

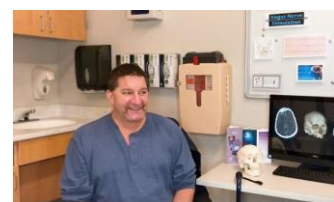
The Brain Injury Research Lab Spring 2018 Newsletter

Did you miss our patient presentations at the Minnesota State Spinal Cord Injury and Traumatic Brain Injury Research Symposium? No problem! Catch them online!

Kathy Allen is enrolled in our “Epidural Stimulation for the Restoration of Spinal Cord Function in Paraplegics” study. Kathy lives in Crosslake, Minnesota. She has been married for 27 years and has 3 beautiful children. Kathy was injured while sleepwalking in October of 2006. Her injury level is at the T8 vertebrae. She has no movement and feeling below this area. Kathy is currently enrolled in the E-Stand clinical trial at HCMC. **View Kathy’s full story here:** <https://www.youtube.com/watch?v=M9v-dZ0qlBg>

Matthew Stifter was enrolled in our “Vagus Nerve Stimulation to Treat Mild to Moderate Brain Injury” study. Matthew is from Winsted, Minnesota. On April 7, 2017, he was hit in the head by a crane and sustained a devastating brain injury. Prior to his accident in 2017, he enjoyed hobbies such as ice fishing and working on engines. Since his accident, he has been diligently working on his physical rehabilitation so he can get back to doing the things he loves. Now an advocate for brain injury research and awareness, he participated in the Brain Injury Alliance Walk for thought in 2017. He was recently cleared to drive again and is enjoying getting some of his independence back. **View Matt’s full story here:** <https://www.youtube.com/watch?v=kA3ZKq90v60>

Erik Bedeux is enrolled in our “Hierarchical Approach to Classification of Brain Injury” study. Erik is from Minneapolis, Minnesota. On September 20, 2016, he was crushed by machinery in a workplace accident and sustained multiple injuries including an occult brain injury. Prior to his accident, he enjoyed hobbies such as working on engines as well as riding motorcycles, ATVs, and jet skis. Since his accident more than year ago, he has continued to work on his rehabilitation and hopes to someday get back to doing the things he loves. He and his family continue to support TBI research and are optimistic that his story will inspire others to do the same. **View Erik’s full story here:** <https://www.youtube.com/watch?v=WewjPO-IIXA>



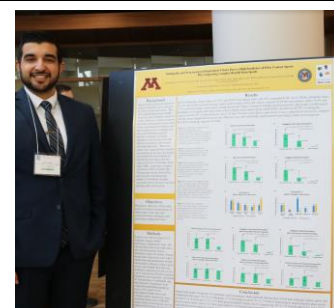
Minnesota State Spinal Cord Injury and Traumatic Brain Injury Research Symposium Poster Presentations

“Orthopedic and Neurosurgical Department Chairs Have a High Prevalence of Prior Contact Sports Play and Concussion”

“Validation of Neck Measurements in a Concussion Reduction Clinical Trial”

“Normative Values of the Sports Concussion Assessment Tool 5th Edition (SCAT5) in Student Athletes”

“Assessment of Brain Injury History in Young Athletes with the Boston Assessment of Traumatic Brain Injury Lifetime (BAT-L)”



HCMC to host Music with a Mission fundraiser benefiting the Brain Injury Research Lab on March 5, 2018! Please join us with your family and friends!



Music with a Mission

Supporting Hennepin Health Foundation



Monday, March 5 | 5:30-8pm

The Crooked Pint

501 Washington Avenue S, Mpls. 55415

No Cover. Donations are welcome & appreciated.

Benefits go to HCMC Brain Injury Research Lab.



Hennepin County Medical Center
Hennepin Health Foundation



Joe Kapp and Bob Stein, former NFL players and Super Bowl players, visited the lab to participate in our “Chronic Effects of Neurotrauma” study. Thank you for participating, Joe and Bob!



Congratulations to Undergraduate Researcher Lensa Ali!

Lensa Ali is an undergraduate senior at the University of Minnesota, majoring in Physiology. From May 2016 to January 2017, she volunteered at the Brain Injury Research Lab where she was primarily involved in patient recruitment and assessments (including eye tracking for the lab studies). She also contributed to special projects such as our Healthy Brain Initiative research project at the 2016 Minnesota State Fair.

On December 5th 2017, Lensa was granted a travel award for the 2018 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM) organized by the American Association for the Advancement of Science (AAAS) and will be traveling to Washington, D.C. (February 22-24, 2018) to present her work: “Etiology of Brain Injury in Males Versus Females in a Community Population: Men Take Risks, Both Sexes Suffer Abuse” based on research conducted at the Brain Injury Research Lab.

“I feel extremely honored for the opportunity to present at this conference and I'm excited to share what we found from our state fair study on traumatic brain injuries! I'd also like to thank Dr. Samadani and all of the members of the BIRL for providing their unconditional support.”

- Lensa



Recent Publications

Hyperbaric Oxygen Therapy in the Treatment of Acute Severe Traumatic Brain Injury: a Systematic Review

Published in: The Journal of Neurosurgery

Authors: Daly S, Thorpe M, Rockswold SB, Hubbard M, Bergman TA, Samadani U, Rockswold G.

<https://www.ncbi.nlm.nih.gov/pubmed/29132229>

Helmet Efficacy against Concussion and Traumatic Brain Injury: a Review

Published in: The Journal of Neurosurgery

Authors: Sone JY, Kondziolka D, Huang JH, Samadani U.

<https://www.ncbi.nlm.nih.gov/pubmed/27231972>

Elevated Intracranial Pressure Causes Reversible Eye Tracking Changes Detected While Viewing Film Clip

Published in: The Journal of Neurosurgery

Authors: Kolecki, R., Dammavalam, V., Bin Zahid, A, Hubbard, M., Chaudhry, O., Reyes, M., Han, B., Wang, T., Papas, P.V., Adem, A., North, E., Gilbertson, D.T., Kondziolka, D., Huang, J., Huang, P., & Samadani, U.

<http://thejns.org/doi/pdf/10.3171/2016.12.JNS161265>

Eye Tracking: a Biomarker for Concussion in the Pediatric Population

Published in: The British Journal of Sports Medicine

Authors: Samadani U, Zahid AB, Lockyer J, Dammavalam V, Grady M, Nance M, Scheiman M, Master C.

<http://bjsm.bmj.com/content/51/11/A5.2>

Brain Atrophy Increases after Subdural Hematoma to Rates Greater Than Associated With Dementia

Published in: The Journal of Neurosurgery

Authors: Bin Zahid, A., Balser D., Thomas, R., Mahan, M.Y., Hubbard, M.E., Samadani U. N

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5189658/>

Oxygen Therapy in Suspected Acute Myocardial Infarction

Published in: New England Journal of Medicine

Authors: Affana, C and Samadani U.
<http://www.nejm.org/doi/full/10.1056/NEJMc1714937>

Upcoming Talks

**February 25, 2018: Winter Clinics for Cranial & Spinal Surgery
Snowmass Village, CO**

**March 14, 2018: North American Brain Injury Society (NABIS) Brain Injury Across the Age Spectrum: Improving Outcomes for Children and Adults
Houston, TX**

**April 13, 2018: Brain Injury Alliance (BIA) Minnesota's 33rd Annual Conference for Brain Injury Professionals
Minneapolis, MN**

**April 28, 2018: American Association of Neurological Surgeons (AANS) Annual Scientific Meeting
New Orleans, LA**



Save the Date: Charlene's 2nd Annual Dog Run

Charlene Barron was a nine-time Ironman Triathlete who took part in 40 marathon races, including 20 Twin Cities Marathons and 8 Boston Marathons.

Sadly, she passed away in 2015 following a traumatic brain injury sustained on a biking training run. Charlene's family organized a 5K Dog Run to benefit brain injury prevention research to honor and celebrate Charlene's life and her love for dogs and outdoor activities. The first run in September 2017 raised more than \$14,000 to support research on prevention of sports related traumatic brain injury.

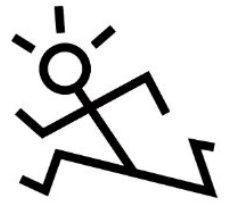
Join us in 2018!

We are pleased to invite you to the **2nd Annual Charlene's 5K Dog Run.**

When? September 9th, 2018

Where? Baker Park in Medina, MN

Follow @CharlenesDogRun on Twitter for more details!



**Never run a 5K?
No problem! We
still want to see
you at Charlene's
Dog Run in
September! Get
ready for our
new challenge
coming soon!
Join our lab staff
and volunteers
in a couch to 5k
challenge!**

Exercise benefits us in many ways but BIRL staff are particularly interested in how exercise can impact brain function.

Did you know that cardiovascular activity can increase cerebral perfusion and lower the risk of dementia? Cardiovascular activity can also decrease your risk of depression. In short, good cardiovascular health means good brain health!

Download a couch to 5k app on your phone or search programs online to get fit for the 5k! We hope to see you there!

The Brain Injury Research Lab has a new and improved social media presence! Are you following us?

Website: <http://samadanilab.com/>

Twitter: @DrSamadani and @samadanilab

Facebook: <https://www.facebook.com/Brain-Injury-Research-Lab-325880001237289/>

Instagram: The Brain Injury Research Lab



The Brain Injury Research Lab expresses profound gratitude to James and Patty Andersen (on left) for their unrestricted donation of \$50,000 which the lab will use to support advances in treatment of intracranial hemorrhage and its potential consequences. The donation is being used to develop a strategy for machine learning to improve surgical planning for evacuation of bleeding on the brain surface.

Dr. Gaylan Rockswold, founder of the Brain Injury Research Lab, received a 5-year grant from the NINDS/NIH (National Institute of Neurological Disorders and Stroke/National Institutes of Health) to run a Phase II multi-center Hyperbaric Oxygen Brain Injury Treatment Trial (HOBIT). The trial is slated to begin next month.



About Us

The Brain Injury Research lab opened in September 2015 in the Purple Building at HCMC following the recruitment of Dr. Uzma Samadani and an endowment of a research chair for brain injury. Announced at the Light Up the Night Gala in December of 2014, the research chair was endowed by philanthropists Elliot and Eloise Kaplan, and neurosurgeon Dr. Gaylan Rockswold and his wife Mary to enable continuation of HCMC's world-class brain injury program. Dr. Rockswold spent 42 years at HCMC performing surgery and federally funded clinical and basic science research, most notably to develop the use of hyperbaric oxygen therapy for brain injury. The late Pat Fallon donated an additional \$800,000 to the chair to thank Dr. Sarah Rockswold for her care of his son Duffy.

Our Studies

CLASSIFY (Traumatic Brain Injury Classification and Outcome Assessment)

Purpose: To classify the pathophysiology of brain injury on the basis of blood biomarkers, eye tracking and radiographic measures.

Funding: Abbott Diagnostics, Minnesota State Legislature Grants and the Rockswold-Kaplan Endowment at HCMC

Number of subjects enrolled: 602

Chronic Effects of Neurotrauma Study (CENTS)

Purpose: To assess the long term effects of repetitive traumatic brain injury in NFL players, other athletes and lay-people. Positive controls include people previously treated for brain injury at HCMC in the 1980's and 1990's.

Funding: Minnesota State

Number of subjects enrolled: 102

Eye Tracking and Neurovision Rehabilitation of Oculomotor Dysfunction in Mild Traumatic Brain Injury

Purpose: To establish eye tracking as an objective tool to identify vision disturbances related to mild traumatic brain injury and predict the effectiveness of neurovision rehabilitation.

Funding: Minnesota State

Number of subjects enrolled: 19

Traumatic brain injury Reduction in Athletes by Neck strengthening (TRAIN)

Purpose: To assess the effectiveness of a neck-strengthening regimen in reducing the incidence, duration, and severity of concussions in youth athletes.

Funding: Minnesota State,

Charlene Baron's friends and family

Number of subjects enrolled: 476

Algorithmic Optimization of Neurosurgical Procedures

Purpose: To use 3D visualization and machine learning to improve surgical accuracy in treatment of brain injury and hemorrhage

Funding: James and Patricia Andersen

Number of subjects enrolled: n/a (retrospective patient film analysis)

E-STAND Clinical Trial (Epidural Stimulation After Neurologic Damage)

Purpose: To assess whether and how well stimulation of the spinal cord can help in restoring voluntary movements in people who have suffered paralysis following spinal cord injury.

Funding: University of Minnesota - Clinical and Translational Science Institute.

Number of subjects enrolled: 3

VANISH Clinical Trial (Vagal Activation of NeuroImmune Systems to Heal Traumatic Brain Injury)

Purpose: To evaluate how well stimulation of the vagus nerve can help facilitate recovery after moderate traumatic brain injury, and improve quality of life over time.

Sponsor: Minnesota State

Number of subjects enrolled: 13

TRACK-TBI (Transforming Research and Clinical Knowledge in Traumatic Brain Injury)

Purpose: HCMC is one of 17 sites across the country collecting comprehensive clinical data on TBI patients across the injury spectrum with the goal of establishing biomarkers for injury and predictors of outcome.

Funding: UCSF/NINDS/NIH

Number of subjects enrolled: 20

VERTEX/SPRING Clinical Trial

Purpose: A multicenter clinical trial (currently in Phase 2b/3) that aims to assess the safety and efficacy of the drug VX-210 in people who have suffered acute traumatic spinal cord injury.

Funding: Vertex

Number of subjects enrolled: 1