

**DR. ROBERT FINKELSTEIN**

11424 Palatine Drive

Potomac, MD 20854

Day: 301-983-4194

Evening: 301-983-4270

BobF@RoboticTechnologyInc.com

Robert.Finkelstein@UMUC.edu

**SUMMARY**

Dr. Robert Finkelstein has more than 30 years experience in academia as adjunct faculty, including more than 16 years of experience with the University of Maryland University College (UMUC). As a Collegiate Professor at UMUC, Dr. Finkelstein taught on-site and online graduate courses in a wide variety of subjects, including 30 credits per year online in technology management and system engineering courses. As an adjunct professor, he also taught courses in Unmanned Ground Vehicles for Unmanned Vehicle University. Dr. Finkelstein also has more than 30 years of experience as a scientist, manager, and entrepreneur in government and industry, in fields such as military and civil systems analysis; operations research; technology assessment and forecasting, and intelligent systems and robotic vehicles.

**EDUCATION**

George Washington University, Washington, DC

DBA, January 1995, (graduated with a 4.0/4.0 average), primary field was Systems Theory and Cybernetics and supporting field was Management of Science, Technology, and Innovation, Dissertation was *Design of the Organization as an Intelligent System*.

George Washington University, Washington, DC

Ap.Sci. (Applied Scientist), May 1977, Operations Research, Thesis was *Operational Analysis of the Modern Airship*.

George Washington University, Washington, DC

M.S., May 1974, Operations Research

University of Massachusetts, Lowell, MA

M.S., June 1966, Physics, Thesis was *The Effects of a Magnetic Field on the Flow Patterns in a Sulfuric Acid Solution and a Possible Analogy to the Sun's Corona*.

Temple University, Philadelphia, PA

B.A., June 1964, Physics

**Other Education**

LaSalle Extension University, Chicago, IL

LL.B., American law and Procedure, October 1971

U.S. Army Ordnance School, Aberdeen, MD  
Diploma, 1966, Ordnance Systems

U.S. Army Missile School, Huntsville, AL  
Diploma, 1967, Missile Systems

University of California, Los Angeles, CA  
Certificate, 1983, Battlefield Robotics

Massachusetts Institute of Technology, Cambridge, MA  
Post Graduate Courses, 1968-1970, Physics

### **COURSES TAUGHT AT UMUC: (1999–Present)**

With multi-disciplinary expertise, Dr. Finkelstein taught thirteen different graduate courses for UMUC since 1999, receiving high overall course evaluation scores and the UMUC Teaching Recognition Award, typically teaching 30 credits per year during fall, spring, and summer semesters. He designed and developed the course SYSE640, System Integration and Test, and since the start of the systems engineering program, he has taught six systems engineering courses during four semesters.

- TMAN600: Foundations of Management and Technology
- TMAN611: Principles of Technology Management
- TMAN614: Strategic Management of Technology and Innovation
- TMAN621: Systems Analysis and Operations Research
- TMAN640: Program Management
- MGT610: The Manager in a Technological Society
- PMAN628: Contract Pricing and Negotiation
- PMAN634: Program and Project Management
- PMAN635: Techniques for Scheduling and Resource Allocation
- PMAN637: Risk Management
- SYSE630: System Design and Development
- SYSE640: System Integration and Test
- ITEC630: Information Systems Analysis, Modeling, and Design

### **Courses Taught Elsewhere: (1964-Present)**

Before UMUC, Dr. Finkelstein served as adjunct faculty at: University of Massachusetts, University of Alabama, Central Michigan University, Prince Georges Community College, the University of Texas, George Mason University, George Washington University, and the University Of Maryland Clark School Of Engineering. With multidisciplinary expertise, he taught a wide variety of courses: physics, astronomy, mathematics, operations research, robotics, technology, engineering, and business management. He taught online for Excelsior College in the Blackboard format: Economic Analysis for Technologists (which he also was tasked to re-structure) and Introduction to Energy Utilization. He also taught courses in autonomy and unmanned ground vehicles online for Unmanned Vehicle University.

## **EMPLOYMENT HISTORY**

### **President, Robotic Technology Inc. (RTI), 1985 to Present**

Responsible for business development, technical analyses, technology assessments, operations research, and other professional services, for government and industry - nationally and internationally - in military and civil advanced technology systems, especially robotics, unmanned vehicles, and intelligent systems. Dr. Finkelstein is the inventor of the Energetically Autonomous Tactical Robot (EATR), which was developed under sponsorship of the Defense Advanced Research Projects Agency (DARPA). The December 2010 issue of the "Scientific American" recognized EATR as one of ten "World Changing Ideas: Innovations for a Brighter Future," and the December 2010 issue of "Esquire" magazine recognized EATR as one of the "Best Innovations of 2010." He is also the inventor of the CamArray, a public safety application for the intelligent Connected Vehicle System being developed by the Department of Transportation. Dr. Finkelstein also initiated and managed the Military Memetics Project and the Intelligent Vehicle Technology Transfer (IVTT) Project with DARPA sponsorship. He was the designer and Principle Investigator for the Integrated Intelligent System of Systems (IISOS) in a program for the Department of Homeland Security involving maritime security in the Arctic. RTI clients have included 15 government agencies, 6 universities, 8 non-profit organizations, and 43 corporations.

### **Previous Experience, 1966-1985**

- Systems Scientist, MITRE Corporation (1977-1985), responsible for studies involving C3I, weapons systems analysis, robotics, and artificial intelligence
- Project Manager, Mantech International Corp. (1976 to 1977), leading teams in the multi-disciplined analyses of high-technology systems
- Senior Analyst, Ketrion Inc. (1975 to 1976), responsible for operations research analysis for military applications, including urban warfare, modeling and simulation
- Project Manager, Atlantic Research Corp. (1972 to 1975), developed new concepts for advanced technology military and civil systems
- Task Leader, Computer Sciences Corp. (1970 to 1972), applied physics for spaceship mission analysis, orbital mechanics, and Earth satellite analysis
- Technical Staff, Massachusetts Institute of Technology (1968 to 1970) applied physics and operational analysis for the Apollo Manned Spaceflight program (was awarded the MIT Certificate of Commendation)
- Anti-satellite Systems Officer, U.S. Army Missile Intelligence Agency (1966 to 1968), served during Vietnam War, awarded the Army Commendation Medal and National Defense Service Medal

## **HONORS, AWARDS, SCHOLARSHIPS, AND FELLOWSHIPS**

- Full scholarship to Temple University
- Full teaching fellowship to the University of Massachusetts
- U.S. Army Commendation Medal and National Defense Service Medal
- MIT Certificate of Commendation
- Honor Societies: Sigma Pi Sigma (Physics Honor Society), Omega Rho (Operations Research Honor Society), Beta Gamma Sigma (Business Honor Society)
- Six Service Awards from the Association for Unmanned Vehicle Systems International

- UMUC Teaching Recognition Award

## **PUBLICATIONS AND BOOKS**

- Book in process: *Military and Civil Robotics: Intelligent Machines in War and Peace*
- Book: *Unmanned Vehicle Systems: Military and Civil Robots for the 21st Century and Beyond*, Pasha Publications (1994)
- Book: Defense Year-Book, (Chapter: *Combat Robotics: From the Kaiser to the New World Order*), Brassey's Publications (1992)
- Book: Wiley Handbook of Science and Technology for Homeland Security (Chapter: *Memetics for Threat Reduction in Risk Management*), 15 March 2009
- Authored more than a 250 technical reports and studies. Contributed articles to publications such as National Defense, Sea Power, and the Armed Forces Journal. Wrote a quarterly column and served on the Editorial Board for the journal Unmanned Systems, and served on the Editorial Board of the journal Mathematical Machines and Systems.
- Featured in print and broadcast media: New York Times, Washington Post, Wall Street Journal, Baltimore Sun, Philadelphia Inquirer, Boston Globe, Los Angeles Times, Palm Beach Post, Arizona Daily Star, Montgomery County Gazette, London Guardian, Japanese Mainichi Newspaper, Business Week, High Technology, Omni, Fortune, Defense News, Unmanned Systems, Popular Science, Esquire, Scientific American, among other publications, including being referenced in books and many online publications. Featured on radio and television, including: PBS radio, BBC radio, CBS news, Swedish Public Radio, other local and national radio stations, the History TV channel, ITV news in London, MSNBC, the Pentagon Channel, and a documentary film on military robotics.

## **EXECUTIVE COURSES, LECTURES, AND PRESENTATIONS**

Dr. Finkelstein has given dozens of presentations, executive courses, and lectures, nationally and internationally, on military and civil robotics and intelligent systems, intelligent vehicles and driverless cars, cybernetics, military memetics, and cultural transformation to prevent conflict and war. Recently, he provided presentations to help pass the law to legalize driverless vehicles in Washington, DC, and he was invited to give similar presentations to the County Engineers Association of Maryland, the Transportation Research Board, and the American Council of Engineering Companies of North Carolina. He was invited to give presentations to the Army War College and the Army Training and Doctrine Command, among other U.S. government agencies, as well as internationally to audiences in Israel, London, Paris, and Stockholm. He taught a course on intelligent vehicle technology at a Chinese university. He has given numerous presentations at events sponsored by the Association for Unmanned Vehicle Systems International and the Military Operations Research Society. He has spoken on various professional topics to academic, government, and industry audiences.

## **PROFESSIONAL SERVICE**

At UMUC Dr. Finkelstein had the opportunity to mentor new instructors and develop new courses, and volunteered to develop new curriculums. At the University of Maryland, he serves as Co-

Director of the Intelligent Systems Laboratory in the Center for Technology and Systems Management in the Clark School of Engineering.

Dr. Finkelstein is a charter member of the Association for Unmanned Vehicle Systems International (AUVSI) and served on the Board of Trustees for 15 years. He also served as the President of the Capital Chapter, the publications director, and he wrote a regular column for the AUVSI publication *Unmanned Systems*, which he named. He is also a charter member of the Intelligent Transportation Society of America (ITSA) and served on a number of committees. He founded the Unmanned Vehicle section of the Military Operations Research Society (MORS). He initiated and managed the Intelligent Vehicle Technology Transfer (IVTT) program for the Department of Defense, as well as the Military Memetics project. He has organized and moderated numerous international conferences and workshops for AUVSI, IVTT, MORS, and military memetics, among many others.

### **PROFESSIONAL AFFILIATIONS**

With multidisciplinary interests, Dr. Finkelstein has participated in a spectrum of Professional Societies, including: Sigma Pi Sigma (Physics Honor Society), Omega Rho (Operations Research Honor Society), Beta Gamma Sigma (Business Honor Society), Association for Unmanned Vehicles Systems International, Institute For Operations Research and the Management Sciences, Washington Institute For Operations Research and Management Science, Military Operations Research Society, American Association for the Advancement of Science, American Physical Society, American Anthropological Association, American Association for Artificial Intelligence, American Society for Cybernetics, Institute of Electrical and Electronics Engineers, Intelligent Transportation Society of America, National Defense Industrial Association, World Future Society, Washington Academy of Science, and the Association for Intelligence Officers.