



Penn State MD Network, our toll-free physician consultation service, is the referring physician's link to Penn State Milton S. Hershey Medical Center specialists. Seven days a week, our MD Network staff can assist with patient referrals and admissions, transfers, patient status reports, and provide you with information about our physicians and services. The MD Network newsletter highlights diagnostic and therapeutic procedures and research protocols available at the medical center.

Vascular Brachytherapy

Stent implantation following angioplasty to clear blocked coronary arteries reduces the restenosis rate by more than 30 percent. Although stents help prevent constrictive remodeling of the artery, they can increase neo-intimal proliferation. More than 20 candidate drugs for pharmacological prevention of restenosis have been tested and the results have been disappointing. Vascular brachytherapy, a type of radiation therapy recently approved by the FDA, reduces neo-intimal hyperplasia and may limit constrictive remodeling. Mark Kozak, M.D., associate professor of medicine at Penn State College of Medicine and interventional cardiologist at Penn State Milton S. Hershey Medical Center, performs vascular brachytherapy with assistance from David Salinger, M.D., assistant professor of radiology.

Facts

- Intracoronary beta radiation therapy produces a significant dose-dependent decrease in the rate of restenosis within stents after angioplasty and may encourage luminal enlargement
- Although vascular brachytherapy is not a cure for restenosis, it may help avoid the need for bypass surgery.
- Vascular brachytherapy can reduce the rate of recurrent restenosis by half.

Subsequent recurrences are more focal, which are easier to correct.

- Five-year follow-up results are promising.

According to a study published in the *New England Journal of Medicine*, vascular brachytherapy has important implications for the field of Interventional Cardiology. The study's authors conclude that vascular brachytherapy using beta radiation is beneficial because it reduces the amount of scar tissue and reduces the chance of restenosis.

A patient with in-stent-restenosis first undergoes angioplasty to clear the blocked artery. This is followed by the placement of radioactive sources, through a catheter in the vessel, to the place of cleared blockage. Working with Kenneth Miller, Ph.D., a medical health physicist, Dr. Salinger monitors the time and precise radiation dose to the blood vessel. Following the required radiation time, the radioactive sources are removed from the patient.

Who to refer

Refer patients with suspected in-stent restenosis especially if they are not good candidates for bypass surgery. Co-morbid conditions do not contraindicate brachytherapy.

For more information or to make an appointment, call 1-800-233-4082 ■

Mark Kozak, M.D.

- Associate Professor of Medicine
- Medical School:** Johns Hopkins University School of Medicine
- Residency:** Internal Medicine, Johns Hopkins Hospital
- Fellowship:** Cardiology, University of Utah Medical Center
- Certification:** Diplomate: American Board of Internal Medicine with special qualifications in cardiovascular diseases and interventional cardiology



David J. Salinger, M.D.

- Assistant Professor of Radiology, Radiation Oncology Section
- Medical School:** Hahnemann University
- Residency:** Hahnemann University
- Diplomate:** American Board of Radiology, Radiation Oncology



Epidural anesthesia and analgesia for hip and knee replacement

The administration of epidural anesthesia represents the single most important advance in joint replacement surgery in the past decade. In addition to maintaining adequate anesthesia during the surgical procedure, the epidural catheter is maintained for 48 hours post surgery for continuous pain management. There is no confusion or delirium associated with the administration of spinal or general anesthesia and patients are able to participate in physical therapy within 24 hours of the procedure.

Facts

- Published clinical studies document that epidural anesthesia lowers post-operative pulmonary and cardiac morbidity and reduces the incidence of deep vein thrombosis.
- Many hospitals lack the infrastructure to monitor patients who have had epidural anesthesia and are not staffed to effectively treat post-operative pain.
- Penn State Milton Hershey Medical Center offers an operative and acute pain management team including surgeons, physicians, and nurses all with extensive experience in placing the catheter, administering the anesthetic and analgesic agents, conducting the surgery and following the patient through recovery and therapy.
- Experience matters. Our surgical team performs approximately 350 joint replacement procedures using epidural anesthesia annually.

This technique benefits patients because

- Epidural anesthesia and analgesia allow patients to be discharged earlier from post anesthesia care and provides superior pain relief for the first 24 hours following surgery.
- There are fewer side effects, patients are alert, able to ambulate and may begin physical therapy within 24 hours of surgery.
- Hypotensive epidural anesthesia reduces peri-operative blood loss by significantly lowering mean arterial pressure in addition to stimulating clot lysis.
- Elderly patients—even those with cardiac and pulmonary co-morbidity

that contraindicates general anesthesia—can safely receive controlled hypotensive epidural anesthesia.

- The risk of deep vein thrombosis, a common complication of total hip and knee arthroplasty that can lead to fatal pulmonary embolism, is significantly reduced.

Who to refer

All patients who are candidates for total hip or knee replacement surgery, particularly those with substantial co-existing medical illnesses that make a general anesthetic less desirable and are associated with greater risk to the patient. ■

“There are fewer side effects, and patients are alert, able to ambulate and may begin physical therapy within 24 hours of surgery.”

For more information or patient referral, please call 1-800-233-4082

Charles M. Davis, M.D.

• Assistant Professor
Department of Orthopaedics
and Rehabilitation

Medical Degree: Vanderbilt
University School of Medicine

Residency: Mayo Clinic
Fellowship: Mayo Clinic



William M. Parrish, M.D.

• Assistant Professor
Department of Orthopaedics
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Medical Degree: West Virginia
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Internship: West Virginia
University Hospital

Residency: Akron General
Medical Center

Fellowship: Case Western Reserve University
School of Medicine



Laparoscopic Solid Organ Surgery

Laparoscopic or Minimally Invasive Surgery has revolutionized surgical care for many patients over the last decade. Laparoscopic Surgery utilizes video visualization and specialized instrumentation to perform a number of operations through tiny incisions. Laparoscopic Surgical techniques have been applied to many operations within the abdominal cavity including complex gastrointestinal surgery with excellent results.

Benefits of Laparoscopic Surgery

- Less Post-Operative Pain
- Better Cosmetic Results
- Faster Recovery
- Faster Return to Normal Activity Level
- Shorter Post-Operative Hospital Stay

One area where Laparoscopic techniques are particularly well suited is that of intra-abdominal solid organ surgery. These are operations involving the kidneys, spleen, adrenal glands, and even the pancreas that involve removing the organs in part or in total for a variety of diseases. Laparoscopic Surgery for live kidney donation for transplantation represents another example. Laparoscopic techniques are especially applicable in this case because traditionally a large, uncomfortable incision had been required, often in the flank or the back to access these posteriorly located organs. Once these organs are exposed however, the removal process is relatively simple. Laparoscopic Surgery bypasses the large incision portion of the operation and proceeds to the process of removal.

The diseases affecting these organs, necessitating removal, are not commonplace. Diseases include

renovascular hypertension involving the kidneys, benign tumors of the adrenal glands, and hemotologic disorders involving the spleen. The relatively low volume of these diseases and operations make it difficult for many surgeons to gain expertise in this type of surgery.

Patients to Refer

- Kidney Donors
- Pancreatectomy patients
- Splenectomy patients with normal or slightly enlarged spleen.
- All adrenalectomy patients

Dr. Randy Haluck, Director of The Penn State Minimally Invasive Surgery program has had the opportunity to perform a large number of these operations as the Penn State Hershey Medical Center serves as a referral source for these diseases. Dr. Haluck has been able to refine his experience and techniques involving these operations, further reducing length of hospital stay and patient discomfort. ■

For more information or patient referral, please call 1-800-233-4082

Randy Haluck, M.D.

• Department of Surgery
• Director of Minimally
Invasive Surgery

Medical School: Penn State
College of Medicine

Residency: Penn State Milton
S. Hershey Medical Center

**Advanced Laparoscopic
Rotating Surgery**

Fellowship: Penn State Milton S. Hershey
Medical Center, Cleveland Clinic, Emory
University Medical Center



Implantable phrenic nerve stimulator system

An implantable phrenic nerve stimulator system provides ventilatory support for patients with chronic breathing insufficiency whose diaphragms, lungs and phrenic nerves have residual function. Repetitive stimulus to the phrenic nerve triggers the diaphragm to contract rhythmically, which pulls air into the lungs.

In spite of decades of success with this system for children diagnosed with central sleep apnea, central nervous system or high spinal cord injuries, conventional diaphragm pacing works only when there is some phrenic nerve function.

When there is no phrenic nerve function, Robert Cilley, M.D., associate professor of surgery and pediatrics, performs surgery in which a viable intercostal nerve is grafted onto the phrenic nerve near the diaphragm. He then places a pacemaker electrode on the phrenic nerve and attaches an electrode to an implanted radio receiver. After a few months, intercostal nerve fibers repopulate the phrenic nerve and a radio transmitter is used to stimulate the diaphragm so the patient can begin breathing without ventilator assistance. It can take years to get the pacing right so it doesn't fatigue the nerve. A complex computer program used to adjust pacing allows the system to be monitored and calibrated via a phone line.

Facts

- The injured phrenic nerve serves as an arbor for the secondary nerve pathway created by the grafted intercostal nerve.
- One year after surgery the patient could be weaned from a ventilator.

Benefits of diaphragm pacing

- Provides physiological respiratory function superior to that of mechanical ventilation.
- Cost effective because patients do not require ongoing hospitalization.
- No need to purchase ventilators and disposable products.
- Lower infection rates than that of mechanical ventilation.
- Patients who have had tracheostomy may undergo tube removal.
- Patients resume breathing, speaking, eating and drinking normally.
- Some patients become more mobile.
- Unobtrusive to use.

We offer a comprehensive program for children and adolescents requiring breathing assistance.

The Technology-dependent Care Program for Children at Penn State Milton S. Hershey Medical Center provides inpatient and outpatient services for children requiring ventilator or respiratory support. Michael Dettorre, D.O., assistant professor of pediatrics, Division of Pediatric Critical Care Medicine directs this four-to-six-week program conducted in the pediatric rehabilitation hospital at Penn State Hershey Medical Center.

Physical, speech and occupational therapies are integral to this program. Nurses, therapists and other caregivers teach positioning techniques, ventilator care and address specific feeding and nutritional needs. Dr. Dettorre and pediatric pulmonologists Stuart Warren, M.D., and Michael Pallone, M.D., continue to monitor patients after transfer from these units. Educational sessions are available during weekdays, in the evenings and on

weekends to accommodate parents' work schedules.

When the child is discharged, services are coordinated with outside vendors to continue appropriate therapeutic routines and treatments. Follow-up care includes outpatient appointments through the Technology-dependent Care clinics that are held twice a month.

This program has an outreach component at Lancaster General Women and Babies Hospital.

Refer these patients

- Premature infants who cannot be weaned from ventilators
- Children with degenerative muscular disorders, spinal cord injuries, and obstructive and central sleep apnea

Call 1-800-233-4082 for more information or to make an appointment ■

Robert E. Cilley, M.D.

- Associate Professor of Surgery and Pediatrics
- Medical School:** Temple University School of Medicine
Internship and residency: University of Michigan Hospitals
Pediatric surgical fellowship: Mott Children's Hospital, University of Michigan
Research Fellowship: University of Michigan, Department of Surgery



Michael D. Dettorre, D.O.

- Assistant Professor of Pediatrics
- Medical School:** Philadelphia College of Osteopathic Medicine
Internship: Memorial Hospital, York, Pa.
Residency: Pediatrics, Medical Center of Delaware
Fellowship: critical care medicine, LeBonheur Children's Medical Center, Memphis, Tenn.



Recognizing Post-traumatic Stress in Children

In the midst of a busy clinical practice, psychiatric needs of patients can be overlooked. However, it is impossible to care for the somatic concerns of the patient without also caring for a patient's mental health needs.

The Surgeon General's 1999 report on Mental Health documents that one in five adult Americans experienced a mental disorder in the course of a year. About 10% of the U.S. adult population uses mental health services in any given year. Gaps exist between those who need services, and those who are able to obtain services. Moreover, those who suffer from mental disorders may present with a complicated array of depressive, anxiety, and substance abuse symptoms, making their management more difficult.

The Penn State Milton S. Hershey Medical Center offers an array of psychiatric services for all age groups, including specialized services for children. Typically, patients are referred if they are in crisis (for example, if they are suicidal, or acutely psychotic) or, more often, if they find their symptoms troubling or disabling. In the developed world, mental illnesses represent the second most costly set of diseases (after cardiovascular disease) in causing disability and premature death.

Care is available for

- depressive disorders
- anxiety disorders
- sleep disorders
- eating disorders
- dementia care
- psychiatric disturbances of childhood

Specialized inpatient care is available for

- children
- adults
- geriatric patients

Partial hospitalization is also available for those who need intensive care, but do not need acute inpatient hospitalization. Intensive outpatient services are available as well. In caring for eating disorders, for example, patients come several evenings a week to take part in group therapy, nutrition counseling, and medical follow-up care for their disorder.

All services are fully integrated with the rest of the medical center. Pediatric consultation for child psychiatry patients is readily available. Internal Medicine consultation is routinely obtained on geriatric patients, and is often obtained on general adult patients as well.

Potential Reactions to Trauma

- agitation or overactivity
- confusion
- fear
- anger
- depression
- nervousness or anxiety
- guilt
- withdrawal
- afraid to be alone
- avoidance of situations or places that remind them of the trauma
- trouble believing the trauma happened

Parents and medical professionals should be alert to the following signs of post-traumatic stress in children

- Refusal to return to school and "clinging" behavior
- Shadowing the mother or father around the house
- Sleep disturbances such as nightmares, screaming during sleep or bed wetting

- Problems staying or falling asleep
- Loss of concentration and irritability
- Behavior problems, which are not typical for the child, like misbehaving in school or at home
- Physical complaints (Stomach ache, headache, dizziness) for which a physical cause cannot be found
- Withdrawal from family and friends
- Decreased activity
- Preoccupation with the events
- Acting younger than their age

Outpatient care, call (717) 531-8338.

Adult inpatient care call (717) 531-8822.

Child psychiatry inpatient care, call (717) 531-7146.

Geriatric psychiatry inpatient care, call (717) 531-7237.

Emergency psychiatric care is always available by calling the Penn State Hershey Medical Center operator at (717) 531-8521 and asking for the psychiatrist on call. ■

Paul A. Kettl, M.D.

- Professor and Chair, Department of Psychiatry
Director of Geriatric Psychiatry

Medical School: Temple University School of Medicine

Internship: Johns Hopkins Hospital



Christopher A. Petersen, M.D.

- Assistant Professor
Department of Psychiatry
Department of Pediatrics

Medical School: Medical College of Georgia School of Medicine

Internship: University of Michigan Hospitals

Fellowship: University of Michigan Hospitals



Surgeon Joins Transplant Team

The Surgical Department at Penn State Milton S. Hershey Medical Center is pleased to announce the addition of Susan M. Lerner, M.D. to our surgical team. Dr. Lerner's specialties include liver transplantation and hepatobiliary surgery relating to a variety of conditions. Dr. Lerner is a native of Allentown and a graduate of Yale University and the University of Pennsylvania School of Medicine. She comes to Penn State Hershey Medical Center and the College of Medicine from the University of California- Los Angeles where she completed her fellowship in Multi-Organ Transplantation. She was the first recipient of the Leonard D. Miller Award for Excellence in Teaching and also received the National Kidney Foundation/Juvenile Diabetes Foundation Award in 1998.

The transplant team at Penn State Milton S. Hershey Medical Center consists of a dedicated staff of surgeons, pharmacists, coordinators, financial counselors, and medical support personnel who work together to facilitate the transplant process for patients. Patients not only receive the full support of this experienced transplant team, but also enjoy the added security of knowing the full resources of our renowned academic medical facility are poised to serve their medical needs.

Penn State Milton S. Hershey Medical Center has offered World Class transplant care to the region since 1982. We invite you to contact Dr. Lerner or the Division of Transplant Surgery for more information about our program.

Call toll free 1-800-525-5395 or (717) 531-5002 in the Hershey area ■

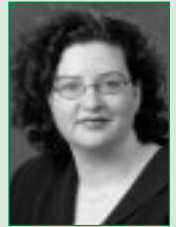
Susan M. Lerner, M.D.

• Associate Professor
of Surgery

Medical School: University of Pennsylvania School of Medicine

Residency: Hospital of The University of Pennsylvania

Fellowship: Multi-Organ Transplantation, University of California - Los Angeles



How to Refer to the PSHMC Liver Transplant Program

Primary care physicians or referring gastroenterologists may make a referral to the Penn State Liver Transplant program by calling the Liver Transplant office at (717) 531-5002 or toll free at 1-800-525-5395

Prior to Appointment Date

Patient's insurance will be verified by our financial counselor to determine benefit with the insurance provider for Liver Transplant. The primary care physician or referring physician will obtain the necessary authorization for patients with "HMO" insurance.

Appointment Date

Liver Transplant Clinic takes place every Monday except for Holidays. Patients will be scheduled for an

Abdominal Ultrasound, Abdominal CAT Scan and laboratory work the day of the appointment. The clinic appointment consists of meeting the Transplant Hepatologist, Transplant Surgeon, Transplant Coordinator, Social Worker, Nutritionist, and Financial Counselor. Patients should plan on spending an entire day at the Hospital. Testing usually begins at 8:00 am and the evaluation is complete by 5:00 pm.

Testing Prior to the Transplant Appointment

A letter outlining the evaluation process will be sent to the patient, primary care physician, and referring physician. Additional testing is required for completion of the transplant evaluation. Additional testing is scheduled by the

local physicians and includes the following:

- Pulmonary Function Test (Spirometry)
- < 50 year old: 2D Echocardiogram
- > 50 year old or Diabetic: Dobutamine Stress Echo
- EKG
- 24-hour urine collection for creatinine clearance
- EGD- upper endoscopy
- Portable chest x-ray
- > 50 year old: Colonoscopy
- < 50 year old: Flexible Sigmoidoscopy

Listing for liver transplantation will not take place until all the required testing is completed, therefore it is very helpful to have all additional testing completed prior to the initial transplant evaluation. ■

Transradial Catheterization and Interventions

Initially used primarily in Europe and Canada, radial access for cardiac catheterization increased in popularity within the United States during the last several years. As equipment for radial access has become more readily available, use of this procedure can be expected to continue to rise.

Problems with the traditional femoral artery approach include vascular complications and patient discomfort due to both the prolonged groin compression and subsequent immobilization during bedrest. These issues are eliminated by the transradial approach. The radial artery is superficial and has no major veins or nerves located nearby. Hematoma formation is infrequent and vascular surgical intervention is very rare. Ambulation time following a radial access is immediate – considerably less than the four or more hours of bedrest required with the femoral approach. Full function may be expected by the next day.

Only light sedation is required for a radial access. Local anesthesia such as lidocaine 2% is given at the site of radial access. Medications are given to eliminate or reduce arterial spasm – such combinations may include nitrates, calcium channel blockers, or local anesthesia agents. Heparin is usually administered to reduce risk of radial artery thrombosis.

Facts

- Penn State Hershey Medical Center's first transradial PTCA was performed in 1996.
- Penn State Hershey Medical Center has multiple physicians trained in this procedure, supported by a specially trained team of nurses and technologists.
- Over 30% of our catheterizations and interventions are performed with a transradial approach, versus an average of less than 5% at other surveyed institutions.
- Both diagnostic and treatment procedures (stents/balloon therapies) are easily accomplished.

Benefits of wrist procedure vs. traditional groin

- Ambulation time following a radial access is immediate
- Length of recovery time reduced by 75%
- Typically same-day discharge
- No required post-procedure bedrest
- Less risk of bleeding
- Less patient discomfort

Refer these Patients

- Patients desiring greater comfort and lower level of sedation
- Obese patients (450 lbs.) can be easily done
- Patients with peripheral vascular disease
- Patients with difficulty laying flat due to musculoskeletal or pulmonary disorders.

Call 1-800-233-4082 for more information or to make an appointment ■

Ian C. Gilchrist, M.D.

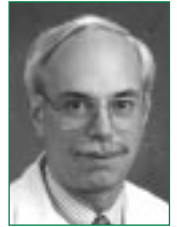
- Associate Professor of Medicine, Penn State Cardiovascular Center

Medical Education: College of Physicians and Surgeons, Columbia University

Internship: St. Luke's-Roosevelt Hospital Center

Residency: St. Luke's-Roosevelt Hospital Center

Fellowship: St. Luke's-Roosevelt Hospital Center, UMDNJ: Robert Wood Johnson Medical School



Steven M. Ettinger, M.D.

- Associate Professor of Medicine, Penn State Cardiovascular Center

Medical Education: Sackler School of Medicine - Tel Aviv, Israel, 1986

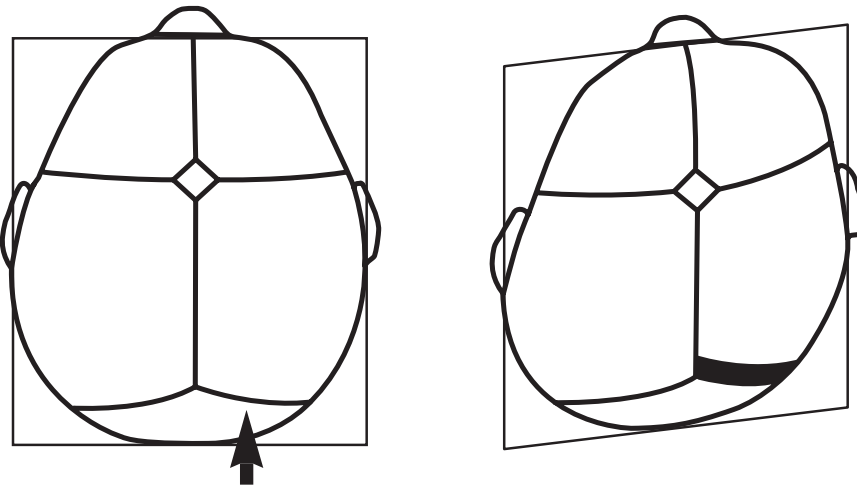
Residency: Long Island Jewish Medical Center

Fellowship: Penn State Milton S. Hershey Medical Center



Occipital Plagiocephaly in Infants

Occipital plagiocephaly (OP) is a condition of infancy in which the occiput is flattened. In infants, this condition is usually caused by the child lying on its back with the head turned toward one side or the other. In most affected infants, the head assumes a parallelogram shape when looked at



Effect of molding to produce occipital plagiocephaly (OP): On the left is an illustration of a normal infant head viewed from the top. The ears and skull shape are symmetrical. With continued pressure from the lying on the back of the head (arrow), the skull becomes progressively deformed. The rectangle seen on the left becomes a parallelogram on the right. The right illustration shows right occipital flattening with a prominent right forehead and forward shifting of the right ear. Lambdoid perisutural sclerosis is indicated by the shading.

from above; the occiput is flattened, the forehead on the affected side is also somewhat prominent, the ear on the affected side is pushed forward compared with the other side, and even the cheek may be somewhat prominent compared with its counterpart.

The Penn State Milton S. Hershey Medical Center Pediatric Neurosurgical and Plastic/Craniofacial surgeons, together with an orthotist, can evaluate and provide effective treatments for plagiocephaly. One treatment is a custom

molded helmet produced to counteract the flattening effect. A helmet may be helpful when simple positional changes are ineffective in reversing the condition.

The affected child is measured and molded at Penn State Hershey Medical Center, and a custom formed plastic helmet called the Starband is then

fabricated. Molding appointments are typically scheduled within 3-5 days of patient's initial call. The custom molded helmet is completed and delivered within 3 weeks. Follow-up visits are scheduled regularly throughout the course of treatment, at no additional cost to the patient.

Facts

- OP is a deformation of the skull- there is no convincing evidence that OP restricts an infant's intellectual growth or development.

- Two-thirds of infants with OP are boys, and 80% have right-sided flattening.
- About 20% of newborns have OP at the time of birth.
- OP is not related to craniosynostosis, which requires surgery to correct.
- Pediatric patients diagnosed with torticollis are also good candidates for this program, with the addition of physical therapy.

For more information call the Division of Neurosurgery at (717) 531-8807 ■

Jeffrey Koach, C.P.

- Certified Prosthetist
- Education:** North Western University
- Special Training:** Certified Prosthetist from the American Board of Certification in Orthotics and Prosthetics



Mark S. Dias, M.D., F.A.A.P.

- Associate Professor of Neurosurgery
- Medical School:** Johns Hopkins University School of Medicine
- Internship:** University of Pittsburgh School of Medicine
- Residency:** University of Pittsburgh School of Medicine
- Fellowship:** University of Utah/Primary Children's Medical Center



Paul M. Kanev, M.D.

- Associate Professor of Surgery and Pediatrics; Director, Pediatric Neurosurgery; Vice-Chairman, Division of Neurosurgery
- Medical School:** Temple University School of Medicine
- Residency:** University of Virginia, New England Medical Center, University of Washington, Atkinson-Morley's Hospital, Wimbledon, England
- Fellowship:** Children's Hospital and Medical Center, University of Washington

