, Zhu JK, Hirschi KD. The protein kinase SOS2 activates the Arabidopsis H⁺/Ca²⁺ antiporter CAX1 to integrate calcium transport and salt tolerance. *J Biol Chem* 279:2922-2926, 2004.

Cherrington NJ, Slitt AL, Maher JM, Zhang XX, Zhang J, Huang W, Wan YJ, Moore DD, Klaassen CD. Induction of multidrug resistance protein 3 (mrp3) in vivo is independent of constitutive androstane receptor. *Drug Metab Dispos* 31(11):1315-1319, 2003.

Conneely OM, Mulac-Jericevic B, Lydon JP. Progesterone-dependent regulation of female reproductive activity by two distinct progesterone receptor isoforms. *Steroids* 68(10-13):771-778, 2003.

Contreras A, Hale TK, Stenoien DL, Rosen JM, Mancini MA, Herrera RE.. The dynamic mobility of histone H1 is regulated by cyclin/CDK phosphorylation. *Mol Cell Biol* 23(23):8626-8636, 2003.

Cui Y, Huang L, Eleftheriou F, Yang G, Shelton JM, Giles JE, Oz OK, Pourbahrami T, Lu CY, Richardson JA, Karsenty G, Li C. Essential role of STAT3 in body weight and glucose homeostasis. *Mol Cell Biol* 24(1):258-269, 2004.

Cullen KW, Baranowski T, Owens E, Marsh T, Rittenberry L, De Moor, C. Availability, accessibility, and preferences for fruit, 100% fruit juice, and vegetable influence children's dietary behavior. *Health Educ Behav* 30(5):615-626, 2003.

Cullen KW, Himes JH, Baranowski T, Pettit J, Stevens M, Slawson DL, Obarzanek E, Murtaugh M, Matheson D, Sun W, Rochon J. Validity and reliability of a behavior-based food coding system for measuring fruit, 100% fruit juice, vegetable, and sweetened beverage consumption: results from the Girls' health Enrichment Multisite Studies. *Prev Med* 38:S24-S33, 2004.

Cullen KW, Klesges LM, Sherwood NE, Baranowski T, Beech B, Pratt C, Zhou A, Rochon J. Measurement characteristics of diet-related psychosocial questionnaires among African-American parents and their 8- to 10-year-old daughters: results from the Girls' health Enrichment Multisite Studies. *Prev Med* 38:S34-S42, 2004.

Cullen KW, Watson K, Himes JH, Baranowski T, Rochon J, Waclawiw M, Sun W, Stevens M, Slawson DL, Matheson D, Robinson TN. Evaluation of quality control procedures for 24-h dietary recalls: results from the Girls' health Enrichment Multisite Studies. *Prev Med* 38:S14-S23, 2004.

Cullen KW, Zakeri IF, Pryor EW, Baranowski T, Baranowski JC, Watson K. Goal setting is differentially related to change in fruit, juice, and vegetable consumption among fourth-grade children. *Health Educ Behav* 31:258-269, 2004.

Cullen KW, Zakeri IF. Fruits, vegetables, milk, and sweetened beverage consumption and access to a la carte/snack bar meals at school. *Am J Public Health* 94:463-467, 2004.

Dacquin R, Davey RA, Laplace C, Levasseur R, Morris HA, Goldring SR, Gebre-Medhin S, Galson DL, Zajac JD, Karsenty G. Amylin inhibits bone resorption while the calcitonin receptor controls bone formation in vivo. *J Cell Biol* 164:509-514, 2004.

Dacquin R, Mee PJ, Kawaguchi J, Olmsted-Davis EA, Gallagher JA, Nichols J, Lee K, Karsenty G, Smith A. Knock-in of nuclear localised beta-galactosidase reveals that the tyrosine phosphatase Ptp^{rv} is specifically expressed in cells of the bone collar. *Dev Dyn* 229:826-834, 2004.

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