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WEDNESDAY
December 4, 2024

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Army Encourages Collaboration and Feedback

The U.S. Army is utilizing this year's Interservice/Industry Training, Simulation and Education Conference (I/ITSEC) to highlight its activities and accomplishments across four major mission areas and as reflected through more than 260 programs or products that are supported by that office.

"Our big message is that we have four big initiatives here," offered Brigadier General Christine A. Beeler, U.S. Army Program Executive Officer for Simulation Training and Instrumentation (PEO STRI). "And they are pretty straightforward, because they represent 'STRI.'"

Beeler said that her first initiative area involves strengthening collaboration with partners and stakeholders, explaining, "That includes industry partners and stakeholders. In addition to our relationships with Army's Simulation and Training Technology Center (STTC), Synthetic Training Environment Cross Functional Team (STE CFT), Army Futures Command (AFC), Combined Arms Center – Training (CAC-T) and others across the Department of Defense, we want to make sure that we're reaching out and having these critical conversations. It's the same thing with our industry partners. I do as much as I can to be at events and other activities to be a good partner and share what we're doing as much as we can and to be transparent in where we're headed and where we're going."

The second identified mission area addresses transforming new technologies.

"If you've got some kit that can help me modernize the way we train we absolutely want to see it," she said. "Maybe it's AI related. It could be a large language model. It could be generative AI that helps reduce what it takes to put together an exercise. We absolutely want to see all of those things."

She continued, "The next area focuses on our objective to rapidly deliver outcomes in a very agile process, both hardware and software. But a lot of what we're doing today is really software driven, which in many ways makes it easier to operate in that agile environment."

The final area reflects investment in people.

"We're looking for talent and we invest in our people," Beeler said. "We are looking for folks to come on and join the team. And we will absolutely invest in them, because we want them to succeed professionally and personally as much as we want the organization to succeed."
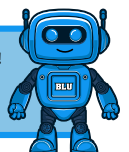
Against that strategic background Beeler highlighted a number of recent milestones and emerging activities.

She began with the example of the Program Executive Office focus on STE Software, which she

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WEDNESDAY, DECEMBER 4
CONFERENCE HIGHLIGHTS

REGISTRATION HOURS
0700-1800 (South Concourse)

EXHIBIT HALL HOURS
0930-1800
1200-1330 Lunch

SIGNATURE EVENTS
0830-1000 Leadership Perspectives on Development, Education and Training (Room 330ABCD)
1030-1200 Navy Warfighting Requirements and Capabilities (Room 310AB)
1030-1200 Department of the Air Force Panel (Room 330ABCD)
1030-1200 Marine Corps General Officer Panel (Room 330EF)
1330-1500 Integrated Defense Against Cognitive Warfare (Room 330EF)
1330-1500 Investing in Technology that Increases Training Realism to Enhance Readiness and Deterrence (Room 310CD)
1530-1700 Supporting the Future of Training and Experimentation Infrastructure (Room 310AB)
1530-1700 Cyberspace – Perspectives on Future Multi-Domain Challenges Panel (Room 330EF)
1530-1700 Uncrewed & Autonomous Systems – Trends & Challenges (Room 330ABCD)

FOCUS EVENTS
0830-1000 Department of the Air Force (DAF) – Noncommissioned Officer (NCO) Panel (Room 330EF)
0830-1000 Navy Continuous Training Environment (Room 310AB)
0830-1000 Evolution vs. Revolution: Special Operations' Path to Integrated Training in a Synthetic Environment (Room 310CD)
0830-1000 Marine Corps Senior Enlisted Panel (Room 320H)
1030-1200 Army Senior NCO Perspective (Room 310CD)
1330-1500 Ethical, Legal and Social Implications of Human-AI Teaming (Room 310AB)
1330-1500 Space Capabilities Panel (Room 330ABCD)
1330-1500 Women in Modeling and Simulation (Room 330GH)
1400-1530 Navy Senior Enlisted Panel (Room 320H)
1400-1530 Best from Around the Globe (Booth 2909)

COMMUNITY OF INTEREST
0830-1000 Data & Cyber Considerations to M&S (Room 330GH)
1030-1200 How Stakeholders in Niche Markets Can Benefit from, and Drive, Interoperability Standards and MOSA (Room 330GH)
1300-1700 NTSA Career Fair at I/ITSEC (Room 210A)
1400-1530 Value Proposition of STEM in Acquisition Talent Management (Booth 2395)
1530-1700 Digital Materiel Management (Room 330GH)
1530-1700 Artificial Intelligence (AI) – Training, Analytics, Experimentation and Acquisitions (Room 310CD)

NEXT BIG THING
1030-1200 Novel Applications of Data (Destination Lounge)
1600-1730 Catalysts to Adoption (Destination Lounge)
1745-1900 Next Big Thing Social (Destination Lounge)

PAPER SESSIONS   *(Download the I/ITSEC app for synopses)*
0830-1000 (Rooms 320ABCDEFG)
1030-1200 (Rooms 320ABCDEFG)
1330-1500 (Rooms 320ABCDEFG)
1530-1700 (Rooms 320ABCDEFG)

BEST PAPER NOMINEES

Education	Context-Sensitive Attribute and Competency Assessment
Policy, Standards, Management and Acquisition	Are LLMs Too Smart for Their Own Good?
Emerging Concepts & Innovative Technologies	Converting 2D Images to Geospatial 3D Models Using Generative AI
Simulation	Beyond Illusions: Navigating VR Fidelity in Undergraduate Pilot Training — A 3-Year Data Analysis
Training	Airway Skills Assessment with Spatio-Temporal Attention Mechanisms Using Human Gaze
Human Performance, Analysis And Engineering	Assessing Cognitive Workload in Mixed Reality Flight Simulators for Naval Aviation

I/ITSEC
SHOW DAILY

I/ITSEC Officially Opens

Tuesday morning ceremonies in the Windermere Ballroom of the Hyatt Regency Orlando Hotel marked the official opening of I/ITSEC 2024.

Conference Chair Jim Threlfall opened the event on behalf of the naval services by welcoming the audience to the 58th anniversary of the world's largest modeling, simulation and education event.

He was joined on stage by representatives of those services: Captain Tim James, USN, Commanding Officer of Naval Air Warfare Center, Training Systems Division and Naval Support Activity Orlando and Colonel Marcus Reynolds, USMC, Marine Corps Systems Command Program Manager for Training Systems.

Following a stirring presentation of colors, delivery of the National Anthem and solemn invocation, Threlfall presented a dynamic video that brought to life key aspects of this year's conference theme, *Assuring Deterrence Through Integrated Training and Readiness — The Need is Now!*

"As mentioned recently by the Army Chief of Staff, General George, Russia, China, Iran and North Korea represent the axis of upheaval that is increasingly collaborating and conspiring to undermine democratic values and to drive a wedge between us, our allies and partners," Threlfall said. "We continue to see this, through the two years of continuous war in Ukraine, with the involvement of North Korean forces, drone support from Iran, and also events in the Middle East."

He added, "As we continue to provide systems to our allies and partners in two theaters, the ability for us to also provide effective modeling, simulation and training for these systems is essential to ensuring the integration of these capabilities into a more cohesive tactical advantage. Looking at the transformation that our services are undergoing and the critical role that modeling, simulation and training will play as a pillar in these concepts, our community must be ready for the challenge outlined by these senior military leaders.

Referring to infusing advanced technologies that are already available, Threlfall pointed to the need to "prioritize and make informed investments."

He said, "We must build readiness and capability now as we partner to scale industry capabilities and expand budgets. Transformation in contact is designed to evaluate emerging technologies, combat force structure and tactics across multiple focus areas by inserting emerging technologies into operational exercises, collecting data and providing enhanced incremental increases in that capability at the speed of need.

"We hope this week that you will take advantage of not only our community of DoD, industry and academia and what they can bring to you now, but also how they can support you in the future to ensure the forces maintain their readiness to deter our adversaries. Our program provides a path throughout the week for all engaged attendees at the levels of management, acquisition, business development, and most importantly, the practitioners, for It is they who are integral to researching, testing, development and evaluation of these emerging and innovative solutions. You will have the chance to engage with the best of the best in such areas as AR, VR, MR and XR, technologies that are becoming more accessible to our warfighters and the ability for those systems to be adaptive and robust."

Threlfall attributed the power of I/ITSEC to the efforts of over 300 volunteers from DoD, academia and industry, who have worked tirelessly for a year to put the program together under the leadership and guidance of this year's Program Chair, Mr. Fred Fleury, summarizing at list of opportunities ranging from 52 special events to over 515 exhibitors from government, industry and academia.

"Please experience and get demonstrations on the exhibitors' capabilities in the exhibit hall," he urged. "The innovation and technologies you will experience this week address real world, current issues and future issues. I challenge you to participate, collaborate and involve yourself in all those activities."

Captain James followed with a warm welcome to Department of Defense and Congressional officials, senior military leaders, representatives from coalition and partner nations, industry members, academic partners and Sailors, Soldiers, Airmen, Marines, Guardians and Coast Guardsmen who are attending the conference.

"It's an honor for me to represent the Navy," he said. "Our theme for this year's conference, *Assuring Deterrence for Integrated Training and Readiness — The Need is Now!*, was inspired by the geopolitical environment for the last couple years. If you've been able to avoid the last year of news coverage of the conflicts and tensions in Ukraine, Israel and Taiwan, I admire your focus. But it doesn't change the reality of the threats and challenges we face today. And each time those areas are covered, the military has been brought into the conversation. And that's not a bad thing. You have to remember that the military is an extension of our nation's diplomacy. Our first mission is to serve as a credible deterrent. Our second is to forge close bonds with our allies. And lastly, if called upon, our third mission is to win decisively."

James was followed by Colonel Reynolds, who serves as the naval services co-lead for this year's I/ITSEC.

"As I walk through the convention center, I can't help but be amazed by the exhibit hall," Reynolds observed. "Admiral Buck and team NTSA, you have outdone yourself once again. There are countless hands working behind the scenes to bring together such an extraordinary event. And while it is impossible to acknowledge everyone individually, rest assured that your efforts speak volumes for your work."

The opening ceremonies were followed by a "Fireside Chat" moderated by Vice Admiral Sean Buck, USN (Ret.), President of the National Training and Simulation Association and featuring Admiral James Kilby, USN, Vice Chief of Naval Operations, and Lieutenant General Benjamin Watson, USMC, Commanding General, Training and Education Command.

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Naval Services Emphasize Warfighting

Tuesday morning's events included a "fireside chat" with senior leaders from the Naval Services. Vice Admiral Sean Buck, USN (Ret.), President of the National Training and Simulation Association, moderated the event, which included Admiral James W. Kilby, USN, Vice Chief of Naval Operations, and Lieutenant General Benjamin T. Watson, USMC, Commanding General, Training and Education Command.

"We hope to convey where the Naval Services are going today," Kilby began, citing his own personal experiences with various modeling and simulation approaches.

"I'll go back about a year to issuance of *America's Wafighting Navy* by the Chief of Naval Operations. And she has three priorities in that document; warfighting, warfighters and foundation, all of which this conference touches. Several months ago she released her navigation plan (NAVPLAN), which highlights seven priorities, and I'll briefly cover them. She establishes a target date of 2027. The first priority is 80% combat surge ready — aircraft, ships and submarines. That's a big deal for us, and there's certainly an element of training involved in that. The second is having robotics and autonomous systems integrated into our fleet. That's into our fleet units and into our vision of the fleet moving forward, a hybrid fleet. The third is fighting from the Maritime Operation Center (MOC). That's where a number of fleet commanders and our four star fleet commanders manage their fleets. The fourth is recruiting and retaining our talent. Clearly there is a connection here with simulation and making sailors feel valued in their professions. The fifth is quality of service. One could argue, if I feel valued in my profession and I am treated right, I would be more inclined to stay. The sixth is called warfighting competency, and that's smack dab in live, virtual, constructive training. And last is the foundation."

Watson observed that the Commandant of the Marine Corps, like the Chief of Naval Operations, "is laser focused right now on how we achieve warfighting advantage at echelon, from bottom to top of the organization, against a peer level threat — China, specifically — with the idea that if we can overmatch that particular threat, then we can handle everything else. General Smith is not a patient man when it comes to achieving warfighting advantage and advancing our capabilities. So that leaves the rest of us fairly impatient to hang on to our jobs. I would say it's a really fascinating time to be in the United States Marine Corps, and really the Naval Service more broadly, since this is the first time that I can remember, since I was a young lieutenant more than 30 years ago, that we had the same kind of intellectual buzz around the institution about warfighting."

Secretary of the Navy Reflects

Tuesday's Military Keynote address featured Secretary of the Navy the Honorable Carlos Del Toro, who reflected on his experience as the 78th Secretary of the Navy.

"I've been familiar with I/ITSEC for just about my whole life, from the time I was a young lieutenant, as commanding officer of a satellite ground station in Vermont, to Secretary of the Navy, and I've had deep admiration for the work that's done here…I fully understand and I appreciate what the people in this room bring to the high-end fight."

"Former president and Assistant Secretary of the Navy Franklin Delano Roosevelt once said, and I quote, 'There are many ways of going forward, but only one way of standing still.' But standing still is not an option for our military services today. We have become, I think, a lot more innovative, certainly in the last three-and-a-half years that I've experienced this from a front row seat, in how we actually try to bring capabilities to the warfighter in an expedited manner."

As examples, he pointed to establishment of the Marine Innovation Unit and the Disruptive Capabilities Office, crediting them with significant contributions.

"The urgent need for a strong Navy and Marine Corps to protect our nation and vital interests simply cannot be overstated in today's world. As you have certainly heard or seen on the news, our nation faces threats around the world, from Europe to the Red Sea to the Indo-Pacific. In Europe, Russia is quickly approaching the third year into the illegal and unprovoked war of aggression against Ukraine. Ukraine is fighting not only for their own liberty and freedom. They are fighting to protect democracy in Europe and indeed around the world, and we as a nation must continue to stand by Ukraine and its quest to remain free of Vladimir Putin's tyranny."

He continued. "In the Red Sea and Gulf of Aden, we are working alongside our NATO allies and Middle East partners to ensure the safety of innocent civilian mariners and protect our commercial shipping against the Iranian aligned Houthi terrorist attacks following the October 7 attacks in Israel. Over a year ago, our Navy and Marine Corps were swiftly deployed to the region, forming an integrated force capable of responding to any threat. Our warships have demonstrated exceptional performance under fire, successfully deterring and defeating missile and drone attacks targeting innocent maritime shipping. And let me say to all of you, the role that you play today in terms of supporting our national defense is as critical as the role that was played 50 years ago, 40 years ago, 30 years ago, by engineers and businesses similar to you, as they were developing the Aegis Weapon System that today we deploy that around the world, and especially in the Red Sea.

"I'm extremely proud of everything our department has accomplished," he concluded. "And I'm excited for our Navy and Marine Corps team as we chart a course for the future as well, a future that will require us to respond and adapt to whatever geopolitical challenges that our nation faces. We are indeed a maritime nation."

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AI Center Stage at Industry Keynote

In an industry keynote address delivered on Tuesday morning, Rick Schmidt, President and Chief Executive Officer of Tipping Point Solutions, Inc., discussed the rapid advancements in AI and its impact on training and simulation technologies.

"I'm reminded in the day-and-a-half I've been at I/ITSEC just how much of what I put together for today's keynote really reflects what everyone else is also thinking," he began. "I was worried at some point that maybe my generalizations of what this year meant may not be shared by all, but I'm starting to feel that's not the case."

Schmidt said that the rate and speed of technology over the past 12 months has transformed in a way that he has not seen in more than three decades of his personal experience with technology advancements.

"Immersive training simulation technology has moved at a rapid pace," he said. "I think no one in this room is going to be lost on this point. Artificial intelligence has made an impact on our society in the past 12 months. But most importantly, the implications that we have for what we can do to affect modeling and simulation, training and education within our history has never been more impactful."

Schmidt shared aspects of his own technology journey, which included service in the Navy that reinforced what he described as "a passion for helping support our military's effectiveness through training, education, modeling and simulation."

As part of that journey, he described himself as "an early adopter" of artificial intelligence, describing it as a technology unlike any other.

"If you look at the history of the evolution of technology, think of electricity," he said. "It was invented in the 1870s and it was 50 years later before it became a mainstream, widely adopted capability. If you fast forward to other technological innovations, in the 1970s personal computers came about but it took until about the '90s before they had widespread adoption. In the early part of the '90s, people like me were playing around on bulletin boards and using a precursor to the internet, until the late '90s, when Mozilla created Netscape and certain mainstream elements started to attach with the wide population of the world, who started getting email accounts and started using websites and such. And then by the early 2000s it became just part of our way of life. Look how mobile technology has transformed us. And I could go on and on. But with each of those periods of technology, it generally took 20 or more years."

"But AI is something of a different color," he continued. "And I think that what we're seeing right now in the last year has been remarkable in terms of the speed with which it's infiltrated so many forms of our existence as a society. That's going to be both good and bad, but as an industry, we have an opportunity to leverage that technology in a way that allows us to create training at the speed of need."

Senior Leaders Share Perspectives

Tuesday morning's Special Events included a Senior Leader Panel that included Vice Admiral Daniel L. Cheever, USN, Commander, Naval Air Forces / Commander, Naval Air Force, U.S. Pacific Fleet, Lieutenant General Benjamin T. Watson, USMC, Commanding General, Training and Education Command, Thomas J. Lawhead, SES, Assistant Deputy Chief of Staff, Strategy, Integration and Requirements, U.S. Air Force, Major General Timothy A. Sejba, USSF, Commander, Space Training and Readiness Command, Brigadier General David Zinn,

USA, Director of Training, Headquarters U.S. Army G-3/5/7, and Brigadier General Rickard Johansson, Commanding General 1. Division, Swedish Army.

Each of the service leaders offered opening remarks and messaging for the I/ITSEC audience, followed by a question and answer period guided by panel moderator, Vice Admiral Sean Buck, USN (Ret.), President of the National Training and Simulation Association.

"There's more excitement out there about the focus and direction that the Navy is going now, than I've seen in a very long time," Cheever said. "Our integration with the Marine Corps is at an all-time high since I joined in 1988. When I joined the two services were like two peas in a pod. Then we got distracted due to a lot of the overseas things and that kind of stuff. But now we're back to the high-end warfighting integrated team, and it's the same with the joint force and our allies and partners. So it's a really exciting time to be here and to be part of this team."

He offered the audience a notional vision aboard the USS Abraham Lincoln, which his currently at sea in the Pacific region.

"What a lot of people don't understand is that since I have been at sea on that indispensable aircraft carrier that provides the integrated deterrence necessary for our nation to preserve the peace, it has responded in crisis, went to the Red Sea, and it went decisively in combat. Now I can send about 24 young warfighters down to the highest classified room on the carrier, where there are simulators, and they can do integrated training, like joint simulation environment we have at Pax River and at Fallon, Nevada. They can rehearse. They can train. And they are higher trained because of the 'sims at sea' than ever before. What I need to do is integrate that training across the strike group and with every asset that comes out."
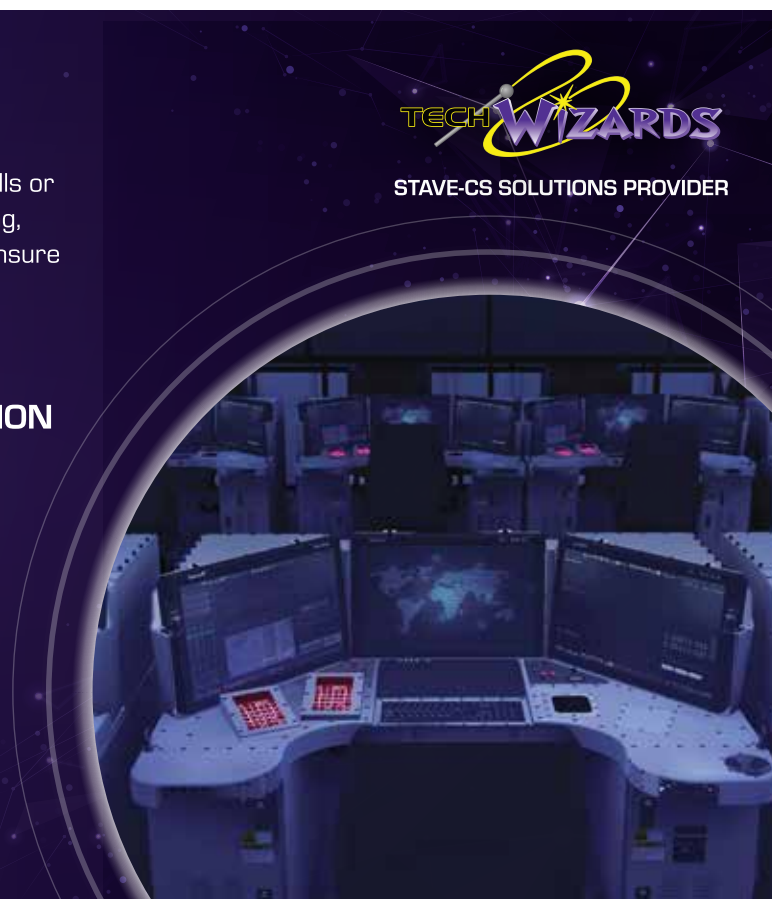
Senior Leaders *...continued from page 10*

Watson began his comments directed toward the concept of "Stand-in-Forces," explaining, "The idea is that if you believe that we're not going to have much time, that we're not going to get significant indications and warnings of an adversary like China before they act to initiate a conflict; second, if you believe that we're going to have insufficient capacity in all of the aircraft and ships and stuff that transport folks over those vast distances to a conflict, and that the competition for those assets is going to be significant; third, if you believe we're going to be contested in all domains, starting right here in Orlando and Camp Pendleton and Norfolk and other bases and stations around the U.S. in the event of a pending conflict; if you believe those three things, then that kind of naturally leads you to the idea that if you're not already there in the theater of relevance when things escalate, you aren't getting there on an operationally relevant timeline. We're going to fight with what we've already got. So the importance of those forces forward, and in our case, those naval forces, Marines and Sailors that are postured forward all the time, is really critical to our posture for the next fight, and our ability to fight now if required."

Lawhead observed, "It is not lost on me as I look at this panel, that this is exactly the joint force that we are with in the future, to include our allies and partners. The good news is while it is hard, we've got consistent direction on where we all need to go. It starts with National Security Strategy, through the National Defense Strategy, through the Joint Warfighting Concept and the Future Operating Concept. That all drives us to a future force design that leads to the force that we need to provide, the joint force and the coalition to be able to win and deter."

Sejba noted that one of his many key responsibilities is preparing Guardians and preparing combat critical capabilities, asserting, "Combat credibility is probably one of the key things that we're certainly focused on, certainly in an era of Great Power Competition. We like to say that on December 20, we'll hit our fifth birthday as a service, so we're still fairly new and have a lot of work ahead of us. I encourage my folks across the service to look back some days and realize how far we've come when it comes to the high-end threat that we know we face, and how we're going to support the joint force and our allies differently than we ever had to before."

Zinn offered, "The Army is coming out of several decades of recent experience that's very different from the locations and type of areas we expect to operate in to potentially fight in today and in the future; places like Iraq and Afghanistan with counterinsurgency operations, small unit tactics against a capable adversary operated primarily in the land domain. And because of what we see with our adversaries, we are pivoting to planning for large-scale combat operations, preparing for that with modern adversaries who have invested in some advanced capabilities, including the ability to leverage space, the ability to geo-locate command posts, to exploit the electromagnetic spectrum, the proliferation of unmanned systems and the ability to deny access to long range precision fires and air and missile defense. What that's done is expand the operating environment from the recent past, where our tactical formations focused in the air and the land, to also include the maritime domain."

Johansson offered the perspective as the latest NATO ally, describing the ongoing transformation of the Swedish Armed Forces.

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Vice Chairman Provides Joint Service View

Tuesday's impressive list of I/ITSEC Signature Events included a "Fireside Chat" with Admiral Christopher W. Grady, Vice Chairman, Joint Chiefs of Staff. Moderated by Vice Admiral Sean Buck, USN, (Ret.), President of the National Training and Simulation Association, the event provided audience members with a unique perspective on technology application and integration across the services and the integration of all of the joint forces together with the same goal in mind, that of national defense.

Grady began his responses by outlining the roles and responsibilities of the Vice Chairman, offering that he finds himself living in four different worlds: policy, requirements, budget and acquisition.

"Policy, requirements, budgeting and acquisition. There is lots going on there. how does one attack that? I have my own strategic framework here, and it has three end states. The first is joint force overmatch now and in the future…The second end state is dominant decision advantage. Now you start to see where [the I/ITSEC audience] might discreetly fit in…How do we bring AI to the fight? How do we do modeling and simulation? How do we think about Combined Joint All Domain Command and Control? And then the third end state is warriors who can fight and win."

He then identified four lines of effort to get to those end states and an additional three "core efforts" across those lines of effort.

Asked by an audience member about what he sees as the top modeling and simulation challenge that the joint force might be facing today, as well as related trust issues surrounding machine driven analytics, he replied, "There are several that animate my thinking. The first is, there's so much data out there that all of you are working with. How do we manage that data? And, if you think about the data and measure it by quality and safety and security, as well as just the sheer commodity of it, how do we manage data so that we can bring it into these very sophisticated modeling and simulation engines that are going to help us with that dominant decision edge? I would say that's the first one. But from a joint perspective, I think we need to have standards so that as we build now, for instance, the Joint Live, Virtual and Constructive framework, I want the services to be able to plug into that seamlessly. So standardization will be really, really important. We're not there yet, and we're working on it. And indeed we're working with Congress to fund a little bit more money to allow us to build out those robust standards so that everybody can see where they fit in. And in fact, the JROC [Joint Requirements Oversight Council] is working right now and will report out in March 2025 a capstone capabilities document that will lay out what these standards should be."

One final question asked Grady for his views on the future integration of cyber and electronic warfare into fleet synthetic training and the LVC environment.

"We model and simulate the physical environment," he observed. "But now we have to get after space, cyber, EW and the information environment. That's work to be done. You know, if the Chief Space Officer were sitting here right now, he or she needs a space range. If the Cyber Command Commander was sitting right here, he or she needs a cyber range where we can go out and test these high-fidelity systems, which is much harder to do than say, in the air domain. And so the work that all of you are doing to help us advance our thinking in those less-than-physical domains is really important."

He continued, "And as I mentioned earlier, I am particularly fascinated in the cognitive domain. How do you emulate adversary thinking? And this is where AI can be really, really helpful. I think the quote is that advanced AI can read every book ever written in two hours or something. So if we can read what the adversary is saying and then emulate their thinking at a high-fidelity level, that's a game changer."

Grady concluded, "I'm fixated on five things in addition to all that I told you: I want to get the JROC right. I want to get strategic information right. But the other three that I'm really interested in are all precision navigation and timing and alternates therein, followed by EW. If you look at what's happening in Ukraine or what could happen in Taiwan, how do we fight in an EW-saturated environment, and how do we impose an EW-saturated environment? And that leads me to the fifth thing that I'm very focused on, and that's modeling and sim. How do I bring that environment, along with space, into our planning and our practicing and our rehearsing that is high-fidelity and we can learn from it?"

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SIMULATIONS

Army Encourages *...continued from page 1*

described as "one of our main modernization efforts," adding "It's not our only modernization effort, but it is our main effort in this space, and it is part of one of the six big Army modernization programs."

The past year has also witnessed considerable testing with the Army's Reconfigurable Virtual Collective Trainers (RVCT), which provided a cornerstone of the Army exhibit at I/ITSEC 2023.

Beeler said "The ground version will be out at three locations by the end of this calendar year and the air version will be out just into the calendar year 2026. In between, we'll be able to do our first demonstration event in the spring of 2025 where we will bring both air and ground versions together in the environment, with operators participating. So that's going to be a phenomenal opportunity.

"And then, as we look at continuing on with this Soldier Virtual Trainer component, we're coming to the end of one phase, and we're making some decisions in the spring on where we're going to head with that capability requirement. I don't have a lot I can share about it in terms of where we're headed, but we've done a lot of prototyping work and a lot of integration work, and I think we're excited to see what's going to be the next step, and we're going to work through that right now."

Related to that, she highlighted the release of a request for information "just to get a sense of what's changed in the space," noting "I'm very excited to see in the I/ITSEC Exhibit Hall what has changed in that space since we've started going down this path."

Another program effort highlighted by Beeler was the "Next Gen Constructive product," that will bring together the ability to train battalion, brigade, division and corps level staff in ultimately, what will be a warfighter exercise.

"It will include folks doing the constructive piece, folks doing a virtual piece and, at the end of the day, folks doing a live event in the dirt. So as we look at the ability to do all of those things through the next gen constructive, I think 2025 is going to be very exciting in terms of the capability we can deliver," she said.

Returning to the "partnership" theme, Beeler asserted that the Army's guidance to look at continuous transformation in contact in the near term and deliberate transformation in the POM [Program Objective Memorandum] years had strengthened the connections

between PEO STRI and Army Futures Command's STE CFT.

"Our work with the CFT keeps us connected to all the other CFTs that make sure that not only are our requirements right, but that we're making sure we keep pace and are able to integrate the work that we're doing with the work that other CFTs are doing. So those are the really important things that the CFT can help us with. The other thing the CFT helps us with is obviously communicating where we are from the materiel development side of the house in terms of delivering an end product that lines up with what the Army and the requirements community has documented is the direction they want us to go. So, Colonel Jason West, Director of the Army's STE Cross Functional Team, is like 'battle buddy number one' on the Army Futures Command side. But we also have the training community. So the CAC-T Commander, Brigadier General Jeremy Wilson, who is kind of like the end user that the requirements community is working with on behalf of developing something for the Mission Command Training Program, which is what drives these warfighter exercises for the Army. And so, making sure that I've got the test community, the training community, the CFT community, and the money guys, whether it's ASA(ALT) or 'DAMO-TR' [Director of Training, Office of the Deputy Chief of Staff, G-3/5/7], Brigadier General David Zinn. All of us spend a lot of time making sure that we all know what each of us is thinking and how can we best use our authorities to deliver the materiel development solution that the Army needs."

Beeler said that this year's spotlight in the Army exhibit at I/ITSEC will focus on work surrounding live training systems that can be used at home stations or combined training centers.

Many of these are systems that are being developed and prototyped between our STAAR [STRI Agile Acquisition Response] Team and PM TRADE [Project Manager Training Devices] and are reaching the point where we are looking to do more development so that we can actually get those types of systems out into the hands of Soldiers," she said, offering examples ranging from new hand grenade simulators to more realistic synthetic training weapons effects across individual and crew-served weapons.

"We will also highlight our STAAR Team, whose members are at the front end of trying to find technology that we can pull into the process today that helps move us forward," she stated. "So they're going to talk about the things that we're continuing to develop, which is the direct fire, counter-defilade, directed energy weapons, and all of those other types of weapons that we haven't been able to really replicate inside the live training environment, or improve so that we can get rid of some negative training aspects."

In her closing message to industry, Beeler offered, "If you've got an idea, let me know about it. One of the challenges in the acquisition community is how 'non-traditional' industry really gets noticed. How do folks with some good ideas that might need some startup money to continue to develop their ideas get that startup money? Obviously venture capital is out there, but we want to really be able to help shape that, and we've done that in partnership with the Navy and the Air Force and our own prize competitions for ideas to help fill some gaps."

She concluded, "Warfighters should know that PEO STRI is going to continue to deliver the training devices that you need. But I need your feedback as well, so that we can continue to make them better."

MVRsimulation

JTAC TRAINING
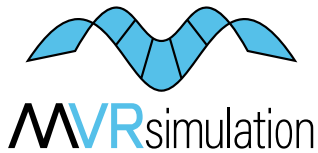## FROM THE CLASSROOM
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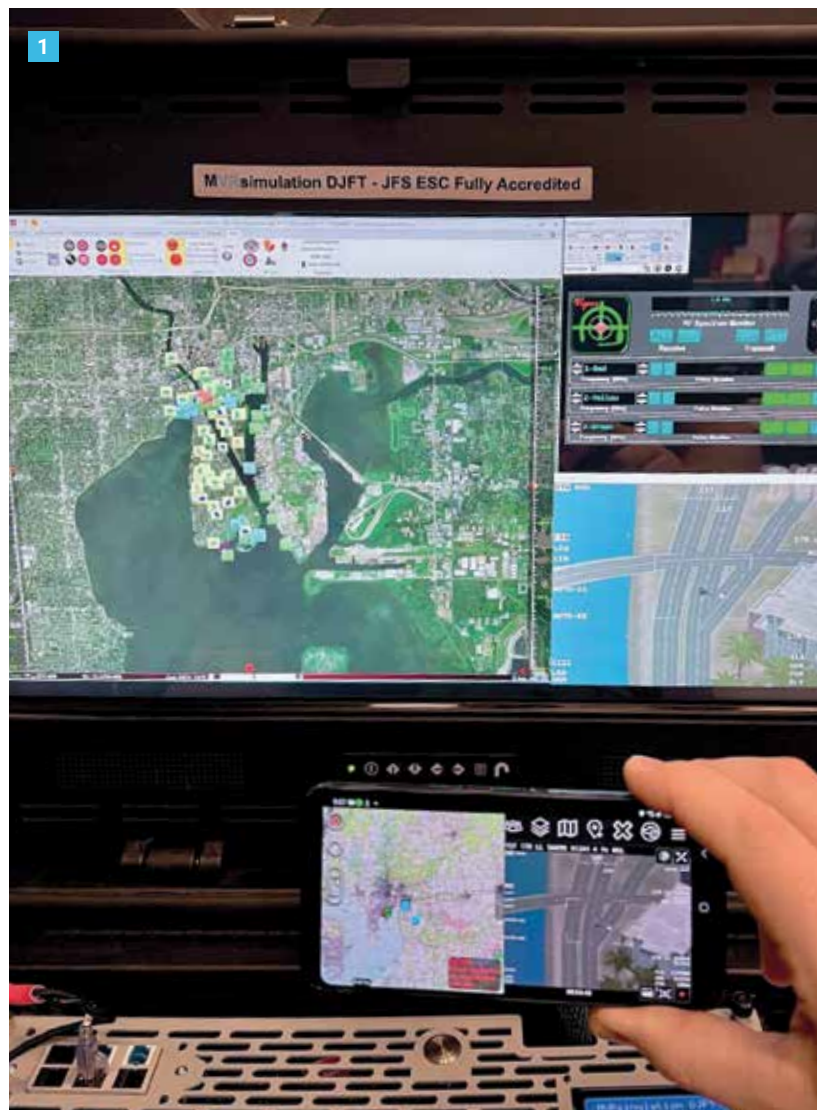
1 Handheld ATAK device and DJFT Observer Station, both displaying BSI's MACE Link 16 data and VRSG video stream, for use with the DJFT & PJFT.

2 The PJFT contains all equipment required for full-spectrum Joint Fires training, contained in two backpacks weighing less than 50 lbs combined, sized for commercial airline carry-on.

3 At the DJFT Observer Station wearing the Varjo HMD, looking through the emulated SOFLAM, with the SOFLAM's view rendered in VRSG on the display.
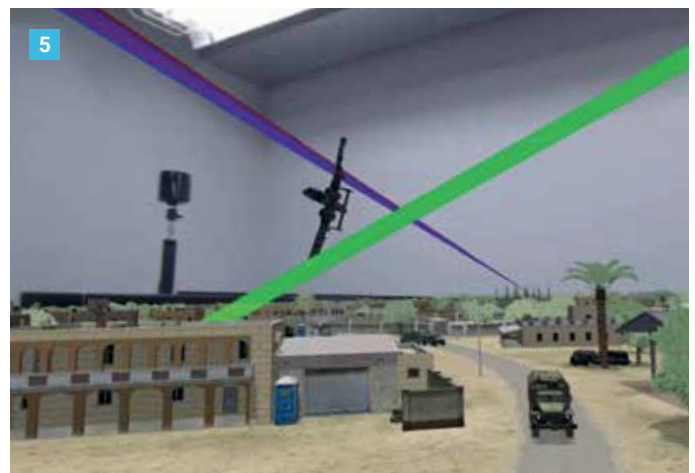
4 JTAC training missions are rendered in high-res in VRSG's geospecific terrain, which can be augmented with content from VRSG's library of 10,100+ 3D models.

5 Conduct classroom-based JTAC tactics training, mission planning, and AAR on the Mixed Reality Sand Table.

Air Force and Space Force Look to M&S Summit

Reflective of a growing collection of modeling and simulation events that occur throughout the year, the Department of the Air Force Modeling & Simulation Summit (DAFMSS) provides the M&S community with a unique glimpse into the needs and requirements of both the Department of the Air Force and United States Space Force.

The event began in 2022, with annual locations changing between Orlando, Florida (2022), Albuquerque, New Mexico (2023) and San Antonio, Texas (2024). The annual summit was previously hosted by Mr. Richard Tempalski, the DAF Chief Modeling and Simulation Officer (CMSO), and Lt. Gen. Brian S. Robinson, Commander, Air Education and Training Command (AETC).

This year's DAFMSS event, which will be held May 6-9, 2025, in Orlando, Florida, is being organized by the National Training and Simulation Association (NTSA) and marks the first time that the event will be hosted by Tempalski and U.S. Space Force Maj. Gen. Timothy Sejba, Commander of Space Training and Readiness Command (STARCOM).

Elaborating on his role in supporting those advanced M&S capabilities, Tempalski explained that in December of 2019 the Secretary of the Air Force decided that the Department of the Air Force needed a single modeling and simulation executive to oversee, update guidance and enforce compliance in M&S throughout the DAF.

He said that prior to the establishment of that office, there was not sufficient work being done to develop the workforce, adapt M&S strategy for simulation interoperability or to look at tools from a holistic enterprise digital infrastructure.

"Our modeling and simulation enterprise roughly includes about 12,000 employees across 70 plus organizations, with the Department of the Air Force spending about $4 billion per year," he said. We have simulators, simulation architectures, models and tools to cover everything from pilot training to the medical community. And all of that leads to an overarching mission of advancing warfighting readiness by increasing collective, affordable, interoperable modeling and simulation-enabled capabilities."

Pointing to next year's DAFMSS event, he said, "Next spring, we're going to be hosting our fourth annual M&S summit in Orlando between the sixth and ninth of May 2025. We are expecting about 1,000 participants this year, and our theme is *Transformation for Peer Competition*. This is highlighting the Department of the Air Force's commitment to optimizing the DAF for great power competition. So, we're going to be discussing how we are currently using modeling and simulation and where we need to go in the future to counter these challenges from near peer adversaries by ensuring Air Force and Space Force readiness.

Tempalski said that DAFMSS will include five distinguished panel discussions with question and answer sessions.

"The first one is going to be the senior Air Force and Space Force leaders discussing 'Modeling and Simulation in the Great Power Competition,'" he said. "The second one is going to be about a 'Digital Space Range' and how the space range will support operational testing and training. The third one, which is one of my favorites, is a 'Non-Commissioned Officer (NCO) Panel,' where NCOs will discuss how modeling and simulation is applied to overcome the challenges in the field. The fourth panel we're going to have is called 'Resilient, Ready and Responsive Airmen and Guardians. Here we're going to be talking about how we train and prepare our Airmen and Guardians.' And the fifth panel is 'Partner to Win.' This panel is going to be emphasizing the importance of the mutually beneficial relationships with industry, the joint force and the international community."

He continued, "Those panels are being designed to work on each other as they go forward. For example, the first M&S panel is going to be highlighting the four core areas of great power competition, and that's to develop people, generate readiness, project power and develop capabilities. And additionally, on top of that, we're going to have three eminent keynote speakers from military, government and industry."

In addition to the panel presentations, Tempalski said that DAFMSS will be supported by approximately 50 exhibitors from various companies, government organizations and academia.

"The exhibits themselves are going to feature a variety of technologies and solutions. Their purpose is really to help our attendees in networking with industry and the government," he said.

Another special feature of DAFMSS involves a limited number of classified sessions that will be available to those attendees with clearances.

"Obviously, more details are going to be posted on the website as they come available, and to help facilitate this classified session," he noted. "And we're working with Lockheed Martin to host the classified portion at their R&D Conference Center."

ECS Unveils Military Working Dog Virtual Reality Casualty Care System

ECS [Booth 1949] will demonstrate its Military Working Dog (MWD) Virtual Reality Casualty Care system integrated with the HaptX G1 system at I/ITSEC 2024.

The MWD simulation provides canine handler trainees with a realistic VR environment that emphasizes recognizing symptoms and behaviors of heat stress in working canines by familiarizing trainees with a virtual K9 casualty who presents behaviors and symptoms consistent with the various stages of heat stress. The virtual dog demonstrates symptoms like stumbling or vomiting, or its gums will change color, and its vital signs degrade as its condition worsens. These symptoms prompt the trainee to intuitively take appropriate actions using the HaptX gloves, such as taking the dog's temperature, fanning it with nearby debris, or pouring water on its body to lower its core temperature before its condition escalates to a life-threatening stage. The gloves provide the user with tactile and force feedback during the simulation to allow them to feel virtual objects they interact with.

According to Shane Taber, ECS Chief Technology Officer, the level of interactivity between the handler and the virtual canine makes the system a very intuitive way of training, because trainees don't have to learn a lot of "buttonology" or interfaces to be able to complete the training.

Taber acknowledged that there are a number of other training products on the market right now designed for canine tactical combat casualty care, but, he said, "most of those focus on live training using medical manikins and other part task trainers that mostly focus on the period when trauma has already occurred."

He continued, "At that point, the canine is already out of the fight, and is now in a stage of treatment and evacuation, trying to ensure survival of the canine. So, by developing our system in the virtual space, it allowed us to still do hands-on training, but to do it before the injury has become so severe that it is taking the dog out of the fight. That's why we focused on the heat injury, because that's something that you can easily miss the signs and symptoms before its condition escalates to a life-threatening stage. However, if you catch them early, you can perform interventions that then can prevent the situation from worsening. There were several other conditions and ailments that we explored during the initial analysis, but that was the one that was the best fit to start with."

"We recently attended the military working dog symposium and it was amazing to see all of these trainers come forward and express their excitement for something like this," said Madison Quinn, Research Lead for ECS. "And a lot of them said that the first time this happened to one of their canines, they were not as prepared as they think they are. Dogs obviously cannot show too many signs and speak, they can only show their behavioral signs, and we as humans have to understand that.

"Like Shane said, there are part task trainers and the manikins at the moment, but you can't see when the dog's eyes start to get dilated. You can't see those gums changing on a canine manikin. But in this virtual reality, they can see those changes. They can actually pour water on the dog and start to see the dog's breath slowing down. They can see the coloration go back to normal. They can see the dog come back to life."

Noting that the current iteration of ECS' advanced haptics was developed under a Phase III SBIR and utilizes the latest haptics technology available on the market, Taber added, "At this point we're looking at how to commercialize it and apply it in dual use applications. Right now, the scenario that we have takes place in a military battlefield environment for military working dogs, but this could easily be transitioned to a law enforcement canine officer, search and rescue canines or any other kind of canine handler that's out there. Something like heat stress, which is the scenario that we have here at I/ITSEC, is certainly applicable to any of those use cases."

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Obsidian Spotlights Mixed Reality Manikin

Obsidian Solutions Group [Booth 763] is highlighting a prototype for a new mixed reality manikin at I/ITSEC 2024. Called Virtual Interactive Training for Augmented Learning (VITAL), the manikin combines tactile feedback with mixed reality overlays to provide trainees with the best of both worlds: physical engagement with realistic physiological responses and immersive digital overlays that simulate complex injuries and treatment needs.

According to Ryan Chen, Director of Modeling and Simulation for Obsidian Solutions Group, the fusion design elevates training realism, enhancing decision-making and response skills in high-stress environments.

"With the addition of adaptive learning, gesture recognition, pressure sensors and voice recognition, VITAL provides a state-of-the-art medical training resource that continually advances trainees' skills," he explained, adding that VITAL's flexible content adapts to various training scenarios, making it suitable for both the defense community and civilian first responders.

"I think medical treatment manikins are critically important and really interesting," Chen began. "And with a mixed reality medical training scenario, the VITAL design is almost alive. It's not just a static manikin on the table. It's actually a living representation of a warfighter that could be male or female, and in some cases, actively conscious and interacting with the trainee."

He added, "Maybe the scenario has them returning fire on an enemy position. Because when we were doing research on medical manikin training, especially with tactical combat casualty care, the information indicates that if you are wounded in battle, you will return fire as long as you are able to against the enemy. So in that case, if someone was injured, they still need to return fire. But you have someone who has to apply a tourniquet in that setting. So this allows that kind of intense medical scenario, where you don't have perfect conditions, you are in combat, you are going to save the life of this person and deal with all these other distractions. This is the kind of training we wanted to present. It's something novel that doesn't exist currently and it involves

production value in terms of animation and storytelling as well as interactive elements with game development."

Referencing his own background in motion capture technology, Chen continued, "It's readily available and has been around for decades. But here, instead of motion capturing a person, VITAL could feature motion capture and could have different modules to allow training on different medical procedures.

"The manikin itself doesn't have to be male or female and doesn't have to be highly detailed, because we are going to overlay that detail in mixed reality aspect. So we're talking about building a proxy human that has some kind of tracking mechanism, in this case, motion capture, with that data relayed to your perception on some kind of headset, whether it's VR or some new headset that we're developing internally. And the overlay allows the option of any gender, any combat situation, any type of wound that we can represent. It's extremely flexible. We plan to develop this and eventually commercialize it for both the military applications and civilian responders."

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AF & SF Summit *...continued from page 20*

He summarized, "The DAF Modeling & Simulation Summit is going to provide a forum for shared information, ideas and the connection of modeling and simulation professionals across the Department of Defense, industry, academia and international partners. So the DAFMSS is a great event to have those meaningful breakout conversations that lead to new innovations."

Comparing DAFMSS and I/ITSEC, he added, "They both showcase simulation, education, modeling and training technology for the exchange of information among our military, industry and educational communities. And both of them serve as valuable forms for modeling and simulation. Now, the bit of difference is that while DAFMSS and I/ITSEC target the same community, with DAFMSS it's just about the right size to make meaningful connections while exploring that new technology. So, we keep it a little bit smaller on purpose, so that we could get a little bit more of building out your contact list so that you can explore those new technologies."

As noted above, the upcoming DAFMSS gathering is being co-hosted by STARCOM. Established as a Field Command on Aug. 23, 2021, STARCOM is responsible for preparing the United States Space Force and more than 8,600 Guardians to prevail in competition and conflict through innovative education, training, doctrine and test activities.

"It is a tremendous honor to host the 2025 Department of the Air Force Modeling and Simulation Summit," said Maj. Gen. Timothy Sejba, Commander of Space Training and Readiness Command. "This event reflects our deep commitment to advancing the integration of space into multi-domain operations through cutting edge modeling and simulation technologies. As we transition to the Space Coast and Florida, STARCOM is proud to call Patrick Space Force Base our new home where we aim to make our mark in the region's robust modeling and simulation community. We will not only continue the spirit of innovation—we will harness the Space Force and the Air Force's command of their joint domains, staying atop of the latest in industry and academia, ensuring readiness for the challenges of tomorrow."

STARCOM representatives noted that the goal of the summit is to gather Air Force and Space Force M&S experts to learn about new initiatives and techniques in this field, network across military services and with industry experts and to hear our technological leaders' perspectives on how M&S can transition more training from the real world to digital. They added that the 2025 DAFMSS will provide a forum for shared information, ideas, and a connection of M&S professionals across the DoD, industry, academia and international partners.

They credited STARCOM's role as the host for the 2025 DAFMSS as highlighting the increasing significance of space as a critical domain in military operations, observing that STARCOM, a key component of the U.S. Space Force, is responsible for preparing combat-ready Space Force Guardians to prevail in competition and conflict through innovative education, training, doctrine and test; M&S being a key component for Space Systems Training and Test. The command, established in 2021, is comprised of five subordinate Deltas, and develops superior space capabilities, delivers warfighting solutions and prepares every Space Force Guardian.

A command representative concluded, "As the Space Force continues to mature in space capabilities, so must its ability to train and test in the high-fidelity mission-specific M&S environment. The Space domain has come to the forefront of national security, and it's STARCOM's mission to ensure that the Space Force is ready to protect the United States' national security interests in, from and to space. The DAFMSS is key to this mission as it provides a forum for military, government and industry to come together to advance the field that will enable the Space Force to ensure mission success in the Space Domain."

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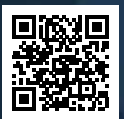
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I/ITSEC Scholarships Award Future Leaders

The National Training and Simulation Association continues its commitment to the future of the modeling and simulation community as demonstrated by the NTSA I/ITSEC scholarship program.

Janet Spruill, I/ITSEC Scholarship Chair, said the scholarship program started over 30 years ago with the award of a single PhD scholarship.

"The goal of that was to identify the top talent coming out of universities, and to help encourage them to stay within this defense modeling, simulation and training (MS&T) community," she said. "And over the years, it's continued to grow, so this year we'll award 21 scholarships and a total of $175,000. So, from that first $10,000 award, it's grown significantly, and I attribute that to several things.

"One is the growing acknowledgement of the importance of building that STEM pipeline of students who will become our future leaders; who will lead MS&T companies and really important research programs," Spruill continued. "And I don't think it's overstating it to say those programs and their leadership are a matter of national security. It helps us to continue to innovate. It helps us to continue to equip and train our warfighters so that we can remain the best trained force in the world."

Spruill said the scholarships are offered to U.S. citizen students at the undergraduate, master's and PhD level. "The undergraduate schools change each year, and we select three undergraduate universities to award those scholarships to. The master's and the PhD programs are a competitive process, and applicants apply through the I/ITSEC website portal. Our scholarship committee convenes in July, and we review, score and select those master's and PhD students deserving of awards, and then they are notified and invited to the I/ITSEC conference."

The four scholarship programs are: the RADM Fred Lewis Postgraduate Scholarship; the Leonard P. Gollobin Postgraduate Scholarship; the Barbara McDaniel Undergraduate Scholarship; and the NTSA CMSP [Certified Modeling and Simulation Professional] Scholarship at I/ITSEC. See page 30 for a complete list of scholarship recipients.

Spruill said the 21 scholarship recipients have been invited for an all-expense paid trip to the I/ITSEC conference. Their week includes a scholarship alumni reception, "which is a really important event bringing back former scholarship awardees to meet the newest awardees. We also invite the military senior leaders to that event to network with the students and to help motivate them to stay in this MS&T community," she said.

"We connect them to the Job Fair, where there are companies and government organizations looking to hire and to provide internships," Spruill continued, adding that the big event is the Conference Awards Banquet Thursday night, where the scholarships are presented to each individual.

Spruill's message to I/ITSEC attendees about the scholarship program is that "I think this really is a crucial part of the lifeblood of I/ITSEC and our MS&T community. It allows us to identify and to embrace into this community our rising talent, and to surround them with information and experiences and mentors who can help guide them, as well as real opportunities to connect and to stay connected, whether it's through the Alumni Program, the Career Fair, people that they'll meet in the exhibit hall, authors that they connect with because of the content of their papers, or even each other, to have a peer network as they go forward."

Two of this years' scholarship recipients spoke with *Show Daily* about their educational pursuits, career aspirations and what the awards mean to them.

Jonathan Harbin has been awarded a Leonard P. Gollobin Postgraduate Scholarship. He is studying computer science and/or information sciences at American Public University. He is a Major in the U.S. Army stationed at Fort Cavazos, Texas and is the brigade S6. He has served for 24 years, first in the National Guard Reserves and now on active duty. "I've been a signal officer for about 15 years, and a big piece of that is the cyber security of our network," said Harbin. "So, I kind of saw the writing on the wall, and

cyber operations has been a new branch in the military as well. I don't want to miss out on that, so I chose to get my master's in cyber security." He said the scholarship will help cover costs above the Army's tuition assistance support, which will be "one less thing to worry about." Harbin is looking towards a next career in cyber, he said, "as possibly a cyber operations planner. I chose this degree because it can turn into a lot of different options."

Sabina Patel has received a RADM Fred Lewis Postgraduate Scholarship. She is studying human factors at Embry-Riddle Aeronautical University where she is earning a PhD. Receiving this award, she said, "helps alleviate some of the tension of trying to manage financial burdens along with trying to pursue higher education. So, it just relieves some of the pressure of trying to balance both, especially while pursuing a PhD." Regarding future career plans, Patel said, "I would love to work for a human-AI team company. I'm open to any domain, but would love to continue within the space of some sort of human robot or human machine interaction."

Attending I/ITSEC for the first time, she said, "I'm excited to walk around the exhibit hall and also attend some of the talks. A few of my colleagues are giving talks later this week, so I'm excited to get to hear them speak." She concluded, "I'm grateful that I was awarded this scholarship, and excited to learn more about how robotics and AI are being integrated within different spaces."

2024 I/ITSEC Scholarship Recipients

RECIPIENT	TYPE	SCHOOL AFFILIATION	FIELD OF STUDY
Michelle Aros	Gollobin	Embry-Riddle Aeronautical University	Human Factors
Rory Bogan	Gollobin	The George Washington University	Engineering
Paul Brown	Lewis	Western Governors University	Computer Science and/or Information Sciences
Sara Florkey	Lewis	Florida Southern College	I/O Psychology
Javier Garza	Lewis	The George Washington University	Engineering
Jonathan Harbin	Gollobin	American Public University	Computer Science and/or Information Sciences
Sean Hinkle	Gollobin	University of Central Florida	Human Factors
Corey Kado	Gollobin	Florida Polytechnic University	Human Factors
Christine Kwon	Lewis	Carnegie Mellon University	Computer Science and/or Information Sciences
Logan Lane	Lewis	Virginia Tech	Computer Science and/or Information Sciences
Sabina Patel	Lewis	Embry-Riddle Aeronautical University	Human Factors
Kristen Schmidt	Gollobin	University of Central Florida	Human Factors
William (Liam) Stalker	Lewis	Wright State University	Human Factors
Rohana Swihart	Gollobin	Prescott College	Instructional Design and Training Methodology
Genna Telschow	Lewis	University of Central Florida	Human Factors
Rodney (Adam) Wade	CMSP	Auburn University	Engineering

Serious Games Showcase & Challenge
[Booth 2285]

The Serious Games Showcase & Challenge (SGS&C) is one of the main attractions at every I/ITSEC, and plays a critical role in helping to generate interest in the use of digital games and virtual reality applications for training and education. The SGS&C provides a showcase of best-in-class learning games submitted by business, government and student developers, and awards noteworthy games to recognize their achievements.

The true uniqueness of the SGS&C is that every I/ITSEC "player" has the chance to play the games, talk with the developers and cast a vote for the coveted SGS&C People's Choice Awards.

The SGS&C team is appreciative of this year's sponsors: ARA Virtual Heroes Division, BreakAway Games, Box.com, Engineering & Computer Simulations, Hatalom Corporation, HP, Mass Virtual, NTSA and VMASC.

Be sure to visit SGS&C [Booth 2285] to check out the games and cast your vote for the People's Choice Award before voting closes at 1800 today, Wednesday, December 4. Award winners will be announced on Thursday, December 5 at 1300 at the Innovation Showcase [Booth 2909].

STUDENT CATEGORY FINALISTS
GENERAL AUDIENCE

Home N' Work
Savannah College of Art and Design

Answer Campus
NERDLab at the University of Miami

Siege of Jerusalem: Another Story
Florida Interactive Entertainment Academy at the University of Central Florida and the Judaic Studies Department at the University of Central Florida

Flooded Folds
Team Paper at the University of Florida

VOTE NOW
Visit the SGS&C [Booth 2285] before Wednesday at 1800 to vote for this year's People's Choice Award.

STUDENT CATEGORY FINALISTS
GOVERNMENT AUDIENCE

Cyber Siege
Florida Interactive Entertainment Academy at the University of Central Florida and United States Air Force 338th Training Squadron (USAF 338th TRS)

Land Engagement Adjudication Platform (LEAP)
USAF Academy and AFRL Gaming Research Integration for Learning Laboratory (GRILL) for the Multi-Domain Laboratory at USAF Academy Strategy & Warfare Center

GOVERNMENT AUDIENCE FINALISTS

The PEACEGAME
CRISP - Conflict Transformation and Principles for Peace Foundation

The Plastic Pipeline
The Woodrow Wilson Center for International Scholars, Serious Games Initiative

AI's Anatomy
The Woodrow Wilson Center for International Scholars, Serious Games Initiative

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Lockheed Martin Moves Live Action to Virtual Environments

Lockheed Martin [Booth 1449] is utilizing the I/ITSEC Exhibition Hall to showcase its latest developments in force-on-force training solutions. Called SIMRES, the system utilizes a combination of sensors and algorithms to track soldier and weapon orientation and location in the real world and then orient that data in the digital world.

According to Jay Pitman, Vice President and General Manager of Lockheed Martin's Training and Logistics Solutions, this year's exhibit reflects a number of developmental enhancements achieved over the past year.

"We showed up at I/ITSEC 2023 with our new SIMRES force-on-force training solution," Pitman explained. "And we are absolutely coming back and bringing it full force in 2024."

He said that the synthetic training environment work that the company has been continuing with SIMRES "continues to be exciting," adding, "I/ITSEC visitors will get a hands-on experience with the technology — think of it as shooting a training weapon at targets located behind features like bricks or brush — to see how our system accurately simulates the effects of the bullets on all the different materials. They will have the opportunity to see the differences of what can stop a round and what can't. Some people got a small taste of it last year, but we have really had the opportunity to keep evolving and incorporating feedback from all the work we've been doing with the U.S. Army Soldiers and through some of the live training applications."

Pitman compared the force-on-force training design to what he called "traditional laser-based solutions," asserting that the laser systems have an inability to shoot through environmental conditions like fog, rain or brush.

"We will be able to demonstrate and show that realism, which is extremely exciting to us," he said. "And, like I mentioned, we can also show the differentiation between situations of concealment or cover."

Pitman observed that another aspect of the SIMRES design that is drawing customer interest is improved after-action review.

"Think of it as live immersive viewing that can then be replayed from any angle," he said. "So imagine yourself almost in a video game setting with the ability to play back that immersive training, including all the extensive reporting capability you can see in terms of things like shots fired and other tactical interactions."

Turning to what he described as "the macro level," he added, "One of the things I would make sure that I reinforce is that we view ourselves as linking together some of the best minds in both defense and commercial industries to make sure that we are effectively training military personnel for 21st century security needs. And we are obviously excited about continuing to provide the training, logistics and sustainment capabilities to not only save money and time, but most importantly, lives."

He continued, "I'm excited about continuing to build and deepen relationships with folks across I/ITSEC. We think we have continued to make sure that we have better training solutions for the future."

Pitman concluded, "I/ITSEC just brings together such an exciting group of really talented individuals, corporations and activities, along with key stakeholders across the services and on the international stage. And I'm really excited by the energy, the draw and just the excitement that I/ITSEC brings."

Kopin Visual Technology to Enhance Warfighter Performance

Kopin Corporation [Booth 472] is highlighting its advanced electro–optic designs at I/ITSEC 2024.

Chief Executive Officer Michael Murray told *Show Daily* that he joined the 40-year-old company approximately two years ago with the goal of focusing company efforts on becoming what he described as "an application-specific solutions company."

As one example, he said, "One way we do that is by developing what we call a micro display, which is basically a monitor that is only the size of your thumb. These devices are currently flying in the F-35 helmet system as well as on the CH-47 Chinook and UH-60 Black Hawk helicopters. And we also have many of these displays going into things like thermal weapon sights that go on weapons like the M-4 and new M-7 Next Generation Squad Weapon rifle."

Noting that the company manufactures multiple types of micro displays, he said, "We are extremely unique in the fact that we are the only U.S. owned company that makes these four different types of micro displays, and we also now make a fifth type, which is an AI-enabled micro display. And what's cool about them is we then put them into actual 'end systems' depending on the application."

Shifting to the company's display at I/ITSEC 2024, Murray highlighted the company's Scout and Ranger hand-held virtual binocular lines as well as thermal weapon sights, night vision goggles and heads up displays.
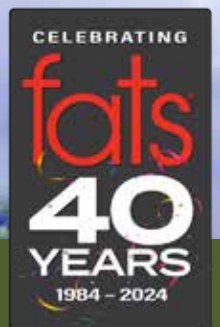
"Those are some of the types of products that we manufacture," he said. "And we build them into application-specific solutions that include a micro display, the optics and the housings that you need. So we like to think about Kopin as your [commercial lens provider] for aerospace and defense applications."

"I hope I/ITSEC visitors leave our exhibit with the understanding that Kopin is focused on saving lives. That's number one. And number two, we are impacting human performance, whether it be for warfighters, surgeons, gamers or industrial mechanics, using video and optics to provide better human experiences, and potentially life-saving experiences.

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