SAFETY INNOVATION CHALLENGE: HEAT STRESS

JULY 2024 – FEBRUARY 2025

THE CHALLENGE:

Heat stress is a critical workplace hazard affecting industries such as construction, manufacturing, agriculture, and defense. Rising global temperatures and extreme weather events further exacerbate the risks, leading to increased incidents of heat-related illnesses and productivity losses. Despite existing solutions like hydration protocols and cooling garments, organizations seek novel and more effective ways to mitigate heat stress and improve worker safety.

The Safety Innovation Challenge: Heat Stress, organized by TechConnect in partnership with National Safety Council (NSC) aimed to identify groundbreaking technologies and strategies to protect workers from heat-related risks. The challenge sought solutions spanning wearable sensors, predictive analytics, cooling materials, and physiological monitoring systems.

TechConnect invited technology providers, startups, and research institutions to submit their solutions. Selected finalists had the opportunity to engage with the client, present their technologies at a national forum, and explore pathways for deployment.

THE OPPORTUNITY:

Organizations managing high-heat environments recognize the limitations of current heat stress mitigation methods. Many solutions are either inadequate, cumbersome, or require extensive infrastructure changes. The Safety Innovation Challenge: Heat Stress provided an avenue to surface cutting-edge innovations that may not yet be widely known or applied within industrial, military, and first responder settings.

By utilizing an open innovation approach, TechConnect aimed to attract diverse technologies from adjacent industries, such as biomedical engineering, materials science, and data analytics. The challenge sought to uncover adaptable solutions that could enhance worker safety in extreme heat conditions.

THE SOLUTION:

TechConnect structured the Safety Innovation Challenge: Heat Stress to maximize participation from a broad spectrum of innovators while aligning with industry needs. The challenge emphasized the urgency of heat stress mitigation and encouraged responses from companies with expertise in climate adaptation, physiological monitoring, and thermal regulation.

TechConnect's extensive network and outreach strategy ensured the participation of both emerging startups and established organizations. The challenge was designed to surface both commercial-ready solutions and promising early-stage concepts with high potential for development.

TechConnect a division of ATI ADVANCED TECHNOLOGY INTERNATIONAL

SAFETY INNOVATION CHALLENGE: HEAT STRESS

JULY 2024 – FEBRUARY 2025

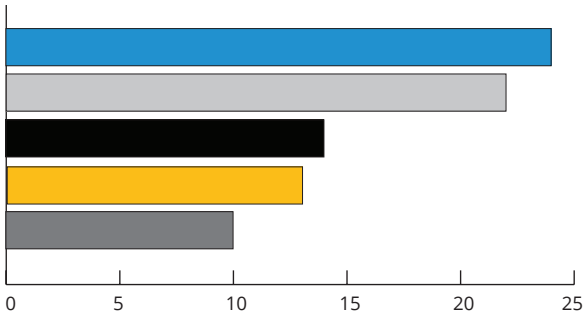
THE OUTCOMES:

The challenge successfully attracted a diverse range of technology solutions from multiple sectors. Submissions included:

- **Wearable Heat Stress Monitors –** Devices capable of tracking real-time body temperature, hydration levels, and environmental conditions.
- **AI-Driven Predictive Models –** Systems that analyze weather data, work conditions, and physiological responses to anticipate heat stress risks before symptoms arise.
- **Cooling and Hydration Innovations –** Advanced materials, clothing, and hydration solutions engineered to regulate body temperature more effectively.

Total solutions: **83**

TECHNICAL MATURITY:



- Prototype (24)
- Commercial Product (22)
- Proven Manufacturability (14)
- Ready to Market (13)
- Concept (10)

COUNTRY:

United States (64)
United Kingdom (4)
Switzerland (2)
Japan (2)
India (2)
Brazil (2)
Australia (2)
Singapore (1)
Israel (1)
Germany (1)
Canada (1)
Argentina (1)

TechConnect a division of ATI

SAFETY INNOVATION CHALLENGE: HEAT STRESS

JULY 2024 – FEBRUARY 2025

THE PROGRAM:

Challenge Design

TechConnect developed all public-facing challenge content in collaboration with NSC. The challenge framework was designed to emphasize the importance of worker safety, technological feasibility, and scalability.

Submissions & Evaluations

TechConnect leveraged its global ecosystem to source high-potential solutions through direct outreach, industry networks, and online engagement. A structured evaluation process, leveraging NSC experts, assessed submissions based on effectiveness, adaptability, and scalability.

Finalist Presentations

Top-ranked innovators were invited to present at the the Future of EHS Conference in St. Louis, MO in February 2025, providing them with exposure to industry decision-makers and potential partners. This platform facilitated further discussions on piloting and implementing the most promising solutions.

TIMELINE:

Challenge launch: **October 1, 2024**

Informational webinar: **October 16, 2024**

Submission deadline: **November 1, 2024**

Notification of finalists: **December 2024**

Pitch event at Future of EHS Conference: **February 18, 2025**

RESULTS AND BENEFITS:

The Safety Innovation Challenge: Heat Stress successfully identified multiple high-impact solutions with the potential to significantly improve worker safety in high-temperature environments. The challenge:

- Expanded awareness of new heat stress mitigation technologies.
- Provided direct engagement opportunities between innovators and industry end-users.
- Enabled the selection of a winning technology for potential field testing and deployment.
- Strengthened industry collaborations on worker safety and extreme heat adaptation strategies.

TechConnect a division of ATI

SAFETY INNOVATION CHALLENGE: HEAT STRESS

JULY 2024 – FEBRUARY 2025

NEXT STEPS:

NSC is exploring pilot programs to test selected solutions in real-world environments. The challenge outcomes will inform future investments and policy recommendations for heat stress mitigation across various industries.

For more information, visit heatstress.techconnect.org.

TESTIMONIAL

TechConnect was an invaluable partner in the Safety Innovation Challenge. Their team's dedication and expertise helped us engage 83 companies, providing a strong pool of applicants. They meticulously evaluated each submission, creating a detailed report and scoring matrix that streamlined our selection process. Beyond that, they were instrumental in ensuring the challenge's success—giving the six chosen vendors a platform to showcase their technology and emphasizing the impact of the pilot grant program. Working with TechConnect was a seamless and rewarding experience.

- Riley Schoenborn
Program Manager, National Safety Council

TechConnect a division of ATI