MISSION
We advance health through research, education, clinical practice and community partnerships, providing each person the best care, in the right place, at the right time, every time.

VISION
Achieve the healthiest population possible, leading the transformation of health care in our region and setting the standard for our nation.
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MESSAGE FROM THE CHAIR

2012 has brought new achievements, changes, and challenges to the Department of Surgery at Dartmouth-Hitchcock and The Geisel School of Medicine at Dartmouth. Most noticeably, Dartmouth Medical School received a very generous endowment from the family of Theodor (Dr. Seuss) and Audrey Geisel and renamed the School in their honor. This will have a profound impact on shaping the future of our Medical School and helping to provide a stable foundation on which to build the medical school of the future. Parallel to this, we in the Department of Surgery have been focusing on revamping, updating, and improving our medical student curriculum and overall teaching effort. Through the direction of Horace Henriques, MD, Gina Adrales, and Andrew Crockett, MD, the entire medical student clerkship schedule and curriculum have been completely revised. We have also appointed a new General Surgery Residency Program Director, Paul Kispert, MD and an Associate Director, Kari Rosenkranz, MD, who have already made a significant and positive impact on our program through a very successful RRC review.

The Department’s commitment to define and improve the value of our clinical care remains foremost through the “care path” development process. Surgical care paths are aimed at streamlining and standardizing the delivery of surgical care, while reducing costs, for the routine procedures we do most frequently. We awarded the second annual $25,000 prize to Thoracic Surgery Team for their “Esophageal Cancer Care” pathway this year. Every section had at least one project in development.

Two other cutting edge programs have been developed over the past year and are highlighted in this report, both of which are developing cellular therapies for surgical diseases.

1) Our Section of Vascular Surgery has reported preliminary findings for the application of bone marrow derived stem cells for the treatment of critical limb ischemia. Significantly fewer patients receiving the stem cell infusions went on to limb amputation compared with patients treated with placebos. This new treatment has the potential to significantly reduce the number of amputations that patients with critical limb ischemia require and, thereby, dramatically improve their quality of life.

2) A multidisciplinary team from Gastroenterology and Surgery performed our first autoislet cell transplant after total pancreatectomy. Patients with severe pain from chronic pancreatitis often have their pain markedly improved by total pancreatectomy; however, this leaves them with difficult to control diabetes. By isolating the islet cells from the pancreas specimen retrieved at the time of pancreatectomy and re-infusing them to the patient, the need for insulin can be greatly reduced or eliminated altogether. Dartmouth-Hitchcock is one of only a few centers around the country that is doing these procedures.

We continue to strive for cutting edge treatments within the value-based accountable care world. As you will see in this report, the Dartmouth-Hitchcock/Geisel School of Medicine Department of Surgery is uniquely poised to meet both needs while continuing to teach, train, and develop the surgeons of the future.

Richard B. Freeman, Jr., MD
William N. and Bessie Allyn Professor and Chair
Department of Surgery

Kerry Ryan
Director, Department of Surgery

William N. and Bessie Allyn Professor and Chair
Department of Surgery
### DEPARTMENT STATISTICS 2012

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Our continued involvement with the General Surgical Residency Training Program and the Geisel School of Medicine allows medical students and surgical residents to experience supervised training in a busy outpatient clinic, inpatient consult and critical care service, and operating room.

The Division of Cardiac Surgery
The Division of Cardiac Surgery continues to offer a full range of surgical procedures for patients with acquired adult cardiac diseases. This includes standard cardiac surgery procedures, i.e. coronary bypass, valve repair and replacement, as well as more complex procedures such as valve sparing aortic valve surgery, and various forms of left ventricular remodeling procedures. In addition, we have recently begun Transcatheter Aortic Valve Replacement in collaboration with our Heart and Vascular Center colleagues. Our continued involvement in the Northern New England Cardiovascular Disease Study Group and participation in the Society of Thoracic Surgeons Cardiac Surgical Database insures that our outcomes are closely monitored and transparently displayed against institutional, regional, and national standards. We are proud to continue to demonstrate some of the best outcomes in the nation. Patients can now access and review our surgical outcomes by logging onto www.dhmc.org/qualityreports/list.cfm?metr ics=CT.

In collaboration with our electrophysiology department, James Yun, MD is helping to lead a laser-assisted lead extraction program for aging or worn out pacemaker and defibrillator leads. This program will address a mounting clinical problem as more of these devices need to be removed.

The Division of General Thoracic Surgery
The Division of General Thoracic Surgery continues to be an integral part of Dartmouth-Hitchcock’s and Norris Cotton Cancer Center’s Comprehensive Thoracic Oncology Program (CTOP). This multidisciplinary initiative offers all patients with malignant diseases of the chest direct “one-stop” access to a multidisciplinary team of experts dedicated to better understanding and treating these devastating conditions. This program meets weekly and combines a patient-centered clinical conference, with a centralized clinic that places clinicians from medical oncology, surgical oncology, pulmonary, diagnostic and interventional radiology, and pathology in one location. This has offered both patients and clinicians the opportunity for “real-time” collaboration and consultation. The General Thoracic Division offers a full range of surgical procedures for patients with benign and malignant diseases of the lung, esophagus, mediastinum, and pleural spaces. This includes, where appropriate, video assisted thoracic surgery (VATS) including VATS lobectomy and esophagectomy. A workgroup headed by Cherie Erkmen, MD is formulating a care pathway for esophageal cancer patients. This will provide optimum care in a timely fashion.

Research opportunities for faculty and residents continue within the Section. Under the direction of Joseph DeSimone, MD, we are enrolling patients into the Partner’s 2 trial for Transcatheter Aortic Valve Replacements. Dr. DeSimone also coordinates a large animal laboratory study looking at the effects of pulsatile perfusion on organ systems. Finally, outcomes
research remains through our collaboration with the Northern New England Cardiovascular Disease Study Group (NNE) cardiac surgical database. The General Thoracic Division participates with the Norris Cotton Cancer Center and the multi-institutional national oncology research organization, Cancer and Leukemia Group B (CALGB). This provides our patients access to the most innovative cancer treatments available and our residents and staff to participate in many institutional and national treatment protocols. Under the direction of Dr. Erkmen, the Division of Thoracic Surgery has an ongoing basic science research initiative studying immunofluorescence tumor marking in malignancies and made available clinical research opportunities through our clinical outcomes registry and membership in the Society of Thoracic Surgeons Thoracic Surgical Database. In addition, Dr. Erkmen and William Black, MD, from our Department of Radiology, are leading a Lung Cancer Screening Program.

Outcomes and the Future of Healthcare
Cardiac surgery remains the most scrutinized specialty in all of medicine. Since healthcare payers and their patients have insisted on increased accountability and transparency in outcomes, the Section of Cardiothoracic Surgery has responded by making our surgical outcomes transparent to the public. DHMC now provides patient access to our surgical outcomes in a patient-friendly format (www.dhmc.org/qualityreports/list?metrics=CT).

This initiative, combined with our continued involvement with the Northern New England Cardiovascular Disease Study Group (www.nnecdsg.org), makes the Section of Cardiothoracic Surgery an international leader in understanding and improving healthcare outcomes.

FACULTY

CARDIAC SURGERY
M. Adam Christopher, PA-C
Instructor in Surgery
Curtis Cote, PA
Instructor in Surgery
Lawrence Dacey, MD
Professor of Surgery and Community & Family Medicine
Joseph DeSimone, MD
Assistant Professor of Surgery
Anthony DiScipio, MD
Assistant Professor of Surgery
Jamie McCormack, PA-C
Instructor in Surgery
Robert Miljan, PA
Instructor in Surgery
James Yun, MD
Assistant Professor of Surgery

THORACIC SURGERY
Cherie Erkmen, MD
Assistant Professor of Surgery and Medicine
Elizabeth Maislen, APRN
Instructor in Surgery
Anne McGowen, PA
Instructor in Surgery
William Nugent, Jr, MD
Professor of Surgery, Community & Family Medicine, and The Dartmouth Institute

Cardiothoracic Surgery Gross Professional Revenue

Cardiothoracic Surgery Cases
Introduction
Much time has been spent this year on planning our move into our new space in the new medical office building on Heater Road in Lebanon. November 12, 2012 is our scheduled date to start. We continue to meet and exceed our productivity benchmarks and are trying to increase our efficiency and expand our services.

Patient Care
Dermatology outpatient care continues to achieve very high patient satisfaction, while improving our patient volumes. We have lost two full-time providers, but are maintaining our access with specialty efficiency clinics, such as the “spot clinic,” shared medical appointments, and a “superderm efficiency clinic.” In addition to the above clinics, we have begun a Telemedicine/Teledermatology Clinic with Weeks Hospital and are planning to expand these services as quickly as possible. We have maintained our high volume per section and per FTE as well as patient satisfaction. Faramarz Samie, MD, our new Mohs surgeon, has established himself in the community and is on his way to performing over 700 skin cancer Mohs cases in his first year, which is a much needed service in our community and region. We are continuing to improve all of our subspecialty clinics. Our focus is not only to provide high quality dermatology care, but also efficient, high-value care for specific patient care needs.

Education
Our Dermatology Residency Training Program is stable, newly accredited, and moving upward. Kathryn Zug, MD is in her second year as Program Director. Dr. Zug has solidified our residency and has renewed focus on academic production. Two of our residents, Aclayna Meyer, MD and Jeffrey Tiger, MD are applying for Mohs Fellowships. Our resident publications and presentations have increased 50% this year alone. We are again considering adding a Pediatric Dermatology and Mohs Surgery/Procedural Fellowship to the Section, which will complement the Dermatopathology Fellowship.

Research
Our Section continues to participate in multiple industry-sponsored clinical trials, and at this point focusing on new and novel systemic psoriasis medications.

Faculty Highlights
Denise Aaron, MD has assumed Course Directorship for the second-year dermatology Scientific Basis of Medicine Course, beginning in the winter term, and will have her work cut out for her as this is a course that is consistently ranked as one of the best. Dr. Zug and Mari-Paz Castanedo, MD (resident) presented their research on contact allergy at the European Society of Contact Dermatitis in Sweden. The Richard D. Baughman Endowment Fund in Dermatology received a $150,000 gift in the name of Marshall Guill, MD from Mrs. Lillian Seward of Vermont. This gets the fund to a total of $250,000.

The Third Edition of *Skin Disease: Diagnosis and Treatment*, an all Dartmouth-Hitchcock Dermatology textbook, was released in 2012 and includes a translation in Farsi. The previous Second Edition, translated in six languages other than English, was wildly successful having sold over 25,000 copies, the most for any dermatology textbook produced by the publisher.
Looking Ahead
We have overcome several obstacles and are now stabilized to add faculty and fellowship programs to the Section as we prepare to move into our new space in the Heater Road Medical Office Building. We want to continue to make our section a leader in office innovation and efficiency, while maintaining high patient satisfaction. Mohs surgery is also establishing itself as a model of in-office surgical/procedural efficiency.

We want to continue improving existing programs and adding to our educational and research productivity. We are also committed to making the Section of Dermatology a leader in outpatient clinical efficiency. There is a renewed focus on the Richard D. Baughman Endowment Fund in Dermatology in order to establish a long-lasting academic endowment for generations to come.

Dermatology Gross Professional Revenue

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FACULTY

**DERMATOLOGY**

- Denise Aaron, MD  
  Assistant Professor of Surgery
- Richard Baughman, MD  
  Professor of Surgery
- M. Shane Chapman, MD  
  Associate Professor of Surgery
- Marshall Guili, MD  
  Assistant Professor of Surgery
- Nicole Pace, MD  
  Assistant Professor of Surgery
- Faramarz Samie, MD  
  Assistant Professor of Surgery
- Steven Spencer, MD  
  Professor of Surgery
- Dorothea Torti, MD  
  Assistant Professor of Surgery and Pathology
- Daniel Stewart, MD  
  Instructor in Surgery
- Kathleen Zug, MD  
  Professor of Surgery
Introduction
The Section of General Surgery, on a daily basis, strives to accomplish the Dartmouth-Hitchcock (D-H) mission: to advance health through research, education, and clinical practice, providing each patient the best care, in the right place, at the right time. We also strive to optimize the job satisfaction of each of our providers and staff, realizing this is essential for us to collectively accomplish our mission.

Major Initiatives
In 2012, we implemented a long-range plan which transforms the way we deliver care for trauma and acute general surgery patients. We now have seven trauma and acute care surgical faculty, who are in-house day and night Monday–Friday so as to provide optimal patient care. Once we complete our current open search for an additional acute care surgeon, we will offer 24/7 in-house attending level care. Through the efforts of Rajan Gupta, MD and Kurt Rhynhart, MD, D-H was re-certified this year by the American College of Surgeons as a Level 1 Trauma Center. Dr. Rhynhart has now assumed the leadership of the Trauma Program. We are proud to be a highly regarded referral center for acute surgical care for our region.

We have also initiated a new model for integrated surgical care with our neighboring community hospitals. Dartmouth general surgeons have begun, for the first time, to evaluate and operate on patients in nearby community hospitals. We hope to optimize patient care by providing ambulatory surgical care in the community setting, while fostering referrals to the academic center for more complicated conditions. Timothy Siegel, MD joined our faculty this year and is leading this effort. When not at D-H, Dr. Siegel is caring for patients and teaching medical students at Alice Peck Day Memorial Hospital. Due to the success of this initiative, we are in the process of hiring two additional surgeons who will jointly operate at D-H, Mt. Ascutney Hospital, and New London Hospital.

Patient Care
General Surgery providers performed 2,529 operative cases in 2012 and 9,150 clinic appointments. Our patients continue to be very satisfied with the care they receive. During 2012, our patient satisfaction scores were significantly above the DHMC mean. Eighty percent of all patients rated their provider overall as excellent.

Substantial effort was expended to develop and codify a Bariatric Care Pathway by Maureen Quigley, APRN and William Laycock, MD, and a Breast Cancer Pathway by Kari Rosenkranz, MD and Lisa McCabe, APRN.

In fiscal year 2012, General Surgery contributed $5.4 million dollars toward the D-H net operating margin. This is impacted not only by our significant volumes, but also excellent post-surgical care by our outpatient nursing and provider team.

Education
Paul Kispert, MD and Dr. Rosenkranz assumed the roles of General Surgery Residency Program Director and Associate Director a year ago and have re-invigorated and made several improvements in the Program. Dr. Kispert enhances all of our education by leading the Morbidity and Mortality conference with insight and humor. Horace Henriques, MD has been joined by Gina Adrales, MD and Andrew Crockett, MD and together have implemented a new curriculum for medical student teaching. Thadeus Trus, MD directs a thriving fellowship in laparoscopic surgery. Kenneth Burchard, MD continues to work towards obtaining approval for a Surgical Critical Care Fellowship. Graduating chief residents this year entered fellowship training in Vascular Surgery (Kentucky) and Plastic Surgery (Utah).

Research
The Section continued to add new knowledge to the surgical literature this past year. Kerrington Smith, MD has utilized his Richard W. Dow Award to develop a murine model which allows him to grow human pancreatic xenografts. Dr. Smith and Dawn Fischer, in the Surgical Lab, have shown for the first time it is possible to grow tumors in mice from the small number of cells obtained in fine needle aspirates. Dr. Rosenkranz is the Principal Investigator on a new breast cancer clinical trial activated by the National Oncology Trial Group Alliance which will determine the local recurrence rate of breast conserving surgery in patients with multicentric cancers. Richard Barth, MD was awarded a $100,000 grant to perform a randomized prospective study of the effect of a short term, pre-op, low calorie diet on hepatic steatosis and surgical outcomes after liver surgery. Drs. Rosenkranz and Barth reported novel observations on higher than expected long term complications seen after Mammosite
brachytherapy for breast cancer, and published a study of the utility of MRI in patients with ductal carcinoma in situ. Burton Eisenberg, MD, recognized nationally for his expertise with GI stromal tumors, published a clinical trial of treatment with neoadjuvant Gleevec. Drs. Trus and Henriques collaborated on a study of communication effectiveness and the Board of Surgery certifying exam. Stefan Holubar, MD led the Section last year in the volume of publications with a total of ten. Dr. Holubar’s papers addressed clinical issues in the care of patients with ulcerative colitis, Crohn’s disease, and rectal cancer.

Faculty Highlights
Dr. Rosenkranz and John Murray, MD were chosen as the Top Surgeons in their specialties by NH physicians, as reported in NH Magazine. Several section members are playing prominent roles in national organizations: Dr. Gupta is chair of the Rural Trauma Committee of the Eastern Association for Trauma and serves on the American College of Surgeons Committee on Trauma. Dr. Trus is leading the international laparoscopic training efforts of SAGES, and Drs. Barth and Kispert have leading roles in the New England Surgical Society. Thomas Colacchio, MD, having completed his sojourn as Clinic President, is once again fully clinically engaged in the treatment of patients with thyroid and pancreatic neoplasms. Eric Martin, MD has expanded his role to include an Emergency Management Medical Directorship.

Taking Stock and Looking Ahead
The General Surgery leadership team: Catherine Garfield, Senior Practice Manager, Laurie O’Rourke, Nurse Manager, Jeanne Minasian, Administrative Supervisor, and Dr. Barth, Section Chief, were encouraged by the positive feedback received in the 2012 DHMC Employee Engagement Survey results and look forward to sustaining a productive and happy section.

General Surgery Gross Professional Revenue

FACULTY

GENERAL SURGERY

Gina Adrales, MD
Associate Professor of Surgery

Richard Barth, MD
Associate Professor of Surgery

Kenneth Burchard, MD
Professor of Surgery and Anesthesiology

Thomas Colacchio, MD
Professor of Surgery

Andrew Crockett, MD
Assistant Professor of Surgery

Burton Eisenberg, MD
Professor of Surgery

Benjamin Forbush, MD
Assistant Professor of Surgery

Neil Ghushe, MD
Instructor of Surgery

Rajan Gupta, MD
Associate Professor of Surgery

Horace Henriques, III, MD
Associate Professor of Surgery

Stefan Holubar, MD
Assistant Professor of Surgery

Paul Kispert, MD
Assistant Professor of Surgery and Anesthesiology

William Laycock, III, MD
Associate Professor of Surgery

Jean Liu, MD
Assistant Professor of Surgery

Eric Martin, MD
Assistant Professor of Surgery

Elizabeth McCabe, APRN
Instructor in Surgery

Ellen McKinnon, APRN
Instructor in Surgery

Darrin Mickalak, PA-C
Instructor in Surgery

John Murray, MD
Associate Professor of Surgery

Maureen Quigley, APRN
Instructor in Surgery

Kurt Rhynhart, MD
Assistant Professor of Surgery

Kari Rosenkranz, MD
Assistant Professor of Surgery

Timothy Siegel, MD
Assistant Professor of Surgery

Kerrington Smith, MD
Assistant Professor of Surgery

Thadeus Trus, MD
Associate Professor of Surgery

General Surgery Cases
**Introduction**
The Section of Neurosurgery enjoyed another full, productive, and successful year across its missions in clinical care, education, and discovery. Our residents and students once again distinguished themselves regionally and nationally, and strong multidisciplinary programs continued to serve as cornerstones to comprehensive clinical services.

**Patient Care**
The pace of clinical activity in the Section has always been high, and the past academic year was no exception. Work RVU-per-FTE activity came in at 128% relative to the 60th percentile benchmark. The first half of the year saw faculty serving in Iraq or on medical leave, requiring an all-hands-on-deck approach to service needs. With the return of a neurosurgery team at full strength at the mid-year, new initiatives saw further growth. Our brain tumor program completed its five-year fluorescence-guided tumor resection study and is moving into its next phase. Brain tumor radiosurgery saw a 48% increase over the preceding year. A new program in spinal radiosurgery has treated its first patients. Multidisciplinary programs in spine, epilepsy, cerebrovascular, peripheral nerve, and pituitary, in addition to tumor, serve as the backbone to our comprehensive, subspecialized patient care activities. Our activities in the southern region, in the form of neurosurgery outpatient clinics in Manchester, entered their second year. Lastly, recruitment of a second pediatric neurosurgeon was successfully completed, and David Bauer, MD, who recently completed his fellowship training at the University of Washington, has brought complementary expertise to that of our own Susan Durham, MD.

**Research**
Dr. Desai investigated the relationship between neurosurgeon density and stroke-related mortality in addition to the motor vehicle study noted above. Additionally, he continued his investigations in spine through the S.P.O.R. T. study database. The recipient of a Dandy Fellowship from the American Association of Neurological Surgeons (AANS), Dr. Bekelis continued his work on nanoparticle imaging in aneurysm inflammation. Faculty member Scott Lollis, MD, in collaboration with the Thayer School of Engineering, has ongoing investigations in hydrocephalus, using the novel imaging technology of magnetic resonance elastography (MRE). Nathan Simmons, MD has been our...
institutional principal investigator in a study of dural sealants and is working on translational development of implantable resonators for EPR oximetry in deep tumors. Neurosurgery’s long-standing collaboration with Keith Paulsen, PhD and colleagues from the Thayer School of Engineering continued its NIH-supported work in the area of computational modeling of the brain, integrating intraoperative sparse data and 3D ultrasound technologies, as well as optical imaging. Alex Hartov, PhD, and Songbai Ji, PhD, actively participated in this research program, and Xiaoyao Fan earned her PhD for her work in stereovision. FDA IND- and RO1-supported investigation of tumor fluorescence continued to push the frontier, successfully demonstrating the high utility of quantitative fluorescence as well as the implementation of wide-field multispectral imaging.

**Faculty Highlights**

We are indebted to and appreciative of Major Lollis, MD, US Army Reserve, for serving in Iraq this past year. This spring Dr. Lollis also successfully launched his iPhone app, “What’s the Data,” a reference program putting the sentinel neurosurgical literature at neurosurgeons finger tips. Perry Ball, MD, this year served as President of the New England Neurosurgical Society. Dr. Ball completed his tenure on the AANS Liability Committee and now serves on the Executive Committee of the Neurosurgical Society of America as well as chairing its Long-Range Planning Committee. Dr. Ball was appointed Associate Editor, General Topics, of the journal, Neurosurgery. Dr. Simmons presented his work on 5-ALA in pituitary surgery this past year and was an invited speaker at the Neuro-oncology Symposium in Hackensack, NJ. Kadir Erkmen, MD participated as faculty at the St. Louis skull-base surgery course, directed our own skull-base cadaver workshop, and laid the foundation for our new medical student rotation. David Roberts, MD, continues to serve on the American Board of Neurological Surgeons, the Executive Committee of the Society of Neurological Surgeons, the Editorial or Advisory Boards of Neurosurgery, World Neurosurgery, and the Journal of Neurosurgery, as well as Editor of Stereotactic and Functional Neurosurgery.

**Looking Ahead**

With a healthy and full complement of personnel, Neurosurgery is excited about upcoming prospects. Opening of the Advanced Surgery Center this spring, with two new operating rooms and intraoperative MRI and CT capability, will provide unprecedented opportunities for current and new translational investigative programs.
Introduction
With the aging population, we are seeing increased incidences of eye disease. This past year, the Section of Ophthalmology provided services for over 20,000 patient visits. The Section is providing primary, secondary, and tertiary eye care, with subspecialty care in neuro-ophthalmology, pediatrics, glaucoma, oculoplastics, vitreo-retina, and cornea. We also offer state-of-the-art cataract surgery. Our team also has an optometrist offering complete primary eye care including contact lens wear.

Patient Care/Faculty Highlights
Michael Zegans, MD provides surgical care for patients with complex corneal disorders and uveitis syndromes. Dr. Zegans spends forty percent of his time doing research centered on the microbiology of the eye.

Donald Miller, MD provides cataract surgery including the use of toric intraocular lenses for patients with significant astigmatism.

David Campbell, MD serves as Director of The Glaucoma Service. He is joined by Ronald Swendris, MD who was in a private ophthalmic group practice in Missouri prior to joining DHMC. Dr. Swendris offers the latest surgical techniques available for treating advanced glaucoma.

Susan Pepin, MD serves as Director of Neuro-Ophthalmology and works closely with the Department of Neurology, seeing those patients that have neurological disorders affecting the ocular system. In addition, she is a skilled cataract surgeon. Dr. Pepin spends fifty percent of her time as Associate Dean for Diversity at the Geisel School of Medicine.

Christopher Chapman, MD and Rosalind Stevens, MD provide comprehensive medical and surgical expertise for patients with complex disorders of the retina, vitreous and macula, including trauma, and laser treatment for premature infants with retinopathy of prematurity. Crystal Colby, PA is now part of the team, assisting in patient evaluation and surgery. Dr. Stevens is very involved in the flying eye hospital, ORBIS, where she is Program Director.

Erin Salcone, MD is a comprehensive pediatric ophthalmologist and treats pediatric eye disease and adult strabismus. She was a medical student at Geisel before doing her residency and fellowship at Mass Eye and Ear, and Children’s Hospital in Boston.

In addition to being Section Chief, William Rosen, MD provides comprehensive ophthalmic care as well as expertise in diseases of the eyelid, orbit, and lacrimal system. He is a diplomate of the American Society of Oculoplastics and Reconstructive Surgeons.

Cynthia Lawrence, OD provides primary eye care and optometric services as well as contact lens fitting and prescribing.

Education
All providers in the Section of Ophthalmology provide educational opportunities onsite at Dartmouth-Hitchcock as well as regionally, nationally, and internationally. Dr. Stevens finished her MPH degree in International Ophthalmology from Johns Hopkins, and is now an advisor for Global Programming for ORBIS, the flying eye hospital.
Our vibrant Grand Rounds Program features nationally recognized leaders in ophthalmology. Dr. Pepin serves as coordinator of medical student and resident education. Dr. Campbell continues to be an invited speaker at the Lancaster Ophthalmology Review Course. We are proud of our collective success in matching Geisel Medical School students each year to competitive ophthalmology residency programs.

Clinical Trials and Research
Dr. Zegans continues his research in epidemiology and microbiology and also is active in international eye care through the Dickey Center at Dartmouth, and through his association with the Aairivand Eye Hospital in India. Dr. Pepin conducts several clinical trials including therapeutic studies involving multiple sclerosis, Alzheimer’s disease, and ischemic optic neuropathy.

Looking Ahead
The Section of Ophthalmology is constantly striving to improve our patient access and satisfaction, while we deliver state-of-the-art treatments in the most cost-effective manner possible. The addition of Michael Barrington as our Practice Manager is helping us move forward. The principal three-year goal of the Section is starting a residency program. All of the faculty view education and teaching as part of their mission and all desire a residency training program.

FACULTY

Ophthalmology

David Campbell, MD
Professor of Surgery

Christopher Chapman, MD
Assistant Professor of Surgery and Pediatrics

Crystal Colby, PA
Instructor in Surgery

Cynthia Lawrence, OD
Instructor in Surgery

Donald Miller, MD
Assistant Professor of Surgery

Susan Pepin, MD
Associate Professor of Surgery

and Pediatrics

William Rosen, MD
Associate Professor of Surgery

Erin Salcone, MD
Assistant Professor of Surgery

Rosalind Stevens, MD
Professor of Surgery

Ronald Swendris, MD
Assistant Professor of Surgery

Michael Zegans, MD
Professor of Surgery and Microbiology & Immunology

Ophthalmology Gross Professional Revenue

Ophthalmology Cases

FY07 FY08 FY09 FY10 FY11 FY12

FY07 FY08 FY09 FY10 FY11 FY12
Introduction
The Section of Otolaryngology and Audiology continues to grow and improve to meet our patients’ needs and to fulfill our important role as a secondary and tertiary care provider of otolaryngology and audiology services for northern New England.

Patient Care
We are clearly focused on meeting our patients’ needs in every possible way. Every member of our Section has been tasked with not only doing their job, but with improving the care we deliver. This charge has been embraced, and we have provided many members of the Section with advanced training in quality improvement techniques (via the Value Institute). Our goal is to lead the Institution in the breadth and depth of our patient care-specific quality initiatives. The Head and Neck Care Pathway Project continues to develop and grow as we add more detail and data-extraction capabilities to the underlying structure. The addition of Sheila Keating, RN, as Nurse Navigator for this patient population, has been a major development. Other projects in development include care pathways for pediatric otolaryngology, otology, and audiology.

Education
Medical Students! We were delighted to learn earlier this year of a change in the structure of the Geisel School of Medicine third-year surgery clerkship that would allow our participation. We have developed a comprehensive otolaryngology curriculum for these students and are happily ensnared in the day-to-day education of these outstanding learners.

June 30th was a landmark day for the Section. On that date, our first resident, P. Tate Maddox, MD, graduated from our program bound for a private practice opportunity in Virginia. We are both overjoyed by Dr. Maddox’s (and our Residency Program’s) accomplishment and saddened by the departure of a cherished part of our fledgling residency. Our residency training program continues to evolve to meet the changing needs of otolaryngology training and continues to strengthen under the expert guidance of the Residency Program Director, Mark Smith, MD.

Research
The Section continues to be well represented at our national meetings with multiple faculty members involved with presentation of scientific papers and serving on important committees.

Faculty Highlights
James Saunders, MD has recently been designated by the American Academy of Otolaryngology as Coordinator for International Affairs. This is fitting recognition of Dr. Saunders’s commitment to international medicine. He is immediate past chair of the Humanitarian Efforts Committee and is involved in research projects studying otitis media in HIV infected children in Tanzania, hearing loss in HIV infected children in Zimbabwe, and heavy metal hearing loss in Artesinal gold miners. Joseph Paydarfar, MD was happy to learn that his proposal to partner with the Thayer School of Engineering on a new medical device project was approved. Dr. Paydarfar will be working with three Thayer students to develop a new robotically-controlled retractor system for use in TORS (transoral robotic surgery) surgical procedures. Daniel Morrison, MD completed his master’s degree with TDI and is looking forward to using his new skill set to help drive research in quality improvement, health services research, and decision analysis. Giri Venkatraman, MD, MBA has recently been tapped by the Value Institute for an administrative position overseeing a portfolio of projects related to quality.
assurance across the institution. This is a vitally important job as our systems of care evolve to meet the mandates of health care reform. It’s nice to know that we have such a capable person in charge of these projects.

Looking Ahead
Over the next several years, we will be making a deliberate move to expand our services into the Manchester/Nashua region. We currently receive a large number of referrals from this area and would like to have a greater physical presence to allow us to provide easier access to advanced otolaryngology and audiology care for patients in this area. Care pathway development and continuous quality improvement will continue to be an area of primary focus. We will be working to consolidate our work on the head and neck cancer pathway and look forward to automating data extraction from this pathway. Care pathway development for our pediatric otolaryngology and audiology services will soon get underway. This will facilitate the development of a regional center for pediatric otolaryngology services with a base of operations at CHaD, and ancillary services provided in Manchester.

Otolaryngology and Audiology Gross Professional Revenue

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PEDIATRIC SURGERY

Introduction
The Section of Pediatric Surgery, which includes Pediatric General and Thoracic Surgery, Pediatric Neurosurgery, and Pediatric Urology, has been serving the infants and children of New Hampshire and Vermont for over a decade. 2012 was a transition year for the Section as old friends said goodbye and new providers were welcomed.

Patient Care
Striving to provide outstanding surgical health care to the children we serve remains the primary mission of the Section. Due to our commitment to the value metric of healthcare, some of our outreach clinics were discontinued. The Manchester/Bedford facilities have seen increases in the General Pediatric Surgery Clinics as some of the Pediatric Urology Clinics were scaled back awaiting new provider recruitment.

Pediatric Trauma Program – In November, 2011, the American College of Surgeons verified the Pediatric Trauma Program as a Level 2 Pediatric Trauma Center. This is the only ACS designated Pediatric Trauma Center in northern New England. Laurie A. Latchaw, MD is the Pediatric Trauma Medical Director and Renee Gaffney, RN is the Pediatric Trauma Program Manager.

The Chest Wall Deformity Program – For the past six years, Daniel Croitoru, MD has evaluated hundreds of patients with Pectus Excavatum and Pectus Carinatum in both Lebanon and Manchester/Bedford Clinics. Dr. Croitoru is a nationally known expert in Minimally Invasive Pectus Excavatum Repair and sees referrals from all over the U.S.

Minimally Invasive Surgery – Minimally invasive surgery continued to expand this past year and can now be offered for many intraabdominal and intrathoracic surgical procedures. Colonic resection for the treatment of Hirschsprung’s Disease can usually be accomplished transanally now without any abdominal incisions at all.

Peripheral Nerve Clinic – Susan Durham, MD continued the only coordinated care of children and adults with peripheral nerve problems in northern New England. This multidisciplinary clinic facilitates the proper diagnosis and treatment plan for these debilitating conditions.

Pediatric Brain Tumor Clinic – This multidisciplinary clinic involving Pediatric Neurosurgery, Pediatric Neurology, and Pediatric Neuro-oncology was instituted four years ago and continues to coordinate the surgical and medical care and follow-up of infants and children with brain and spinal cord tumors.

Pediatric Epilepsy and Spasticity Programs – David Bauer, MD is in the process of establishing programs in the surgical treatment of seizure disorders. He will be mentored by David Roberts, MD, who runs the adult program. In addition, Dr. Bauer will also be offering surgical treatment for specific spasticity disorders. This is a new service to be offered at DHMC.

Pediatric Genitourinary Robotic Surgery Program – Daniel Herz, MD continued to expand the only pediatric robotic program in northern New England. Although Dr. Herz will be leaving the end of 2012 to run the Minimally Invasive and Robotic Surgery Program at Columbus (OH) Children’s Hospital, David Chavez, MD, pediatric urologist, will be continuing the Program when he arrives in January, 2013.
Education
Medical education of our patients and families as well as present and future health care providers continues to be a top priority of the Section. The Division of General and Thoracic Pediatric Surgery remains one of the core surgical teaching services for the third-year Geisel medical students as well as offering a sub-internship for fourth-year students. All three Divisions participate actively in residency training programs. Dr. Latchaw spoke on Pediatric Trauma Care at the 2011 Northern New England Rural Emergency Services and Trauma Symposium. Dr. Durham spoke at the 2012 Neurosurgery Research Symposium. Bridget Logan, PhD, APRN was the invited speaker for the Urologic Nursing Society and the NHVNA.

Research
Bridget Logan, PhD, APRN is involved in research correlating psychological and adverse childhood experiences with treatment of voiding dysfunction. Dr. Latchaw was one of many contributors to the Pediatric Trauma Society’s “Guidelines for alcohol screening in adolescent trauma patients” which has been accepted for publication in the Journal of Trauma.

Faculty Highlights
The Section welcomes Dr. Bauer, pediatric neurosurgeon, who arrived August, 2012 after completing his fellowship in Pediatric Neurosurgery at Seattle Children’s Hospital. Dr. Bauer will be bringing added expertise in the surgical treatment of epilepsy and spasticity. The Section has also successfully recruited David Chavez, MD pediatric urologist, who will be arriving early January 2013. Dr. Chavez, who trained in urology at DHMC and in pediatric urology at Duke University, has considerable experience in robotic urologic surgery. He comes from a successful private practice in Billings, MT and eagerly looks forward to rejoining academic pediatric urology.

Looking Ahead
The Pediatric Surgical Specialties Section is actively recruiting a second pediatric urologist and hopes to fill that position in the next few months. Next year will continue to be a challenge as new health care initiatives and reimbursement options require innovative ways to care for the children of New Hampshire and Vermont. Cooperation and alliances with other children’s hospitals in New England will be paramount to our success.
PLASTIC SURGERY

Dale C. Vidal, MD
Section Chief
Professor of Surgery, Community
& Family Medicine, and
The Dartmouth Institute

Barbara E. Rieseberg
Senior Practice Manager

Introduction
The Section of Plastic Surgery is committed to continuous improvement in the work we do and services we provide to our patients, their families, and each other. Their willingness to do so has led to many successes being recognized by others who have invited us to present and participate in the Value Institute, Surgical Grand Rounds, and other sectional areas. We have enjoyed sharing and learning throughout the year.

Patient Care
Our work on creating a culture of patient and staff safety and satisfaction continued this year. We faced challenges around clinical redesign, optimizing the tools now available to us in our still relatively new electronic medical record, and our need to measure the work we do in many areas. Although this work is challenging, it is rewarding to watch the many metrics we are following improve even when a number of new staff joined our team in 2012. Using resources wisely and to their fullest were major goals for us and meeting these goals gave us great pride in the improvement efforts undertaken during this time. Measuring for sustainability will be important during the upcoming year; ensuring we can sustain the gains when we are facing further changes around meaningful use, ACO requirements, EMR, patient and financial demands as well as anticipated staff and process re-design. This was a year of tremendous growth and camaraderie for us within and across sections – we look forward to much more of the same.

New to the Section this year was John Nigriny, MD who joined us in January of 2012. He brings a myriad of talents, working with and for Orthopedics as well as our own practice to provide superior hand care to those we serve. His strength in microsurgery has also resulted in improved access for patients in need of these services, and he is assisting us to foster relationships and resident opportunities across sections we coordinate care with -- Dermatology, General Surgery, Otolaryngology, Orthopedics, just to name a few. Dr. Nigriny is a fabulous addition to our team!

Research
Dale Collins Vidal, MD accepted a lead role on Dartmouth’s groundbreaking award from the Centers for Medicare and Medicaid Service (CMS) “Engaging Patients to Meet the Triple Aim.” One goal of this initiative is to improve care, improve health and reduce the cost of care by implementing shared decision making, and patient engagement interventions for patients with preference-sensitive and chronic conditions. Dr. Vidal was also awarded a grant from the Informed Medical Decisions Foundation (formerly the Foundation for Informed Medical Decision Making) to continue important work of integrating shared decision making into care pathways for patients at Dartmouth-Hitchcock (D-H). The funding allows for continued access to a full library of patient decision aids through the Center for Shared Decision Making (3P) and supports a project focusing on shared decision making for patients with diabetes. Dr. Vidal is collaborating with investigators at the University of California, San Francisco to expand the Patient Support Corps at D-H. This program deploys Dartmouth surgeons, truly being able to provide comprehensive care.

We have two second-year residents continuing, Sunny Chatterjee, MD and Tom Kosowski, MD. Dr. Chatterjee continues to be productive academically and in October at the ACS meeting, he made a presentation on surgeon payment per unit time for common procedures. Dr. Kosowski is currently evaluating outcomes for breast reduction utilizing a well-developed and standardized patient questionnaire with Carolyn Kerrigan, MD and on an endoscopic carpal tunnel and latissimus dorsi flap harvest educational simulator with Joseph Rosen, MD.

New to our residency program this year is Jeffrey Wu, MD who comes to us after completing his medical school and general surgery residency at University of Connecticut.

Education
Our ACGME accredited residency program graduated Michael Van Vliet, MD this year, and he has taken a fellowship at USC Burn Center in Los Angeles. He will obtain not only burn training but critical care certification as well. This combination will make him unique among burn surgeons, truly being able to provide comprehensive care.
students into specialty clinics (including Plastics and Orthopaedics) where they help patients address their information and communication needs to assure patients are as informed and involved in their treatment decisions as they wish to be. She is an oversight committee member for the Clinical Translational Research Science Award and supports several junior faculty as mentor on sponsored research developmental awards. Dr. Kerrigan is collaborating with researchers from Memorial Sloan Kettering to develop outcome measures for women undergoing breast surgery. She has also focused on clinical outcomes of needle aponeurotomy for Dupuytren’s and utilizing patient reported outcomes in common hand problems as a bedside diagnostic tool. In addition, Dr. Kerrigan spent much of the year participating in Dartmouth’s new degree program: Masters in Health Care Delivery Science. She is also working to spread the integration of patient reported measures to more programs within D-H as well as to other health systems, the latter in collaboration with the Dartmouth Institute (TDI). Mitchell Stotland, MD is exploring perceptual response to facial difference; the effect of isolated muscle paralysis on emotional processing; shared decision making in adolescents contemplating craniofacial reconstruction; and is involved in a new project evaluating a novel approach to total ear reconstruction. Emily Ridgway, MD published the following papers this year: “Staged scalp soft tissue expansion before delayed allograft cranioplasty: a technical report,” Neurosurgery. 2012 Sept; along with “Sternal nonunion: a novel approach to reconstruction,” Eplasty. 2012. In addition, she has submitted two book chapters: one on TRAM Flap Breast Reconstruction, and a Cleft Palate Review as well as two articles; all awaiting acceptance. Dr. Rosen has a grant entitled, “Armed Forces Institute of Regenerative Medicine (AFIRM),” is the Craniofacial Program Director for the Armed Forces Institute of Regenerative Medicine, Rutgers Cleveland Clinic Consortium; is on the Executive Committee of AFIRM; is Chair of the Clinical and Rehabilitative Advisory Team; and co-investigator on a grant focused on predicting surgical errors. Dr. Rosen led an international surgical team to Vietnam and is developing a network-based telemedicine healthcare system for Vietnam called RICE (Remote Interaction Consultation Epidemiology and Reconstructive International Cooperation Exchange). Dr. Rosen also teaches two courses at the Thayer School of Engineering.

Faculty Highlights
Dr. Kerrigan is a trustee of the American Society of Plastic Surgeons and an evaluator of examiners for the American Board of Plastic Surgery (ABPS). Dr. Rosen was named Chief Medical Officer of AFIRM. Dr. Stotland is Chair of the CHaD Development Committee, is an Oral Board examiner for ABPS, and received research funding this year from KLS Martin, LP for his project entitled, “Assessment of Morselized Cartilage Constructs Implanted Within Resorbable Mold.” As Chief of the Section of Plastic Surgery, Professor of Surgery at Geisel School of Medicine, Director of the Center for Informed Choice, and Medical Director of the Center for Shared Decision Making, Dr. Vidal is engaged in activities aimed at transforming local, regional, and national environments for clinical and translational science. As a leader in Health Care Transparency and Shared Decision-Making, she continues as Curriculum Committee Chair for the Masters of Health Care Delivery Science Program at Dartmouth. This role allows Dr. Vidal the ability to effectively shepherd new advances in health care delivery, oversee quality improvement efforts in the use of health information technology systems, and development of novel clinical and translational methodologies.
**Introduction**
The Section of Solid Organ Transplantation provides comprehensive care to patients in northern New England with end-stage organ failure. This year marks the 20th anniversary of the first kidney transplant here at Dartmouth-Hitchcock (D-H). Since that time, the Section has experienced tremendous growth in both its volume and in the clinical programs it is able to offer. The Section is actively involved in both clinical and outcomes research, national leadership roles within the major transplant organizations, and education for medical students, residents, and fellows.

**Patient Care**

*Kidney Transplant:* Our Program has continued to expand transplant services to patients living in northern New England. We have expanded services in the D-H Manchester clinic to better serve patients living in the southern part of the region. Patients can now be seen at D-H Manchester through all phases of their transplant care.

The D-H Transplantation Program continues to grow with an emphasis on excellence of outcomes and improved patient quality of life. Through the appropriate use of living donor exchanges, and, most recently, the use of novel therapies to decrease antibody levels to permit selected cross match positive transplants, we are bringing state-of-the-art transplant care to our patients and significantly reducing their time waiting for a transplant. Our transplant rate is now two to three times faster than the average in our region and in the nation.

*Pancreas Transplant:* D-H has the largest pancreas transplant program in New England. As in our Kidney Program, pancreas patients are managed without corticosteroids. Immunosuppression is limited to two medications (tacrolimus and mycophenolate mofetil) and is well tolerated by our patients. We are pleased that our first pancreas recipient is over six years out and feeling very well.

*Autoislet Transplantation:* We have recently initiated a program of total pancreatectomy and autoislet transplant for patients with disabling chronic pancreatitis. In cooperation with the Massachusetts General Hospital (MGH), we will isolate their islets, reinfuse them in the liver, and substantially reduce the incidence of post-pancreatectomy diabetes.

*Liver Transplantation and Hepatobiliary Surgery:* At D-H, we offer state-of-the-art care for patients with hepatocellular carcinoma, cirrhosis, or end-stage liver disease in our multidisciplinary liver care center. Here surgeons, hepatologists, oncologists, and interventional radiologists participate in a shared medical appointment providing timely, integrated care on a weekly basis. Liver care has now expanded to include the evaluation and post-operative care of liver transplant patients in cooperation with the Lahey Clinic and MGH. This integrated program allows for seamless continuity between the northern evaluation team and the liver transplant programs. Led by the members of the Transplantation Section, the Program has seen and evaluated over 300 liver patients.

**Education**
The Transplantation Section remains committed to the education of students, residents, fellows, patients, and the community. Currently, fourth-year surgical residents spend three dedicated months on the transplant service participating in all aspects of the service. We also train nephrology fellows, urology residents, medical students, and have recently developed a new transplant medicine rotation for the internal medicine residents. Michael Chobanian, MD, Medical Director of Transplantation, won an award for outstanding teaching.
For our patients, the Section continues to conduct outreach sessions and has sessions planned in Manchester, Portsmouth, and Nashua, NH. These sessions bring together health care professionals, local nephrologists, and transplant patients in community sessions designed to promote an understanding of transplant.

**Research:**
The Transplantation Section has been active in research. An investigator-initiated research program, led by Drs. Zuckerman and Chobanian, has focused on immune reconstitution in immunosuppressed patients, with a specific focus on regulatory T cells. David Axelrod, MD has been funded by the NIH to examine strategies to decrease disparities in access to transplantation. Section research has recently been presented at the American Transplant Congress, the American Society of Nephrology, and the Winter Meeting of the American Society of Transplant Surgery.

**Faculty Highlights**
Members of the D-H faculty are active in the national transplant community. Dr. Axelrod serves as the Chairman of the National Pancreas Transplant Committee of the United Network for Organ Sharing (UNOS).

Richard Freeman, MD, Chair of the Department of Surgery and member of the Transplantation Section, is the current President of the International Liver Transplant Society in recognition of his long standing commitment to developing the art, science, and policies that govern liver transplantation in the US and abroad. He also served as member of the UNOS Board of Directors setting national transplant policy.

**Looking Forward:**
We anticipate continued growth in all aspects of the Transplantation Program. We continue to focus on improving patient outcomes and enhancing our ability to provide timely local care to patients in northern New England. We have embarked on expanded outreach and clinical activities in the southern region to ensure access to efficient care for patients in this area and expanded cooperation with referring providers.
The Section of Urology maintains its role as a regional tertiary service in oncology, lower urinary tract reconstruction, incontinence, and complex stone disease through its assiduous attention to the development of relationships with our referring medical community. The minimally invasive approach to the treatment of prostate cancer, BPH, upper urinary tract malignancies, and stone disorders is an example of the Section’s ability to adopt state-of-the-art technology in the delivery of urologic surgical care.

Patient Care
The growth in the volume of renal surgeries and cystectomies performed at Dartmouth-Hitchcock (D-H) suggests that the comprehensive genitourinary oncological initiative is resonating with our patients and referring physicians. Our high risk bladder cancer quality improvement pathway continues to evolve, ensuring timely, punctilious consultation and treatment to a population of patients whose prognosis is dependent on speedy intervention.

The Section remains on the forefront of the minimally invasive approach to the treatment of genitourinary malignancies and benign disorders of the upper urinary tract. Faculty provide state-of-the-art surgical care to our prostate cancer patients with the aid of the da Vinci robotic surgical platform. Most nephrectomies and nephron-sparing nephrectomies are now performed with the aid of laparoscopic and robotic-assisted techniques. Dedicated PSA/prostate biopsy, hematuria, vasectomy, and metabolic stone clinics represent models of efficient, patient-focused care for common genitourinary problems.

An investment in nursing and administrative support services continues to reward our patients and referring providers with improved ambulatory access with an emphasis on personalized care. Our “nurse navigator” program has been particularly effective in coordinating the evaluation and treatment of patients with complex urological problems through every aspect of their healthcare experience.

The Section is providing ambulatory and surgical urological services at Alice Peck Day Hospital, administering cost-effective care with our community hospital colleagues.

Education
The transition to a five-year residency program continues as we welcome our inaugural group of PGY-2 urology trainees. We believe that the revamped block emphasizes the clinical strengths of the Dartmouth program - surgical mentoring based on a core urological syllabus - without sacrificing the importance of investigatory scholarly activity. Elective flexibility allows residents to gain experience in renal transplantation, urogynecology, and bench research. Senior residents rotate at the VAMC and Concord Hospital, pediatric experience is solidified at the junior and senior levels and our chief residents oversee two adult services at D-H.

The Section welcomes changes made to the third-year surgical core curriculum giving medical students exposure to subspecialty surgery. Vernon Pais, MD now coordinates both third- and fourth-year clerkship programs.

Faculty
The Section welcomes Elias Hyams, MD, a recent graduate of the Johns Hopkins program in minimally invasive surgery, to our faculty. Expert in robotic-assisted radical prostatectomy, Dr. Hyams fills some of the void created by the recent retirement of John Heaney, MD. David Chavez, MD, a graduate of the Dartmouth urology program, is expected to join the Section of Pediatric Surgery in January. A fellowship-trained pediatric urologist, Dr. Chavez will be active in our residency program.

Section members remain active in regional
and national organized urology. Ann Gormley, MD is the Chair of the Urinary Incontinence Network, an investigative arm of the NIH. She is an examiner of the ABU Examination Committee and recently became the President-elect of the NES-AUA. John Seigne, MD serves on the AUA Superficial Bladder Cancer Guidelines Panel and is the Program Director of the Genitourinary Oncology Group at the Norris Cotton Cancer Center. Dr. Pais, the Urological Section Editor of Clinical Nephrology, is the New Hampshire representative to the New England Section of the AUA. David Barrett, MD, a former trustee of the ABU, continues to serve as a board examiner. All faculty serve as reviewers for the major urologic journals.

Research
Collaborating with Ryan Halter, PhD on Alex Hartoff’s NIH funded grant investigating the use of electrical impedance technology in the accurate diagnosis and staging of prostate cancer, members of the Section are engaged in applied research activity at the Thayer School of Engineering. Dr. Pais is advancing our understanding of stone management in pregnancy, the proper use of ultrasonography in ureteral stone treatment, and the role of 24-hour urinary risk factors in stone disease, to name a few. Dr. Pais recently received external funding to evaluate the role of endogenous urinary thiosulfate in stone formation in pregnancy. The Section of Urology had ten presentations at this year’s New England Urologic Annual Meeting, five presentations at the National AUA Meeting, and eight manuscripts accepted in peer-reviewed periodicals.

Looking Ahead
The Section is exploring clinical affiliations with urologists at local medical centers and working to provide tertiary and support services to colleagues in a rural environment. We look forward to initiating a dedicated men’s health clinic focusing on the urological problems of a maturing population.
Our core focus remains the care of patients with vascular disease. Annual outpatient visits continue to increase. As the primary referral center for a geographically large and rural area, we continue to implement various programs to better serve our patients. To do this, we developed an outreach clinic at Cheshire Medical Center in Keene, NH and are working with other community hospitals in both New Hampshire and Vermont to increase access to vascular care. This endeavor is a component in the development of a multidisciplinary Heart and Vascular Center at Dartmouth–Hitchcock.

In addition to developing relationships to increase access to care, we have focused some effort in how we provide care by developing clinical care paths. These care paths have been developed with our colleagues from nursing, cardiology, and vascular surgery, along with The Dartmouth Institute, to develop comprehensive cardiovascular care that is evidence-based and cost effective.

Our open surgical case volume remains steady while our endovascular volume has grown over the last year by six percent. The Branched and Fenestrated Stent Graft Program, for the repair of thoracoabdominal aortic aneurysms, which is led by Mark Fillinger, MD, is one of only a handful of centers in the United States capable of performing this procedure.

Education
Our Vascular Residency Training Program, led by Program Director Dr. Fillinger, continues to maintain its reputation as one of the best in the nation. The fellowship program continues to attract high quality applicants. Andy Hoel, MD and David Kuwayama, MD, our 25th and 26th vascular fellows, completed their fellowship and have taken academic surgery positions at Northwestern University Feinberg School of Medicine and the University of Colorado–Denver, respectively. Replacing Drs. Hoel and Kuwayama is Kristina Giles, MD who completed her general surgery residency at Beth Israel Deaconess. Our Vascular Surgery Residency Program, the first in the nation, is now in its sixth year and is about to graduate it’s first resident, Randy Demartino. The newest addition to the Program is Ryan Svoboda, MD from Penn State University of Medicine.

Section faculty delivered over 45 international, national, and regional education presentations this year of which 30 were for vascular surgical society meetings. Research activity resulted in 23 peer reviewed articles and five book chapters published by faculty this year.

Vascular Surgery conferences are held each Monday morning when faculty and trainees have protected time to attend. These include multidisciplinary biweekly clinical case conferences, a biweekly morbidity and mortality conference, a monthly vascular laboratory conference, clinical and basic science research conference, and journal club.

Research
Ongoing basic science bench research is led by Eva Rzucidlo, MD to study the regulation of smooth muscle cell phenotype. Dr. Rzucidlo has received a Hitchcock Foundation Grant and the Richard W. Dow Career Development Award to investigate the role of connective tissue growth factor in the regulation of vascular smooth muscle cell phenotype. She is currently pursuing RO-I Funding with preliminary data based off of this proposal. Dr. Rzucidlo is local principal investigator for stem cell trials for clinical limb ischemia.

Section members remain heavily involved in industry sponsored clinical trials. Dr. Fillinger is the national principal investigator for the Pythagoras endoprosthesis trial for abdominal aortic aneurysms and is the local principal investigator for several endoprosthesis trials for abdominal aortic aneurysms, thoracic aortic aneurysms, aortic dissection, and traumatic aortic injury. Richard Powell, MD is the national and local principal investigator for stem cell therapy trials for the treatment of critical limb ischemia. He is also national and local principal investigator for peripheral arterial stent trials. In addition, Dr. Powell is the local investigator for multiple carotid stent trials, including the ongoing NIH sponsored CREST Trial. David Stone, MD is the local principal investigator for the Atrium iliac stent graft trial.
Outcomes research is led by Brian Nolan, MD and Philip Goodney, MD who have worked closely with researchers from The Dartmouth Institute for Health Policy and Clinical Practice (TDI). Dr. Nolan has received multiple sources of funding to compare the outcomes of various treatment modalities in patients with critical limb ischemia. Of particular note, Dr. Nolan is in his fourth year of a K-23 Career Development Award from the National Heart Lung and Blood Institute for research in quality of life of patients with abdominal aortic aneurysms and has applied for a matching grant from the American Vascular Association for this project. Steven Woloshin, MD, MS, from TDI, serves as his primary mentor. This is an outstanding accomplishment. Dr. Goodney is now in his third year on his K-08 proposal to study variations in treatment of critical limb ischemia. Funding for his five-year proposal began October 2010.

Jack Cronenwett, MD continues to lead the Vascular Study Group of New England. This multi-institutional group now has more than 12,000 vascular surgery operations analyzed to provide hospital-specific feedback for improving outcomes.

Faculty Highlights
Dr. Cronenwett is the Editor of the textbook “Rutherfords Vascular Surgery.” Robert Zwolak, MD is President of the Society for Vascular Surgery and has been appointed Vice-Chair of AMA/Specialty Society Relative Value Committee Five-Year Review Workgroup. Dr. Zwolak has also been elected Chair of the American College of Surgeons Socioeconomic Issues Committee. Lastly, Dr. Zwolak has been appointed to the Executive Board of the newly established Patient Centered Outcomes Research Institute (PCORI). He is the only surgeon on the Board and this is a tremendous accomplishment. Dr. Fillinger was elected Recorder of the New England Society for Vascular Surgery. Dr. Powell has been elected to serve on the NIH/NHLBI Data Safety Monitoring Board for the CLEVER Trial and has been elected to membership on the Surgery and Bioengineering Study Section of the NIH.

Overall, the members of the Section continue to perform at an outstanding level in their commitment to the care of patients with vascular disease and to the educational and research missions of the Section.

Vascular Surgery Cases

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Vascular Surgery Gross Professional Revenue

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FACULTY

**VASCULAR SURGERY**

Jack Cronenwett, MD  
Professor of Surgery, Community & Family Medicine, and  
The Dartmouth Institute

Mark Fillinger, MD  
Professor of Surgery

Philip Goodney, MD  
Assistant Professor of Surgery and  
The Dartmouth Institute

Brian Nolan, MD  
Assistant Professor of Surgery and  
The Dartmouth Institute

Richard Powell, MD  
Professor of Surgery and Radiology

Eva Rzucidlo, MD  
Associate Professor of Surgery and Pediatrics

Carey Stillman, APRN  
Instructor in Surgery

David Stone, MD  
Assistant Professor of Surgery

Daniel Walsh, MD  
Professor of Surgery

Robert Zwolak, MD, PhD  
Professor of Surgery

**VASCULAR RESEARCH LAB**

Mary Jo Mulligan-Kehoe, PhD  
Associate Professor of Surgery
P. Jack Hoopes, DVM, PhD
Professor of Surgery and Medicine
Adjunct Professor of Engineering
and Senior Lecturer
Director, Surgery and Radiation
Research Laboratories
Co-Director NCCC Cancer
Nanotechnology Working Group

Mission
The Surgical Research Laboratory (SRL) is a 10,000 sq. ft. research laboratory and experimental animal OR facility that is designed to perform basic/in vivo biology and in vivo translational research for improved understanding of disease processes including identification and facilitation of new medical imaging and therapeutic applications.

Faculty and Administration
Immediate supervision and oversight of the SRL rests with Department of Surgery (DOS) Chair, Richard Freeman, MD. The Dartmouth College Provost Office, the Geisel School of Medicine, the Dartmouth College Center for Comparative Medicine and Research, the Norris Cotton Cancer Center, and the Thayer School of Engineering are key research partners and administrative collaborators of the SRL. The full-time SRL support staff includes three veterinarians, one veterinary technician, two research associates, four laboratory/OR managers, and a part-time financial manager. Four DOS professors have dedicated laboratory space in the SRL. More than 25 DOS/D-H/Thayer School surgeons and faculty performed research in the SRL in 2011-12. Twelve graduate students and post-doctoral fellows have a research home in the SRL and more than 40 Dartmouth and non-Dartmouth undergraduates engaged in SRL research projects in 2011-12.

Facility
The basic science component of the SRL (six bench laboratories) includes a complete array of molecular biology instrumentation and techniques such as cell culture; DNA microarray; proteomics array; northern, western, and southern blots; ELISA; RT-PCR; autoradiography; etc. The SRL has dedicated expertise in histologic preparation and staining/labeling techniques including histochemistry, immunohistochemistry, in situ-hybridization as well as fluorescent microscopy, and automated/computer-based microscopic image analysis/quantification.

A six room state-of-the-art experimental animal operating facility, which includes a lead lined radiation suite, performs a wide variety of animal species ranging from rodents to all commonly used large research models including pigs, rabbits, sheep, and spontaneous canine tumors (pet dogs) treated with curative SRL surgical and imaging techniques include state-of-the-art animal anesthesia delivery and monitoring, dedicated clinical fluoroscopy/angiography, ultrasound, and an ionizing radiation laboratory. The facility contains five permanent and two mobile operating microscopes, suitable for conventional and microsurgery applications.

NCCC Director, Mark Israel, MD, SRL Director, Professor Hoopes, and research colleagues recently developed a Small Animal Imaging Resource in the Center for Comparative Medicine and Research. This shared resource, which is staffed and directed by the SRL faculty, includes rodent dedicated MRI, CT, PET, ultrasound, fluoroscopy/angiography and bioluminescence, and fluorescence imaging instrumentation. Instrumentation currently available for large animal imaging includes MRI, CT, and PET as needed at D-H. Clinical ultrasound and fluoroscopy/angiography imaging is dedicated in the SRL OR suite. The SRL staff also has expertise in instrumentation for endoscopy, laparoscopy, and radiation therapy/treatment planning. Taken together, research animal based imaging and surgery technology and instrumentation is at the forefront of the national research effort in this area. The NIH/D-H supported Advanced Surgical Center (ASC), funded in 2010, is now scheduled for completion March, 2013. This facility, one of fifteen in the USA, is a two-room OR facility for clinical patients and selected research animal subjects which includes built-in intraoperative MRI, CT, and bi-planar fluoroscopic/angiography technology. The D-H facility is the only one in the USA and Canada to be dual-fitted for animal-based surgical research and clinical patients.

SRL Resident and Non-Resident Faculty (50 active Dartmouth faculty users)
Active, Resident SRL Faculty (11): Mary Jo Mulligan–Kelhoe, PhD, David Roberts, MD, Kathleen Martin, PhD (adjunct), Mark Savellano, PhD, Kimberly Samkoe, PhD, Karen Moodie, MS, DVM, Brian Pogue, PhD, Eunice Chen, MD, PhD, Eva Rzucidlo, MD, and P. Jack Hoopes, DVM, PhD. Four of these faculty members (Drs. Pogue, Samkoe, Roberts and Hoopes) have primary or adjunct appointments at the Thayer School of Engineering.

Active, Non-resident DOS Faculty (14): Scott Lollis, MD, Thadeus Trus, MD, Cherie Erkmen, MD, Mitchell Stotland, MD, Richard Powell, MD, Michael Zegans, MD, Christopher Chapman, MD, Rajan Gupta, MD, Joseph Rosen, MD, Michael Zegans, MD, Richard Freeman, MD, Joseph Paydarfar, MD, Daniel Morrison, MD, Benoit Gosselin, MD, James Saunders, MD, and Burt Eisenburg, MD.
Active, Non-DOS D-H/Geisel Faculty (10): Dept. of Medicine (A. Kaplan, R. Rothstein, L. Jarvis, D. Gladstone, L. Lewis, B. Williams), Dept. of Radiology (J. Weaver, B. Gimi, N. Khan, H. Swartz), Dept. of Orthopedics (S. Mirza), and Dept. Microbiology and Immunology (S. Fiering).


Funded research projects include:
- Antibody and non-antibody directed iron oxide nanoparticle breast and ovarian cancer treatment (NIH NCI U54, ACS/NCCC internal, NIH SBIR awards);
- Development of iron/iron oxide nanoparticles (NIH U54 and foundation award);
- Natural Orifice Transluminal Endoscopic Surgery (NOTES) (CIMIT/NIH award);
- Assessment of novel surgical mesh material (industry);
- Noninvasive microwave imaging and heating techniques (ACS/NCCC internal award);
- Electron paramagnetic resonance assessment of O2 levels in radiation tissue damage (NIH P01, U19 award, DOD award, Robert W. Crichlow Career Development Award);
- Radiation innovation and development research (NIH P30 award);
- Assessment of novel electrocautery technology (industry);
- Photodynamic therapy: treatment efficacy and mechanism (NIH R01, P01, and K01 awards);
- Use and development of fluorescence and near infrared (NIR) in cancer imaging, diagnosis, and treatment (three NIH R01 awards);
- Development and assessment of interventional cardiovascular models and technologies (NIH SBIR and industry funding);
- Anti-angiogenesis and associated developmental biology (NIH R01 and foundation awards);
- Electrical impedance spectroscopy and tomography imaging technology (NIH-NCI P01 and R01 breast cancer imaging awards);
- Protein engineering for diagnosis and therapy of cancer and developmental disease (NIH U54, P20, and NSF);
- Development and assessment of absorbable surgical staples (industry/OPUS-KSD Inc.);
- Novel treatment of spinal cord injury (industry);
- Use of novel preservation methods to improve transplant organ health (industry/Somahlution Inc.).

Educational/training activities:
- Microsurgery GME course (plastic surgery).
- Medical student suture training course.
- Introduction to aseptic training technique.
- Advanced trauma surgery and life support (ATLS) training course.
- Animal surgery training (all Dartmouth researchers who perform surgical techniques).
- Head and Neck surgical training (oral, skull-base, throat).

2011-12 Grant and Contract Funding
Research (2011-2012) associated directly with the SRL facility and faculty is supported by 38 funded research grants (22 as Principle Investigator/PI). DOS-SRL research funding accounted for more than $3 million annually. The majority of this funding is provided by peer review funding mechanisms. The SRL continues to be the central research facility for an NCI Center of Cancer Nanotechnology Excellence (CCNE) grant awarded in 2010. The original award for this five-year grant was $12.8 million, with total funding now over $3.5 million annually. Ten CCNE faculty and staff and eight graduate students, representing more than 50% of the total CCNE award, are associated with the SRL. Work is proceeding towards a breast cancer clinical trial, which will be directed by Dr. Eisenburg, DOS surgeon and Deputy Director of the NCCC.

2011-12 Publications: Resident SRL faculty accounted for 107 published manuscripts and more than 75 full-length published proceedings.
Introduction
Oral and Maxillofacial Surgery provides a diverse spectrum of care ranging from primary to tertiary levels. We are seeing an increase in the number of complex cases involving pathological and structural deformities of the maxillofacial region being referred to Dartmouth-Hitchcock from the tri-state area.

Patient Care
Dr. Addante participates in a number of D-H interdisciplinary care clinics. He is a key member of the Craniofacial Anomalies Clinic and interacts on the Head and Neck Cancer team and tumor board. He also provides care for patients from the Hematology Oncology Section who typically exhibit coagulation disorders and immune suppression along with their need for oral surgery intervention. Cases involving the care of patients who have undergone radiation therapy as a component of their head and neck cancer care or who develop osteonecrosis as a consequence of bisphosphonate use are also included in the mix of patients with significant co-morbidities.

Education
Rocco Addante, DMD, MD remains active academically as a journal reviewer for articles submitted for publication to the Journal of Oral and Maxillofacial Surgery. In addition, he continues to mentor students from Dartmouth with an interest in careers combining medicine and dentistry and more recently, fourth-year students from Harvard Dental School who rotate through the Red Logan Dental Clinic.

Dr. Addante hosts monthly meetings for D-H dental staff, and he regularly presents lectures to members of the dental community on topics of mutual interest. He serves on the Anesthesia Review Committee for the State of New Hampshire which credentials oral surgery offices and care providers for the administration of sedation and anesthesia. He also lectures to the Operating Room Technicians Program group at D-H.

Nationally, he has completed a long tenure on the Commission of Professional Conduct of the American Association of Oral and Maxillofacial Surgeons and as a member of the Examination Committee for the America Board of Oral and Maxillofacial Surgery. Although there is no residency program in Oral and Maxillofacial Surgery at D-H, Dr. Addante maintains close affiliations with the Sections of Plastic Surgery and Otolaryngology and is an active contributor to the training programs in each of these specialties.
The evolution of our medical school into The Geisel School of Medicine at Dartmouth (GSM) has begun the process of a change from the traditional two-year basic science, then two-year clinical medical education, to a longitudinal (integrated) four-year curriculum. We are most excited that initial funding is in place. In the longitudinal curriculum, Surgery will play a role in the earliest development of a clinician in such areas as acute care assessment, communication skills, and informed consent.

The LCME re-accreditation process is fully underway with the formal review in March, 2013. The LCME process has allowed us to adjust goals, expand our clinical offerings, and consequently improve our flexibility for student experiences. Our clerkship educational focus remains on basic surgical principles and acute care assessment. Otolaryngology, Orthopedics, Urology, a Community Surgery practice, and Neurosurgery are the newest part of our rotations. This expansion allows us to keep the surgery experience within The Geisel School of Medicine/ Dartmouth-Hitchcock environment, and adds experience opportunities as we evolve to a longitudinal curriculum. Exclusively in the Surgical Clerkship and in keeping with the discipline of acute care, students are exposed to and actively participate in the Critical Care Units, Emergency Room, and with Anesthesia. Additionally, the interactive decision making with other “invasive” disciplines such as Gastroenterology, Endoscopy, or Interventional Radiology offers perspective, broadens choices, and educates students with respect to risks and benefits beyond just “pills or invasive procedures.”

Gina Adrales, MD, a six-year member of our faculty, has formally taken on a leadership role in the Clerkship. Her experience in developing and instructing simulation lab models is an important aspect of longitudinal education integrating basic science and clinical medicine, as we guide the least experienced learners through important procedures and medical crises without threatening patients in a high-fidelity, safe learning environment. Dr. Adrales’s surgical focus is in Minimally Invasive Surgery and Endoscopy.

The 2012 Arthur Naitove Surgical Scholar, awarded by the Department of Surgery and based on: an honors evaluation on the wards, a 95 percentile or greater NBME exam, and evidence of participation in efforts to “better the greater good,” was awarded to Anna Eley, who is taking her training at the University of California at Davis, and plans a general surgical career. The Class of 2012 graduated with 31% of the students entering an acute care field: Anesthesia (9%), Emergency Medicine (4.5%), and Surgery (17%).

In 2013, the Department of Surgery will continue to foster a culture of learning by providing diverse learning opportunities for students, residents, and attending surgeons. By supporting an environment in which feedback is freely given and welcomed, with the ultimate goal of providing the best patient care, we are reminded that at all levels we are learners and strive for continuous improvement.
GENERAL SURGERY RESIDENCY TRAINING PROGRAM

Concord General Surgery Residency Program Director
Joseph P. Meyer, MD
Adjunct Associate Professor of Surgery

Concord General Surgery Residency Program Faculty
Sharon I. Gunsher, MD
Adjunct Assistant Professor of Surgery

Richard K. Murphy, MD
Adjunct Assistant Professor of Surgery

Nick P. Perencevich, MD
Clinical Associate Professor and Instructor of Surgery

Joseph R. Snow, MD
Adjunct Assistant Professor of Surgery

Russell A. Strong, MD
Adjunct Assistant Professor of Surgery

Christian P. Wilke, MD
Adjunct Assistant Professor of Surgery

GENERAL SURGERY
Residency
Established: 1946
Prerequisite Training: 4 years of medical school
Program Description: 5-year program, training in all division.
Residents per year: 4

Fellowship
Minimally Invasive Surgery Fellowship: 1

The General Surgery Residency Program trains twenty categorical general surgery residents, including four residents at each of the five levels of residency training. In addition, twelve more surgical residents participate in the General Surgery Program preliminary to entering other training programs.

Residents benefit from the rich array of surgical cases. As Mary Hitchcock Memorial Hospital continues to grow, surgical cases have not only continued to increase in number, but also in complexity as measured by case mix index and severity of injury for trauma patients.

The Program draws on the strengths of a committed departmental faculty and a growing array of resources. Gina Adrales, MD serves as Director of Surgical Simulation in Dartmouth-Hitchcock’s Patient Safety Training Center. Dr. Adrales’s responsibilities include oversight and coordination of the laparoscopic and trauma simulations as well as training in basic surgical skills. In addition, the Program includes a weekly “academic half-day.” This half day of didactics also incorporates a basic science curriculum directed by Ken Burchard, MD and a broad-based simulation training curriculum directed by Dr. Adrales. These sessions provide the surgical residents didactic, interactive, case-based learning in clinical and basic surgical sciences. The didactic curriculum is based on The ICU Book for PGY 1-2 residents and Sabiston’s Textbook of Surgery for the PGY 3-5 residents. The American College of Surgeons SCORE Curriculum is available as a resource as well.

The Program is supported by a growing array of data centers that collect and analyze information about procedures and outcomes for surgical patients admitted to DHMC. These include registries administered by the Surgical Outcomes Assessment Program at Dartmouth, the Northern New England Cardiovascular Disease Study Group, and the Vascular Study Group of Northern New England. Specific complications are identified, collated, and sorted into defined categories. Data from these centers are made available in a confidential manner to house officers and faculty, and can be used to inform the discussion at the weekly Morbidity & Mortality conference. The Department of Surgery participates in the American College of Surgeons National Surgical Quality Improvement Program (NSQIP). Expertise in epidemiology and statistical...
analysis is available by dedicated faculty in the Department of Surgery. Data from the Trauma Program is submitted to the National Trauma Data Bank (NTDB), and national data is available for review.

The Program consists of rotations at Dartmouth-Hitchcock, the Veteran’s Administration Medical Center, and a rotation at Concord Hospital (a large community hospital) for second- and third-year surgical residents. This rotation at Concord Hospital allows us to take further advantage of the robust clinical volumes and increasing case complexity occurring in southern New Hampshire.

The teaching conference schedule within the Program remains robust. Conferences are available on a weekly basis on various services. These include GI Tumor Board, Trauma Rounds, Surgical Seminars, Surgical Grand Rounds, Morbidity & Mortality conference, an interdisciplinary Gastrointestinal Disease Conference, a monthly Journal Club as well as service-specific conferences. The Program hosted twelve visiting professors who presented Grand Rounds and interacted with residents and faculty.

The General Surgery Residency Program is an academic program that encourages and supports resident research and teaching. Residents are encouraged to participate in clinical and/or basic science investigation. Three funded positions are available for residents to participate in full-time research activities usually for two years between the third- and fourth-years of training. This has been highly successful with residents in the Program producing numerous scientific presentations at national and regional meetings, multiple peer-reviewed publications, and even mention in regional and national media. Resident teaching has also maintained its outstanding tradition with surgical residents yearly receiving recognition from the medical students at The Geisel School of Medicine for their outstanding efforts.

Fellowship programs in laparoscopic surgery and vascular surgery are supported by the Department. In addition, the opportunity exists to obtain fellowship training in our multidisciplinary critical care training fellowship.
The Dermatology Residency Program trains six advanced dermatology residents, two residents at each of the three levels of residency training. Our three-year curriculum emphasizes graduated clinical autonomy while maintaining a strong focus on academic study. A Dartmouth-Hitchcock joint fellowship in Dermatopathology (with the Department of Pathology) graduated a fellow last year.

Our residents receive their training through the Dartmouth-Hitchcock (D-H) and the Veterans Affairs Medical Center (VA) in White River Junction, VT. Residents benefit from a rich array of dermatological cases, from the general dermatology clinic, busy and challenging consult service, and specialty clinics at D-H and the VA.

The Dermatology Residency Training Program draws on the strengths of a committed section faculty and a growing array of resources. The dermatology residents rotate and actively participate in the Section's subspecialty clinics, including:
- Contact and Occupational Dermatology Clinic (Dr. Zug, attending)
- Cutaneous Lymphoma Clinic (interdisciplinary with hematology/oncology) (Dr. Zug and Frederick Lansigan, MD attending)
- Dermatology-Rheumatology Clinic (interdisciplinary with rheumatology) (Dr. Torti and Lin Brown, MD rheumatology attending)
- Pediatric Dermatology Clinic (Nicole Pae, MD attending)
- Mohs and General Dermatologic Surgery Clinic (Faramarz Samie, MD, Director and attending)
- Laser and Cosmetic Dermatology Clinic (Dr. Chapman, attending)
- Vulvar Dermatology Clinic (interdisciplinary with GYN) (Lynette Magness, MD and Deborah Birenbaum, MD, OB/GYN attending)

Residents quickly flourish in their clinical decision making skills because of their continuity clinic experience that begins in the first year and continues throughout their three program years. Residents benefit from graduated responsibility and increased complexity of patients over the years.

All residents are well aware of the six ACGME competencies: 1) patient care, 2) medical knowledge, 3) practice-based learning and improvement, 4) systems-based practice, 5) interpersonal and communications skills, and 6) professionalism. Curriculum is based on these competencies, and residents are taught and evaluated with respect to these core competencies.

The educational conference schedule within the Dermatology Residency Training Program remains robust. Conferences include a noon conference on most days of the week (clinical slides, didactic lectures, journal club, and dermatopathology practical sessions at the microscope) and Melanoma Tumor Board. Dermatology Grand Rounds occurs twice a month as well as a monthly interdisciplinary Cutaneous Lymphoma Tumor Board.

The Dermatology Residency Training Program hosts visiting professors who present lectures in their areas of interest. The visiting professor participates in Grand Rounds and interacts with residents and faculty.

We are an academic program and continue to encourage and support resident research and teaching. Our residents have continuously produced numerous abstract presentations at national and regional meetings and several peer-reviewed publications.

Residents’ work accepted for publication 2011-2012:


Aelayna Meyer, MD – Meyer A, Aaron D, Perry A, Guill M. Erythematous Reticular Patches: A Rare Presentation of Mid-Dermal Elastolysis. Accepted to Journal of the American Academy of Dermatology in April 2012.


Residents’ Abstracts and Presentations in 2011-2012:

Mari Paz Castanedo Tardan, MD
Joyce I. Imahiyerobo-Ip, MD
Jeffrey Tiger, MD
Jill Wallace, MD
The Neurosurgical Residency Program has been an approved training program since its inception in 1947 by Henry Heyl, MD, later the editor of the Journal of Neurosurgery. With a mission to provide the highest level of academic and clinical teaching, the Program has proudly graduated neurosurgeons who have been successful across a wide range of endeavors. Over the past twenty-five years, more than half have gone on to academic positions.

The residency program in Neurosurgery trains seven residents, one at each level of training. The seven-year curriculum begins at PGY-1 with rotations in general surgery, neurology, critical care, and neurosurgery. The PGY 2-5 rotations in clinical neurosurgery are interspersed with dedicated blocks in pediatric neurosurgery as well as related neuroscience disciplines, including neuroradiology and neuropathology. The PGY-6 year provides a twelve-month experience in the laboratory or on independent study, variably involving wet-bench research, clinical investigation, supplementary clinical subspecialization, or study in a master's degree program. Clinical instruction follows graduated progression through increasing levels of intellectual growth, technical proficiency, and clinical responsibility culminating in twelve months as chief resident. By the final year of training, the resident has acquired a broad education, is capable of teaching medical students and junior residents, and is able to operate across the full range of neurosurgical disorders.

The clinical neurosurgical service is founded on a model of subspecialization within Neurosurgery, functioning in multidisciplinary programs of the Medical Center. Residents are fully integrated into the clinical service, each teamed with a faculty member. Residents participate fully in the operating room beginning in their first year and are given progressive responsibility through their succeeding years. All subspecialties of Neurosurgery are represented in the Program by faculty with special training, clinical expertise, and investigative interest.

The teaching conference schedule is rigorous and protected. Conferences include Neurosurgery Journal Club, Grand Rounds, Clinical Case Conference, Morbidity and Mortality, Neuro-Oncology Tumor Board, Neuropathology, Cerebrovascular Conference, Epilepsy Conference, Pediatric Trauma and Tumor Board Conferences, and a weekly case presentation conference with the Program Director.

An active visiting professor program brings four-to-six distinguished academicians each year. In the tradition of Dartmouth’s international reach, neurosurgery residents have joined our faculty in recent medical education initiatives to Vietnam and Uruguay. Residents have an opportunity to participate in national courses and workshops, including those organized by the AANS, the CNS, and the Washington Neuroradiology & Neuropathology Review. Each resident, during their training, attends the Woods Hole RUNN course. Residents actively present and publish their research and clinical investigative work. During 2011-2012, the Program was responsible for 62 publications. Recent residents have won the Shulman Award for the best resident paper at the AANS/CNS Pediatric Section meeting, the Gildenberg Award for the best resident paper at the AANS/CNS Stereotactic and Functional Section meeting, the CNS Walter Dandy Research Fellowship, a CNS Travel Award, the Best Paper at the New England Neurosurgical Society Annual Meeting, multiple NIH awards, and the Retzius Neuroanatomy competition.

State-of-the-art facilities at Dartmouth-Hitchcock, the major teaching hospital of a health care delivery system covering northern New England, include dedicated neurosurgery and neurophysiology laboratories, the Simulation Center, the Advanced Imaging Center, and (under construction) the Advanced Surgical Center, comprised of two operating rooms with intraoperative MRI, CT, and angiographic capability. The Dartmouth Institute for Health Policy and Clinical Practice, the Norris Cotton Cancer Center, and the Biomedical Engineering Program at Dartmouth’s Thayer School of Engineering provide outstanding educational and investigational opportunities for residents in our program.
The Residency Program in Otolaryngology-Head and Neck Surgery at Dartmouth-Hitchcock is designed to provide residents with education in the comprehensive medical and surgical care of patients with diseases and disorders that affect the ears, the upper respiratory and upper alimentary systems and related structures, and the head and neck.

The Program includes the core knowledge, skills, and understanding of the basic medical sciences relevant to the head and neck; the upper respiratory and upper alimentary systems; the communication sciences, including the knowledge of audiology and speech pathology and audiologic and speech rehabilitation; and the chemical senses and allergy, endocrinology, and neurology as they relate to the head and neck area.

The Program also includes the clinical aspects of diagnosis and the medical and/or surgical therapy for prevention of diseases, neoplasms, deformities, disorders and/or injuries of the ears, the upper respiratory and upper alimentary systems, the face, the jaws, and other head and neck systems; head and neck oncology; and facial plastic and reconstructive surgery.

Following completion of the Program, residents should be prepared to care for patients of all ages with medical and surgical disorders of the ears, the upper respiratory and upper alimentary systems and related structures, and the head and neck; to carry out diagnostic evaluations of patients with otolaryngologic disorders; and to carry out the surgical and nonsurgical management of otolaryngologic disorders, including rehabilitation and referral to subspecialists when appropriate.

As a vital adjunct to the acquisition of the required medical knowledge and patient care skills, the resident will acquire the skills needed to practice medicine in a complex medical system. The interpersonal and communication skills needed for such a practice as well as expertise in systems-based practice are continually emphasized and evaluated throughout the residency. Proper professional behavior is fostered as the resident masters the essential skills of practice-based learning that will prepare him or her for a lifetime of learning.

The ACGME granted approval for Otolaryngology to start a new residency program in July of 2008. The Program is now fully populated with five residents, one in each year of training. We graduated our first chief resident in June 2012. Our most recent Residency Review Committee site visit granted us full approval with a 4-year cycle length.

Our residents are quite active in medical student and intern education. They participate and present papers at the New England Otolaryngological Society meetings three times per year and have each presented papers and posters at national meetings.
The residency program in Plastic Surgery trains three residents, one per academic year in a three-year program. Dartmouth-Hitchcock (D-H) provides a comprehensive and broad-based training experience through exposure to the outpatient clinics, minor surgery suite, main operating room, outpatient surgery center, and inpatient wards. Most of our faculty members have fellowship training and subspecialty areas of clinical and research interest, permitting an exposure to a wide spectrum of plastic surgery problems. We assign residents two half-day supervised clinics per week, providing them with a regular opportunity for both new patient workups and follow-up evaluations.

During the final year of the program, the chief resident is given increasing responsibility for coordinating and customizing the educational and clinical aspects of the Program. Residents at every level are involved in the management of all plastic surgical problems presenting through the Emergency Department. Research electives, throughout the residency, provide meaningful learning opportunities. During the chief resident year, the resident may also train overseas.

There are twice-weekly conferences for resident education. In both settings, there is active participation by the resident and attending staff. These conferences address the weekly case log, a journal review, and discussion series which are based on the core curriculum established by the American Board of Plastic Surgery.

The Program supplements the experience at D-H with a dedicated burn rotation at LAC/USC Hospital in a burn unit within the plastic surgery division. Additionally, exposure to private practice setting is achieved with rotations at a well-established group in Maine and a nationally recognized cosmetic surgeon in Miami. Every year our residents present at both national and regional society meetings.

The graduates of the Program have been successful in pursuing fellowship positions. Our most recent graduate, Michael van Vliet, MD, is going to University of Southern California for a Burn and Critical Care Fellowship.
The Dartmouth-Hitchcock Urology Residency Training Program was started in 1949 by William McLaughlin, MD as a two-year urology residency with one resident accepted per year. In 1987, we became a four-year program and in 2006, we were given approval to complete our expansion to two residents per year. Historically, our residents have completed two years of general surgery training prior to entering the urology residency program. As of this July 2012, our residents do one year of general surgery training, which aligns us with most of the other urology residency programs in the Country.

Eight full-time faculty members provide a complete range of subspecialty urologic training. Clinical urology training at Dartmouth-Hitchcock is oriented around the philosophy of resident exposure to continuity of patient care. Residents are assigned on an “apprenticeship basis” to a team of two or three urology attendings. The Section emphasizes one-on-one interaction between the faculty and the resident fostering an apprenticeship style allowing a resident to progress at his or her own pace, although there are expectations for what the resident should accomplish within each year. As we have expanded our resident numbers, we have also adapted certain aspects of a hierarchical model where the Chief Resident runs the in-patient service and is ultimately responsible for assignment of operative cases.

The Urology Residency Training Program has a robust conference schedule which affords residents protected educational time. Research meetings, journal club, urogynecology/female urology case conferences, and faculty led case conferences round out the teaching program. During the summer months, ethics conferences are held in place of Urology Grand Rounds.

Resident research is expected throughout the Urology Residency Program. Our residents routinely present at regional and national meetings.

In May we had three residents present at the American Urologic Associations annual meeting. The usual acceptance rate for abstracts, both poster and podium presentation, is approximately 30% with our program’s acceptance rate being approximately 70%.

The following residents were first authors on podium or poster presentations: Ben Herrick, MD (3); Einar Sverrisson, MD (1); and Levi Deters, MD (1).

Dr. Sverrisson’s poster was chosen as the best poster in the session on bladder cancer basic research. The Bladder Pal, a bladder diary app, developed by Ron Yap, MD from our Concord faculty and studied by Dr. Herrick is being promoted by the AUA as part of their Over Active Bladder Awareness Campaign.
In June we bid farewell to our two Chief Residents, Dr. Sverrisson and Peter Jones, MD. Dr. Sverrisson has started a fellowship in Oncology at Moffit Cancer Institute in Tampa, FL and Dr. Jones has joined a private practice group in Pocatello, ID. Both Drs. Jones and Sverrisson successfully passed Part I of their American Board of Urology exam in July. In July, E. Ann Gormley, MD finished her term as the editor on the AUA/ABU Exam Committee.

Once again we had a very large contingent of residents and faculty at the Annual Meeting of the New England Section. The meeting was held in Boston, September 6-8, 2012. Residents were first authors on eleven presentations. Scott Wiener, GSM 2012, who is now a Urology Resident at University of Connecticut, also presented work that he did with Vernon Pais, MD. The following residents presented at the annual meeting: Johann Ingimarsson, MD (1); Ben Herrick, MD (2); Elizabeth Johnson, MD (2); Levi Deters, MD (1); Cullen Jumper, MD (1); Paholo Barboglio, MD (3); and Larry Dagrosa, MD (1).

Dr. Herrick successfully completed a manuscript of his research on socioeconomic status and stones, which qualified him to compete in the residents’ prize essay contest. We were very pleased with Dr. Herrick’s first place finish in a very competitive field.

Dr. Pais and Scott Fabozzi, MD, from our faculty at Concord, participated in a debate on the surgical treatment of stones. Dr. Gormley moderated a debate on pelvic organ prolapse, and William Bihrlle, MD organized the social program.

Our residents are submitting abstracts to a variety of subspecialty programs that meet throughout the winter and to the 2013 American Urologic Association Annual Meeting in May.

The Section of Urology is busy preparing for a celebration to recognize John Heaney, MD’s contribution to resident education and to our Section. We will have scientific programs on October 19th and 20th with all of the present faculty and many of Dr. Heaney’s former residents presenting.

Amanda Charbono, our Residency Program Coordinator, and Dr. Gormley are beginning to review the applications for our program for 2013. We will be interviewing Oct 31st, Nov 17th, and Nov 27th.

Since the last Surgery newsletter, we have had major changes to our pediatric urology faculty. Leslie McQuiston, MD left in May for a private practice position in Austin, TX and Daniel Herz, MD has announced his plans to move to the University of Ohio in Columbus, OH at the end of the year. Fortunately, we have recruited David Chavez, MD, who will start in January. Dr. Chavez graduated from our program in 1995 and after completing fellowships in both endourology and pediatrics, has been working in Montana. We are looking forward to having Dr. Chavez join our urology teaching faculty.
The residency program in Vascular Surgery continues to maintain its reputation as one of the best in the nation. The overall Vascular Surgery Residency Training Program continues to have two options for training pathways, with both the traditional fellowship and the newer residency program.

The traditional vascular fellowship is a course for residents in the “5+2” pathway, who have completed a five-year general surgery training program. The fellowship continues to attract great applicants from around the country.

Our five-year integrated Vascular Surgery Residency Program is open for applicants who will join after successful completion of an MD program, also known as the “0+5” training pathway. The Dartmouth integrated program was the first approved in the nation, and is now in its seventh year. Our program had its first site visit in 2009 and achieved full five-year reaccreditation by the ACGME. Our most recent resident joining the Program is Ryan M. Svoboda, MD, PGY1, who comes to Dartmouth-Hitchcock from Pennsylvania State University College of Medicine. Randall De Martino, MD is the first resident to begin the Program, and is now in his fifth clinical year as our Chief Resident. Courtney J. Warner, MD, is in her research year pursuing a Masters in Science at The Dartmouth Institute for Health Policy and Clinical Practice.

Both the residency and fellowship programs have robust training with regards to case volume, variety, and complexity, with the complexity ranking among the 90th percentile nationwide. The full spectrum of research opportunities exist, including basic science, engineering, and outcomes-related research, many of which include NIH funding. A large number of databases are available in this regard, ranging from the Section's own database to the regional Vascular Study Group of New England database (founded here by Jack Cronenwett, MD), to a regional and national aortic aneurysm imaging database via M2S, as well as national NIS and Medicare databases. The vascular section continues to be active in nationwide clinical trials, with over thirty such trials currently in various stages. These trials provide patients and trainees access to the latest technology, ranging from devices for endovascular repair of thoracic aortic aneurysms and dissections, to branched-fenestrated aneurysm repair of abdominal aortic aneurysms and iliac aneurysms, carotid artery stenting for stroke prevention, lower extremity and renal artery stenting, and even gene therapy for lower extremity limb salvage.

Training opportunities include dedicated Vascular Surgery conferences held each Monday morning, when faculty and trainees all have protected time to attend. These include multidisciplinary clinical case conferences, morbidity and mortality conference, monthly vascular laboratory conference, clinical and basic science research conferences, and journal clubs. Vascular laboratory training includes dedicated, supervised case review to complete the requirements for credentialing as an MD reviewer. The residency has weekly joint conferences with the General Surgery Residency Training Program as well as patient simulation experiences built into the training program.

The Vascular Programs at MHMH have been successful academically in many regards. Residents and fellows have produced numerous scientific presentations at regional, national, and international meetings, numerous peer-reviewed publications, and awards at our national meeting in multiple years. The Program has been quite successful in training academic vascular surgeons, with the large majority of our trainees joining the faculty at academic teaching institutions.
Under the stewardship of Richard Freeman, MD, the Department of Surgery is increasing its global surgery efforts. In collaboration with Dartmouth College, Geisel School of Medicine, Dartmouth-Hitchcock (D-H), and Partners In Health (PIH), Dr. Freeman demonstrated his commitment to global surgery early in his tenure as Chair by deploying a multidisciplinary surgical team in response to the Haitian earthquake of 2010. Since that initial effort, Rajan Gupta MD, Chief of the Division of Trauma and Acute Surgical Care, has continued to work with PIH by supporting the construction of a new hospital facility in the town of Mirebalais, Haiti.

More recently, we have begun to focus additional resources in Africa. At present, we are working with local physicians in Tanzania; our goal is to advise and assist efforts to improve health care delivery and to improve the quality of surgical outcomes in the developing world.

Drs. Freeman, Finlayson, and Rhynhart travelled to Muhambili University Hospital in Dar es Salaam, Tanzania in the spring of 2012 as the guests of the Chief of Surgery, Dr. Mchembe. We spent a number of days touring their facility, meeting the staff, and learning about health care in Tanzania. Aims of the trip were to explore mutually beneficial collaborations in the clinical, research, and educational arenas. This initial trip forged relationships that resulted in a journey to Dartmouth for a Tanzanian medical student named Gloria Ngaiza. Ms. Ngaiza spent the summer of 2012 observing various surgical services including surgical oncology and plastic surgery. As recently as August, 2012, Dr. Finlayson returned to Tanzania to assist with a SAGES sponsored laparoscopic course which was well received by the Tanzanian surgeons he mentored. We look forward to supporting similar reciprocal exchanges of medical students, surgical residents, and staff surgeons in the coming years. We also are developing relationships in Rwanda. The Human Resources for Health (HRH) Program was established to build the health education infrastructure and health care workforce in order to create a sustainable quality health care system in Rwanda. The HRH Program is a consortium of academic institutions that
are committed to sending full-time faculty to Rwanda to improve teaching, research, curriculum development, and mentorship over a seven year period. Surgeons, internists, nurses, midwives, and dentists will be among the healthcare professionals included in this endeavor. Drs. Finlayson and Freeman, in partnership with Lisa Adams, MD (Infectious Disease), who leads this effort here at Dartmouth-Hitchcock, have secured positions for surgeons as well. Geisel School of Medicine has committed resources to the Program including two full-time FTE’s from the Department of Surgery. Nick Perencevich MD (DC ’69 and DMS ’72), a long-time Dartmouth resident educator and surgeon at Concord Hospital, arrived in Rwanda representing Dartmouth-Hitchcock in August. Dr. Perencevich reports that despite some anticipated growing pains, he has been up and operating. He even performed a case late on a Saturday night (apparently a rare event in that hospital). I am not sure how to translate Dr Perencevich’s nickname, “Nick at Night”, into Kinyarwanda, but we will learn.
In 2012, Dartmouth-Hitchcock (D-H) initiated a new program for patients with a history of chronic pancreatitis who live with severe, unrelenting pain. Chronic pancreatitis is a life-long condition that results from a variety of factors including mutations in the CF gene, hypertriglyceridemia, abnormal ductal development, and alcohol abuse. Patients frequently have severe pain resulting in chronic narcotic dependence, employment disability, and depression.

Chronic pancreatitis requires a multi-disciplinary care approach including pancreatology, interventional gastroenterology, pain management, social work, and surgery. Medical management of this condition can improve nutrition, manage malabsorption from exocrine insufficiency, and improve pain management leading to reduced narcotic requirements. However, for patients who fail medical management, surgery offers improved pain control.

Traditional surgical approaches for patients with chronic pancreatitis include procedures to improve drainage, partial resection of the head of the pancreas, or total pancreatectomy. As these procedures remove functional endocrine tissue, patients frequently develop brittle type 1 diabetes, further impairing their quality of life.

The autoislet cell transplant procedure involves total or near total pancreatectomy, recovery of the islet cells from the resected specimen, and reinfusion of the islets into the patient’s liver via the portal vein. The islets function within the liver restoring glycemic control. In the largest series, two-thirds of patients remained insulin free or required only a low dose of insulin. These patients are largely pain free or on minimal doses of narcotics.

On May 2, 2012, D-H performed our first autoislet transplant. Our patient was a young man who underwent a subtotal pancreatectomy for a disrupted pancreatic duct from severe pancreatitis. He underwent a series of complex endoscopic interventions by Timothy Gardner, MD. Despite these procedures, he had persistent pain. Surgeons Kerrington Smith, MD and David Axelrod, MD removed the distal, 80% of the patient’s pancreas. Dr. Axelrod then drove the pancreas to our partners at Massachusetts General Hospital where the islets were recovered, while Dr. Smith completed the surgical reconstruction. Dr. Axelrod then returned and together they infused the islets into the liver. Interestingly, the patient developed hyperglycemia requiring insulin infusion during the time that the islets were being recovered. Following infusion, his insulin requirement abated. He is now insulin free, off narcotics, and very satisfied.

We have several additional patients who are currently completing their multidisciplinary evaluation and are being prepared for transplant. There are currently no other programs in the North Eastern United States actively pursuing this innovative approach. We anticipate a significant growth in the Program given the large pancreatology care team lead by Dr. Gardner, in Gastroenterology. We are pleased to have developed a true, collaborative, multidisciplinary team lead by Drs. Gardner, Axelrod, and Smith.
Approximately eight million Americans suffer from Peripheral Artery Disease (PAD) which is associated with a 5-year cardiovascular death risk of 20% to 30%. In its most severe form, PAD manifests as Critical Limb Ischemia (CLI) which is defined by severely impaired hemodynamics and chronic ischemic rest pain, ulcers/tissue loss, or gangrene. Mortality and morbidity due to CLI is high. Up to 20% of patients with CLI will die within the first 12 months following diagnosis. The 5-year mortality for CLI is in excess of 70%. As many as 40% to 50% of patients will undergo major limb amputation within 12 months of diagnosis. The ability of this elderly patient population, with many associated comorbidities, to successfully rehabilitate and maintain an independent living status following major limb amputation is poor.

Biologic therapy utilizes various angiogenic growth factors or autologous stem cells in an attempt to improve perfusion in areas of ischemia through the development of new blood vessels from pre-existing blood vessels. This process has been termed therapeutic angiogenesis. The Section of Vascular Surgery at Dartmouth-Hitchcock has been national leaders in both gene therapy and stem cell therapy for patients with CLI. To date, Richard Powell, MD has led several phase II gene and stem cell therapy trials in patients with critical limb ischemia with no alternative options for revascularization. Currently, Dr. Powell is the national PI on a gene therapy trial in CLI patients with poor options for revascularization and a stem cell trial for patients with no option for revascularization. The current techniques utilize autologous stem cells obtained from the bone marrow of the patient. Two different techniques are being studied. The first, a small quantity of bone marrow (50 ml) is removed from the iliac crest and sent to the sponsor during which time the mesenchymal stem cells are expanded in a bioreactor over a two-week period. Following this two-week period, the cells are harvested and returned to the study site at which point they are injected into the ischemic limb. The early phase 2 trial demonstrated a decrease in major amputation and wound worsening in treated patients compared to placebo treated patients. The second technique involves harvesting 250 ml of bone marrow. This is then concentrated in a proprietary cell separation system and then injected at the same time into the ischemic limb. Preliminary results from the phase 2 trial were promising.
2012 AWARDS

The Surgical Chair’s Award
Daniel P. Croitoru, MD

Each year, the Chair of the Department has the opportunity to acknowledge the contribution of an individual, or several individuals, through the Chair’s Award. The Award is intended to recognize an individual’s accomplishments which have especially reflected the ideals or goals for the Department. The 2012 Surgical Chair’s Award recipient is Daniel P. Croitoru, MD.

The Arthur Naitove Distinguished Teaching Award
David W. Johnstone, MD

The Arthur Naitove Distinguished Teaching Award was instituted by the residents in 1997 to recognize a faculty member’s commitment to the housestaff. The Award is presented to an attending staff for their commitment to enhance the residency educational experience. The 2012 recipient of the Arthur Naitove Distinguished Teaching Award is David W. Johnstone, MD.

The Harmes Surgical Scholar Award
David Bauer, MD

The Harmes Surgical Scholar Award is awarded annually to a faculty member(s) at the Assistant or Associate Professor level in the Department of Surgery. The annual financial award is provided over three years to facilitate career development by strengthening individual professional skills; enhancing contributions to the academic, clinical, and administrative programs of the Department; improving the regional and national visibility of DHMC; and increasing each individual’s sense of professional competence and satisfaction. The Harmes Scholar Award for 2012 was awarded to David Bauer, MD.
The Richard W. Dow Career Development Award in Surgery and The Robert W. Crichlow Career Development Award in Surgery

The purpose of these two research awards is to provide protected time for up to 2 early career Department of Surgery (DOS) faculty members to develop research programs that will lead to independently funded careers in clinical, translational, or basic Surgical Sciences. These awards are patterned after NIH Mentored Research Scientist Development Awards (K01). The ultimate goal of these awards is to stimulate career development in surgical research.

The Richard W. Dow Career Development Award in Surgery
Stefan D. Holubar, MD

The Robert W. Crichlow Career Development Award in Surgery
David H. Stone, MD

Department of Surgery Care Path Award
Section of Thoracic Surgery

CARE PATH TEAM: Katie Abraham, RN, Konstantin Dragnev, MD, Cherie Erkmen, MD, Melissa Friedman, Marcia Lowes, Elizabeth Maislen, APRN, Anne McGowan, PA-C, Wendy Oliver, Ellen Parker, RN, Evelyn Schlosser, R.N, Jennifer Snide, Bassem Zaki, MD

Awarded to the Section of Thoracic Surgery for their “Esophageal Cancer Care: A Personalized Patient Care Pathway.”
CLINICAL TRIALS AND RESEARCH

David A. Axelrod
- Transplant Referral Network
- Integrated OPTN-Medicare Data Base
- VAD/Heart Transplant

Richard J. Barth, Jr.
- A Randomized Phase II Study of the Effect of a Low Calorie Diet on Patients Undergoing Liver Resection
- A Phase II Multicenter Randomized Trial of Sentinel Lymphadectomy and Complete Lymph Node Dissection Versus Sentinel Lymphadectomy Alone in Cutaneous Melanoma
- ACOSOG Studies Z10 and Z11

M. Shane Chapman
- Observational Post-marketing Safety Surveillance Registry of Enbrel (Etanercept) for Treatment of Psoriasis
- A 10-Year, Post-marketing, Observational Study of HUMIRA (Adalimumab) in Patients with Chronic Plaque Psoriasis

Eunice Chen
- Using Tissue Oxygen Profiling to Optimize Wound Healing in Irradiated Tissue
- Theranostics for Head and Neck Cancer Using Hypoxia-targeted, Fluorescent Antibody-labeled Nanoparticles (HyFAN)
- Dartmouth Center of Cancer Nanotechnology Excellence Pilot Award, ‘Modulation of Hypoxia to Enhance Nanoparticle Uptake and Tumor pO2 Guided Radiotherapy with Magnetic Hyperthermia
- Identification and Treatment of Hypoxic Tumors with Nanoparticle Hyperthermia Using Murine and Spontaneous Pet Animal Head and Neck Cancer Tumor Models
- EPR Oximetry for Enhancing Cancer Therapy
- Dartmouth Center for Clinical and Translational Science Pilot Project Award
- Triological Society Career Development Award
- SYNERGY Pilot and Collaborative Studies Award

Michael C. Chobanian
- Identifying Epigenetic Role of CNIs in Determining Nephron Number and Renal Disease in Offspring of Female SOT Recipients

Thomas Colacchio
- Advanced Surgical Center for Translational Research at Dartmouth

Louise Davies
- Development of a Thyroid Nodule Registry
- Improving Patient Outcomes via the Clinical Improvement Work of Learners
- Evaluation and Updating of the SQUIRE Guidelines for Scholarly Reports of Quality Improvement Work

Joseph P. DeSimone
- Aortic Stenosis and Pulmonary Hypertension

Burton L. Eisenberg
- The Molecular Actions of Imatinib Mesylate in Gastrointestinal Stromal Tumors (GIST’s)

Cherie P. Erkmen
- Fluorescent Imaging Anastomosis of Esophagectomy

Mark Fillinger
- A Clinical Evaluation of the GORE EXCLUDER Bifurcated Endoprosthesis-low Permeability in the Primary Treatment of Infrarenal Abdominal Aortic Aneurysms (AAA)
- A Clinical Study Comparing Use of the Bifurcated EXCLUDER Endovascular Prosthesis to Open Surgical Repair in the Primary Treatment of Infrarenal Abdominal Aortic Aneurysms (AAA)
- A Clinical Study Evaluating the Use of the Gore Excluder (R) Bifurcated Endoprosthesis-31 mm in the Primary Treatment of Infrarenal Abdominal Aortic Aneurysms (AAA)
- A Phase III Evaluation of the Safety and Efficacy of the AneuRx Stent Graft System in the Treatment of Abdominal Aortic Aneurysm (AAA)
- A Prospective, Multicenter Study of the Ariba Stent Graft System for the Treatment of Abdominal Aortic Aneurysms
- Abdominal Aortic Aneurysms: Analysis of Patient Characteristics and Anatomy Related to EVAR Treatment and Outcomes (AAA-CARE)
- Aneurysm Rupture Risk Analysis
- Branched-fenestrated Endograft Repair of Thoracoabdominal Aortic Aneurysms
- "Characterization of Human Aortic Aneurysm Anatomy Project (CHAP)", Critical Path Initiative, US FDA
- Detection of Aneurysm Size Change Following Endovascular Repair
- Endolix Bifurcated Powerlink Stent System Clinical Study (Size 34 mm Infrarenal Bifurcated Stent Graft)
- Endurant Stent Graft System US Clinical Study-A Prospective, Single-Arm, Non-Randomized, Multi-Center Clinical Study
- Evaluation of EndoRefix Endovascular Delivery System and Staple Study
- Evaluation of the Gore Conformable TAG® Thoracic Endoprosthesis for the Primary Treatment of Aneurysm of the Descending Thoracic Aorta, GORE TAG

Eunice Chen
- Fluorescent Imaging Anastomosis of Esophagectomy

Richard B. Freeman
- Long Term Outcome for Liver Transplantation for Hepatocellular Carcinoma
- Improve Preservation of Kidneys

Philip Goodney
- Towards Cost and Cost Effectiveness with Carotid Artery Stenting and Endarterectomy
- Comparison of Open and Endovascular Treatment of Popliteal Aneurysms
- Understanding Regional Variation in Treatment Intensity with PAD
- Development of a Disease-specific Quality of Life Measure for Patients with Critical Limb Ischemia
- Understanding Regional Variation in Treatment Intensity with PAD
• Development of a Glucose Management Service for Vascular Surgery Patients
• Development of Patient-centered Outcomes Assessment Tools for Patients with Critical Limb Ischemia Following Extremity Revascularization
• Regional Variation in Treatment Intensity with Lower Extremity PAD

E. Ann Gormley
• Examining Outcomes Including Complications with PV Slings Done at the OSC
• UITN Steering Committee Chair

Daniel B. Herz
• Creation of Longitudinal Database for Children Born with Prenatal Hydronephrosis in the State of New Hampshire and Vermont for the Quality Improvement and Best Practice Outcomes

P. Jack Hoopes
• Advanced Surgical Training Center (ASC) at Dartmouth-Hitchcock
• Biological and Physical Determinants for Optimal PDT
• Brain Tumor Fluorescent as a Real-time Marker for Brain Movement /Deformation during Surgery
• Clinical and Basic Science Investigations for Iron Oxide Nanoparticle Hyperthermia and Cancer Treatment
• Dartmouth Center for Cancer Nanotechnology Excellence
• Development and Assessment of a Novel Cardiac/Respiratory Monitoring Neonatal Feeding Tube Combination
• Electrical Impedance-based Imaging of Brain Compliance in an Animal Model
• Evaluation of Healing, Inflammation, and Strength of a Novel Closure Device
• Evaluation of Prototype Electrosurgical Instruments
• Fluorescence Imaging to Optimize Cancer Therapy
• Modeling of Brain Deformation during Surgery
• Molecular Response and Imaging-based Combination Strategies for Optimal PDT
• Multi-project Institutional Nanotechnology Grant Focused on the Use of Antibody and Nonantibody Targeted Magnetic Nanoparticles and AMF Treatment of Breast and Ovarian Cancer
• Natural Oriface Transluminal Surgery Study
• Noninvasive Biochemical-based Cornea Reshaping
• Spinal Cord cooling to Reduce Cord Injury
• Whole Animal Optical and Computed Tomography
• Improve Preservation of Kidneys

Paul Kispert
• Fogarty International Clinical Research Scholars Support Center @ Vanderbilt-AAMC

Mary Jo Mulligan-Kehoe
• The Anti-Angiogenic Mechanisms of PAI-1

Brian W. Nolan
• Quality of Life Measures in Patients with AAA

Vernon M. Pais
• Effect of Ureretal Access Sheath on Renal Hemodynamics
• Management of Ureteral Calculi using Ultrasound Guidance
• 24-Hour Urinary Risk Parameters for Stone Formation

Susan Pepin
• Neuro-Ophthalmological Predictors of Preclinical Alzheimer’s Disease: A Study Using Frequency Doubling Technology
• A 24-Month Double-blind, Randomized, Multicenter, Placebo-controlled, Parallel-group Study Comparing the Efficacy and Safety of 0.5 mg and 1.25 mg Fingolimod (FTY720) Administered Orally Once Daily vs. Placebo in Patients with Relapsing-remitting Multiple Sclerosis
• Functional MRI, Diffusion Tensor Imaging and Eye Movement Recordings of Patients with Saccadic Palsies Following Hypothermic Cardiac Arrest for Aortic Surgery

Sarah N. Pletcher
• Rural Health Care Services Outreach Grant Program

Brian Pogue
• Micro CT/NIR Molecular Imaging of Cancer
• NIRFAST
• Alternative Breast Cancer Imaging Modalities: Project IV
• A Boundary Element Method for High Resolution MRI/NIR Imaging and MicroCT/Fluorescence Tomography
• Frequency Domain Optical Imaging of Breast Cancer
• Optical Imaging Fused with Tomosynthesis for improved Breast Cancer
• Molecular Response and Imaging-based Combination Strategies for Optimal PDT
• A Spatially-modulated Scatter Imaging System to Detect Tumor-Associated Stroma
• Raman Markers of Alograft Osseointegration
• Dartmouth Center for Cancer Nanotechnology Excellence (DCCNE)
• Targeted Photoactivable Nancells Image-based Drug Delivery and Dosimetry in GBM
• Fluorescence Imaging to Optimize Cancer Therapy

Richard J. Powell
• Carotid Revascularization Endarterectomy vs. Stent Trial
• Randomized Double-blind Placebo-controlled, Parallel-group Multicenter Dose Selection Study of Ad2/Hypoxia Inducible Factor-1 / vp16 in Patients with Intermittent Claudication
• Phase II Double-blind, Randomized, Placebo Controlled Study to Assess the Safety and Efficacy of AMG0001 to Improve Perfusion in Critical Leg Ischemia in Subjects who have Peripheral Ischemic Ulcer
• Phase II trial; Use of Tissue Repair Cells (TRCs – Autologous Bone Marrow Cells) in Patients with Peripheral Arterial Disease to Treat Critical Limb Ischemia

David W. Roberts
• Electrical impedance-based imaging of Brain Compliance in an Animal Model.
• Magnetic Resonance Elastography in Hydrocephalus.
• RNS System Long Term Treatment Clinical Investigation
• Microelectrodes in Epilepsy.
• Coregistered Fluorescence-Enhanced Resection of Malignant Glioma
• Advanced Surgical Center for Translational Research at Dartmouth
• Mechanisms of Cognitive Impairment Following Early Life Seizures.
• Preoperative Image Updating for Guidance During Brain Tumor Resection

Joseph Rosen
• AFIRM

Kari Rosenkranz
• Need for Sentinel Node Biopsy in Papillary Carcinoma of the Breast
• Do Intraoperative Steroids Alter Outcomes in Women with Breast Cancer
• The Role of Local Anesthetic ‘BATH’ in Women Undergoing Breast Surgery

Eva Rzucidlo
• Randomized Controlled Study Comparing Treatment of Femoropopliteal Disease with Primary Stenting and Post Angioplasty vs. Primary Stenting and Post Cryoplasty
• Statin Regulation of Connective Tissue Growth Factor in Restenosis
• Effect of Smoking on the mTOR Pathway in a Mouse Model
• Role of CTGF in Vascular Remodeling
• Determination of a Subpopulation of VSMC having Elevated CTGF

James E. Saunders
- Automated System for Digital Measurements of Ear Canal Geometry
- Chart Review of Semicircular Canal Dehiscence: Review of Clinical and Radiographic Findings in 500 Patients
- Cost Effectiveness Model for Cochlear Implants in Low Resource Settings
- Genetic Hearing Loss in Rural Nicaraguan Families
- Hearing Loss and Heavy Metal Exposure in Artisanal Gold Miners
- Hearing Loss in HIV children in Zimbabwe Otitis Media in HIV Children in Tanzania
- Symptomatology and Quality of Life in Acoustic Neurona Patients
- Temporal Bone Abnormalities in Children with CDH23 Hearing Loss

Mark D. Savellano
- New Strategies for Photoimmunodetection/Therapy

John D. Seigne
- Electrical Property Based Image-guided Prostate Biopsy
- Immunotherapy for Renal Cell Carcinoma
- A Tumor Tissue Pharmacodynamic Study of Modified Neoadjuvant Chemotherapy for Muscle-invasive Non-metastatic Transitional Cell Bladder Carcinoma
- Identification of Accessible Biomarkers of Bladder Cancer Treatment Response, Recurrence, and Progression
- Development of a Multi-modal Image Guidance System to Accurately Identify Tumor Location within the Diodey during Robot-assisted Laparoscopic Partial Nephrectomy (RALPN).
- A Pilot Project to Investigate the Ability of Atomic Force Microscopy to Identify Malignant Cells in the Urine

Nathan Simmons
- Translational Development of Implantable Resonators for EPR Oximetry of Deep Tumors and Tissues in a Large Animal Model
- Co-registered Fluorescence–enhanced Resection of Brain Tumors Stage I: Correlation with MR and Biopsy

Kerrington Smith
- Dow Career Development Award in Surgery – Development of an In Vivo Platform for Individualized Therapy for Pancreas Cancer at Dartmouth-Hitchcock

David H. Stone
- Contemporary Results of Thoracic and Thoracoabdominal Aneurysms in Contemporary Practice
- Depression, A Potential Novel Risk Factor for Peripheral Vascular Disease
- SVS Clinical Seed Grant

Mitchell A. Stotland
- Implicit Attitudes Towards Facial Difference
- Prospective Cohort Study to Determine Management of Isolated Orbital Floor Fractures
- Adolescents Contemplating Facial Reconstructive Surgery: Assessing the Need for Decision Support
- Botox Injection Interval and the Potential Permanence of Targeted Muscle Paralysis
- The Psychological and Social Effects of Glabellar Botox Cosmetic (botulinum toxin type A)
- fMRI Responses of Normal Adults to Facial Cleft Disfigurement

Michael E. Zegans
- Standardization of Uveitis Nomenclature Study (SUN)
- Steroids for Corneal Ulcers Trial
- Mycotic Ulcer Treatment Trial

Kathryn A. Zug
- Genetic Predisposition to Allergic Contact Dermatitis

Thadeus Trus
- A Novel Laparoendoscopic Anastomotic Device Development, Testing in a Porcine Model

Dale C. Vidal
- Implementing Shared Decision Making in Clinical Practice: Helping Patients with Spinal Stenosis Make a Treatment Decision: A Randomized Study Assessing the Benefits of Health Coaching
- Implementing Shared Decision Making in Clinical Practice
- Mastectomy Reconstruction Outcomes Consortium (MROC)
- Quality of Life and Patient-reported Outcomes of Reconstruction in Breast Cancer Survivors
- High Value Healthcare Collaborative: Engaging Patients to Meet the Triple Aim
- Continued Access Study of the Mentor Contour Profile Gel
- Study of the Safety and Effectiveness of the Mentor Contour Profile Gel Mammary Prosthesis in Subjects who are Undergoing Primary Breast Augmentation, Primary Breast Reconstruction

Kathryn A. Zug
PUBLICATIONS

CT Surgery

Lawrence J. Dacey


Joseph P. DeSimone

Anthony W. DiScipio


Cherie P. Erkmen

Dermatology

Denise M. Aaron

Faramarz H. Samie

General Surgery

Gina L. Adrales

Richard J. Barth Jr

Kenneth W. Burchard


Thomas A. Colacchio

Burton L. Eisenberg

Horace F. Henriques

Stefan D. Holubar
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<td>Honigsberg E, Trus TL. Paraeosophageal Hernia. In: Dimick JB (ed); Clinical Scenarios in General Surgery. Lippincott Williams &amp; Wilkins. (In press)</td>
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</table>

**Neurosurgery**

**Perry A. Ball**


**Stuart S. Lollis**


**David W. Roberts**


**Holubar SD.** An Economic Analysis of Medical and Surgical Therapy for Chronic Ulcerative Colitis: A Population-Based Study in Olmstead County, Minnesota. Mayo Clinic Master Thesis (In press)


Chatterjee A, Holubar SD, Figy S, Chen L, Montagne SM, Rosen J, DeSimone J. Application of Total Care Time and Payment per Unit Time Model for Physician Reimbursement for Common General Surgery Operations. JACS (In press)

**Paul H. Kispert**

Kispert PH. Major Hepatic Trauma: When Failure May be a Success. Accepted Editorial Archives of Surgery 2012

**Kari M. Rosenkranz**

Davis K, Barth R, Gai J, Dann E, Rosenkranz K. The Use of MRI in the Pre-Operative Planning for Women with Newly Diagnosed DCIS: Risk or Benefit? Annual of Surgical Oncology

**Kerrington Smith**

PUBLICATIONS


Nathan E. Simmons


Nathan E. Simmons


Plastic Surgery

Carolyn L. Kerrigan


Kerrigan CL, Desmarais T, Burdette T, Regional Block for Endoscopic Carpal Tunnel, Plast Recon Surg 127(6), online video, June 2011


Kerrigan CL, Slezak S. Evidence-Based Practice of Breast Reduction: An Update and Practice Gap Analysis. Plast Recon Surg. (Accepted)

Kerrigan CL: Video Discussion on “Assessment of Post-Operative Venous Thromboembolism Risk in Plastic Surgery Patients Using the 2005 and 2010 Caprini Risk Score.” (Accepted)

Emily B. Ridgway


Ophthalmology

Susan M. Pepin


Michael E. Zegans


Pavan-Langston D, Welch K, Zegans ME. Ganciclovir Gel for Cytomegalovirus Keratouveitis. ophsal 2012 (Accepted)

Ford JR, Tsui E, Lahaye T, Zegans ME. Ophthalmology: Acute Retinal Necrosis. (Accepted)

Otolaryngology

Joseph A. Paydarfar


Surgical Research Lab

Mary Jo Mulligan-Kehoe


P. Jack Hoopes

Brian W. Pogue


PUBLICATIONS

Transplant

David A. Axelrod


Freeman RB and Bernt J. Ethical Issues in Organ Transplantation in Progress in Cardiovascular Diseases, Butterly J ed (In press)

Christopher E. Simpkins


Urology

William Bihrlie, III

E. Ann Gormley


Elias S. Hyams


Vascular

Jack L. Cronenwett


PUBLICATIONS


Mark F. Fillinger


Philip P. Goodney


Brian W. Nolan


Eva M. Rzucidlo


David H. Stone


Richard J. Powell


Robinson W, Schanzer A, Goodney PP

Richard J. Powell
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