

Robert K. Armstrong, Jr.

PROFESSIONAL EXPERIENCE

Director of Technology, Virginia Modeling, Analysis and Simulation Center (VMASC), Old Dominion University Research Foundation

- Sought out and coordinated personal and VMASC involvement in various Funded, STTR and BAA projects, including the following current efforts from 2007:
 - BAA 07-56 Deep Green (Pending)
 - STTR ST071-004 Next-Generation Behavior Composer for Military Simulation (Awarded)
 - Risk Analysis for Range Safety Study (TECOM/USMC, teamed with ASC, Ongoing)
- Coordinated use, installation, upgrade, and administration of hardware/software/network technologies for the entire VMASC organization, ensuring cutting-edge computing, storage, and visualization resources were available for resident researchers and collaborative partners. Rebuilt VMASC network and server infrastructure to accommodate both administrative and research oriented computing needs.
- Collected, validated, and published the requirement for a new 60,000 square foot research facility. Efforts included the detailed analysis and drafting of interior laboratory, conference, and administrative spaces.
- Created and executed a plan to outfit the new VMASC research facility with \$1.23 million in state-of-the-art computing, storage, visualization and collaboration system.
- Research Project/Program Management
 - PM for five year/\$10 million R&D contract to Joint Forces Command's Joint Warfighting Center.
 - PM for initial and follow-on R&D contract to Joint Non-Lethal Weapons Directorate.
 - Led VMASC effort to support and promote Science, Technology, Engineering and Mathematics (STEM), as well as game-based education, in K-12 schools throughout the local community.
- Participated as a researcher in support of various funded BAA/STTR/SBIR projects awarded to VMASC.
- On-site facilitator and coordinator of Engineering Early Advantage Program, a transition and familiarization program for incoming female Old Dominion University freshmen engineering students, 2005-present.
- Created or assisted with the drafting of numerous research proposals, grant requests, and research plans.

Director/Deputy Director, Training and Education Technology Division, Training and Education Command, U.S. Marine Corps, Quantico, Virginia

- Represented Marine Corps training instrumentation and simulation requirements for the Joint National Training Capability (JNTC), a Office of the Secretary of Defense and Joint Forces Command Training Transformation initiative to provide a common and distributed capability for the delivery of live, virtual, and constructive simulation-based training. Responsible for collecting and setting institutional requirements for simulation-based training, especially at the Joint operational level.
- Responsible for the functional design of the Range Modernization/Transformation project, a \$200+ million effort to enhance the combined arms and urban training available at Marine Corps live training ranges. This project included the discovery and implementation of a new method for instrumenting ground and air assets as they moved through the 900+ square-mile Twentynine Palms, California training area. It also included

the creation of both live fire and non-live fire urban training centers, complete with roll-playing personnel, to provide direct pre-deployment support for Marine units.

- Personally responsible for the functional design of the Deployable Virtual Training Environment (DVTE). DVTE is a hardware and software suite that provides simulation and game-based cognitive training tools to deployed Marines. It is the first easily deployable simulation system developed for use by Marines in a shipboard or forward-deployed environment.
- Personally responsible for creating and validating the requirement and initial functional design of the Combined Arms Command & Control Training Upgrade System (CACCTUS). CACCTUS is a much-needed replacement for the Marine Corps' Combined Arms Staff Trainers, or CASTs. Originally installed in 1978, CASTs utilize plaster terrain models and sound powered phones to replicate training terrain areas and radio networks. The CACCTUS project installed high-resolution simulations, 3D visualizations, and voice-over-IP systems as replacements; further, CACCTUS includes the capture of events to formulate a detailed after-action review.

Other Significant Marine Corps Accomplishments

- Hand picked to serve as Base Housing Officer, 29 Palms, California. Managed 25 civilian employees, 2750 housing units, over \$165 million in ongoing construction/refurbishment, and wrote and executed a \$17 million annual operating budget.
- Coordinated 1998 Marine Corps Birthday Ball celebration in Palm Desert, California. Event included a pageant, dinner, and dancing for 2500 Marines and their dates/wives. Total cost for the event was over \$110,000, and took 12 months to plan and execute.
- Deployed to South Korea, Japan, Kuwait, and Somalia in support of training or real-world operations.
- In 1990, wrote a software program to systematically track efforts required to recruit qualified candidates to become Marine Officers for the 9th Marine Corps Recruiting District.
- Consistently ranked in the top five percent of my peer group.

Marine Corps Assignments:

2001-2005: Director/Deputy Director, Training and Education Technology Division, Training and Education Command, U.S. Marine Corps, Quantico, Virginia

2000-2001: Executive Officer, 3d Battalion, 11th Marine Regiment, 1st Marine Division, Twentynine Palms, California

1997-2000: Head, Battle Simulation Center, Marine Corps Air-Ground Combat Center, Twentynine Palms, California

1995-1997: Graduate Student, Naval Postgraduate School, Monterey, California

1992-1995: Commander, Battery L, 3d Battalion, 11th Marine Regiment, 1st Marine Division, Twentynine Palms, California

1991-1992: Student, Amphibious Warfare School, Quantico, Virginia

1988-1991: Officer Selection Officer, Officer Selection Station, Indianapolis, Indiana

1986-1988: Various billets, Battery L, 3d Battalion, 11th Marine Regiment, 1st Marine Division, Camp Pendleton, California

1985-1986: Student, The Basic School and Field Artillery Basic Officer Course

RELEVANT TECHNICAL SKILLS AND EXPERIENCE

Unix, Linux, MS Windows, Macintosh operating systems use, configuration, administration
MS Server 2003 configuration and management
VMWARE workstation and server
Apache, HTML, PHP
Past experience with C++, Lisp, Perl, OpenSceneGraph, Open GL, various scripting languages
IPV4, IPV6
JCIDS document preparation and requirements specification

EDUCATION

2005-present: Old Dominion University, Norfolk, Virginia
Enrolled part-time in Modeling and Simulation Doctoral Program
Completed core coursework during evening classes

1995-1997: Naval Postgraduate School, Monterey, California
M.S., Computer Science
President, Monterey Area Linux Special Interest Group
Thesis: "Investigation of Effect of Different Run-Time Distributions on SmartNet Performance" – September 1997

1981-1985: US Naval Academy, Annapolis, MD
B.S., General Engineering
Commissioned upon graduation into U.S. Marine Corps

PUBLICATIONS

"Science and Technology Long Poles in the Tent" – published in 2002 and 2004 for the express purpose of announcing immediate S&T shortcomings, relative to Marine Corps training requirements

"CACCTUS: Linking the Live, Virtual, and Constructive Environments" – I/ITSEC 2004

"From Game To Training Aid" – Training and Simulation Journal, June/July 2003

"The Deployable Virtual Training Environment" – I/ITSEC 2002

"The Relative Performance of Various Mapping Algorithms is Independent of Sizable Variations in Run-time Predictions" – 7th Heterogeneous Computing Workshop, 1998