

Clinical Translational Research Center

Division Photo



J. Heubi

Division Data Summary

Research and Training Details

Number of Faculty	1
Number of Joint Appointment Faculty	8
Number of Support Personnel	41
Direct Annual Grant Support	\$2,321,669

Clinical Activities and Training

Inpatient Encounters	183
Outpatient Encounters	4170

Significant Publications

Publication Activities

All publications resulting from projects utilizing the Clinical Translational Research Center are listed in the divisional sections for this annual report. The CTRC (formerly GCRC) maintains a complete listing of these publications, along with a copy of each journal article and book chapter, in the office. Contact Amy Hartkemeyer, CTRC business manager, for details.

Faculty Members

James E. Heubi, MD, Professor ; *Associate Chair, Clinical Research; Associate Dean, Clinical Research; Program Director, CTRC*

Joint Appointment Faculty Members

John Hutton, PhD, Professor
Bioinformatics Division
CTRC Informatics Director

Heidi Kalkwarf, PhD, Associate Professor
General & Community Pediatrics
Body Composition Scientific Director

Ardythe Morrow, PhD, Professor
Center for Epidemiology & Biostatistics
CTRC Biostatistician

Jennie Noll, PhD, Associate Professor
Behavioral Medicine & Clinical Psychology
CTRC Research Subject Advocate

David Repaske, MD, PhD, Professor
Endocrinology
Biochemistry Core Laboratory Director

M. Douglas Ris, PhD, Professor
Behavioral Medicine & Clinical Psychology
CTRC Behavioral Core Director

Shelia Salisbury, PhD, Assistant Professor
Center for Epidemiology & Biostatistics
CTRC Biostatistician

Lori Stark, PhD, Professor
Behavioral Medicine & Clinical Psychology
CTRC Psychologist

Significant Accomplishments

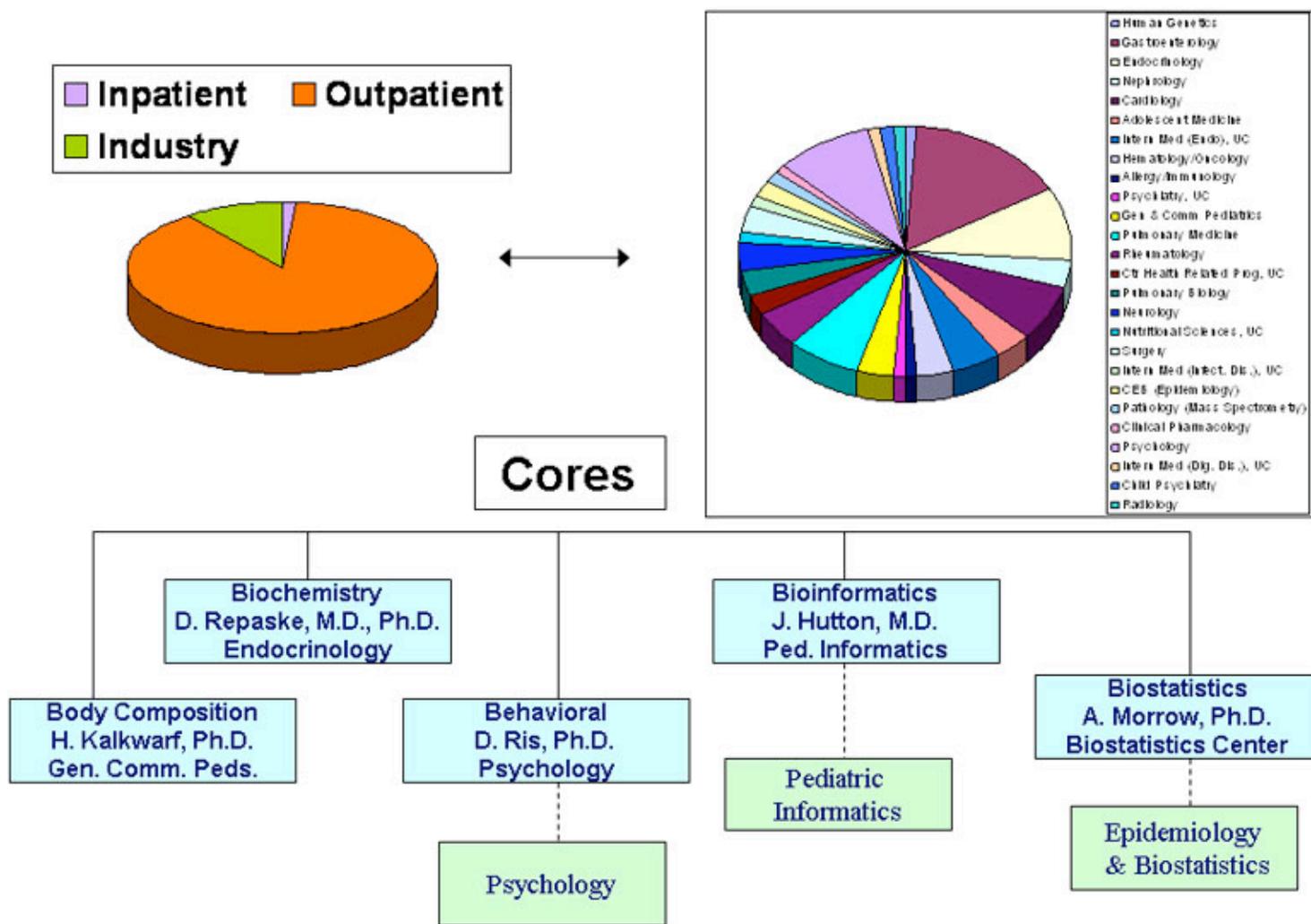
CTRC Highlights

The Clinical Translational Research Center, CTRC (formerly GCRC) has enjoyed funding from the NIH since 1963 with an interruption between 1987-1991. Over the years, investigators have made substantial contributions to medical knowledge through studies of infants, children and adults studied on the CTRC. With added emphasis on translational research, the CTRC has been providing resources including nursing, bionutrition, body composition, behavioral, informatics and biostatistics for more protocols that support the application of novel ideas derived from the laboratory that are being applied at the bedside. Recent outstanding examples of research performed with the CTRC support include:

- Type 2 diabetes is a significant health problem that infrequently remits with standard medical treatment for obesity. Weight loss surgery results in elimination of type 2 diabetes in adults; however, little information is available in adolescents. Extremely obese (BMI 50 ± 5.9 kg/m²) adolescents who had Roux-en-Y gastric bypass had reversal in type 2 diabetes in 10 of 11 operated patients. Concurrent reductions in BMI (34%), fasting blood glucose (41%), HgbA1C levels and insulin sensitivity were observed. In contrast, by comparison unoperated adolescents had stable weight and no significant change in blood pressure or diabetic medication use with improved Hgb A1C after 1 year observation. Significant improvements in weight loss with gastric bypass surgery leads to improved health in adolescents with decreased cardiovascular risks, insulin resistance, and b-cell function and is a potentially effective option for the treatment of extremely obese adolescents with type 2 diabetes. (Inge TH, Miyano G, Bean J, Helmrath M, Courcoulas A, Harmon CM, Chen MK, Wilson K, Daniels SR, Garcia VF, Brandt ML, Dolan LM. Reversal of Type 2 Diabetes Mellitus and Improvements in Cardiovascular Risk Factors after Surgical Weight Loss in Adolescents. *Pediatrics* 2009; 123:214-222.)
- Multiple inborn errors of bile acid metabolism found to be responsive to cholic acid therapy have been identified and characterized by investigators at CCHMC over the last 20 years. Although diseases such as Zellweger Syndrome,

infantile Refsum disease and neonatal adrenoleukodystrophy have perturbations in bile acid metabolism, their clinical picture is dominated by severe neurologic compromise. Investigators at CCHMC in collaboration with colleagues at Kennedy-Kreiger Institute, McGill University and Great Ormond Street recently described the clinical, biochemical, histopathological and genetic characteristics and response to cholic acid in a single patient with a peroxisomal defect caused by mutations in PEX10. Although the patient's biochemical characteristics were similar to those found in patients with Zellweger syndrome, who have profound mental retardation, hearing and visual defects, the patient had only mild ataxia. Conventional fibroblast culture techniques failed to define a defect in peroxisomal assembly or metabolism. This case emphasizes the heterogeneity of the phenotypes of peroxisomal disorders, the challenges of accurate diagnoses and the value of genetic analysis in defining the pathophysiology of peroxisomal defects. (Steinberg SJ, Snowden A, Braverman NE, Chen L, Watkins PA, Clayton PT, Setchell KDR, Heubi JE, Raymond GV, Moser AB, Moser HW. A PEX10 defect in a patient with no detectable defect in peroxisomal assembly or metabolism in cultured fibroblasts. J Inherit Metab Dis 2009; 32:109-119.)

Clinical Translational Research Center census and number of projects are shown below in pie chart format. The CTRC core services are also illustrated below. (Projects utilizing the CTRC are, for the most part, multidisciplinary)



Clinical and Translational Program Highlights

Programs developed with the Center for Clinical and Translational Science and Training supported by the Clinical and Translational Science Award (CTSA), University of Cincinnati, Cincinnati Children's Hospital Medical Center and the Cincinnati Veterans Affairs Medical Center will complement the services provided by the CTRC. The CTSA grant was funded April 3, 2009, with funding for the next five years. Funded programs include the Clinical Translational Research Center (CTRC) formally known as the GCRC as well as expanded services for biomedical informatics, biostatistics and study design, pilot projects, career development, community engagement, regulatory support, and translational technologies. These expanded services will continue to depend upon the CTRC for the translation of discoveries from the bed to bedside and with this new initiative, opportunities will be presented to make applications of discoveries to the broader audience in the community.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct / Project Period Direct

HEUBI, J

Cincinnati Center for Clinical and Translational Sciences and Training

National Institutes of Health (University of Cincinnati)

UL1 RR 026314	04/03/09 - 03/31/14	\$2,321,669 / \$2,321,669
Cripe, T	Pilot/Collaborative Studies	24,238
Hutton, J	Biomedical Informatics	72,175
Morrow, A	Design, Biostatistics and Ethics	33,851
Heubi, J	CTRC	1,992,740
Mitchell, M	Community Engagement	48,211
DeWitt/Rothenberg	Research/Education: K12 Training Program	38,609
Grupp-Phelan, J	Research/Education: K30 Training Program	36,357
Ball, W	Imaging Research	24,238
Aronow, B	Center for Translational and Molecular Disease Modeling	24,238
Malik, P	Stem Cell Research	27,012

Current Year Direct

\$2,321,669

Total \$2,321,669
