

CHARLES DEAN RAY, AB, MS, MD, FACS, FRSH (Lond.) BRIEF CURRICULUM VITAE, August, 2006
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Born, Americus, Georgia, USA, Aug 1, 1927. Widowed & divorced E.Mail: Inveray@aol.com Cell: 805-729-0508
A.B., Pre-med sci, Physics, Emory Univ., Atlanta, GA, 1950. **M.S.**, Exp. Psych., U. Miami, 1952 (Honors).
Graduate courses in Bioengineering, Christian Brothers Col., Memphis & Univ. of Minnesota, Mayo Clinic
M.D., Medical College of Georgia, 1956 (with honors) Permanent Class President
PAST: Surg. Intern, Baptist Mem Hosp, 1956-1957; Neurosurg resident, Semmes-Murphey Clin, Univ Tenn., Memphis, 1957-1962. Research Associate, Director of Neurosurgical Research Lab, University of Tenn., Memphis, 1960-1962.
Fellow in Neurophysiology, Course study & Lecturer in Bioengineering, Mayo Clinic and Foundation, 1962-1964.
Asst. Prof Neurosurg, Lecturer in Bioeng, Dir.of Neurometrics Lab, Johns Hopkins Univ. & Hosp, 1964-68.
Chief, Dept. of Med Eng. Corporate Vice-Director, F. Hoffman-LaRoche & Co, Basel, Switzerland, 1968-1972.
Visiting Professor, Lecturer in Bioengineering, Bürgerspital, Univ. of Basel, Switzerland, 1969-1972.
Corporate Vice-President Medtronic, Inc., Minneapolis, Med Research & Founder of Neuro Div, 1972-1979.
Clinical Associate Professor, Neurosurgery, University of Minnesota 1972-1982.
Industry Rep. Advisory Panel on Neurol Devices, U.S.Food and Drug Admin, Washington, DC, 1975-1979.
Editor-in-Chief, *Medical Engineering*, 1968-1974. Editor-in-Chief, *Medical Progress Through Technol* 1970-80
Editorial Board, *Medical Instrumentation*. Chm. Standards Comm, Assn Advancement of Med Instrumentation.
Secretary, Joint Comm. Materials and Devices (Am.Assoc Neurol.Surg and Congress Neurol.Surg) 1975-1979.
Chief, USA Delegation, Neurosurgical Devices, ISO (Internat.Org.for Standards), (TC150, SC3) 1975-82..
Senior Consultant, Neuro Division, Medtronic, Inc, Minneapolis, Minnesota, 1979-1992
Past President, Founding Chairman of Board, Editor, Chair of Committees of the North American Spine Society.
Senior Director, Senior Spinal Neurosurgeon Institute for Low Back & Neck Care, Minneapolis MN.
President, Chairman of the Board, CeDaR Surgical Inc, Minneapolis, Minnesota, 1980-1996
Board of Directors, Herman Miller, Inc. (Fortune 500 Company), Zeeland, Michigan, 1977-1997
Director, Research & Development, Spinal Research & Education Foundation, Norfolk VA 1996-1999
Member, Board of Dir AAMI Foundation, 1968-1990. Chm, Comm on Materials and Devices, World Fed Neurosurg Soc, 1975-1999. Ed Reviewer, journal *SPINE*. Member, Joint Section, Spine & Peripheral Nerves, AANS/CNS
Editorial Board, Publications Committee, North American Spine Society 1997-2000
Neurosurgeon, Medical Staff, Sentara Hospitals, (Norfolk General, Leigh Memorial), Norfolk, VA 1997-2005
Director, Spine Fellowship Pgm, Eastern Virginia Medical School, Norfolk, VA 1999-2002
Past President, Am. College of Spine Surgery; Past President Internat. Spine Arthroplasty Soc; Past President, North American Spine Society; Director Emeritus. Spinal Neurosurgeon, Institute for Low Back & Neck Care, Minneapolis
PRESENT:Neurosurgery & Orthopedics Visiting Staffs, Abbott-Northwestern Hospital, Minneapolis MN.
Senior Member of: Amer Medical Assn, Amer Assn of Neurological Surgeons & Congress of Neurolg. Surg.
Senior Life Member, Institute of Electrical and Electronic Engineers. Chm Emeritus, Former Med Dir, RayMedica Inc, Minneapolis, 1998-; Chairman & Med. Dir. 1990-1998. Pres. InveRay, Ltd. Santa Barbara, CA 1996-; Member, American College of Physician Executives, 1994-; Oriental Institute, Univ. of Chicago, and Archaeological Inst. Of America
Member Advisory Board, Venture Finance Inst. Peter Drucker - Ito Graduate School of Management, Claremont, CA
MEDICAL LICENSURE: States of Minnesota, Virginia, Georgia (inactive) and Maryland (inactive),
CERTIFICATIONS: Diplomate, American Board of Neurological Surgery, 1967. Qualified, American Board of Electroencephalography, 1964. Fellow, Am College of Surgeons. Fellow, Royal Society of Health of England.
Fellow, N.Amer.Spine Soc. Founding Member, Fellow Am. Bd of Spine Surgery, Fellow Am. Coll of Spine Surg, 1998
Certified Clinical Engineer, International Certification Commission, Washington, DC, 1975.
PUBLICATIONS: Over 365: including 2 books on medical engineering, 1 on spinal surgery; 6 monographs; 53 US & over 100 foreign patents, 2 device standards, many special reports, audio-visuals & original papers, abstracts or chapters. **Topics:** neurosurgery, spinal surgery, clinical neurophysiology, medical business, health care administration, clinical engineering, psychometrics, research & development, medical/surgical materials & devices, medical ethics and regulatory control of medical devices. Visiting professor, surgeon in over 26 countries.
HONORS: Distinguished Alumnus, Medical College of Georgia, 1994. Leon Wiltse Award (research and leadership in spinal surgery) NASS 1997. Alpha Omega Alpha (Honor Medical Society). Sigma Xi (Science). WHO'S WHO in: The World, America, Midwest, Frontiers of Science, Science & Engineering, and Biomedical Engineering. American Men and Women of Science. The Cosmos Club (Washington, D.C.). Wisdom Society Honoree. Recipient "Golden Spine Award" 1985. President's Discretionary Award, Med. Col. of GA, '53. Bausch & Lomb Science award, Technological High School 1945. Inventor of the PDN (Prosthetic Disc Nucleus) awarded the Gold Prize as the most important medical device design of 2000. Similarly received the year 2000 Industrial R & D 100 award, plus its "Best-of-the-Best" products. Prior recipients included the fax and ATM machines, HDTV, CD discs, the halogen lamp, etc.