

\$1.37 Million Awarded in HeadHealthTECH Grant Funding to NFL Helmet Challenge Applicants

Funding will support innovators competing to create a new, top-performing football helmet

New York, NY (June 30, 2020) – The National Football League (NFL) and Football Research, Inc. (FRI) today awarded \$1.37 million in HeadHealthTECH grant funding to four teams of innovators to support the creation of their helmet prototypes to be submitted as part of the ongoing [NFL Helmet Challenge](#), a contest with an additional prize of \$1 million.

The NFL Helmet Challenge is an innovation challenge that aims to stimulate the development by experts, innovators and helmet manufacturers of a new helmet for NFL players that outperforms, based on specified laboratory testing, all helmets currently worn by NFL players. The \$1.37 million in grant funding awarded today is an extension of the NFL's [HeadHealthTECH Challenge](#) funding series and was designed to facilitate broad participation in the NFL Helmet Challenge. Applicants will use HeadHealthTECH Challenge funds to bolster their entry into the NFL Helmet Challenge competition. HeadHealthTECH funding is not required to participate in the NFL Helmet Challenge and other applicants are invited and encouraged to participate.

The Helmet Challenge will culminate in July 2021 with applicants submitting helmet prototypes for laboratory testing used by the NFL-NFLPA engineers to rank helmets over the last six years.

Awardees of HeadHealthTECH Helmet Challenge grant funding are as follows. Their submission descriptions appear in italics below as described by the winners in their grant applications.

- **Christopher Yakacki | Impressio, Inc. and CU Denver
Denver, Colorado - \$491,999**
Impressio, Inc. and CU Denver, relying on materials science research and additive manufacturing, are looking to create unprecedented energy-dissipating helmet liners using ultra-dissipative liquid crystalline elastomers (LCEs) and lattice designs to 3D-print player-specific helmet liners to reduce concussions. This project is supported by partners including EOS, nTopology, and Schutt.
- **Xenith, RHEON, BASF, The University of Waterloo | Xenith Project Orbit
Detroit, Michigan - \$412,000**
Xenith, an industry leader in football equipment, is looking to bring together experts in injury biomechanics, additive manufacturing, material science, design and computational modeling and optimization – BASF, RHEON Labs and The University of Waterloo – to create a new solution for energy management and a best-in-class on-field experience for the athlete.
- **Eric Wagnac (ETS) and Franck LeNaveaux | Kollide
Montreal, Québec - \$238,545**
The [Kollide](#) consortium combines the expertise of academic researchers (ETS) and four innovative Montreal-based companies (Kupol, Tactix, ShapeShift3D, Numalogics)

who are looking to use their virtual design and non-planar 3D printing approach to create helmets customized to the player's head with a custom liner optimized to absorb and redirect impact.

- **Matthew Panzer | UVA, Nama Development and Topologica, Inc. Charlottesville, Virginia - \$223,047**

Dr. Panzer and collaborators are looking to use their innovative cubic + octet foam metamaterial to design a new energy absorbing layer in a football helmet that will minimize risk of concussion.

“By bringing together experts from multiple disciplines, the NFL Helmet Challenge aims to encourage revolutionary advances in helmet design,” said **Jeff Miller**, NFL Executive Vice President of Communications, Public Affairs and Policy, who oversees the NFL’s health and safety work. “The awardees demonstrated the potential to do just that. We’re very excited to support their efforts and test their prototypes next year. This is one more sign of the recent transformation in the protective equipment space – more in the last couple of years than over the previous decade – and we are committed to keeping this momentum going.”

“The extraordinarily high level of engagement and breadth of innovative work happening right now in the protective equipment space is exciting to see,” said **Dr. Barry Myers**, Director of Innovation at Duke University’s Clinical and Translational Science Institute (Duke CTSI), who chairs the Oversight Committee that selected the winners. “The four winners awarded today all demonstrated the ability to develop a winning helmet, but there is definitely more to come from many of the other teams and start-ups we saw submit proposals and we look forward to opportunities to support these entrepreneurs in the future.”

The HeadHealthTECH Challenge grant funding is just one of the many resources that the NFL has brought to bear to support potential applicants throughout the NFL Helmet Challenge process. Other available resources include those developed through the Engineering Roadmap, such as NFL [video review data](#) and [finite element models](#) of modern football helmets. Additionally, the NFL [hosted a symposium](#) in November 2019 to kick off the challenge, which brought together 300 engineers, manufacturing experts and innovators from across the country for three days of information-sharing and collaboration. The symposium provided potential applicants, including many of today’s grant winners, with background on the current state of the science around helmets and head injuries in the NFL and information on the challenge and available resources.

For more information on the NFL Helmet Challenge and how to enter, potential applicants should visit: PlaySmartPlaySafe.com/NFLHelmetChallenge.

About the HeadHealthTECH Challenge Series

The HeadHealthTECH Challenge series is one component of the [Engineering Roadmap](#), a \$60-million comprehensive effort – funded by the NFL and managed by FRI – to improve the understanding of the biomechanics of head injuries in professional football and to create

incentives for helmet manufacturers, small businesses, entrepreneurs, universities and others to develop and commercialize new and improved protective equipment, including helmets. FRI awards the most promising HeadHealthTECH Challenge proposals with monetary grants and in-kind support. A panel of expert judges selected by Duke CTSI, in collaboration with FRI, reviews and provides feedback to all proposals. Every HeadHealthTECH Challenge applicant is invited to reapply and receives constructive feedback from Duke CTSI biomechanical experts to help refine innovations and increase chances for success on future submissions.

The HeadHealthTECH Challenges have awarded more than \$1.6 million in grants to date to help advance the development of 13 new technologies:

- [Winners of TECH Challenge I](#), announced in April 2017, are [VyaTek Sports](#) for its highly efficient energy-absorbing Zorbz technology and [Guardian Innovations](#) for its Guardian Cap technology – a soft helmet cover designed to reduce the severity of impacts.
- [Winners of TECH Challenge II](#), announced in October 2018, are [2ND Skull](#), to research the effectiveness of its 2nd Skull® skull cap in reducing impact forces and developing a second-generation version; [Baytech Products](#), for its prototype HitGard® multi-component helmet system concept; and [Windpact](#), for its Crash Cloud™, an impact liner system using restricted air flow and foam in helmets and protective gear.
- [Winners of TECH Challenge III](#), announced in May 2018, are [Impressio, Inc.](#) for its ultra-dissipative padding made from liquid-crystal elastomers (LCEs); [HRL Laboratories, LLC](#), to support the development and testing of its novel impact-attenuating pads for football helmets; and [AES Research & Design](#) for the testing of its anti-rotational kinematic (ARK) helmet prototype.
- [Winners of TECH Challenge IV](#), announced in July 2018, are [FieldTurf Inc.](#) for its all-new sports surface; [Corsair Innovations, Inc.](#) for its FEAM material; and Yobel Technologies, LLC for its faceguard.
- [Winner of TECH Challenge V](#), announced in November 2018, is [Cardiff University](#), for its unique padding material for use as a helmet liner.
- [Winners of TECH Challenge VI](#), announced in March 2019, are [Windpact](#) to tailor its Crash Cloud™ technology for use in Schutt's AirXP Pro Q10 helmet, and [Auxadyne](#), for its energy absorbing XPF material.

About the NFL's Health and Safety Initiatives

The NFL is committed to advancing progress in the diagnosis, prevention and treatment of sports-related injuries. As part of the NFL's ongoing health and safety efforts, in September 2016, Commissioner Goodell launched *Play Smart. Play Safe.* — a league-wide health and safety initiative. At the heart of the initiative is a pledge of \$100 million in support of independent medical research and engineering advancements and a commitment to try to protect our players and make our game safer, including through enhancements to medical protocols and improvements to how our game is taught and played. For more information about the NFL's health and safety efforts, please visit www.NFL.com/PlayerHealthAndSafety.

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