### AFRL Inspire: Hacking in the Name of Space Security

Delia Jesaitis and Steve Colenzo discuss how they helped launch the Hack-A-Sat competition by bridging the gap between the U.S. government and the hacker community. The unlikely partnership ultimately helped strengthen satellite security by identifying vulnerabilities that could harm our "collective, mobile way of life." **Watch Here** | **Read More**

Oracle Satellite - Cislunar Space
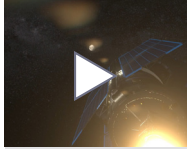
AFRL's Oracle spacecraft will collect observations of resident space objects in the region near the moon and potentially beyond. Oracle will deliver advanced space capabilities in support of the U.S. Space Force's space situational awareness mission. **Watch Here**

AFRL Lab Life - Episode 71: Launching into 2023
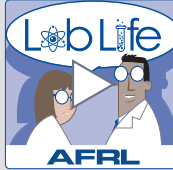
AFRL Commander Maj. Gen. Pringle joined the podcast to discuss her vision for the coming year and to reflect on 2022 successes. Pringle provided an update on the priorities covered in her Commander's Intent including "One Lab, Two Services." **Listen Here** | **Read More**

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NEW AFRL MISSION AREA LEADS INTEGRATE, EXECUTE SPACE S&T NEEDS

WPAFB, OH — AFRL Commander Maj. Gen. Heather Pringle announced new space mission area leads, or MAL, in December 2022. With the growing national space community, she said, adding space MALs will help support the range of customers in the expanding ecosystem. "The team will build a critical communication path with the Space Force, and I am certain they will add considerable value," Pringle said. In ensuring AFRL's support of the U.S. Space Force, Pringle began "One Lab, Two Services" as one of her top priorities. Along with naming new space MALs, Pringle also established a key role: deputy technology executive officer, or TEO, for Space Science and Technology, or S&T. Dr. Andrew "Andy" Williams, deputy TEO for S&T, is responsible for integrating and executing Space S&T across AFRL and the community to ensure the appropriate prioritization of Space S&T needs for a balanced technology portfolio to support the Space Force. The deputy TEO role within AFRL was established with the standup of the Space Force. "We wanted to make sure there was a leadership role within AFRL focused on capturing the needs and the requirements from the Space Force, and to ensure their needs and equities were being addressed," Williams said. **Full Story**

Former longtime AFRL Senior Scientist **Dr. Nicholas "Nick" J. Pagano** was inducted into the Engineering and Science Hall of Fame at the Dayton Engineers Club in Dayton, Ohio, Nov. 9, 2022. The hall honors engineers and scientists whose achievements significantly enhance quality of life for humanity. Pagano pioneered numerous contributions in the field of composite materials for over 40 years. According to his nomination package, Pagano was the first to recognize the importance of interlaminar phenomena in high-performance composite materials. His discovery of the "stacking sequence phenomenon" led to new practices to reduce delamination, or failure between composite layers, ultimately leading to the creation of material that is stronger and lighter than the aluminum traditionally used for aircraft production. **Read More**

LATEST MILESTONE BRINGS NTS-3 VANGUARD CLOSER TO 2023 LAUNCH

Kirtland AFB, N.M. – The Department of the Air Force's Navigation Technology Satellite-3, or NTS-3, Vanguard program has reached another major milestone in preparation for the satellite's launch in late 2023. Industry partner L3Harris Technologies, the spacecraft prime contractor, recently delivered the NTS-3 space vehicle to an Air Force Research Laboratory, or AFRL, integration and test facility at Kirtland Air Force Base, New Mexico. The satellite integrates an agile positioning, navigation and timing, or PNT, payload to the Northrop Grumman ESPAStar bus, to provide a space platform for AFRL and partner organization experiments and integrated capability demonstrations. In 2019, the U.S. Department of the Air Force designated NTS-3 as one of the first three Vanguard programs to deliver innovative, game-changing capabilities to the warfighter at an accelerated pace. NTS-3, which is managed by the AFRL Transformational Capabilities Office and has program partners in both the U.S. Space Force and U.S. Air Force, will push the boundary of PNT technology to pave the way for a more flexible, robust and resilient architecture for satellite navigation. **Full Story**

US, UK PARTNERSHIP DEMONSTRATES ARTIFICIAL INTELLIGENCE TECHNOLOGY

ROME, N.Y. – For the first time, the U.S.'s AFRL in partnership with the U.K.'s Defence Science and Technology Laboratory, or Dstl, demonstrated state-of-the-art artificial intelligence, or AI, technology at two major back-to-back military exercises. In November 2022, a team of 30 AI and autonomy experts from the U.K. and U.S. deployed as a joint taskforce to the Project Convergence 22, or PC22, experiment at the U.S. National Training Centre at Fort Irwin, California. In December, a subset of the taskforce reconvened at the British Army's Salisbury Plain Training Area in Wiltshire, England, taking lessons learned from PC22 and rapidly applying AI into a new operational environment as part of the Dstl HYDRA project's Integrated Concept Evaluation, or ICE. Both exercises addressed the challenge of making AI and autonomy agile, adaptable, trustworthy and accessible to warfighters, albeit under different U.S. and U.K. military use cases. The goal was to deliver mission specific AI that can be deployed to meet the ever-changing mission conditions and needs of warfighters. **Full Story**