CURRICULUM VITAE

RICHARD BOWEN LOFTIN

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May 2015

CURRICULUM VITAE

RICHARD BOWEN LOFTIN

PERSONAL

Married with two adult children and four grandchildren

Business Address:

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University of Missouri
Columbia, MO 65211

Home Address:

501 South Ninth Street
Columbia, MO 65201-4699

Phone: 573-882-0627 (Ann Celeste McGruder, Executive Assistant)

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EDUCATION

Ph.D., Physics, Rice University, Houston, Texas, 1975
Advisor: Prof. Harold E. (Bud) Rorschach

M.A., Physics, Rice University, Houston, Texas, 1973
Advisor: Prof. Harold E. (Bud) Rorschach

B.S., Physics, *with high honors*, Texas A&M University, College Station, Texas, 1970

TEACHING AREAS

Engineering and Computer Science: Computer Graphics, Visualization, Modeling and Simulation, Intelligent Systems, Software Engineering

Physics: General Physics, Biological Physics, Condensed Matter Physics, Computational Physics, Mechanics, Thermodynamics

RESEARCH AREAS

Modeling and Simulation; Synthetic Environments for Training, Education, and Scientific/Engineering/Medical Data Visualization; Intelligent Systems for Training and Education; Human-Computer Interaction (especially Multi-Modal Interaction)

CURRENT AND PAST ADMINISTRATIVE EXPERIENCE

As Chancellor of the University of Missouri, manages a campus of more than 35,000 students and 13,000 faculty and staff with a budget (FY16) of over $2.2B.

As President of Texas A&M University, managed a campus of approximately 50,000 students and 9,000 faculty and staff with a budget of over $1.2B.

As a Vice President of Texas A&M University and Chief Executive Officer of Texas A&M University at Galveston, a branch campus of Texas A&M University, managed a campus of over 1,600 students and 400 faculty and staff, including the Texas Maritime Academy, with a budget of approximately $45,000,000 per year.

As Executive Director, Virginia Modeling, Analysis & Simulation Center, Old Dominion University, managed approximately sixty administrative/research staff, approximately fifty graduate research assistants, and a research budget of approximately $8,500,000 per year; in addition, as Director of Simulation Programs and Graduate Program Director, led Old Dominion University's M.E., M.S. and Ph.D. multi-disciplinary degree programs in Modeling and Simulation.

As Chair, Department of Computer Science, University of Houston, managed a department of seventeen tenured/tenure-track faculty, six staff, approximately 450 graduate students, approximately 730 undergraduate majors, and a budget of approximately $2,300,000 per year.

As Director, NASA/University of Houston Virtual Environments Research Institute, managed ten administrative/research staff, twenty-five graduate students, and a research budget of approximately $2,500,000 per year.

CURRENT AND PAST PROFESSIONAL SERVICE

Referee for many professional journals and member of program committees of many technical conferences; list available on request. Frequent reviewer for National Science Foundation proposals, including Engineering Research Center competition and Small Business Innovative Research programs. Specific current and past significant assignments follow:

7/12 to present	Member, Chief Executive Officers of the Southeastern Conference
5/12 to present	Member, National Security Higher Education Advisory Board (reports to the Director, Federal Bureau of Investigation)
2/12 to present	Member and Chair, Homeland Security Academic Advisory Council (reports to the U.S. Secretary of Homeland Security) and Chair, Subcommittee on Campus Resiliency
1/12 to present	Chair, Joint Research and Institutional Partnerships Working Group, U.S.-Indonesia Joint Council on Higher Education Partnership

5/10 to 1/13	Member, Board of Directors, Houston Technology Center
6/09 to 6/12	Member, Big 12 Board of Directors
6/09 to 1/14	Member, Board of Directors, Institute for Nautical Archaeology
6/09 to 9/12	Member, Board of Directors, Texas International Education Consortium; Member, Executive Committee (7/10 to 9/12)
6/09 to 1/14	Member, Board of Directors, Houston Advanced Research Center
6/07 to 12/10	Member, Panel on Arms and Armaments, National Academies
3/07 to 7/07	Member, Panel on University of Vermont Visualization Center, American Association for the Advancement of Science
12/06 to 6/07	Member, National Science Advisory Committee, Desert Research Institute (assembled under the auspices of the American Association for the Advancement of Science)
11/06 to 12/09	Associate Editor, *Computers in Science and Engineering*
3/05 to 12/05	Member, Panel on Modeling and Simulation, Systems Engineering, and Cost and Risk Analysis of the Committee for the Review of NASA's Capability Roadmaps, Aeronautics and Space Engineering Board, Division on Engineering and Physical Sciences, National Research Council
1/05 to 9/06	Member, Defense Modeling, Simulation and Analysis Committee, Board on Mathematical Sciences and their Applications, National Research Council
9/04	Co-Chair and Advisor, Capabilities-Based Planning and Analysis Working Group, Military Operations Research Society Training Transformation Workshop
9/04	Member, External Review Panel, Navy Center for Applied Research in Artificial Intelligence, Naval Research Laboratory
8/04 to 12/04	Consultant for North Atlantic Treaty Organization Research and Technology Agency's Human Factors and Medicine Task Group (HFM-121)
7/04 to 12/04	Member, Committee on Naval Analytical Capabilities and Improving Capabilities-Based Planning, Naval Studies Board, National Research Council

2/04 to 8/07	Member, Program Committee, First (2005) and Second (2007) International Conferences on Virtual Reality
10/03 to 7/04	Co-Chair (with J.C. Roberts, R. Robles-De-La-Toree, and V. Scarano), 2004 International Symposium on Non-visual & Multimodal Visualization
7/03 to 5/05	Director, Old Dominion University McLeod Institute for Simulation Science
4/03 to 2/04	Member, Committee for the Review of Office of Naval Research Marine Corps Science and Technology Program of the National Research Council Naval Studies Board
3/03 to 4/04	Co-Editor (with J. Chen), Special Issue of *PRESENCE* (MIT Press)
1/03 to 5/05	Member, Board of Directors, National Center for Simulation
1/03 to 4/04	Member, Airspace Systems Panel of the National Research Council Committee for the Review of NASA's Revolutionize Aviation Program
10/02 to 5/05	Co-Director (with C.D. Combs), National Center for Collaboration in Medical Modeling and Simulation
10/02 to 5/05	Member, Executive Committee, National Training Systems Association
7/02 to present	Member, Association for Computing Machinery Special Interest Group on Computer Graphics (ACM SIGGRAPH) Computer Graphics Pioneers
6/02 to present	Member, Editorial Board, *PRESENCE* (MIT Press): Senior Editor (5/04 to 10/06); Associate Editor (10/06 to present)
1/02 to 11/06	Co-Editor (with Jim Chen), Visualization Corner, *Computers in Science and Engineering*
6/01 to 12/10	Member, Technical Advisory Board, The MOVES Institute, Naval Postgraduate School
1/00 to 4/10	Member and Director (beginning 1/04), Executive Committee of the Technical Committee on Visualization and Graphics, IEEE Computer Society
11/02 to 12/03	Member, Technical Advisory Board, Center for Research in Computer Graphics
3/02 to 2/03	Co-Editor (with L. Rosenblum), Special Issue of *PRESENCE* (MIT Press)

1/02 to 12/03	Chair, Technical Committee on Visualization and Graphics, IEEE Computer Society
1/02 to 12/03	Member, IEEE Computer Society Technical Advisory Board
6/01	Member, Board of Visitors for Triennial Review, Office of Naval Research Basic Research Programs in Mathematics, Statistics, and Computer Science.
11/00 to 4/03	Program Co-Chair (Primary), 2002 and 2003 IEEE Virtual Reality Conferences
9/00 to 7/04	Member, Steering Committee for Modeling and Simulation Professional Certification, National Training Systems Association
3/00 to 5/01	Member, Exposition Technical Committee, Association for Computing Machinery 2001 Exposition (ACM1)
9/99 to 8/00	Chair, University of Houston Information Technology and Computing Committee
4/99 to 4/00	Chair, Promotion and Tenure Committee, College of Natural Sciences and Mathematics, University of Houston
3/99 to 3/00	General Co-Chair (secondary), 2000 IEEE Virtual Reality Conference
6/98 to 7/00	Member, Committee on Advanced Engineering Environments, Aeronautics and Space Engineering Board, National Research Council
3/98 to 3/99	General Co-Chair (primary), 1999 IEEE Virtual Reality Conference
3/96 to 4/10	Member and Chair (2009-present), Steering Committee, IEEE Virtual Reality Conference
10/95 to 10/97	Member, Committee on Technology for Future Naval Forces, Naval Studies Board, National Research Council
5/93 to 5/98	Secretary/Treasurer (1993-94), Vice President (1994-95), President-Elect (1995-96), President (1996-97), and Past President (1997-98), University of Houston-Downtown Chapter Phi Kappa Phi
9/92 to 12/02	Member, Intelligent Systems Technical Committee, American Institute for Aeronautics and Astronautics

EMPLOYMENT

2/14 to present	Chancellor and CEO, University of Missouri, Columbia, MO. Responsibilities include leadership of the first public university west of the Mississippi.
2/14 to present	Professor of Physics, University of Missouri, Columbia, MO.
2/10 to 1/14	President and CEO, Texas A&M University, College Station, TX. Responsibilities include leadership of one of the nation's largest universities.
2/10 to 1/14	Wofford Cain Presidential Endowed Chair; Wm. C. McCord Presidential Chair
6/09 to 2/10	Interim President, Texas A&M University, College Station, TX.
11/05 to 1/14	Professor of Industrial and Systems Engineering, Texas A&M University, College Station, Texas.
5/05 to 2/10	Vice President (Texas A&M University) and Chief Executive Officer (Texas A&M University at Galveston). Responsibilities included management of the Galveston branch campus of Texas A&M University (College Station).
5/05 to 2/10	Professor of Maritime Systems Engineering, Texas A&M University at Galveston.
5/05 to 5/08	Adjunct Professor of Electrical and Computer Engineering, Old Dominion University, Norfolk, Virginia. Responsibilities included participation in doctoral dissertation committees and in team instruction of graduate courses in Modeling and Simulation.
8/00 to 5/05	Professor of Electrical and Computer Engineering and Professor of Computer Science, Old Dominion University, Norfolk, Virginia. Responsibilities included teaching and direction of graduate student research. Institutional service included student advising, service on committees (departmental, college, and university), curriculum and program development, and other activities consistent with the role of a full-time faculty member at an institution of higher education.
8/00 to 5/05	Executive Director, Virginia Modeling, Analysis & Simulation Center, Old Dominion University, Norfolk, Virginia. Responsibilities included managing fifty-five administrative and research staff, approximately forty graduate research assistants, and a research budget of approximately $8,000,000 per year; in addition, as Director of Simulation Programs and Graduate Program Director, provided leadership for Old Dominion University's M.E./M.S. and Ph.D. multi-disciplinary degree programs in Modeling and Simulation.

9/99 to 4/00 Chair, Department of Computer Science, University of Houston, Houston, Texas. Responsibilities included managing a department of seventeen tenured/tenure-track faculty, six staff, 450 graduate students, 730 undergraduate majors, and a budget of approximately $2,300,000 per year.

7/99 to 8/01 Adjunct Professor of Computer Science, Department of Computer Science, Rice University, Houston, Texas. Responsibilities included development and teaching of new course on Scientific/Engineering Data Visualization.

8/94 to 8/00 Professor of Computer Science, Department of Computer Science and Director, NASA/University of Houston Virtual Environments Research Institute, University of Houston, Houston, Texas. Responsibilities included teaching and direction of graduate student research in addition to management of a multidisciplinary research and development facility. Institutional service included student advising, service on committees (departmental, college, and university), curriculum and program development, and other activities consistent with the role of a full-time faculty member at an institution of higher education.

7/88 to 8/89 National Research Council Senior Resident Research Associate, Office of Information Technology, Information Systems Directorate, National Aeronautics and Space Administration/Lyndon B. Johnson Space Center, Houston, Texas. Responsibilities included direction of research program in intelligent computer-aided training systems for NASA astronauts, flight controllers, and ground support engineers.

5/86 to 12/03 Principal Investigator for Advanced Training Technologies, Space Flight Training Division, Mission Operations Directorate, National Aeronautics and Space Administration/Lyndon B. Johnson Space Center, Houston, TX. Responsibilities included direction of research and development activities in intelligent computer-aided training, intelligent tutoring, and virtual environment technology.

9/84 to 8/88 Coordinator of Physics, University of Houston-Downtown, Houston, Texas. Responsibilities included scheduling of course offerings, establishing laboratory schedules for multi-instructor laboratory courses, supervision of laboratory student assistants, recruiting and evaluating part-time faculty, coordination of course development and modification, coordination of textbook selection for multi-instructor courses, laboratory equipment and supplies acquisition, and other duties as assigned.

9/77 to 8/00 Professor of Physics (9/88 to 8/00), Associate Professor of Physics (9/80 to 8/88; tenure awarded 9/82), and Assistant Professor of Physics (9/77 to 8/80), University of Houston-Downtown, Houston, Texas. Responsibilities included teaching of astronomy, biological physics, electronics, general

physics (both calculus and non-calculus courses), and intermediate mechanics.

9/76 to 8/77 — Assistant Professor of Physics, Texas A&M University at Galveston, Galveston, Texas. I had sole responsibility for the non-calculus general physics course and its accompanying laboratories. In this capacity I supervised from one to three student workers and a full-time laboratory assistant (a holder of a masters or Ph.D. in physics). Together with another full-time physics faculty member, I wrote proposals for new equipment, formulated the physics budget and assisted in the recruitment and evaluation of new faculty. Other duties included committee assignments, student advising, departmental representation, and other activities consistent with the role of a full-time faculty member at an institution of higher education.

7/76 to 8/76 — Lecturer in Physics, University of Houston, Houston, Texas. I was responsible for teaching a one-semester course in astronomy.

1/76 to 7/76 — Lecturer in Physics, University of Houston-Downtown, Houston, Texas. I taught the second and third courses and accompanying laboratories in the calculus-based general physics course sequence for engineering and science students. I revised the laboratory curriculum for these courses, developing many new laboratory experiments. In addition, I assisted a full-time physics faculty member in the development of new course syllabi and in the revision of syllabi for existing courses.

9/74 to 12/75 — Research Associate, Materials Science Group, Department of Mechanical Engineering, Rice University, Houston, Texas. My duties consisted of the conduct of a National-Science-Foundation-sponsored research project investigating the thermal, electrical, and mechanical properties of certain transition-metal alloys. The direction of a graduate student and a technician were also my responsibility.

9/70 to 8/74 — Graduate Student, Department of Physics, Rice University, Houston, Texas. During my tenure as a graduate student I taught a general physics laboratory for engineering/science students and served as a grader/tutor for senior and graduate courses in thermal/statistical physics.

9/68 to 5/70 — Laboratory Teaching Assistant, Department of Physics, Texas A&M University, College Station, Texas. I assisted in the instruction of calculus-based general physics laboratories and a junior-level electronics laboratory. I evaluated a new laboratory manual for use in the latter course and suggested modifications and additions to the experiments it contained.

9/67 to 8/70 — Electronics Technician (part time), Department of Physics, Texas A&M University, College Station, Texas. I assisted a full-time technician in the

design, construction, and repair of electronic instrumentation used in the instructional and research laboratories of the department.

GRANTS AND CONTRACTS

Digital Electronics Laboratory, National Science Foundation, $32,000 (1979)

Studies of Electrotransport of Hydrogen in Palladium, University of Houston-Downtown Organized Research Grant, $2,189 (1982)

UH-Downtown Sigma Xi Lectures, University of Houston-Downtown Academic Development Fund, $1,400 (1982)

Workshop on Computers as an Aid in Learning Science, University of Houston-Downtown Academic Development Fund, $1,900 (1982)

Support for Computer-Assisted Learning at the University of Houston-Downtown, University of Houston-Downtown Academic Development Fund, $23,000 (1982)

Computer-Aided Data Acquisition and Analysis in the Science Laboratory, UH-Downtown Computer-Intensive Environment Grant, $7,535 (1983)

Development of a Prototype Scientific Programming Environment, University of Houston-Downtown Organized Research Grant, $5,156 (1984), $2,437 (1985)

Summer Faculty Fellowship, American Society for Engineering Education, $7,000 (1986).

Summer Faculty Fellowship, American Society for Engineering Education, $8,800 (1987).

Intelligent Computer-Aided Training, subcontracts with Barrios Technology:

BTI-86-14-C	9/2/86-12/19/86	$3,200.00
BTI-87-15C	12/20/86-5/31/87	$10,000.00
BTI-87-22C	8/10/87-8/31/87	$1,600.00
BTI-87-26C	9/1/87-9/30/87	$1,600.00
BTI-87-29C	10/1/87-12/31/87	$8,400.00
BTI-88-01C	1/1/88-4/17/88	$7,633.44
BTI-88-02C	4/18/88-5/31/88	$3,113.64
BTI-88-03C	6/1/87-6/30/88	$4,400.00

A General-Purpose Architecture for Intelligent Training Systems, National Research Council Senior Resident Research Associateship, July 1, 1988 - August 31, 1989, $53,667.

An Intelligent Tutoring System for Physics, Apple Computer Apple Classroom of Tomorrow Project, $86,500 (1989) and $33,307 (1990); Pennzoil Products Company, $18,500 (1989); Brown Foundation, $14,400 (1990).

A General-Purpose Development Environment for Intelligent Computer-Aided Training Systems, National Aeronautics and Space Administration/Lyndon B. Johnson Space Center, $56,870 (1989-90), $56,128 (1990-91), and $151,000 (1991-93).

An Intelligent Tutoring System for Physics, Advanced Technology Program, Texas Higher Education Coordinating Board, $214,884 (1989-91).

Development and Evaluation of Advanced Training Technologies, National Aeronautics and Space Administration/Lyndon B. Johnson Space Center, $212,093 (1993-95) and $273,065 (1995-97).

Assessing the Potential of Virtual Realities in Science Education, National Science Foundation, $961,715 (1994-1996); Co-Investigator: Chris Dede, George Mason University.

Developing Virtual Environments for Training, Office of Naval Research, $6,026,050 (1995-2002); Co-Investigators: Norm Badler, University of Pennsylvania; Bob Culpepper, LinCom Corporation; Jim Price, Transom; Kimberly Parsons, Institute for Simulation and Training, University of Central Florida; Chris Chuter, Mojave Computer Graphics; Mark Acosta; Pixel Perfect Software.

Student Motivation and Retention: Virtual Reality in the Classroom, Shell Oil Company Foundation, $90,000 (1995-1998).

Evaluating the Application of Virtual Realities in Science Education, National Science Foundation, $1,433,107 (1996-2000); Co-Investigator: Chris Dede, George Mason University.

Virtual Environment Training for Battlefield Medical Personnel, DARPA (as a subrecipient to LinCom Corporation), $15,966 (1996).

Feasibility Study: Developing a Combat Surgical Team Performance Model, DARPA (Shepard Patterson AFB), $40,000 (1996-1997).

Retaining Students from Groups Underrepresented in Science: Virtual Reality in the Classroom, Delphian Society, $1,000 (1996-1997).

Visualization of Seismic Data, Landmark Graphics, $5,000 (1996).

Augmentation of Developing Virtual Environments for Training, Office of Naval Research (ASSERT), $197,157 (1997-2000).

Human-Computer Symbiotes: Cyberspace Entities for Active and Indirect Collaboration, DARPA, $225,000 (1996-1999); subrecipient to Hughes Research Laboratory, M. Daily, PI.

Virtual Environment Technology Laboratory Infrastructure Advancement, National Aeronautics and Space Administration/Lyndon B. Johnson Space Center, $246,000 (1997-1998).

Improving Data Visualization in the Geosciences, BHP Minerals, $88,885, three years (1997-2000).

Virtual Environments for Hydrocarbon and Mineral Exploration/Production, BHP Research, $175,000 (1997-1998).

Interaction Environments Thrust, National Partnership for Advanced Computational Infrastructure, National Science Foundation, $100,000 (1997-1999).

Advanced Visualization Facility, National Science Foundation CISE Research Instrumentation Grant, $50,000 (1998-1999); matched by $50,000 from UH; co-PI: Ioannis Kakadiaris.

VR in the Geosciences Test, Statoil, $73,615 (1997-1998).

Data Visualization for Hydrocarbon Reservoir Characterization, University of Texas Bureau of Economic Geology, $97,500 (1997-98).

Investigation and Development of Advanced Training Technologies, National Aeronautics and Space Administration, $505,000 (1997-1998).

Virtual Reality in Geosciences Research Consortium, twelve industrial members, $425,000 (1998-2000).

Visualization of Geoscience Data, Columbia-Lamont Geophysical Observatory, $23,573 (1998).

An Intelligent System for Information/Knowledge Integration and Development, Boeing, $46,481 (1998).

Modeling and Simulation of Human Anatomy and Physiology to aid the Design and Evaluation of Astronaut Extravehicular Activity Suits, Institute for Somatic Sciences, $136,000 (1998-2000).

Investigation and Development of Advanced Training Technologies, National Aeronautics and Space Administration, $480,628 (1998-2000).

Virtual Reality Training: Cybersickness and Effects on Sensorimotor Functions, National Aeronautics and Space Administration, $23,206 (1999-2000).

Support for the Workshop on Perceptual and Multi-Modal Interfaces at the 2000 IEEE Virtual Reality Conference, Office of Naval Research, $5,000 (2000).

Augmentation to Computer-Aided Plastic and Reconstructive Breast Surgery, University of Houston Vice President for Research, $35,000 (2000), with I. Kakadiaris.

Design of a Visualization Facility, Griffiths University (Gold Coast), $15,000 (2000-01).

Virtual Environments for Training, National Aeronautics and Space Administration, $96,246 (2000-2003).

MagLev Visualization, American MagLev Technology, Inc., $8,857 (2001).

Virtual and Augmented Reality for Training and Operations, National Aeronautics and Space Administration, $96,000 (2001-03).

Research on Intelligent Synthesis Environment, National Aeronautics and Space Administration, $80,000 (2001-03).

Planning for a Virtual Interactive Science Museum, National Science Foundation, $6,000 (2001-02).

Exploration of Presence in and the Psycho-Physical Effects of Immersive Environments, Office of Naval Research, $5,000 (2002).

Student-Faculty Support Contract, U.S. Joint Forces Command, $30,970,786 ceiling (2002-2007).*

Millennium Challenge ’02 Range Integration, ACS Systems, $74,000 (2002).

Acquisition of Collaborative High Performance Computing and Visualization Cluster, National Science Foundation, $153,000 (Stephen Zahorian, co-PI) (2002-2004).

National Center for Collaboration in Medical Modeling and Simulation, U.S. Army Medical Research and Materiel Command, $200,000 (2002), shared equally with Eastern Virginia Medical School (Don Combs, co-PI).

Modeling and Simulation Body of Knowledge and Graduate Course Development, Office of Naval Research, $159,750 (2003-2005).

National Center for Collaboration in Medical Modeling and Simulation, Naval Health Research Center, $2,250,000 (2003), shared equally with Eastern Virginia Medical School (Don Combs, co-PI).

Solder CATT Technology Evaluation, MYMIC, LLC, $43,689 (2003-2004).

Engineering and Technical Support Contract, U.S. Joint Forces Command, $23,523,660 ceiling (2004-2009).

Enhanced Visualization Capability for Modeling and Simulation, Office of Naval Research, $232,915 (2004-2005).

National Center for Collaboration in Medical Modeling and Simulation, Office of Naval Research, $1,500,000 (2004), shared equally with Eastern Virginia Medical School (Don Combs, co-PI).

State and Trait Estimation in Performance Modeling, U.S. Army Medical Research and Materiel Command, $99,865, (2004-2005).

Additional grants were awarded to the National Aeronautics and Space Administration/Lyndon B. Johnson Space Center by NASA Headquarters as a result of proposals developed by R.B. Loftin. The funding sources included the Office of Technology Utilization ($255,000, FY89-91; $115,000, FY93), Office of Space Flight ($2,150,000 FY88-96), Office of Space Station ($1,630,000, FY89-93), Kennedy Space Center ($541,000, FY89-90), and George C. Marshall Space Flight Center ($394,000, FY89-91), Johnson Space Center Director's Discretionary Fund ($191,000, FY91-93; $49,000, FY94; $60,000, FY95; $102,000, FY96), and Johnson Space Center's Information Systems Directorate ($150,000, FY92). R.B. Loftin served as the principal investigator for each of these projects.

BOOKS

R.B. Loftin and R. Burson. *The 100-Year Decision: Texas A&M and the SEC*. Indianapolis, IN: Dog Ear Publishing, 2014.

PUBLICATIONS († after entry denotes refereed publication)

R.B. Loftin and F.R. Brotzen. Sample Holder for Measurement of Thermoelectric Power. *Journal of Physics E 10*, 682 (1977).†

A.C. Lin, F.R. Brotzen, and R.B. Loftin. Thermoelectric Power of bcc-Transition Metal Alloys of the Second Period. *Journal of Applied Physics 51*, 1655 (1980).†

R.B. Loftin and J.W. Hanneken. Nondestructive Determination of Local Hydrogen Concentrations in Metals: Neutron Radiographic Techniques. In*ternational Advances in Nondestructive Testing 10*, 115 (1984).†

R.B. Loftin. *Laboratory Experiments in Physics, Part I: Mechanics and Heat*. Second Edition. (Houston: University of Houston-Downtown, 1985). [First Edition, 1979]

J.W. Hanneken and R.B. Loftin. Nondestructive Determination of Local Hydrogen Concentration in Metals. *Zeitschrift fur Physikalische Chemie 147*, 685 (1986).†

R.B. Loftin, L. Wang, P. Baffes, M. Rua. An Intelligent Training System for Payload-Assist Module Deploys. In *Proceedings of the First Annual Workshop on Space Operations, Automation, and Robotics*, August 5-7, 1987, National Aeronautics and Space Administration Lyndon B. Johnson Space Center, Houston, Texas, pp. 53-59.

R.B. Loftin, L. Wang, P. Baffes, M. Rua. An Intelligent Training System for Payload-Assist Module Deploys. In *Proceedings of the SPIE 1987 Cambridge Symposium on Advances in Intelligent Robotics Systems*, November 1-6, 1987, Cambridge, Massachusetts, pp. 83-89.†

R.B. Loftin, L. Wang, P. Baffes, and G. Hua. An Intelligent Training System for Space Shuttle Flight Controllers. In *Proceedings of the 1988 Goddard Conference on Space Applications of Artificial Intelligence*, May 24, 1988, NASA Goddard Space Flight Center, Greenbelt, Maryland, pp. 3-15.†

R.B. Loftin, L. Wang, P. Baffes, and G. Hua. An Intelligent Training System for Space Shuttle Flight Controllers. *Informatics and Telematics 5* (3), 151 (1988).†

R.B. Loftin, L. Wang, and P. Baffes. Simulation Scenario Generation for Intelligent Training Systems. In *Proceedings of the Third Artificial Intelligence and Simulation Workshop*, August 22, 1988, St. Paul, MN, pp. 69-74.†

R.B. Loftin, L. Wang, P. Baffes, and G. Hua. An Intelligent Training System for Space Shuttle Flight Controllers. In *Proceedings of the 1989 American Association for Artificial Intelligence Conference on Innovative Application of Artificial Intelligence*, March 28-30, 1989, Stanford University, pp. 105-110.†

R.B. Loftin, L. Wang, P. Baffes, and G. Hua. An Intelligent System for Training Space Shuttle Flight Controllers in Satellite Deployment Procedures. *Machine Mediated Learning 5*, 41 (1989).†

R.B. Loftin, L. Wang, P. Baffes, and G. Hua. An Intelligent Training System for Space Shuttle Flight Controllers. In H. Schorr and A. Rappaport, Editors, *Innovative Applications of Artificial Intelligence*. Menlo Park, CA: AAAI Press, 1989, pp. 15-24.†

R.B. Loftin, T. Saito, L. Wang, and P. Baffes. Automating Knowledge Acquisition for Intelligent Training Systems. In *Proceedings of the Workshop on Knowledge Acquisition*, Eleventh International Joint Conference on Artificial Intelligence, Detroit, August 22, 1989.†

R.B. Loftin. Intelligent Computer-Aided Training. In M. Ferguson, Editor, *Machine Intelligence and Robotics at Johnson Space Center*, Vol. 1, JSC-23518, September, 1989.

R.B. Loftin, L. Wang, and P. Baffes. Intelligent Scenario Generation for Simulation-Based Training. In *Proceedings of the AIAA Computers in Aerospace VII Conference*, American Institute of Aeronautics and Astronautics, Monterey, CA, October 3-5, 1989.†

R.T. Savely and R.B. Loftin. Advanced Training Systems. In *Proceedings of the Space Transportation Avionics Technology Symposium*, Williamsburg, Virginia, November 7-9, 1989.

T. Saito, S. Ebaud, and R.B. Loftin. Supplemental Knowledge Acquisition through External Product Interface for CLIPS. In *Proceedings of the First CLIPS Users' Conference*, August 13-15, 1990, NASA/Johnson Space Center, Houston, Texas.

R.B. Loftin and R.T. Savely. Intelligent Computer-Aided Training and Tutoring. In *Proceedings of the Technology 2000 Conference*, Washington, DC, November 29-30, 1990.

T. Saito, C. Ortiz, and R.B. Loftin. On the Acquisition and Representation of Procedural Knowledge. In *Proceedings of the 1991 Workshop on Space Operations and Research (SOAR-91)*, NASA/Johnson Space Center, Houston, TX, July 9-11, 1991.

R.B. Loftin and R.T. Savely. Intelligent Computer-Aided Training. In *Beyond the Baseline: Proceedings of the 1991 Space Station Evolution Symposium*, League City, TX, August 6-8, 1991.

T. Saito, C. Ortiz, S. Mithal, and R.B. Loftin. Acquisition, Representation and Rule Generation for Procedural Knowledge. In *Proceedings of the Second CLIPS Conference*, NASA/Johnson Space Center, Houston, TX, September 23-24, 1991.

R.B. Loftin and R.T. Savely. Workstations Augment the Simulator. *Aerospace America 29* (10), October, 1991.

T. Saito, C. Ortiz, and R.B. Loftin. On the Acquisition and Representation of Procedural Knowledge. In *Proceedings of the 1991 Knowledge Acquisition Workshop*, Banff, Alberta, Canada, October 8-10, 1991.†

R.B. Loftin and R.T. Savely. Applications of Intelligent Computer-Aided Training. In *Proceedings of the Conference on Computers in Aerospace VIII*, American Institute for Aeronautics and Astronautics, Baltimore, MD, October 22-23, 1991.†

R.B. Loftin. Standards for Space Automation and Robotics. In *Proceedings of the Spacecraft Serviceability Working Group Meeting*, Houston, TX, November 13-14, 1991.

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R.B. Loftin. Virtual Environment Technology at NASA/JSC. The Technical Cooperation Program, Subcommittee on Non-Atomic Military Research and Development, Technical Panel UTP-2 (Training Technology), Orlando, FL, May 17-19, 1993.

R.B. Loftin. Advanced Training Technologies for Aerospace Applications. Conference on Intelligent Computer-Aided Training and Virtual Environment Technology, Houston, TX, May 5-7, 1993.

R.B. Loftin. Approaches to Intelligent Tutoring and Training. USWest Workshop on Intelligent Tutoring Systems, Boulder, CO, July 27-28, 1993.

R.B. Loftin. A Virtual Physics Laboratory. Annual Summer Meeting of the American Association of Physics Teachers, Boise, ID, August 9-12, 1993.

R.B. Loftin. Virtual Environment Technology in Training and Education. Annual Conference of the Texas Association for Educational Technology, San Antonio, TX, October 29-30, 1993.

R.B. Loftin. Virtual Reality at NASA. Fourth Annual Retreat on Computational Biology, W. M. Keck Center for Computational Biology, Houston, TX, November 12, 1993.

R.B. Loftin. Virtual Environment Technology at NASA/JSC—A Progress Report. The Technical Cooperation Program, Subcommittee on Non-Atomic Military Research and Development, Technical Panel UTP-2 (Training Technology), Orlando, FL, December 2-3, 1993.

R.B. Loftin. Into the Looking Glass: Virtual Environments for Education and Data Visualization. American Association of Physics Teachers Annual Winter Meeting, San Diego, CA, January 6. 1994.

R.B. Loftin. Simulator Sickness Results from Hubble Space Telescope Repair and Maintenance Mission Training. Defense Modeling and Simulation Office, Washington, DC, February 9-10, 1994.

R.B. Loftin. VR for Astronaut Training. Synthetic Environments Conference, Washington, DC, February 28-March 1, 1994.

R.B. Loftin and D.M. Ota. The Role of Virtual Reality in Laparoscopic Education. Society for Surgical Oncology 47th Annual Cancer Symposium, Houston, TX, March 17, 1994.

R.B. Loftin. Advanced Training Technologies. Honeywell Conference on Automation in the Process Industry, Phoenix, AZ, April 8, 1994.

R.B. Loftin. The Application of Integrated Advanced Technologies in Surgical Training. Advanced Technology Applications to Combat Casualty Care Workshop, May 25-26, 1994.

R.B. Loftin. From NASA with Love: The Adaptation of NASA Training Technologies for Education. Lunar Landing 25th Anniversary—Space Expo and Education Conference, Houston, TX, July 16, 1994.

R.B. Loftin. Virtual Environment Technology: An Overview with Applications to Manufacturing. National Institute for Standards and Technology Workshop on Technologies for Discrete Parts Manufacturing, Gaithersburg, MD, August 8, 1994.

R.B. Loftin. From NASA with Love: The Adaptation of NASA Training Technologies for Education. Utah State University Sixth Annual Summer Instructional Technology Institute, Logan, UT, August 17-20, 1994.

R.T. Savely and R.B. Loftin. VR in Astronaut Training. Synthetic Environments Conference, Washington, DC, September 22-23, 1994.

R.B. Loftin. Virtual Environment Technology: Applications in Training and Education. 4th International Symposium on Computational and Electronic Systems of the Instituto Tecnologico y de Estudios Superiores de Monterrey, Toluca, Mexico, September 24, 1994.

R.B. Loftin. The Application of Integrated Advanced Technologies in Surgical Training. Denver Medical Library Annual Symposium on Medical Informatics, Denver, CO, September 30, 1994.

R.B. Loftin. Virtual Reality in Education and Training. National Institute of Standards and Technology Workshop on Learning Technologies, Washington, DC, October 24, 1994.

R.B. Loftin. Virtual Reality for Education and Data Visualization. American Chemical Society—Gulf Coast Section, Houston, TX, October 27, 1994.

R.B. Loftin. Virtual Environment Technology: Tools for Education and Data Visualization. Computational Mathematics Seminar, University of Houston, November 2, 1994.

R.B. Loftin. From NASA with Love: The Adaptation of NASA Training Technologies for Education. League for Innovation, Houston, TX, November 14, 1994.

R.B. Loftin. Enhancing the Effectiveness of Surgical Simulations for Training. Johnson & Johnson Ethicon Endosurgery, Cincinnati, OH, November 16, 1994.

R.B. Loftin. Student Learning in Virtual Environments: ScienceSpace. 1995 Winter Meeting of the American Association of Physics Teachers, Orlando, Florida, January 14-18, 1995.

R.T. Savely and R.B. Loftin. Virtual Environments in Training: NASA's Hubble Space Telescope Mission. 1995 Reliability and Maintainability Symposium, Washington, DC, January 17-19, 1995.

R.B. Loftin. Virtual Environments in Education. University of Houston-Victoria Student Chapter of the Association for Computing Machinery, Victoria, Texas, February 9, 1995.

R.B. Loftin. Virtual Environment Technology in Training: Results from the Hubble Space Telescope Mission of 1993. Workshop on Virtual Environments: Training's Future, NATO Defense Research Group 16, Panel 8, Portsmouth, England, March 7-9, 1995.

R.B. Loftin. The Use of Virtual Environments for Training the Hubble Space Telescope Flight Team. 1995 Virtual Reality Annual International Symposium (VRAIS '95), Raleigh-Durham, North Carolina, March 14, 1995.

R. B. Loftin. Developing Virtual Environments for Training. Office of Naval Research 6.1 Workshop, Washington, DC, March 19-22, 1995.

R.B. Loftin. From NASA with Love: The Adaptation of NASA Training Technologies for Education. Newspapers in Education Foundation of Texas, Houston, Texas, April 4, 1995.

R.B. Loftin. Virtual Environment Technology for Training and Education. Western Association of College and University Business Officers 57th Annual Meeting, Portland, Oregon, May 2, 1995.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. National Management of Engineers Meeting, GDE Systems, San Diego, California, May 16, 1995.

R.B. Loftin. Virtual Environments for Hubble Telescope Training. Synthetic Environments Conference, Washington, DC, May 18-19, 1995.

R.B. Loftin. A Virtual Trainer for the Hubble Space Mission. Society for Information Display, Orlando, Florida, May 25-26, 1995.

Virtual Environments in Education. Teaching Excellence Conference, County College of Morris, Randolph, New Jersey, June 5-6, 1995.

R.B. Loftin. Virtual Environments: A New Tool for Training, Education, and Data Visualization. South Central Computational Science at Minority Institutions Consortium (SC CoSMIC), Houston, Texas, October 21, 1995.

R.B. Loftin. The Role of Data Visualization in Aerospace Training. IEEE Visualization '95 Conference, Atlanta, Georgia, November 1, 1995.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization, Rice University Distinguished Speakers Series, Houston, Texas, November 8, 1995.

R.B. Loftin. MaxwellWorld: A Virtual Reality for Studying Electrostatics. 1996 Winter Meeting of the American Association of Physics Teachers, Reno, NV, January 15, 1996.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. International Symposium for Computer Science, Monterey, Mexico, February 21, 1996.

R.B. Loftin. Virtual Environments: A New Tool for Education. University of Houston System Conference on Instructional Technologies, Houston, TX, February 23, 1996.

R.B. Loftin. Virtual Environments for Aerospace Training, Synthetic Environments Conference, Washington, DC, February 29, 1996.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. Texas A&M University Institute for Biomedical Technology, Houston, TX, March 14, 1996.

R.B. Loftin. ScienceSpace: Virtual Realities for Learning Complex and Abstract Scientific Concepts. Discovery of Battlespace Metaphors Workshop, Washington, DC, March 24, 1996.

R.B. Loftin. Shared Virtual Environments for Mission Planning and Rehearsal. 1996 Training Development Symposium, Ft. Knox, KY, March 26, 1996.

R.B. Loftin. Virtual Environments for Physics Education. Department of Physics, University of Houston, Houston, TX, April 16, 1996.

R.B. Loftin. NASA/UH Virtual Environment Technology Laboratory. Allied Geophysical Laboratory Annual Consortium Meeting, Houston, TX, April 18, 1996.

R.B. Loftin. On Scholarship. The Honor Society of Phi Kappa Phi, UH-Downtown Chapter Annual Initiation Ceremony, Houston, TX, May 3, 1996.

R.B. Loftin. Using Virtual Environments to Address Human Factors Issues in Aerospace Applications. DoD Human Factors Engineering Technical Advisory Group, Houston, TX, May 9, 1996.

R.B. Loftin. Virtual Reality and Its Impact on Medicine. 1996 National Association of Orthopedic Nurses Congress, Dallas, TX, June 3, 1996.

R.B. Loftin. Intelligent Computer-Aided Training Technology. U.S. Army Simulation, Training, and Instrumentation Command Workshop, Orlando, FL, June 8, 1996.

R.B. Loftin. By All Possible Means.... WELS National Teachers Convention New Ulm, MN, June 24, 1996.

R.B. Loftin. Project ScienceSpace. National Center for Supercomputing Applications Workshop on Virtual Reality, Champaign IL, July 16, 1996.

R.B. Loftin. Virtual Reality for Education. South Central Regional Meeting of Phi Kappa Phi, Houston, TX, September 7, 1996.

R.B. Loftin. The Classroom of the 21st Century. Department of Defense Education Activity Technology Conference, Oberwessel, Germany, December 8, 1996.

R.B. Loftin. Virtual Environments for Training and Education. South by Southwest, Austin, TX, March 11, 1997.

R.B. Loftin. Virtual Reality and Its Impact on Medicine. Gulf Coast Chapter of the National Association of Orthopedic Nurses, Houston, TX, April 7, 1997.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. IEEE Houston Chapter, Houston, TX, April 24, 1997.

R.B. Loftin. Virtual Reality and Its Impact on Medicine. 1997 Annual Congress of the National Association of Orthopedic Nurses, Philadelphia, PA, May 20, 1997.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. Texas Energy Symposium, Austin, TX, June 3, 1997.

R.B. Loftin. Virtual Reality in the Geosciences. Society of Petroleum Engineers Forum Series, Breckenridge, Colorado, July 11, 1997

R.B. Loftin. What's Left to Do?: Missing Elements in Technology for Training Education. IMAGE Special Interest Group for Virtual Reality in Education and Training Symposium, Scottsdale, Arizona, July 17, 1997.

R.B. Loftin. Virtual Environment Technology for Hydrocarbon Exploration and Production. International Business Communications Deepwater Technologies Conference, Houston, Texas, July 28, 1997.

R.B. Loftin. Convergent Simulations: Integrating Deterministic and Interactive Systems. Human Performance and Simulation Workshop, Alexandria, Virginia, July 30,1997.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. Encuentro Nacional de Computacion '97, Querretaro City, Mexico, September 13, 1997.

R.B. Loftin. The Potential of Virtual Environments in the Development of High Integrity Software. The High Integrity Software Conference, Albuquerque, New Mexico, October 15, 1997.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. Instituto Technologico de Estudios Superiores de Monterrey Simposium Exposim '97, Torreon, Mexico, October 16, 1997.

R.B. Loftin. Advanced Visualization Techniques for Exploration and Production. Chevron Petroleum Technology Company Subsurface Characterization in Reservoir Management Seminar, Los Angeles (LaHabra), California, October 28, 1997.

R.B. Loftin. Shared Virtual Environments: Enabling Global Teams. Shell Virtual Global Teams Workshop, Houston, Texas (with video links to Amsterdam and Melbourne), November 10, 1997.

R.B. Loftin. Shared Virtual Environments for Mission Planning and Team Training. Conference on Human and Organizational Issues for the Army after Next, Washington, DC, November 14, 1997.

R.B. Loftin. Shared Virtual Environments for Collective Training. NATO Research Study Group 28 Workshop, Orlando, Florida, December 8, 1997.

R.B. Loftin. Virtual Environment Technology in the Geosciences. Statoil Research Centre, Trondheim, Norway, February 4, 1998.

R.B. Loftin. Virtual Environment Technology in the Geosciences. Royal Dutch Shell Technology Research Center, The Hague, Netherlands, February 9, 1998.

R.B. Loftin. Shared Virtual Environments for Collective Training. TTCP HUM-TP2 Training Technology Workshop, Adelaide, South Australia, March 2, 1998.

R.B. Loftin. Advanced Visualization Techniques for Exploration and Production of Hydrocarbons. BHP Newcastle Laboratories, Newcastle, Australia, March 11, 1998.

R.B. Loftin. Human Factors Engineering for Virtual Environments. Department of Industrial Engineering, University of Houston, Houston, Texas, April 24, 1998.

R.B. Loftin. Advanced Visualization Techniques for Exploration and Production of Hydrocarbons. Chevron Visualization Exposition, Chevron Petroleum Technology Center, LaHabra, California, May 4, 1998.

R.B. Loftin. Advanced Visualization Techniques for Exploration and Production of Hydrocarbons. Silicon Graphics Visualization Summit, Oslo, Norway, May 7, 1998.

R.B. Loftin. Practical Application of Virtual Environments in Exploration and Production. Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, Utah, May 20, 1998.

R.B. Loftin. Advanced Visualization Techniques in the Geosciences. Society of Petroleum Engineers Gulf Coast Section, The Houstonian, Houston, Texas, May 28, 1998.

R.B. Loftin. Virtual Environments for Education. 1998 NASA Education Workshop, Portland, Maine, June 2, 1998.

R.B. Loftin. Shared Virtual Environments for Training and Education. Seventeenth NORDUnet Conference, Tromsoe, Norway, June 29, 1998.

R.B. Loftin. Project Science Space. 1998 Conference on Virtual Reality in Education and Training Conference, City University, London, United Kingdom, July 8, 1998.

R.B. Loftin. Shared Virtual Environments for Collective Education and Training. Invited Panel on the Future of Virtual Reality in Education and Training, 1998 Virtual Reality in Education and Training Conference, City University, London, United Kingdom, July 9, 1998.

R.B. Loftin. Virtual Environments for Training, Education, and Data Visualization. Houston SIGGRAPH Chapter, Art Institute of Houston, Houston, Texas, September 2, 1998.

R.B. Loftin. Virtual Environments for Training, Education, and Scientific/Engineering Data Visualization. Halliburton Distinguished Lecture, Texas Tech University, Lubbock, Texas, September 22, 1998.

R.B. Loftin. Virtual Environments for Training, Education, and Scientific/Engineering Data Visualization. Wright State University, Dayton, Ohio, October 2, 1998.

R.B. Loftin. Project ScienceSpace. 8th Annual Scholarship & Community Conference, The Next Generation: The Impact of Technology on Learning, University of Houston, Houston, Texas, October 7, 1998.

R.B. Loftin. Visualizing the Future of Visualization: From 2-D to 3-D and Beyond. Shell Geological/Petrophysical Conference, Houston, Texas, October 14, 1998.

R.B. Loftin. Advanced Visualization Techniques for Exploration and Production of Hydrocarbons. Emerging Energy Technologies Conference, Baker Institute for Public Policy, Rice University, Houston, Texas, December 7, 1998.

R.B. Loftin. Advanced Visualization Techniques for Hydrocarbon Exploration and Production. Silicon Graphics Visualization Summit for Oil and Gas, Galveston, Texas, January 18, 1999.

R.B. Loftin. Distributed Virtual Environments for Molecular Science. Second National Partnership for Advanced Computational Infrastructure, University of California at San Diego, San Diego, California, January 29, 1999.

R.B. Loftin. Charting the Challenges. Workshop on Virtual Reality in the Geosciences, 1999 IEEE Virtual Reality Conference, Houston, Texas, March 14, 1999.

R.B. Loftin. Advanced Technologies for Training and Education. Workshop on Advanced Training Technologies and Learning Environments, NASA/Langley Research Center, Hampton, Virginia, March 9, 1999.

R.B. Loftin. Intelligent Virtual Environments for Collective Training. Keynote Address, SimTecT'99, Melbourne, Australia, March 30, 1999.

R.B. Loftin. Overview of VERI Research Projects. Australian National University, Canberra, Australia, March 31, 1999.

R.B. Loftin. Project ScienceSpace and Medical, Industrial, and Military Applications of Virtual Environments. 15th Annual Society of Exploration Geophysicists Gulf Coast Technical Meeting and Geophysical Society of Houston 1999 Spring Symposium, Houston, Texas, April 15, 1999.

R.B. Loftin. Training Peacekeeping Operations with Shared Virtual Environments. Marine Corps Combat Development Command, Quantico, Virginia, October 1, 1999.

R.B. Loftin. Medical Applications of Modeling and Simulation. Department of Computer Science, University of Houston, Houston, Texas, November 23, 1999.

R.B. Loftin. A Look to the Future of Human-Computer Interfaces. North American Reality Center Special Interest Group, Continuum Resources, Houston, Texas, January 31, 2000.

R.B. Loftin. Medical Applications of Modeling and Simulation. Integrated Research Team, Telemedicine & Advanced Technology Research Center, U.S. Army Medical Research and Materiel Command, Frederick, Maryland, February 17, 2000.

R.B. Loftin. Modeling and Simulation: State of the Field and Challenges. Old Dominion University, Norfolk, Virginia, February 18, 2000.

R.B. Loftin. Virtual Reality: Technologies and Applications. Rice Aldine Science Club, Carver High School, Aldine Independent School District, Houston, Texas, March 6, 2000.

R.B. Loftin. Virtual Reality: Technologies and Applications. University of Houston Student Chapter of the American Institute of Aeronautics and Astronautics, University of Houston, Houston, Texas, March 27, 2000.

R.B. Loftin. New and Future Space Technologies or What Has NASA Done for Me Lately? Annual Science Symposium, Bethany Lutheran College, Mankato, Minnesota, March 29, 2000.

R.B. Loftin. Human-Computer Interactions in Shared Virtual Environments. NATO Workshop: What Is Essential for Virtual Reality Systems to Meet Military Human Performance Goals, The Hague, The Netherlands, April 13, 2000.

R.B. Loftin. Training for Peacekeeping Operations in Virtual Environments. Annual Meeting of The Technical Cooperation Program HUM-TP-2, Niagara Falls, Ontario, Canada, May 8, 2000.

R.B. Loftin. Virtual Environments in Education: Results from Project Science Space. Asia Pacific Visualization Summit 2000, Melbourne, Victoria, Australia, August 16, 2000.

R.B. Loftin. Shared Virtual Environments for Operational Training. Asia Pacific Visualization Summit 2000, Melbourne, Victoria, Australia, August 16, 2000.

R.B. Loftin. Immersive Virtual Environments for Training, Education, and Scientific/Engineering Data Visualization, Department of Electrical and Computer Engineering, Old Dominion University, September 22, 2000.

R.B. Loftin. A Visualization Centre at Griffith University—Applications and Recommendations. Griffith University, Gold Coast, Australia, November 7, 2000.

R.B. Loftin. Human-Computer and Human-Human Interactions in Shared Virtual Environments. Workshop on Shared Awareness in Virtual and Co-Located Teams, Interservice/Industry Training, Simulation and Education Conference, Orlando, FL, November 29, 2000.

R.B. Loftin. 'Smart' Simulations for Medical Training and Planning. VSIMS Orlando, FL, January 9, 2001.

R.B. Loftin. Advanced Visualization Techniques for Engineering. Hampton Roads Chapter American Society of Mechanical Engineers, NASA/Langley Research Center, January 16, 2001.

R.B. Loftin. Advanced Visualization Techniques for Medicine and Bioengineering. 19th Annual Houston Conference on Biomedical Engineering Research, Houston, TX, February 8-9, 2001.

R.B. Loftin. Virtual Environments in Education: Results from Project ScienceSpace. Department of Computer Science, Virginia Tech, March 28, 2001.

R.B. Loftin. NASA's Advanced Training Technologies Program: An Overview. Annual Meeting of The Technical Cooperation Program HUM-TP-2, Pearl Harbor, Hawaii, May 4, 2001.

R.B. Loftin. Applications of Modeling and Simulation in Medicine. University of Maryland School of Medicine, Baltimore, MD, June 1, 2001.

R.B. Loftin. Modeling and Simulation in Education: A Perspective from the Sciences and Engineering at Old Dominion University. U.S. Navy Technical Interchange Meeting, National Defense University, August 23, 2001.

R.B. Loftin. Shared Virtual Environments for Mission Planning and Rehearsal in Multinational Contexts. NATO Multinational Experimentation Pre-Symposium Workshop, Sundvollen, Norway, September 5, 2001.

R.B. Loftin. Virtual Reality in Education: Results from Project Science Space. Department of Computer Science, University of North Carolina at Chapel Hill, November 8, 2001.

R.B. Loftin. Computer Simulation Markets. Orlando Technology Forum, Orlando, FL, June 10, 2002.

R.B. Loftin. Lessons Learned in Establishing Old Dominion University's Graduate M&S Programs. Georgia Tech, June 14, 2002.

R.B. Loftin. National Center for Collaboration in Medical Modeling and Simulation. Advanced Technology Applications for Combat Casualty Care, St. Pete Beach, FL, September 12, 2002.

R.B. Loftin. From Outer Space to Inner Space—the Application of Virtual Environments for Training and Education. Provost's Lecture Series, East Carolina University, November 18, 2002.

R.B. Loftin. Grand Challenges in Medical Modeling and Simulation. 2003 Virtual Worlds and Simulation Conference, Orlando, FL, January 20, 2003.

R.B. Loftin. Overview of VMASC Research and Development. Old Dominion University Computer Science Colloquium, February 28, 2003.

R.B. Loftin. Overview of Research Activities. Institute for Creative Technologies Defense Modeling and Simulation Office Workshop on DoD and Entertainment Collaborations, Marina del Rey, CA, April 15, 2003.

R.B. Loftin. Grand Challenges in Modeling and Simulation. Keynote Address, Tidewater Chapter of Sigma Xi Annual Banquet, Christopher Newport University, April 18, 2003.

R.B. Loftin. Overview of Research Activities in Human Performance Modeling. Annual Meeting of The Technical Cooperation Program HUM-TP-2, Royal Tunbridge Wells, United Kingdom, April 24, 2003.

R.B. Loftin. From Outer Space to Inner Space-the Application of Virtual Environments for Training and Education. Keynote Address, Medical Symposium, SimTecT 2003 Conference, Adelaide, South Australia, May 26, 2003.

R.B. Loftin. Grand Challenges in Modeling and Simulation. Keynote Address, SimTecT 2003 Conference, Adelaide, South Australia, May 27, 2003.

R.B. Loftin. VMASC—Lessons Learned in Developing the Center. Keynote Address, Alabama Modeling & Simulation Council, Huntsville, AL, October 29, 2003.

R.B. Loftin. An Overview of VMASC's Research Activities in Human Behavioral Modeling. Human Effectiveness Directorate, Air Force Research Laboratory, Wright Patterson Air Force Base, February 17, 2004.

R.B. Loftin. Virtual Environments for OOTW Training and Mission Rehearsal. Workshop on Operations Other Than War, Rosslyn, VA, July 7, 2004.

R.B. Loftin. M&S Research and Education Programs at the Virginia Modeling, Analysis and Simulation Center. Modeling, Virtual Environments and Simulation Institute, Naval Postgraduate School, Monterey, CA, August 25, 2004.

R.B. Loftin and M. Phillips. Live, Virtual, and Constructive Simulation: An Introduction. U.S. Army Simulation Operations (FA7) Officers Conference, Atlanta, GA, April 13, 2005.

R.B. Loftin. Issues in Modeling and Simulation Education. Navy Technical Interchange Meeting. Baltimore, MD, May 4, 2006.

R.B. Loftin. The Future of Simulation. NATO Human Factors and Medicine Panel Workshop on Virtual Media for Military Applications. United States Military Academy, West Point, New York, June 15, 2006.

R.B. Loftin. Modeling and Simulation Education. Modeling and Simulation Caucus Leadership Summit. Virginia Beach, VA, February 11, 2008.

R.B. Loftin. The Future of Simulation. Society for Computer Simulation International, Ottawa, Canada, April 14, 2008.

R.B. Loftin. The Future of Simulation. 2009 Capstone Conference, Virginia Modeling, Analysis and Simulation Center, Suffolk, Virginia, April 9, 2009.

R.B. Loftin. The Future of Simulation. College of Engineering, Dartmouth College, Dartmouth, New Hampshire, May 20, 2010.

R.B. Loftin. Transforming American Higher Education to Support Modeling and Simulation. Interservice/Industry Simulation and Education Conference, Orlando, Florida, November 30, 2010. I was the first academic keynote speaker in conference history.

R.B. Loftin. Modeling and Simulation: Toward a National Strategy. M&S Stakeholders Meeting II, Virginia Beach, Virginia, February 7, 2011.

WORKSHOPS ORGANIZED

R.B. Loftin. Introduction to the Use of Computers in the Instructional Process. Workshops presented to the faculties of the Departments of Arts and Humanities, Engineering Technology, and Natural Sciences as a part of the Title III Computer Training Committee's program, April 29-30, 1982.

R.B. Loftin. An Introduction to Personal Computers. Two workshops conducted as a part of the UH-System Conference on Experimentation in University Teaching held at UH-University Park, 1983.

R.B. Loftin. An Introduction to the DEC Pro350. A workshop conducted for faculty of the University of Houston-Downtown, February 12, 1985.

R.B. Loftin. Should We Stop Talking? What Are the Alternatives? A workshop conducted for the faculty of the Department of Natural Sciences of the University of Houston-Downtown, January 16, 1987 (with J.A. Fefer and R. Sherman).

R.B. Loftin. The Intelligent Physics Tutor: An Introduction. A workshop conducted at the Joint Spring Meeting of the Texas Sections of the American Association of Physics Teachers and the American Physical Society, San Marcos, Texas, March 7, 1992 (with B. Lee).

R.B. Loftin. Intelligent Computer-Aided Training & Tutoring. Army Research Office Workshop on Multi-Modal Interfaces for Training, Exploration, and Task Analysis, Institute for Defense Analysis, Washington, DC, March 10, 1992.

R.B. Loftin, (co-chaired with Beverly Woolf). Workshop on Real-World Issues in Deploying Intelligent Tutoring Systems. World Conference on Artificial Intelligence in Education, Edinburgh, Scotland, August 27, 1993. Presentation delivered on "The Intelligent Physics Tutor."

R.B. Loftin. Workshop on Virtual Reality in the Geosciences. A workshop organized in conjunction with the 1999 IEEE Virtual Reality Conference, Houston, Texas, March 14, 1999. Presentation delivered on "Charting the Challenges."

R.B. Loftin. Shared Virtual Environments: Leveraging the Internet for Science, Engineering, and Business. Presented at the EUROTEX Internet- & Web-based Computing Workshop, Dallas, Texas, April 13, 1999.

R.B. Loftin and L. Rosenblum. Workshop on Perceptual and Multi-Modal Interfaces. A workshop organized in conjunction with the 2000 IEEE Virtual Reality Conference, New Brunswick, New Jersey, March 19, 2000.

PANEL APPEARANCES

R.B. Loftin. Varying Views of Atomic Structure. University of Houston-Downtown, Houston, Texas, October 2, 1980 (with V.C. Pierce and J.B. Umland).

R.B. Loftin. The Statistical Treatment of Experimental Data. University of Houston-Downtown, February 26, 1981 (with J.H. Hummel and J.B. Umland).

R.B. Loftin. The Crisis in Math and Science Education. UH-System Conference on the Crisis in Math and Science Education, UH-University Park, February 23, 1984 (panel chair).

R.B. Loftin. Man-Machine Interfaces: Training and Tutoring. First Annual Workshop on Space Operations, Automation, and Robotics, National Aeronautics and Space Administration/Lyndon B. Johnson Space Center, Houston, Texas, August 6, 1987 (with H. Burns, S.P. Gott, V.J. Shute, and K. Swigger).

R.B. Loftin. Intelligent Tutoring Systems. Third Conference on Artificial Intelligence for Space Applications, National Aeronautics and Space Administration/George C. Marshall Space Flight Center, Huntsville, Alabama, November 2, 1987.

R.B. Loftin. A Virtual Physics Laboratory. Symposium on Virtual Reality in Education, Annual Meeting of American Educational Research Association, Atlanta, GA, April 12-15, 1993.

R.B. Loftin. Survey of Current Activities at the Johnson Space Center for the Development of Advanced Training Technologies. Seventh Meeting of the Department of Defense Training Technology Technical Group, Orlando, FL, May 4, 1993

R.B. Loftin. Virtual Environments for Training and Education. Armed Forces Electronics Association Annual Meeting, Washington, DC, February 3, 1994.

R.B. Loftin. Training for the Operating Room of the Future. 1994 Image VII Conference, Tucson, AZ, June 16, 1994.

R.B. Loftin. ...a prophet without honor.... Seventh World Congress on Artificial Intelligence in Education (AI-ED 95), Washington, DC, August 15-19, 1995.

R.B. Loftin. The Integration of Intelligent Agents with Virtual Environments for Training. 17th Interservice/Industry Training Systems and Education Conference, Albuquerque, New Mexico, November 14-17, 1995.

R.B. Loftin. An Architecture for Intelligent Computer-Aided Training. 17th Interservice/Industry Training Systems and Education Conference, Albuquerque, New Mexico, November 14-17, 1995.

R.B. Loftin. Shared Virtual Environments for Aerospace Training. Panel on Global Multi-User Virtual Environments, SIGGRAPH 96, New Orleans, LA, August 7, 1996.

R.B. Loftin. Applications of Virtual Environment Technology in (Training and) Education. Panel on Applications of Virtual Reality, SIGGRAPH 97, Los Angeles, CA, August 9, 1997.

R.B. Loftin. Development and Assessment of Virtual Reality Materials for Education. Supercomputing '97: High Performance Networking and Computer Conference, San Jose, CA, November 17, 1997 (Served as panel chair; panel organized by NSF).

R.B. Loftin. Shared Virtual Environments for Collective Training. TTCP HUM-TP2 Training Technology Panel at SimTecT '98, Adelaide, South Australia, March 2, 1998.

R.B. Loftin. Virtual Reality in Education: Promise and Reality. IEEE VRAIS '98, Atlanta, Georgia, March 17, 1998 (Served as panel organizer. Panel members also included Fred Brooks and Chris Dede.).

R.B. Loftin. Educational Research in the CAVE™. Panel on Working in the CAVE™ Environment (organized by Umesh Thakar, NCSA), Second International Immersive Projection Technology Workshop, Iowa State University, Ames, Iowa, May 12, 1998.

R.B. Loftin. Advanced Visualization Techniques for Exploration and Production of Hydrocarbons. Panel on Virtual Environments for Geoscientific Data Visualization (organized by R.B. Loftin), 1998 Virtual Environments Conference and Fourth Eurographics Workshop, Stuttgart, Germany, June 17, 1998.

R.B. Loftin. Stories as the Basis for Virtual Environments for Training. Panel on Methodologies for Tutoring in Procedural Domains (organized by Ben Bell, Columbia, and Carol Redfield, St. Mary's), 1998 Intelligent Tutoring Systems Conference, San Antonio, Texas, August 18, 1999.

R.B. Loftin. Future Advances in Visualization. Panel on Emerging Technologies (organized by Scott Bartlett), Silicon Graphics Visualization Summit for Oil and Gas, Galveston, Texas, January 19, 1999.

R.B. Loftin. Modeling and Simulation for Reconstructive Surgery. Panel on Emerging Technologies in Plastic Surgery, Annual Meeting of the Texas Society of Plastic Surgeons, Austin, Texas, October 9, 1999.

R.B. Loftin. Collaborative Virtual Environments, Beyond Demos: Likely Venues and Real Challenges. Panel on the Future of Shared Virtual Environments, 2000 IEEE Virtual Reality Conference, New Brunswick, New Jersey, March 20, 2000.

R.B. Loftin. VMASC Programs in Modeling & Simulation and Homeland Security. 71st Annual Symposium of the Military Operations Research Society, Quantico, VA, June 10, 2003.

R.B. Loftin. Old Dominion University's Graduate Programs in Modeling and Simulation. Air Force Modeling and Simulation Conference, Orlando, FL, February 26, 2004.

R.B. Loftin. Modeling and Simulation for Critical Infrastructure Support. International Conference on Wearable Computing, Washington, DC, June 2, 2004.

R.B. Loftin, Graduate Programs in Modeling and Simulation: Advanced Formal Education in M&S (a tutorial). Interservice/Industry Training, Simulation and Education Conference, Orlando, FL, December 6, 2004.

R.B. Loftin. Grand <Research> Challenges in Modeling and Simulation. Society for Computer Simulation International, Ottawa, Canada, April 14, 2008.

CONTRIBUTED PRESENTATIONS (First name is the presenting author.)

W.G. Cooper and R.B. Loftin. Model of Energy Exchange between Radiation Fields and DNA. Texas Association for Radiation Research, San Antonio, Texas, November 5, 1976.

R.B. Loftin, J.W. Hanneken, and J.W. Edwards. Electrical Mobility of Hydrogen in Palladium. American Physical Society, San Francisco, California, December 20, 1976.

R.B. Loftin. The Effect of Air Resistance on Projectile Motion. American Association of Physics Teachers, London, Ontario, Canada, June 14, 1978.

R.B. Loftin and J.W. Hanneken. Frictional Effects on an Air Track. Texas Section of the American Association of Physics Teachers, Nacogdoches, Texas, November 17, 1978.

R.B. Loftin. The Computer in the Instructional Process at the University of Houston-Downtown. UH-System Conference on Experimentation in University Teaching, UH-Clear Lake, Houston, Texas, April 2, 1982.

R.B. Loftin and J.W. Hanneken. Neutron Radiographic Studies of the H-Pd System: Diffusion and Electrotransport. Texas Section American Physical Society, Austin, Texas, November 12, 1982.

J.W. Hanneken and R.B. Loftin. Neutron Radiographic Measurement of H Electrotransport in Pd. Tennessee Academy of Sciences, November 19, 1982.

R.B. Loftin and J.W. Hanneken. Hydrogen Transport in Metals: Neutron Radiographic Studies. American Physical Society, San Antonio, Texas, January 31, 1984.

J.W. Hanneken and R.B. Loftin. Nondestructive Determination of Local Hydrogen Concentration in Metals. International Symposium on Hydrogen in Metals, Queen's University of Belfast, Northern Ireland, March 26, 1985.

J.W. Hanneken, D.A. Williams, and R.B. Loftin. Neutron Radiographic Analysis of Diffusion and Electrotransport of H in Pd. Southeastern Section of the American Physical Society, Athens, Georgia, December 2, 1985.

D.A. Williams, J.W. Hanneken, and R.B. Loftin. Neutron Radiographic Analysis of Diffusion and Electrotransport of H in Pd. American Physical Society, Atlanta, Georgia, January 27, 1986.

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R.B. Loftin, M.G. Murphy, and S. Agrawal. A Naive Approach to Concurrent Calculations for a Two-Dimensional Diffusion Equation. Texas Section of the Mathematical Association of America, Mesquite, Texas, April 11, 1986.

R.B. Loftin and B.A. Bourgeois. Expert Systems for the Solution of Physics Problems. Texas Section of the American Association of Physics Teachers, Nacogdoches, Texas, November 8, 1986.

R.B. Loftin, L. Wang, P. Baffes, and M. Rua. An Intelligent Training System for Payload-Assist Module Deploys. First Annual Workshop on Space Operations, Automation, and Robotics,

August 5-7, 1987, National Aeronautics and Space Administration Lyndon B. Johnson Space Center, Houston, Texas .

R.B. Loftin, L. Wang, P. Baffes, M. Rua. An Intelligent Training System for Payload-Assist Module Deploys. SPIE 1987 Cambridge Symposium on Advances in Intelligent Robotics Systems, November 2, 1987, Cambridge, Massachusetts.

R.B. Loftin, L. Wang, P. Baffes, and G. Hua. An Intelligent Training System for Space Shuttle Flight Controllers. 1988 Goddard Conference on Space Applications of Artificial Intelligence, May 24, 1988, NASA/Goddard Space Flight Center, Greenbelt, MD.

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T. Saito, S. Ebaud, and R.B. Loftin. Supplemental Knowledge Acquisition through External Product Interface for CLIPS. presented at the First CLIPS Users' Conference, August 13-15, 1990, NASA/Johnson Space Center, Houston, Texas.

R.B. Loftin, B. Lee, S. Mueller, and R. Way. An Intelligent Tutoring System for Physics Problem Solving. Physics Computing '91, San Jose, CA, June 11-14, 1991.

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T. Saito, C. Ortiz, and R.B. Loftin. On the Acquisition and Representation of Procedural Knowledge. Workshop on Space Operations and Research (SOAR-91), NASA/Johnson Space Center, Houston, TX, July 9-11, 1991.

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R.B. Loftin and R.T. Savely. Applications of Intelligent Computer-Aided Training. Conference on Computers in Aerospace VIII, American Institute for Aeronautics and Astronautics, Baltimore, MD, October 22-23, 1991.

T. Saito, C. Ortiz, and R.B. Loftin. Acquiring Knowledge within an ICAT (Intelligent Computer-Aided Training) Environment: Factors and Issues. 1991 Conference on Intelligent Computer-Aided Training, NASA/Johnson Space Center, Houston, TX, November 21-22, 1991.

R.B. Loftin, B. Lee, S. Mueller, and R. Way. The Intelligent Physics Tutor. 1991 Conference on Intelligent Computer-Aided Training, NASA/Johnson Space Center, Houston, TX, November 21-22, 1991.

R.B. Loftin and R.T. Savely. Survey of Intelligent Computer-Aided Training. 30th Aerospace Sciences Meeting & Exhibit, American Institute for Aeronautics and Astronautics, Reno, Nevada, January 6-9, 1992.

R.B. Loftin and R.T. Savely. Advanced Training Systems for the Next Decade and Beyond. Space Programs and Technologies Conference, American Institute for Aeronautics and Astronautics, Huntsville, AL, March 24-27, 1992.

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R.B. Loftin. TARGET: Rapid Capture of Process Knowledge. A contributed presentation (with C.J. Ortiz, H.V. Ly, and T. Saito) at the Technology 2002 Conference, held in Washington, DC, December 1-3, 1992.

R.B. Loftin, M. Engelberg, and R. Benedetti. Virtual Environments in Education: A Virtual Physics Laboratory. Annual Society for Information Display Conference, Seattle, WA, May 17-20, 1993.

R.B. Loftin. Virtual Environment Technology for Aerospace Training. American Institute of Aeronautics and Astronautics Computing in Aerospace 9 Conference, San Diego, CA, October 19-21, 1993.

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C. Dede, M. Salzman, and R.B. Loftin. NewtonWorld: An Artificial Reality for Physics Education. National Educational Computing Conference, Baltimore, MD, June 18, 1995.

M. Salzman, C. Dede, and R.B. Loftin. Learner-Centered Design of Sensorily Immersive Using a Virtual Reality Interface. Seventh World Congress on Artificial Intelligence in Education (AI-ED 95), Washington, DC, August 15-19, 1995.

M. Salzman, C. Dede, and R.B. Loftin. Usability and Learning in Educational Virtual Realities. Human Factors and Ergonomics Society 39th Annual Meeting, San Diego, California, October 9-13, 1995.

R.B. Loftin. Virtual Environments for Aerospace Training. Technology 2005 Conference and Exhibition, Chicago, IL, October 25, 1995.

R.B. Loftin, C. Dede, and M. Salzman. ScienceSpace: Virtual Realities for Learning Complex and Abstract Scientific Concepts. Virtual Reality Annual International Symposium, Santa Clara, CA, March 31, 1996.

R.B. Loftin. The Utility of Virtual Reality for Learning Mental Models for Complex Tasks and Knowledge. 1996 Annual Meeting of American Educational Research Association, New York, NY, April 11, 1996.

R.B. Loftin. Applications of Virtual Environment Technology in Aerospace Training. Society for Industrial and Organizational Psychology, San Diego, CA, April 27, 1996.

R.B. Loftin, C. Dede, and M. Salzman. Learning Science through Immersive Virtual Realities. 1996 Image Conference, Scottsdale, AZ, June 26, 1996.

C. Dede and R.B. Loftin. Learning Complex Scientific Concepts Via Immersion in Virtual Reality. International Conference on the Learning Sciences, Evanston, IL, July 25, 1996.

R.B. Loftin. Virtual Environments for Aerospace Training. 104th Annual Convention of the American Psychological Association, Toronto, Canada, August 11, 1996.

R.B. Loftin. Applications of Virtual Environments in Training at NASA/JSC. Virtual Reality Working Group, Technical Panel UTP-2 (Training Technology), Subgroup U (Human Resources and Performance), Subcommittee on Non-Atomic Military Research and Development of the Technical Cooperation Program (Australia, Canada, New Zealand, United Kingdom, and United States of America), Toronto, Canada, June 10, 1996.

R. Kuppersmith, R. Johnston, R.B. Loftin, and H. Jenkins. Building a Virtual Reality Temporal Bone Dissection Simulator. Medicine Meets Virtual Reality V Conference. San Diego, CA, January 23, 1997.

C. Dede, M.C. Salzman, and R.B. Loftin. Cognition and learning the sciences of the 21st century: New directions in the design of advanced technology learning environments. presented at the 1997 Annual Meeting of the American Educational Research Association, Chicago, IL, March 27, 1997.

C. Dede, M.C. Salzman, D. Sprague, and R.B. Loftin. Virtual reality and science learning: Comparing multisensory immersion to two-dimensional microworlds. presented at the 1997 Annual Meeting of the American Educational Research Association, Chicago, IL, March 27, 1997.

R.B. Loftin. Applications of Virtual Environments in Training at NASA/JSC. Virtual Reality Working Group, Technical Panel UTP-2 (Training Technology), Subgroup U (Human Resources and Performance), Subcommittee on Non-Atomic Military Research and Development of the Technical Cooperation Program (Australia, Canada, New Zealand, United Kingdom, and United States of America), Las Vegas, NV, April 16, 1997.

R.B. Loftin, B.A. Bavinger, S.D. LeRoy, and H.R. Nelson, Jr.. Advanced Visualization Techniques for Exploration and Production. Offshore Technology Conference, Houston, TX, May 5, 1997.

M.C. Salzman, C. Dede, and R.B. Loftin. Evaluating Virtual Environments for Learning: Issues and Outcomes. Presented at the 1997 Meeting of the Human Factors and Ergonomics Society.

J.P. Bliss, P.D. Tidwell, R.B. Loftin, R. Johnston, C. Lyde, and B. Weathington. An Experimental Evaluation of Virtual Reality for Training Teamed Navigation Skills. Presented at the 1997 Meeting of the Human Factors and Ergonomics Society.

R.B. Loftin. Virtual Environments for Learning Science. Presented at the Symposium on Cognition and Leaning the Sciences and the 21st Century: International Perspectives on the Design of Advanced Technology Learning Environments, 7th European Conference for Research on Learning and Instruction, Athens, Greece, August 26-30, 1997.

J. Aucar, C. Miller, R. Villavicencio, T. Granchi, C.-R. Lin, J. Bartasis, K. Liscum, and R.B. Loftin. Development of a Virtual Reality Model for Assessment of Surgical Knot Tying. Presented at the 1997 Annual Meeting of the Association of Academic Surgeons, Dallas, TX, November, 1997.

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R.B. Loftin and C. Dede. Project ScienceSpace. Presented at the Visualization and Modeling Workshop, Center for Innovative Learning Technologies, University of California at Berkeley, San Francisco, CA, January 24, 1998.

R.B. Loftin. Shared Virtual Environments for Collective Training. Presented at the 1998 SimTecT Conference, Adelaide, Australia, March 4, 1998.

C.-R. Lin and R.B. Loftin. Applications of Virtual Reality in the Geosciences. Presented at the World Energy Council's 17th Congress, Houston, Texas, September 15, 1998.

R.B. Loftin. Distributed Virtual Environments for Collective Training. Presented at the 1998 IMAGE Conference, Scottsdale, Arizona, August 7, 1998.

R.B. Loftin. Using Virtual Reality to Support Hydrocarbon Exploration and Production. Presented at the ETCE'99 Energy Sources and Technology Conference, Houston, Texas, February 1, 1999.

R.B. Loftin. Immersive Data Visualization in the Geosciences. Presented at the 1999 Immersive Projection Technologies Workshop, Stuttgart, Germany, May 10, 1999.

R.B. Loftin. Human-Computer Interactions in Shared Virtual Environments. Presented at the 1999 International Conference on Human-Computer Interaction, Munich, Germany, August 26, 1999.

C.-R. Lin, R.B. Loftin, and H.R. Nelson, Jr. Interaction with Geoscience Data in an Immersive Environment. Presented at the 2000 IEEE Virtual Reality Conference, New Brunswick, NJ, March 18-22, 2000.

R.B. Loftin. Augmented and Virtual Reality in Support of the International Space Station Program. Presented at the 2000 American Institute of Aeronautics and Astronautics Technical Symposium, University of Houston-Clear Lake, Houston, Texas, April 6, 2000.

R.B. Loftin. Human-Computer Interactions in Shared Virtual Environments. Presented at the NATO Workshop: What is Essential for Virtual Reality Systems to Meet Military Human Performance Goals?, The Hague, The Netherlands, April 13, 2000.

C. Harding, R.B. Loftin, and J. Casey. Multi-Modal Investigation of Geoscientific Data--Adding Touch and Sound to 3D Visualization of Surface-based Data. Presented at the 2000 Annual Meeting of the Society of Exploration Geophysicists, Calgary, Alberta, Canada, August, 2000.

PUBLISHED BOOK AND AUDIO/VISUAL MATERIALS REVIEWS

R.T. Weidner and R.L. Sells. Elementary Modern Physics, Third Edition. Boston: Allyn and Bacon, 1980. Appeared in *Science Books and Films 16*, 133 (1981).

Audio Visual Narrative Arts, Inc. Models of the Atom. (filmstrip/audio cassette) Pleasantville, New York: Audio Visual Narrative Arts, Inc., 1980. Appeared in *Science Books and Films 17*, 49 (1981).

B. Gruber and R.S. Millmann (Editors). Symmetries in Science. (Proceedings of the Einstein Centennial Celebration Science Symposium on Symmetries in Science, held at Southern Illinois University, Carbondale, Illinois) New York: Plenum, 1980. Appeared in *Science Books and Films 17*, 192 (1982).

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J.B. Fenn. Engines, Energy, and Entropy: A Thermodynamics Primer. San Francisco: W.H. Freeman, 1982. Appeared in *Science Books and Films 18*, 141 (1983).

V.G. Veley and J.J. Dulin. Modern Electronics: A First Course. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1983. Appeared in *Science Books and Films 19*, 91 (1983).

C. Laron. Electronics Basics. Englewood Cliffs, NJ: Prentice-Hall, 1984. Appeared in *Science Books and Films 21*, 41 (1985).

U. Haber-Schaim, J.H. Dodge, and J.A. Walter. PSSC Physics, Fifth Edition. Lexington, MA: D.C. Heath, 1981. Appeared in *Science Books and Films 22*, 15 (1986).

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Coronet Films & Video. Sound, Energy, and Wave Motion; Sound, Acoustics, and Recording. (videocassettes) Deerfield, IL: Coronet Films & Video, 1986. Appeared in *Science Books and Films 22*, 254 (1987).

Wayne J. Leblanc and Alden R. Carter. Modern Electronics. New York: Franklin Watts, 1986. Appeared in *Science Books and Films 22*, 231 (1987).

Michio Kaku and Jennifer Trainer. Beyond Einstein: The Cosmic Quest for the Theory of the Universe. New York: Bantam, 1987. Appeared in *Science Books and Films 23*, 33 (1987).

Robert L. Forward and Joel Davis. Mirror Matter: Pioneering Antimatter Physics. Appeared in *Science Books and Films 24*, 156 (1989).

G.F.R. Ellis and R.M. Williams, Flat and Curved Space-Time. Appeared in *Science Books and Films*.

John D. Cutnell and Kenneth W. Johnson, Physics (New York: Wiley, 1989). Appeared in *Science Books & Films*, *25*, 195-197 (1990).

David Darling, Sounds Interesting: The Science of Acoustics (New York: Dillon Press, 1991). Appeared in *Science Books & Films*, *28*, 51 (1992).

Arthur Mokin Productions. Antonio Meucci: The Father of the Telephone. (videocassette) (Santa Rosa, CA: Arthur Mokin Productions, 1993). Appeared in *Science Books & Films*, *30*, 213 (1994).

Gary Gibson, Hearing Sounds, Light and Color, and Making Things Float and Sink (Brookfield, CT: Copper Beech Books, 1995). Appeared in *Science Books and Films 31*, 141 (1995).

The Electromagnetic Spectrum and Vision, Energy: Form and Transfer, Metals and Alloys (Videos; Briarcliff Manor, NY: Benchmark Media, 1994). Appeared in *Science Books and Films 32* (6), 189 (1995).

HONORARY AND PROFESSIONAL SOCIETY MEMBERSHIPS (Past and Present)

American Association for Artificial Intelligence, American Association of Physics Teachers, American Institute for Aeronautics and Astronautics (Senior Member), American Physical Society, Association for Computing Machinery Special Interest Group on Computer Graphics, IEEE Computer Society, Military Operations Research Society, Phi Eta Sigma, Phi Kappa Phi, Pi Mu Epsilon, Sigma Xi, Society for Computer Simulation International, The Philosophical Society of Texas

HONORS AND AWARDS

Texas A&M University:	Science Honor Award Scholarship; McFarland Physics Scholarship; Faculty Achievement Award of the College of Science; graduation *with high honors* (equivalent to *summa cum laude*); member, Academy of Distinguished Former Students, College of Science, Texas A&M University (2010-present).
Rice University:	Rice University Fellowship, NDEA Fellowship, NASA Fellowship.
UH-Downtown:	UH-Downtown Award for Excellence in Teaching, 1982; UH-Downtown Award for Excellence in Service, 1984 and 1985; Finalist, UH-Downtown Award for Excellence in Scholarship, 1992, 1993, 1994.
Professional:	Outstanding Young Man of America, 1978; Listed in Who's Who in the South and Southwest, Who's Who in Science and Engineering, The International Dictionary of Biography, and Who's Who in America; NASA/American Society for Engineering Education Summer Faculty Fellowship, 1986 and 1987; Best Paper Award, 1988 Goddard Conference on Space Applications of Artificial Intelligence; National Research Council/National Aeronautics and Space Administration Senior Resident Research Associate, 1988-89; National Aeronautics and Space Administration Awards for Technical Publications and Patent Applications, 1988 and 1989; American Association for Artificial Intelligence Award for an Innovative Application of Artificial Intelligence, 1989; National Aeronautics and Space Administration Group Achievement Awards, 1992 and 1994; National Aeronautics and Space Administration Space Act Award, 1992; National Aeronautics and Space Administration Public Service Medal, 1993; *CyberEdge Journal* Software of the Year Award (Applications), 1994; National Aeronautics and Space Administration Invention of the Year Award, 1995; National Aeronautics and Space Administration Space Act Award, 1995; 1996 Phi Kappa Phi South Central Scholar Award; Shell Distinguished Lecturer, 1997; Halliburton Distinguished Lecturer, Texas Tech University, 1998; IEEE Computer Society Meritorious Service Award, 2005; IEEE Virtual Reality Conference Career Award, 2008; Charter Fellow, National Academy of Inventors, 2013.

PUBLIC SERVICE

Lone Star Lutheran High School Association Board of Directors (Member, Secretary, Vice-Chairman, and Chairman), 1979-84; Education Chairman (1978), President (1979-84), Member, Committee of Elders (1985-87; 1999-2000), Stewardship Chairman (1991-1998) Lord of Life Lutheran Church; Chairman, Committee of Elders, Resurrection Lutheran Church (2002-2005); Coordinator for Parish Education (1986-91) and Youth Education (1991-1997), South Central District, Wisconsin Evangelical Lutheran Synod; Judge (1978-1999), Senior Physics Judging Coordinator (1981-84), Judging Chairman (1985-1998), Science Engineering Fair of Houston; Co-Coordinator of Physics Judging, 33rd International Science and Engineering Fair, 1981; Physics Judge, 38th International Science and Engineering Fair, 1986; Member, City of Nassau Bay Board of Zoning Adjustment (1987-1994); Chairman, Harmony Cemetery Association (1988-present); Judge, Optimist Scholarship Foundation of Southeast Texas (1989-1992); Member, Board for Ministerial Education, Wisconsin Evangelical Lutheran Synod (1990-2007); Member, City of Suffolk Mayor's CEO Advisory Council (2004-2005); 2008 Campaign Chair, United Way of Galveston; Member/Vice President, Executive Committee of the Board of Directors, United Way of Galveston (2006-2010); Member (2006-2010) and Vice President (2009-2010), Board of Directors, Odyssey Academy, a public charter school; Member, Executive Committee, Galveston Economic Development Partnership (2008-2010); Member, Galveston ISD Education Foundation Advisory Board (2008-2010); Founding Chair, International Maritime Committee, Bay Area Houston Economic Partnership (2008-2014); Member, Board of Directors (2009-2010), Bay Area Houston Economic Partnership; Member, Education and Workforce Committee, Bay Area Houston Economic Partnership (2006-2010); Member, Executive Committee, Bay Area Council, Boy Scouts of America (2007-2010); Member, Community Liaison Committee, Galveston National Laboratory, University of Texas Medical Branch (2006-2010); Chair, Galveston P-16 Council (2008-2010); Member, Board of Regents, Wisconsin Lutheran College (2009-present); Member, Great Rivers Council, Boy Scouts of America (2014-present).