

STAKEHOLDER REVIEW

2023/2024



AUIX

AIR UNIVERSITY INNOVATION ACCELERATOR

Taking Ideas
"One Step Beyond."

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LETTER FROM THE DIRECTOR



**Dr. J. William "BILL" DeMarco,
Director of Air University Innovation Accelerator**

Dear Members of Air University, the Local Community and Esteemed Stakeholders,

Air University Innovation Accelerator (AUIX) is an initiative that embodies the unwavering commitment to fostering a culture of innovation and strategic problem-solving within Air University (AU), and by extension, the Department of the Air Force (DAF). AUIX stands at the forefront of transforming student and faculty ideas from mere concepts on paper or presentations into tangible prototypes addressing real-world challenges. AUIX is not simply a staff office; we connect to a dynamic ecosystem dedicated to advancing the nation's strategic imperatives through the power of education, communication, and engagement.

The AUIX mission is clear: to Accelerate Problem-Solving. We achieve this by harnessing the immense potential of our community, encouraging the free flow of ideas, and providing the necessary resources and support to bring these ideas to fruition. AUIX serves as a pivotal platform where the theoretical meets the practical, where innovative concepts are rigorously tested and refined, and where U.S. Air Force and Space Force leaders are empowered to think critically and creatively.

In alignment with the Chief of Staff of the Air Force's (CSAF) vision, we are committed to "harnessing the innovative talent and spirit that permeates every corner of our Air Force." It is AUIX's goal to channel this incredible energy toward addressing the most pressing challenges facing our DAF today. By doing so, we not only enhance our operational capabilities but also contribute to the broader security and prosperity of the U.S. and partner nations.

The vision for AUIX is ambitious yet attainable: to be a catalyst for realizing ideas through conceptual experimentation. We are dedicated to pushing the boundaries of what is possible, to exploring uncharted territories, and inspiring a culture of continuous innovation and improvement. By fostering an environment that encourages risk-taking and embraces inevitable setbacks as stepping stone to success, AUIX aims to unlock the full potential of our community.

To achieve these lofty goals, we understand the importance of collaboration and partnership. AUIX seeks to connect and empower the innovation ecosystem, bringing together diverse minds from within the U.S. Air Force and Space Force and beyond. By leveraging the strengths of our partners in academia, industry, and government, AUIX can amplify our impact and drive forward the advancements that will secure our nation's future.

In conclusion, the Air University Innovation Accelerator is more than just a program or an initiative. It is a movement—a collective endeavor to elevate the standard of excellence within the U.S. Air Force and Space Force and to ensure that we remain at the cutting edge of technological and strategic innovation. AUIX invites each of you to join us on this exciting journey, to contribute your ideas, your energy, and your passion, as we work together to shape the future of our DAF and our nation.

THE AUIX CONCEPT

The Air University Innovation Accelerator (AUIX) stood up on 5 April 2021 with the mission to connect Air University (AU) students, faculty, and staff with partners in the Department of Defense (DoD), academia and industry, identifying opportunities for collaboration and for developing new capabilities, strategies and technologies to increase military effectiveness. AUIX's strategic alignment comes down from the National Security Strategy all the way down to the AU Strategic Action Plan. This supports the AU Commander's strategic priority to increase AU's scholarly contributions to national security, strategic competition, and the profession of arms by taking ideas "one step beyond."

THE AUIX VISION:

A catalyst for realizing ideas through conceptual experimentation.

THE AUIX MISSION:

AUIX accelerates problem solving through Education, Communication, and Engagement...taking ideas one step beyond.

AUIX leverages the insight that AU student, faculty and staff teams generate innovative ideas that have immediate potential to help Department of Air Force (DAF) and joint warfighters; AUIX connects teams with AFWERX, AF Futures, Air Force Research Laboratory (AFRL), Defense Innovation Unit (DIU) and others who can take projects one step beyond the idea stage. AUIX assists students, faculty, staff, partners, and others in AU networks to refine their new ideas and concepts so they can become game-changing advancements with immediate warfighting utility. AUIX explores and influences levers of funding and contract support, partnerships, networks, and manpower to turn innovative ideas into prototypes and products. We have three lines of effort:

1. **Education:** Instruct courses and lectures throughout the 11 schools of AU and beyond. We have taught at Air Command and Staff College, survey level courses, and lectures at many different universities. Other workshops we have helped organize include with the Eaker Center on Developing Airmen with Games (DAWG), 7th Bomb Wing on Design Warfare, AU Advanced Research, and Workshop on Teaching Space (SWOTS)
2. **Communication:** Support and create knowledge in technical, strategic, and social innovation along with associated prototyping.
3. **Engagement:** Incubate innovation ventures, network, and support innovators in collaborative spaces. We have partnered with AFWERX on international projects with the Republic of Singapore's Air Force, the Royal Air Force, and NATO's Innovation Hub. AUIX industry partners include Northrop Grumman, Cypress Resources, Google, and Unity. AUIX academic partners include the University of Michigan, Auburn University, University of Cambridge, Massachusetts Institute of Technology, Stanford University, and the University of Southern California.

THE EAGLE INSTITUTE

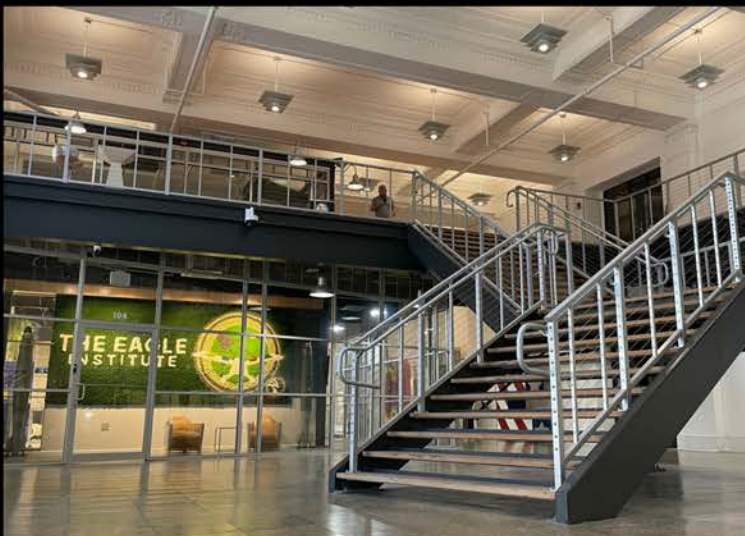


The Eagle Institute serves as AUIX's home, providing working, collaborative, and meeting spaces to meet mission needs. Housed in the historic downtown Kress building, it also provides linkage, visibility, and interaction with the local Montgomery community. AUIX leverages The Eagle as a platform that bridges an existing divide between public and private sectors by fostering collaboration and networking among the DoD, industry, academia, and the community, for developing national security initiatives and innovation.

The supporting team organizes events like the Leadership Education Development Experience (LEDx), featuring keynote speakers and workshops in order to cultivate ideas within the innovation ecosystem. The Eagle incorporates multiple spaces equipped with state-of-the-art technology that can be reserved using an open access and transparent scheduling software system.

The Eagle includes a common space, freely accessible to the public, allowing for spontaneous collaboration opportunities and walk-ins outside the gates of the base and has five primary areas, each with a specific function:

- **Praxeum:** A "classroom of the future" designed to host classes and employ innovative instructional techniques and technologies for the academic community.
- **Chimaera:** Wargaming area capable of hosting smaller-scale wargames and strategy sessions.
- **Echo Lab:** A makerspace providing facilities for 3D printers and fabrication equipment useful for ideation and prototyping as well as hosting STEM workshops.
- **Pegasus & Raptor:** Pitch-room and classrooms on the second floor, serving as spaces for idea presentations, innovation showcases, and instructional activities.
- **Viper:** A community room for open collaboration and spur-of-the-moment engagement.



NETWORK MAP

The AUIX Network Map offers just an overview of the intricate web of stakeholders that collaboratively shape and contribute to the innovation ecosystem.

- **Air University (Internal):** AUIX engages with faculty, students, and administrative units within AU, fostering an environment where ideas seamlessly traverse disciplinary boundaries.
- **Academia (External):** Connections are established with renowned institutions, nurturing collaborative partnerships that bring cutting-edge research and academic expertise into the innovation space.
- **Industry (External):** A myriad of stakeholders contribute valuable industry perspectives, resources, and mentorship, providing a bridge between academic concepts and real-world applications.
- **Military and Government (External):** These entities reinforce the commitment to aligning innovative endeavors with national security imperatives.

Air University (Internal)



Academia (External)



Industry (External)

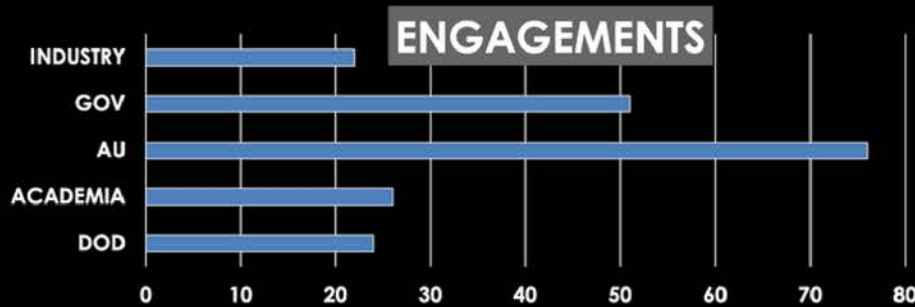


Military & Government (External)



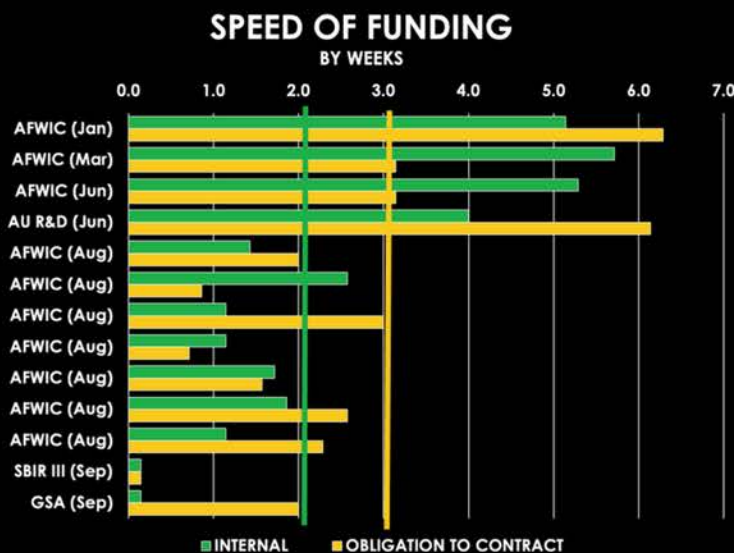
2023 QUARTER 4 REPORT

The AUiX quarterly report captures the metrics that represent mission execution alongside all stakeholders of the organization.



Engagements: The number of meetings and collaboration with entities from each sector.

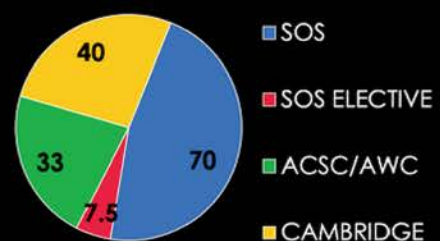
- Industry: companies offering solutions that can be tested in the innovation ecosystem
- Government: local/state/federal agencies
- Air University: specific to the 11 academic schools/centers of Maxwell AFB
- Academia: K-20 educational institutions
- DoD: any other DoD entity outside of AU



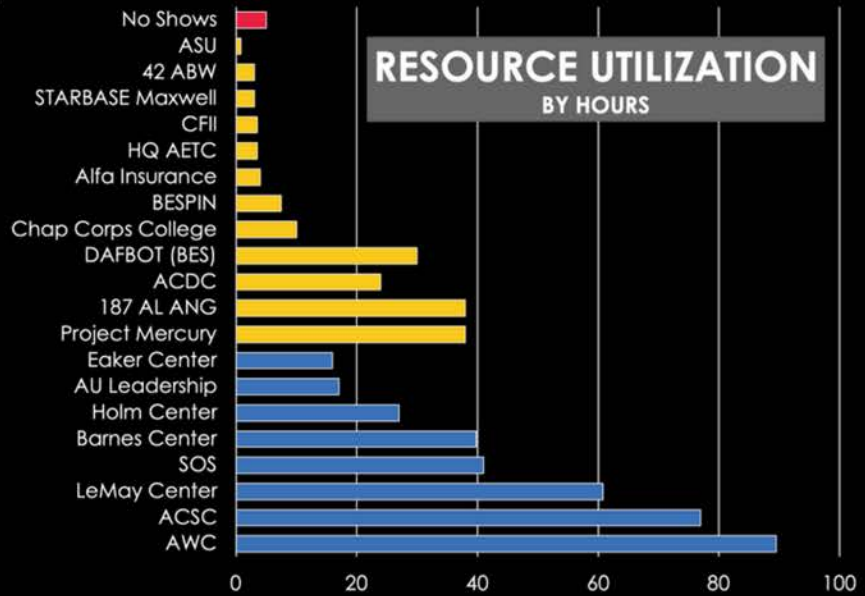
Speed of Funding: The time it takes to execute a transaction from a variety of sources with the goal benchmarks. Green represents AU-internal processes (things we can control), and yellow represents AU-external processes (things we have limited control over). The vertical line for both colors is the goal benchmark for that category.

Education Hours: The amount and distribution of hours AUiX contributes to education in the academic community. Examples include Squadron Officer School (SOS) and their electives, Air Command and Staff College (ACSC), Air War College (AWC), and University of Cambridge workshops.

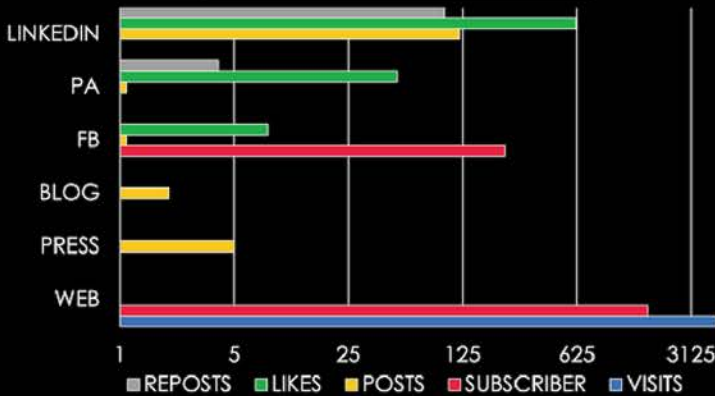
EDUCATION HOURS



Resource Utilization: the diversity of groups and amount of time reserved at The Eagle Institute. Blue represents the AU Centers, such as the Eaker Center and Holm Center. Yellow represents other groups, such as Air Education and Training Command (AETC) Headquarters and Project Mercury.



MEDIA OUTREACH



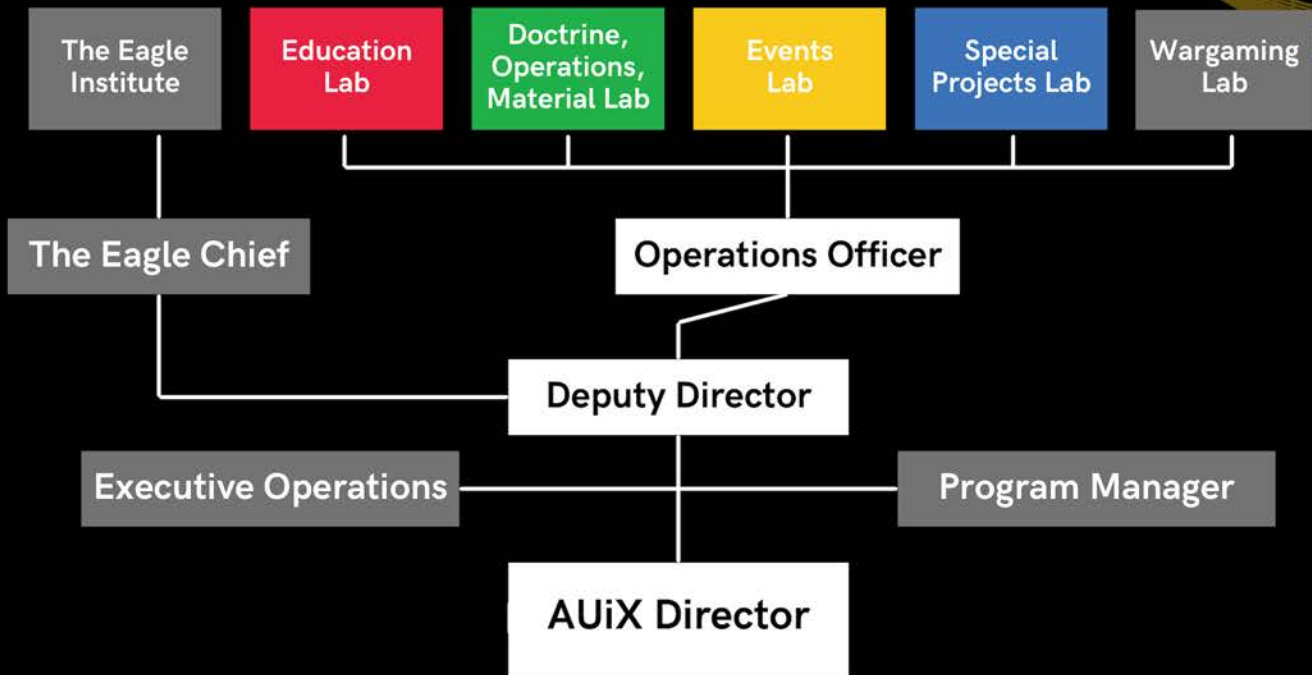
Media Outreach: The virtual traffic on various platforms where AUIX shares posts about events, research, and AUIX stories. This includes LinkedIn, U.S. Air Force Public Affairs, FaceBook, the AUIX Blog, local news press, and the AUIX website.

Status on AUIX Projects: The number of months each project has spent in the following phases:

- PRE-ALPHA: Ideation and conceptualization phase, where core functionalities and features are being brainstormed, drafted, and initially designed.
- ALPHA: Partnerships with stakeholders are developed, funding is sourced, and initial model development begins.
- BETA: Prototype, signifies a shift from internal development and testing to external testing and feedback collection.
- TRANSITION: AUIX searches for an external champion and stakeholder who is interested in taking the project forward into an operational or production stage.



LABS OVERVIEW



AUIX is divided into five sub-organizations that serve as dynamic hubs of innovation, each with a unique focus and mission to drive transformative advancements:

- **Eagle Institute:** This is the central hub and workspace for AUIX. Comprising Praxeum, Echo Lab, and Chimaera classrooms, it serves as a collaborative space fostering research, development, and advanced learning. Praxeum revolutionizes education, Echo Lab conducts research for evidence-based decision-making, and Chimaera focuses on emerging technologies.
- **Education Lab:** Dedicated to revolutionizing education and curriculum development through technical innovation, this lab has a mission to develop, deliver, and maintain state-of-the-art classroom environments. It also focuses on creating innovative educational technologies, strategies, and practices to transform the learning experience.
- **Doctrine, Operations, Material Lab:** With a mission to deliver innovative solutions to the warfighter, the lab strategically analyzes National Security Strategy objectives and prototypes solutions for doctrine, operations, training, material, and leadership initiatives.
- **Events Lab:** This lab is instrumental for engaging audiences and communities through innovative events and outreach activities. Goals include creating innovative event concepts, increasing audience engagement, expanding outreach to new communities, establishing partnerships, and enhancing sustainability.
- **Special Projects Lab:** This lab focuses on cultivating relationships across the DoD, industry, community, and academia. By developing outreach projects, programs, and activities, the lab aims to diversify, propagate, and enhance the reach of AUIX innovation programs.

EDUCATION LAB

Guided by a vision to reshape the learning landscape, the Education Lab's mission is to develop, deliver, and maintain a state-of-the-art classroom environment, fully equipped to transform the learning experience. Objectives include:

- Field and maintain a cutting-edge classroom environment.
- Develop innovative solutions to educational challenges and 21st century needs.
- Prototype and test new educational approaches or technologies.
- Collaborate with teachers, students, administrators, and other stakeholders.
- Provide innovative professional development for educators.

The Education Lab conducts research on various aspects of education, learning theories, pedagogical strategies, student engagement, education technologies, and curriculum development. The Lab also prototypes through pilot studies and controlled experimentation in the classroom. Collaboration efforts aim to understand educators' needs, evaluate the impact of innovations with various research methods, and share the latest research findings with strategic partners, incorporating feedback into the lab's work.

The Education Lab also advocates for changes to educational policy, improving teaching and learning at the enterprise level. By fostering innovative methods of teaching and learning, the lab will inspire critical thinkers to take ideas of merit "one step beyond." The Lab conducts business within the philosophical ecosystem of the Praxeum classroom. Praxeum works closely with Echo Lab and Chimaera to provide a well-equipped, flexible workspace designed to accommodate various learning preferences and environmental needs. This includes:

- Multiple interactive TV panels with fully integrated presentation/mirroring.
- Complete videoconferencing providing seamless live and virtual experiences.
- Virtual Reality headsets for simulations and exploration.
- 3D printers, coding, Science, Technology, Engineering, and Math (STEM) kits, drones, Artificial Intelligence (AI) capabilities, and much more.



DOCTRINE, OPERATIONS, MATERIEL LAB

The Doctrine, Operations, Materiel (DOM) Lab at AUIX is the driving force for innovation across critical domains, including Doctrine, Operations, Training, Materiel, and Leadership. Positioned as the primary catalyst for advancing transformative initiatives, DOM's mission is to deliver cutting-edge solutions seamlessly integrated into military operations, enhancing capabilities for mission success.

Strategically analyzing National Security Strategy objectives, we collaborate closely with the warfighter, serving as a nexus connecting valuable ideas with key stakeholders in the DoD, industry, academia, and the broader community. The Lab diligently examines warfighter needs, capturing ideas of merit through rigorous investigation and research. The Lab then transforms these ideas into tangible prototypes and operates in sync with operational needs. We actively engage warfighters for real-time feedback on materiel requirements, remaining vigilant to policy changes that may impact current methods and systems. Objectives include:

- **Doctrine:** Develop new strategies or principles that guide the use of innovations. As new doctrine emerges, find innovative ways to publicize and incorporate the doctrine into future operations. A benchmark could be the number of new doctrines developed or updated.
- **Operations:** Explore innovative ideas to enhance military operations and readiness. Examine emerging biotech, digital technologies, automation, equipment, and methodologies for possible military applications. Possible benchmarks could include number of ideas deemed plausible or in need of further research.
- **Materiel:** Acquire new technologies or equipment to support innovation in doctrine and operations. Benchmarks could include successful procurement and deployment of such resources.



OUTREACH LAB

The Events and Outreach Innovation Lab is dedicated to connecting with innovation partners and fostering engagement through innovative events and outreach activities. With a visionary mission to develop and implement cutting-edge methods for engaging audiences and communities, the lab strategically positions itself as a key player in AU's innovation ecosystem.

The strategy of the Events Lab revolves around planning and executing high-value forums, establishing connections with leaders and stakeholders in the DoD, industry, community, and academia. The lab's objectives include promoting AU innovation, connecting with innovation partners, and orchestrating events with cutting-edge content.

The Events Lab is responsible for developing, promoting, supporting, and marketing AUIX events, projects, and experiences. The lab develops marketing strategies and campaigns across multiple platforms including social media, press releases, and the AUIX website to promote AU programs, events, and initiatives. The lab ensures event coordination between AU Public Affairs and public media to ensure alignment with the AU Commander's intent. The Events Lab also analyzes and reports on the effectiveness of marketing campaigns, providing insights and recommendations for future improvements. The lab also remains involved in AUIX projects, developing marketing programs, and evaluating new tools and technologies to improve the effectiveness of the organization's work. Finally, the Events Lab provides guidance and mentorship to AUIX Interns, developing skills and expertise.

Outreach Lab objectives include:

- Promote AU innovation.
- Connect AU with innovation partners.
- Plan and execute events with cutting-edge content.



SPECIAL PROJECTS LAB

The Special Projects Lab emerges as the pivotal force connecting AU with key innovation partners, embodying a vision to enhance collaborative initiatives. With a mission to cultivate and sustain relationships across the DOD, industry, community, and academia, the lab is dedicated to diversifying, propagating, and amplifying the impact of AUIX innovation programs. Its strategic approach involves developing targeted outreach projects, programs, and activities to effectively communicate key messages to distinct audiences.

The Special Projects Lab goals encompass the implementation of comprehensive education and outreach programs, the establishment and maintenance of robust relationships with key stakeholders, continuous evolution of AUIX outreach initiatives, and the identification of opportunities for expanding the AUIX mission. Positioned at the forefront of engagement efforts, the Special Projects Lab takes a leadership role in setting and executing the vision, ensuring that AU's strategic goals are met through diverse and impactful education and outreach initiatives.

Special Projects Lab objectives include:

- Develop and implement education and outreach programs.
- Build and maintain relationships with key stakeholders.
- Evolve AUIX outreach projects, programs, and activities.
- Identify opportunities for expanding the AUIX mission.



PROJECTS OVERVIEW

AUIX stands as a driving force behind a diverse array of projects spanning various domains aligning with the mission of all AUIX Labs, showcasing AU's unwavering commitment to addressing contemporary challenges and propelling advancements across education, community engagement, military operations, and technology integration.

Originating from student ideas cultivated through Air University courses or workshops, these projects exemplify the synergy between academic exploration and practical innovation. Some highlighted projects include:

- **HULK:** HULK focuses on the development of a Heavy Utility Lifting Kit for lifting and transporting cargo on U.S. Air Force aircraft.
- **KRAYT:** Project KRAYT is a "smart" shipping container that aims to improve the efficiency and effectiveness of ACE through innovative mobile C2 technologies.
- **LEDx:** LEDx is a social innovation conference that serves as a platform for addressing current problems, connecting AU with community leaders, and engaging in discussions that contribute to innovation on a broader scale.
- **Praxeum:** Praxeum stands as the Classroom of the Future within AU's innovative campus plan. The classroom incorporates cutting-edge technologies, including auto-tracking cameras, virtual and augmented reality capabilities, and high-definition audio, to create an environment that supports new learning modalities and enhances the educational experience.
- **Mercury:** Project Mercury, in partnership with Michigan's Ross Business School and the Eaker Center, is a PhD-led program dedicated to teaching innovation methodologies to the DAF.
- **REFUEL:** The REFUEL app leverages artificial intelligence, analysis, and analytics to promote Total Force Fitness, resilience, and readiness of service members and their families. REFUEL provides personalized feedback, digital coaching, and holistic support across various domains.
- **ROTC Internship:** The ROTC Internship initiative focuses on providing AUIX internships for ROTC detachments at both traditional and historically black colleges and universities (HBCUs).
- **PELLA:** Project PELLA is a community outreach initiative providing aviation experiences, such as a free introductory flights, STEAM fairs, and private pilot license training, to local students in the Alabama River Region.



PROJECT HULK

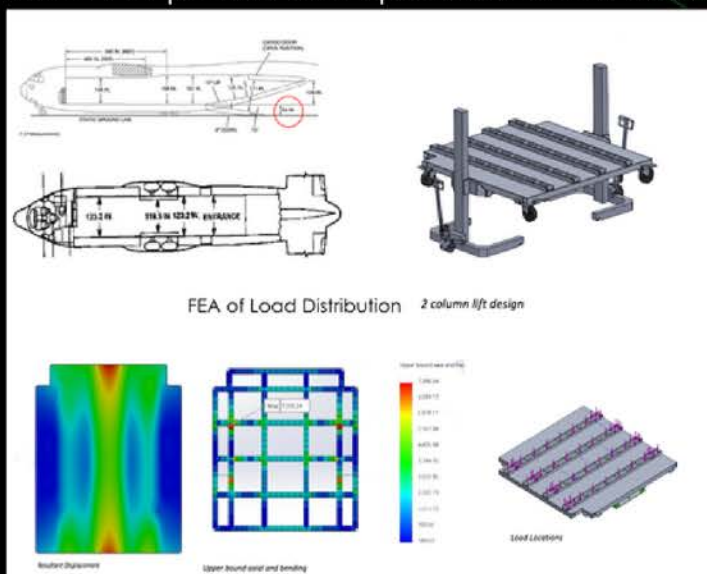


AUIX, in collaboration with The Samuel Ginn College of Engineering at Auburn University, proudly sponsors an innovative Agile Combat Employment (ACE) technology maturation rapid prototyping project called the Heavy Utility Lift Kit (HULK).

As the U.S. military undergoes a strategic shift in training and combat methodologies with ACE—an adaptive basing scheme of maneuver—the need for rapid deployment and maneuverability is paramount. The ACE approach requires swift adaptability and relies heavily on the efficient use of aircraft cargo loading equipment and capacity. However, persistent challenges persist with the size and sustainability of the current Material Handling Equipment (MHE), highlighted by research from Capt. “Shake” Shekhawat (SOS, 2021). The primary concern is with its substantial footprint, occupying excessive space on transport aircraft, and its limited sustainability due to fuel consumption, power requirements, and spare parts dependence. The absence of the appropriate MHE jeopardizes the ability to efficiently on/off-load cargo, particularly payloads of up to 10,000 pounds per pallet, at adaptive bases.

In response, Auburn students have developed a more efficient way to load and unload cargo from the C-130 and C-17. The device can be stored on the ramp of the aircraft during transit, boasts a compact logistical footprint, moves cargo efficiently, and is self-sustaining (i.e., powered by and powers available equipment).

HULK comprises a platform and two battery-powered lifting columns, showcasing the capability to lift up to 12,000 pounds on a 15-degree incline (aircraft ramp). Rigorous operational and fit tests have been successfully completed. The prototype has now been transitioned to Dannelly Field for integration into live demonstrations and exercises with the 187th Fighter Wing. Future HULK prototypes aim to load cargo aircraft without a ramp (i.e. KC-135, KC-46, etc.) and will incorporate with KRAYT to provide a comprehensive ACE solution.



PROJECT KRAYT



Project KRAYT stands at the forefront of mission-centric solutions, dedicated to advancing the maturation and risk reduction efforts of Agile Combat Employment (ACE) technology. The growing intel, surveillance, and reconnaissance (ISR) plus precision strike capabilities of peer adversaries requires a strategic shift towards mobile operations; thus, the U.S. Air Force aims to develop a prototype with similar loading characteristics as the ISU-90 shipping container, which is renowned for its modular capabilities.

In collaboration with Western Shelter Systems and Huntington Ingalls Industries, AUIX has sponsored KRAYT—an easily deployable, mobile, and self-sustaining operational support solution and “smart” shipping container characterized by a remarkably small logistical footprint. Designed for seamless integration into ACE operations, this cutting-edge system requires minimal training and dedicated resources, enhancing its adaptability and usability on the field. It includes on-the-go potable water production, power generation, base and perimeter security, as well as robust command and control (C2) capabilities. Beyond its operational prowess, KRAYT facilitates mission tasking for deployed forces in remote and austere locations while providing real-time status reporting to command and control nodes. Furthermore, it serves as a vital intelligence hub, receiving the latest threat and targeting information.

KRAYT was delivered to Dannelly Field, AL on September 9, 2023. The prototype is currently in a dynamic state with the 187th Fighter Wing and the LeMay Center and is undergoing daily training and ongoing testing to determine viability in various exercises. Future prototypes will include incorporation with HULK to provide a comprehensive ACE solution.



PROJECT LEDX



The Leadership Education Development eXperience (LEDx) is an initiative aimed at promoting leadership, strategic thinking, and innovation. This one-day conference invites individuals to partake in a high-caliber educational experience. Over the years, there have been several iterations of LEDx, each focusing on a unique theme.

For instance, LEDx 2.0 honed in on "Diversity at the Intersection of Leadership, Strategy, and Innovation". Further, LEDx 3.0 showcased a rich and diverse list of military and civilian speakers, engaging the audience with "TED Talk"-style presentations, small-group discussions, and more, making it a unique leadership experience event.

The LEDx program has grown over the years, with AUIX hosting its 5th annual LEDx conference in October 2023 in Montgomery, Alabama. This edition of LEDx was held to coincide with the opening of AUIX's grand opening of The Eagle Institute with the theme of "Leadership, Innovation, and Strategy" and featured Ms. Judy Smith and Lt. Gen. Clint "Q" Hinote.

The LEDx initiative represents a concerted effort by AU and AUIX to nurture diverse and innovative thinking across all levels of leadership, aligning with broader strategic and innovative imperatives. Distinguished academic and military scholars dive into various aspects of innovation, exploring topics such as the fundamentals of social innovation, its intersection with gender, the role of technology, and its ties to local history.



PROJECT PRAXEUM



Project Praxeum stands as a pioneering component within the broader AU "Campus of the Future" initiative, revolutionizing traditional classroom design to propel the institution into the future. This innovative classroom not only aligns with AU's commitment to evolving learning modalities but also serves as a catalyst for the development of novel pedagogical methods and courseware, cultivating more effective and efficient critical thinkers in the pursuit of national security objectives.

The Praxeum classroom integrates cutting-edge technologies, thoughtfully curated software, meticulous scheduling considerations, and attention to aesthetics. Auto-tracking cameras empower instructors to seamlessly move around the classroom, engaging students both in-person and remotely. High-definition audio enhances the virtual learning experience, while virtual and augmented reality platforms connect students with peers across the globe. Praxeum embraces diverse learning methods, including podcasting, video creation, and storyboarding, providing a comprehensive educational experience.

Wargaming, a vital component of Praxeum, aligns seamlessly with AU's educational mission, offering a dynamic approach to learning critical concepts. The space is not just a classroom; it's a hub of technological amenities that foster collaboration and innovation. Inside Praxeum, students have access to state-of-the-art technology such as augmented reality (AR) and virtual reality (VR) tools, holographic displays, simulators, and advanced podcasting and video production capabilities.

Moreover, Praxeum maximizes the benefits of stakeholder diversity by capturing holistic learning requirements and discovering innovative ways of collaborative learning. The environment is meticulously designed, incorporating technology seamlessly with relevant aesthetics, including considerations like color palette and lighting to create an effective and efficient learning space.



PROJECT MERCURY



Project Mercury is a community-of-practice dedicated to creating a cadre of innovation leaders. This is accomplished through the pairing of a rigorous, academic curriculum with small teams focused on project-based learning—using CONSTRUCTIVE CONFLICT™ —to develop bold solutions. This PhD-led program, a partnership between the Innovarium in Ann Arbor, Michigan and the Leadership and Innovation Institute at Air University, is credentialed by the University of Michigan School of Engineering. Project Mercury is a founding pillar of the Intellectual Edge Alliance, a consortium of universities and innovation education programs serving members of the DoD and allied partners.

At its core, Project Mercury is a conduit for transformative education, having certified over 400 professional innovators and engaged with hundreds more through its Innovator Workshops. This growing network of innovators and innovation coaches is not merely a statistic but a community equipped with the essential elements of culture, competency, and camaraderie, essential for success in innovation leadership roles across various units and headquarters within the DoD. The impact of Project Mercury extends beyond its immediate community, giving rise to multiple initiatives and programs that have spun off and taken root. Notable among these are the annual cohort in the Republic of Singapore Air Force, triennial cohorts within the Air National Guard, a burgeoning program serving the NATO Innovation Hub, and a modular curriculum tailored for organizations such as Civil Air Patrol, ROTC, and the U.s. Air Force Academy (USAFA). These diverse programs reflect the adaptability and scalability of the Project Mercury model, showcasing its ability to transcend geographical and organizational boundaries.



PROJECT REFUEL



In response to the evolving landscape shaped by the Chief of Staff of the Air Force's (CSAF) action orders, COVID-19, and deployments, the necessity for innovative solutions in Comprehensive Airman Fitness (CAF) has never been more apparent. Recognizing this imperative, REFUEL emerges as a groundbreaking web and mobile application designed to harness the power of cutting-edge technologies, including artificial intelligence (AI), sentiment analysis, data analytics, and evidence-based holistic human performance tools. Its overarching mission is to fortify and promote the resilience and readiness of service members and their families in real-time.

The REFUEL app seamlessly integrates advanced technologies, such as AI, machine learning (ML), and sentiment analysis, merging passive data from wearables and biometrics with user inputs, intertextual customized content, and in-app tracking across various domains, including Spiritual, Mental, Physical, Social, Nutritional, Environmental, and Occupational. The result is a personalized, actionable data dashboard providing insights for building and maintaining readiness and resilience in real-time.

Key features include:

- **Transparent Actionable Data:** The app provides transparent, actionable data for both users and commanders, enabling informed decisions and robust support for individual and unit readiness and resilience.
- **Early Warning Health Intervention Platform (EWHIP):** EWHIP closes the gaps between prevention, resilience, and readiness, offering personalized feedback, recommendations, digital interactive coaching, mental fitness assessments, virtual Chaplaincy, spiritual fitness assessments, and stress-care management support.
- **Digitized Training Programs:** The platform digitizes training programs, including physical/mental fitness training, suicide prevention and intervention training, emotional intelligence training, and resources for marriage and family support.
- **Wearable Biometric Data Integration:** REFUEL digitizes the annual physical fitness assessment using wearable biometric data and analysis, adding a layer of precision and efficiency to the process.

REFUEL continues in MVP Beta-Phase under the guidance of the Vice Chief and is piloted at ACSC. Please contact Dan Warf at timothy.warf.1@us.af.mil for more information.



PROJECT ROTC INTERNSHIP

The ROTC Internship project is a strategic initiative dedicated to cultivating a culture of innovation within the Reserve Officer Training Corps (ROTC) detachments, spanning both traditional and historically black colleges and universities (HBCUs). This visionary effort, fueled by AUIX innovation, aligns seamlessly with General Brown's (CSAF) directive to "Accelerate or Change," addressing the imperative need to educate and train the next generation of Airmen in the realm of innovation activities.

The ROTC internship has active participation from esteemed institutions such as Stanford University, Auburn University of Montgomery, Tuskegee University, and the University of Southern California. The ROTC Internship program is designed to be a transformative experience for ROTC cadets, providing them with unique opportunities to engage in innovative projects, access "Innovation and Leadership" accredited courseware, and receive mentorship in leadership, innovation, and strategy from seasoned DAF personnel.

Key components of the ROTC internships:

- **Innovation Courseware:** ROTC cadets enrolled in the internship program gain access to Innovation and Leadership accredited courseware, providing them with a comprehensive understanding of the principles and practices driving innovation within the U.S. Air Force and Space Force.
- **Hands-on Innovation Projects:** The program offers a practical dimension, allowing cadets to actively participate in innovation projects. This hands-on experience equips them with the skills and mindset necessary to navigate the dynamic landscape of modern military operations.
- **Mentorship from DAF Personnel:** An invaluable aspect of the ROTC Internship is the mentorship provided by experienced U.S. Air Force and Space Force personnel. Cadets receive guidance and insights in leadership, innovation, and strategy, fostering a holistic development that extends beyond the classroom.
- **Diversity and Inclusivity:** The program's reach extends beyond traditional institutions to include HBCUs, ensuring a diverse and inclusive cohort of future DAF leaders. This strategic approach aligns with the broader goal of fostering a dynamic and representative leadership pipeline.



PROJECT PELLA



PELLA (Professional Educational Leadership Learning Activities) serves as a community outreach initiative with a strategic focus on promoting STEM education among K-12 students in the Alabama River Region. Aligned with the goals of the National Security Strategy and the DAF, the project aims to cultivate a pipeline of technologically proficient individuals who could potentially become future leaders in the military. Committed to encouraging STEM education, enhancing national security, and fostering community engagement, AUIX has designed Project PELLA in coordination with Civil Air Patrol (CAP) with three integrated programs: PELLA: Fly, PELLA: Labs, and PELLA: Ambassadors.

- **PELLA: Fly:** This program delivers transformative aviation experiences with exposure to manned and unmanned flight. The program includes PELLA: Fly Exposure, introducing students to aviation basics, and PELLA: Fly/PPL, offering interested high school students a pathway to obtain a Private Pilot License.
- **PELLA: Labs:** This program drives hands-on learning in STEAM subjects through STEAM Fairs and specialized STEAM Saturdays. The multi-day STEAM Fairs offer diverse activities for all age groups, while STEAM Saturdays focus on enhancing instructors' and teachers' proficiency. Collaborating with key providers like Ed Farm, Fearless, King's Canvas, and Another Reality Studios, PELLA: Labs offers workshops in coding, AI/Machine Learning, adaptive manufacturing, and AR/VR. The program also features a mobile AR/VR lab by Another Reality Studios, managed by Social Montgomery, ensuring an immersive learning experience for participants in the Alabama River Region. PELLA: Labs stands as a comprehensive initiative, enriching STEAM education through engaging events and cutting-edge technology.
- **PELLA: Ambassadors:** This is a 'Train the Trainer' program, amplifying the reach of STEAM education by training community ambassadors. In partnership with the CAP, PELLA: Ambassadors provides STEM kits, coaching, and teacher support to impact over 1000 students in the River Region.



LOOKING AHEAD

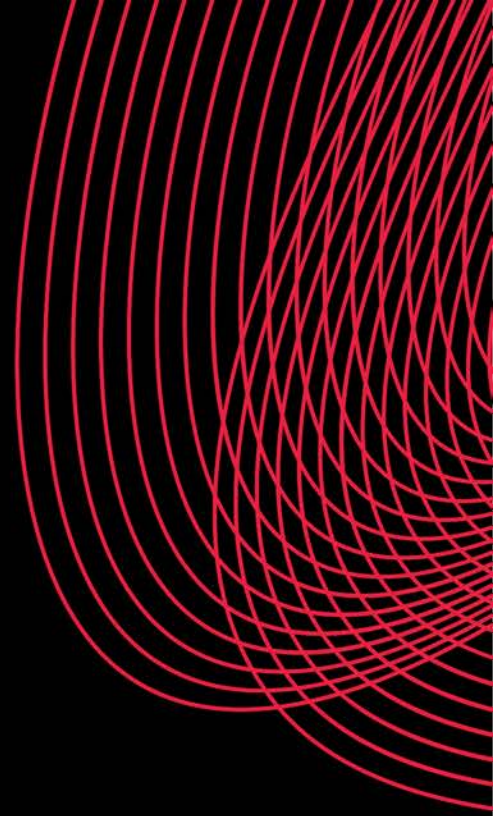
To envision the future, it is imperative to recognize that the challenges facing the United States and the global community will only become more intricate and interconnected. Looking ahead, emerging technologies such as artificial intelligence, quantum computing, biotechnology, and space exploration will undoubtedly reshape the geopolitical landscape, presenting both unprecedented opportunities and complex dilemmas. As we navigate this uncertain terrain, a forward-focused approach becomes paramount in preparing for the challenges and opportunities that lie ahead.

In this context, the Air University Innovation Accelerator (AUIX) must not only address current issues but also anticipate future trends and disruptions. By fostering a culture of innovation and strategic foresight, AUIX can equip future leaders with the skills and mindset needed to adapt to rapidly evolving circumstances.

Furthermore, collaboration across sectors and disciplines will be essential in tackling emerging challenges, from cybersecurity threats to implications and mitigation of climate change. By leveraging the expertise of diverse stakeholders and embracing a multidisciplinary approach, we can develop holistic solutions that address the complex interplay of factors shaping our future. Some channels that support this type of approach include wargaming and Human Performance (HP) which will be significant lines of effort for AUIX in 2024. These types of initiatives provide tangible ways of processing and applying new theories/ideas in the most comprehensive manner.

In summary, as we confront the uncertainties of tomorrow, it is imperative that we adopt a future-focused perspective in our approach to leadership, innovation, and strategic planning. By doing so, AUIX will help position AU and the Department of the Air Force at large to not only navigate the challenges ahead but also to seize the opportunities for progress and prosperity in the decades to come.

QUESTIONS? CONTACT US.



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