TATRC Participates in the Medicine Meets Virtual Reality (MMVR) Conference

For 16 years, TATRC's "MedSim" team has played a prominent role in the success of the Medicine Meets Virtual Reality (MMVR) Conference. In 2016, several TATRC leaders participated in MMVR to include Mr. Harvey Magee, Lab Manager, Medical Modeling & Simulation Innovation Center (MMSIC), Dr. Thomas Talbot, MD, MMSIC's former Chief Scientist, Mr. Geoff Miller MMSIC’s Senior Research Scientist, and Ms. Lori DeBernardis, TATRC’s Marketing Director. Also in attendance were Drs. Kevin Kunkler and Amber Linde from the Joint Program Committee - 1 (JPC-1), Medical Simulation and Health Information Sciences, as well as Mr. Hugh Connacher from the Congressionally Directed Medical Research Program. Approximately 275 people attended MMVR from 23 countries around the world. There were more than 180 educational sessions with a technical exhibit area featuring cutting-edge research demonstrations, where TATRC had a booth and was highlighted.

So what is the MMVR Conference anyway? In 1992, visionaries at the very first MMVR Conference, presented a bold image and road map of patient care and medical education transformed by computer technology. The evolving NextMed/MMVR became an engaging event at which a creative mix of unorthodox thinking researchers comprised of engineers, physicians, scientists, educators, students, industry, military, and futurists, communicated their commitment to intelligent healthcare and validated investigation.

NextMed/MMVR is an international conference that welcomes the participation of 1) physicians and other medical professionals who are interested in computer-enabled advances that make patient care more effective, accurate, and affordable, 2) IT engineers and medical device developers who must understand caregivers' needs in order to direct projects toward the best outcome, 3) medical educators and students involved with the transfer of knowledge to the next generation of physicians and fellow providers, 4) military medicine specialists addressing the special demands of battlefield care and warrior rehabilitation, and 5) biomedical futurists, investors, and policy-makers who need to evaluate scenarios for healthcare's future. It was critical that the MMSIC team engaged with this audience to ascertain and understand the latest technology developments and how they may contribute to solving identified training technology gaps in the DoD.

Presentations were chosen to educate participants on: 1) advances in simulation, modeling, and haptics that are upgrading medical education, skills training, psychotherapy, and physical rehabilitation, 2) novel imaging, visualization, and data fusion methods that make clinical diagnosis and therapy more precise and personalized, 3) robotics and sensors that extend the caregiver’s reach and provide richer patient data, 4) medical intelligence networks that promote a collaborative healthcare environment and enhance decision making.

Dr. Thomas “Brett” Talbot, former Chief Scientist for MMSIC, delivered a presentation on "Natural Language: Understanding Performance and Use Considerations in Virtual Medicine Encounters" and was a presenter and panelist for a session entitled: “Fidelity for Simulation in Healthcare: Pushing the Envelope.” Additionally, JPC-1’s Dr. Amber Linde spoke along with Dr. Kevin Kunkler on “The Evolution of Medical Training Simulation in the U.S. Military.”

Prominently featured in a half-day seminar, was one of MMSIC’s primary projects, the BioGears® Open-Source Human Physiology Engine, which included multiple, interactive presentations and hands-on learning opportunities. BioGears® simulates whole body model human physiology in response to a variety of conditions, injuries, and interventions. BioGears®, available to the public as a FREE download (www.biogearsengine.com), enables accurate and consistent simulation physiology across training applications. Medical educators, trainers, developers, and manufacturers require medical training content that includes consistent, validated physiology responses. The BioGears® simulation software suite was conceptualized to provide that capability.

BioGears® is a research project by Applied Research Associates, under the leadership of Mr. Jeff Webb, Principal Investigator, funded through the JPC-1 and managed by TATRC’s MMSIC. Mr. Harvey Magee serves as the Grants Officer Representative. Presenters at this seminar were Mr. Jeff Webb, Dr. Rachel Clipp, and Mr. Aaron Bray. Four BioGears® posters were selected for the poster session as well.

During the two-day technical exhibit, The TATRC team engaged with numerous current and potential DoD research partners from government, academia, and industry. The team had the opportunity to interact with conference participants and inform them about both the latest initiatives and new mission within MMSIC.

MMSIC Lab Manager, Mr. Harvey Magee reflected on the event stating, “the MMVR conference continues to be “the place-to-be,” serving as a unique and distinct melting pot for innovators and early adopters in the fields of virtual reality and medicine. With MMSIC’s newly assigned mission to enable and assess technologies, it is important that the MMSIC team communicate this message to the community at large.”