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The Hamming Interdisciplinary Achievement Award Presented to Associate Professor Don Brutzman

Monterey, California, Naval Postgraduate School

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**Faculty
Recognition
June 6, 2006**

The Hamming Interdisciplinary Achievement Award Presented to Associate Professor Don Brutzman

Don Brutzman is Technical Director for 3D Visual Simulation and Networked Virtual Environments in the Modeling, Virtual Environments and Simulation (MOVES) Institute. An Associate Professor at the Naval Postgraduate School in Monterey California, he serves as the Undersea Warfare (USW) Academic Committee chair and also as MOVES Ph.D. Committee chair. He is an investigator in the NPS Center for Autonomous Underwater Vehicle (AUV) Research. He leads the Scenario Authoring and Visualization for Advanced Graphics Environments (SAVAGE) research group.

His research interests include underwater robotics, real-time 3D computer graphics, artificial intelligence and high-performance networking. He is a member of the Institute of Electrical and Electronic Engineers, the Association for Computing Machinery Special Interest Group on Graphics (SIGGRAPH), the American Association for Artificial Intelligence and the U.S. Naval Institute.

Professor Brutzman is a founding member of the non-profit Web3D Consortium Board of Directors. He represents Web3D as the Advisory Committee Representative to the World Wide Web Consortium. Together with research associate Don McGregor, he designed and developed the influential DIS-Java-VRML and DIS-XML open-source implementations of the Distributed Interactive Simulation protocol, thus enabling shared multi-user virtual worlds via standard Web browsers. Currently he cochairs the Extensible 3D Graphics Specification Working Group. X3D is the third-generation version of the Virtual Reality Modeling Language international standard. He further directs development of various research protocols and projects related to the Extensible Modeling and Simulation Framework for large-scale Web-based virtual environments. These include XML Schema-based Binary Compression, XML Tactical Chat and usw-xml for improved messaging interoperability between legacy tactical systems and modern service-oriented architectures.

Professor Brutzman is a board member of non-profit Camp Sea Lab Monterey Bay, which designed and operates a youth-oriented year-round residential science camp. This partnership includes participation and support from over two-dozen research and educational institutions around Monterey Bay. He also organized the original SIGGRAPH Online efforts, which recorded and published hundreds of hours of instructional video, papers and slidesets via Web-based multimedia distribution.

Dr. Brutzman is a retired submarine officer who has conducted testing of advanced capability underwater equipment. Current research includes the development of underwater robot software, in combination with comprehensive virtual-world modeling of underwater hydrodynamics, sonar and robot hardware response. This physically realistic AUV Workbench software supports the Acoustic-Radio Interactive Exploratory Server (ARIES), a highly capable fourth-generation AUV designed, built and operated at NPS. Together these many efforts are expected to elevate networked interactive 3D graphics and virtual environments to become open, standards-based, first-class media types supporting science and education on the World Wide Web.



The late Professor Richard Wesley Hamming was a renowned scientist and engineer whose accomplishments led directly to many significant developments of major benefit to the United States. His experience ranged from important work at Los Alamos on the Manhattan Project to breakthroughs in several areas at Bell Telephone Laboratories. He made discoveries in information coding that are now used in every computer, CD-ROM, and computer network. He developed the Hamming method of integration and the Hamming filters that are central to a variety of signal processing techniques. His work was marked by innovation and creativity. After retiring from Bell Labs in 1976, Dr. Hamming accepted a faculty position at the Naval Postgraduate School in the Computer Science Department. He also taught in the departments of Electrical and Computer Engineering and Mathematics. He remained at Postgraduate School until his death in January 1998. He was proud of "teaching future admirals" and his teaching embodied the same creativity and spirit of innovation that marked his life. It is fitting that Hamming awards be established as a lasting tribute to this great American, and that recognition be provided to the Postgraduate School faculty in his name. Two annual awards are planned and made possible through the generosity of Wanda Hamming, Dr. Hamming's wife and partner for over fifty years. Associate Professor Don Brutzman was presented the Richard W. Hamming Award for work producing online learning archives.

