Embedded in Neurosurgery

(New Slide) Although I am now longer engaged in patient care or research, I am involved in the training of potential neurosurgeons and derive a great deal of satisfaction in that task. Now I am a retired professor of neurosurgery. (New Slide) I have a little time to think and to consider the internal and external factors that have gone into the development of neurosurgery into a department at Hershey and to see if there are any lessons to be learned from that experience. I arrived at Hershey in 1972, a newly minted neurosurgeon fresh from New Haven and became embedded in the division. It is from this perspective that I report on the activities, successes and failures of the neurosurgical endeavor until 2003.

Hershey Medical Center was almost as new to the medical profession as I. Planned in 1963 when $71 million dollars had been obtained by Penn State with $50 million donated by Hershey Foods and $21 million obtained from federal grants; it had opened its doors to students in 1967 and to patients two years before my arrival. Its opening occurred at a time of expansion of medical facilities encouraged by five independent factors. (New Slide) First, following World War II the Hill-Burton (Hospital Survey and Construction) Act was passed in 1946 and the government became involved in hospital construction to meet a perceived increased need
for medical care. Second, after the success of the Office of Research and Development during WWII under the guidance of Vannevar Bush, its committee on Medical Research “undertook a research program to deal with the medical problems of the war” and thus involved the government in the funding medical research done at hospitals. At the insistence of Bush, scientific institutions of the nascent NSF and NIH were left to set their own standards and policies free of government interference. By the time the Hershey Medical Center was planned, several NIH institutes were well established, as were their intramural and extramural funding mechanisms and their preference for funding research activities at medical schools. Third, the Veterans Administration decided to end the isolation of veterans’ hospitals and to affiliate them with medical schools. Fourth, Medicare was signed into law in 1964, just one year after the decision to build the Hershey Medical Center and the fateful decision made to pay physicians, surgeons and hospitals their “usual and customary fee” for services rendered. Fifth, with the passage of the Comprehensive Health Manpower Training Act 1971 the government became involved in financially supporting the education of medical students and residents. The triune role of the Academic Medical Center to provide patient care, to train physicians and to develop knowledge was enabled and financially supported by the federal government without
oversight. Unknown to me, and unrealized by most, the new born Hershey Medical Center had been dealt a full house. What was known was that we had the opportunity to do something new and exciting and perhaps different. The history of neurosurgery at Hershey, and I suspect of other disciplines, is the story of how its leaders played the hand they were dealt and of how they coped with changing dealers and changing rules of the game.

The first hand was dealt by our first dean George Harrell who came to Hershey from Gainesville where he had built his first medical school. Now fortified by experience, he knew exactly what he wanted to build and proceeded to do so. He was convinced that patient care and the development of medical science were dependent upon the physical location of particular disciplines and their neighbors. (New Slide) Thus in a middle section of the crescent he placed the division offices of neurology next to neurosurgery next to orthopedics next to psychiatry on the concave (north) side of the crescent on the fifth floor. Note that the spatial relationship of the disciplines had nothing to do with departmental structure. Neurology was a member of the Department of Medicine, Neurosurgery and Orthopedics were members of the Department of Surgery and Psychiatry was a Department in its own right. However, George Harrell felt that neurologists, neurosurgeons and psychiatrists shared a common interest in the brain and that neurosurgeons
and orthopedists shared a common interest in the spine and that something might come of the proximity of these groups to one another.

Across the main hall on the fifth floor was housed the division of neuroradiology, whose chief, William Weidner, was also the department chairman of radiology. The angiogram suite and the pneumoencephalographic suite were located only a short distance from the divisions of neurology and neurosurgery but a long distance from the main offices of radiology in the basement. Down that hall lay the T where 5 south, east and west housed neurology, neurosurgery and orthopedic patients and where a small ICU housed post op and critically ill patients from those disciplines.

Across the hall of the crescent on the south (convex) side, each division had its own laboratory space in which it was free to pursue its own interests; but, it was planned, the physical proximity of people with common interests would lead to common ventures in which the whole would be greater than the sum of its parts. The emphasis was on collaborative patient treatment and research by clinicians. Outpatients were to be seen in clinics on the first floor far removed in space and in thought from the denizens of the fifth floor. Academic Medical Centers were to treat hospitalized patients and find cures for their afflictions.
(NEW Slide) When I entered the neurosurgery’s office suite I found a central small reception room occupied by Rachael Mentzer the Division secretary. An office behind it overlooked the entrance to the hospital and a small office to the right overlooked the green in front of the hospital. From the larger office emerged Richard Bergland, the Chief of the Division of Neurosurgery. He took me across the hall to the lab and introduced me to Patricia Hogan, his lab technician. That was the Division of Neurosurgery: four people in total, two of whom were surgeons. It remained so for four years.

(New Slide) Dick Bergland was the guiding force in Hershey Neurosurgery. He was one of the very few that had done a three year general surgery residency at Columbia and a four year neurosurgery residency at Cornell, two cross town rivals in New York who seldom collaborated on anything much less the training of residents. Dick was first pointed out to me with awe regarding his surgical prowess when I was a college student working a summer job as a nurses’ aide on the wards at Presbyterian Hospital, Columbia’s teaching hospital. He was a senior surgical resident at the time and was known to have been accepted into Cornell’s neurosurgical residency program. That program was chaired by Bronson Ray, the last resident of neurosurgery’s father figure Harvey Cushing. It trained surgeons
to do elective surgery; and, at the time Dick trained, it did not have a busy emergency room. Dr. Ray felt that trauma distracted neurosurgeons from their true role doing elective brain surgery and did not encourage emergency room consultation by his residents or staff.

One key to understanding neurosurgeons is to understand the neurosurgery lineage from which they spring. Dr. Cushing pioneered not only pituitary surgery but also research into the pituitary gland. At the Johns Hopkins and at Harvard’s Peter Bent Brigham Hospitals he established surgical laboratories that were the first of their kind. In them he investigated the anatomy and physiology of the pituitary gland and was the first to recognize that it was controlled by the brain’s hypothalamus and in turn regulated the endocrine system. Cushing had first removed pituitary tumors by the transphenoidal route; but a small number of operative infections led him to abandon this approach through a contaminated field and to adopt a cranial approach that avoided the paranasal sinuses.

Dr. Ray was Cushing’s last resident and enthusiastically adopted Dr. Cushing’s passion for the pituitary gland and his transcranial approach to enable its removal. He also developed a neurosurgical laboratory and set Dr. Bergland the task of anatomically demonstrating the benefits of that approach and the dangers of the transphenoidal approach by carrying out
anatomic studies of the pituitary and its vasculature. (New Slide) His pioneer study of the human pituitary and its environs was published in the Journal of Neurosurgery. A unique electron microscopic study of the human median eminence was published in the anatomic literature. These laboratory studies led to Dr. Bergland’s receipt of the Van Wegenan award and his subsequent trip to Oxford to work in the laboratory of Geoffrey Harris, a legendary anatomist especially interested in the vascular relationships of the brain and pituitary: i.e. the portal circulation. He returned to New York and took a post at Memorial Hospital where he continued his anatomic studies uninterrupted by the necessity to train residents.

He came to Hershey to continue those studies and to train young neurosurgeons just out of residency but not to train residents. He felt that there were too many neurosurgeons, that recent graduates were inadequately trained and lacked experience doing difficult cranial cases. He wished to provide them with a two year opportunity to increase their experience under his tutelage. Residents would simply diminish the surgical experience available to his protégés.

Dr. Bergland’s exposure, training and beliefs assured that Hershey’s division of neurosurgery would have an active laboratory interested in pituitary anatomy and that it would seek out collaborations in the
Department of Anatomy. They were a perfect fit for the arrangement of
neurosurgical space and the collaborative vision of Dr. Harrell. The space
occupied by the neurosurgical division, plus his background, beliefs and
values also assured that the Division of Neurosurgery was distanced from
the Department of Surgery of which it was a member, that its surgical role
was elective brain and pituitary tumor removal, that trauma and spinal
surgery were seen as the price it had to pay to engage in its primary role:
research into pituitary function and malfunction not resident training. These
assurances were to have fateful outcomes.

I had little knowledge of this history when I walked into that office
thirty six years ago. I was to be his first trainee. We would alternate
coverage. Each would take all the elective cases on alternate months. On our
months off service we would work in the lab. We would cover alternate
nights. Residents would be supplied by the Division of General Surgery and
the Division of Orthopedics. Their Department Chairman and ours, Dr. John
Waldhausen, was an august presence on a far removed Olympus on the third
floor.

(New Slide) Dick soon introduced me to Anatomy’s Chairman
Bryce Munger, an eccentric man of genius who made and played a
harpsichord and was a concert level pianist whose interest was in the
anatomy of skin. In that department were two transmission electron microscopes, a scanning electron microscope and several lovely light microscopes of which one proved to be especially useful. Dick then introduced me to our next door neighbor, Dr. Robert Brennan, who was chief of Neurology and also a graduate of the Cornell system. Bob went through neurology training when Dick went through neurosurgery training and his interest was in brain blood flow and stroke. He was measuring blood flow in the brains of large and small animals using a variety of techniques. Finally he introduced me to Max Lang who had established the animal farm and its primate colony that would provide us with the space and technical help to perform experiments on large animals.

These meetings with Dr.’s Bergland, Munger, Brennan and Lang were to have profound effects upon me and the development of neurosurgical research at Hershey. (New Slide) If there was an expert in the light microscopy of pituitary vasculature, could he not be helpful in evaluating pictures of pituitary vasculature taken on the new scanning electron microscopic? (New Slide) If there was an expert in how the skin, an epithelial surface, responded to stretch could not he be of assistance in investigating how ependyma, an epithelium lining the ventricles, did the same? (New Slide) If there was an expert in measuring brain blood flow,
could he not be of help in measuring pituitary blood flow? These questions did not immediately arise, but they did over time and Dr. Harrell's concepts of propinquity and of collaboration seemed vindicated.

(New Slide) Surgery was carried out in OR 9. That room was dedicated to neurosurgery several days a week (perhaps two or three but not five). There was no neurosurgical nurse team and no specialized anesthesia team, but Dick didn’t mind. He rather liked being sole captain of the team and stated that he operated like a dentist and needed no help. It was somehow not manly to have specialized assistance. A broad range of cases was performed. Dick garnered most of the pituitary cases. He didn’t like doing acoustic neuromas and so I was given that task. Spinal cases were split but I seemed to do most of the shunts and myelomingocelels. Rotating residents and students scrubbed on cases and cared for patients on the floor.

Research was carried out at three sites. Across the hall, in our neurosurgery lab, Pat and I contrived a means to make rabbits hydrocephalic and to study the responses of the ependyma to ventricular enlargement. In the Department of Anatomy, I was given a small Lab about 20 feet long and 6 feet wide in which I placed selected light microscopes and prepared tissue for light and electron microscopic examination. The only problem was that I had no experience at all in ultrastructural research. The premier electron
microscopist of the department was a young Haitian anatomist—Dr Alphonse E. Leure duPree. Fortunately, when I was in medical school at Columbia I had worked in a laboratory where early electron microscopic studies were carried out by a brilliant, but pathologically shy, cell biologist. As it happened his Haitian lab technician, Millicent Henry, was known to Dr. Leure duPree, as was he. Thus Alphonse and I knew people in common; and, he came to believe that if they could tolerate me, he could because he respected them and their science. Alphonse became an exacting mentor and friend; and, he taught me what I know about transmission electron microscopy. Bryce Munger tutored me in light microscopy and, as none of us knew much about scanning electron microscopy we all learned together. He arranged a joint appointment for me in Anatomy as well as in Neurosurgery and I began lecturing in the neuroanatomy course as soon as school opened in September.

Finally in the animal farm’s large animal surgery lab we did procedures on sheep to measure brain and pituitary blood flow with labeled microspheres and trundled the hot samples back to the neurology lab to count them and to determine blood flow. Dr. Harbaugh was the first of many students to be involved in that project and although he did not get a paper
out of his endeavors because he was the first and had to make all the mistakes, he did gain something. He returned to run the show.

(New Slide) For a young neurosurgeon just out of training, I was in a Garden of Eden. I had the opportunity to increase my operative skills and experience. I had questions to ask and the tools to answer them. I had mentors in surgery and research. Most importantly I had the time to do both surgery and research. We trained no residents, but two students working in neurosurgery became professors and department chairmen in neurosurgery, another is a professor of neurosurgery at Harvard and still another is a professor of psychiatry at Yale. From this lab has come papers published in the Journal of Neurosurgery, Endocrinology, The Journal of Comparative Anatomy, The American Journal of Anatomy, The Anatomical Record, Brain Research, The American Journal of Physiology and the New England Journal of Medicine. It was a heady time highlighted by a trip to an international congress in Hamburg in 1976 to present our findings based upon scanning electron microscopy of pituitary vascular casts.

(New Slide) But Eden does not remain unmolested by the world or unsullied by its inhabitants. Societal changes were beginning as the cost of medicine rapidly escalated. “Usual and customary” fees translated into a cost plus billing system by physicians and hospitals to government and private
insurance plans. In the early 70's, President Nixon declared a “health care crisis” due to spiraling medical costs. Medical care became subjected to the disciplines of the government and the market. The accommodations made to doctors by the government to assure their acceptance of Medicare left it with no means to control cost and government set about remedying the situation with a vengeance. In 1970 the Department of Health Education and Welfare approved a Health Maintenance Organization (HMO) option for Medicare and Medicaid. Prepaid medical care was established. In 1973, employers with more than twenty five employees were required to offer a private HMO option. Professional Standards Review Organizations (PSROs) reviewed the length of hospital stays. Although Senator Kennedy’s Universal Health Care plan was defeated in 1974, the panoply of cost containment measures that we know today was ushered in during the remaining years of the 1970’s.

(New Slide) Cost containment meant less hospital revenue from existing enterprises and the need to increase revenue generating clinical activity and to curtail spending. Congress and the public no longer granted the medical community authority to run its own affairs. The dreams of George Harrell were ill suited to the societal climate in last half of the 1970’s and he left to be replaced by Harry Prystowsky as Dean and Provost in 1973.
Concurrent with the arrival of Dr. Prystowsky, a Dean and Provost with a clip board and a mandate to control spending on the medical campus of Penn State, Dr. Bergland was championing his vision of the proper role of a neurosurgical division in a medical school. He was honing his argument that a valid role for an academic neurosurgical group was to improve the training of graduated residents, who for the most part were not well trained, and to pursue research to compete with research endeavors at the best institutions in the country. He explained his position in the 1973 article in the New England Journal of Medicine entitled *Neurosurgery may Die.* This article created a storm of indignation among the movers and shakers in neurosurgery with its implication that they had failed to attract the best and the brightest and to produce outstanding surgeons and scientists. Further, this heretic went outside the neurosurgical community to make his point. I suspect that John Waldhausen, Chairman of the Department of Surgery, cannot have been pleased to hear the cries of senior neurosurgeons when personally approached at the American College of Surgeons and other gatherings, especially as it was one of his goals to have neurosurgery develop a residency. After all, that was his raison d'être for having a division of neurosurgery and the reason to support the division with personnel and money.
To establish his research Dr. Bergland worked diligently on his manuscript entitled *Can the pituitary secrete to the Brain? Affirmative anatomic evidence* which met considerable resistance in neuroscience community upon publication in 1978 and only a glancing nod from the Dean’s office while in preparation. Finally Dr. Bergland clashed with the new Dean over a petty matter concerning the last paycheck of Dr. Northrup, a neurosurgeon who had completed a two year stint in the division and was off to North Dakota. Over the years, Dr. Bergland had lost the support of organized neurosurgery, the research community, his Dean and his Chairman.

His exit was facilitated by a chance encounter with Dr. Francis Moore from Harvard’s Peter Bent Brigham Hospital. Dr. Moore came to Hershey, at the invitation of Dr. Waldhausen, to give the Tresher Lecture. After the lecture he closeted with each of the Division Chiefs for an hour or more.

(New Slide) Dick was well prepared and overwhelmed him with scanning electron micrographs of pituitary vascular casts, his Oxford experience, his knowledge of endocrinology and of Harvard’s contribution to the field and his theory of how the pituitary secreted to the brain. Although I do not know the details, Dr Moore apparently talked to Dr. Geshwind, a world renowned endocrinologist at Harvard’s Beth Israel Hospital and brother of an equally
renowned Harvard neurologist, and Dick was soon off to Boston appointed Chief of the Neurosurgery Division at Beth Israel in 1977.

(New Slide) Whereas Dick Bergland was a dreamer, his successor Ralph Lehman was a scholar. A summa cum laude graduate of Harvard College, a graduate of Harvard Medical School who took his neurosurgery training under Henry Schwartz at Washington University in St. Louis, Dr. Lehman was John Waldhausen’s choice to run the division and establish the neurosurgical residency at Hershey. After all, he came from a program that had trained more neurosurgical chiefs than any in the country. Henry Schwartz was beholden to no man, least of all Harvey Cushing, and so Dr. Lehman came from a different neurosurgical lineage than Dr. Bergland. Ralph Lehman was not interested in the pituitary but was interested in neuropsychology and was an adept experimenter who employed monkeys to answer questions about cerebral dominance. (New Slide) The primate colony at the animal farm was a singular attraction and he set up his lab there. He also initiated clinical neuropsychological studies and brought Lynn Davies to the division to carry them out.

Ralph accepted the existing arrangement in the division, alternating months taking all the elective cases, alternating night call and giving priority to laboratory endeavors. A good deal of his time initially was taken up
serving on the Neurology A study section at the NIH. At first a bit wary of each other, we grew close over time as shared experiences and trials accumulated. Our first such trial was the meltdown at TMI in 1979 during which a good proportion of the patients were evacuated and all elective activity ceased. We would listen for the report of the nuclear medicine group who went to the roof each morning to monitor radiation levels. I used to watch the cows because Strontium 90 as well as Calcium accumulates in cows’ milk and the Hershey Food Corporation knew it. If the cows came in, we were in trouble. They never did and soon the patients returned and life became normal again.

My lab flourished. I was lucky enough to move from a Teacher Investigator Award to an ROI and we hired not only Barb Hartman to replace Pat who tragically died of breast cancer but also Dr. Robert Bryan, a PhD interested in cerebral blood flow. (New Slide) Dr. Bryan worked across the hall in our little lab. He developed a means to measure regional cerebral blood flow in undisturbed, free running rats and collaborated with members of the Division of Neurology, the Department of Anesthesia, Dr. Lehman and myself. (New Slide) My anatomic studies on pituitary vasculature and physiologic studies on pituitary blood flow progressed thanks to the help I received from Bob Brennan in Neurology, Rich Hawkins

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in Anesthesia, Alphonse Leure duPree in Anatomy, and Howard Morgan in physiology. (New Slide) Barb Hartman, and later Tina Rutherford, were invaluable in the preparation of specimens for light and electron microscopic examination. (New Slide) Dr. Lehman's research at the animal farm proceeded apace. Meanwhile Dr. Morgan had been instrumental in establishing a Neuroscience Program that brought me into contact with other members of the basic science faculty most notably with Dr Elliot Vesell the Chairman of Pharmacology whose wisdom and humor benefitted me greatly.

The operating room continued much the same. We still operated in room 9. The number of cases increased a bit and the variety was good. Some incidents stick out in memory. One, a nurse who entered the OR dressed in a trench coat and only a trench coat. Another, a nurse who did not appear for an aneurysm case. When I sent the police to his apartment they found him dead, shot through the head. His lover lay beside him overdosed and obviously abused. She was transferred to the ICU. The python and tarantula were in the room somewhere.

Because I began doing transphenoidal cases with an ENT surgeon doing the nasal approach, I became close to the Division of ENT whose chief Dr. George Conner openly encouraged collaboration. With a series of ENT attendings, I did a number of cases including acoustic neuromas,
glomus tumors, sinus carcinomas and esthesioneuroblastomas. David Weigand and I formed a skull base center over a beer and it took off. With a small office, a nurse, a facial nerve monitor and a telephone we managed one year to do 20 acoustic tumors and many other skull base cases. Dr. Lehman developed an interest in epilepsy surgery and collaborated with the neurologists in that endeavor.

(New Slide) The division increased its involvement in medical student teaching. I continued to lecture in the neuroanatomy and neuropathology courses. Dr. Lehman developed an interest in the role that neurosurgeons played in the education of medical students; and, in whether that involvement by neurosurgeons encouraged medical students to enter Neurosurgery. He was active on a committee of the Senior Society involved in these issues and reported his findings to it. For much of the time Dr. Lehman and I saw little of each other as we worked alternate months, nights and weekends. He and his wife Judy made sure that time was set aside for us to get together and relax and they provided many a diner for this no longer young bachelor.

(New Slide) Events were happening over the years that were to become significant. Medicare payments to hospitals became based upon a fixed prospective payment system with the introduction of the DRGs in 1983
ending the cost plus system of billing and increasing financial pressures on the department. Conflicts arose between Dr. Lehman and Chairman of Anesthesia over time expenditure. Our neuroanesthesiologists were research oriented and intent upon measuring every physiologic parameter available. Multiple lines were placed after the patient arrived in the OR, usually between 7:30 and 8:00am leading to very late starts that usually occurred after 10:00am. The OR days were long. In addition, Dr. Prystowsky announced that the Medical Center was going to purchase a helicopter to bring stricken patients to the medical center. Unspoken was the need to increase delivery of medical services to maintain financial stability.

However there was to be no increase in resident help for neurosurgery and no increased funding for additional staff. The night work increased in amount and complexity. The amount of sleep time diminished. Conflicts arose with Orthopedics which had succeeded in becoming a Department, over which service should do spine surgery. The need to increase revenue led both neurosurgeons and orthopedists to covet these cases which had once been viewed as peripheral to their mission. Dr. Greer, the Orthopedic Chairman, was under pressure from his RRC to train his residents to do spinal surgery. Orthopedics felt that if we would not train their residents to do disc surgery, they would not provided residents to cover our service. They
would, and did, hire staff who specialized in that field. Dr. Keith Kuhlengel
joined us from St. Louis to become our spine surgeon. Dr. Greer felt
aggrieved that his residents were not being trained to do discs on their
neurosurgery rotation. Dr. Lehman felt betrayed that an agreement reached
long ago between Drs. Greer and Bergland which left spinal surgery to
neurosurgery had been abrogated. Competition between Neurosurgery and
Orthopedics sharpened. The idea of a joint effort to form a spine center
could not surface in the prevailing chilly climate. Dr. Waldhausen felt
disappointed that a neurosurgery residency had not been established. Further
resident coverage by general surgery residents was withdrawn to spur Dr.
Lehman into getting his own residency staff.

(New Slice) In 1987 Dr. Prystowsky was replaced as Dean and
Provost by C. McCollister Evarts. His mantra was “No money, no mission”
and he set about to change the medical school to bring it around to the
prevailing corporate ethos of the booming 1990’s. Growth meant prestige
and was good. As the number of buildings increased on the land Dr.
Prystowsky had purchased, the number of dollars decreased in the saving
accounts Dr. Prystowsky had squirreled away. Departments were directed to
give space to funded projects only and to let unfunded projects wither. Space
could be allocated by the Dean’s office and be taken from one department
and given to another. Clinicians were directed to devote their time to patient care and growing the business of medicine and not to grant applications and research. (New Slide) The adoption of the Resource Based Relative Value Scale (RBRVS) by Medicare in 1992 to pay physicians and surgeons for procedures hammered the last nail in the coffin of cost plus billing and income became more dear as doctors and hospital units competed for it. The collaborative vision of Dr. Harrell was viewed as quaint and gave way to a zero sum game with winners and losers. A neurosurgery division that prized collaboration and bench research by clinicians was doomed to extinction. Surgeons were to earn fees.

Early in his tenure, Dr. Evarts wanted to create a Neuroscience Department and to hire a neurologist to head it. Dr. Lehman opposed this idea. At odds with his Dean, his Department Chairman and some of his senior colleagues Dr. Lehman found himself facing a new dealer and holding a weak hand in a game with new rules. This situation was not tenable and in 1992 Dr. Stephen Powers took over the reins in the Division of Neurosurgery.

(New Slide) Whereas Dick Bergland was a dreamer and Ralph Lehman a scholar, Stephen Powers was a surgeon. He was trained in San Francisco by Charles Wilson a skillful surgeon and intrepid cancer
researcher who owed no tribute to Dr. Cushing or to Dr. Schwartz. His program was a one man show and he directed every aspect of its clinical and research activities. Dr. Powers was brought up with this model and had seen its successes and it was this model that he brought to Mac Evarts’ Hershey Medical Center.

(New Slide) A move of the division to the third floor of the new clinical research wing was planned prior to his arrival and Dr. Powers negotiated for a further increase in office and laboratory space there. New faculty members were to occupy the increased office space and Dennis Johnson was soon added to become our pediatric neurosurgeon. Research was to be carried out by PhDs, not senior faculty members and Waldimar Dubinsky became sole proprietor of the new laboratory space with a bit set aside for the expected residents. Our new neighbors were Plastic Surgery and, at the other end of a very long hall, Orthopedics. Neurosurgery’s ICU had long since left the fifth floor; and, with the advent of CT and MRI scanning, so had neuroradiology. Angiography was brought to the ground floor where all catheter studies were done. Pneumoencephalography and myelography disappeared. MRI, at first in an out building because of the strong magnetic field and subsequently in the basement along with CT, became firmly ensconced in Radiology’s space. The neuro ICUs were
amalgamated into a Surgical ICU on the second floor. The beginning of the
decade found neurosurgery unmoored and under new leadership with a new
mission shared by the Dean, the Department Chairman and the Division
Chief.

Dr. Powers moved swiftly. He established a "fellowship" to obtain the
equivalent of resident help without actually having residents. These two
fellows, one a medical school graduate and the other a graduate of a school
of osteopathy, were to work up patients, help in the OR and on the ward, and
help in clinic. The case numbers increased; and, with the presence of a
subspecialty certified pediatric neurosurgeon, the division was able to
overcome previous reservations by the Board of Neurological Surgeons and
the residency was approved in 1993.

(NEW Slide) Dr. Johnson became a victim of a familial
cardiomyopathy and collapsed while on horseback. He underwent successful
cardiac transplantation while Dr. Lehman, Dr. Powers and I covered
pediatric neurosurgery. Dr. Kanev joined the staff and became the senior
pediatric neurosurgeon when it became evident that Dr. Johnson would not
be able to resume full clinical duties. He soon became vice-chief of the
division. Keith Kuhlenghel left for a job in Lancaster but was replaced by
the addition of Brian Holmes, a graduate of the Dartmouth program and of a
skull base/vascular fellowship. John Barr, an interventional neuroradiologist was recruited by the Radiology Department at Dr Powers’ urging and the number of cases grew. We actively participated in the Trauma Program and under Dr. Powers’ prodding modernized our approach to treatment of head injured patients.

(New Slide) Dr. Holmes left after several years believing that he had not had the opportunity to develop his subspecialty interests. He was replaced by Dr. Cockroft. Dr. Sheehan, Dr. Dias and Dr. Pahapil were successfully recruited by Dr. Powers to support pediatric neurosurgery and to provide sub specialization in vascular, tumor and functional neurosurgery. Dr. Sumas was hired to supervise trauma care.

Dr. Powers’ energy and drive inevitably brought him into conflict with the Dean’s protégé, Dr. Vincent Pellegrini who had replaced Dr. Greer as the Chairman of Orthopedics and served as Dean Evarts right hand man. There was almost nothing about which the two agreed from the handling of spinal trauma, to schedules for coverage of spinal injury cases in the ER, to matters of space allocation. In 1996 Dr. Waldhausen retired and was succeeded by the chief of pediatric surgery as Department Chairman. During his brief tenure, Tom Krummel and Steve Powers differed over the taxes levied by the department upon the division and the amount of control the
department was to exert upon the division. The two men differed markedly in temperament and each disapproved of the other. Tom was succeeded by Chip Souba as Chairman of the Department of Surgery in 1999. During this interval financial matters at the Medical Center had continued to deteriorate. In 1997 Dr. Evarts had announced a “merger” of the Hershey Medical Center with Geissinger Medical Center. The effort was doomed to failure by a clash of cultures and when demerger was announced in 2000, the Dean departed to be replaced by Dr. Darrell Kirch.

(New Slide) Dr. Souba continued Dr. Krummel’s course of trying to exert authority over the division and extract taxes from it and he listened empathetically to Dr. Lehman during his exit interview as he expressed concerns about the dysfunctional nature of the division. Although Dr.’s Kanev, Cockroft, Sheehan and Dias flourished, Dr. Pahapil was found to have a substance abuse problem and was summarily dismissed by the administration. Rightly or wrongly questions were asked about how thoroughly he was vetted by Dr. Powers in the recruiting process. The neurosurgery residency program was not thriving and did not match on more than one occasion. Two residents quit and went to Peter Bent Brigham and there was dissatisfaction among the remainder. The 2002 Chief Resident had in particular displeased the new Dean and brought down his wrath upon both
the resident and Dr. Powers. Thus Dr. Powers now found himself isolated and without support from powerful colleagues, his new Department Chairman and his new Dean. In 2002 Dr. Powers resigned only a few months before a scheduled RRC review. The dealer and the game had changed.

Dr. Johnson was appointed Chief and soon came up with a plan to rejuvenate the division but resigned over what he saw was a lack of support. I agreed to serve as interim chief until June 2003 at which time I would retire and leave the institution. It was my expressed hope that we could have the situation corrected by that time; but, if not, I was leaving anyway. Without any authority I sought out Dr. Harbaugh at the AANS meeting and asked him if he would take the job if offered. When he agreed, I had to make a plan to achieve that goal. As a first step I arranged a site visit so that he could evaluate the program and give a lecture. The second step was to get through the RRC site visit. We had been cited because the previous chief resident had done too few cases. This citation was the result of a book keeping error and considerable time was spent in the new application gathering data and collating it in the RRC's format. We managed to get by with a probationary status as is common when a leadership change is in progress but several deficiencies were found. There was no neuro ICU,
neurosurgery was a division and not a department, there was no longer any
neurointerventional capability and too few vascular and peripheral nerve
cases were performed. As far as I was concerned the latter matters were
taken care of if we could manage to get the Harbaughs on board. More
difficult to correct were the first three deficiencies.

Departmental status had apparently been discussed by Dr. Powers and
Dr. Waldhausen prior to Dr. Powers’ recruitment but the matter was dropped.
Dr. Harbaugh had made it clear to me that he would not come until
departmental status had been achieved. He reiterated that stand when he met
with Dr. Souba during his visit to evaluate the program. An independent
study group, the Washington Group, had been commissioned to develop a
plan for the advancement of Neuroscience at Hershey and had recommended
Departmental status for both Neurology and Neurosurgery. Finally, the
RRC’s comments made it likely that the residency would not continue to be
approved unless departmental status was obtained.

(New Slide) As a matter of luck I had met Steve Baron, the new
COO, shortly after his arrival in 2000 at the Hershey Pantry one Saturday
morning while having lunch. We got to talking and he asked several probing
questions about neurosurgery. When our application to remain an accredited
trauma center failed in 2001, I was able to approach him with a plan to come
off probation because I sat on the PA Trauma Systems Foundation. We were successful. Thus I had his ear and Chip’s when I went to them with the proposal to gain departmental status for neurosurgery. Both were enthusiastic supporters, for to lose the residency endangered the trauma program which in turn endangered the surgery residency. We had in today’s parlance become too big to fail. With the help of Chip Soubia the department chairman and Steven Baron the COO the application for departmental status was approved by the dean and forwarded to the main campus where it was approved. In addition both were instrumental in paving the way for the reinstitution of a neuro ICU some 30 years after it had first opened. Finally, under Chip’s guidance, arrangements were made to send Dr. Cockroft to Philadelphia for an interventional neurovascular fellowship.

The RRC’s demands were met and Dr. Harbaugh was satisfied. The rest is known to you better than it is to me.

In summary it is paradoxical that the acquisition of a residency program, so desired by surgery’s founding chairman, led directly to the formation of an independent Neurosurgery Department for it brought into play an additional power center—the RRC. Without the RRC, the refusal of Dr. Harbaugh and any other viable candidate to consider the job at Hershey unless a department was created before they accepted the position and the
enthusiastic support of Dr. Soubra and Mr. Baron, the Department of Neurosurgery would not exist.

(New Slide) I have presented to you a dreamer, a scholar and a surgeon and each led neurosurgery. I will leave it to you to judge which, if any, were successful. You also might ponder whether bigger is always better and whether how you get bigger is important. How much your mentors define you and how the local and national environment impact upon your endeavors and define their outcome might be worth consideration. You might ponder for a moment the role of chance.

(New Slide) Finally I would like to dedicate this lecture to my friend who died last year-- Richard Bergland. He should not be forgotten.