

# Review

**INSTITUTE for  
SIMULATION  
& TRAINING**

## IST welcomes new executive director

**D**r. Dennis K. McBride is IST's new Executive Director. He comes to IST from the Office of Naval Research where, as Captain McBride, he was the Research Program Officer for the Aviation Medicine and Human Performance Program, Medical Science & Technology Division.

Following the conferment of his first Ph.D., in experimental psychology and learning theory from the University of Georgia, Dr. McBride completed Navy Flight Surgeon School and Navy basic flight training. He subsequently was des-

ignated a Naval Aerospace Experimental Psychologist and served at five Navy laboratories, principally in human performance research and development and flight test of tactical aircraft and systems. He graduated from the Navy flight test engineering training program and was selected by the Navy as a NASA astronaut candidate. He also served as science advisor to the Deputy Assistant Secretary of the Navy (C4I).

As Program Manager for modeling and simulation at the Defense Advanced Research Projects Agency (DARPA) Dr.



McBride organized and managed agency programs in computer-generated forces, intelligent gateways and synthetic environments that ultimately were presented

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## Far out learning not that far off

**T**he premise is simple: it's too expensive and time consuming to send people away to be trained. It's also too expensive and not practical to transport the trainers to distant classrooms.

One solution is to use Internet technology to deliver the training. Not so simple is making sure that (1) the delivery system—both software and hardware—is generic enough to be useable on the widest variety of target platforms, and (2) the content is designed to provide the intended learning results.

To meet the increasing need for on-demand training and education services, the White House Office of Science and Technology and the Department of Defense in 1997 launched the Advanced Dis-

tributed Learning (ADL) initiative. Its goal is to ensure access to custom-tailored, high quality education and training materials whenever and wherever they are needed.

Business, education and government entities are collaborating in an ADL effort that focuses on developing and delivering instructional content through the establishment of a common technical framework and reusable, platform-neutral software.

With its emphasis on training and education research, IST has a strong interest in both ADL content and technical issues. Current ADL efforts at IST include development of a prototype Web-based

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## Salas to edit human factors journal

**E**duardo Salas, Ph.D. has been selected to be the next editor of *Human Factors* (the official journal of the Human Factors and Ergonomics Society). Dr. Salas holds a joint appointment with IST and the University of Central Florida's Department of Psychology.

*Human Factors*, considered by many psychologists to be the most prestigious of peer-review journals, publishes articles on and reviews of basic and applied research on the interface between humans and systems. According to IST's director, Dr. Dennis McBride, Salas' appointment reflects positively on the university's standing in human factors research and teaching.

Dr. Jack McGuire, chair of the university's Department of Psychology, referred to the appointment as "...a great honor for Dr. Salas and [one that] will bring tremendous visibility to UCF, as human factors professionals and students continue to associate the field with UCF."

Recognition from the appointment is expected to increase applications from high quality graduate students, ultimately augmenting research programs at both IST and the university.

Dr. Salas came to the university in June 1999 from the Naval Air Warfare Center Training Systems Division (NAWCTSD) where from 1984 he man-



Dr. Eduardo Salas

aged team training and performance research projects and was head of the Training Technology Development branch. During this period Dr. Salas served as a principal investigator for numerous R&D programs focusing on teamwork, team training and performance assessment. He is widely published and has served in editorial capacities in at least 26 journals and other professional publications.

Dr. Salas has co-authored over 150 journal articles and book chapters and has co-edited eight books and has two in preparation. He is on the editorial boards of *Human Factors*, *Personnel Psychology*, *Military Psychology*, *Interamerican Journal of Psychology*, *Transportation Human Factors Journal*, *International Journal of Aviation Psychology*, *Group Dynamics*, *Journal of Organizational Behavior* and *Training Research Journal*. He currently edits an annual series, *Human/Technology Interactions in Complex Systems* (JAI Press).

Dr. Salas's expertise includes helping organizations to foster teamwork, implement team training strategies, facilitate training effectiveness, manage decision making under stress, develop performance measurement tools and design learning environments. He is currently working on designing tools and techniques to minimize human errors in aviation, law enforcement and medical environments. He has consulted to a variety of manufacturing, pharmaceutical laboratories, industrial and governmental organizations.

Undergrad, Ph.D., joint faculty appointment...

## Advancement is real for IST simulation researcher



Dr. Robert Franceschini

**D**r. Robert Franceschini, a Senior Research Computer Scientist at the Institute for Simulation & Training has been appointed Visiting Assistant Professor in the School of Computer Science. The one year, renewable appointment is a joint faculty position with IST and the university. Beginning in January Dr. Franceschini will divide his responsibilities between the two positions.

A UCF alumnus, Dr. Franceschini earned his BS and Ph.D. in Computer Science in 1992 and 1999 respectively. He has been with IST since 1994, where he leads research projects related to multi-resolution simulation. In 1997 IST named him Researcher of the Year for his leading edge advances in Computer Generated Forces research. Also that year the Link Foundation awarded him a fellowship for graduate studies in the simulation sciences.

As a student at UCF, Franceschini was founding vice president of the UCF Delta Chapter of the Upsilon Pi Epsilon Computing Sciences Honor Society. He later served as president from 1991 to 1994.

Dr. Franceschini will teach courses in computer science during the spring, summer and fall terms while continuing his research at IST.

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## Army project spurs non-line-of-sight simulation research **Feature**

**A**dvanced weapon systems designed for future combat soldiers will be capable of hitting targets that are not in the direct line-of-sight.

One of these weapons, the Objective Individual Combat Weapon, can fire either kinetic energy projectiles (bullets) or explosive, air-bursting munitions (a form of grenade). This weapon will enable the soldier to defeat enemy forces hiding in trenches and behind barriers. It is expected to replace the M16 rifle in the Army's 21st Century Land Warrior program.

IST and the U.S. Army Simulation, Training and Instrumentation Command (STRICOM) are researching the development of Advanced Tactical Engagement Simulations (A-TES), an Army Science and Technology Objective (STO).

"Developing a weapons system with this capability is challenging enough," says Dan Mullally, one of IST's research scientists assigned to the project. "Building an engagement simulation system is even more challenging." According to Mullally, accurate training simulations of the effects of this indirect fire for training and testing will require new technologies.

### Field Exercise Use

The expense of training with live rounds is constantly being driven upwards by escalating costs of sophisticated weapons. One of the goals of the project is to

allow the introduction of test and training simulations into live, virtual and constructive domains. The research focuses on providing an accurate and inexpensive means to simulate indirect "live" fire into field exercises where the training is performed with live "friendly" and "opposing" forces using simulated weapons.

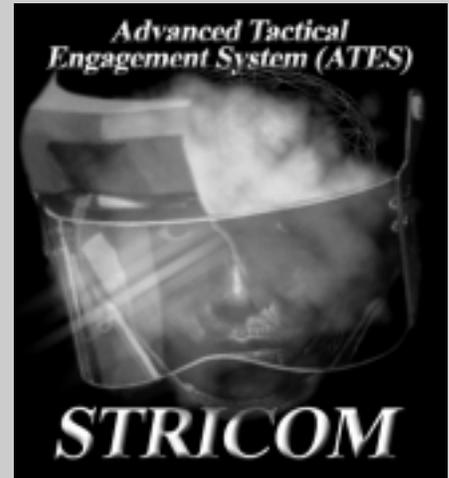
Although the Objective Individual Combat Weapon was chosen for the initial testing, the simulation's design could be applied to any indirect fire live training.

The simulation will use such emerging technologies as ultra wide band radio communication to link weapon firing data to a central processing facility during field training. The facility will process location data transmitted from shooters and targets, determine the resulting casualties and transmit hit, miss or kill data back to the players. One of IST's tasks is to develop a visualization of this data to aid analysis.

IST has developed and distributed a CD ROM presentation that graphically depicts the non-line-of-sight problem and incorporates an animated presentation of projected A-TES system capabilities.

### A-TES Encyclopedia

The institute also is developing a Web-based encyclopedia to familiarize the interested reader with the A-TES program and other related subjects. The two-part encyclopedia provides information



related to the evolution of the program and presents information and results generated during program testing and evaluation.

Material available for reference includes simulation descriptions, results, visualizations and analyses for the various Testbed Implementation Exercises. These exercises bring together all aspects of the initiative in a series of focused activities.

For example, one exercise might evaluate the applicability of a particular weapon aim-point instrumentation package, whereas another might develop an actual or simulated prototype tactical engagement system.

More detailed information is available on the A-TES STO Web site at [www.a-tes.org](http://www.a-tes.org).



## ADL programs under development at IST

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course under the sponsorship of the Florida Department of Education and the Navy that will enable public school teachers statewide to meet English as a second language certification requirements.

The project's goal was to demonstrate the advantages, capabilities and flexibility of Web-based instruction within the logistical and financial constraints of the public education system. The prototype includes capabilities for tracking and test-

ing learners. Forum and chat capabilities augment the instructional content. The prototype is platform independent and designed to run on hardware already in place in the schools.

IST's Performance Technology Group has developed an in-house course to teach training and instructional design professionals how to convert curricula to a Web-based format. The five-day course covers the integration of digital media,

network issues, course and network administration, information management systems and related topics.

As curriculum developers gain new insights from applying the latest technology, ADL's concept and content are maturing and changing. IST is employing its multidisciplinary expertise and experience to develop a seamless, on-demand ADL learning environment.



## 4 Past IST Director honored for lifetime achievement

Past IST Director A. Louis Medin, Ph.D., was the recipient of a Lifetime Achievement Award at the 21st Interservice/Industry Simulation, Training and Education Conference (I/ITSEC) recently held in Orlando.

Conference officials honored Dr. Medin for his more than 20 years of educational leadership to I/ITSEC and the simulation industry. Medin and his wife, Julia, who also holds a Ph.D., serve as academic advisors to the conference. Presented at the closing banquet, the award is only the third such honor given in the conference's 21-year history.

I/ITSEC is the largest conference

held in the simulation, training and education field. This year approximately 15,000 scientists, educators and military attended the weeklong program of seminars, workshops and trade show activities.

Dr. Medin is credited as having been a driving force behind the growth of the high-tech simulation industry in Central Florida, which now accounts for roughly a quarter of the simulation dollars earned in the U.S. In 1987 he left a 22-year career at IBM to become executive director of IST.

The institute, at that time consisting of only a dozen or so staff, had been created by the University of Central Florida

to help establish the region and the university as a Department of Defense Center of Excellence for simulation research. Under Medin's leadership, IST grew to over 100 scientists, engineers, instructional technologists, UCF faculty members and support staff.

Since relinquishing the directorship of IST, Medin has served as a consultant to the university on simulation issues. He and Julia have returned to Washington D.C. where he is working with government and other national and international organizations to bolster the DoD budget in research and development. 

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"New Director" continued from page 1 as the Synthetic Theatre of War Advance Concepts Technology Demonstration.

Dr. McBride holds master's degrees in systems modeling, public administration and experimental psychology. A Ph.D. from the London School of Economics is pending.

Dr. McBride has published and presented more than 100 scientific papers in the fields of experimental and engineering psychology, aeromedicine, information technology, economics and political science, sociobiology and flight-test engineering. As an adjunct professor at the Krasnow Institute for Advanced Study, his

research interests have concentrated on modeling complex adaptive systems. He holds the designation of Naval Aerospace Experimental Psychologist from the Naval Aerospace Medical Institute and is Board Certified in Professional Ergonomics. 

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