

Descriptive Biography of Prof. Wolfgang-Martin Boerner (1937- 2018)



Wolfgang-Martin Boerner (IEEE M'65, SM'75, F'84, LF'92) was born in Finschhafen, Papua New Guinea on July 26 1937, spent his childhood in Oceania & Austral-Asia with WWII internment in Australia (1941 – 1946), 1948 post-internment lengthy sea-travel via India, Africa, England to Germany; received the B.S. (Abitur) degree from the August von

Platen Gymnasium, Ansbach, Germany in 1958; the M.S. (Dipl.-Ing.) degree in Communications & Electromagnetic Wave Engineering from the Technical University of Munich, Bavaria, Germany in 1963; and the Ph.D. degree in Electromagnetic Engineering Sciences from the Moore School of Electrical Engineering at the University of Pennsylvania (Penn), Philadelphia, in 1967.

From 1967 to 1968 WMB was a Research Assistant Engineer with the EECS Radiation Laboratory of the University of Michigan, Ann Arbor, MI. In 1968 he joined the University of Manitoba at Winnipeg, Canada, where he was strongly active in across-Canada research activities on the advancement of inverse problems in aeronomy, geo-environmental radar remote sensing, geo-dynamic stress-change monitoring and surveillance. Since 1978, he has been a Professor at the Department of Electrical & Computer Engineering (formerly EECS), the University of Illinois at Chicago, and Director of its Communications, Sensing and Navigation Laboratory (UIC-ECE/CSN-Lab). While at UIC Professor Boerner was awarded the Alexander von Humboldt Senior US Scientist, the Japan Society for the Promotion of Science Senior US Scientist, and the US Navy Distinguished Senior Professor awards; he is now a University of Illinois Distinguished Senior Professor Emeritus, and he was awarded the *Doctor Honoris Causa* (Dr. H. C.) of the Tomsk State University Cluster in Tomsk, West Siberia on 2000 October 12; of the University of Rennes 1, Bretagne, France on 2003 April 04; and of the Friedrich-Alexander-University of Erlangen-Nuremberg, Germany on 2003 April 11 - all in recognition for his profound contributions to the advancements of “*Electromagnetic Vector (Polarization) Inverse Scattering, Radar Polarimetry, Interferometry and Tomography*”. He is a Corresponding Member of the Saxonian Academy of Science at Leipzig, Germany, SAWzL; of *acatech*, the German Academy of Technological Sciences, Germany; and the Electromagnetics Academy of Zhejiang University at Hangzhou in China.

In recent years, he was actively involved in international outreach programs in Europe, Oceania and Pacific Asia, where he was, for example, the Invited Senior Distinguished Professor of Japan's first National engineering institution, the Nippon Institute of Technology (NIT) at Miya-shiro Machi in Saitama-ken; the Distinguished Senior Visiting Professor at the Tohoku University, Center for Northeast Asian Studies in Sendai, Japan during Spring 2003 and summer 2011; the Visiting Honorary Professor at the Niigata University, Information Engineering Department since 2002; the Distinguished Visiting Chair Professor (2004) of the National Central University of Taiwan in Chung-Li, Taiwan; the Visiting Consulting Professorship within Chiba University, Center for Environmental Remote Sensing, Josaphat Microwave Radar Scattering Laboratory (JMRS�); the Distinguished Visiting Chair Professor & Fellow of *'The Electromagnetics Academy'* of Zhejiang University at Hangzhou in China – involved in the *"advancement of extra-wideband polarimetric imaging radar & SAR theory and technology"*; the Honorary Consulting Professor of the Fudan University, Key Laboratory of Wave Scattering and Remote Sensing Information, at Yang-pu, Shanghai in China – engaged in *"the assessment of multi-band polarimetric feature detection and identification for polarimetric imaging radar and POL-IN-SAR theory and its applications."* Professor Boerner served as the IEEE-GRSS Outreach Liaison for SE-Asia and India engaged in enticing GRSS-related research expertise utilization at its major research centers; and for enticing IEEE membership increases as well as initiating the establishment of IEEE societal chapters involved in geo-environmental remote sensing, geodynamic stress-change monitoring, natural as well as man-made disaster detection, surveillance. In this context, Professor Boerner was successful in initiating IEEE Chapters for GRSS, EAS-S, OES and APS within the E/SE/S-Asia & Pacific/Austral-Oceanic region. During the past ten years with his strong engagement new chapters have been established in India: for Rajasthan at Jodhpur, Karnataka at Bangalore, West-Bengal at Kolkata, Gujarat at Ahmadabad, Maharashtra at Mumbai, and currently forthcoming for Tamilnadu at Chennai, for Madhya Pradesh at Bhopal, for Uttarakhand at Dehradun/Roorkee, for Andhra-Pradesh at Hyderabad, for Maharashtra-East at Pune, for Kerala at Kochi/Trivandrum; and one Joint GRSS/AES-Chapter each for East-Malaysia at Kota-Kinabalu and for West-Malaysia in Kuala-Lumpur; for Singapore; for East-Java at Jakarta, West-Java at Surabaya and soon for East Indonesia at Makassar in West-Sulawesi; and for the Philippines at Manila.

For his contributions toward linking international research centers of Oceania & East/Austral-Asia via the Americas with Eurasia & Europe, Prof. W-M. Boerner was honored with the distinguished IEEE-GRSS Outstanding Services Award for 2005 and that of IEICE-SANE for 2007; most recently with a Special Recognition on the occasion of the 50th anniversary of IEEE-GRSS during the IGARSS-2012 at Munich, Germany for *"his extraordinary technical contributions to the advancement of radar remote sensing and valued services to the Geoscience and Remote Sensing Society of IEEE"*,

and honored in March 2018 *“In recognition of his invaluable contributions to the IEEE Geoscience and Remote Sensing Society for the period of 2003 -2018”*.

Dr. Boerner was a member of numerous international scientific societies; he was a senior member of the Canadian Association of Physicists (CAP), the American Society for Engineering Education (ASEE), the American and the International Societies for Remote Sensing and Photogrammetry (ASRSP &ISRSP); he was a Life Fellow of IEEE and IEICE; Fellow of the OSA, SPIE, AAAS and of the A.v.H.S. He has been awarded the Alexander von Humboldt U.S. Senior Scientist, the Japan Society for the Promotion of Science Senior U.S. Scientist, and the U.S. Navy Distinguished Senior Professor awards, respectively. He was the University of Illinois Senior Scholar, member of the *Sächsische Akademie der Wissenschaften zu Leipzig*, the *Akademie-Forum (Academy) of Science and Technology of Germany*, and he was awarded the Doctor Honoris Causa of the Tomsk State University Cluster in Tomsk (2000); an Honorary Doctorate, Dr. h.c., from the University of Rennes 1 in Rennes, Brittany, France (2003); and another Honorary Doctorate of Engineering, Dr.-Ing. E-h., from the Friedrich-Alexander University of Erlangen-Nürnberg in Erlangen, Frankonia, Germany (2003). He was a registered engineer with VDE (*Verein Deutscher Ingenieure*), APEM (Association of Professional Engineers of the Province of Manitoba), ISPE &NSPE (Illinois and US National Societies of Professional Engineers); and among others he was a member of the honor societies Sigma Xi, the American and the German Fulbright Associations, and the Alexander von Humboldt Association. Appointed Chair, International Symposium on Environmental & Ecological Remote Sensing and Surveillance of the Baikal Lake Basin in Siberia/Mongolia of Inner Asia, Irkutsk/Ulan-Ude, Russia, summer 2001 (with sponsorship of NATO, RAS-SB, INTAS, ONR, UNESCO-UNEP, JSPS).

In his position as the Asia-Pacific/Oceania Liaison on behalf of the IEEE Geoscience and Remote Sensing Society GRSS during 2003 - 2018, Prof. Boerner was engaged in advancing membership and establishing IEEE-GRSS and Joint IEEE-AES/GRSS Chapters, emphasizing microwave, radar and fully polarimetric SAR airborne, high-altitude and satellite surveillance and remote sensing of the equatorial tropical belts in pursuit of natural hazard and manmade disaster reduction for which he was invited for organizing and presenting a group presentation at the APSAR-2015 at Singapore on *“The challenge for still unresolved development of multi-band Equatorially Orbiting POLSAR satellite sensors with varying latitudinal coverage within the Tropical Belt - an integral task for the major space-SAR technology centers world-wide – with special emphasis for South-East/South Asia-deployment for natural and man-made hazard risk detection”*.

Professor Boerner was elected a member of the IUCN SSC/WI Crane Specialist Group 2004-2007, 2008-2011, 2012-2015, 2016-2019; and he was an active member of various nature and migratory bird conservation groups including NABU, BUND, ICF, WBI, WBSJ, WBST, and so on; and he specializes on the conservation of wetland and desert habitats for cranes – worldwide including especially India, Korea, China and South Africa – with the aid of satellite PolInSAR high-resolution remote sensing and migration monitoring within and across continents and oceans.

Prof. Boerner passed away on May 25, 2018 in Chicago with his family at his side. In memoriam to Prof. Boerner, a special prize will be awarded during the future ESA PolinSAR workshops rewarding the best advances and achievements in radar polarimetry.