



At the Rebecca D. Considine Research Institute, we're **Ready.**

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Ready to tackle the biggest healthcare challenges our patients – and communities – face. **Ready** to advance Akron Children's Hospital's commitment to research. **Ready** to grow.

How did we get here?

In 2016, we **Set** our new strategic plan and infrastructure firmly in place. This gave our institute a renewed focus, one that enhances our efforts to:

- Transform pediatric care.
- Improve health and outcomes.
- Grow our educational programs.
- Attract top talent.

This annual report celebrates these and other goals we reached in 2016. It also highlights how we plan to Go forward into our new era.

Thank you for joining us on this journey.

FROM OUR FOUNDERS

A renewed commitment. A sharper focus. An amazing year.

2016 opened a new chapter in the history of the Rebecca D. Considine Research Institute. Research has long been an integral part of Akron Children's Hospital's mission. In 2015, we renewed our commitment to research by developing a blueprint to raise the profile of our program and focus the spotlight on the groundbreaking work of our extraordinary pediatric researchers.

In 2016, we launched this transformation by implementing the first phase of our research institute's strategic plan.

Our team completed foundational work to support the plan's four major focus areas, which capitalize on our expertise in these disciplines: healthcare delivery and innovation, childhood lifestyle and population health, mitochondrial medicine and vision sciences. We also added staff and strengthened our operational infrastructure to better support our researchers, all under the skillful guidance of our Interim Director Mary Toth, MD, and Director of Operations and Nursing Research Aris Eliades, PhD, RN, CNS. We thank both of them for their vision and dedication.

In this report, we highlight our research programs and showcase the efforts of our hospital investigators.

We invite you to learn more about how this work leads to new discoveries and improved outcomes for patients here and around the world. We're thrilled with the achievements of our researchers in 2016 and excited to see what the future holds.

It's a privilege to be a part of this renewal of our commitment to and investment in the important work of the Rebecca D. Considine Research Institute.

Rebecca D. Considerie

Thank you for an incredible year.

William H. Considine

CHIEF EXECUTIVE OFFICER
AKRON CHILDREN'S HOSPITAL

Rebecca D. Considine





FROM OUR DIRECTORS

Getting ready, getting set ... to "go,"

Three words come to mind when looking back at 2016; planning, building and growing. The dedication of our staff, the work of our investigators and the support of Akron Children's Hospital leadership made last year one for the record books

In 2016, we established the Rebecca D. Considine Research Institute's foundation for the future.

As we rolled out our new strategic plan, we experienced record expansion. This included:

- Increasing our staff by 45 percent from the previous year.
- Creating a Research Administration department and four new research centers, where we named research program leaders and hired scientific and operations directors for each.
- Reorganizing the clinical research department.
- Growing and strengthening our infrastructure to align with our institute's vision.
- Establishing new committees and workgroups.
- Launching new systems, databases, processes and policies.

As we worked to build the next generation of our hospital's pediatric research program, hospital investigators made incredible gains of their own.

We tracked 822 IRB-approved open studies – a 55 percent increase from 2015. Our providers authored or co-authored 123 peer-reviewed journal and professional organization publications, the highest number achieved by the hospital in a single year. The institute was awarded 30 grants for studies totaling more than \$2.5 million.

The gains we made last year have strengthened the future of the Rebecca D. Considine Research Institute and Akron Children's Hospital.

We're excited to see how this work will make a significant impact in 2017 – and beyond.

Aris Eliades, PhD, RN, CNS

DIRECTOR OF OPERATIONS AND NURSING RESEARCH, REBECCA D. CONSIDINE RESEARCH INSTITUTE

Mary Toth, MD

INTERIM CLINICAL AND SCIENTIFIC DIRECTOR, REBECCA D. CONSIDINE RESEARCH INSTITUTE DIRECTOR, PEDIATRIC RHEUMATOLOGY



CENTER FOR CHILDHOOD LIFESTYLE AND POPULATION HEALTH RESEARCH



Focuses on chronic disease diagnosis and care among specific populations, driving groundbreaking research in the field. Examines lifestyles and prevention measures. with a focus on overall pediatric wellness.

Proper diagnosis

Investigations aim to understand genetic disorders in the Amish community - and beyond

Research at Akron Children's Hospital has the potential to influence the health and wellness of an entire community. This is especially true when investigators analyze health challenges faced by unique patient populations. Investigators like Olivia Wenger, MD.

At New Leaf Center in southeast Wavne County. Dr. Wenger is working with Akron Children's Institutional Review Board on two studies that facilitate care and proper diagnosis of inherited disorders in the Amish community.

"The disorders we study are rare individually, but collectively are common in the non-Amish population," said Dr. Wenger. "The misprints in the genetic code that cause them originated in Europe. As a whole, though, there's been little research surrounding these disorders. So while the Amish community benefits by participating in these studies, our work impacts humankind."

The first study focuses on a specific disease, propionic acidemia, which results in an error in the way the body metabolizes protein.

Her second study harnesses genomic medicine. Rather than looking at one disease, she's looking to define the genetic code of the community itself to benefit people with unknown causes of neurodevelopmental diseases like cerebral palsy and developmental delay.

"We've come a long way in terms of helping those who don't have a diagnosis," said Dr. Wenger. "If you think of the community's genetic code as a language, when you translate a massive amount of information in that language, you need a dictionary specific to the community. Every ethnic and religious community needs this kind of dictionary to get the best care."



Connecting care

Type 1 diabetes study unites research, patient services and community health

What role can a summer camp play in research? A big one.

Each year, Akron Children's Hospital's Center for Diabetes and Endocrinology hosts a two-day camp for children with type 1 diabetes. It gives patients a fun and safe chance to enjoy the full camp experience while learning new information about diabetes and self-care.

It also creates a unique opportunity to recruit participants for a study that aims to identify family members at risk for type 1 diabetes, while investigating why certain relatives contract the disease and others don't

It's called the Pathway to Prevention screening, led by TrialNet and funded by the National Institutes of Health. Relatives of children with type 1 diabetes undergo testing to find out if they have certain biomarkers indicating the likelihood of developing the disease.

"If results come back positive, they can be referred to a physician who can advise them on precautionary steps to manage their lifestyles and reduce their chance of developing it fully," explained research institute study coordinator Debbie Maglionico.

The study supports Akron Children's enhanced focus on diabetes education, self-care and treatment and its impact on community health. The disease is one of five high-priority health needs that the hospital is addressing as a result of the 2016 Community Health Needs Assessment (CHNA).



CENTER FOR MITOCHONDRIAL MEDICINE RESEARCH

Mitochondrial diseases and mitochondrial dysfunction are believed to be at the core of many common diseases. This center focuses on developing new treatments and participating in laboratory stem cell experiments, observational and therapeutic clinical trials.

Revealing results

New therapies help patient recover from adult sudden onset mitochondrial disease

As clinical research nurses, Hilary Tonni, Ann Pokelsek and Kari Barkey coordinate care for patients involved in studies seeking new therapies for mitochondrial disease. One of their patients, Michael Bole, has experienced life-changing results with the treatment.

"Michael was not aware of his mitochondrial disease until he was in his mid-40s and suffered a sudden onset of the disease," said Tonni. "It left him in a wheelchair, and he was barely able to talk. His condition didn't improve for some time. But soon after starting an investigational drug, he quickly improved and is able to walk with a cane. He's talking and even playing the trumpet in his church choir."

Bole explained he had a busy, fulfilling life when it was interrupted by his diagnosis eight years ago. "I had no idea what mitochondrial disease was," recalled Bole, who requested to participate in the clinical drug trial at Akron Children's led by Bruce Cohen, MD, FAAN, director of Akron Children's NeuroDevelopmental Science Center.

"I figured if I could not do all the things I had planned to do, at least I could do this," said Bole, who in September 2011 was able to enter the study. "The big revelation for me was when I learned how mitochondrial disease affects so many babies and children."

Once unable to finish a sentence, stay awake, keep food down or walk, Bole is now living a relatively normal life.

"Mr. Bole has had a dramatic improvement in his quality of life since beginning this investigational therapy," said Dr. Cohen. "It's a joy to be part of cutting-edge research. Mr. Bole's improvement gives me hope that we'll one day have real treatments for this disease."





Akron Children's is part of the North American Mitochondrial Disease Consortium, sponsored by the National Institutes of Health. In this international collaborative. 15 clinical sites look into the causes and treatments of mitochondrial disease. Akron Children's is the second-largest contributing member. Director, Akron Children's NeuroDevelopmental Science Center

Bruce Cohen, MD, FAAN

On the cutting edge

Clinical trials work to advance treatment of mitochondrial disease

Clinical trials for new drugs, not vet FDA-approved, allow researchers to seek advancements in mitochondrial disease.

In a current study, Bruce Cohen, MD, FAAN, director of Akron Children's NeuroDevelopmental Science Center. is excited about the work surrounding a drug commonly referred to as EPI-743. It's being investigated as a way to help patients with Leigh syndrome, a mitochondrial disease that affects the brain

"We're seeing enough activity of the drug that the pharmaceutical sponsor is investing additional money and resources for future trials," said Dr. Cohen. "In trials that have been done, patients using the drug have fewer adverse events, including the progression of the disease and hospitalizations."

Emily Culley describes the medicine as "liquid gold." Her son, Jack, suffers from Leigh syndrome. Every three months, the Culleys travel from Memphis, Tenn., to Akron Children's for Jack to receive treatment in Dr. Cohen's clinical trial.

"When Jack started this drug, it was like he woke up." Culley said. "He's still non-verbal, but we get a little glimpse of his personality."

Culley's nephew. Harrison, also participates in the same drug trial. "We know the mode of inheritance of this disease." she explained. She also understands the maternal genetic link; three of the four sisters in her family have needed to pursue treatment for their children

"This treatment might benefit not only our children, but our grandchildren and all others who suffer from mitochondrial disease," Culley said. "It has given us hope."

"Emily and her extended family know all too well the devastating effects of Leigh syndrome," added Dr. Cohen. "When Jack came to see me, his parents had little hope that we could reverse the progression of the disease. I'm encouraged that this medication, and others we're investigating, will help us turn the tide on mitochondrial disease."

CENTER FOR VISION SCIENCE RESEARCH



Working to preserve and restore the sight of children, this center focuses on discovering conditions of the developing visual system and uncovering surgical treatment paradigms while aiming for advancement of new drugs and devices.

Syncing sight

Sensory substitution device bypasses visual sense through tongue

A groundbreaking study at Akron Children's Hospital aims to help children see using their tongues instead of their eyes.

Richard Hertle, MD, FAAO, FACS, FAAP, and his team of researchers are working to restore vision through the use of a camera that collects images and sends them to the brain for interpretation through a chip placed on the tongue.

The BrainPort® V100, made by Wicab, Inc., is intended for use by individuals who are blind with no functional vision. BrainPort translates digital information from a video camera into gentle electrical stimulation patterns on the surface of the tongue.

"Users learn to interpret the patterns as the shape, size, location and motion of objects in their environment and, eventually, will be able to move without assistance – no dog or cane," explained Dr. Hertle, director of pediatric ophthalmology at the Vision Center. "This new technology not only restores sight to the blind, it gives families new hope."



Paving the way

New Vision Science Lab provides on-site lab space

Located within the walls of Akron Children's Vision Center the new Vision Science Lab provides investigators with the ease of performing laboratory research on-site while also paving the way for more research.

That's all thanks to its in-house location, said Rachida Bouhenni. PhD. scientific and operations director for Vision Science Research at Akron Children's Hospital.

"This lab is really important because investigators have specific topics they work on," explained Dr. Bouhenni. "The potential is that we can recruit more patients and come up with more studies because the location makes it easier, and children enjoy it; they're excited to be a part of that process."

A big vision

Enzyme injection therapy in pre-clinical phase

Dr. Rachida Bouhenni is working on a new treatment for congenital glaucoma, a rare condition caused by a genetic mutation that can lead to blindness in childhood. Currently, the only treatment available is surgery.

Dr. Bouhenni wants to change that.

An enzyme replacement therapy that is being developed at Akron Children's Hospital consists of the enzyme produced by the malfunctioning gene. The enzyme could be injected into a child's eve shortly after birth.

"The enzyme is expected to correct the phenotype seen in these children and eventually restores their vision." explained Dr. Bouhenni. "If it works. this will be the first therapy of its kind. This will be both economically beneficial and non-invasive. It will enhance the life of the child born with this disease."



CENTER FOR CLINICAL RESEARCH

Supports existing innovation and a wide range of research activities, while offering patients opportunities to receive the latest medicines, treatments and procedures through clinical study participation.

Renewed focus

New division director of neurology takes the helm

Quality of life for epilepsy patients doesn't improve until they are seizure free. Therefore our goal in epilepsy therapy, simply stated, is: no seizures and no side effects.

"The problem is a third of our patients have what we call refractory epilepsy," said Michael Kohrman, MD, director of pediatric neurology at Akron Children's Hospital. "They don't respond to the current drugs available. The focus of my research over the years has been to look at new anticonvulsants and drugs that are available for adults, but are not yet approved for children, to determine appropriate and safe use of these compounds in pediatric patients."

That's why Dr. Kohrman, who was named the new division director of neurology in 2016, is the principal investigator in a number of clinical trials at Akron Children's to evaluate new drugs and new indications for children with refractory epilepsy. He explained that through research, he and his team have the potential to bring new hope and normalcy to children who have this debilitating disorder.

"As a comprehensive epilepsy center, it's our responsibility to provide the most up-to-date therapies. That's the purpose of our clinical trials," he said. "We want to be able to offer the newest options before they may be available in the general marketplace."







Identify and target

Translational research aids in cancer treatment

How is Akron Children's Hospital working to improve treatment for pediatric cancer patients? Translational research. This approach takes questions from the bedside to the laboratory – then brings resistance also is a major problem answers back to the bedside.

For two decades. Steven J. Kuerbitz. MD, director of divisional research and stem cell transplantation at Akron Children's, has sought answers surrounding the role of epigenetics in children's cancer. The study of epigenetics explains how the genetic information encoded by DNA within a cell can change over time without altering the actual DNA sequence.

Today, the focus of Dr. Kuerbitz's research aims to answer a revolutionary question that few are asking: What are the epigenetic mechanisms by which bone cancer cells become resistant to chemotherapy drugs?

"There are only a few chemotherapy drugs that are highly effective for osteosarcoma, which is the most common form of bone cancer in children." said Dr. Kuerbitz. "But drug with this type of cancer, and if bone cancer cells become resistant to frontline therapy, there is not really an effective alternative treatment."

He's investigating what's called epigenetic gene silencing in chemotherapy resistance in osteosarcoma, as well as leukemia. During this pre-clinical work, his first goal is to pinpoint the relevant genes. Then, he and his team will work toward identifying epigenetic drug treatments that may restore normal levels of gene expression.

"The idea is that these drugs could be used alongside chemotherapy treatment to improve efficacy, leading to better outcomes for our patients," explained Dr. Kuerbitz.

CENTER FOR HEALTHCARE SERVICES DELIVERY RESEARCH AND INNOVATION



Research efforts are centered around transforming quality of care and outcomes, patient experiences and procedural innovation through new medications, devices and procedures.

Spotlight on innovation

Gastric stimulation applies new technology to develop standards of care, protocols

For patients with chronic gastro issues, including vomiting and nausea caused by a stomach defect, there's no ideal medication. Reinaldo Garcia-Naviero, MD, director of pediatric gastroenterology, hopes gastric stimulation is the answer for these patients.

Gastric stimulation uses electrical stimulation to reorganize the internal electrical activity of the stomach. Akron Children's is one of the few locations in Ohio that places a temporary external stimulation device to determine effectiveness before implanting a permanent device. In patients who respond well to the temporary device, almost 100 percent have success with the permanent one.

"Thanks to support of Akron Children's research, we're able to develop and apply new technology in patients and help develop new standards of care and protocols in the U.S.." said Dr. Garcia-Naviero. "It's very exciting because this is a door opening to new ideas and new projects."

Critical component

Investigating glutamine supplementation to help prevent infection among burn patients

Infection prevention. It's one of the most critical factors when treating burn victims.

In a current research study. Akron Children's Hospital is exploring whether or not an amino acid called glutamine could help reduce the risk of infection

"Infections are the leading cause of mortality in burn patients," said John Crow, MD, chairman of the department of surgery at Akron Children's "We have to continually seek the best-possible way to reduce this statistic and lessen a patient's length of stay."

The hospital was selected to participate in the four-year, multi-site, international study by Daren Heyland, MD, a critical care doctor at Kingston General Hospital in Ontario. Canada, who has studied glutamine supplementation for decades.

"We use glutamine supplementation in babies who undergo bowel surgery," said Dr. Crow. "Potential benefits from previous studies have led to possible benefits for burn patients, as well. In fact, a random controlled study showed reduction in mortality and length of stay with less complications. It's our hope that this study will result in the same outcomes "

Better, together

Teamwork fuels pediatric orthopedic research

Collaboration is at the heart of any research project. Mark Adamczyk, MD, director of pediatric orthopedic research at Akron Children's Hospital, said it would be difficult to find a more collaborative group than the hospital's department of orthopedics.

Through its collaborative research with area partners, including The University of Akron and Northeast Ohio Medical University, the pediatric orthopedic surgery research group has been carefully studying growth plate development in multiple areas of the body.

One of their earlier studies showed they could influence bone formation with electrical stimulation, which may lead to stimulating growth.

"For a child with one leg too short, if you can stimulate one of its growth plates, that leg could catch up to the other, eliminating the need for surgery," Dr. Adamczyk explained. "There are many potential uses for it."

Dr. Adamczyk noted that through this collective partnership, he and his team are hoping to bring more controlled and less invasive treatments to the children they serve.

"Our group has been diligently studying the growth plate, and through this research we hope to one day benefit our patients directly with innovative treatments we develop."

AKRON CHILDREN'S WELCOMES NEW CHIEF RESEARCH OFFICER

Building partnerships, shaping research program

In his new role as chief research officer, Mike Kelly, MD, PhD, plans to build on the established foundation for pediatric research and develop a more cohesive research community at Akron Children's Hospital.

Dr. Kelly joined the hospital's Rebecca D. Considine Research Institute in spring 2017. He oversees the hospital's research activities, directing the process to define the vision, clinical trial strategy and management of research studies conducted within the hospital. He believes the key drivers of success are the partnerships developed within the hospital, as well as those cultivated by everyone impacted by the hospital's care, including patients and community members.

Helping a 'young' program grow

In 2009, the hospital established the research institute as the "hub" for research and innovation. In 2015, hospital leadership, key investigators and institute staff created a blueprint to build the next generation of its pediatric research program. This five-year strategic plan leverages Akron Children's current strengths and pursues research opportunities with the most potential to impact the health of children, families and communities in northern Ohio. In 2016, the research institute launched the first phase of the strategy.

"We're a young program," said Dr. Kelly. "This gives us an opportunity to shape it the way we want. It's about figuring out how to continue building a program that will be most impactful for our patients and the care we deliver."



Mike Kelly, MD, PhD, Chief Research Officer

DONORS IMPACT SUCCESS

Philanthropy strengthens research at Akron Children's

To build a successful patient-based research program requires another key component: financial support. While hospital investigators seek funding from state and national sources, donors play a crucial role in their work, too.

"Philanthropy is critically important to the success of the research institute." said Dr. Kelly, "We are in a time where research funding from the government is being cut and money from industry is limited because pediatric problems do not generate sufficient potential revenue to entice many companies to support pediatric research. We must rely increasingly on local support of research that improves the health of children in our community."

Bob Levine, of Wayne, Pennsylvania, understands the impact.

Levine heard Richard Hertle, MD, FAAO, FACS, FAAP, director of pediatric ophthalmology at Akron Children's Vision Center, speak at a recent convention about his investigation toward a new treatment for congenital nystagmus. The eye condition is characterized by rapid, uncontrollable eye movements that blur vision.

"Dr. Hertle performed a surgical procedure on me that helped me with nystagmus, which both my sister and I have," said Levine. "My hope is that the new treatment that Dr. Hertle is testing will be able to help children see better."

Levine made the donation along with wife, Julie, and his parents, Velva and Fred Levine. He said his family was happy to give toward research that will have a direct impact on the lives of others.

"The treatment will help make the condition more manageable and less frightening to children and their families," he said.





BUILDING STRONG PHILANTHROPIC PARTNERSHIPS

Gail and Scott Wilkes, of Bath Township, say the partnership they've developed with Akron Children's to fund targeted-therapy research is one way they honor their daughter. Shannon, who died in 2013, five years after being diagnosed with bone cancer at age 19.

"Shannon was the first recipient of some targeted-therapy treatments." said Scott. "We experienced the hope that a new treatment option brings, and that doctors are out there really trying to accomplish these things. It is incredibly inspiring to see other people using their talents and their gifts to try to beat this horrible disease, and we are the recipients of all of their hard work."

The Shannon E. Wilkes Pediatric Oncology Tissue Banking and Targeted Therapy Fund made it possible for Akron Children's to purchase equipment and hire the staff necessary to complete on-site collection, storage and analysis of tissue samples for targeted therapy, which precisely identifies and attacks cancer cells. The fund also provides financial support to the Division of Hematology-Oncology for collaborative basic and translational cancer research at Akron Children's.

"We want to honor Shannon and help advance this hospital that gave us outstanding treatment for five years," said Gail, "We want to try to help families going through the struggles that we went through. We want to ease their burden a little bit and give back in that way. And, we want to provide that opportunity for other people. especially in a local setting. This is our hospital."

Dr. Kelly couldn't agree more. The success of the research enterprise at Akron Children's is incumbent upon community partnerships. And philanthropic support, such as the Wilkes' fund, is critical. Last year, the Akron Children's Hospital Foundation awarded 15 research grants toward hospital investigations totaling more than \$230,000. "I would like our community to know that we're all partners in research. We're only going to be as successful as the people who get involved and make it happen, including patients who participate in research, community advocates and philanthropists," Dr. Kelly said. "I really want people to feel ownership of this. It's not my program. It's not the institute's program. It's our program."



Support the Rebecca D. Considine Research Institute

Thanks to the vision of William and Rebecca Considine the foundation for our world-class pediatric research center has been set. Their \$1 million gift in 2009 represents the cornerstone of our efforts

The purpose of this fund is to provide financial support for needs identified and recommended by the staff of the Rehecca D. Considine Research Institute in support of the work they are doing to advance research at Akron Children's Hospital. You, too, can nurture this growing enterprise with a gift of any amount. Every dollar plays an important role in advancing research, right here in northern Ohio

If you would like to support the hospital's research program or its investigators, please contact Luann Maynard, senior major gifts officer, at 330-543-1302 or Imaynard@akronchildrens.org.



Clinical studies

822 IRB-APPROVED OPEN STUDIES AS OF DEC. 31, 2016

55 PERCENT INCREASE FROM 2015

207 STUDIES WITH RESEARCH INSTITUTE BIOSTATISTICIAN SUPPORT

Publications

AKRON CHILDREN'S HOSPITAL INVESTIGATORS:

123 PEER-REVIEWED JOURNAL AND PROFESSIONAL ORGANIZATION PUBLICATIONS AUTHORED AND CO-AUTHORED



- 1 AUTHORED BOOK
- 5 BOOK CHAPTERS CONTRIBUTED

PRESENTATIONS:

- 107 NATIONAL AND INTERNATIONAL PRESENTATIONS CONDUCTED BY HOSPITAL INVESTIGATORS
- 13 PERCENT INCREASE FROM 2015

Five-year growth





EDUCATION

Education remains a high priority among research institute staff and hospital leadership. It's also a key priority in the strategic plan.

2016 EDUCATIONAL ACCOMPLISHMENTS

Nursing contact hours

The research institute offered nine nursing contact hours through educational programming.

Staff education

Sessions focused on topics ranging from organizational and departmental protocol to policies and regulations.

Building a Culture of Research series

A monthly, 60-minute program (aimed at an internal audience) focused on a variety of topics central to how research and the research institute play a vital role at Akron Children's Hospital and beyond.

Research Hot Topics series

A 30-minute program (aimed at an internal audience) and focused on the fundamentals of doing research. Topics covered grants, IRB, finance, statistics, budgeting, how to write a protocol and more.

Medical education curriculum support

Research institute biostatisticians offered seminars year-round designed specifically to address the educational needs of fellows and residents, support their research projects and help them prepare for board certification examinations.

Launched a research volunteer program and student research practicum

The research institute delivers a wide range of learning opportunities focused on early and mid-career investigators, students and hospital clinicians. In 2016, 702 staff attended educational programs – a 60 percent increase from 2015. This included:



Staff education programs

11 **PROGRAMS**

233 **ATTENDEES**

Research Hot Topics series

7 **PROGRAMS**

176 **ATTENDEES**

Building a Culture of Research series

PROGRAMS

447 **ATTENDEES**

Bolstering the work of Akron Children's residents

Making lives and processes better. That's the aim of pediatric residents who complete scholarly work during their three years at Akron Children's Hospital. according to Sabrina Ben-Zion. MD. FAAP, research director for the pediatric residency program.

Their work has included reducing infection rates in intensive care units, improving asthma care in juvenile detention centers and lessening radiation time for children who require cardiac catheterizations.

"The research institute has provided a lot of resources for our residents." said Dr. Ben-Zion. "I think we are working hard to improve the quality of our research. Research has the potential to impact a much larger group of patients. That's the ultimate goal, that residents continue to ask questions and find answers and better outcomes for patients."

SUMMER PEDIATRIC RESEARCH SCHOLARS

Former SPRS student continues work at Akron Children's

In 2014, Laura DiGeronimo was a nursing student at Walsh University when she participated in Akron Children's Hospital's SPRS program.

Today, she's a staff nurse at Akron Children's working to publish her first collaborative study. The investigation focuses on the effectiveness of a pain area locator, an innovative diagnostic tool used to help post-surgical patients point to pictures that correspond with their pain location.

She began supporting Phyllis Mesko, RN, and Aris Eliades, PhD, RN, CNS, in this study after participating in the SPRS program as an undergraduate nursing student. Results were presented at a national conference in Philadelphia.

"The research institute provided me a great way to learn about the research process and all it entails," said DiGeronimo. "Everything I learned from the SPRS program I was able to take with me for my own research through my thesis. I could not have done it without the help of some really amazing mentors and people I've met along the way. It's been a really rewarding experience."



Laura DiGeronimo, RN, BSN Nurse at Akron Children's Hospital



SPRS: A decade of undergraduate pediatric research accomplishments

In 2006. Robert T. Stone. MD. and several colleagues in the department of pediatrics offered five college students a summer research internship. Dr. Stone said. "I always thought a program that gave students interested in healthcare real-world exposure is something I could have learned from at that age."

A decade later, more than 100 college students have spent their summers at Akron Children's Hospital conducting research in the Summer Pediatric Research Scholars (SPRS) program. In addition to their project, students attend weekly educational meetings.

Students have significant opportunities to shadow clinicians from a range of pediatric disciplines. Several student investigations culminated with presentations at major professional conferences. Other students returned during breaks to voluntarily continue assisting their mentor.

Dr. Stone continues to provide leadership for the SPRS program. In this 10th anniversary year, we celebrated his contributions to the healthcare careers of so many college students.

CENTER FOR NURSING RESEARCH

The Center for Nursing Research mentors and supports nurses in their work to design and conduct investigations. This work contributes to nursing science and informs evidence-based, patient-centered best practices.

To foster clinical inquiry, our methods and coaching are tailored to meet the individual needs of nurses at the novice, intermediary and expert level of research experience. We accomplish this by offering ample educational experiences to enrich nurse scientists' understanding of the characteristics of rigorous scientific inquiry.

Magnet recognition

The research institute was recognized as an Exemplar in the Executive Summary Report contributing to the third designation of Akron Children's Hospital as a Magnet hospital. This recognition was due to:

- Substantive infrastructure investment in research.
- Support for a nursing research center.
- The mentoring of nurses in the research process.



Nursing research has been recognized as an Exemplar in every Magnet designation received by Akron Children's.

Nursing Research Council

The Nursing Research Council encourages and supports Akron Children's nurses interested in conducting an investigation or gaining knowledge of research practices. It was an exciting year of continued growth and change, as the council added new members and enhanced infrastructure.

In 2016, the council hosted:

- "Elements of Research," an Open House and Educational Presentation. Participants gained a greater understanding of differences in research, evidence-based practice and performance improvement.
- "Spotlight on Nursing Research 2016" presented during Nursing Grand Rounds. Attendees learned about the depth and scope of research performed at Akron Children's.
- Third Annual Nursing and Patient Services Research Awards. Recipients included:
 - Phyllis Mesko, RN, CPN Staff Nurse, PACU
 - Kimberly S. Firestone, MSc, RRT Neonatal Respiratory Outreach Clinical Liaison, NICU
 - Diane Wolski, BSN, RN Research Clinical Coordinator, Rebecca D. Considine Research Institute



BOOK CHAPTERS AUTHORED OR CO-AUTHORED BY NURSES

OPEN STUDIES WITH NURSES AS PRINCIPAL **INVESTIGATORS**

ACTIVITIES

ORAL AND POSTER PRESENTATIONS DELIVERED **BY NURSES**

PEER-REVIEWED JOURNAL AND **PROFESSIONAL ORGANIZATION PUBLICATIONS**

NEW RESEARCH STUDIES WITH NURSES AS PRINCIPAL INVESTIGATORS



"My research journey has taken me to heights and places I never imagined, advanced a long career and given me the chance to help others through my own passion. It has also helped me increase my confidence and ability to present information to diverse audiences. Our research department gives everyone at Akron Children's a chance to surpass their wildest expectations."

Phyllis Mesko, RN, CPN Staff Nurse, PACU Excellence in Nursing Research Award Recipient



"When you have a passion for research, working somewhere that supports advancing clinical practice through research is powerful. This organization supports bedside and benchmark studies, while also promoting partnering with other organizations. Research is promoted on every level: administratively, clinically and educationally."

Kimberly S. Firestone, MSc, RRT Neonatal Respiratory Outreach Clinical Liaison, NICU Patient Services Research Award Recipient



"Research is an avenue to positively impact the future. There's amazing work being done at Akron Children's, and so many great people working in research. Whether you have an interest in or curiosity about research, or anything else in life, get involved. We all have an incredible ability to learn."

Diane Wolski, BSN, RN Research Clinical Coordinator. Rebecca D. Considine Research Institute Novice in Nursing Research Award Recipient



COLLABORATIONS

The most imaginative, productive research often results from sparks ignited when gifted research specialists join forces.

The Rebecca D. Considine Research Institute maintains ongoing collaborations with several national, regional and academic partners.

National Multicenter Pediatric Research Initiatives

Akron Children's Hospital is a study site for many national and global research initiatives. Our investigators actively participate in research studies sponsored by leading national pediatric foundations and organizations focused on advancing the treatment and quality of life for children afflicted by these conditions.





Cystic Fibrosis Foundation

The Cystic Fibrosis Foundation sponsors several clinical trials of therapies that treat the underlying cause of the condition. Akron Children's is one of 82 clinical research centers known as the Cystic Fibrosis Therapeutics Development Centers. Akron Children's Lewis H. Walker M.D. Cystic Fibrosis Center oversees this collaboration supported by the Rebecca D. Considine Research Institute clinical management services.

Pediatric Trials Network

This national initiative provides infrastructure to study the formulation, dosing, efficacy and safety of prescription medicines used in pediatric patients, as well as the development of medical devices. It's composed of an alliance of clinical research sites and sponsored by the Eunice Kennedy Shriver National Institute of Child Health and Human Development.



CHILDREN'S ONCOLOGY GROUP

Children's Oncology Group

Akron Children's division of pediatric hematology-oncology research participates in Children's Oncology Group, the world's largest childhood cancer research organization. Data from collaborative pediatric cancer studies show children and teens with cancer have better survival rates when treated at a pediatric oncology center rather than one that primarily treats adults.

Community Collaborations

Austen BioInnovation Institute (ABIA)

As one of five founding partners of the Austen BioInnovation Institute, Akron Children's is aligned with institutional, state, federal and philanthropic organizations in this groundbreaking research venture. ABIA focuses on patient-centered innovation and commercialization at the intersection of biomaterials and medicine.

Hattie Larlham

Hattie Larlham is a non-profit organization that provides services to more than 1,500 children and adults with developmental disabilities. In 2010, the Hattie Larlham Research Institute and Rebecca D. Considine Research Institute established a formal research affiliation to support joint medical research in this population. Through our collaboration, we're seeking answers to questions that will enhance the lives of people coping with serious impairments and activity limitations.





Academic Partners



Akron Children's Hospital became a major pediatric teaching institution when this community-based medical school opened in 1973. NEOMED focuses on training next-generation healthcare professionals in the full complement of interdisciplinary medical practices. Several Akron Children's physicians, medical professionals and researchers hold NEOMED faculty appointments.





The research institute also collaborates with colleagues at major northeast Ohio academic institutions such as Kent State University and The University of Akron.

2016 FINANCES AND GRANT FUNDING

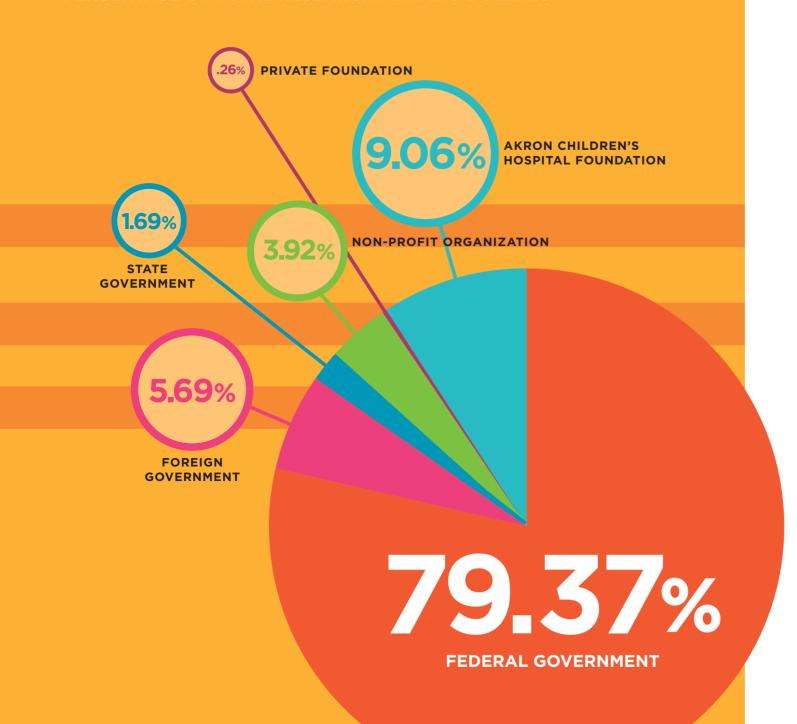
TYPE OF FUND	ER NUMBE	R % OF TOTAL#	AMOUNT	
FEDERAL GOV	ERNMENT 10	33.33%	\$ 2,023,172	
AKRON CHILD HOSPITAL FOU	15	50.00%	\$ 231,063	
FOREIGN GOV	ERNMENT 1	3.33%	\$ 145,125	
NON-PROFIT C	DRGANIZATION 1	3.33%	\$ 100,000	
STATE GOVER	NMENT 1	3.33%	\$ 43,071	
PRIVATE FOUN	IDATION 2	6.67%	\$ 6,665	

IN 2016, AKRON CHILDREN'S INVESTIGATORS WERE AWARDED 30 RESEARCH GRANTS TOTALING MORE THAN \$2.5 MILLION. OF THOSE AWARDED:





PERCENTAGE OF TOTAL RESEARCH FUNDING DOLLARS





Adding financial support staff

In 2016, the research institute added new finance and grants administration positions to its staff. These roles:

- · Contribute to the institute's financial sustainability.
- · Enhance its administrative and investigator support capacity.
- · Assess the feasibility of proposed studies and ensure ongoing research studies are viable.



Enhancing budgeting efforts

The outcomes of a 2016 Research Finance Kaizen event and Greenbelt project led the research institute to develop a more robust budgeting process. Staff can now more accurately examine individual study feasibility by comparing actual costs to anticipated revenue expected from sponsors.

2016 REBECCA D. CONSIDINE RESEARCH INSTITUTE STAFF

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Interim Scientific and Clinical Director

Aris Eliades, PhD, RN, CNS

Director of Operations and Nursing Research

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Research Coordinator

OFFICE OF HUMAN SUBJECTS PROTECTION

Michelle Jacobs, MA, CCRP IRB Coordinator

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Jamie Lucey, MBA, EMT-P Regulatory Compliance Auditor

Ellen Minnozzi, CCRP Regulatory Document Specialist

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Jennifer Pitz, MPA, CRA Research Grants Coordinator

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Neil McNinch, MS, RN

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Inside Children's

Akron Children's Hospital invites you to connect with us.