

MISSION STATEMENT

Madonna Rehabilitation Hospitals are Catholic hospitals that provide physical medicine and rehabilitation services to children and adults throughout the nation. We rehabilitate those who have sustained injuries or disabling conditions so they can fully participate in life; lead research to improve outcomes; prevent physical disabilities and promote wellness through community programs.

Our core values reflect Madonna's history, mission and beliefs:

Collaboration Hospitality Respect Innovation Stewardship Teaching



A letter from the

President & CEO

This issue of the Independent focuses on Madonna's Brain Injury Program. The impact of a brain injury can be devastating; the recovery process is often long and difficult. Many believe that once injured, the brain is unable to recover. We know this isn't true. Following an injury, the brain has the ability to adapt, rewire and use other pathways to compensate for the damaged areas. This is called neuroplasticity and it holds great promise for recovery when a survivor has access to a specialized brain injury program like Madonna's. At the very core of such a program is a team of rehabilitation clinical experts led by physicians certified as brain injury specialists working together. This team, along with a holistic approach to care and leading-edge technology, unleashes the power of neuroplasticity. When combined with small acts of genuine respect and kindness — hallmarks of Madonna's Benedictine heritage — outcomes are astonishing. We see these miracles every day. You will, too, as you read the stories of Sidney, Nick and Kali in this issue.

I recently received a note of appreciation from the wife of one of Madonna's Brain Injury Program survivors upon his return to independence and home. She wrote, "I will be forever grateful to Madonna for their passionate work in giving broken people new life."

 $\label{eq:madonna} \mbox{Madonna is rehabilitation} - \mbox{that's who we are and all we do.} \\ \mbox{Messages like this reaffirm our commitment to this mission.}$

Paul Dongilli Jr., Ph.D., President and CEO

(Saul Dongs

The INDEPENDENT is a magazine published three times a year for friends of Madonna. Direct questions or comments to: 402.413.4292 or info@madonna.org.

EDITORIAL STAFF

Tami Rudder - Marketing, Media and PR Specialist

Nicole Mueksch - Marketing, Media and PR Specialist

Mackenzie Huck - Marketing, Media and PR Specialist

Klair Acton - Marketing and Communications Specialist

Lora Vohl - Internal Communications Specialist

Jeremy Wegner - Brand Strategist

Sue Carraher - Development Coordinator

Katie Williams - Director of Marketing and Communications











Madonna.org I 800.676.5448

Visit Madonna.org/VirtualTours for an up close look at our hospitals.

CONTENTS

4

Rebuilding lives after

BRAIN INJURIES

6

Resilient Kansan

BACK IN THE SADDLE

10

Teenage recovery:

HOPE & HUMOR

16

Brainwaves and alternative

COMMUNICATION

20

Historic ceremony honors

MILESTONE

8

Meet Madonna's

B.I. PHYSICIANS

12

Helping children through **MONTHLY GIVING**

13

Forging a deep

CONNECTION

14

Continuing Madonna's

IMPORTANT WORK

15
Positive patient

OUTCOMES

18
Keeping the faith —

LIFE AFTER TBI

22

Ninja Warrior mom is
UNSTOPPABLE



Rebuilding lives after

BRAIN INJURIES

A graduate student. A teenager. A young professional. Three completely different individuals with a common denominator. They are brain injury survivors who reclaimed their lives at Madonna Rehabilitation Hospitals.

The brain is the master of us — controlling how we move, think, feel, behave — and it forms our individual personalities. After a brain injury, all of this can change, including how the brain functions.

An estimated 2.8 million Americans sustain a traumatic brain injury (TBI) annually according to the Centers for Disease Control and Prevention (CDC, 2014). Rehabilitation after any severity of brain injury is crucial for long-term quality of life.

Since the 1970s, as a leader in innovative care, Madonna has provided specialized services to patients with brain injuries. We have helped countless adults and children return to their communities and lead meaningful lives.

Prior to admission, families may feel overwhelmed with a bleak outlook for their loved one's future. Madonna is often their first glimmer of hope. We meet the needs of any severity of brain injury regardless of how it occurred. The Disorders of Consciousness (DoC) Program serves the most challenging patients who are in a coma or minimally conscious state.

Every brain injury is different and there is no one-size-fits-all approach to rehabilitation. We excel at tailoring the recovery for patients with the most complex medical, physical and cognitive needs.

A compassionate care team of physicians, nurses, therapists, case managers, social workers, psychologists, recreational therapists and spiritual care staff lend their expertise to help patients set realistic goals and reach their highest levels of independence. Our personal connections with patients and families increase engagement in recovery and demonstrate the possibilities of a fulfilling life.

Madonna's Brain Injury Program offers a distinct advantage with inpatient and outpatient services located under one roof. For example, a patient on a ventilator with complex medical needs is admitted to Madonna's specialty hospital where the care team works to improve their medical condition while providing one or two hours of daily therapy. Once the patient is breathing independently and is physically stronger, they move to the rehabilitation hospital. Here, the team builds on the patient's progress, challenging them to reach





Learn more about the Brain Injury Program at: Madonna.org/brain-injury

new milestones through an expanded three to five hours of daily therapy. The outpatient programs allow a seamless transition from the hospital setting to the intensive Rehabilitation Day Program, with individual and group therapy, or traditional outpatient services.

Madonna uses the latest technologies, along with work, school and community re-entry services; an adaptive sports and recreation program and comprehensive vision therapy to help patients maximize their independence. Family involvement is also an essential and encouraged component of the program. Specially-trained staff educate and coach caregivers for a patient's confident return to home and community.

By combining heartfelt hospitality with technology and education, we help patients step back into life, the classroom or even the saddle of a horse. It's the Madonna difference.





DIFFERENCE

Madonna is proud to have 88 staff members, including nurses, therapists, counselors, case managers and social workers, who are Certified Brain Injury Specialists (CBIS), including two CBIS-certified Trainers (CBIST). Earning the CBIS accreditation gives staff the advanced training and knowledge to address the unique needs of adults and children with brain injuries for the best outcomes.

The first step in becoming a CBIS is completing 500 hours of direct care experience in treating patients with a brain injury. Training includes guidelines for interacting with patients and building rapport, understanding how brain injury effects behavior, common medical complications, safe medication management and helping families cope with brain injury. Additionally, applicants need to pass a rigorous exam proctored by the Academy of Certified Brain Injury Specialists. The CBIS designation reflects a high level of quality care and must be renewed annually.

Impressive fact: Over 80% of the CBIS/Ts in the state of Nebraska are employed by Madonna.







Resilient Kansan

BACK IN THE SADDLE

Every Thursday, Sidney Doane makes a three-hour drive from her home in Downs, Kansas, to Madonna's Lincoln Campus for outpatient therapy. It's a drive she and her parents, Steve and Heidi Doane, know well — one they've been making for more than six years.

On Dec. 18, 2014, Sidney, then a second-year graduate student at the University of Kansas, had just wrapped up her finals and started a drive to visit her sister in Waco, Texas. Near Wichita, Kansas, Sidney's car hit an icy patch and careened off the road.

Miraculously, Sidney survived, but she suffered a severe diffuse axonal brain injury, a type of traumatic brain injury that occurs when the brain rapidly shifts inside the skull, shearing the long connecting brain fibers known as axons. After weeks at Wesley Medical Center in Wichita, Sidney moved to Madonna to begin intensive inpatient therapy, even though she was still in a comatose state. Understanding the long road ahead, Steve and Heidi dropped

everything to care for their oldest daughter, who went from excelling in graduate school with dreams of becoming a school psychologist to lying in a hospital bed, unable to breathe or swallow independently. Between the support of her parents and her new Madonna family, Sidney slowly started to reach milestones — from waking up to removing her feeding tube five months into rehabilitation. It wasn't until horses were introduced to therapy that Sidney truly turned a corner. Riding and showing horses was fundamental to Sidney's childhood and something she continued into her adult years.

"I remember the first time [Sidney's occupational therapist] Brooke [Murtaugh] took her to the horse show in Lincoln," Heidi said. "To see Sidney be put on a horse — she went from the first time on a horse with five people holding her up there to just a month or two later sitting up by herself and having someone walk alongside her. You could have never told me that horses were going to bring her back to life."

Equitherapy not only propelled Sidney's drive, it helped her physically gain the strength to walk out of Madonna after seven months of inpatient care. Through the outpatient Rehabilitation Day Program, Sidney continued her forward momentum, improving walking skills by using specialized technology like the Madonna ICARE by SportsArt and working on her cognitive skills in the Therapeutic Learning Center to prepare her to return to graduate school.

Regular visits to the nearby horse stables in Lincoln rejuvenated the young Kansan, inspiring her to return to show through the Quarter Horse Association. In July 2017, just 2½ years after her accident, Sidney earned first place in the Amateur Walk/Trot Trail with her therapy horse, Snickers, during a competition in Kansas. "Riding horses is the best thing ever; I'm just so glad that I can ride again," Sidney said.

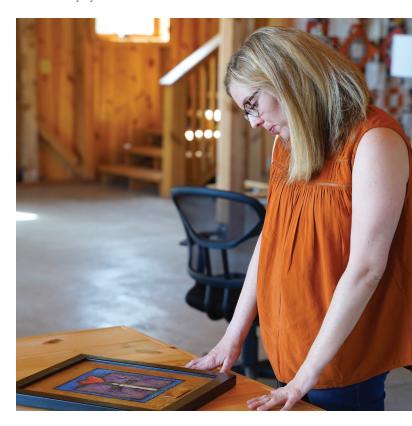
Today, Sidney's weekly drives to Madonna are a short blip in her miraculous recovery journey. While Sidney refines her speech and vision through therapy, she continues honing her horseback riding skills. In May, Sidney celebrates graduating from KU with a master's degree in educational psychology, which is a significant achievement.

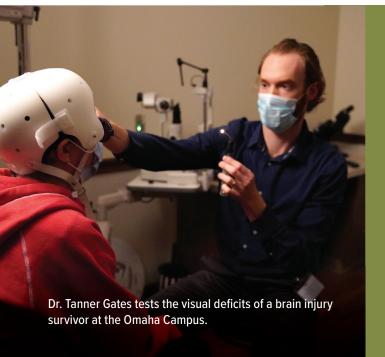
"I'm just so thankful for everyone on my team," Sidney said. "Thank you, Madonna, for everything along the way, and God!"



Opposite Page: Sidney used a variety of specialized technology as part of her rehabilitation. The Madonna ICARE by SportsArt , is a bodyweight supported, motorized elliptical trainer designed to help patients regain their walking ability and physical fitness. The Dynavision is an interactive light board used to improve visual motor skills, peripheral vision, reaction time and arm coordination.

Below: In 2020, Sidney was honored with a GOAL Award for her resilient spirit and courage during her lengthy recovery from a near-fatal brain injury in a car accident.





VISION REHABILITATION

Visual deficits after a traumatic brain injury (TBI) are common. The TBI affects how the eyes and brain communicate. Symptoms may include blurred or double vision, light sensitivity and difficulties with concentration and reading. Madonna is the only hospital in the region offering an extensive vision rehabilitation program delivered by specially-trained experts in neuro-optometric care. Dr. Samantha Bohl and Dr. Tanner Gates serve inpatients and outpatients of all ages. The doctors collaborate with the occupational therapist in tailoring a treatment plan that may include specialized technology and adaptive strategies to enhance hand-eye coordination, reaction time, recognition and other cognitive and visual responses.

Meet Madonna's

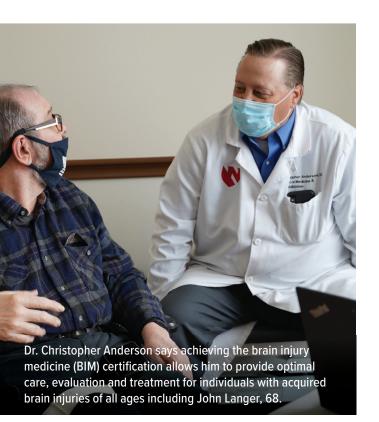
B.I. PHYSICIANS



A Lincoln native, Dr. Morgan LaHolt began his career in medicine when he served as a rehabilitation aide at Spaulding Rehabilitation Hospital in Boston.

LaHolt attended school at Boston College and the University of Nebraska College of Medicine. He completed postgraduate training at the University of Missouri-Columbia and was the chief resident for the Department of Physical Medicine and Rehabilitation.

In 2010, LaHolt began treating patients at Madonna's Lincoln Campus and serves as the physician program director for the brain injury program. He became certified in 2011 and received his subspecialty certification in brain injury medicine (BIM) in 2014. Additionally, LaHolt has a robust outpatient clinic conducting independent medical examinations and serves as the outpatient concussion clinic physician.



An Omaha native, Dr. Christopher Anderson was first exposed to rehabilitation medicine during a college internship at NYU Langone Health's Rusk Rehabilitation in New York.

Anderson completed his doctor of osteopathic medicine at the University of Health Sciences in Kansas City, Missouri, before finishing his physical medicine and rehabilitation (PM&R) residency at McGaw Medical Center at Northwestern University in Chicago, Illinois.

Since 2016, Anderson has worked at Madonna's Omaha Campus and currently serves as the physician program director for brain injury rehabilitation. He is also an assistant professor with the PM&R residency program, a partnership with Madonna and the University of Nebraska Medical Center and its clinical partner, Nebraska Medicine. Along with teaching, he continues caring for brain injury survivors in an outpatient clinic setting and is advancing the level of care and training for brain injury survivors with a brain injury medicine (BIM) certification he completed in 2020.







NEUROPSYCHOLOGY

Madonna's inpatient and outpatient brain injury programs include representatives of the Neuropsychology Department. A neuropsychologist is a licensed psychologist specializing in the area of brain—behavior relationships. Neuropsychologists are educated in brain anatomy and function with specialized training in administering and interpreting cognitive tests.

Neuropsychologists also have expertise in rehabilitation. During a patient's recovery from a major brain injury, the neuropsychologist provides cognitive assessments that guide treatment, brain injury education to patients and families and counseling to help with the coping and adjustment process. They assist in managing behavioral crisis situations that can accompany the early stages of brain injury recovery.

Neuropsychologists provide opinions on the capacity of individuals to manage various aspects of their life following discharge. They collaborate with Madonna's consulting psychiatrist, Dr. Ahsan Naseem, who assists in managing specialized medication interventions for TBI survivors.

The Neuropsychology Department plays a key role on the outpatient Mild TBI Clinic team. The neuropsychologist performs detailed evaluations of cognitive and emotional functioning and the rehabilitation counselor helps persons with mild TBI to achieve a successful return to productive life activities.



Learn more about Neuropsychology at: Madonna.org/Neuropsychology







The Neuropsychology Department helps brain injury survivors and their families cope and adjust to life post-injury. The team includes a diverse group of neuropsychologists, rehabilitation counselors, post-doctoral residents and graduate student interns.

Teenage recovery:

HOPE & HUMOR

Diana Schneider looks back on 17 months filled with uncertainty and counts her blessings. For the single mother of three, the pandemic has given her the freedom to work remotely and at times, nights and weekends. The flexibility gives her additional time to spend at home caring and advocating for her son, Nick Murphy, who is recovering from brain trauma.

In December 2019, Nick, then 15, was riding in the back seat with his younger sister, Carlee, when the car crashed nearly head-on with another vehicle. All four passengers needed hospitalization, but Nick's brain injuries proved the most severe. He required emergency craniotomy surgery to relieve pressure in his swelling brain.

Repetitive steps
on the Lokomat,
a robotic gait
trainer, help retrain
Nick's brain and
spinal cord to
work together on
mobility as Lindsay
Tiberi, physical
therapist, tracks
his progress.

When he first arrived at Madonna's Omaha Campus in March 2020, Nick could barely keep his eyes open. The teenager wasn't ready for traditional rehabilitation. Nick began the specialized Disorders of Consciousness Program to increase his arousal and awareness. He started at Level III on the Rancho Los Amigos Scale of Cognitive Functioning, showing localized responses to specific stimuli and following simple commands. However, Mother's Day marked a turning point in Nick's recovery.

"He started raising his arm on command. He was waving," Diana said. "It was a Mother's Day I won't soon forget."

From there, Nick's progress steadily improved, and he began tolerating more intense therapy. Occupational therapy encouraged his independence during his morning routine. In physical therapy he was introduced to specialized technology called the Lokomat, which played to his competitive nature and helped get him up and walking.

On June 10, Nick turned 16. And while he wasn't able to celebrate the milestone by getting behind the wheel of a car, Diana organized a surprise drive-by parade. Family, friends and a local car club showed up to rev their engines. Another motivator? Nick's favorite snack: Taco John's Potato Olés with a side of nacho cheese.

In a month, Nick transitioned to the next step of Madonna's continuum of care, the Rehabilitation Day Program. In the intense outpatient program, he progressed to using a walker at home. By late October, Nick started traditional outpatient therapy with Madonna TherapyPlus, adding aquatic therapy that continued to fuel his recovery.

Fast forward one year, and Diana said she can't believe she's talking about the same child. Once using a communication board and a keypad to voice his wants and needs, Nick now laughs and jokes with his care team.



"I was prepared to buy a new, adaptable car and make our house more accessible, because I expected to take him home in a wheelchair," Diana said. "But he just made so much progress so quickly, he doesn't need any help from me."

He still participates in outpatient rehabilitation twice a week, where he continues to work on walking independently and improving the use of his right hand.

"Several staff call him the Homecoming King of Madonna," Diana said. "He's always waving, saying hi to everyone and I think he feels like a celebrity."

Nick quickly pipes in, "I'm not the Homecoming King. I want to be Prom King. That's more important."

Madonna's Therapeutic Learning Center helped the teenager keep up with his junior year of high school and return to the classroom full-time. Nick's favorite class is speech, something his mom said she's not at all surprised to hear.

"Nick's back — the mouth, the attitude, the sense of humor, all of it," Diana said with a laugh.

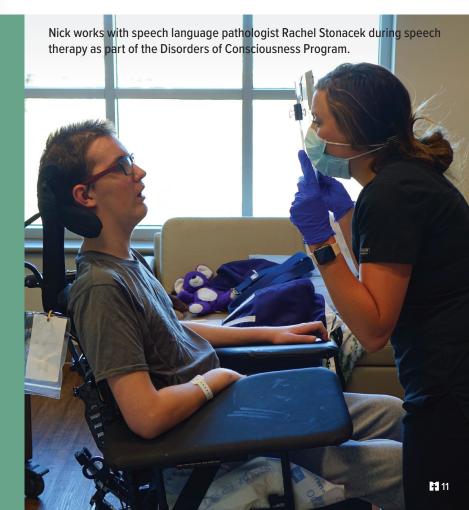


Learn more about the our technology at: Madonna.org/technology

DISORDERS OF CONSCIOUSNESS

Madonna designed the Disorders of Consciousness (DoC) program to serve patients with the most severe brain injuries presenting with lower levels of consciousness, such as unresponsive wakefulness (previously termed vegetative state) and minimally conscious states. Our interdisciplinary team of doctors, nurses and therapists work in tandem to care for the complex DoC patient.

Introducing specialized rehabilitation early in recovery is critical to increase arousal and awareness and promote the best patient outcomes. Family involvement also plays a significant role. Madonna provides caregivers compassionate support with thorough, family-focused education and training to care for their loved one.



Helping children through

MONTHLY GIVING



For Rich and Jeanne Weiner, it's all about the kids. The retired public school teachers spent their careers helping middle school students embrace history and social studies. It's no wonder that their philanthropic focus also has centered on children.

"We support two organizations that help children — Madonna and St. Jude's," Jeanne shared. Rather than make a once-a-year donation, the Weiners donate to Madonna on a monthly basis.

"Giving monthly is so convenient," Rich explained. "We work within our budget and we don't even miss it," he says of the gifts they designate to Madonna. "We don't give to get a tax deduction," Jeanne says, adding that they donate because they know their gifts are making a difference.

The Weiners have a bit of an inside track to the latest happenings at Madonna. Their daughter, Mandi, is an outpatient physical therapist at the Omaha Campus. As donors, the couple enjoyed a special campus tour before the onset of the pandemic, sharing that they were overwhelmed by all they witnessed that day.

"You are dealing with two people who don't know a lot about technology so it was amazing to see all the therapy equipment in action and to hear patients and therapists talk about it," Jeanne said.

Giving children a second chance is important to the Weiners. Life can change in an instant and they appreciate knowing that their monthly gifts impact children who have their whole lives ahead of them.



CALLING ALL ANGELS...

The Angels Monthly Giving program is an easy, flexible, secure and convenient way to support Madonna's mission. Simply choose the dollar amount you wish to donate and select the day of the month for your deduction. Whether you designate your monthly gift to a general or specific Madonna need, you are making a difference in rebuilding the lives of our patients. For more information, visit Madonna.org/MonthlyGiving. Thank you!

Forging a deep CONNECTION

Prior to 2006, Linda Sundberg viewed Madonna through the experiences of others. That all changed on Feb. 3, 2006 when she endured a traumatic brain injury (TBI) after being struck by an SUV while walking across the street.

Linda's husband, Dave, had been involved with the Madonna Foundation Board of Directors since 2000. Also, the Sundbergs' son-in-law, Patrick Kuhl, was a patient following a workplace injury, resulting in a leg amputation.

"It wouldn't have been my choice to learn about Madonna through my own patient experience but it was a blessing. I grew a lot and my faith grew a lot as well," Linda shared. The Sundbergs' personal experience has forged a deep connection to Madonna, evident in Dave's board leadership and through the many volunteer hours they spent visiting patients who also had experienced TBI.



"Going to visit a patient with a TBI and supporting their family were simple for me to do," Linda said. "I didn't think twice about it."

The Sundbergs also have supported multiple Madonna campaigns and participate in the charitable gift annuity program. "Madonna is so significant in people's lives. I would certainly encourage support," Linda added. As Dave always says, "God lives at Madonna. He works each day through the people who help patients recover."



A GIFT THAT PAYS YOU BACK

Looking for better interest rates than what's available through a certificate of deposit or savings account? Consider a charitable gift annuity.

A charitable gift annuity is a financial tool that allows you to make a gift to Madonna and still receive a fixed, guaranteed income for yourself or others. Based on your age(s) at the time of the gift, you receive a fixed monthly or quarterly payout for the rest of your life. At the end of your life (as well as your spouse's, if you're giving as a couple), Madonna would receive the remainder of the gift.

- Your annuity can be funded with cash donations, securities or property.
- You may be eligible to take a tax deduction at the time of the original gift.
- The interest rate of the annuity is determined by the age and number of annuitants (one or two).

To learn more, contact the Madonna Foundation at 402.413.4777 (Lincoln) or 402.401.5050 (Omaha).

Continuing Madonna's IMPORTANT WORK

Every Christmas, Greg and Peggy Fiala purchase a bundle of restaurant gift cards for families spending the holidays in the pediatric unit at Madonna.

"It's just our way of paying it forward for all the good that came our way when we were at Madonna," Peggy said. The Fialas also are paying it forward in another way. In gratitude for the care their daughter, Meghan, received 17 years ago, they have named Madonna in their estate.

On June 22, 2004, 16-year-old Meghan suffered a traumatic brain injury in a serious car crash. Despite Meghan arriving at Madonna in a coma, Greg said every day brought a glimmer of hope.

"We had a lot of good memories of things going well," Greg recalls adding that two blessings came out of their experience. Both of his daughters ultimately entered the health care field; Meghan as a physical therapist assistant and her younger sister, Kristine, as a physical therapist.

"An experience like this completes you," Greg says. "You find out what's really, really important very fast. I would have given away everything I own for Meghan to get better." The Fialas appreciated the staff's attitude of never giving up.

"If something didn't work, they would try something else," Peggy recalled, acknowledging that it takes money to develop that level of expertise and technology.

"Naming Madonna in our estate allows us to help continue the important work," Peggy said. "We owe Madonna a lot," Greg added. "In fact, we can never repay Madonna for all they have done for Meghan."





SAVE THE DATES 2021-2022

MILES FOR MADONNA

Sept. 25, 2021 · Omaha Zorinsky Lake

MIRACLE NIGHT FOR MADONNA

Dec. 3, 2021 · Omaha The Empire Room at Midtown Crossing

DISH & BLOOM

April 26, 2022 · Lincoln Country Club of Lincoln



THE MADONNA LEGACY SOCIETY

By naming the Madonna
Foundation as a beneficiary of
a portion of their estate, Greg
and Peggy Fiala are members
of the Madonna Legacy
Society, which recognizes
those who have arranged
for future gifts to Madonna
Rehabilitation Hospitals.

Making an estate gift can be as simple as adding three lines to your will. Many people discover that they are able to make a larger gift through their estate than they ever thought possible. Because estate planning is unique to each family, be sure to talk with a financial professional for guidance. Please contact one of our gift officers to begin the process:

- John C. Glenn
 Vice President of Development

 402.401.5151
- Suzanne Sughroue
 Assoc. Vice President of Development
 402.413.4782
- Lauren Lineweber Gift Officer - Lincoln 402.413.4783
- Catherine Wieczorek Gift Officer - Omaha 402.401.5053

Positive patient OUTCOMES

By Dan Vokoun

Madonna Foundation Board Member and Past Board Chair

Madonna's mission is very personal to me. Although I was asked to serve on the Foundation Board in 2012, my experience with Madonna stretches back nearly 20 years to when my mother was a patient. The positive outcome she experienced, along with the excellent treatment my daughter received following her traumatic brain injury, certainly motivated me to join the Board.

I am always amazed by how empowered and forward-thinking everyone is at Madonna. If someone can imagine a new piece of technology that will benefit patients, there is no doubt Madonna will find a way to build or develop it.

Several years ago, I was involved with a renovation project through my company, Sampson Construction. We learned that some of the pediatric patients were curious about our work. Our crews bought some construction toys, gathered some safe building materials and put together a few tool belts with toddler tools and children's hard hats. Madonna let us design a therapeutic "construction project" and we spent an hour or two building with the patients. If there was a dry eye in the room as we all finished up, I sure didn't see it. This story clearly



illustrates how Madonna's focus is all about the patients. Everyone is always willing to go the extra mile and you simply feel great being a part of it.

As Madonna expands in its services and facilities, it is being recognized for the impact it has on the communities it serves, well beyond the state's border. Madonna is providing world-class rehabilitation to patients from across the nation and will continue to be a destination for cutting-edge post acute care because of its positive patient experiences and exceptional outcomes.



Brainwaves and alternative COMMUNICATION

The American Speech-Language-Hearing Association estimates over 2 million individuals impacted by congenital or acquired disabilities require augmentative and alternative communication (AAC), from sign language to communication boards and devices. However, current AAC technologies are not all-encompassing, and many individuals who experience such disabilities lack adequate access to communication methods because of the severe physical limitations caused by their condition. Researchers at Madonna's Institute for Rehabilitation Science and Engineering are now exploring technology that could open new doors for this population.

As part of a federal grant co-awarded to the Institute by the Rehabilitation Engineering Research Center on Augmentative and Alternative Communication (RERC on AAC), researchers are exploring new ways to improve communication methods for society's most significantly impacted individuals. The grant includes several projects, one of which is led by Susan Fager, Ph.D., director of the Institute's Communication Center, in collaboration with Dr. Jon Brumberg at the University of Kansas.

Fager and Brumberg's research focuses on harnessing electrical signals emitted by the brain (electroencephalography [EEG]) and pairing them with signals emitted by the muscles (electromyography, or EMG) to allow an individual with communication and mobility deficits to communicate through a computer.

While studies on the use of brain signals to communicate have been done before, they have largely not produced an actionable result because the signals are difficult to interpret. This study will explore pairing brain and



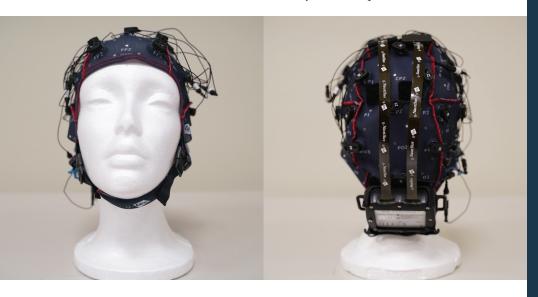
muscle signals, with a goal of better understanding the brain's intentions. This study also focuses on translating this technology into a clinical research environment.

"This is where the field needs to go to be able to help those with the most severe impairments," Fager said. "Many patients can still generate either a muscle twitch or the small electrical signal that precedes a twitch. Harnessing this electrical signal and combining it with the brain's signals may enable creation of a new method that those with limited movement can use to control a computer and communicate."

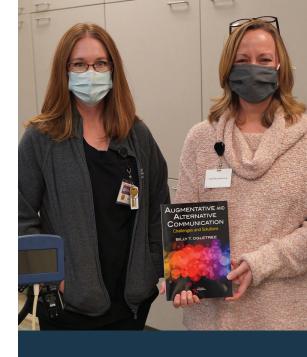
To harness these signals, Fager will use a cap-like system to track and ingest brain and muscle signals wirelessly into a database. Then, the team will analyze the data to develop an algorithm. The research focuses primarily on patients with amyotrophic lateral sclerosis (ALS), high-level spinal cord injury and brain stem impairment.

"The Madonna Institute's strong research and clinical collaborations uniquely position Dr. Fager and her team to lead the way in meaningfully translating emerging sciences into the day-to-day lives of individuals who have very minimal capacity to move," said Judith Burnfield, Ph.D., Institute director.

While this study is not intended to result in the development of tangible technology, Fager expects it will provide a foundation to create new communication tools for those who currently lack adequate access.



The research team is using the g.nautilus wireless system to develop a prototype that will combine brain and muscle signals, laying the groundwork to assist severely impaired patients with new communication options.



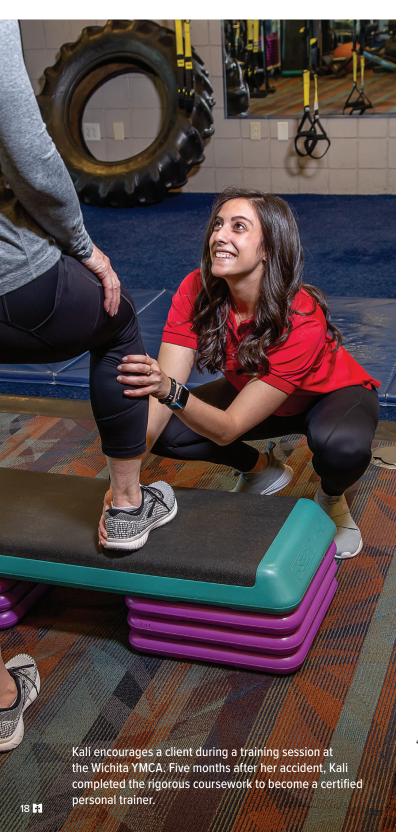
MADONNA RESEARCHERS COLLABORATE

A newly published book, Augmentative and Alternative Communication:
Challenges and Solutions, features a chapter co-authored by Madonna coworkers Dr. Susan Fager (at right) and Tabatha Sorenson, in conjunction with UNMC colleague Dr. Jessica Gormley. Fager, a speech language pathologist, is the director of Madonna's Communication Center of Excellence. Sorenson is an occupational therapist, assistive technology specialist and Rehabilitation Engineering Program leader.

The book is described as a "solutionoriented text intended to prepare
professionals to face AAC challenges
with a can-do perspective."
Fager, Gormley and Sorenson's
chapter, titled "Access to AAC for
individuals with acquired conditions:
challenges and solutions in early
recovery," shares real-life examples
of how Madonna's Institute
for Rehabilitation Science and
Engineering works collaboratively
with clinicians to problem solve
for patients and increase access to
communication methods.

Keeping the faith —

LIFE AFTER TBI



For I know the plans I have for you...plans to give you a future and a hope. - Jeremiah 29:11

For Christmas 2018, Kali Richardson bought gratitude journals for herself and her family to document the positives in each day. Little did she know, gratitude would play a pivotal role in helping her heal from a life-changing accident.

On Jan. 11, 2019, Kali was commuting to the YMCA in Wichita, Kansas, to start day one in her newly-promoted position. The driver of a truck crossed the highway median and hit Kali's vehicle head-on. Her then-22-year-old body sustained massive injuries including broken legs and a jolting blow to her head causing a traumatic brain injury (TBI). Thankfully, Kali survived.

After emerging from a coma and enduring four surgeries and two weeks of intensive care at Wesley Medical Center, a fragile and confused Kali arrived with her parents at Madonna's Lincoln Campus. "I was in a wheelchair and couldn't even formulate a thought," said Kali, a 2018 University of Kansas graduate.

Introducing Kali to rehabilitation involved setting realistic goals with her Madonna care team. Mastering everyday living skills, like dressing and bathing, restored a sense of independence. Speech therapy was a workout for her brain. "It helped me understand what I lacked cognitively and how to improve," said Kali.

Her therapists devised a group cooking challenge that doubled as creative therapy. Kali paired up with another brain injury survivor to compete against other young patients in the fun competition held in Madonna's Independence Square kitchen. Their delicious cupcake creation elicited "oohs and aahs" from their fellow bakers. "I worked on standing, balancing, critical thinking; it was hard, but so fun!"



Kali worried the brain injury had compromised the attention skills needed in her community development role at the YMCA. The Work Re-Entry Program offered her an opportunity to volunteer with Madonna's Fit for Work team and assist with an employee health challenge. "It boosted my confidence and made me realize I was still capable of doing my job."

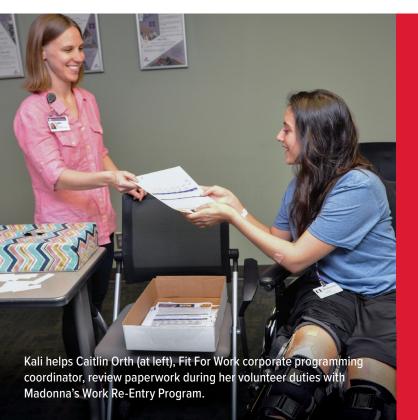
Kali's mother, Sangita, slept in her daughter's room and provided 24/7 support. She brought Kali's gratitude journal so she could resume the daily practice of thankfulness. "When I look back, I'm in awe of the entries, like 'Stood for four minutes,' and later, 'Walked 180 feet,' and seeing how far I'd come," said Kali.

Throughout her recovery, the young Kansan felt the loving support of not only her mother, but her father, Rob, and two brothers. "I truly think having my family near

helped me progress at a much faster pace." Kali leaned on her strong faith and a favorite verse from Jeremiah 29:11 during her eight-week recovery. She wasn't about to give up on herself. "God has a plan."

A confident Kali returned to her career and in June 2019, five months post-accident, she reached an impressive milestone passing a rigorous exam to become a certified personal trainer. But Kali's not stopping there. She's been accepted into the Doctor of physical therapy program at Wichita State University. Her gratitude has come full circle. "I am beyond excited to one day be like the amazing individuals that helped me throughout my rehabilitation!"





WORK RE-ENTRY **PROGRAM**

Madonna's Work Re-Entry Program assists individuals in resuming their careers or volunteer positions. The program includes reviewing a person's previous employment, any barriers returning to work, a neuropsychology assessment and an individualized return to work plan. If needed, a therapy plan is created to build physical, cognitive or behavioral strengths. For others, like Kali, the next step is a work simulation. Kali volunteered with Madonna's Fit for Work program by completing tasks similar to her position at the YMCA in her hometown.



The Lincoln Campus \$57 million construction and renovation project celebrated a significant milestone this spring — the placement of the final uppermost beam atop the building's tower. On March 12, the hospital hosted a topping off ceremony, a practice dating back hundreds of years. A former patient's pivotal role in this time-honored tradition made the event extra meaningful.

Madonna leaders, board chairs and donors gathered outside the construction area for the socially distant event, signing their names to the beam to represent their special role in helping the project become a reality. Father John Sullivan, vice president of the Madonna Rehabilitation Hospital



The evergreen tree signifies that the project has reached into the sky without injury.

Board of Directors, shared a blessing, offering prayers for continued safety throughout the project's completion.

The topping off tradition dates back to ancient Scandinavia as early as 700 A.D., when Viking chieftains would hoist an evergreen tree atop a newly-finished building to celebrate its completion.

"In the steel construction trade, the evergreen tree signifies that the project has reached into the sky without injury," said Paul Dongilli, Madonna president and CEO. "The tree also symbolizes new or continued growth for the building's future occupants."

Ryan Eastin, the Moen Steel Erection crane operator responsible for placing







the monumental beam, felt an emotional connection to the project. In 2017, Ryan spent eight months at Madonna in outpatient therapy after suffering significant brain trauma.

"I had the whole gambit of things, memory issues, muscle problems — relearning how to use my eye muscles and my neck muscles," Ryan said. "I just one day lost everything after my injury and things that had come so easy to me were now just difficult and it was so frustrating. I had to relearn all of that at Madonna."

Through months of hard work and guidance by his care team, Ryan relearned invaluable life skills that allowed him to excel both personally and professionally. He currently operates the tallest crane in Lincoln at 220 feet and 275 tons. He completes about 60 lifts per day and has been on the Madonna job site since November 2020. Ryan recently reconnected with this care team to thank them for helping rebuild his life. The opportunity to place the final beam on the new addition meant the world to him.

"I am so thankful for Madonna and their help and that I am able to do what I am doing now," Ryan said. "To place the final beam on the new addition to serve even more people in the future just means everything in the world."

Through this project, Madonna is spending approximately \$41 million locally to support the city of Lincoln's 1% More Pledge. The new initiative asks local companies to sign a pledge agreeing to spend at least 1% more locally in 2021 as area businesses recover from impact of the COVID-19 pandemic. "Madonna has been part of the Lincoln community for 63 years and we're proud to support our community partners," said Dan Griess, vice president of facilities and ancillary services.

Lincoln-based companies assisting with the expansion include Sampson Construction, Davis Design and Olsson. The overall project is scheduled for completion in spring 2023.

Ninja Warrior mom is UNSTOPPABLE



Never Give Up. Maggi Thorne's motto reflects her relentless drive. A former collegiate track athlete and mom of three, Maggi became an American Ninja Warrior competitor to inspire people. The popular television show uses a grueling obstacle course to challenge an athlete's strength and endurance. Maggi embraced the intense training and competed for years on ANW. Then Season Five dealt her a crushing blow.

In April 2019, while navigating a finals course in Oklahoma City, Maggi lost her balance and face-planted on a steel balance beam. A fierce competitor, Maggi picked herself up to post the best run of her career. The then 38-year-old from Lincoln, Nebraska, paid a price for her impressive finish.

Maggi suffered a concussion. It wasn't her first head trauma. Earlier in life, Maggi sustained concussions as a boxer and in a surfing accident. The latest injury took a cumulative toll on her body. Maggi struggled with nausea, fatigue, blurred vision and difficulty focusing. Her daily routine seemed insurmountable.

Realizing she needed professional help, Maggi contacted TherapyPlus, Madonna's outpatient clinic in her hometown. Guided by physical, occupational and speech therapists and a neuropsychology counselor, Maggi devoted months to rebuilding her life.

In 2021, Maggi met her goal to return to competition on ANW. "I wouldn't be where I am today if it wasn't for my amazing Madonna team." Follow her journey on Instagram @nvr_gvup.

HONORING COMPASSIONATE CARE

Caring and committed describe Faye Weckle, RN, recipient of the 2020 Georgann Claussen Memorial Award of Excellence. For 33 years, Faye has worked in the Lincoln Campus long term care and hospital settings where she's currently on the brain injury care team. "Faye's dedication to her patients, families and co-workers is evident in all she does," according to her nominator, Susan Klanecky, vice president of patient care. "Faye's helped many patients with disabilities rebuild their lives and made a difference in the lives of patients and families."

In 2001, Rich and Bill Claussen of Lincoln, Nebraska, established the award in memory of their mother to honor compassion and excellence in helping children and adults with disabilities rebuild their lives.



HIIT — A STEP IN THE RIGHT DIRECTION

Greg Loving was working his dream job at Blue Origin, the aerospace manufacturer in Kent, Washington, owned by Amazon founder Jeff Bezos, when he suffered a brain bleed. Following life-saving surgery, Greg's speech and motor abilities were compromised. Seeking specialized rehabilitation, Greg chose Madonna, 1600 miles from his Washington home. He began the comprehensive outpatient program unable to walk and within eight weeks, traded his wheelchair for a walker.

Kelly Billings, physical therapist, tapped into Greg's love for technology, using high intensity interval training (HIIT) to refine his gait. HIIT workouts include repetition of short bursts of near maximum aerobic capacity. Greg wore a heart monitor and tracked his progress with an app on his iPhone. A recreational athlete, he gravitated to the challenge of HIIT. "It's like fertilizer to your brain," said Greg.



Madonna Rehabilitation Hospitals 5401 South Street Lincoln. NE 68506

ELECTRONIC SERVICE REQUESTED



On the front: Sidney Doane sits proudly atop her Quarter Horse, Beau, near her home of Downs, Kansas. After surviving a severe brain injury in 2014, Sidney worked diligently with her Lincoln Campus care team to return to her love of riding.

At Madonna Rehabilitation Hospitals, we combine heartfelt hospitality with unmatched innovation and education. Our rehabilitation programs are world class. Our clinical expertise, rehabilitation research and state-of-the-art equipment provide the tools to help all patients, even those whose diagnoses pose the most complex challenges. Our investment in exceptional talent, groundbreaking technology and progressive treatments is changing the face of rehabilitation.

Hospital: 402.413.3000 | Admissions: 402.486.8260 | Toll Free: 800.676.5448 | Locations in Omaha & Lincoln