

PERTINACITY



THE MISSION OF THE KOREY STRINGER INSTITUTE IS TO PROVIDE RESEARCH, EDUCATION, ADVOCACY, AND CONSULTATION TO MAXIMIZE PERFORMANCE, OPTIMIZE SAFETY, AND PREVENT SUDDEN DEATH FOR THE ATHLETE, WARFIGHTER, AND LABORER.



MOVING FORWARD FASTER:

A Reflection on 10 Years of the Korey Stringer Institute

Hello to our partners, collaborators, supporters, friends, and global network — What an awesome opportunity our first decade has been. Every day I pinch myself because it is an honor to do such meaningful work with such amazing people. The staff at KSI, now over 80 people strong, bubbles with inspiration, creativity, and passion. You just have to climb on board the wave of collective forward momentum and you are immediately catapulted to a destination closer to your goal. I had not known anything like it prior, and I am wise enough to know it will likely never occur again. But given my memorable past, having suffered life-threatening exertional heat stroke at 16 years old, I can tell you that I will cherish every single second of this joyous experience.

I had a recent emotional experience with one of my children where her safety was briefly in grave danger, and another one of my children and I had to rise to the occasion to assist my child in distress. We overcame in that wildly emotional moment, and it was like a jolt of electricity being sent through my system. I had always cherished my second chance at life, but was I doing every possible thing to make sure those who work for me know that I appreciate them? Am I inspiring them? Helping them? When all the chips are down, am I coming through in the clutch for them?

It is my everlasting hope that those who work for and with KSI not only experience kindness, knowledge, empathy, and problem solving, but most of all, I hope they're left with



the sense that KSI exhibits *pertinacity* — persistent determination — when looking to overcome challenges that have long faced those who do intense physical exercise as athletes, warfighters, or laborers.

KSI has been unbelievably fortunate to leverage connections in these industries, along with active collaborations in the academic and medical space, to create a unique not-for-profit. We not only work to mobilize public health policy changes to serve these constituents, but being at UConn, KSI also gets to do something most nonprofits don't: we create new knowledge. We implement our expertise in the field to increase the safety and performance of those in the military, sport, and the workforce. We respect this privilege and try to live up to a high standard of leadership by remaining humble, intellectually curious, and engaged.

I cannot begin to list all of those who helped us in the journey over the past 10 years, from the founders at UConn, the NFL, and Gatorade who joined Kelci and Jimmy and I to build out the bold dream of KSI; to the countless

staff and volunteers who put in the tough, thankless, and critical work overseeing research projects and public health initiatives; to the corporate partners who believed in us; to the end user who showed faith in what we could do to help them. All of it has helped us get where we are right now.

My thanks to the entire KSI family for working together to honor the legacy of Korey. I believe everything we have done and will do in the future, collectively, is a tribute to our namesake, and I hope with all my heart that our efforts will help the memory of this great human being endure. I can assure you, *pertinacity* will remain our guiding torch as we push toward the next big thing.

And, yes, we will continue to stir the pot so that we can move forward faster.

Douglas J. Casa
CEO, Korey Stringer Institute

KSI CELEBRATES 10 YEARS

LIVING OUR MISSION

We're proud of a decade of accomplishments. Here are some of the highlights of the past 10 years.

INFORMATION KEY

HISTORICAL

RESEARCH

ADVOCACY

MEDIA OUTREACH

EDUCATION

CONSULTATIONS

TESTING



AUGUST 1
Korey tragically dies from the consequences of exertional heat stroke suffered in pre-season practice

2001

JANUARY

The NFL, Kelci Stringer (Korey's wife), and Jimmy Gould (Korey's agent) reach out to Dr. Douglas Casa

SEPTEMBER

Key planning meeting to create KSI occurs on UConn's campus

2009



APRIL 23

NFL and Gatorade join UConn to announce the creation of the Korey Stringer Institute

"Good Morning America" interview with Dr. Douglas Casa to discuss exertional heat stroke

National Athletic Trainers' Association (NATA) Webinar, Exertional Heat Illnesses

KSI assists NASA with heat policies for training programs

2010

New Jersey and Texas are first states to pass heat acclimatization laws with the help of KSI

PBS airs "Frontline: Football High"



Kona World Ironman Championship elite triathlete research study

USA Cycling webinar "Exertional Heat Illnesses"

NFL Combine Health and Safety Summit presentation

Pentagon and U.S. Army release new heat guidelines assisted by KSI

2011

KSI begins formal collaboration with the National Center for Catastrophic Sport Injury Research

Timex Triathlete Training Camp multi-sport team research study

Pre-season research with the New York Giants



KSI assists athletes at Ironman Lake Placid

"Preventing Sudden Death in Sport and Physical Activity (1st ed.," is published

2012

JANUARY 7TH

KSI moves into new facility at Gampel Pavilion

KSI organizes the Inter-Association Task Force for Preventing Sudden Death in Secondary School Athletics meeting

ESPN airs "Outside the Lines: Heat Stroke"



Falmouth Road Race research studies begin

2013

50 states pass laws on concussion with the help of KSI



KSI's TED-Ed video, "What happens when you get heat stroke?" premieres (Nearly 1.5 million views today)

Research partnership begins with the National Football League

KSI assists Portugal National Soccer Team as they prepare for the heat of the FIFA World Cup in Rio de Janeiro, Brazil

Work to improve heat safety policies with major U.S. Army and U.S. Air Force bases begins

2014



APRIL 23

10th Anniversary of KSI

KSI and the TUFSS initiative help Louisiana pass Wet Bulb Globe Thermometer (WBGT) law

KSI helps Florida pass the "Zach Martin Act," a law requiring AEDs, AED training, cold water tubs, and WBGT

"Return to Sports and Exercise during the COVID-19 Pandemic: Guidance for High School and Collegiate Athletic Programs" position paper published

KSI launches innovATe

Douglas Casa works with the International Olympic Committee in preparation for the Olympic Games Tokyo 2020

New Jersey signs two bills into law requiring high schools to follow best practices guidelines for WBGT environmental monitoring and implementing emergency action plans

2020



HBO airs "Real Sports with Bryant Gumbel: Overheated"



KSI, NFL team up to create video designed to educate football community about heatstroke

KSI hosts first HEATT Innovation Technology Summit

Douglas Casa works with the IAAF Track and Field World Championships Organizing Committee in Qatar

2019

HBO airs "Real Sports with Bryant Gumbel: Sudden Death"

Over \$1.5 million in funding secured for Team Up for Sports Safety (TUFSS) initiative, impacting high school sports safety policy across the U.S. through 2021

NPR Morning Edition airs "Off Your Mental Game? You Could Be Mildly Dehydrated"

NPR Weekend Edition airs "Researching Heatstroke in Athletes"

CamelBak Products Hydration App Health Outcomes and CamelBak Team Sport Cooling studies

NATA Research and Education Foundation Grant secured to disseminate comprehensive safety toolkit to improve best-practice policy adoption at the secondary school level through 2020

2018



SEPTEMBER

MISSION Heat Lab Grand Opening in Gampel Pavilion

KSI announces state Health and Safety Policy Rankings for High School Athletics at NFL Headquarters press conference

Internal Body Temperature and Physiological measures validated during Exercise and Rest study

"From Science to the Field" presentation at U.S. Soccer, Major League Soccer, National Women's Soccer League Head Injury and Concussion in Soccer summit

2017



KSI hosts experts in the field to clarify hydration recommendations for athletes, coaches, and parents at the Practical Hydration Solutions for Sports summit

National Football League Foundation funds Validation of Brain Function Assessment Algorithm for mTBI from Injury to Rehabilitation in College Athletes through 2019

Boston Marathon Medical Meeting presentation



White House Roundtable on Climate and Sports

2016



Inaugural Collaborative Solutions for Safety in Sport meeting held at NFL headquarters, hosted by KSI, the NFL, NATA, and the American Medical Society for Sports Medicine

ATLAS Project is initiated

BrainScope research study starts with the Department of Defense

First-of-its-kind online course for athletic trainers to meet evidence-based practice CEU requirements developed

U.S. Tennis Association Meeting presentation on heat illnesses

Marine Corps Marathon Medical Conference presentations (through 2018)

KSI convenes first Youth Sport Safety Governing Bodies (YSSGB) meeting, hosted by the NFL at NFL Headquarters in NYC

2015

2020 BY THE NUMBERS

PUBLICATIONS

57

BOOK CHAPTERS/
MANUSCRIPTS
(published/in press)

**ACTIVE GRANTS
CY 2020**

9

RESEARCH

.....

3

NON-RESEARCH

RESEARCH TRIALS

341

**MEDIA APPEARANCES
(KSI SPEAKERS)**

20

INTERVIEWS/
PODCASTS

.....

8

WEBINARS/
CONFERENCES

.....

1

OTHER

PERSONNEL

22

PAID STAFF

.....

83

VOLUNTEERS

.....

2015
13 STAFF, 30 VOLUNTEERS

2010
3 STAFF, 7 VOLUNTEERS

**STATE LEGISLATIVE
PUBLIC TESTIMONIES**

6

**STATES MAKING POLICY
CHANGES IN 2020**

17

**NUMBER OF POLICY
CHANGES IN 2020**

76

2020 FUNDING

\$1,820,148

TOTAL

.....

\$1,489,706

RESEARCH

.....

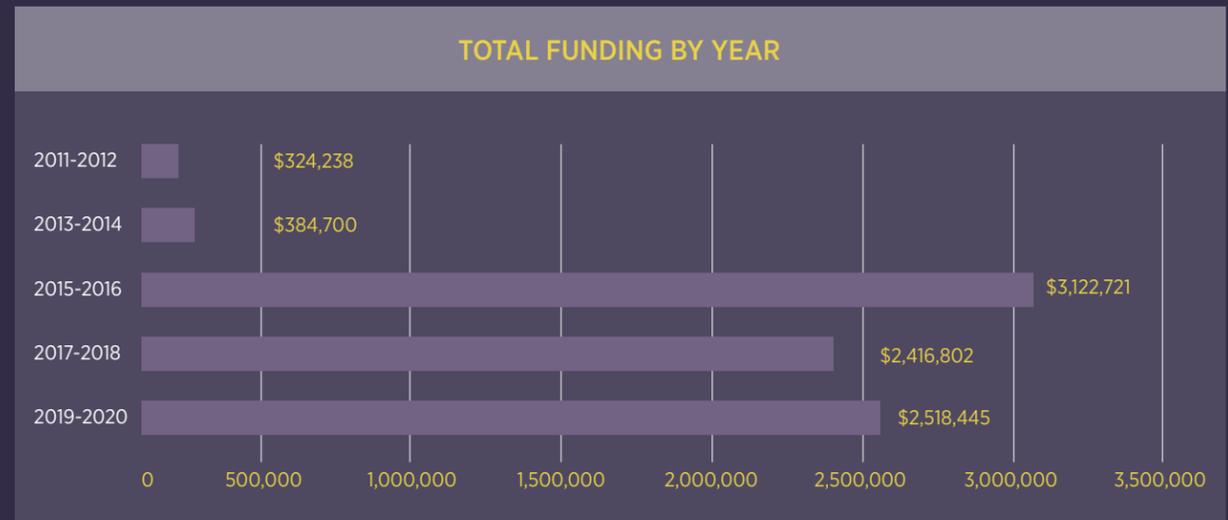
\$179,319

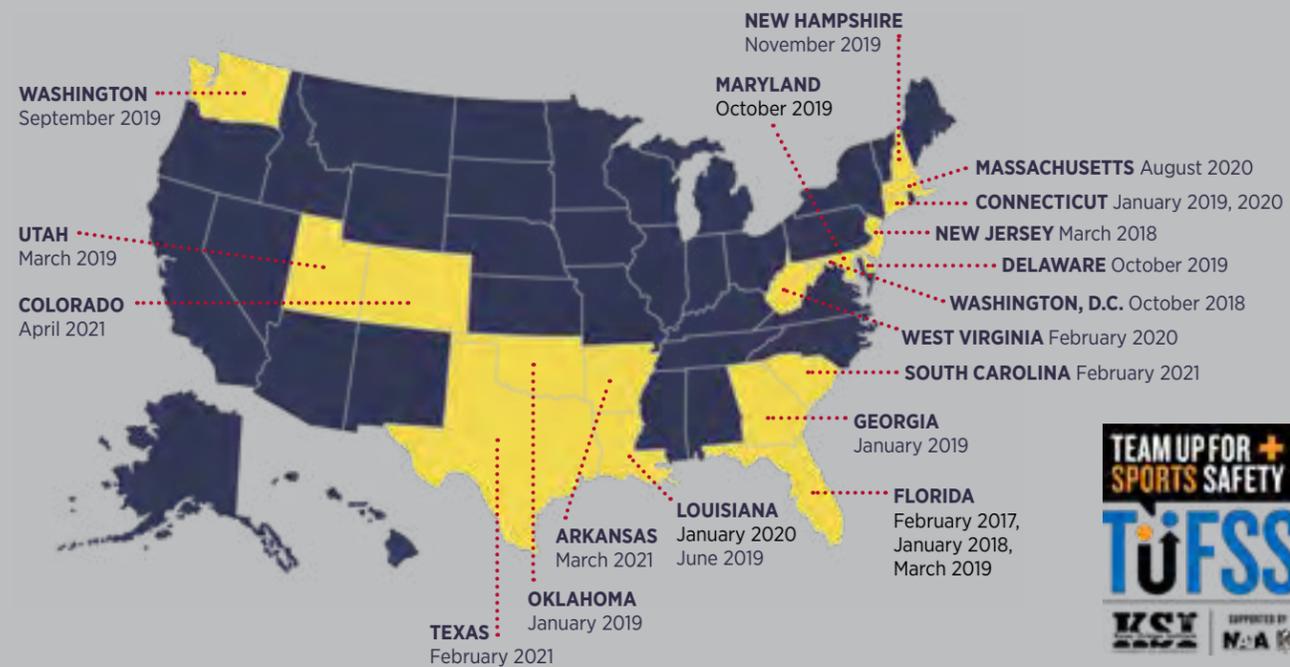
NON-RESEARCH

.....

\$132,484

CORPORATE
FUNDING/DONATIONS





▶ Anticipated state visits for 2021 (firm dates are listed)

Colorado – June 2021
Missouri – June 2021

Kansas – June 2021
New Hampshire

New York – June 2021
West Virginia – October 2021

Pennsylvania – October 2021
Virginia – October 2021

TUFSS CONTINUES TO PROPEL POLICY NATIONWIDE

After publishing research in 2017 that found many states fell short when it came to mandating best health and safety best practices for athletes, KSI launched Team Up for Sports Safety (TUFSS) in 2018 to propel the adoption of policies proven to reduce the incidence of catastrophic sport injuries for secondary school athletes.

“Many state policies do not include even the most widely accepted standards,” KSI CEO Douglas Casa said at the time, in a press release about the research. “Simple, cost-effective strategies can prevent nearly all deaths, but currently no state meets 100% of the minimum best-practice standards.”

The TUFSS project accomplishes its goals by identifying and bringing together the key individuals responsible for improving health and safety policies for high school athletes within a particular state. These state-specific meetings facilitate the collaboration of key stakeholders with the objective to formalize actionable items for adoption or improvement of health and safety policies as it pertains to secondary school athletic health care.

While state visits were halted due to COVID, planning and communication has continued. TUFSS has rescheduled and is actively planning more than a dozen state meetings and has hosted four virtual meetings that couldn't occur in person, with plans to follow up in person when possible.

In the three-year period since KSI published their initial report examining health and safety policies for high school athletes, 38 states have adopted legislative or state high school athletic association changes that make high school athletes safer in their respective states.

In August 2020, KSI released an updated High School Sports Safety Policy Review to reflect the notable progress states made between August 2019 and August 2020 in adopting important new policies. States adopting policy changes that went into effect during that time include Alabama, Arkansas, Colorado, Delaware, District of Columbia, Florida, Hawaii, Illinois, Iowa, Louisiana, Missouri, New Jersey, New Mexico, New York, Oklahoma, Tennessee, Texas, and Vermont. TUFSS is funded through the NFL Foundation and the National Athletic Trainers' Association, along with countless private donors.

TUFSS continues to work to reach all 50 states and the District of Columbia in order to accomplish our goal of enhancing the health and safety of all secondary school athletes.

Read more and learn about our current status at: ksi.uconn.edu/outreach/team-up-for-sports-safety

ATLAS PROJECT CELEBRATES 5TH ANNIVERSARY AMIDST THE COVID-19 PANDEMIC

In 2015, Robert Huggins, Ph.D., KSI president of research and athlete performance and safety; Larry Cooper, chair of the National Athletic Trainers Association (NATA) Secondary School Athletic Trainers' Committee; and Ronnie Harper, athletic trainer at Dutchtown High School in Louisiana, huddled over a bar napkin, sketching out the details for a project. This project would become the go-to source for information on providing athletic training services at secondary schools, the KSI and NATA ATLAS Project: Athletic Training Locations and Services, which celebrated its 5th anniversary this past summer.

Since launching, ATLAS has mapped and surveyed secondary schools nationwide, producing annual reports, publications in peer-reviewed journals, and abstract presentations at national conferences; collaborated on numerous joint research projects; and fulfilled hundreds of requests from state athletic training association leaders, individual athletic training advocates, and legislators. ATLAS also provides key data for KSI's Team Up For Sports Safety (TUFFS) and innovATe projects.

For TUFFS, ATLAS provides stakeholders with school-specific information on access to athletic training (AT) services and critical emergency medical equipment, as well as risk management processes for emergency action planning. With these data in mind, state leadership and high school athletics associations

can make more informed decisions regarding the policies that they enact to improve the health and safety of their athletes.

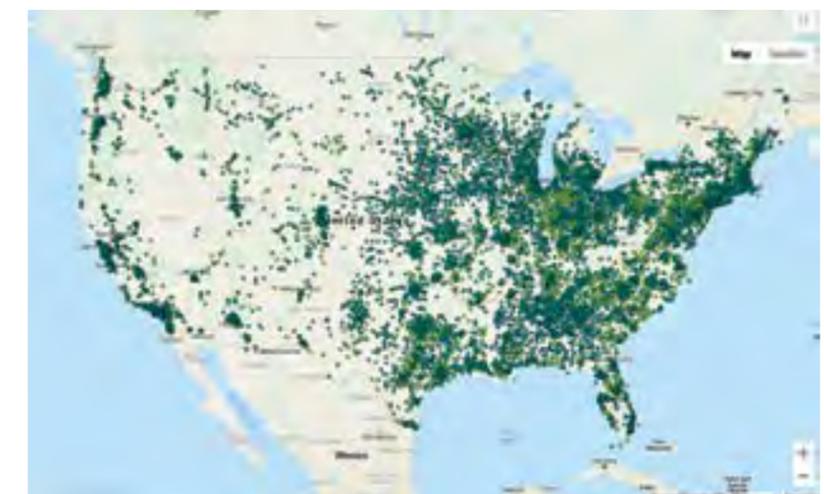
For the innovATe Project, ATLAS can overlay availability of AT services with socioeconomic status of a state on a map to help researchers determine which areas would benefit most from innovATe support.

Ph.D. students Erica Filep and Ayami Yoshihara and 10 ATLAS independent study students each year work tirelessly alongside Huggins, the ATLAS Project director, to import surveys, update maps, and produce data every week, enabling states to make real-time decisions about the status of the profession. Furthermore, states can request data from the ATLAS team to help advance the services provided within a specific area.

Recently, athletic trainers from the Lafayette Parish school system in Louisiana used ATLAS-provided data to advocate for appropriate medical services and improved sport safety.

“The administration is moving forward with further discussions regarding the health care their parish provides to their student athletes,” Huggins says.

“ATLAS, KSI, and the NATA are proud to help ensure athletes can play the sports they love in a safe manner,” says Huggins. “Student-athletes deserve preparedness, they deserve to be safe, and they deserve to go home at the end of the day to their loved ones. As long as there are schools with athletics programs without proper — or sometimes any — medical care, ATLAS will continue its mission to visually report schools that lack these critical services. We can do better for our athletes.”



- The latest ATLAS map indicates the locations of secondary schools that have full-time athletic training services with green dots and secondary schools that have part-time athletic training services with teal dots.

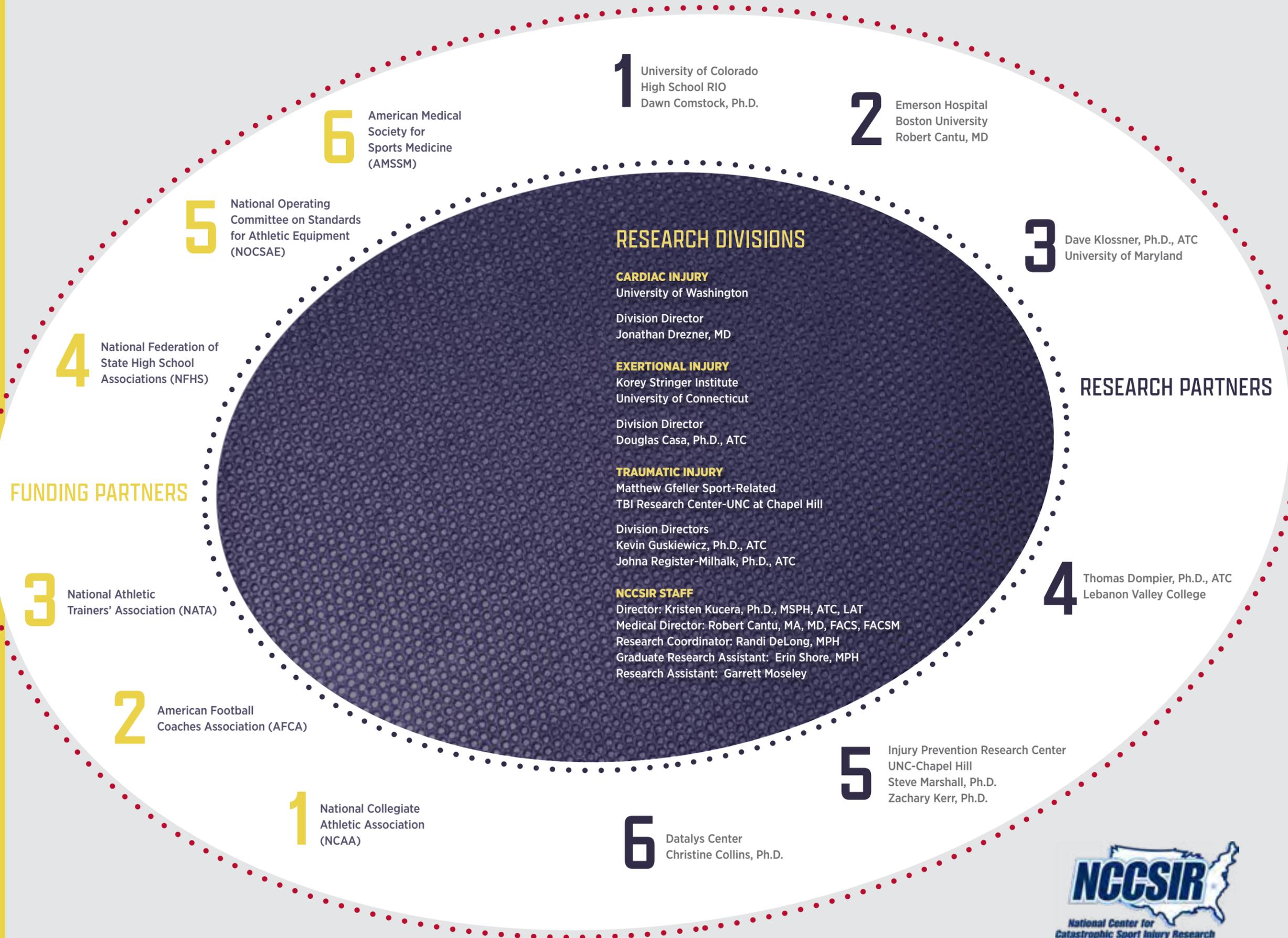
NATIONAL CENTER FOR CATASTROPHIC SPORT INJURY RESEARCH (NCCSIR)

NCCSIR was founded at the University of North Carolina Chapel Hill in 1982 under the leadership of Frederick O. Mueller and is currently directed by Dr. Kristen Kucera. In 2013 NCCSIR created three research branches: the Traumatic, Cardiac, and Exertional Injury divisions, the last of which KSI leads. The mission of NCCSIR is to conduct surveillance of catastrophic injuries and illnesses related to participation in organized sports in the United States at the collegiate, high school, and youth levels of play. The goal of the Center is to improve the prevention, evaluation, management, and rehabilitation of catastrophic sports-related injuries.

The center also brings together many prominent research and funding partners to accomplish its goals. Research now focuses on generating reliable data that can be used to make sports safer for athletes, increase the amount of information that is available about catastrophic sports injuries, and to increase general awareness of catastrophic injuries in all sports.

NCCSIR has become the leader for housing the critical epidemiological evidence for catastrophic injury in sport, which has helped to drive policy change to enhance the health and safety of athletes across all levels of play. Recently, in 2019, KSI published an epidemiological paper on sudden death in youth athletes, which was the first comprehensive article to address this topic. Most notably, it concluded that the majority of youth athlete deaths occurred in males, were due to cardiac causes, and occurred while playing basketball.

sportinjuryreport.org



1 University of Colorado High School RIO
Dawn Comstock, Ph.D.

2 Emerson Hospital Boston University
Robert Cantu, MD

3 Dave Klossner, Ph.D., ATC
University of Maryland

RESEARCH PARTNERS

4 Thomas Dompier, Ph.D., ATC
Lebanon Valley College

5 Injury Prevention Research Center
UNC-Chapel Hill
Steve Marshall, Ph.D.
Zachary Kerr, Ph.D.

6 Datalys Center
Christine Collins, Ph.D.

1 National Collegiate Athletic Association (NCAA)

2 American Football Coaches Association (AFCA)

3 National Athletic Trainers' Association (NATA)

FUNDING PARTNERS

4 National Federation of State High School Associations (NFHS)

5 National Operating Committee on Standards for Athletic Equipment (NOCSAE)

6 American Medical Society for Sports Medicine (AMSSM)

RESEARCH DIVISIONS

CARDIAC INJURY
University of Washington
Division Director
Jonathan Drezner, MD

EXERTIONAL INJURY
Korey Stringer Institute
University of Connecticut
Division Director
Douglas Casa, Ph.D., ATC

TRAUMATIC INJURY
Matthew Gfeller Sport-Related TBI Research Center-UNC at Chapel Hill
Division Directors
Kevin Guskiewicz, Ph.D., ATC
Johna Register-Milhalk, Ph.D., ATC

NCCSIR STAFF
Director: Kristen Kucera, Ph.D., MSPH, ATC, LAT
Medical Director: Robert Cantu, MA, MD, FACS, FACSM
Research Coordinator: Randi DeLong, MPH
Graduate Research Assistant: Erin Shore, MPH
Research Assistant: Garrett Moseley



innovATe: THE VALUE OF ATHLETIC TRAINERS

Last summer the Korey Stringer Institute launched its latest project, innovATe, whose mission is to increase access to medical care provided by an athletic trainer for secondary school athletes in underserved communities across the United States.

This \$3 million collaborative project, administered by KSI and funded by the Education Fund established as part of the settlement of the NFL Concussion Litigation, will provide funding, advocacy, education, mentorship, and strategic support to 10-14 school districts over the next five years.



“We know, through our research at KSI, the value athletic trainers bring to communities, especially as it relates to promoting safety, injury prevention, and emergency response,” says Christianne Eason, a UConn alumna who is KSI’s President of Sport Safety and director of innovATe. “Athletic trainers in the high school setting are invaluable to the health and well-being of student athletes. High school athletes are vulnerable to long-term consequences of sport-related injuries due to their musculoskeletal and cognitive development. These athletes need access to care just as much, if not more than, college and professional athletes.”

Though KSI research and policy advocacy efforts effect change throughout the country, if there is not an athletic trainer present in schools, there is no one to implement the research and safety policies to improve safety. The innovATe project will help fill that gap.

“The innovATe project is an opportunity for us at KSI to take what we have learned from all of our ongoing projects to help protect the health and safety of student athletes at these schools,” says Douglas Casa, KSI CEO and UConn professor of kinesiology.

KSI’s ATLAS project has shown that many high schools across the country lack access to the medical care provided by an athletic trainer. As of June 2020, 34% of all public and private schools had no access to athletic training services.

“Sadly, there are many student athletes across our country who don’t have access to this care, often because of financial constraints. The innovATe project allows us to provide help and offer tangible resources to these communities,” says Eason.

“ATHLETIC TRAINERS IN THE HIGH SCHOOL SETTING ARE INVALUABLE TO THE HEALTH AND WELL-BEING OF STUDENT ATHLETES.”

In addition to establishing athletic training programs, innovATe aims to secure strategic partners to sustain these new programs. KSI staff will also work with the NFL Alumni Association to identify retired NFL players who will provide education and help build community support in each funded area.

The goal is for the first cohort of athletic trainers to begin supporting these communities in summer 2021.

Visit ksi.uconn.edu/outreach/innovate to learn more.



TAKING ACTION IN 2020 WITH OUR CORPORATE PARTNERS

- NFL**
FOUNDING PARTNER
 - Team Up for Sports Safety (TUFSS)
 - Marketed KSI’s “Preventing and Treating Exertional Heat Stroke” video to athletes at all levels
- UConn**
FOUNDING PARTNER
 - Helped to fund renovation of KSI’s original heat lab
 - UConn research equipment grant awarded to KSI in 2020
- G**
FOUNDING PARTNER
 - COVID-19 Return to Sports and Exercise document endorsing agency
 - NATA Live Expert Chat
- M**
MISSION
 - National Heat Safety Coalition
 - The MISSION Heat Lab at the Korey Stringer Institute
- NATA**
NATIONAL ATHLETIC TRAINERS ASSOCIATION
 - Athletic Training Locations and Services (ATLAS)
 - Team Up for Sports Safety (TUFSS)
 - Increasing access to Athletic Training Services in Secondary Schools (innovATe)
- Kestrel**
 - Heat Stress Tracker Donation Program
 - innovATe Equipment Provider
- CAMELBAK**
 - Circuit Vest Study
 - Hydration Monitoring system algorithm collaboration
- defibtech**
 - New corporate sponsor for 2020
 - innovATe Equipment Provider
 - AED donation to Hartford Public Schools Athletic Trainer
- FIRST LINE TECHNOLOGY**
 - New Corporate Partner for 2021
 - Partnering with KSI to bring awareness and resolution to lethal heat stress-related incidents through innovative products such as the Immersion Cooling Equipment (ICE) System

KSI AND THE MILITARY

KSI continues to be heavily involved in advancing military medicine and protecting soldiers from the dangers of heat, specifically by testing and validating technologies to help protect warfighters in extreme environments. In 2018, the Biotechnology High Performance Computing Software Applications Institute (BHSAI), a Department of Defense research unit within the U.S. Army Medical Research and Materiel Command (now the U.S. Army Medical Research and Development Command), partnered with the Henry M. Jackson foundation and KSI to validate biotechnological solutions through wearable technologies to protect soldiers training and fighting in extreme environmental conditions. The grant associated with this project is still active and has funded five projects housed at KSI, involving more than 100 research subjects and spanning more than four years of data collection.

Additionally, KSI is involved in two other Department of Defense-funded grants that began in 2020: one sponsored by BrainScope to validate a concussion assessment tool, the other sponsored by Amp Human to evaluate the effects of a topical sodium bicarbonate lotion on hydration and fluid balance.

Furthermore, in 2019, General Electric (GE) partnered with KSI using an Air Force grant to validate a wearable sweat patch that helps military personnel estimate sweat rate in hot environments. The Air Force also recently awarded a grant to KSI partner company Kelvi to evaluate hand- and back-wrap cooling devices during exercise in the heat.



DOD GRANT

In April of 2021 KSI received the exciting news that we were recommended for funding from the Department of Defense to conduct a three-year, \$2 million study titled: “Enhancing Lethality by Targeting Cognitive and Physiological Mechanisms of Female Warfighter Resiliency to Consecutive Days of Intense Exercise in the Heat.” The study will begin in the summer of 2021 and continue through summer 2024. KSI has been unbelievably fortunate to conduct 14 different federally funded (DOD, NIOSH) projects in the past five years, some of which continue today. We will provide an extensive update of this new project in our 2021 annual report.



FIRST PERSON:
Major Cody Butler, active-duty Air Force Physical Therapist

Three years ago, I was selected by the Air Force Institute of Technology as one of the first-ever Air Force PTs to complete a Ph.D. in Exercise Science. The purpose was to gain advanced training in exercise science, human performance, and injury prevention to later apply at an Air Force base.

I've been very fortunate to be at UConn and to work with the Corey Stringer Institute (KSI). When I first arrived, I wasn't sure what to expect, as I had been a practicing clinician for nearly a decade and hadn't been in a lab or classroom in years. But my experiences with KSI were remarkable from the start. I gained invaluable experience with a diverse set of lab and field studies related to heat, hydration, performance, and injury prevention.

I've had the opportunity to share findings at multiple conferences, including the 5th International Congress on Soldiers' Physical Performance in Quebec City, Canada, in February 2020, where military delegates from across the globe discussed exercise science topics specific to warfighters. While there, I presented the findings from a recent study our lab completed regarding the effects of heat and hydration on cognitive and physical performance.

My experiences at KSI will be a tremendous anchor and guide for me as I embark on the next chapter of my military career, using these skills to conduct research, create injury prevention programs, and oversee the general health and wellness of our nation's warfighters.



NATIONAL HEAT SAFETY COALITION

KSI is excited to announce the creation of a new entity within KSI that will focus on protecting the health and safety of industrial laborers working in the heat. The National Heat Safety Coalition (NHSC) will gather leading safety experts and researchers who will work together to provide research, advocacy, consultation, and education with the common goal of keeping laborers safe.

The NHSC was created through a collaboration between KSI and two personal protective equipment manufacturers, MISSION and Magid, and will be housed at KSI. The organization will work to overhaul heat safety guidelines and provide organizations and occupational safety stakeholders with recommendations and solutions to protect workers from heat injury. The NHSC will initiate public health surveillance protocols

and training programs for the millions of vulnerable laborers who have to perform intense exercise in the heat as part of their jobs, such as those working in farming, construction, the oil or gas industries, and firefighting and train rail, landscaping, and road work laborers. The NHSC will create a Heat Safety Certification program for worksites, companies, and organizations to become certified in best practice heat safety policies and procedures to protect their workers.

The NHSC has hit the ground running, working on several important initiatives aimed at protecting workers from occupational heat stress.

The National Heat Safety Coalition will develop policies and procedures to keep workers safe in extreme heat, including firefighters who may fight blazes as hot as 500 degrees Fahrenheit.





KSI staff members conduct athlete performance testing in the MISSION Heat Lab at UConn's Korey Stringer Institute.

The MISSION Heat Lab at the UConn Storrs campus allows for precise control of ambient temperature and relative humidity.



THE MISSION HEAT LAB AT UCONN'S KOREY STRINGER INSTITUTE

The year 2020 marks 10 years since KSI opened its doors. In that time, KSI's exercise physiology research division has become world-renowned, with an agenda focused on thermoregulation, exertional heat stroke, and elite athlete testing.

In 2018, the KSI research program was dramatically enhanced with the addition of the MISSION Heat Lab at UConn's Korey Stringer Institute. The heat lab came to be due to the philanthropic efforts of some of KSI's most cherished partners, including MISSION, the National Football League, the University of Connecticut, and the Professional Football Athletic Trainers Society, as well as other important supporters of KSI. The 450-square-foot environmental chamber has significantly enhanced

our research capabilities by allowing for precise control of ambient temperature (below freezing to 110°F), relative humidity (20-90%), and varying solar radiation conditions.

With high-speed treadmills, advanced cycle ergometers, metabolic carts for human gas exchange, and a bathroom and cooling area for subjects, we can mimic environments experienced in the field by athletes, warfighters, and laborers in a safe manner. In 2020, our team was able to successfully complete four projects requiring the new heat lab that are currently awaiting or being prepared for publication in peer-reviewed journals.

Some recent notable endeavors include collaborating with the Biotechnology High Performance Computing Software Applications Institute (BHS AI) and Department of Defense, culminating in novel advances in wearable technology, thermoregulation, and hydration research.

BHS AI has been a fantastic group to work with and our relationship is slated to continue into 2021 with novel projects currently in development. Notably, since its

inception, graduate students who have worked at KSI in the heat lab and have been integral to our productivity now work in various post-doctoral and faculty appointments, positions within the private sector, and in professional sports organizations across the globe.

WE CAN MIMIC ENVIRONMENTS EXPERIENCED IN THE FIELD BY ATHLETES, WARFIGHTERS, AND LABORERS IN A SAFE MANNER.

As the MISSION Heat Lab is the cornerstone of our physiological studies, we are indebted to everyone involved who supports us to facilitate the lab's productivity and continued success.



KSI staff prepare the forearm immersion tub during a research trial in the heat lab.

KSI AND COVID-19

Like the rest of the world, KSI was significantly impacted by health and safety regulations required due to the COVID-19 pandemic over the past year. Although the unexpected shutdown of campus and extended absence from research activities initially paused research, we are proud of the work we accomplished once we were able to resume collecting data in our labs at the beginning of July. Our staff worked tirelessly to write and implement safety plans to get our labs up and running again after shutdown to maintain a high level of safety after our return to campus, and we are honored to have been able to contribute to the body of COVID-related research.

After the abrupt shutdown of all research activities in March, the team at KSI was anxious to resume research as quickly as possible when the University announced a phased reopening of research activities would commence. In late May, we began creating the KSI COVID-19 Safety Plan as the first step in gaining University approval to resume our research. The safety plan was developed based on CDC guidelines and UConn's Office of the Vice President for Research (OVPR) guidelines, and was approved by the OVPR before we resumed any research activities. The purpose of the safety plan was to facilitate an orderly ramp-up of lab operations, minimize any exposures to COVID-19 between our staff and subjects, and maintain safe lab and office spaces for the return to research activities.

Some of the protocols we developed as a part of this safety plan included: pre-screening questionnaires via Qualtrics survey for any staff or subjects prior to arriving on campus, recording temperatures

and logging arrival/leaving time for contact tracing purposes, adhering to guidelines regarding PPE requirements in both office settings and in the lab, and setting up all physical spaces at KSI to allow for maintaining social distancing guidelines. These protocols have been in place since KSI was approved to resume research in June and will continue to be until OVPR instructs us to discontinue these practices. Thanks to our incredible teamwork, we were able to successfully complete four research projects in fall 2020: the VIPER, MAMBA, ICE, and Face Mask studies.

COVID-19 RETURN TO ACTIVITY WHITE PAPER

KSI is pleased to have published a collaborative paper detailing not only how athletes could safely return to sports and exercise but also how health care providers could help their athletes during the COVID-19 pandemic. Early in the pandemic we realized that many athletes were being sidelined from their typical training activities. The combination of decreased activity and potential health risks associated with COVID-19 presents important health and safety risks specific to athletes as the return to sport plans emerge.

While it is clear that transition periods between inactive and active training have a higher risk for major sport injury, social distancing measures required during the pandemic could place athletes at higher risk for significant injuries and illnesses. Additionally, it is important for organizations to consider how to safely return to activity during a pandemic and avoid increased instances of injury, illness, and sudden death in sport. Therefore, the purpose of this paper was to create an overarching consensus statement across high school and collegiate athletics to address return to physical activity considerations during or immediately following physical distancing.

We are proud that this document was endorsed by numerous organizations including the American College of Sports Medicine, the Collegiate Strength and Conditioning Coaches Association, the National Athletic Trainers' Association, and the National Federation of State High School Associations.

FACE MASK STUDY

Since the COVID-19 pandemic began, the use of face masks has been widely recommended by international and national authorities to limit the transmission of airborne infectious agents. Present studies have reported protective face masks may cause discomfort due to increased breathing resistance and thermal perception; however, the evidence related to the thermal burden of face masks is limited.

To increase knowledge of the effect of the face mask on thermoregulation, KSI conducted a study in which participants wore four different face masks — a surgical mask, an N95, a MISSION adjustable gaiter, and a MISSION adjustable sport mask — in heat during light-to moderate-intensity exercise, such as walking and jogging while monitoring rectal temperature, skin temperature, and several perceptual variables. Additionally, we measured

KSI studied the effects of different types of face masks on thermal regulation.



temperature and humidity inside and outside of the masks. Our teamwork enabled us to complete 72 subject visits safely and successfully in three weeks, under continued COVID-related safety protocols. We hope this study will benefit the essential workers and athletic population who are participating in activities related to their profession or sport with face masks during this pandemic.



A subject in the Face Mask study exercises in the heat while KSI staff monitor changes in physiological and perceptual variables.

2020 STUDIES



THE EFFECT OF AMP HUMAN PR LOTION ON HYDRATION STUDY

Various populations such as military personnel, athletes, and industrial laborers may practice harmful fluid ingestion behaviors potentially increasing cognitive, physiological, and heat stress. For example, military pilots purposefully dehydrate themselves due to difficulties with urinating while flying an aircraft. Currently, the consumption of sodium bicarbonate has been deemed effective for improvements in fluid regulation; however, it may cause abdominal discomfort. AMP Human Performance, based in Park City, Utah, recently created a sodium bicarbonate solution called PR Lotion that can travel through the skin after application. The research study evaluates the effects of this sodium bicarbonate lotion on physiological and psychological responses associated with fluid balance in humans while sitting in a hot environment. If this product is effective, then it may be available to those who need it to improve hydration and regulate fluid balance.

IMPACT OF IMMERSION COOLING EQUIPMENT ON EXERCISE PERFORMANCE IN THE HEAT

Both physiological and perceptual changes may occur while exercising in the heat, potentially leading to reduced athletic performance. Various cooling strategies have been explored to reduce internal body temperature, enhance perceptual measures, and improve physical performance during exercise in the heat. In particular, the practice of forearm cold-water immersion was recently evaluated for obtaining these positive responses by reducing skin temperature. However, there is a substantial gap in the literature regarding benefits of forearm cooling while participating in athletic activity. First Line Technology of Chantilly, Virginia, has created a convenient device, the Immersion Cooling Equipment (ICE) System, for use in forearm cold-water immersion in both military and occupational settings. This study examined how physiological, perceptual, and performance responses are affected by forearm cold-water immersion during exercise in the heat.

HYDRATION INTERVENTION IN ADOLESCENTS

Maintaining a desirable level of hydration has been associated with improvements in the overall health and well-being of adults. Adolescents have a more difficult time maintaining proper hydration due to unique challenges with both scheduling conflicts and beverage preference. Furthermore, the harmful effects of hypohydration on both physiological and mental health are not fully understood within the adolescent population. In light of these concerns, Kraft Foods Group Brands LLC of Glenview, Illinois has introduced an alternative beverage called Creative Roots to combat these potentially negative responses. This study determined if the beverage improved measurements of hydration in adolescents. By providing an alternative beverage that is both tasty and satisfies the health-related desires of parents, adolescents may consume more fluids, which could improve hydration, leading to benefits in both physiological and mental health, all of which are vital to the development of adolescents.



IMPROVING NATURAL SPORT OUTCOMES AND LANDING EFFICIENCY (INSOLE) STUDY

To combat the risk of lower body injuries, the use of protective equipment has become common in sport. Typical shoe insoles are unable to generate mechanical power and react to the individual's needs, reducing the interaction between the device and user. But insoles that can absorb power have the ability to dramatically improve movement, thereby reducing risk for injury. The purpose of this study was to test the VKTRY Performance Insoles against a control insole in 15 healthy, male participants. Joint angles and running efficiency were assessed during a treadmill test performed to fatigue. Injury protection via lower body movement errors and ground reaction force as well as performance were assessed before and after the treadmill test. The study was conducted by KSI in association with the UConn S.O.A.R. Lab.

SWEAT ELECTRICAL SENSOR VALIDATION DURING EXERCISE AND REST (SEVERE) AFRL NEXTFLEX VALIDATION

Maintaining an appropriate level of hydration has physiological, cognitive, and performance benefits during exercise in the heat. Hydration, electrolyte concentration, and sweat rate can be assessed in a variety of different ways. However, these measures often require expensive equipment and laboratory space, which limits their use in military combat and training scenarios. The GE Sweat Sensor (General Electric Research, Niskayuna, NY) is a non-invasive, disposable sweat patch that measures sweat rate and electrolyte concentration. This patch was designed to measure hydration level through sweat loss and electrolyte composition while warfighters are in combat or training. In order to assess this design, the study aimed to validate this technology during exercise and rest in the heat at varying levels of hydration in men and women.

EVALUATION AND VALIDATION OF A MULTIMODAL BRAIN FUNCTION BIOMARKER WITH NPC

Mild traumatic brain injury (mTBI) is a global medical problem which has been identified as a major cause of death and disability. With a majority of concussion diagnoses relying on subjective self-reporting of signs and symptoms, there is a need for an accessible device that uses non-invasive techniques and objective measurements to rapidly assess injuries with precision. The BrainScope Ahead® 300iP-O (BrainScope Inc.®, Bethesda, MD) has been developed to aid in the assessment of concussions sustained. To be more effective, the device procedures have been altered to include a feature for the assessment of eye function, which will expand upon the characterization of a brain injury. In order to demonstrate the effectiveness of the BrainScope Ahead® 300iP-O device, this study is being conducted to evaluate mTBI/concussion diagnoses while characterizing differences in severity and recovery within a population of males and females aged 13 to 50.

PERCEPTIONS STUDY

The purpose of the Perceptions Study was to assess current knowledge and opinions of athletic training and appropriate medical care for student-athletes from key stakeholders who influence the hiring of athletic trainers in secondary schools. Data has already been collected and analyzed from athletic directors, superintendents, principals, coaches, parents, and legislators. With responses from more than 3,900 individuals, we were able to gather a baseline assessment of knowledge that can be used to target educational efforts for support on the hiring of athletic trainers in secondary schools. Data from the legislator, athletic director, and principal stakeholder groups are currently published in the *Journal of Athletic Training*. The Perceptions Study is continuing into 2021 as we look to collect data from additional stakeholder groups, including high school nurses. This study is partially funded by the National Athletic Trainers' Association.

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- Camelbak - Petaluma, CA
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- MISSION - New York, NY
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- UConn - Storrs, CT
- First Line Technology - Baltimore, MD

MILITARY BASES ●

- Fort Benning - Fort Benning, GA
- Fort Bragg - Fort Bragg, NC
- Lackland Air Force Base - San Antonio, TX
- Worked with the U.S. Army and U.S. Air Force to improve heat safety policy

KSI'S GLOBAL IMPACTS

NORTH AMERICA ●

Washington, D.C.

White House Roundtable on Climate & Sports
Marine Corps Marathon Medical Conference presentations
The Pentagon

New York, NY

Human Rights Watch
New York Giants Football Team
U.S. Soccer, Major League Soccer, National Women's Soccer League - Head Injury and Concussion in Soccer Summit presentation

Lake Placid, NY

Ironman Lake Placid

Boston, MA

Boston Marathon Medical Meeting presentations

Natick, MA

U.S. Army Research Institute of Environmental Medicine

Falmouth, MA

Falmouth Road Race Medical Symposium
Medical Tent Support

Kona, HI

Hawaii Ironman Triathlon World Championships
Data collection in collaboration with Timex

Cancun, Mexico

American Medical Society for Sports Medicine

Canada

Canadian Athletic Trainers' Association meeting, Vancouver
5th International Congress on Soldiers' Physical Performance, Quebec City

ASIA

Doha, Qatar

IAAF World Athletics Championships, 2019
FIFA World Cup 2022
Aspetar, National Medical Supplier of IAAF
Dr. Douglas Casa spoke at the International Conference on Medicine and Science in Athletics hosted by Aspetar. He trained the medical staff to appropriately recognize and treat exertional heat stroke. The medical staff was responsible for treating athletes at the IAAF World Athletics Championships 2019 and FIFA World Cup 2022.

Tokyo, Japan

International Olympics Committee (IOC) 2020 Tokyo Olympic games
Dr. Douglas Casa, in collaboration with Dr. Yuri Hosokawa and Dr. Andrew Grundstein, helps to prepare organizers for extreme heat.
Sports Safety Symposium

EUROPE

Evian, France

10th Annual Hydration for Health Conference
Dr. Gabrielle Giersch receives the "Pitch Your Science Competition" Young Research Award

Split, Croatia

International Conference on the Physiology and Pharmacology of Temperature Regulation

Ukmergė, Lithuania

Gedminas Grinus, a Camelbak pro sponsored athlete from Lithuania, is tested in the KSI MISSION Heat Lab

Portugal

Portugal National Football Team
Dr. Douglas Casa and Dr. Robert Huggins assist the Portugal national soccer team in preparing for the heat of the 2014 FIFA World Cup in Rio de Janeiro, Brazil.

MAKING AN INTERNATIONAL IMPACT

FIRST PERSON:

Yuri Hosokawa, Ph.D., ATC, Associate Professor,
Waseda University, Tokyo, Japan
Safety and Performance Optimization Laboratory



I received an invitation to be part of the International Olympic Committee Adverse Weather Impact Expert Working Group for the Olympic Games Tokyo 2020 in October 2019. Dr. Casa was already part of the expert group, and he and others nominated me for involvement with the initiative given my background



at KSI. Being from Japan, it was a long-awaited opportunity because it has been my career goal to introduce and implement proper prehospital management of exertional heat stroke (EHS) to the Japanese medical system.

One of the primary tasks assigned to the expert group was to establish a medical response plan for collapsed athletes with suspected EHS. The context of the Olympic Games medical service is unique, to say the least. The initial care at the field of play is delivered by the local medical team. This means that the host city must ensure that team is able to deliver care to the level expected by the international standard. In Japan, there were several barriers in implementing the common best practice of EHS prehospital care, such as lack of on-site cooling and prehospital rectal temperature assessment. It may not be an

overstatement to say that I was the only person who had treated EHS patients following the premise of “cool first, transport second” before on-site training at test events began.

The education and training for the local medical team is an ongoing process, and the COVID-19 pandemic has certainly impacted our initial plan. While many uncertainties about the Games remain, I can confidently say that they have given Japanese health care providers the opportunity to elevate their standard of care of EHS prehospital management.

The expert group has summarized the best practice for EHS prehospital care in a manuscript, which will be available in the *British Journal of Sports Medicine*.

COMBATING HEAT STROKE IN ONE OF THE HOTTEST PLACES ON EARTH



Sébastien Racinais, Ph.D.,
Head of Research at Aspetar

It's only logical that KSI's work preventing exertional heat stroke extends to Qatar, a Middle Eastern country that was already one of the hottest places on Earth when temperatures started rising rapidly in recent decades. KSI CEO Douglas Casa and Sébastien Racinais, Ph.D., head of research for Aspetar Orthopaedic and Sports Medicine Hospital in Doha, Qatar, have developed a partnership, collaborating on educational articles on the management of heat stress, the International Olympic Committee Adverse Weather Impact Expert Working Group for the 2020 Olympic Games in Tokyo (being held this summer after postponement due to COVID), and the “Exercise in the Heat” Guideline Development Group for the State of Qatar.

The partnership began when Casa was invited as an international expert to advise on and help implement safety precautions for the 17th IAAF World Athletics Championships in Doha, held from September 27 to October 6, 2019. In preparation for the potential hot ambient conditions during the road race events, the IAAF (now known as World Athletics), the local organizing committee, and Aspetar took several precautionary measures ahead of the events. The highlight of this partnership was Casa's visit to Aspetar in May 2019, where he delivered a workshop on exertional heat stroke management. The medical staff of the various

IAAF World Athletics Championships competition venues, including sports medicine doctors, physiotherapists, sports scientists, emergency doctors, and paramedics, were in attendance.

In addition, Casa delivered the “Tuesday Morning Lecture” on the preceding day, a plenary lecture attended on-site by more than 100 practitioners and available on YouTube afterward. Casa also attended and presented at the International Conference on Medicine and Science in Athletics the same week.



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► 2020 PUBLICATIONS

BOOK CHAPTER

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PUBLISHED

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► 2020 MEDIA APPEARANCES

INTERVIEWS AND PODCASTS

1. Gatorade Performance Partner Chat at vNATA 2020 LinkedIn Live
2. Gatorade Informational Video - "Beat the Heat" with Dr. Douglas Casa
3. "The In with Dr. Tim" Podcast
4. "The Healthy Young Athlete" Podcast
5. "Three Cycle Strength" Podcast
6. "Madam Athlete" Podcast
7. WILI Radio
8. "Doug Casa Discusses Decade Leading Stringer Institute," Athletic Business
9. "UConn's KSI Launches innovATe Program to Aid High School Athletes," UConn Today
10. "NFL Partner Korey Stringer Institute Drives Progress in High School Sport Safety," NFL.com
11. "Korey Stringer Institute: Progress Made in High School Sports Safety Policies," UConn Today
12. "Recommended Is Not Enough: Korey Stringer Institute Releases State Policy Scores," Local 12 Cincinnati
13. "Where's the Water? Schools Not Allowed to Supply Hydration Stations," Local 12 Cincinnati
14. "The All-American Who Became the Protector of Thousands of Athletes," Fox 28 Columbus
15. "Florida Enacts Heat Stroke Protections for Student Athletes," NBC 6 Miami (Laurie Giardano, KSI Ambassador)
16. "Focusing on Solutions by Teaming Up for Sport Safety in High Schools," Local 12 Cincinnati
17. "38 States Have Made Policy Changes Under KSI Rubric but Not Ohio," Local 12 Cincinnati
18. "Ohio Scores 43.93 out of 100 on Korey Stringer Institute Evaluation," Local 12 Cincinnati
19. "Hot Zones: Dr. Doug Casa and Return to Play," AFCA Insider
20. "Secondary School AT? Then You Should Be Familiar With and Completed the Atlas Project Survey," The Sports Medicine Broadcast

WEBINARS AND CONFERENCES

1. Earth Networks Webinar
2. vNATA 2020
3. WV TUFSS Visit
4. LA TUFSS Visit
5. MA Virtual TUFSS Meeting
6. CT TUFSS Meeting
7. "Preparing Athletes & Athletic Trainers to Return to Sports after the COVID-19 Pandemic: Physical and Psychosocial Considerations" Webinar by A.T. Still University
8. Virtual Environmental Ergonomics: Heat Preparation for Toyko 2021 and Major Events
9. 2020 National NSCA Coaches Conference

OTHER

1. Arizona State University EHI Infographic Collaboration

► KSI ACTIVE GRANTS SUBMISSIONS CY 20

SUBMITTED APPLICATIONS CY20 - RESEARCH

SPONSOR	TITLE	PROJECT PERIOD	TOTAL AWARD
First Line	First Line Technology ICE Study	7/1/20–6/31/21	\$49,982
Amp Human	AMPlify Human Hydration Study	8/23/20–5/22/21	\$90,234
Department of Defense	Enhancing Lethality of Female Warfighters by Increasing Resiliency to Repetitive Days of Intense Exercise in the Heat	10/1/20–9/30/23	\$1,633,566
DOD/Henry M. Jackson Foundation	Continuation – Validation of Internal Body Temperature and Physiological Measures During Exercise and Rest	11/1–20–01/31/21	\$22,838
NIOSH/Harvard Education & Research Center	Safety and Performance Monitoring During Occupational Work	1/1/21–6/30/21	\$13,894
Magid Glove & Safety Company	The National Heat Safety Coalition	1/6/21–1/5/24	\$173,648
MPUSA, LLC	The National Heat Safety Coalition	1/6/21–1/5/24	\$173,648
Camelbak	The Effect of Running Vest Garment Material and Design During the Exercise in the Heat	1/6/21–1/5/22	\$49,964
DOD/Henry M. Jackson Foundation	Continuation – Validation of Internal Body Temperature and Physiological Measures During Exercise and Rest	2/1/21–7/31/21	\$147,889
NFL Concussion Settlement – Education Fund	InnovATe	6/1/20–12/31/24	\$3,000,000
UNC– Chapel Hill	NCCSIR–NCAA Continuation	7/1/20–7/31/21	\$44,068
NATA	Athletic Training Locations and Services and Consumer Awareness Projects	4/1/20–3/31/23	\$300,000

ACTIVE GRANTS CY20 - RESEARCH

DOD/Henry M. Jackson Foundation	Validation of Internal Body Temperature and Physiological Measures During Exercise and Rest	9/15/17–7/31/21	\$561,385
National Collegiate Athletic Association/University of North Carolina at Chapel Hill	National Center for Catastrophic Sport Injury Research (NCCSIR)	8/1/17–7/31/21	\$150,000
NATA	TUFSS	4/1/20–3/31/24	\$600,000
First Line	First Line Technology ICE Study	7/1/20–6/31/21	\$49,982
NFL Concussion Settlement – Education Fund	InnovATe	6/1/20–12/31/24	\$3,000,000
Amp Human	AMPlify Human Hydration Study	8/23/20–5/22/21	\$90,234
Kraft Heinz Company	Hydration Intervention in Adolescents	12/1/19–12/31/20	\$274,999
NFL Foundation	TUFSS	12/1/19–11/30/21	\$799,960
DOE/BrainScope Co., Inc.	Evaluation and Validation of a Multimodal Brain Function Biomarker with NPC	9/1/19–2/28/21	\$164,903

► ACTIVE GRANTS CY 2021

GRANTS - RESEARCH

SPONSOR	TITLE	PROJECT PERIOD	TOTAL AWARD
DOD/Henry M. Jackson Foundation	Validation of Internal Body Temperature and Physiological Measures During Exercise and Rest	9/15/17–7/31/21	\$561,385
National Collegiate Athletic Association/University of North Carolina at Chapel Hill	National Center for Catastrophic Sport Injury Research (NCCSIR)	8/1/17–7/31/21	\$150,000
NFL Concussion Settlement – Education Fund	InnovATe	6/1/20–12/31/24	\$3,000,000
NATA	TUFSS	4/1/20–3/31/24	\$600,000
First Line	First Line Technology ICE Study	7/1/20–6/31/21	\$49,982
Amp Human	AMPlify Human Hydration Study	8/23/20–5/22/21	\$90,234
NFL Foundation	TUFSS	12/1/19–11/30/21	\$799,960
NIOSH/Harvard Education & Research Center	Safety and Performance Monitoring During Occupational Work	1/1/21–6/30/21	\$13,894
Magid Glove & Safety Company	The National Heat Safety Coalition	1/6/21–1/5/24	\$173,648
MPUSA, LLC	The National Heat Safety Coalition	1/6/21–1/5/24	\$173,648
Camelbak	The Effect of Running Vest Garment Material and Design During the Exercise in the Heat	1/6/21–1/5/22	\$49,964
NATA	Athletic Training Locations and Services and Consumer Awareness Projects	4/1/20–3/31/23	\$300,000
DOD/U.S. Air Force/Kelvi	SHE Cool (Semiconductor Heat Extraction Cooling)	4/1/21-3/31/22	\$156,735
DOD/U.S. Army/Army Medical Research Acquisition Activity	Enhancing Lethality of Female Warfighters by Increasing Resiliency to Repetitive Days of Intense Exercise in the Heat	10/1/20-9/30/23	\$1,658,261

You are invited to attend
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Jeffrey Pash
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The annual Korey Stringer Institute Gala allows us to gather to celebrate the year's achievements and to honor our annual KSI Lifesaving Award winners. Each year, KSI leadership and staff gather with our corporate partners, supporters, and friends to celebrate the important work being done at KSI and throughout the country to maximize performance, optimize safety, and prevent sudden death.

This year's Gala is pending COVID-related guidelines.

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