



Chuck Noll Foundation

FOR BRAIN INJURY RESEARCH

2019 *Annual Report*

October 2020

“IT'S EARLY...”

Arthur J. Rooney, II
Chairman, Board of Trustees

It goes without saying that the past several months has been extremely difficult. I'm thinking especially of the families who have lost a loved one, those who were stricken by the COVID-19, our nurses, doctors and all health care providers. This pandemic has reminded us how things can change in a moment of time.

The same holds true when someone suffers a brain injury as a result of a sports related activity. Things can change in a moment of time. And that is why the Chuck Noll Foundation for Brain Injury Research is funding research to better diagnose and treat concussions.

In 2017, the Chuck Noll Foundation for Brain Injury Research was launched with a contribution from the Steelers to provide early stage seed funding to researchers in our region conducting cutting-edge research on ways to detect, and treat brain injuries sustained as a result of sports-related activities.

Since its launch, the Foundation has funded ten research projects at four different institutions thanks to the contributions of hundreds of caring and supportive individuals, like you. Every July, hundreds of admirers of Chuck Noll come together to walk in honor of his legacy and for the Foundation. Many philanthropic individuals around the country have supported the Foundation's work, which has also been embraced by Pittsburgh's generous foundation community.

It is still very early in our time of work, but we are already seeing promising results, which you can read about in this report. With your support and the work of those we fund, we believe that the future for all athletes can be made safer.

“Things can change quickly, and that's why we do, what we do.”

Thank you for your consideration.

Sincerely,



Arthur J. Rooney, II



THE DIFFERENCE BETWEEN ZERO AND ONE

DR. JOSEPH MAROON, NEUROSURGEON
DR. REGIS W. HAID, JR. MD
National Science Advisory Committee Members

William Sweet, a brilliant Harvard based neurosurgeon, neuroscientist and pioneer in evidence-based medicine, published a simple but profound article in 1976 entitled, "The Difference Between Zero and One." He wrote, "Zero, is less than something infinitely small, whereas one, though not infinitely great is vastly more than an infinitely minute quantity. Two on the other hand is only twice as much as one." The point he made was the first time a new and valid thought is conceived is the critical time—the passage from NO idea to ONE constructive idea is indeed the difference between zero and one.

Now in its third year, The Chuck Noll Foundation for Brain Injury Research takes great pride in supporting early stage development of unique research projects by committed scientists with new and constructive thoughts. Such projects include the evaluation of biomarker panels for inflammation and abnormal tau proteins in concussed athletes, the use of brain diffusion MRI connectometry to quantitate connectome changes in the brains of traumatized athletes and randomized controlled trials of precision vestibular treatment in adolescence following sports related concussions.



Over the last three years, \$1.3 million, contributed by the foundation, has been granted to neuroscientists in different disciplines at the University of Pittsburgh, Carnegie Mellon University, Penn State and West Virginia University for sports related traumatic brain injury research. Although early in our work, by supporting early stage research we have observed the power and profound clinical implications in the passage from NO idea to MANY productive, constructive and relevant ideas and projects to better diagnose and manage traumatic brain injuries in athletes of all ages and in all sports.

Reference: William Sweet, M.D., D.Sc.,
"The Difference between Zero and One"
Neurosurgery, Volume 23,
Issue CN_suppl_1, 1976, Pages 32–51

https://doi.org/10.1093/neurosurgery/23.CN_suppl_1.32

EARLY STAGE RESEARCH

DR. JULIAN E. BAILES, MD
SHELLY D. TIMMONS, MD, PhD, FACS, FAANS
National Science Advisory Committee Members

Traumatic brain injury remains a vitally important medical condition which we face in modern society. TBI is a major healthcare concern, constituting a significant cause of death and disability not just in the United States, but throughout the world. During the last decade, the occurrence of brain injury has emerged as a leading issue in sports medicine and for athletes. The recognition that concussions, repetitive head impacts, and the potential for long term neurodegeneration is in the forefront of changes in sports and the way they are played, as well as in the management of injured athletes by physicians and athletic trainers.



While there have been many advancements made in our understanding of the numerous issues regarding sports-related brain injuries, there remains much to learn regarding how they occur, who is most at risk, gender-specific characteristics, clinical expression of the injury spectrum, prevention strategies and others. Paramount to improvements in these areas, continued research is vital to medical progress.

The Chuck Noll Foundation (CNF) for Brain Injury Research has a niche in funding early stage research for projects which help push the frontiers of various aspects of brain-injury science and prevention strategies for sports. Thus far, it has provided grants to numerous scientists in research laboratories in Western Pennsylvania and West Virginia. This funding is often awarded for emerging science, and in areas which may have difficulty securing the financial backing necessary to generate important pilot data. This early stage progress often allows researchers to confirm theories, assess responses, and to produce preliminary data which can lead to larger and more profound projects.



RESEARCH GRANTS 2019-2020



Saliva Biomarkers in Adolescents

Drs. Amelia Versace, David Brent, Anthony Kontos, Michael Collins
University of Pittsburgh: Department of Psychiatry

The research team are attempting to determine if saliva testing can identify changes in brain function allowing for a more rapid diagnosis of a concussion. Saliva fluid contains a wide range of products from the body, including genetic material, enzymes and antibodies. Testing saliva is a technique used to diagnose numerous conditions but has never been used for concussions in aggregate with neuroimaging measures for concussions.

Levetiracetam as therapy for synaptic dysfunction after repetitive mild traumatic brain injury in Adolescents

Dr. Shaun Carlson, Dr. C. Edward Dixon
University of Pittsburgh: Department of Neurological Surgery

Drs. Carlson and Dixon have identified a medication currently used to treat seizures that could have potential to restore transmission of nerve impulses between brain cells. Drs. Carlson and Dixon are conducting research to further unveil whether Levetiracetam can lessen the damage that can occur during mild head traumas to the mechanisms or pathways that allow nerve impulses to move between cells in the brain. If successful, more research will be necessary but the goal is to have a readily available medication to reduce the damage done by multiple mild brain injuries.



Fundamental and Applied Concussion Recovery

Joshua Hagen, PhD, Scott Galster MD., Victor Finomore, MD., Ali Rezai, MD.
WVU Rockefeller Neuroscience Institute

This team of doctors from West Virginia University is studying approaches to treating concussions that they believe could improve patients' rate of recovery while building strength within the patients' nervous system to ultimately minimize the damage from future concussions. The researchers is working with NCAA-student athletes, adult clinical patients and military personnel. The military personnel are active duty personnel as well as veterans currently being treated for Traumatic Brain Injury and Post Traumatic Stress Disorder.

Sulfonylurea Receptor-1 and Glyburide: Preventing Brain Swelling and Providing Neuroprotection in Traumatic Brain Injury

Ruchira M. Jha, MD., Patrick M. Kochanek, MD
University of Pittsburgh; Rangos Research Center; Children's Hospital Pittsburgh

Drs. Jha and Kochanek are researching a rare but devastating condition experienced by some high school and college athletes called Second-Impact Syndrome (SIS). SIS occurs when the brain swells rapidly after a person suffers a second concussion before symptoms from an earlier concussion are healed. The condition can be fatal or may result in severe disability. Little is known about the causes and currently there is no preventive treatment available. The research, if successful, could lead to ways of identifying athletes at high risk for SIS before it occurs as well as possible treatments with currently available drugs.

National Sports Brain Bank

Dr. Julia Kofler, Dr. Oscar Lopez
University of Pittsburgh: Department of Neurological Surgery

A project to establish a clinical and pathological database in collaboration with the Pittsburgh Steelers of retired football players and other athletes to examine the natural history of cognitive deficits and their corresponding brain lesions at autopsy. Participating players will be asked to complete a questionnaire covering their medical history, clinical symptoms, and instances of brain trauma. A second phase will include detailed neurocognitive evaluations at the center to obtain objective longitudinal data about cognitive performance.



EARLY MONEY

JOHN DENNY,
EXECUTIVE DIRECTOR

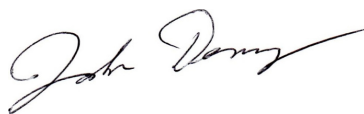
Early money is really important money. Be it a start-up company, a new nonprofit organization, or in our case a public charity foundation. Often times the first dollar in is the easiest. In our case, those dollars came from the Pittsburgh Steelers and our generous board members. Every dollar after the early money becomes harder to raise.

But with the powerful mission of the Chuck Noll Foundation for Brain Injury Research – to fund early stage research to diagnose, treat, and prevent brain injuries as a result of sports related activities so that athletes at all levels know they are safe to participate in sports – we have been successful in raising research dollars from hundreds of contributors and partner with several other major foundations.

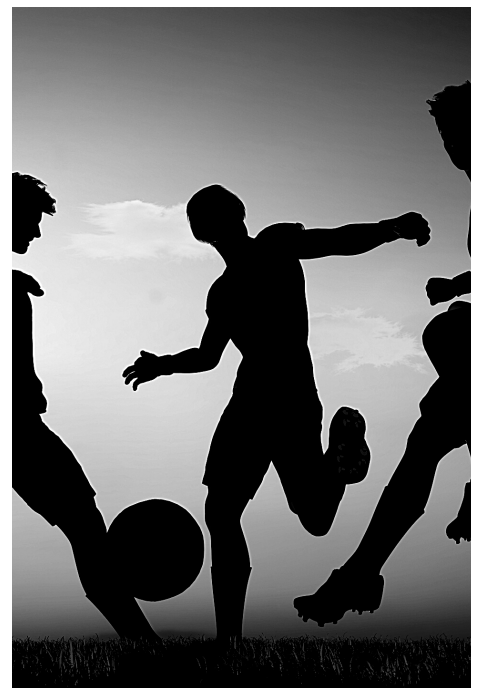
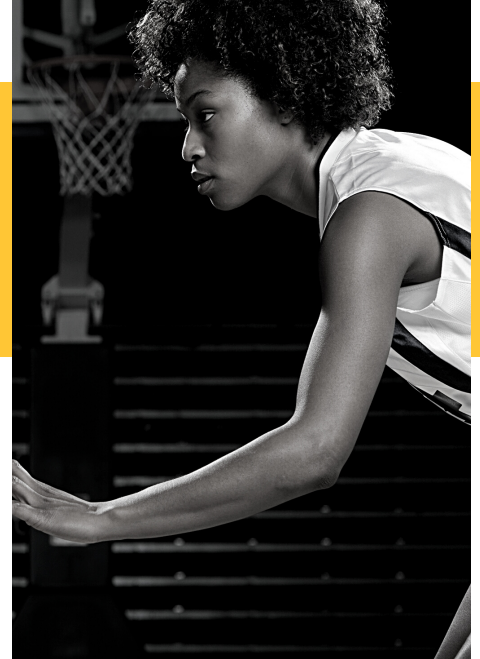
Take Rebecca, the daughter of a longtime, passionate Steeler fan. Her father, Jim, who recently passed away, never missed a game at Three Rivers Stadium and viewed Chuck Noll as one of his heroes. As Rebecca said when she and her family decided to direct contributions to the Chuck Noll Foundation, “This is what my Dad would want. He admired Chuck Noll for putting his players' health first.”

The early money we have raised and invested in early stage research, has generated over 500% return on investment. Our \$1.3 million in grants has leveraged more than \$7 million in funding from other resources. We believe this speaks volumes of our strategic grant making.

We invite you to be part of our efforts by contributing to the Chuck Noll Foundation for Brain Injury Research. You can become a supporter by donating online at www.ChuckNollFoundation.org.



John Denny



GRANTS & SPONSHORSHIPS BY THE NUMBERS

2019 Grants

New Grants Awarded	5
Grant Dollars Awarded	\$724,8360

Total Grants

Total Grants Awarded	10
Average Grant Size	\$128,784

Clinical Research	\$962,500
Basic Research	\$325,336

Total Grants Paid to Date	\$1,055,418
<i>Total Dollars Awarded</i>	<i>\$1,287,836</i>

Donate Now

If you'd like to make a contribution to the Chuck Noll Foundation for Brain Injury Research, visit our website at www.ChuckNollFoundation.org to donate online.

Or you can donate by mailing a check to:

ATTN: JOHN DENNY
CHUCK NOLL FOUNDATION FOR
BRAIN INJURY RESEARCH
3400 SOUTH WATER STREET
PITTSBURGH, PA 15203

Chuck Noll Foundation

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