



# WELCOME to the 2<sup>nd</sup> Annual Mixed/Augmented/Virtual Reality Innovation Conference!

We are so pleased that you have joined us and would like to take this opportunity to thank you for your support of AR/VR/MR in the Mid-Atlantic region. Without the fantastic work that you and your peers in the region are doing, there would be no reason for the conference, so thank you! We hope that you will find the sessions interesting, the demos fascinating, and the connections you make invaluable.

We have two fantastic days of talks planned in both the 1st floor Innovation Center and the on the 10th floor, and some great demos available on both floors, as well. The Speaker/Work room is the main conference room on the first floor, and all are welcome to use it when you need to check email, charge your devices, or find a quiet area. Phone 'booths' are available on the 10th floor. The wifi passwords are available from the reception desk. Breakfast, snacks and drinks will be available throughout the event in the Recharge Room, and we hope you will stay for the reception at the end of the first day. Thanks to Booz Allen Hamilton, our hosts, there will be a reception from 5:15-7:30 on the 17th.

I'd like to thank our Speakers, Advisors, and Sponsors, without whom none of this would be possible!

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# Poster Sessions

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<p><b>Alexandra "Ali" Tobolsky</b></p> <p><b>Kash Sridhar</b></p>	<p><b>Designing better virtual user experiences for optimized human performance</b></p>	<p>"Human physicality and cognition can be quantified for the purposes of designing systems or predicting human behavior. Using augmented and virtual reality solutions, users may be exposed to a variety of controlled simulations while a system of sensors work in real-time to assess data, identify stress patterns, and provide recommendations for improving performance.</p> <p>We will walk through learned best practices for user experience design principles and research methods, as well as and a look ahead at the future of user experience around haptics, eye-tracking, integrated neurofeedback, and increasingly portable virtual reality training delivery mechanisms."</p>
<p><b>Ian Coffman</b></p>	<p><b>Evaluating a US Navy VR training program: Methodology and challenges</b></p>	<p>"The US Navy has recently implemented the Immersive Virtual Shipboard Environment (IVSE), an interactive, first-person perspective software replica of the Littoral Combat Ship (LCS) designed to simulate and largely supplant on-the-job training for certain engineering roles/ratings. The IVSE consists of a series of modules that each cover tasks related to routine maintenance/system alignment as well as adverse events (i.e., casualties) that may occur in deployed settings. Each module includes a series of training phases with diminishing degrees of guidance and culminates with a "watchstanding challenge" meant to simulate actual duty aboard the LCS.</p>
<p><b>Evan Owens</b></p>	<p><b>Toward a Physiological Understanding of Presence and Embodiment</b></p>	<p>"Fully immersive head-mounted displays (HMDs) have emerged as a viable pedagogical tool in recent years. How this technology influences human cognition and its underlying neural circuitry remains unclear. Accumulating evidence suggests that bodily awareness, and even self-consciousness, are the consequence of integrating information across multiple sensory modalities. This illusion of the self is referred to as bodily self-consciousness.</p>
<p><b>Rawan Alghofaili</b></p>	<p><b>Lost in Style: An Adaptive Navigation Aid for an Immersive VR experience.</b></p>	<p>The integration of eye-tracking into VR head-mounted displays offers a wide range of opportunities to enhance the VR experience. Rawan Alghofaili will discuss a VR navigation aid which is adaptively displayed only as needed, according to a Long short-term memory (LSTM) classification of the player's gaze patterns. The adaptive nature of the aid resulted in a more immersive VR experience, with players exploring more of the scene as they traverse the environment. Alghofaili will explain how this tool was realized. As well as ways it can be used in designing virtual spaces and enhancing the AR experience.</p>
<p><b>Ewa M. Golonka,</b></p> <p><b>Jared Linck,</b></p> <p><b>Medha Tare</b></p>	<p><b>360-degree video improves listening comprehension in a second language</b></p>	<p>This session presents the results of an empirical study, which tested the hypothesis that second language (L2) listening practice via 360-degree video increases the sense of presence, leading to corresponding gains in listening comprehension. Native English speakers with advanced L2 Russian proficiency watched a video of a Russian conversation at an embassy cocktail party in either 2D or 360-degree conditions. Results show that participants in the 360-degree video condition had significantly better listening comprehension scores and experienced a greater sense of presence than those in the 2D condition; however, the benefits of listening comprehension were not driven by increased presence.</p>
<p><b>Yauri Dalencour,</b></p> <p><b>Bianca Jackson</b></p>	<p><b>Visual Culture, Experience design and Social Impact - Leveraging Augmented &amp; Mixed Reality in Art and Immersive Storytelling</b></p>	<p>Our query is an exploration of how using Augmented Reality and Mixed Reality for consuming art, impacts the art viewing experience for the viewer. Have you ever thought about ways to make art more accessible or more engaging? Thought about how to help viewers connect with the artists, the subject or subject matter(s) more deeply when viewing art? If so, this session will intrigue you. Using AR to bring art to spaces with no art and using MR to visualize birth stories of African American women, we reveal through these projects different techniques and software in XR that can be leveraged to make social impact and increase the number of accessible and meaningful immersive experiences by intersecting culture, art and technology. We will share our experience designs, design principles, inquiries, key takeaways, themes and insights of our exploration with our attendees. Further, we'll provide tips, best practices and DIY techniques inspiring attendees to go beyond art viewing to art making with immersive storytelling and immersive design.</p>

Time	DCIC (1st Floor)	10th Floor
0800	<b>Registration/Breakfast</b>	
0900	<b>Welcome</b>	
0915	<b>Keynote -</b>  <b>A brief history of the next big thing</b>  Graeme Devine - Magic Leap	
1005	<b>Break</b>	
1020	<b>Augmented Reality for Ultrasound-Guided Surgical Interventions</b>  Raj Shekhar, PhD - Medtech , Children's National Hospital	<b>Machine Learning in Spatial Computing Datasets</b>  David Busch - Booz Allen Hamilton
1050	<b>Break</b>	
1110	<b>From Football Field to Battlefield: Accelerated Training in Mixed Reality</b>  Jordan Higgins - U.Group & George Mason University	<b>Implementing xAPI in XR For Improved Data Measurements and Assessment</b>  Stuart Claggett - DIG-IT! Games
1200	<b>Lunch Break</b> Poster Sessions will be available on the 1 <sup>st</sup> Floor in the Upper Hall	
1330	<b>Creating Immersive VR for Language Learning: Lessons Learned</b>  Svetlana V. Cook - National Foreign Language Center at UMD	<b>AR-ECDIS: A Mobile Maritime Navigation Assistance System</b>  Hurriyet Aydin Ok - VRT-U LLC  Ziya Ipekkan - SimBT INC.  Cagatay Undeger - SimBT INC.
1400	<b>Break</b>	
1415	<b>XR for Every Age: Creating content for an ageless consumer</b>  Cezara Windrem - AARP Innovation Labs	<b>Future of Fashion: The Economic Impact of Style for Immersive Technology Adoption</b>  Darragh Dandurand - Producer + Independent Journalist
1445	<b>Lessons Learned: Research project post-mortems</b>  Blake Schreurs - JHU Applied Physics Laboratory	<b>Blame the Design Team</b>  Jeff Fiske - Muzzy Lane Software
1510	<b>Break</b>	
1530	<b>Audience as Participant: How State-Driven Systems Transform Performance</b>  Nicholas Fortugno - Playmatics	<b>Accessibility in XR</b>  Jason Michael Perry - Mindgrub Technologies
1555		<b>True Story: How The Washington Post uses immersive technologies for journalism</b>  Elite Truong - The Washington Post
1620	<b>Break</b>	
1630	<b>Weather Forecasting In Virtual Reality</b>  Mason G Quick - University of Maryland	<b>Creating and Validating a VR measurement tool</b>  Dr. Susan Persky - National Human Genome Research Institute (NIH)
1700	<b>Break</b>	
1715	<b>Reception</b>	-

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0915	<b>Welcome/Announcements</b>	
0940	<b>Building the XR Ecosystem on the East Coast</b> Susanna Pollack - Games for Change	<b>Natl Insts for Health XR Funding Opportunities</b> Victor Prikhodko - Natl Insts of Health
1005	<b>Break</b>	
1020	<b>Location Based Training, Navigation, and Maintenance without GPS, beacon, wifi, or cell service</b> Neil Levin - Powers Media	<b>M-PAVE: Maryland Project on Avatars and Virtual Environments</b> Dr. Helene Kalson Cohen - University of Maryland - College Park Daniel Levin - University of Maryland - School of Education
1050	<b>Break</b>	
1110	<b>VR and AR for Everyone</b> Seth T. McBeth - Diplomatic Language Services	<b>Panel: Putting the AR in Marketing: From Apples to App-less</b> Panel with Will Gee - BaltiVirtual Jon Morris - Fueled James Heuser - Monumental Sports / Caps
1200	<b>Lunch Break</b> Poster Sessions will be available on the 1st Floor in the Upper Hall	
1330	<b>Abstract to Action, Adaptive Flight Trainer and Targeted Learning System</b> Travis H. Sheets - USAF/Pilot	<b>D4: Data-Driven Design Decisions</b> Madlen Simon - Maryland's School of Architecture, Planning, and Preservation Justin Benjamin - Perkins and Will's New York and Washington DC offices Ming Hu - Maryland's School of Architecture, Planning, and Preservation
1400	<b>Break</b>	
1415	<b>Using XR and Artificial Intelligence to create better tools</b> Mike Wikan - Booz Allen Hamilton	<b>Panel: VR and Healthcare - How Do We Build and Grow the Ecosystem in the DMV?</b> Robert Fine - Intl Virtual Reality and Healthcare Assoc Dr. Susan Persky - Natl Human Genome Research Inst Jonathan H. Sherman - The George Washington University / Medical Faculty Associates Vijay Ravindran - Floreo Adaora Udoji - RLab Cezara Windrem - AARP Innovation Labs
1510	<b>Break</b>	
1530	<b>Creating Virtual Culture for Art and Museum</b> Kyungjin Yoo - University of Maryland - College Park	<b>3D Scanning and Visualization for Scientific Discovery</b> Don Engel - Univ of Maryland - Baltimore County
1555		<b>Are We There Yet? Crossing the Chasm with AR/VR for Training</b> John Burwell - Varjo Technologies
1620	<b>Break</b>	
1630	<b>Emma Rye - VR MRI Simulator for pediatric patient wellbeing</b> Hillel S. Maresky, MD - Lewis Katz School of Medicine at Temple University	<b>Using VR Tools to Playtest Museum Installations</b> Dustin Stephan - Carnegie Mellon's Entertainment Technology Center Daryl Choa - Carnegie Mellon's Entertainment Technology Center
1700	<b>Conference Closes</b>	