FOR IMMEDIATE RELEASE:

ARA WINS CONTRACT TO DEVELOP ARMY'S HUMAN PHYSIOLOGY ENGINE

INTERNATIONAL MEETING ON SIMULATION IN HEALTHCARE **(**IMSH**),** SAN FRANCISCO, Jan. 28 – Applied Research Associates (ARA, www.ara.com) has been awarded a multiyear, $7 million contract by the U.S. Army Medical Research and Materiel Command (USAMRMC) in Fort Detrick, MD under Contract Number: W81XWH-13-2-0068.

ARA's biomedical research team will develop BioGears™ (www.biogearsengine.com), an open-source physiology engine to allow for distributed collaboration and consistent simulation across the medical training community. The BioGears™ physiology engine will model human response to trauma and treatment and will include physiologically accurate models for multiple systems, including cardiovascular, respiratory, renal and endocrine.

BioGears™ is based on a common data model that will create standard inputs and outputs, making it easy to extend existing and add new physiology models. BioGears™ will provide a set of application programming interfaces (APIs) for real-time retrieval of accurate physiology state. This allows for easy integration with immersive medical education software built on popular game engines such as the award-winning Unreal® Engine technology and Unity® game engine. BioGears™ will be a GCC compliant, C++ library.

Joint Program Committee 1 - Medical Training and Health Information Sciences Research Program (JPC1) and the U.S. Army's Telemedicine & Advanced Technology Research Center (TATRC, www.tatrc.org) will administer the program.

The main goals for BioGears™ are:

- Create a comprehensive, extensible human physiology engine that will drive medical training technologies
- Create a publicly available physiology research platform that enables accurate and consistent simulated physiology across training applications
- Lower the barrier to create medical training content
- Engage the community to develop and extend physiology models
- Meet the training needs of the military
- Expand the body of knowledge about the use of simulated physiology for medical education

"Our team is thrilled to have been selected by TATRC. This project is one of great importance to the medical simulation community and the advancement of immersive medical training technologies. We look forward to creating the most comprehensive, open source mathematical model of human physiology available," said Jerry Heneghan, BioGears™ principal investigator at ARA.

ARA's biomedical modeling and simulation research group has a proven track record of creating innovative, physiologically accurate mathematical models that drive immersive, game-based medical training technologies. Jerry Heneghan will present on BioGears™ at the IMSH

conference on Tuesday, Jan. 28, from 2 to 2:45 p.m. at the Moscone Center West in Interactive Learning Center Room #7.

**About Applied Research Associates, Inc. (ARA):**

Applied Research Associates, Inc. (ARA) is an international research and engineering company recognized for providing technically excellent solutions to complex and challenging problems in the physical sciences. Our mission is to provide in-depth and diversified research, engineering, and technical support services. We have a broad range of technical expertise in biomedical engineering, defense technologies, civil engineering, computer software and simulation, systems analysis and environmental technologies. For additional information, please visit www.ara.com.



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