The researchers at Children’s Hospitals and Clinics of Minnesota are recognized internationally for their excellent care and outcomes. Our professional staff has been invited to participate in networks, consult as experts, and coordinate cooperative agreements in national initiatives and clinical research trial networks. Partnerships with entities such as the Therapeutic Development Network of the Cystic Fibrosis Foundation, Children’s Oncology Group, and the Pediatric Heart Network enable clinical research centers worldwide to consolidate research efforts and provide patients with leading edge treatments.

**Therapeutic Development Network (TDN):**
According to recent TDN center data, Children’s Cystic Fibrosis Program is ranked in the top third of all centers participating in similar research for timely enrollment of patients from enrollment approval date to study inception.

**Children’s Oncology Group (COG):**
Children’s is among the top 10 hospitals, medical centers, and research institutes in COG for numbers of children with newly diagnosed cancer treated each year. Through successful international partnerships and collaborations related to the treatment and prevention of childhood cancer, Children’s is able to provide clinical trials for childhood cancer treatment and help develop the most effective treatment protocols. Importantly, Children’s is ranked eighth out of the 235 hospitals participating in COG.

**Hemophilia Treatment Center (HTC):**
Children’s is a designated Hemophilia Treatment Center, and through the Centers for Disease Control and Prevention (CDC), is dedicated to the advancement of treatments and cures for bleeding and clotting disorders and prevention of complications through education, advocacy, and research.

**Pediatric Heart Network (PHN):**
Children’s Cardiovascular and Critical Care Research Center participates in the PHN, a group of hospitals conducting research studies in children with congenital or acquired heart disease.

**The Pediatric Acute Lung Injury and Sepsis Investigators Network (PALISI):**
The Pediatric Acute Lung Injury and Sepsis Investigators Network (PALISI) is a North American collaboration of clinical investigators in pediatric intensive care units. Researchers collaborate to identify supportive, preventive, and therapeutic strategies for acute lung injury, sepsis, multi-organ failure, and other acute, life-threatening pulmonary or systemic inflammatory syndromes that affect infants and children.
Every day, we find inspiration from the children and families we serve and from the researchers at Children’s who are committed to finding answers. Each researcher fulfills the promise of our vision to seek knowledge that will benefit children for generations to come.

The excitement of our scientific inquiry resonates in the pages of this report. The studies featured are only a small representation of the research being conducted at Children’s. Our diabetes/endocrinology group collaborates in state-of-the-art research to enhance daily living for children with diabetes and endocrine disorders. The cystic fibrosis team is involved in clinical trials to conquer debilitating symptoms and continues to demonstrate excellent outcomes. Cardiovascular and critical care research illustrates an elegant collaboration between two of our cornerstone service lines committed to improving health and mortality for children and their families.

Hematology/oncology gained national recognition for identifying the DICER1 gene and continues leading-edge investigator-initiated research to help children with cancer live developmentally normal lives. The Telehealth Institute for Child Maltreatment reaches across the nation to ensure that any child who is a victim of sexual abuse receives an appropriate and timely diagnosis. The Infant Diagnostic and Research Center is committed to changing outcomes for premature and critically ill infants.

Research at Children’s often yields dramatic, positive results. We are proud to be associated with such talented researchers who continuously stop to ask: “What can I do to make a difference?” Their ongoing mission is to help our children and families thrive and reach their full potential.

Phillip M. Kibort, MD, MBA
Vice President of Medical Affairs
and Chief Medical Officer

Laurie Blumberg-Romero, MA
Director, Research and Sponsored Programs

Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes/Endocrinology</td>
<td>2</td>
</tr>
<tr>
<td>Cystic Fibrosis</td>
<td>4</td>
</tr>
<tr>
<td>Cardiovascular and Critical Care (CVCC)</td>
<td>6</td>
</tr>
<tr>
<td>Hematology/Oncology</td>
<td>8</td>
</tr>
<tr>
<td>Telehealth Institute for Child Maltreatment (THICM)</td>
<td>12</td>
</tr>
<tr>
<td>The Infant Diagnostic and Research Center (IDRC)</td>
<td>14</td>
</tr>
<tr>
<td>Research Financials</td>
<td>16</td>
</tr>
<tr>
<td>Selected Grant Awards</td>
<td>17</td>
</tr>
<tr>
<td>Peer-Reviewed Publications</td>
<td>18</td>
</tr>
<tr>
<td>Research Staff and Vision</td>
<td>22</td>
</tr>
</tbody>
</table>
Exploring solutions for diabetes management

Children’s diabetes care team is aggressively seeking best practices to help children and their families consistently monitor blood sugar, activity, food, and regular injections. Diabetes, one of the most common chronic childhood diseases, impacts the lives of approximately 1.9 out of every 1,000 children in the United States. Diabetes occurs when the body does not produce an adequate amount of insulin needed to convert sugar and starches into energy. Management is complex, requiring daily monitoring of blood sugars and balancing food, exercise, insulin, and other medication.

“Our providers are passionate about taking care of patients. As a group, we will do whatever we can to improve quality of life for patients and families. We focus on clinical research as a means to achieve this goal,” stated Jennifer Kyllo, MD.

Examining new diabetes technology through clinical studies

Children’s McNeely Diabetes Center and Endocrine Clinic is currently involved in nine open clinical studies. One area of research interest is exploring whether adult-focused technologies and medications can be used by children to improve health outcomes and quality of life.

As part of a multi-center trial, Children’s is partnering with Medtronic to investigate the use of newer diabetes technology for children. The focus of this research is to ascertain if new technology will allow children to shift their daily routines so they can eat what they want, when they want, worry less about low blood sugars, and avoid the inconvenience of monitoring blood sugars throughout the day.

Controlling hypothalamic obesity with drug therapy

Craniopharyngioma, a slow-growing, non-malignant brain tumor, accounts for 6 to 10 percent of all brain tumors in children, and occurs most commonly in children between the ages of 5 and 14. It is the third most common intracranial brain tumor in children. Children undergo surgical removal with radiation for recurrence of this tumor. One adverse outcome often observed is hypothalamic obesity that results from damage to the hypothalamus.

M. Jennifer Abuzzahab, MD, and her research team at Children’s are evaluating the effect of exenatide on weight gain and obesity in this pediatric population. Administered through subcutaneous injections, exenatide is a synthetic hormone agonist for gut-derived hormone glucagon-like peptide-1 (GLP-1). One of the main mechanisms of exenatide is to enhance glucose disposal in the postprandial setting and improve glucose tolerance.

In addition, exenatide can induce weight loss by decreasing appetite and slowing gastric motility. Also being evaluated is the effect of exenatide on calorie intake, satiety, and quality of life. The hypothesis is that exenatide given to children with hypothalamic obesity will reduce their weight significantly from baseline to endpoint. It is also hypothesized that calorie intake will decrease, while satiety and quality of life ratings increase.

Fostering inquiry

Children’s is actively involved in the following additional research:

TrialNet, a National Institutes of Health (NIH) sponsored multi-center national network, looks at natural history and treatment of children with Type I diabetes.

In partnership with Naval Medical Center, researchers are looking for the genetic marker that causes Type I diabetes.
Elizabeth Potratz, BSN, RN, clinical diabetes educator, teaches a patient with diabetes how to use a glucose monitor.
Clinical trials bridge the gap between debilitating symptoms and excellent outcomes

Early detection and treatment alleviate symptoms

Our cystic fibrosis (CF) multidisciplinary care team seeks to improve the quality of life and extend the life expectancy for children with cystic fibrosis by achieving optimal nutritional status, preventing lung infections, and maintaining multi-organ function.

Cystic fibrosis is a life-limiting disease that impacts 70,000 children and adults worldwide, including 30,000 in the United States. Approximately 1,000 new cases of CF are diagnosed each year; and more than 70 percent of these cases are identified by age two. Adding CF testing to newborn screening, which has been taking place in the state of Minnesota since 2006, allows for early detection and proactive treatment. Today, the median life expectancy for children with CF is more than 37 years. This number increases every year due to advances in clinical care and enhanced research.

Innovative collaborations lead to promising CF therapies

In 2009, the CF program at Children’s was awarded Therapeutic Development Network (TDN) Center status through the CF Foundation, which is providing Children’s with the potential to pursue new networking and research opportunities.

John McNamara, MD, and his team are currently evaluating the safety and efficacy of two CF treatments. The Infant Study of Inhaled Saline in Cystic Fibrosis (ISIS) is exploring the use of 7 percent hypertonic saline in patients with CF, ages four months to five years. Children’s is also participating with Inspire Pharmaceuticals, Inc. on a multi-center, randomized trial to evaluate the use of denufosol (an investigational drug) vs. placebo delivered via inhalation in 450 patients with CF (www.clinicaltrials.gov; Study ID:NCT00625612).

Denufosol is a P2Y2 receptor agonist designed to enhance the lungs’ innate mucosal hydration and mucociliary clearance mechanisms, which in CF patients are impaired due to a genetic defect. Activation of the P2Y2 receptor may bypass this defect to hydrate airways and stimulate mucociliary clearance. Thus, denufosol may have the potential to help keep the lungs of CF patients clear of thickened mucus, reduce infections, and limit the damage that occurs as a consequence of the prolonged retention of thick, infected secretions.

Yoga study targets depression and anxiety

Based on an investigator-initiated study, researchers at Children’s found that pediatric patients with CF often have a negative perception of their bodies, experience significant sleep problems, have limb and joint pain, and suffer from severe depression and anxiety. Based on this data, researchers are now exploring the potential benefits of yoga on children with CF. The strength of this data as well as information gathered about the families’ desire for complementary therapy, led to the development of the yoga study titled: Evaluating the effects of yoga on children with cystic fibrosis: pain, sleep, anxiety, and depression.
Mahrya Johnson, senior clinical research coordinator, interacts with a patient during a clinical visit.

"Our continued excellent outcomes and increasing involvement in clinical research is a tribute to the passion of the multidisciplinary CF team. For over 20 years, the team has focused on continuous quality improvement in the care of children with CF."

John McNamara, MD
Collaboration between two service lines improves health and mortality

Clinical needs drive state-of-the-art research

The Cardiovascular and Critical Care (CVCC) Research Center was created in 2009 to demonstrate the proven multidisciplinary collaboration between the cardiovascular and critical care departments. Research is prioritized based on clinical improvements in care. These range from drug studies to longitudinal outcome surveillance projects that highlight groundbreaking methodologies. Improved health and mortality for children and families is the top priority. Our collaborative infrastructure supports a full scope of research projects through the thoughtful use of state-of-the-art technologies, treatments, and pharmaceuticals.

Improving outcomes for atrioventricular septal defects

With the goal of providing the best possible outcomes for patients with unbalanced atrioventricular septal defect (AVSD), David Overman, MD, initiated the collaboration of five pediatric institutions in a retrospective analysis of the treatment of this defect. AVSD is a rare heart abnormality characterized by the failure of the heart chambers to separate, and accounts for 5 percent of all congenital heart defects. Overman and his study team are reviewing and analyzing medical records including echocardiograms performed over the past 10 years from the participating institutions. The objective is to establish clear criteria for determining optimal treatment strategies in unbalanced AVSD.

Research targets life-threatening complications in children with marfan syndrome

Marfan syndrome is a genetic disorder of connective tissue with a prevalence of approximately 1 per 5,000 people. Today, standard of care therapy for these individuals is beta-blocker therapy, such as atenolol, which reduces the rate of aortic growth. Through significant research, the life expectancy and quality of life of individuals with marfan syndrome has increased, but patients continue to suffer cardiovascular morbidity and mortality.

Mary Ella Pierpont, MD, geneticist/cardiologist, and Charlie Baker, MD, cardiologist, are joint investigators on a multi-institutional, randomized clinical trial with 30 sites throughout the U.S., Canada, and Europe. This study is sponsored by the National Heart, Lung, and Blood Institute and conducted through the Pediatric Heart Network. This study is exploring the effects of atenolol and losartan on aortic root growth, a leading cause of death in individuals with marfan syndrome. Recent studies have shown that angiotensin II receptor blockers, like losartan, have normalized aortic root growth, ultimately preventing premature death. The primary aim of the study is to compare the effects of atenolol therapy to those of losartan on aortic root growth and other short-term cardiovascular outcomes.

Innovative research inspires excellence in empyema pneumonia care

From diagnosis to treatment, Children’s is always looking for ways to provide state-of-the-art care for our children. Improving the Care of Children with Pneumonia is an institution-wide study to improve the care of children with pneumonia and empyema (chest cavity infection) by creating a clinical benchmark that minimizes practice variation and limits delay in decision-making.

Stephen Kurachek, MD, in collaboration with radiology, infectious disease, the emergency department, and hospitalists is collecting data in order to develop a standardized treatment and intervention plan for children who are hospitalized with pneumonia. These findings promise to create a consistent approach for the care of children with pneumonia hospital-wide. The focus is on designating immunologic and situational risk associated with the consistent use of antibiotics, including the selection and length of use, as well as standardizing both imaging and laboratory studies for the population as a whole.
David Gremmels, MD, helps a patient listen to the sound of his own heart.
Investigator-initiated research awakens balance and strength

Maintaining national presence in pediatric oncology research

The hematology/oncology research team at Children’s is actively involved with Children’s Oncology Group (COG), the world’s most prominent pediatric cancer research organization. Children’s ranks in the top 10 of COG institutions for patient enrollment. With 132 clinical research-driven specialty studies, 95 of which are clinical trials, Children’s is at the forefront of pediatric oncology research with ongoing studies that are well-integrated into national research. Children’s also participates in other clinical trial groups, such as Therapeutic Advances in Childhood Leukemia (TACL).

Research at Children’s promotes the current and future physical and emotional development of children undergoing cancer treatment. Researchers believe that children with cancer can live a developmentally normal life in relation to physical activity, social interaction, and school. Children’s is pioneering new treatments and cures to minimize side effects and enhance patients’ quality of life.

Hemophilia Treatment Center provides on-site comprehensive services

Children’s federally funded Hemophilia Treatment Center (HTC) within the hematology/oncology clinic participates in the national Universal Data Collection Registry (UDC) for patients with bleeding disorders. The purpose of the registry, coordinated through the Centers for Disease Control and Prevention (CDC), is to gain a better understanding of ways to reduce or prevent complications of bleeding disorders and to create a uniform set of routinely collected clinical data.

“Children’s HTC belongs to a nationwide network of federally funded hemophilia and thrombosis centers and is the only such program in the region focused solely on pediatrics,” said Margaret Heisel Kurth, MD. “This designation ensures that children receive comprehensive care, including diagnostic evaluations, treatment, and care coordination.”

Investigating with passion

Laura Gilchrist, PT, PhD, has dedicated her career to finding new ways to improve physical function in children undergoing cancer treatment. With Lynn Tanner, PT, she is exploring ways to measure chemotherapy-induced damage to peripheral nerves in the hands and feet. While this issue is well described in adults, Gilchrist is developing a measurement tool specifically for use in children to determine which changes in nerve function are permanent, with the goal of preventing such damage. This tool will not only help Children’s patients, but will be utilized by health care providers and researchers across the country to more precisely evaluate this treatment-related side effect. This is the first step in her quest to create a new model that integrates physical status into the care of cancer patients.

In a second study led by Gilchrist, children at the end of cancer treatment are being evaluated for balance, endurance, strength, posture, and walking mechanics. She is using a state-of-the-art computerized walkway system to collect information on changes in walking mechanics. Potential deficits such as decreased step length, foot drop, and changes in gait patterns are measured using this novel device. Research outcomes will potentially help children maintain motor development during treatment and prevent chronic late effects, such as obesity and decreased bone mineral density.

Megan V. Thygeson, a certified yoga instructor; Casey Hooke, RN, PhD, CPON; and her team completed the Peaceful Play study to evaluate the benefits of yoga for children, teens, and their parents hospitalized for treatment of cancer or blood disorders. Study results show that after a single 45-minute inpatient yoga class, parents and teens experience a significant decrease in anxiety and an improved sense of well being. The group is planning future studies to determine the benefits of yoga over a longer period of time.
With guidance from Laura Gilchrist, PT, PhD, a patient regains balance and stability.

“Now that the vast majority of children survive cancer due to advances in cancer treatment, we must understand the physical deficits that treatment brings and intervene in order to maintain normal motor development and improve their quality of life.”

Laura Gilchrist, PT, PhD
Gene mutation discovery leads to early detection of PPB

The search for the cause of an inherited form of a rare, aggressive childhood lung cancer has uncovered important information about how the cancer develops, and potentially sheds light on the development of other cancers. Children’s physicians Yoav Messinger, MD, and Jack Priest, MD, MBA, partnered with colleagues at Children’s of St. Louis and Children’s National in the discovery that some children with the rare cancer pleuropulmonary blastoma (PPB) are born with a deleterious mutation in the DICER1 gene.

“For years, our large collection of PPB cases and families has revealed the strong genetic component of this disease,” said Priest, who is the research director of the International PPB Registry at Children’s. “We are thrilled to have uncovered an important mutation and we have begun to understand the cellular mix-up which results in malignancy.”

The DICER1 gene is a master controller gene that helps regulate expressions of other genes. This research adds the final link to the chain connecting the DICER1 gene to cancer development—something that had been suspected, but until now had not definitively been demonstrated.

Only 50 to 60 cases of PPB are diagnosed each year around the world. Most children with PPB are under five years of age. The cancer progresses from air-filled lung cysts in the early stage to solid lung tumors in later stages. If detected in the earliest stage, 90 percent of patients appear to be cured when treated with surgery and sometimes chemotherapy. Survival drops to about 40 percent if the cancer is diagnosed in the latest stage.

The researchers found that all the children studied with PPB carried damaging mutations in one of their DICER1 genes, giving them one functional and one non-functional DICER1 gene in all their body’s cells. The researchers indicated that PPB lung tumors probably originate when one or more cells in the lung acquire a harmful mutation in their functional copy of the DICER1 gene.

“Having identified this gene will allow us to focus on early detection in children who are most susceptible,” stated Messinger. “The findings could help us diagnose and treat children in the earliest stage of this disease, when PPB is by far the most curable.”

PPB Registry facilitates family connections

In the summer of 2008, 31 families with PPB survivors gathered in Minneapolis from across the United States and as far away as Australia, Ireland, and Canada to share a sense of hope. Virtually connected through the PPB Registry Web site (www.ppbregistry.org), they were offered the chance to meet face to face. The PPB Registry is the only international resource to offer diagnosis, treatment, and surveillance information for providers and families.
Yoav Messinger, MD, examines a patient in the new Children’s Specialty Center.
Increasing access for medically underserved areas

Child abuse is a persistent and tragic problem in the United States. In most cases, rural and medically underserved areas have no access to medical expertise. Rich Kaplan, MD, partnered with VisualShare to envision and develop a telehealth solution using Web-based imaging technology that facilitates peer review of suspected abuse cases by connecting medical providers with experts in tertiary care centers.

The overarching goal of the Telehealth Institute for Child Maltreatment (THICM) is to reach across the nation to provide mentorship to community medical providers, regardless of geographic location.

Under the direction of Kaplan, THICM is housed at Children’s. Through medical technology and peer review mentoring, THICM ensures timely and accurate diagnosis for all children who are possible victims of sexual abuse. Cutting edge TeleCAM technology facilitates high resolution, quality review of cases uploaded into a HIPAA compliant server using both store and forward, and real-time conferencing modalities. As each case is submitted by a medical provider, a THICM expert reviewer provides prompt feedback regarding the accuracy of the exam interpretation. The submissions are anonymous and reviewers are blinded to the identity of the submitting provider.

This model was developed by an unprecedented national coalition of medical providers, governmental, and corporate partners. Kaplan and colleague Lori Frasier, MD, medical director of the Safe and Healthy Families at Children’s Primary Medical Center, Utah, began providing this innovative peer review technology to medical professionals in remote centers in Utah, Alaska, South Dakota, and Nebraska. The services are now offered nationwide.

Robert Shapiro, MD, medical director for Safe and Healthy Children at Cincinnati Children’s Hospital Medical Center, and Frasier, in collaboration with Children’s, are researching the collated pre and post review data to determine and analyze case demographics, trends, and the effectiveness of THICM in the accurate diagnosis of child abuse. The work promises to provide invaluable feedback regarding diagnostic skills and to overcome geographic and cultural disparities suffered by child abuse victims who lack consistent, high quality medical care.

“THICM is an ambitious quality improvement project. If proven effective, this mentorship process combined with the TeleCAM software can be applied to many medical specialties beyond child abuse,” stated Shapiro.
“The use of this innovative technology in conjunction with peer review mentoring, ensures accessibility to an accurate diagnosis for all medical professionals, regardless of geographic area, who are treating children suspected of abuse.”

Rich Kaplan, MD
Clinical investigation changes outcomes for premature and critically ill infants

Cultivating research to sustain tiny heartbeats

Children’s has been providing compassionate care to premature and critically ill newborns for more than 30 years. Their future is at the heart of the mission of the Infant Diagnostic and Research Center, part of Children’s Neonatal Cornerstone Program. Today, our neonatal intensive care units provide life-sustaining treatments to more than 2,000 babies each year with critical or debilitating conditions such as respiratory distress syndrome, extreme prematurity, retinopathy of prematurity, birth asphyxia, meconium aspiration, and pulmonary hypertension, as well as infants who undergo heart, lung, and gastrointestinal surgery.

Researchers within the Infant Diagnostic and Research Center, founded in 1979, have produced more than 100 publications and actively participate in local and national research projects. The Center’s commitment to investigation and clinical implementation of new technology enhances outcomes for premature and critically ill infants.

Redesigning feeding protocol for preterm infants

Approximately 25,000 premature infants per year receive indomethacin or ibuprofen during the newborn period to treat the symptoms of a patent ductus arteriosus (PDA). Ductus arteriosis is open during the fetal period so blood can bypass the lungs when oxygen is received from the placenta. It normally closes at birth, but may remain open in premature infants. If left uncorrected, this can result in pulmonary hypertension and possibly congestive heart failure and cardiac arrhythmias.

In a multi-center, randomized controlled trial, Children’s researchers explored the efficacy of enteral feedings during the time an infant is being treated with one of these medications. Currently, 85 percent of U.S. neonatologists withhold feedings when using indomethacin or ibuprofen. However, recent evidence from animal and human studies indicates that the practice of withholding infant feedings for several days may lead to subsequent feeding difficulties.

The research team posited that feeding infants while receiving indomethacin or ibuprofen therapy will lessen changes in intestinal permeability that occurs with these drugs and will improve the infants’ blood flow response to tube-fed nutrition. They hypothesized that this will decrease the incidence of feeding intolerance and shorten the time before infants are able to tolerate full liquid tube feedings.

“If the hypothesis of this trial is confirmed, current clinical practice will be altered and new guidelines for infant nutrition will be established for preterm infants receiving indomethacin or ibuprofen treatment for PDA,” said Robert Couser, MD.

“The IDRC is a homegrown group that has been a real success story. We have helped advance respiratory care of newborn infants, helped train new physicians in newborn medicine, and are recognized as innovative thinkers. Today’s research is tomorrow’s treatment.”

Mark Mammel, MD
Robert Couser, MD, cares for a premature infant in the NICU.
Research Financials

2009 Awards by Funding Source Total

- Federal 32.2%
- State/Local Government 19.6%
- Industry 17.2%
- Academic Sub-awards 4.8%
- Foundation 26.2%

Funding Amounts by Sponsor Type

<table>
<thead>
<tr>
<th>Sponsor Type</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$1,000,314</td>
<td>$706,855</td>
<td>$1,993,734</td>
<td>$2,474,653</td>
</tr>
<tr>
<td>State/Local Government</td>
<td>1,723,811</td>
<td>1,717,681</td>
<td>1,195,663</td>
<td>1,509,944</td>
</tr>
<tr>
<td>Industry</td>
<td>564,795</td>
<td>1,038,910</td>
<td>1,163,637</td>
<td>1,321,646</td>
</tr>
<tr>
<td>Academic Sub-awards</td>
<td>328,739</td>
<td>153,904</td>
<td>108,480</td>
<td>371,921</td>
</tr>
<tr>
<td>Foundation</td>
<td>1,421,513</td>
<td>1,908,673</td>
<td>1,994,619</td>
<td>2,017,800</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$5,039,172</strong></td>
<td><strong>$5,526,023</strong></td>
<td><strong>$6,456,133</strong></td>
<td><strong>$7,695,964</strong></td>
</tr>
</tbody>
</table>
Selected Grant Awards

Jane Braun, MA, Emeritus LSW,
Midwest Regional Children’s Advocacy Centers (MRCAC)
Department of Justice (DOJ)
$1,250,000

Laurel Edinburgh, RN, CNP
Community Intervention Program (CIP)
Title V Maternal Child Health Services for Improving Adolescent Health
St. Paul Ramsey County – Department of Public Health
$65,200

Susan Forvé, MBA, M.Ed
Health Care and Other Facilities – Simulation Equipment
Health Resources and Services Administration (HRSA)
$298,620

Richard Kaplan, MD
Teleconsultation and Quality Review in Child Maltreatment
National Institutes of Health – Small Business Innovation Research (SBIR)
VisualShare
$42,587

James McCord, MD
Telehealth Nursing Intervention for Children with Complex Health Care Needs
National Institutes of Health – National Institute of Nursing Research (NINR)
University of Minnesota
$154,569

John McNamara, MD
Therapeutics Development Center
Cystic Fibrosis Foundation Therapeutics, Inc. (CFFT)
$64,800

Mary Ella Pierpont, MD
Trial of Beta Blocker Therapy (Atenolol) Vs. Angiotensin II Receptor Blocker Therapy (Losartan) in Individuals with Marfan Syndrome
National Institutes of Health – National Heart Lung and Blood Institute (NHLBI)
Pediatric Heart Network
$423,000

Stacy Remke, MSW, LICSW
Children’s Institute for Pain and Palliative Care: National Outreach Project
Health Resources and Services Administration (HRSA)
$238,313

Mark Schumann, MT, ASCP
Health Information Technology Grant
Health Resources and Services Administration (HRSA)
$235,000

Emily Scribner-O’Pray, BA
Eliminating Health Disparities Grant (EHDl)
Minnesota Department of Health (MDH)
$222,854

Patsy Stinchfield, RN, MS, CPNP
Assessing the Public Health Impact of the U.S. Rotavirus Vaccination Program through the Emerging Infections Program Network
Centers for Disease Control (CDC)
Minnesota Department of Health (MDH)
$87,372
Peer-Reviewed Publications


Gilles E. Symons F. J., Shinde S. K., Perspetives on pain and
supplement. 2008;121(7
rates and broaden the immunization season. Am J Med.
Practice-proven interventions to increase vaccination
Stinchfield P. K.
alpha gene loss of function mutation. Lubahn D. B., Korach K. S. Impact on bone of an estrogen receptor-
M. F., Fedarko N. S., Abuzzahab M. J., Frank G. R., Cohen R. M.,
the first 7 days of life. J Pediatr Hematol Oncol.
newborns with hemophilia: the role of screening radiologic studies in
Smith A. R., Leonard N., Kurth M. H., Intracranial hemorrhage in
newborns with hemophilia: the role of screening radiologic studies in
Smith E. P., Specker B., Bachrach B. E., Kimbro K. S., Li X. J., Young
M. F., Fedarko N. S., Abuzzahab M. J., Frank G. R., Cohen R. M.,
Lubahn D. B., Korach K. S. Impact on bone of an estrogen receptor-
Stinchfield P. K. Practice-proven interventions to increase vaccination
rates and broaden the immunization season. Am J Med. 2008;121(7
Symons F. J., Shinde S. K., Gilles E. Perspectives on pain and
Thygeson M. V. An evidence-based eye: interpreting and evaluating
Tibes R. J., Sidman J. D. Mandibular distraction osteogenesis
2008;16(6):548-554.
Whelan K. F., Stratton K., Kawashima T., Waterbor J. W., Castleberry
J., Robison L. L., Mertens A. C. Ocular late effects in childhood and adolescent cancer survivors: a report from the childhood cancer
Wheless J. W., Carmant L., Bebin M., Conry J. A., Chiron C., Elterman
R. D., Frost M., Paolicchi J. M., Donald Shields W., Thiele E. A.,
Zupanc M. L., Collins S. D. Magnetic resonance imaging abnormalities
associated with vigabatrin in patients with epilepsy. Epilepsia.
Wild R. T., Flick R. P., Sprung J., Katusic S. K., Barbaresi W. J.,
Mickelson C., Gleich S. J., Schroeder D. R., Weaver A. L., Warner
D. O. Early exposure to anesthesia and learning disabilities in a
Zarate Y. A., Pacheco M. C., Bove K. E., Gorlin R., Zhao H., Hopkin R.
J. Phenotypic and microscopic description of a new case of Ermine
confirmation of constitutively activated mTOR, ERK, and NF-kappaB
166.
Zier J. L., Rivard P. F., Krach L. E., Wendorf H. R. Effectiveness of
sedation using nitrous oxide compared with enteral midazolam for
Research Staff

Row 3 (back row), from L to R: Chris Sigstad; Mary Lamers Tkach; Nicole Hart; Lezlie Rabine; Erin E. Olson; Cathy Worwa; Pat Meyers.
Row 2, from L to R: Robert Koepp; Anne Harris; Brenda Plumm; Andrea Nugent; Marsha Finkelstein; Pauline Mitby; Gretchen Williams; Erica Swift; Heidi Vander Velden.
Row 1, from L to R: Megan V. Thygeson; Laurie Blumberg-Romero; Houa Vue; Meixia Liu; Kristi Jarvis; Mahrya Johnson.
RESEARCH VISION: Children’s Research and Sponsored Programs strives to improve the quality of life for all children and families through innovation and investigation of care, therapies, and technology. We foster transformative research through collaborations within our institution, statewide, and nationally. We create vibrant opportunities by inspiring and motivating Children’s investigators to explore new frontiers.
Research Staff

Research and Sponsored Programs
Laurie Blumberg-Romero
Director

Marsha Finkelstein
Health Services Research Specialist

Meixia Liu
Health Services Research Specialist

Erica Swift
Grants Analyst

Megan V. Thygeson
Scientific and Technical Writer

Cardiovascular and Critical Care/Genetics
Kristi Jarvis
Clinical Research Coordinator

Camille Clare
Research Assistant

Emma Halbrooks
Research Assistant

Erin E. Olson
Clinical Research Associate

Cystic Fibrosis Research
Mahrya Johnson
Sr. Clinical Research Coordinator

Lisa Read
Clinical Research Associate

Catherine Girard
Clinical Research Coordinator

Houa Vue
Sr. Clinical Research Coordinator

Emergency Department Research
Karuna Thomas
Research Assistant

Grant Accounting
Joy Berens
Associate Grant Accountant

Melissa Ketter
Grant Accountant

Natalie Ruiz
Sr. Grant Accountant

Linda Ward
Grant Accounting Manager

Hematology/Oncology Research
Amy Babcock
Clinical Research Associate

Ann Blake
Administrative Assistant

Stacy Doering
Clinical Research Associate

Courtney Haller
Clinical Research Associate

Anne Harris
Clinical Research Associate

Nicole Hart
Clinical Research Coordinator

Jennifer Lee
Clinical Research Coordinator

Robert Koepp
IRB & Research Support Coordinator

Pauline Mitby
Sr. Clinical Research Coordinator

Lezlie Rabine
Clinical Research Associate

Chris Sigstad
Clinical Research Associate

Mary Lamers Tkach
Clinical Research Associate

Gretchen Williams
Clinical Research Coordinator

Infant Diagnostic and Research Center
Molly Maxwell
Clinical Research Coordinator

Pat Meyers
Sr. Clinical Research Coordinator

Brenda Plumm
Research Associate

Cathy Worwa
Clinical Research Coordinator

Institutional Review Board
Don Brunnquell
Chair

Elizabeth Campbell
IRB Administrator

Integrative Medicine Research
Heidi Vander Velden
Clinical Research Coordinator

Laboratory
Lisa Kappenman
Laboratory Research Specialist

Pain and Palliative Care Research
Andrea Nugent
Clinical Research Coordinator
Acknowledgements

Published by Children's Hospitals and Clinics of Minnesota

Laurie Blumberg-Romero
Director, research and sponsored programs

Megan V. Thygeson
Scientific and technical writer

Erica Swift
Grants analyst

Bruce Bostrom, MD
Physician sponsor

Trudy Marshall
Manager, internal and cornerstone communications

Tera Bollig
Communications specialist

Stanley Wai
Graphic designer

Brady Willette
Photographer

Michael Haug
Photographer

Rick Peterson
Illustrator