DIGITAL MEDIA SPOTLIGHT

AFRL Inspire 2022: Around the World in 80 Steps

Maj. Michael Nayak, a planetary scientist formerly with AFRL's Directed Energy Directorate, discusses his journey to the South Pole and reveals the lessons he learned about life in isolation. AFRL Inspire is the lab's TEDx-style event. **Watch Here**

Basic Research Art of Science Showcase

2022 marked 70 years of basic research innovation supported by AFRL's Air Force Office of Scientific Research or AFOSR. Check out a virtual art gallery celebrating the basic research inspired innovations past, present and future that continue to support the U.S. Air Force and Space Force. **Learn More**

AFRL Lab Life - Episode 70: Collaborate to innovate

Dr. Dan Berrigan and Dr. Lauren Ferguson join the podcast to discuss digital transformation, AFRL's Google pilot initiative and the mantra "collaborate to innovate." **Listen Here**

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TOP NEWS STORY

AFRL REVEALS ADVANCED MUNITIONS TECHNOLOGY COMPLEX

EGLIN AFB, FL — AFRL hosted a ribbon-cutting ceremony Dec. 15, 2022, for the lab's new Advanced Munitions Technology Complex, or AMTC, at Eglin Air Force Base, Florida. AFRL constructed the AMTC, a state-of-the-art complex, to ensure war-winning capabilities and support technologies today and into the future. In the end, the cost was approximately $165 million, not including the equipment that will later fill the buildings. The project provides unparalleled test capability and modernizes the 1960s high explosive infrastructure. AFRL designed the critical National Defense facility as a modern, collaborative research space that allows scientists and engineers to experiment with new explosive materials and integrate them into complex munition designs more efficiently. "[With this facility], researchers will now be able to conduct additional experiments," said Segrid Harris, deputy director, Munitions Directorate, AFRL. "We'll be able to enhance our science and our technology even further. Things that we did not have the capacity to do before; we will have the capacity to do now. And capacity is the key. Capacity allows you to go further, capacity allows you to accelerate, capacity allows you to change." **Full Story** | **Watch Segrid Harris' remarks**

MEDIA ARTICLES

Eglin Air Force Base tests out new security robotic dog 'GUS'
ABC News
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Around the Air Force: Raider unveiled, Airmen fly HEXA, turning flowers into tires
Air Force TV
Read Full Article Here

Experts propose XQ-58 Valkyrie as 'best option' to swarm China before attacking with F-22, F-35 jets
EurAsian Times
Read Full Article Here

Northrop to modernize hypersonics manufacturing infrastructure with Air Force funds
ExecutiveBiz
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AFRL tests synthetic, carbon-recycling jet fuel
Inside Defense
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PEOPLE OF AFRL

Dr. Harry Pierson, AFRL senior general engineer and technical adviser, accepted the Defense Manufacturing Technology Achievement Award at the 2022 Defense Manufacturing Conference in Tampa, Florida, Dec. 6, 2022. The award celebrated a cold spray robot developed by AFRL and the Advanced Robotics for Manufacturing Institute. The new system, used to apply thermal coatings to refurbish worn aerospace parts, requires a human to look through an augmented reality-enabled Microsoft Hololens and indicate where a coating should be applied to a workpiece. The robot will deliver significant cost savings, improve weapon system readiness, decrease maintenance downtime and improve material application accuracy. **Read More**

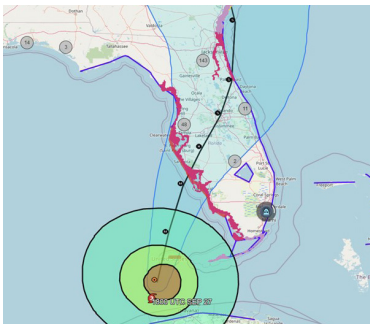
AFRL LAUNCHES WEARABLE BIOMOLECULAR SENSORS PROGRAM FOR DOD

WPAFB, OH – AFRL has partnered with the Nano Bio-Materials Consortium, or NBMC, and Case Western Reserve University to create wearable sensors that measure biomarkers in Airmen and Guardians. The term "biomarker" refers to any physiological or molecular information that can be tracked for human health. The collaboration, called Biomolecular Structure and Integration for Sensors, or BioSIS, connects AFRL's Materials and Manufacturing Directorate, the 711th Human Performance Wing, the NBMC and Case Western Reserve University. In 2022, the body of research accumulated by BioSIS since 2018 led to the founding of private spinoff company Sensate Biosystems. The NBMC provided funding to Case Western Reserve University to license the existing AFRL patent, assemble its own team and kickstart the company to develop wearable molecular sensor research for dual use in the commercial market. This technology is key to

tracking well-being during critical missions, sensing when Airmen and Guardians become overly fatigued, stressed or hyperstimulated, according to Dr. Lawrence Drummy, senior materials engineer in the Materials and Manufacturing Directorate and BioSIS technical lead. **Full Story**

AFRL GUARDIAN SOFTWARE TEAM REPORTS BUSY YEAR

ROME, N.Y. – When disaster strikes in the world, chaos can ensue, but AFRL, scientists are working on software applications that provide clear situational awareness to help response teams bring calm to the chaos. Guardian is one software application customized by AFRL's Information Directorate that facilitates disaster response and battlefield efforts. Its primary function is to provide critical updates to command and control regarding deployed assets. "Command and control are about decision superiority, and this software can improve security and protection during times of crisis or response," said Col. Fred Garcia II, the director of AFRL's Information Directorate. "It provides crucial information to the command team, enabling them to deploy resources and have better situational awareness of their teams during an operation." Guardian demonstrated its effectiveness during the 2022 California wildfires, providing complete situational awareness of various assets on



the ground. As Hurricane Ian approached southeast U.S. in September 2022, an AFRL team saw a vital opportunity to put Guardian to the test and integrate Guardian software with disaster response efforts. Working with TrailBlazer Innovations and the tracking and situational awareness team for U.S. Northern Command and National Guard Bureau units from multiple states, AFRL provided Guardian software to assist in communication efforts. **Full Story**