What is MMI?
The UNMC Munroe-Meyer Institute (MMI) for Genetics and Rehabilitation originated in the late 1950s as a place for children with polio to receive treatment. Today, Nebraska’s federally designated University Center of Excellence for Developmental Disabilities Education, Research and Service annually provides diagnosis and treatment to more than 10,000 children and adults with diverse developmental and physical disabilities and genetic disorders.

With approximately 230,000 people with disabilities in the state of Nebraska, the need for specialized programs and support services to improve their quality of life is vital.

By utilizing professionals who specialize in more than 15 disciplines and programs, MMI provides an interdisciplinary team approach that assures a comprehensive diagnostic and treatment program.

Parents, teachers, therapists and community service providers are involved in the provision of services, which includes the development of innovative ways to promote inclusion of individuals with disabilities and their families into the community.

Since becoming a part of the University of Nebraska Medical Center in 1968, MMI’s research, education, services and statewide technical assistance training have been a source of hope for patients with developmental disabilities and their families.

MMI’s mission includes a dedication to basic and applied research conducted by faculty and staff members in all disciplines and programs.

MMI is committed to training future health care professionals who will provide care to children and adults with developmental disabilities and genetic disorders and their families.
Dear Friends of the Munroe-Meyer Institute,

In its 60 years, the mission of the Munroe-Meyer Institute (MMI) has evolved. From an initial emphasis on services, MMI has since expanded its interdisciplinary education and leadership programs in order to meet our state’s needs for trained professionals in disabilities.

The number of students coming from across the country to learn about developmental disabilities and genetic disorders has dramatically increased. Most of these students have remained in Nebraska and now provide services across the state and teach in our colleges and universities.

Designated a UNMC academic unit in 2009, MMI has since established master’s, Ph.D., and advanced training opportunities for practitioners whose goal is to help children and adults with disabilities unlock their full potential. These degree and post-doctoral programs are in addition to internship and trainee programs that already exist at MMI, such as the federally funded Leadership Education in Neurodevelopmental and Related Disabilities (LEND) program.

While there are few traditional classrooms at MMI, MMI faculty teach several university courses across all disciplines on the UNMC campus, at other Nebraska colleges and beyond through telecommunication technology. From those completing fellowships to the general public seeking more knowledge on individuals with disabilities, MMI covers it all.

Just this past summer, MMI hosted a symposium in collaboration with Special Olympics, whose national games were held in Lincoln. This spring, MMI will host its third interdisciplinary symposium, this one on cerebral palsy, for every-one from parents to practitioners.

In everything we do, our goal is simple: to improve the quality of life for each individual with a disability. We couldn’t do it without our supporters. These include UNMC Chancellor Harold M. Maurer, M.D., the Hattie B. Munroe Foundation Board, the MMI Board, the Meyer Foundation for Disabilities, the MMI Guild, the Enrichment Foundation, the Scottish Rite Masons, the Autism Action Partnership and the C. Louis Meyer Family Foundation.

This year’s report features just a few snapshots of the vital work in education that goes on at MMI. I hope you enjoy the 2010 annual report.

Sincerely,

J. Michael Leibowitz, Ph.D., Hattie B. Munroe Professor
Director of UNMC’s Munroe-Meyer Institute
This annual report highlights only a few of the programs, activities and services offered by the UNMC Munroe-Meyer Institute. For more information, we invite you to visit our facilities on the UNMC campus, our clinics and other programs across the state, or our website.
Elizabeth Bullington works with 5-year-old Danny on a sequencing exercise during an applied behavioral analysis (ABA) therapy session. Bullington is one of the first graduates of the ABA master’s program, a partnership between MMI and the University of Nebraska at Omaha.

New degree program helps students make their next move
Following her graduation from Midland University (formerly Midland Lutheran College) in 2008, Elizabeth Bullington came to a crossroads in her life.

Though armed with her bachelor’s degree in psychology, she knew she needed a master’s degree to work in a clinical setting. But there were no such local programs with an emphasis in Applied Behavior Analysis (ABA). Bullington sought to help children with autism, but wanted to stay in Nebraska. Her family did too.

Luckily for Bullington, the psychology department at the University of Nebraska Medical Center’s Munroe-Meyer Institute (MMI) and the school psychology program at the University of Nebraska at Omaha launched a joint master’s program in ABA just in time.

Completion of such a program would allow her to sit for a Board Certified Behavior Analysis (BCBA) exam. Board certification is important because it is evidence of a service provider’s competence to provide ABA services. In addition, graduation from the master’s program also provides the prerequisites for provisional licensure as a mental health practitioner, a must-have to work in a clinical psychology setting.

Bullington enrolled in the program in the fall of 2008. It consisted of 30 hours of course work, a 750-hour practicum of supervised experience and a research thesis. Of two options available, Bullington chose the autism/severe behavior disorders track over the outpatient behavioral pediatrics track. She was placed in the early intervention program at MMI. It was there she met Danny, a 5-year-old boy with autism.

During games of Chutes and Ladders, Danny would swat at the pieces and echo every word Bullington said.

Bullington received her master’s degree in August and soon hopes to take her turn at the BCBA exam.

“I wouldn’t even be in my field if MMI and UNO didn’t have a joint program,” she said.

Another draw to the master’s program for Bullington was the people in charge of the Center for Autism Spectrum Disorders and Pediatric Feeding Disorders program where she did her practicum. Wayne Fisher, Ph.D., and Cathleen Piazza, Ph.D., are internationally-renowned in the ABA world.

“Their names would pop up in my textbooks, and I would be like ‘oh my goodness, I work with them.’”

Their work has inspired students in the master’s program to spread their ABA knowledge beyond the walls of MMI. Bullington said her colleagues talk about opening preschools for children with autism and providing parent training programs, all based on the principles of ABA.

The master’s program prepares them for this by providing opportunities to work with faculty at MMI who practice ABA daily in outpatient clinics, schools and community and primary care settings.

Bullington personally wants to combine her two loves: faith and children with autism.

“I want to help children with autism obtain the sacraments and encourage parents and families to go to church with their kids with autism,” she said. “They typically don’t because their children are too noisy and they don’t know the proper ways to handle problem behavior.”

The need for psychologists with their master’s in ABA is ever-present. Many parents of children who receive services from the Center for Autism Spectrum Disorders wait between six to nine months to get in. In addition, Nebraska has a substantial shortage of behavioral health clinicians with the expertise to work with children and adolescents with behavior problems and their families.

“This is why we started the ABA program,” said Lisa-Kelly Vance, Ph.D., professor of psychology at UNO and co-director of the joint master’s program along with Mark Shriver, Ph.D., associate professor of psychology at MMI. “We need more professionals trained to work with children with behavior problems.”

Bullington is ready to go to work.
It’s nine a.m. on a Monday in November. Eric Rush, M.D., pages through his files in the conference room of the diagnostic building at UNMC’s Munroe-Meyer Institute.

Today he’ll see an 8-year-old girl who was referred for potential Fetal Alcohol Syndrome. Dr. Rush knows that many of the physical characteristics the child exhibits are probably due to being born 15 weeks premature.

He enters the exam room and receives a high-five from the little girl who’s sporting a pink helmet because of behavior problems. He chats with her foster parent and then measures the distance between her eyes and her head circumference. The numbers fall in the normal range for a girl her age.

Dr. Rush explains to the foster mom that the girl’s behavior problems and delays can’t necessarily be attributed to FAS. He orders a “microarray” that will test her DNA for genetic disorders that could be causing her issues. Such a diagnosis would allow for an optimal treatment plan and a more accurate outlook for her future. Dr. Rush likens chromosomes that the microarray will test to a book. It looks for extra pages or pages missing and any abnormal genes it finds are like spelling errors. This seems to click with the foster mom.

As a clinical geneticist in training, Dr. Rush has done his job.

Down the hall, Lois Starr, M.D., sits down with a 14-year-old female referred for some freckles in an unusual pattern on her back.

In talking with her patient about her past medical history before the physical exam, Dr. Starr learns that the girl also has experienced enuresis, better known as bed wetting, for years. Noting that the abnormal pattern of skin findings may indicate a disease known as segmental neurofibromatosis, Dr. Starr recommends an MRI of the lower spine to look for a potential link between the freckles and the enuresis.

Also a clinical geneticist in training, Dr. Starr has done her job.

Abigail Haggerty, a cytotechnologist III in the Human Genetics Lab at MMI, shows Lois Starr, M.D., a clinical geneticist fellow, how to identify ideal cells for chromosome analysis.
Clinical geneticists who can consult about lab tests and diagnose potential genetic diseases and disorders are in short supply. That’s why MMI and the UNMC Department of Pediatrics recently launched a fellowship program to train clinical geneticists like Drs. Rush and Starr.

Based on the growing need, MMI also will re-launch the clinical cytogeneticist fellowship it discontinued 12 years ago. Cytogeneticists detect chromosome problems early to provide health care professionals with an opportunity to establish the best method for treatment.

“There are about three open positions in genetics and cytogenetics for every qualified candidate,” said Warren Sanger, Ph.D., director of cytogenetics and interim director of clinical genetics at MMI. “What’s lacking is the personnel to fill them.”

“Some would call genetics the most rapidly expanding field of medicine,” he said.

Adds Dr. Starr: “I love putting together the pieces of a patient’s history and physical findings and perhaps providing an answer, helping not only the patient, but also the patient’s family members.”

Following the completion of her clinical genetics fellowship in June 2012, Dr. Starr plans to pursue the clinical cytogenetics fellowship.

“I would like to see patients in the clinic and hospital while also taking an active role in the lab, not just in diagnostics, but also as a part of the research essential to advancing the medical care of our patients.”

She is grateful that such programs exist to help her realize her dreams in the city she calls home. Dr. Starr graduated from medical school at UNMC in 2007 and also completed her pediatrics residency at UNMC in 2010.

“I feel fortunate to have the opportunity to train for my ideal career here,” she said.

MMI is happy to provide the opportunity.
Training **SHIFTS into 2nd GEAR**

When most people think of physical therapists, they think of rehabilitation, not “habilitation.” While rehabilitation reteaches, habilitation means “to learn for the first time.” For children with developmental disabilities, it’s essential.

That’s why federal law mandates physical therapists in schools. Even still, just over 10 percent of physical therapists specialize in pediatrics. With its new pediatric physical therapy residency, UNMC’s Munroe-Meyer Institute (MMI) hopes to produce more specialized practitioners in the field.

“Our goal is to provide students with an intensive, well-rounded learning experience in pediatric physical therapy,” said Wayne Stuberg, Ph.D., director of the PT department at MMI. “The hope is that upon completion of the residency, students will take on leadership roles in pediatric PT.”

Dr. Stuberg strives for MMI to be known as an innovative leader in pediatric physical therapy. The new residency, to be accredited through the American Physical Therapy Association, is the most advanced training program available to physical therapists. Upon accreditation, it will be one of only six such programs in the United States.

“We want to offer a unique training opportunity so those who want to receive the highest level of training can do so in the Midwest,” he said. “It includes clinical practice and problem-solving as well as the chance to witness research discoveries and their clinical applications first-hand.”

Jill Lindsteadt is the first resident enrolled in the one-year program. She spends half her time doing clinical work in homes and local schools. The other half of Lindsteadt’s time is spent with outpatients or in the state-of-the-art motion analysis lab at MMI. The lab analyzes abnormal walking patterns pre- and post-surgery. Current research in the motion analysis lab compares strength training in children with cerebral palsy, which is standard practice, to “treadmill training with weight support.”

For Lindsteadt, exposure to the latest research and the chance to work with well-known physical therapists are among the reasons she chose to do her PT residency at MMI.

She’s also been impressed by the collaboration at MMI. Because the residency is offered in conjunction with the Leadership Education in Neurodevelopmental and Related Disabilities (LEND) program at MMI, which is based on an interdisciplinary curriculum, she is able to learn from a multitude of knowledgeable health professionals.

“**Because of my education at MMI, I can help children reach their full potential.**”

“Everyone looks at the whole child, not just their motor control or cognitive abilities,” she said. “I work with psychologists to understand behaviors, occupational therapists to understand fine motor skills and others to better understand the child as a whole person.

Following her graduation in June of this year, Lindsteadt knows someone with her education and skill set will be in high demand. Graduates of the PT residency also are eligible for board certification in pediatrics through the American Board of Physical Therapy Specialties. And as Neonatal Intensive Care Units save the lives of more babies, some of whom grow up with life-long disabilities, pediatric physical therapists will be vital to helping them maintain a high quality of life.

“Physical therapists are needed everywhere, especially those with expertise in working with children with developmental disabilities,” Lindsteadt said. “Because of my education at MMI, I can help children reach their full potential.”
MMI’s first physical therapy resident Jill Lindsteadt, coaches her patient, Guin, as she tests out an adaptive bike.
A Broad Education

New doctoral program first of its kind in Nebraska

In third-world countries, children with severe behavior disorders are often placed in orphanages or institutionalized. Rebecca Dogan wants that to change.

As a Ph.D. student studying Applied Behavior Analysis at UNMC’s Munroe-Meyer Institute (MMI), Dogan hopes to teach others how to treat autism and other behavior disorders following her graduation in 2012.

“I want to educate those in less developed areas on positive behavioral interventions and raise awareness that will hopefully lead to early intervention,” she said.

Through the Medical Sciences Interdisciplinary Area at UNMC, MMI started the three-year Ph.D. program in 2010. It is the first of its kind in the state of Nebraska and the first one in the nation to be integrated with a University Center of Excellence on Developmental Disabilities in a university medical center setting.

The doctoral program focuses on applied behavior analysis for children, adolescents and families. The training model for the program is similar to programs used to train basic researchers and scientists. Principles and concepts introduced in the classroom are immediately applied in clinical and research settings.

“By integrating courses and hands-on experience, students get practical use right away which maximizes learning,” said program director, Wayne Fisher, Ph.D. “They retain more when learning and doing go hand-in-hand.”

As part of the curriculum at MMI, Dogan is already applying her education. She conducts a training program for parents of children with high-functioning autism. Parents bring their real-life problems to the table and Dogan, supervised by faculty member Terri Mathews, Ph.D., talks them through the solutions.

One couple struggled to get their son to offer genuine compliments rather than “I like your giant ear.” Dogan advised them not to attend to the inappropriate comments, but instead provide high amounts of praise and attention when he used appropriate compliments. She recommended they “catch him being good” frequently to keep his attention gauge high. That way, he’d be less likely to use undesirable behaviors to gain attention. She also guided the parents on how to handle unsafe behaviors like running into the street versus behaviors that parents may find annoying, like wearing the same thing all the time.

In addition to her clinical work at MMI and in behavioral health clinics around Nebraska, Dogan also conducts research that is published in journals and presented at conferences. For her dissertation, she plans to explore why the literature shows that programs like the parent training don’t always generalize to everyday situations.

“They learn the skills, but it doesn’t always transfer to other settings,” Dogan said. “I would like to study what we can do differently to teach skills that apply more broadly.”

While Dogan chose the “Clinical Behavior Analysis in Pediatrics” track, Regina Carroll selected the “Intensive Applications of Behavioral Psychology and Behavior Analysis” track.

Her research interests include decreasing stereotypical behaviors that often co-occur with autism, such as hand-flapping and repeated

Ph.D. student Regina Carroll tests the effectiveness of a computer-based reading program for children with autism. “We’re finding that it requires a lot of adult intervention,” she said. “We hope to look for alternatives to make it more practical for children with autism.”
vocalizations. These behaviors interfere with acquisition of skills. Carroll also hopes to teach graduate school courses in ABA and mentor research assistants following her graduation. She may even go on to do a post-doctoral experience.

“The goal of this new program is to prepare students for prominent leadership positions in academic, clinical and research arenas,” said Joe Evans, Ph.D., faculty member in the program and director of the MMI psychology department.

So far, mission accomplished.
DEPARTMENT HIGHLIGHTS

Autism
MMI’s Center for Autism Spectrum Disorders was awarded a $1.5 million grant from the US Army to study the use of tele-health and web-based technologies to train para-professionals to provide services to children with autism in military families. Unfortunately, most military-dependent children with autism spectrum disorders do not receive appropriate services, in part because there are not enough professionals appropriately trained to provide services. This project will greatly increase the number of well-trained therapists in areas around many military bases.

Administration
MMI hosted the Special Olympics Health Symposium, which highlighted the health issues faced by people with intellectual and developmental disabilities. “Improving Health for People with Intellectual Disabilities - Policy, Practice and Possibility” preceded the 2010 Special Olympics USA National Games in Lincoln, Neb.

Developmental Medicine
Faculty revised the pediatric resident rotation to provide a more comprehensive experience in the developmental pediatrics and behavioral psychology clinics. Now the residency also incorporates formal training in developmental and autism screening into the curriculum.

Developmental Neuroscience
MMI created the Department of Developmental Neuroscience in 2010 to conduct research into the causes of autism, cognitive and motor delays, and language disorders. Three new faculty members with expertise in brain development and learning processes joined MMI on July 1 - Anna Dunaevsky, Ph.D., Woo-Yang Kim, Ph.D., and Jyothi Arikkath, Ph.D. The department’s goal is to find new ways to diagnose and treat such disorders.

Education and Child Development
The Interdisciplinary Center of Program Evaluation enrolled its first trainees who will gain skills evaluating community programs such as the Building Bright Futures Early Childhood Services.

Occupational Therapy
Students from four different states and six colleges and universities are currently completing their pre-service clinical rotations at MMI.

Physical Therapy
The Physical Therapy department organized a multi-disciplinary health symposium on Muscular Dystrophy for health care professionals as well as families to develop new skills and strategies to treat those with MD. This year’s symposium on April 29th and 30th will focus on Cerebral Palsy.

Psychology
Faced with a growing shortage of mental health providers in Nebraska, the psychology department increased its emphasis on training behavioral health practitioners. As part of the Nebraska Internship Consortium in Professional Psychology (NICPP), MMI attracts doctoral psychology intern applicants from Nebraska and across the country. In 2010, a record 165 applicants applied for internships in the NICPP from more than 60 university training programs. MMI accepted 13 psychology interns in 2010.

Recreation Therapy
A record 478 volunteers provided 15,674 service hours for individuals with developmental disabilities throughout the year. Almost every middle school and high school in the Omaha metro area sends students to MMI for community service hours. For most students it’s a gateway experience to the world of developmental disabilities. Many return as repeat volunteers or apply for staff positions.

Speech Language Pathology
The department hosted its annual continuing education conference about augmentative and alternative communication (AAC) for speech pathologists, special educators, families and individuals who use AAC to communicate. The featured speaker, Janice Light, Ph.D., inspired the speech language pathology staff at MMI to implement new methods to teach children who use AAC how to read.

Social Work
The Social Work Department conducted “Safety and ‘Netiquette’ Training in Social Networking” workshops for young adults with developmental disabilities. The project was made possible by a grant from the Nebraska Planning Council on Developmental Disabilities.
Andrea Clements conducts an early intervention therapy session while Lindsey Loutsch records data. Autism spectrum disorders affect as many as one in 91 children.
Serving the Community

MMI provides technical assistance to other university departments and programs, community organizations and governmental agencies to transfer new knowledge from the academic setting into the community.

This year, 18,208 participants attended workshops, conferences, teleconferences and other community education activities. This chart illustrates the broad spectrum of issues and services for which MMI provides evaluation, assistance in program development or implementation, continuing and community education and a variety of other community services.

Funds Leveraged

Over the past five years, MMI has been successful in maintaining grants and contracts with existing partners in the community, and also in identifying new partnerships and funding sources to develop innovative programs and address emerging issues.

Interdisciplinary Trainees

MMI’s education program provided an interdisciplinary training experience for 167 students, interns, residents and post-doctoral fellows in 2010 for a total of 99,429 hours. More than half of these students were long-term trainees, receiving 300 hours or more of interdisciplinary instruction at MMI.
Fueling our mission

MMI’s complex mission requires that we seek support from a wide variety of sources. Patient revenues continue to be the largest part of our budget with state funds and contracts from public schools and state agencies providing a great deal of support. Private donations continue to be a very important part of our program as we develop cutting-edge programs to benefit Nebraskans with disabilities.

Products developed and disseminated

MMI faculty members publish extensively in professional journals, monographs, periodicals and books and also disseminate best practices through reports, manuals and other informational materials. In 2010, MMI faculty members developed 155 new products and disseminated 134 different products to professionals, students, parents, people with disabilities and the general public.
The Munroe-Meyer Institute is committed to unlocking the potential of people with disabilities. Every individual with complex medical and developmental needs deserves the very best care available. And with hundreds of thousands of people with disabilities living in the state of Nebraska, the need for MMI’s specialized programs and services is vital.

Today, an unprecedented momentum exists at UNMC to be the best in health care for all Nebraskans. Through the University of Nebraska Foundation’s Campaign for Nebraska, there’s a tremendous opportunity to raise the private support needed for MMI to shape the care available for Nebraskans with intellectual and developmental disabilities.

Private support plays a critical role in helping MMI achieve its vision — to be the premier interdisciplinary center on disabilities in the Midwest. Specifically, your support will help UNMC:

- Enhance patient services across the state via tele-health education of families and providers as well as direct services in numerous communities
- Better understand disorders such as autism in order to improve diagnosis and treatment options
- Educate providers to better care for individuals with disabilities
- Design, develop, adapt and apply technological solutions to help children and adults with disabilities reach their full potential

As part of the Campaign for Nebraska, MMI seeks to raise $20 million to fully realize its key priorities. Since the Campaign began in 2005, individuals and organizations have generously supported MMI, helping the Institute reach approximately 25 percent of this goal.

Pulitzer Prize winning journalist, Hodding Carter, said, “There are only two lasting bequests we can hope to give our children. One is roots; the other, wings.” Your support offers families hope through research and innovative treatment programs at MMI. It also provides important support for faculty and staff needed to reach families throughout our community and give them opportunities to soar past perceived boundaries.

For more information about the campaign or to make a donation contact mwelsh@nufoundation.org or 402-502-4117.

Sincerely,

Melanie S. Welsh
Director of Development MMI
University of Nebraska Foundation
MMI’s mission:

to improve the quality of life for persons with disabilities and their families.