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## **TASK FORCE CHAIR**

**John McFee** has been leading and conducting research in the detection of mines, minefields, and UXO for 25 years. At present, he is responsible for developing, directing, and executing the mine detection research programs for the Canadian military and the Canadian Centre for Mine Action Technology. Researchers in other countries have adopted a number of his research group's detection algorithms, models, concepts, and configurations. Among his group's achievements are development of the first multisensor, teleoperated, and vehicle-mounted mine detector fielded by a military and the first real-time hyperspectral detection of mines. His group has also worked in the field in Cambodia, Bosnia, Croatia, Afghanistan, and Colombia to solve practical problems with in-service mine detectors and to determine which detectors were best suited for each particular location. Dr. McFee's research has involved a wide range of technologies to detect mines, minefields, and UXO, including magnetometers, EMI systems, pattern classification, image analysis, and passive and active infrared imaging. He presently concentrates his R&D on hyperspectral imaging and nuclear detection of mines, including TNA, neutron albedo imaging, and x-ray imaging. Since 1995, he either has cochaired or has been a program committee member of the annual International Society for Optical Engineering (SPIE) Conference on Detection and Remediation of Mines and Minelike Targets. Dr. McFee received the B.Sc. honours physics degree from the University of New Brunswick and a Ph.D. degree in nuclear physics from McMaster University.

## **TASK FORCE MEMBERS**

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**J. Thomas Broach** began his R&D career in 1969 by investigating the application of superconductivity to specialized electric power sources. He began working in the development of mine detection technologies in 1983 when he joined the countermine division of the U.S. Army Night Vision and Electronic Sensors Directorate (NVESD). From 1986 to 1997, Dr. Broach was head of the Detection Research Team, which was responsible for developing various mine detection technologies for use in handheld, vehicular-mounted, and remote detection applications. During this time, he directed mine detection research, which included such sensors as GPR, acoustic/seismic, nuclear, x-ray, and electro-optic. In 1996, he was appointed by the Army Countermine Task Force to field test and evaluate 13 detectors for their potential for immediate troop use. He was in charge of the U.S. Army Vehicular Mounted Mine Detector Advanced Technology Demonstration, which was completed in 1998. Since 1998, he has chaired the annual SPIE Conference on Detection and Remediation Technologies for Mines and Minelike Targets. Currently, Dr. Broach is senior scientist of the countermine division at NVESD. He holds a Ph.D. in physics from American University.

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**Waymond Scott** is a professor of electrical engineering at Georgia Tech. His research involves the interaction of electromagnetic and elastic waves with materials. This research spans a broad range of topics, including the measurement of the properties of materials, experimental and numerical modeling, and systems for the detection of buried objects. Currently, his research is concentrated on investigating techniques for detecting objects buried in the earth. This work has many practical applications and includes, for example, the detection of underground utilities, buried hazardous waste, UXO, and buried landmines. Dr. Scott received his B.S., M.S., and Ph.D. degrees in electrical engineering from Georgia Tech.

**Richard Weaver** has held a variety of positions in the U.S. Army's research community. He currently is the director of the countermine division at NVESD. He served as the first director of JUXOCO, which was established to coordinate all Department of Defense work concerning detection of UXO and landmines. He has published articles covering countermine research in *Geoscience and Remote Sensing* and in journals of the Institute of Electrical and Electronics Engineers. He has spoken about mine detection at numerous national and international symposia. He received a B.A. in chemistry from Bucknell University and an M.S. in systems engineering from the University of Southern California. Mr. Weaver is a veteran of the Vietnam War.