

## Presidential address

# Commitment and Contribution

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I begin this address by expressing my gratitude to the members of the Congress of Neurological Surgeons for honoring me by allowing me to serve as your President during the past year. It has been a great privilege to work with you and for you in this capacity. It has always been truly inspiring to see the dedication of the members to improving our specialty. Thank you for your efforts for neurosurgery.

I will share some thoughts with you about commitment and contribution. Commitment and contribution to our profession, to our communities, to society, to our families, and to ourselves.

It is always enlightening, even awe-inspiring, to consider modern neurosurgery's beginnings and to spend some time contemplating the character and the achievements of our specialty's founding fathers. As Cushing said: "We merely stand on the shoulders of our predecessors and the sturdy contemporary figures of Macewen on one side and of Horsley on the other are what support the arch of modern neurological surgery. To Macewen belongs the distinction of having been chief pioneer of craniocerebral surgery."

William Macewen was born in 1848, the 12th child of a seaman, and was reared on an island off the coast of Scotland. He was a student of Lister's, whom he greatly admired and followed, becoming a leader in the move toward aseptic surgery. In 1876, he was appointed surgeon to the Glasgow Royal Infirmary and in that post he was highly innovative and productive. He introduced endotracheal intubation in place of tracheostomy in 1880, developed chromic catgut sutures in 1878, and performed the first pneumonectomy in 1895.

Neurosurgery accounted for only a part of Macewen's surgical activities, yet he made two great advances: He was the first to explore the central nervous system on the basis of localized neurological dysfunction, and he made a special study of pyogenic infection of the brain and spinal cord. During his time, there were two formidable barriers to the advance of surgery on the nervous system, the specter of infection and the problem of localizing the pathological condition. Lister's pioneering work helped Macewen solve the first problem, and Broca, Jackson, and Ferrier combined to elucidate cerebral localization. In 1888, Macewen reported his experience of 21 intracranial operations with 16 recoveries. Godlee removed a brain tumor in London in 1884, but Macewen clearly has priority, having performed 7 brain operations before 1883. His landmark study, "Pyogenic Diseases of the Brain and Spinal Cord," has never been bettered as a complete account of the subject, and his surgical results are most impressive as well—only 1 of the 24 patients operated upon died.

William Macewen was knighted in 1902. He was a dominant and innovative surgeon and a superb teacher. It is well for us to remember his singular courage and his commitment to intracranial surgery. It is also well for us to recall his words: "Let us remember that the same phenomena by which we are now able to recognize certain cerebral lesions and locate them in precise areas, were exhibited by patients who came under the eye of our surgical predecessors . . . yet they saw not their import. Their true significance never dawned on them. There are all around us phenomena, each with its hidden truth, and how do we fail to read their riddle?"

The other colossal founding father of neurosurgery is Victor Horsley, born in 1857. His father was a well-known artist and his mother was the sister of Sir Francis Seymour Haden, a famous surgeon and etcher. Horsley's first name was given to him by Queen Victoria. He trained as a surgeon at University College Hospital, and his preparation for neurosurgery consisted entirely of the experience and skill that he acquired during the course of his experiments on the function of the brain and spinal cord in animals. In 1886, he was appointed Surgeon to the National Hospital for the Paralyzed and Epileptic—Queen Square. There he worked closely with Ferrier and Jackson, laying the foundations for cerebral localization and epilepsy surgery. His research in neuroanatomy and neurophysiology was directed at solving problems presented by operating on the brain. Horsley's contributions are manifold: He used electrical stimulation to map cortical areas, and he was the first to draw scalp markings for the underlying cortex. He detected electrical changes in the spinal cord during a seizure evoked by cortical stimulation. He mapped the anatomy of the internal capsule. He was the first to use a balloon to compress the brain to study intracranial pressure, and his observations of the effect of increased intracranial pressure on respiration and cardiovascular parameters form the basis of modern techniques of cardiopulmonary resuscitation.

He was determined to prevent infection; he studied the action of anesthetics on the brain; he was the first to make long curved incisions rather than cruciate ones; he was the first to use bone wax. He removed the first spinal tumor in 1887 with complete recovery of his patient's paralysis. He recognized the significance of papilledema and its association with elevated intracranial pressure. He did the first operation for craniosynostosis and developed the technique of removing the gasserian ganglion to treat tic douloureux. His first brain operation was in 1886, when Horsley was 29 years old. It and two other operations were described in his classic paper, "Brain Surgery." The first operation was to remove a cortical scar in a patient with epilepsy and initiated the modern era

of epilepsy surgery. He, together with Clarke, developed the first stereotactic instrument.

Horsley was intensely devoted to research and was a daring and persistent surgeon. Creative, energetic, and courageous, he was avidly interested in the world around him. He was strongly opposed to the use of alcohol and tobacco, was active in the suffragette movement, and was active in medical and national politics. He served on several national commissions and ran unsuccessfully for Parliament. He was knighted in 1902 (the same year as Macewen).

Horsley was devoted to his family. Ironically, his son Siward, in his late teens, suffered a seizure during a concert at Prince Albert Hall. Surgery was suggested and only Sir Victor Horsley was considered sufficiently competent to do the operation. He performed this operation on his son, but success was not complete and seizures recurred. Some think that Horsley's ensuing frustration and disappointment led to his volunteering for medical service in Mesopotamia at the outset of the first World War. There he worked indefatigably, operating on head injuries and administering his surgical unit. He became ill and died of heat stroke on July 16, 1916. He is buried in Amara on the Tigris river.

Horsley was a true surgical neurologist whose neurological diagnostic ability matched his surgical skills. He was the first neurological surgeon to devote his main interest and activity to the central nervous system. He was well prepared by laboratory work to turn his attention to the surgical therapy of nervous diseases, and he continued his experiments throughout his career. He was once asked, "Victor, why do you persist in doing these operations when your results are so bad?" His reply: "If I do not persist those who come after me will do no better." Sir Victor Horsley prepared the way.

Many great men followed, and our specialty grew and flourished. Their names live on in our history, our traditions, and our memories. We may not have the talent, the courage, the perseverance, and the singular dedication of these past neurosurgical giants, and we may not have the same opportunities. Nevertheless, each one of us can make the same commitment that our forebears made. It is our duty to expand our knowledge about the nervous system and the treatment of its disorders. We must dedicate ourselves to study the neurosurgical literature, to attend conferences and meetings such as this one, to grow in knowledge of our profession. As Macewen pointed out, with a fertile and well-prepared mind, each of us could make discoveries and advance our field based on the patients we see every day.

Victor Horsley was devoted to research, and many of his contributions were the direct application of his experiments to the treatment of brain disorders. We may not have the talent for research, we may not possess the single-mindedness and determination, we may not have the proper training, and we may not have the opportunity to do laboratory work. But all of us can commit ourselves to support neuroscience research in spirit and financially. Research is the key to the future of our specialty. There are ample opportunities to contribute to research projects, and we can all support the Neurosurgical Research Fund, a most worthy endowment.

We are not all gifted technically and we are not all skillful and deft surgeons. But we can all commit ourselves to improving our judgment and our operative techniques; we can read, we can view tapes and films, and we can watch and learn from those who are superb technical surgeons. We can give attention to our surgical skills and improve them.

Each one of us, no matter how great, no matter how humble, can contribute to our specialty's growth by our commitment to increasing our knowledge of the nervous

system and its disorders, to supporting research, and to improving our judgment and technical abilities as surgeons.

Not all of us will be department chairmen or leaders in neurosurgical organizations, but we can all contribute to the better administrative functioning of our hospitals and our medical societies. We can lend our administrative capabilities and skills to our hospital activities, making them more effective and meaningful. We can work in our local, state, and national medical and neurosurgical organizations to improve the quality of medical care and safeguard what we think is best in our profession. Many neurosurgeons have committed themselves to their local and state medical and neurosurgical organizations and have worked to reach the goals of these organizations. Some neurosurgeons have even held major leadership roles in the American Medical Association and American College of Surgeons.

All members of the Congress have made commitments by attending our national meeting and participating in the scientific program. The goal of providing continuing medical education for our membership is the Congress' highest priority and one to which most of our efforts are directed. The development of a large, comprehensive neurosurgical meeting, the publications of *Clinical Neurosurgery* and other books, the journal *Neurosurgery*, the Newsletter, etc., are all designed to fulfill our commitment to continuing education.

In addition, the Congress devotes considerable energy and effort to consider all of the problems that neurosurgery faces and deal with the forces that affect our specialty. The Congress Executive Committee has worked diligently for over 2 years to institute a Professional Conduct Committee and develop appropriate rules and regulations. The goal of this committee and its regulations is to ensure that our members are of the highest caliber and to codify the ethical standards of our organization and proscribe activities deemed prejudicial to the best interests of neurosurgery and the Congress. To this forum members may bring complaints about other members. Great attention has been given to the protection of due process and members' rights during the proceedings of this committee.

The Congress continues to work closely with the American Association of Neurological Surgeons in many areas to deal with problems common to all of neurosurgery. One such problem that is receiving increasing attention from the government is reform of physician reimbursement. It seems certain that there will be changes in the traditional fee for service system. At present, there is an important commission (The Harvard/AMA Relative Value Study) working to develop a relative value system for payment, with attempts to rectify perceived imbalances in "cognitive" vs. "procedural" services. Neurosurgery has advisors at this commission's hearings, but is not one of the 12 designated specialties included on the commission. Information used in this commission's deliberations on manpower, fees, practice expenses, etc., is being taken from sources such as *Medical Economics*, whose reliability is uncertain.

We need current and accurate information about our specialty so that we will be able to present the facts to the government and to those who pay our bills. Inasmuch as reliable information about manpower, fees, malpractice, and demographic is so vital, the Congress and the AANS have developed a survey that is to be mailed to all neurosurgeons. This survey has been produced and will be distributed by an independent professional firm, experienced in developing and analyzing surveys for medical specialties, in conjunction with neurosurgeons knowledgeable in these areas. It will be sent to all neurosurgeons and is to be completed anonymously. This

survey is crucial for neurosurgery. It will be analyzed by this independent firm and the results distributed. You have made a commitment to the Congress, and the institution of the Professional Conduct Committee and the development of the Neurosurgical Survey are two examples of its commitment to you.

All of us, not just those in academic departments, have a commitment to teaching. It is part of our Hippocratic oath. I would like to single out a teacher of mine and pay him tribute. When I was a 1st year medical student, Dr. Bennett Stein, then a laboratory instructor in neuroanatomy, inspired me to look toward neurosurgery as a career by his sensible, rational, and thorough approach. He has inspired me ever since. He is a superb teacher who is totally committed to educating young neurosurgeons, and he works hard at this task. He possesses a superior understanding of surgical anatomy, and he gives meticulous attention to surgical technique, working to push back the frontiers of neurosurgery. He is imperturbable and courageous, and he is devoted to our specialty. We may not all be superb teachers like Dr. Ben Stein, but we all can commit ourselves to teaching students, colleagues, other hospital personnel, and our patients.

Our most important commitment is to our patients. All of us must continually renew our resolve to do our utmost in our patients' behalf. Osler, the great medical philosopher, in a beautiful passage from one of his works, admonishes us to illustrate with our lives the Hippocratic standards of learning, sagacity, humanity, and probity:

Of learning, that you may apply in your practice the best that is known in our art, and that with the increase in your knowledge there may be an increase in that priceless endowment of sagacity, so that to all, everywhere, skilled succour may come in the hour of need. Of a humanity, that will show, in your daily life, tenderness and consideration to the weak, infinite pity to the suffering, and broad charity to all. Of a probity, that will make you under all circumstances true to yourselves, true to your high calling, and true to your fellow man.

To each one of you the practice of medicine will be very much as you make it—to one a worry, a care, a perpetual annoyance; to another a daily joy and a life of as much happiness and usefulness as can well fall to the lot of man, because it is a life of self-sacrifice and of countless opportunities to comfort and help the weak-hearted and to raise up those that fall. In the student spirit you can best fulfill the high mission of our noble calling—in his humility, conscious of weakness, while seeking strength; in his confidence, knowing the power while recognizing the limitations of his art; in his pride in the glorious heritage from which the greatest gifts to man have been derived; and in his sure and certain hope that the future holds for us still richer blessings than the past.

We, as physicians, have commitments besides those to our profession. We have a commitment to the community where we live. We are part of a larger group of citizens and we, better than most, should be able to make contributions to the welfare of that community. Not many of our fellow citizens are more learned, nor are many more altruistic. A good example of one who has made this larger commitment is our honored guest, Dr. Thomas Langfitt.

Dr. Langfitt led the Division of Neurosurgery at the University of Pennsylvania for 19 years, where he, in addition to being an outstanding teacher and clinician, made major contributions to our understanding of intracranial pressure, cerebral circulation, and metabolism. He has done many other things. He has been Vice-president for Health Affairs at the University of Pennsylvania and also acting Vice-president for Finance. He has served as the Chairman of the American Board of Neurological Surgery, as the President of the American Academy of Neurological Surgery, as the Vice-president of the American Association of Neurological Surgeons, and

as the current President of the Society of Neurological Surgeons. He is a Charter Trustee of Princeton University, and he has recently become the President and Chief Executive Officer of the Glenmede Trust Company and Pew Charitable Trusts—a most remarkable accomplishment for a neurosurgeon. He is responsible for the operation of both the trust company and the foundation that provides significant financial support for the health sciences, higher education, art and culture, public policy research, and other areas of human endeavor. He exemplifies commitment.

As I thought about this address during the past year, I reflected about our commitment and contribution as physicians to society and culture in a more general way. In a more light-hearted vein, I also took note of society's impact upon us. I try to take time to read the *New Yorker* magazine as often as I can—a bit of leisure reading I do regularly. Over the year I was struck by the number of topics that were addressed to the general public in cartoon form but that also apply directly to issues that we face in medicine. Some examples: Our Litigious Society—visualize a man strolling by a house with a picket fence. A sign on the lawn says "Beware of our lawyer." The Liberated Woman in Medicine—a statue in a park with a plaque that reads "Doris K. Elston, Brain Surgeon, Professional Model, Artist, Lawyer, Plus Mother of Four."

In our relationships with society, there seems to be no question that our specialty is of interest and can be a source of humor and fun. Two movies are illustrative: "The Man with Two Brains" with Steve Martin as neurosurgeon Dr. Hfuharuhurr. Dr. Hfuharuhurr, driving in his car on the way home from an operation, speaks to a reporter: "Would you read the back to me? I'm afraid that it may make me seem pompous to your readers." Reporter reading: "My brilliant research in brain transplantation is unsurpassed and will probably make my name live beyond eternity." Dr. Hfuharuhurr: "No, that's all right—take out the probably, it makes me sound wishy-washy."

In "Young Frankenstein" with Gene Wilder, there is a line by Dr. Frankenstein that I was tempted to use to begin this address. Dr. Frankenstein begins his presentation to a medical convention with the greeting, "Scientists and Neurosurgeons."

Steve Martin and Gene Wilder aside, physicians have made a serious impact on and important and permanent contributions to our society and culture. I am fascinated by the number of doctors who have made lasting contributions to society and culture through their commitment to letters and the arts. I mention a few, beginning with Francois Rabelais (1490–1553), one of the great comic geniuses in world literature. Underlying Pantagruel's humor in Rabelais' epic novel *Gargantua* are serious discussions of education, politics, and philosophy. Rabelais' learning and zest for living are evident. He practiced and taught medicine at the University of Montpellier.

The great English philosopher John Locke (1632–1704) was educated as a physician and practiced for some time. He is the philosopher of freedom, and many of his ideas form the foundation of the United States Constitution. He believed in freedom, had faith in the new science, and had confidence in the goodness of man.

The romantic poet John Keats (1795–1821) began a career in surgery that he abandoned when his love for poetry blossomed. He died at the age of 25 from tuberculosis. He was noble, generous, and sympathetic. His poetry is dignified, melodic, and rich in sensuous imagery, and is filled with a mysterious and elevating sense of beauty and joy.

Oliver Wendell Holmes (1809–1894) began his career as a

general practitioner and ended it as the Dean of Harvard Medical School. He was also a writer whose poems and essays are urbane, charming, and witty and were often published in the *Atlantic Monthly*—the magazine that he named. He wrote a classic medical paper entitled "The Contagiousness of Puerperal Fever," in which he cited the facts that led to the conclusion that the disease was transmitted from doctor or nurse to the patient and was due to a specific infection.

The great Russian dramatist and short story writer Anton Chekhov (1860–1904) wrote his early tales to support himself and his family while obtaining his medical degree. He was an active humanitarian, effecting social reform for the treatment of convicts and fighting two cholera epidemics. His works concern human folly, the tragedy of trivialities, and the oppressiveness of banality. He said:

I feel more confident and more satisfied with myself when I reflect that I have two professions and not one. Medicine is my lawful wife and literature my mistress. When I get tired of one I spend the night with the other. Though it's disorderly, it's not so dull, and besides neither of them loses anything from my infidelity. If I did not have my medical work I doubt if I could have given my leisure and my spare thoughts to literature.

The creator of Sherlock Holmes, Sir Arthur Conan Doyle (1859–1930), was a practicing physician for 10 years before giving up medicine to devote himself full-time to his writing. His medical reflections, "Round the Red Lamp," are well worth reading.

W. Somerset Maugham (1874–1965), orphaned at age 10, completed medical training but never practiced. He wrote plays, short stories, novels, and essays with sardonic wit and irony. His masterpiece, *Of Human Bondage*, is the partly autobiographical story of the painful growth and self-realization of a lonely, sensitive, handicapped young physician.

William Carlos Williams (1883–1963), one of the most original and important of American poets, practiced medicine during his entire life. He was a close observer of American ways, writing verse close to the idiom of speech in a lucid and vital style. He wrote that his roles as doctor and poet supported each other. He brought creativity to his relationships with patients, and they, in turn, often provided him with material for his writing. His autobiography is beautifully written and filled with interesting anecdotes from his life in medicine and in the literary world.

Walker Percy went to medical school at Columbia University, gave up practice because he contracted tuberculosis, and has gone on to become an important contemporary novelist, winning the National Book Award with the *Moviegoer* in 1961. His latest novel, *The Thanatos Syndrome*, continues in the fanciful, satirical vein of his most recent works.

The Greek god Apollo had responsibility for medicine, poetry, and music, among other duties. His son, Asclepius, was made god of medicine by Zeus after he demonstrated great healing power. It is interesting that medicine, poetry, and music were linked together by the Greeks. Several musical sons of Asclepius should be mentioned.

Hector Berlioz (1803–1869) studied medicine at the urging of his father, who bribed him to do it by giving him an expensive and beautiful flute. Berlioz gave up medicine after graduation and went on to become one of the greatest of romantic composers, with the *Symphonie Fantastique*, *Harold in Italy*, *The Damnation of Faust*, and *The Trojans* among his many great works.

Aleksander Borodin (1833–1887), although perhaps not as great a composer as Berlioz, was a better doctor. He was a professor of medicine and founded a school of medicine for

women in St. Petersburg. He was a self-sacrificing philanthropist who continually adopted unfortunate children, gave them a home, and raised them. He championed women's educational and social rights and scientifically made some lasting contributions to organic chemistry. He thought of music as a recreation that distracted him from his principal pursuit as an academician. Friend of Moussorgsky, Glazunov, and Rimsky-Korsakov, he was one of the group of Russian nationalist composers. In the *Steppes of Central Asia* and the opera *Prince Igor* are his best remembered works.

Albert Schweitzer (1875–1965) was a well-known medical missionary, theologian, and musician. Honored as a physician and humanitarian, he won the Nobel Peace Prize in 1952. He was a recognized authority on Bach and was a magnificent organist. In addition, he wrote numerous books on philosophical and theological themes.

Closer to home, one of the founders of German neurosurgery, Fedor Krause (1856–1937), was an avid pianist. Upon retirement from neurosurgery at age 80, Krause gave many public concerts in Rome to the appreciative reviews of musical critics.

Besides a commitment and contribution to culture, many physicians have made impressive contributions to politics and government. Benjamin Rush (1745–1813) was a signer of the Declaration of Independence and a member of the Continental Congress and the Continental Army. He was a professor of medicine at the University of Pennsylvania, worked heroically during an epidemic of yellow fever, made contributions to psychiatry, and was a founder of Dickinson College.

Georges Clemenceau (1841–1929), twice premier of France, was trained as a doctor. He fled Napoleon III and worked in the United States as a journalist for several years before returning to France. In 1902, he was elected senator and then premier in 1906. He vigorously promoted preparations against the Germans after an election defeat in 1909. He was reelected premier in 1917 and renewed the morale of the French people, leading to final victory in World War I. He opposed Wilson at the Paris peace conference and thought that the treaty of Versailles was inadequate in guaranteeing the security of France. Clemenceau was a dynamic and tough leader and, as history has proven, often a correct one.

Thus, we see that physicians have made great and lasting contributions to literature and the arts, and this can be an inspiration for us to partake of the culture and the life around us. An example of one neurosurgeon who did so partake as well as contribute is J. Lawrence Pool, another of my mentors, to whom I would like to pay tribute. As a neophyte medical student, I had the great fortune of attending Saturday Clinics in one of those old-fashioned, large amphitheatres. The clinics were conducted by the duo of Dr. H. Houston Merritt and Dr. J. Lawrence Pool. The intellectual vigor, enthusiasm, and verve of these two inspiring teachers went a long way toward convincing me that neurosurgery was for me. Dr. Pool, a national squash champion as a collegian, went on to become Professor of Neurosurgery at Columbia, where he applied his masterful knowledge of anatomy and his great surgical skill. He was always charming, brilliant, and exciting. He retired at 65 and pursued other ventures; he has written six books on nonmedical topics from fishing to foundries and forges in revolutionary New England, and he continues to paint with talent. His approach to life, his commitment, and his contribution have indeed been an inspiration.

Of all the many commitments, duties, and responsibilities that I've listed, none is more important than the commitment to one's family. Surely one of our most important responsi-

bilities is to nurture and care for that person we choose to spend our life with as a spouse and to love, provide for, and teach our children. My wife, Ilona, and my children, Wendy, Amy, and Susan, are the greatest treasures of my life—they have given me more love, support, and happiness than I could ever repay.

A commitment to make of ourselves the best that we can be should be our life-long goal. Montaigne said, "There is nothing so beautiful and legitimate as to play the man well and duly; nor any science so arduous as to know how to live this life of ours well and naturally. For my part, I love life and cultivate it." Albert Schweitzer said, "Affirmation of life is the spiritual act by which man ceases to live unreflectively and begins to devote himself to his life with reverence in order to raise it to its true value. To affirm life is to deepen, to make more inward, and to exalt the will to live." Again Schweitzer, "It is our duty to remember at all times that medicine is not only a science, but also the art of letting our own individuality interact with the individuality of the patient." In the words of Osler, "We are here to add what we can to not get what we can from life."

Despite the vicissitudes and strife of medicine these days, our profession still offers the singular opportunity to help other human beings, to relieve pain and suffering, to work with the most advanced technology, and to provide for a secure future. We all can and should renew our commitment to our profession, our community, our society, our families, and ourselves.

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