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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ADMINISTRATION
Richard Freeman, Jr, MD
William N. and Bessie Allyn
Professor and Chair of Surgery
Kerry Ryan
Director
Administrative Associate in Surgery
Linda Barie
Administrative Manager
Audrey Carr
Financial Manager
Jo-Ann Dugdale
Administrative Assistant
Nino Dzebisashvili
Statistical Research Analyst
John Higgins
Data Center Manager
Terri Nicholson
Clerkship Program Coordinator
Laura Stancs
Assistant to the Chair

DEPARTMENT OF SURGERY
Sarah Pletcher, MD
Assistant Professor of Surgery
Medical Director,
Center for Telehealth
The Department of Surgery at Dartmouth Hitchcock/Geisel School of Medicine continues to build on past accomplishments and explore new directions. We have highlighted in this report new opportunities and developments that have occurred in 2013. Consistent with Dartmouth-Hitchcock’s primary goal to enhance population health, 2013 has been a year of expansion of surgical services into our surrounding communities. We have developed relationships with four community hospitals at which Dartmouth-Hitchcock surgical faculty now spend a significant amount of their time practicing. Currently, we have members of our sections of Urology, Otolaryngology, and General Surgery regularly seeing patients and operating at these community sites. These arrangements allow patients to have access to an academic medical center level of surgical care while remaining much closer to their homes. This also allows Dartmouth-Hitchcock to support health care in the local communities. There are numerous examples where these arrangements have enhanced transitions of care, both to the tertiary levels of care when needed, as well as enabling transfers back from the academic medical center to the local community when tertiary care is no longer required. All of this is managed by our surgeons who practice in both settings. In addition, we are actively working to improve our coordination with our established surgeons who practice in our five community group practice sites to help advance surgical sub-specialist services in these communities as well. All of these new venues will also allow us to expand our educational offerings. In fact, some of our surgical residents and medical students are now getting one-on-one experiences as a result of developing these community based faculty. We envision these efforts as important components of delivering and teaching more rational, accountable, surgical care in the right place, at the right time.

Our global surgery program is continuing to develop. We now sponsor at least one faculty member in Rwanda through the Clinton Foundation’s partnership with the Rwandan Health Ministry. We welcomed Dr. Peter Bendix back to complete his surgical training after his two year project measuring the burden of surgical disease in Mozambique. We are continuing to explore additional relationships in Haiti and Tanzania through Dartmouth-Hitchcock’s Global Health Initiatives Program.

The Center for the Evaluation of Surgical Care (CESC) is also taking shape under the able guidance of Dr. Phil Goodney. Working with collaborators at The Dartmouth Institute (TDI), he is developing a Dartmouth Surgical Atlas that will provide an important resource for better understanding the breadth and depth of surgical care across the nation. This new compilation will hopefully highlight where there are unexplained variations in surgical care and offer opportunities to improve surgical decision-making by using these comprehensive data.

These are just a few areas where our department is making significant strides academically and clinically. I invite you to read further to find more specific details about the great accomplishments and work underway in our department.

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

MESSAGE FROM THE CHAIR
### DEPARTMENT STATISTICS 2013

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### Department of Surgery Total Cases

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INTRODUCTION
The Section of Cardiothoracic Surgery, consisting of the Divisions of General Thoracic Surgery and Cardiac Surgery, continues to offer a full range of focused and innovative surgical options to all patients with surgical diseases of the thorax. With this increased specialization of the cardiothoracic surgical faculty, the Section has witnessed an increasingly complex caseload with excellent outcomes while it continues to be an institutional leader in inpatient, outpatient, and referring physician satisfaction. 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, critical care service, and operating room environment.

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. Joseph DeSimone, MD continues with 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?metrics=CT.

The Aortic Center at Dartmouth continues to thrive under the directorship of Anthony DiScipio, MD. This multidisciplinary initiative offers patients with complex diseases of the thoracic aorta many of the most sophisticated surgical interventions performed today. Patients with life-threatening aortic diseases can now be evaluated and electively treated by the most advanced imaging and therapeutic modalities available and by a team of professionals dedicated to understanding and treating these conditions.

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 is 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 refining a care pathway for esophageal cancer patients. This will provide optimum care in a timely fashion.
RESEARCH WITHIN THE SECTION OF CARDIOTHORACIC SURGERY

Research opportunities for faculty and residents continue within the Section. Under the direction of Dr. DeSimone, we are continuing to enroll patients into a 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 robust through our collaboration with the Northern New England Cardiovascular Disease Study Group (NNE) cardiac 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 Cherie Erkmen, MD, 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.cfm?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
Associate Professor of Surgery

Jamie McCormack, PA-C
Instructor in Surgery

Robert Miljan, PA
Instructor in Surgery

James Yun, MD, PhD
Assistant Professor of Surgery

THORACIC SURGERY

Daniel Chentorycki, PA
Instructor in Surgery

Cherie Erkmen, MD
Assistant Professor of Surgery and Medicine

Elizabeth Maislen, APRN
Instructor in Surgery

William Nugent, Jr, MD
Professor of Surgery, Community & Family Medicine, and The Dartmouth Institute

Cardiothoracic Surgery Gross Professional Revenue

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INTRODUCTION

Much time has been spent this year on settling into our space in the Heater Road medical office in Lebanon. On November 12, 2013, we will celebrate our one year anniversary at D-H Heater Road location. This year has seen many changes for Dermatology, but we have continued to meet and exceed our productivity benchmarks while increasing our efficiency and expanding our services.

PATIENT CARE

Dermatology outpatient care continues to achieve very high patient satisfaction, while improving our patient volumes. We have increased access by hiring a new staff physician, Dorothea Barton. Dr. Barton completed her Dermatopathology Fellowship at Dartmouth this June bringing a new spin to our Faculty. Additionally, she offers a joint clinic with Rheumatology on a monthly basis. Our patient satisfaction has increased as we have settled into our new space at Heater Road. Patients are overjoyed with the improved access due to additional exam rooms, ease of parking, and the bright, beautiful facility itself.

Our section is consistently working on efficiencies including a focus on seeing our patients within the appropriate timeframe. Under the leadership of a Greenbelt project, we have reviewed our nurse workflow and made changes that reduce wait time throughout the clinic. Our staff routinely present cost savings ideas as they are discovered throughout the clinic. Through the creation of a Super Surgery Clinic, we have been able to perform excisions on patients in a more timely manner. Our workflow, efficiencies, and use of Epic are examples which such groups as John Hopkins Medical Center and Massachusetts General Hospital have come to observe. We have implemented new equipment including MelaFind and Coolsculpting machines.

EDUCATION

Our Dermatology Residency Training Program continues to move upward under the leadership of Kathryn Zug, MD who is in her third year as Program Director. Our two residents who graduated this past June, Aelayna Meyer, MD and Jeffrey Tiger, MD, have both started Mohs Fellowships. Thomas Knackstedt, MD presented to the World Congress of Cutaneous Lymphoma in Berlin, Germany on “CD30+ Cutaneous T-Cell Lymphoma and Response to Brentuximab Vedotin” during his first year of residency. Mari Paz Castanedo Tardan, MD received the American Contact Dermatitis Society 2013 Mentoring Award. M. Shane Chapman, MD started a joint Melanoma Clinic with Marc Ernstoff, MD which our residents participated in. As we continue to grow we have the hopes of adding a seventh resident to our program in the near future.

RESEARCH

Our section began working with the Clinical Research Unit (CRU) office this year and is continuing to participate in multiple industry-sponsored trials and enrolling patients.

FACULTY HIGHLIGHTS

Dr. Zug was quoted in the July edition of Prevention “The Allergen Hiding in your Makeup” which focused on the allergen methlisothiazolinone. Drs. Chapman and Zug made the NH Top Doctors list. In June, Dr. Chapman and one of our third year residents, Jill Wallace, MD traveled to Kenya on a medical volunteer trip through Free the Children, Me to We and Passion to Heal. Richard Baughman, MD was honored with Emeritus Status. Dr. Chapman received a grant through Dartmouth SYNERGY: The Center for Clinical and Translational Science for studying Personalized Photodynamic Therapy (PDT) for Improved Treatment of Lethal Skin Lesions. Faramarz Samie, MD, PhD is working on a care path for Mohs micrographic surgery.
LOOKING AHEAD
We want to continue to make our section a leader in office innovation and efficiency, while maintaining high patient satisfaction. Dermatology is looking to hire additional faculty, including a second Pediatric Dermatologist as well as expanding our staff through the addition of Physician Assistants. Through this additional staff we will continue to improve access as we continue developing our relationship with Primary Care. We are also committed to making the Section of Dermatology a leader in outpatient clinical efficiency. Dermatology continues to look to the future of establishing a department with a connection in the southern region.

FACULTY
DERMATOLOGY
Virginia H. Arvold, PA-C (VA)
Denise Aaron, MD
Assistant Professor of Surgery
Dorothea Barton, MD
Assistant Professor of Surgery and Pathology
John Bocachica, MD
Assistant Professor of Surgery
M. Shane Chapman, MD
Associate Professor of Surgery
Marshall Guill, MD
Assistant Professor of Surgery
Nicole Pace, MD
Assistant Professor of Surgery
Faramarz Samie, MD, PhD
Assistant Professor of Surgery
Kathleen Zug, MD
Professor of Surgery

Dermatology Gross Professional Revenue

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INTRODUCTION
The Section of General Surgery, on a daily basis, strives to accomplish the 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 NEW INITIATIVES
During the past year, we have established a new model for integrated surgical care with our neighboring community hospitals. D-H general surgeons have begun, for the first time, to evaluate and operate on patients in nearby community hospitals. This model will optimize patient care by providing ambulatory surgical care in the community setting, while fostering referrals to the academic center for patients with more complicated conditions. Since 2011, Timothy Siegel, MD has been caring for patients and teaching medical students at both DHMC and Alice Peck Day Hospital. This Spring, Brent White, MD and Sean Bears, MD have also joined this model, dividing their efforts between DHMC and Mt. Ascutney Hospital or New London Hospital, respectively. This initiative has been so successful that Valley Regional Hospital, in Claremont, wishes to participate and New London and Alice Peck Day Hospitals both desire to utilize additional surgeons in this model.

Kerrington Smith, MD in collaboration with Timothy Gardner, MD from Gastroenterology and David Axelrod, MD from Transplant, has performed the first islet cell transplantation at D-H for patients with diabetes. This required a substantial team effort both to coordinate and implement. Drs. Smith and Gardner have also been fortunate to secure a major development gift that will support the general surgery laboratory now and a pancreas center in the future.

Dr. Siegel, having met the requirements for board certification in Palliative Care, has now begun to serve as the first surgical attending on the Palliative Care Service at DHMC.

The Trauma and Acute Care Division, boasting six members who are double boarded in surgery and critical care medicine, has now assumed complete responsibility for the care of trauma and acute surgical patients in the intensive care unit. In the past, these patients were jointly cared for by surgeons and medical intensivists.

We have greatly expanded the role of advanced practitioners in our section. Priscilla Marsicovetere, PA is now a vital part of the Colorectal Surgery Division. Deborah Upton, APRN, Rachel Sargent, APRN, and Katelyn Husband, APRN have all recently joined the Trauma & Acute Care Division to streamline and improve inpatient care.

QUALITY PATIENT CARE
Our General Surgery providers performed 3,391 operative cases in FY13 and had 12,881 outpatient clinic appointments, achieving 99% of our budgeted volumes.

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-one percent of all patients rated their provider overall as excellent.

We have begun a section-wide quality improvement effort to decrease our infection rate after colorectal operations. John Murray, MD, Stefan Holubar, MD, and Richard Barth, MD identified and implemented a best practice intervention bundle, and are actively documenting whether adherence to the bundle affects our NSQIP reported complication rates.

We have also established, within eDH, a comprehensive database to record breast cancer outcomes. We have established a process for populating and updating this database, and look forward to using this information to enhance patient care and breast cancer research.

In FY12 General Surgery contributed over 4 million dollars toward the D-H net operating margin, and have exceeded this performance in the first 9 months of FY13.
EDUCATION
Paul Kispert, MD and Kari Rosenkranz, MD assumed the roles of General Surgery Residency Program Director and Co-Director a year ago. They have improved the method by which new residency candidates are evaluated and have improved the process of current resident feedback and evaluation. Gina Adrales, MD and Andrew Crockett, MD have implemented a new curriculum for medical student teaching. Dr. Thadeus Trus, MD directs a thriving fellowship in laparoscopic surgery. Two graduating chief residents this year entered fellowship training in thoracic surgery (Massachusetts General Hospital and Denver), one is doing an endocrine surgery fellowship at the University of Michigan, and one has stayed at Dartmouth pursuing a Critical Care fellowship.

RESEARCH
The Section continued to add new knowledge to the surgical literature this past year. Dr. Holubar was awarded a Dow-Crichlow Award this year to support his research in optimizing surgical decision making for chronic ulcerative colitis patients in the era of biologic therapy. Dr. Holubar has been an invaluable resource for members of the section working with large national databases. Dr. Rosenkranz is the Principal Investigator on a new breast cancer clinical trial, Z11102, activated by the National Oncology Trial Group Alliance which will determine the local recurrence rate of breast conserving surgery in patients with multicentric cancers. Dr. Barth completed a study in conjunction with Dartmouth Thayer School engineers which showed supine MRI images can be used to intraoperatively precisely define the location of breast cancers. Drs. Laycock, Trus and Adrales demonstrated laparoscopic surgery for paraesophageal hernias is safe in octogenarians. Kenneth Burchard, MD published the second edition of his Handbook of Critical Care. Burton Eisenberg, MD has initiated a new clinical trial, termed the “Genius” study, which plans to determine whether personalized therapy which targets specific mutations in patients with metastatic tumors is more effective than standard therapies.

FACULTY HIGHLIGHTS
Drs. Rosenkranz and Murray 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. Rajan Gupta, MD 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. Drs. Kispert, Rosenkranz, Rhynhart, and Barth hold leadership roles in the New England Surgical Society, with Dr. Kispert serving as Chair of the Program Committee for the 2013 annual meeting. At DHMC, Eric Martin, MD has expanded his role to include an Emergency Management Co-Medical Directorship. Horace Henriques, MD has assumed the clinical leadership role in Care Management.

TAKING STOCK AND LOOKING AHEAD
The General Surgery leadership team — Catherine Garfield, Sr. 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.
FACULTY

GENERAL SURGERY

Gina Adrales, MD
Associate Professor of Surgery

Richard Barth, Jr., MD
Associate Professor of Surgery

Sean Bears, MD
Assistant Professor of Surgery
(Community Surgeon)

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

Debra Fournier, APRN
Instructor of Surgery

Benjamin Forbush, MD (VA)
Assistant Professor of Surgery

Rajan Gupta, MD
Associate Professor of Surgery

Horace Henriques, III, MD
Associate Professor of Surgery

Stefan Holubar, MD
Assistant Professor of Surgery
and The Dartmouth Institute

Paul Kispert, MD
Assistant Professor of Surgery
and Anesthesiology

William Laycock, III, MD
Associate Professor of Surgery

Jean Liu, MD (VA)
Assistant Professor of Surgery

Priscilla Marsicovetere, PA-C
Instructor in Surgery

Kari Rosenkranz, MD
Assistant Professor of Surgery

Ellen McKinnon, APRN
Instructor in Surgery

Maureen Quigley, APRN
Instructor in Surgery

Kurt Rhynhart, MD
Assistant Professor of Surgery

Kerrington Smith, MD
Assistant Professor of Surgery

Clare McManus, MD
Assistant Professor of Surgery

Thadeus Trus, MD
Associate Professor of Surgery

John Murray, MD
Associate Professor of Surgery

Jean Liu, MD (VA)
Assistant Professor of Surgery
INTRODUCTION
The Section of Neurosurgery, with its focus on highest quality patient care, education and investigation, has had another successful year. New personnel have brought additional programmatic initiatives to all three of those missions, and core activities of the section have been sustained and refunded. The Section is particularly excited about the imminent opening of the Center for Surgical Innovation, whose intraoperative imaging, digitization and robotic resources align well with our patient, resident and investigator activities.

PATIENT CARE
Although short of a full clinical team most of the year, the Section exceeded its wRVU benchmark by 110%. We continue to provide comprehensive, highly subspecialized neurosurgical care in the areas of intracranial and spinal tumor, degenerative spine, cerebrovascular, peripheral nerve, pediatric, radiosurgery, trauma, and functional neurosurgery. Dedicated faculty, midlevel and resident teams, and multidisciplinary programs in each of these areas provide essential infrastructure. Successful recruitment of Robert Singer, MD, with fellowships in both open cerebrovascular and interventional neurosurgery, substantially augments our capability, particularly in the institution’s neurointerventional program that has thrived under Cliff Eskey, MD, PhD. Development of regional activity in the south continues through outpatient clinics in Manchester.

EDUCATION
The Dartmouth-Hitchcock Neurosurgery Residency Program has had another great academic year. Chief Resident Atman Desai, MD secured a fellowship in complex spine at Johns Hopkins and will be taking a faculty position at Stanford. Joon-Hyung Kim, MD from Cornell-Weill Medical School and first author on a study just published in Lancet Oncology, has joined our resident team. Kimon Bekelis, MD on the American Association of Neurological Surgeons (AANS) Young Neurosurgeons Committee, is now serving on the Executive Committee of the Joint Section on Cerebrovascular Neurosurgery as well as the Guidelines and the Medico-legal Committees of the Council of State Neurosurgical Societies (CSNS), from whom he was awarded a CSNS Socioeconomic Fellowship. Residents presented this past year at the AANS, the Congress of Neurological Surgeons, the Pediatric Joint Section meeting, and the New England Neurosurgical Society (NENS). They participated in the Woods Hole RUNN course and the AFIP/Cook County Neurosurgery, Neuroradiology, and Neuropathology Review courses. Melissa Robb, our Residency Coordinator, was awarded DHMC’s Residency Coordinator of the Year Award. Our first-year elective, Exposure to Neurosurgery, continues to be over-subscribed. A new third-year medical student rotation has been implemented under the direction of Scott Lollis, MD, and fourth year sub-internships have remained popular with both Dartmouth and visiting medical students. Sebastian Rubino, Geisel Medical School IV, won the Shucart Award at this year’s NENS meeting for best student paper, with his presentation, “Outpatient follow-up of non-operative cerebral contusion and traumatic subarachnoid hemorrhage: does repeat head computed tomography alter clinical decision-making?” Coming off a postdoctoral year in the section, MD-PhD student Pablo Valdes, MD continued innovative work in technological development of hyperspectral and dual fluorophore optical imaging.

RESEARCH
Population-based studies by Dr. Bekelis and Dr. Desai in trauma and stroke have generated publications receiving wide attention. Supported by an AANS Dandy Fellowship Award, Dr. Bekelis has continued his work using nanoparticle imaging to investigate the inflammatory response in intracranial aneurysm. Linton Evan, MD worked on acute spinal cord injury as well as glioma volumetric resection analysis. Jennifer Hong, MD investigated helicopter transport for subarachnoid hemorrhage as well as surgical interventions for headache. Dr. Lollis continues to explore the novel imaging technique of magnetic resonance elastography and is developing a research program in image-guided spinal surgery, work that will directly benefit from the Center for Surgical Innovation. Pediatric neurosurgeon David Bauer, MD, received the Harmes Surgical Scholar Award and is working in collaboration with Ryan Halter, PhD, in the Biomedical Engineering program on a new shunt design. New addition Robert Singer, MD, has brought his cerebrovascular laboratory from Vanderbilt, and with the assistance of his research assistant, Imad Khan, also from Vanderbilt, it is already up and running. The NIH-supported fluorescence-guided...
surgery project was successful in its NIH competitive renewal and is investigating dual fluorophore imaging (protoporphyrin IX and fluorescein), new methodologies for quantitative and depth-resolved imaging, and development of a large data base on quantitative tumor fluorescence, which will be expanded to include Johns Hopkins and UCSF this coming year. We are also working with Brian Pogue, PhD, on a successfully NIH-funded project to develop a new EGFR-targeted fluorophore. The section’s long-standing program in image-guidance and computational brain modeling, incorporating Keith Paulsen, PhD, Songbai Ji, PhD, Xiaoyao Fan, PhD, Kolbein Kolste, and Alex Hartov, PhD successfully implemented ultrasound-alone surgical co-registration and further refined its stevovision technology whereby 3D images of the surgical field are fully co-registered. The section continues to work with neuro-oncologist Camilo Fadul, MD, on a glioma vaccine trial.

FACULTY HIGHLIGHTS
Perry Ball, MD, who in addition to operating on complex spine spends part of his time on the Critical Care service, is now directing the Neuroscience Special Care Unit. Recently promoted to full Professor, he continues to serve on the Executive Committee of the Neurosurgical Society of America, its Long-Range Planning Committee which he chairs, and the editorial board of the journal, Neurosurgery. Nathan Simmons, MD, a model of clinical efficiency and productivity in pituitary, complex spine, and intracranial tumor, has expanded his activities to skull base tumor, working closely with ENT surgeon, Jim Saunders, MD. Dr. Simmons continues to lead our weekly operating room scheduling and efficiency committee and this past year has been a principal in the institution’s OR quality improvement safety initiative. Dr. Lollis is focusing his clinical activity in spine, and in synergy with the investigative work outlined earlier. He is overseeing our medical student rotations as well as manning a Manchester neurosurgery clinic. Dr. Bauer’s clinical work in pediatric epilepsy and in spasticity has highlighted his development of a pediatric neurosurgery practice, and has proved a greatly appreciated and invaluable member of the neurosurgery team. Dr. Singer’s arrival, alluded to with respect to his cerebrovascular and interventional activities, has been long-awaited and the source of much excitement. Section Chief David Roberts, MD, rotating off the Executive Committees of both the Society of Neurological Surgeons and the American Academy of Neurological Surgeons, is presently serving as Chairman of the American Board of Neurological Surgeons. He continues on the advisory or editorial boards of the Journal of Neurosurgery, Neurosurgery, and World Neurosurgery, and as editor of Stereotactic and Functional Neurosurgery.

LOOKING AHEAD
With a full complement of physicians, mid-level providers, and residents, the Section of Neurosurgery looks forward to another exciting, productive, and successful year. With the opening of the Center for Surgical Innovation, the resources to further complement and grow our clinical, educational, and research mission will be substantially enhanced.

FACULTY

NEUROSURGERY
Perry Ball, MD
Professor of Surgery and Anesthesiology

S. Scott Lollis, MD
Assistant Professor of Surgery

Amber Merrill, APRN
Instructor in Surgery

Sharon Morgan, APRN
Instructor in Surgery

David Roberts, MD
Professor of Surgery and Neurology

David Sargent, PA
Instructor in Surgery

Nathan Simmons, MD
Associate Professor of Surgery

Robert Singer, MD
Assistant Professor of Surgery and Radiology

Joellen Speaker, MSPA
Instructor in Surgery

Neurosurgery Gross Professional Revenue

Neurosurgery Cases

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INTRODUCTION
With the aging population, we are seeing increased incidence 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 fitting.

PATIENT CARE/FACULTY HIGHLIGHTS
Michael Zegans, MD provides surgical care for patients with complex corneal disorders and uveitis syndromes. Dr. Zegans spends fifty 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. This year he is joined by Robert Schertzer, MD who was in solo private practice in Vancouver, British Columbia, after spending many years in academic medicine at the Kellogg Eye Institute and the University of British Columbia. Dr. Schertzer 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 Geisel School of Medicine (GSM).

Christopher Chapman, MD provides 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. Rosalind Stevens, MD provides comprehensive medical treatment for patients with retinal and macular disease. 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 GSM 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 diplomat 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. Chapman 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 GMS 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 Aarivand 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 principal three-year goal of the Section is starting a residency program. A major step that will help our residency application is the new ophthalmology program being started at the White River Junction Veterans Administration. Our goal is to affiliate our residents with rotations at the VA facility. 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

Robert Schertzer, 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

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**Ophthalmology Gross Professional Revenue**

- FY08: $10M
- FY09: $15M
- FY10: $20M
- FY11: $25M
- FY12: $30M
- FY13: $35M

**Ophthalmology Cases**

- FY08: 300
- FY09: 600
- FY10: 900
- FY11: 1,200
- FY12: 1,500
- FY13: 1,800
INTRODUCTION
Throughout 2013 we continued to focus on our core business of patient care and improving the quality of care that we deliver. As the financial pressures of a changing healthcare landscape continue to increase, efficiency and cost containment are also priorities. Activities surrounding these focus areas consume most of our time and energy, but due to the strong commitment of the faculty and staff, we have also been able to meet the needs of our academic mission through teaching and research.

PATIENT CARE
In June, we graduated our second resident, Laura Shively, MD. Dr. Shively chose to follow her passion of care for the disadvantaged and took a job with the Indian Health Service in Anchorage, Alaska. As one of our first residents, she helped guide the evolution of the residency educational structure. Patrick Tate Maddox, MD, our first graduating resident, easily passed his written and oral boards on the first try and is now a board certified otolaryngologist practicing in Abingdon, VA. Brian Thomas, MD has taken over as Chief Resident, and we welcome Jake Ossoff, MD as our new PGY-1 resident. We are all looking forward to the upcoming year as Mark Smith, MD, our Residency Program Director, prepares to submit a request to increase the number of residents in the Program.

Expanding our view and working toward developing a regional practice strategy became a priority over the course of this year. This sharpened focus was precipitated in part by a downturn in tertiary referrals for large parts of our practice. Increased competition for patients from the academic medical centers in Boston as well as the addition of several otolaryngologists and subspecialty expertise across New Hampshire and Vermont resulted in budget shortfalls across most section subspecialty practices. To meet these challenges, we have been actively seeking ways to increase our presence in the Manchester, NH area and explore new regional practice models. Dr. Morrison started a two-day per week general otolaryngology practice at New London Hospital and will use this experience to shape our response to a rapidly changing health care delivery landscape.

We have been pushing forward with value creation on several fronts. Our head and neck care pathway transitioned to the standardization phase and continues to benefit from the oversight of Sheila Keating, RN, BSN, our Clinical Nurse Navigator. In our next care path project, we have decided to tackle the continuum of care for children referred to us for management of chronic otitis media with effusion (potential myringotomy with tube candidates). In this project we will look beyond our walls and include care delivered at the level of the primary care office. We will also work to develop a care path model that is able to adapt over time as well as capture and study those patients who deviate from the pathway.

EDUCATION
Changes in the structure of the Geisel Surgery clerkship allowed us to be regular participants in this MS-3 clerkship for the first time this past year. In addition to hosting third year medical students in the clerkship, we continue to offer a popular elective in otolaryngology and a sub internship experience. The entire section is energized and enthusiastic about these medical student teaching opportunities. Daniel Morrison, MD, MS and Mark Smith, MD continued their regular involvement in teaching basic exam and assessment skills to students in the Family and Community Medicine and Pediatrics clerkships and will be looking forward to new opportunities as the Geisel curriculum redesign unfolds.

Our relationship with The Dartmouth Institute (TDI) microsystem group continued as we sent another team to participate in ECS 124, serving as a clinical system for the class to study as well as benefitting students in the class. A similar arrangement has us regularly sending clinical teams to the Microsystem Academy Coach-the-Coach Program. Projects completed during the year include an overhaul...
of our hearing aid line of business and a fiscal overhaul of the entire Audiology line of business resulting in a positive operating margin for the first time.

None of these activities move forward without effective leadership. Annette Tietz, our Practice Manager, has been phenomenally effective in her role as a quality improvement leader, personnel manager, and financial guru. Her personality and capability shone brightly as she met the challenges of the past year. Jen Christoffers, RN, NP, joined us as our nurse manager. She has been busy dealing with a significant reduction in our nursing support staff and the continued challenges of turnover within this group. Her energy, enthusiasm, and expertise are clearly evident every day.

FACULTY HIGHLIGHTS
Other significant accomplishments include that of Giri Venkatraman, MD, MBA. Dr. Venkatraman was offered a part-time appointment with the Value Institute and now spends half his time involved in quality improvement work with the Perioperative Center and the Value Institute. James Saunders, MD was appointed the American Academy of Otolaryngology’s International Affairs Coordinator and continues active lines of research in hearing loss in developing countries. Louise Davies, MD, MS remains an active member of the VA Outcomes Group studying treatment decision making for head and neck cancer patients. Eunice Chen, MD, PhD has maintained an active bench research program with funding through the Dow-Crichlow Award.

FACULTY

OTOLARYNGOLOGY
Sharon Bry, APRN
Instructor in Surgery

Eunice Chen, MD
Assistant Professor of Surgery

Louise Davies, MD
Associate Professor of Surgery and Pediatrics

Peter Dixon, PA
Instructor in Surgery

JJ Benoit Gosselin, MD
Associate Professor of Surgery

Ryan McCool, MD
Assistant Professor of Surgery

Daniel Morrison, Jr, MD
Associate Professor of Surgery

Joseph Paydarfar, MD
Associate Professor of Surgery

AUDIOLOGY

Kerry Gudlewski, AUD
Instructor in Surgery

Julie Johnson, AUD
Instructor in Surgery

Maria Stella McHugh, MS

James Saunders, MD
Associate Professor of Surgery

Mark Smith, MD
Associate Professor of Surgery and Pediatrics

Giridhar Venkatraman, MD
Associate Professor of Surgery
INTRODUCTION
The Section of Pediatric Surgery includes Pediatric General and Thoracic Surgery, Pediatric Neurosurgery, and Pediatric Urology. 2013 continued to be a transitional year for the section as changes in healthcare delivery and reimbursements mandated a reorganization of the sections activities.

PATIENT CARE
Striving to provide outstanding surgical health care to the children we serve remains the primary mission of the Section. The Manchester/Bedford facilities have seen increases in the General Pediatric Surgery clinics as the Pediatric Urology clinics were scaled back following the departures of Drs. McQuiston and Herz. Dr. David Chavez joined the section at the beginning of 2013 as the only pediatric urologist in the region. He has rapidly increased his clinical availability in both the Lebanon and Manchester/Bedford campuses. Along with Dr. Latchaw, Dr. Chavez performs outpatient pediatric urology surgery at the Manchester ASC.

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 7 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 most intra-abdominal and intra-thoracic surgical procedures when indicated. Dr. Bauer started the minimally invasive treatment of brain tumors through advance neuroendoscopy techniques which allows tumor biopsy and resection through small openings in the skull.

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 follow-up of infants and children with brain and spinal cord tumors.

Pediatric Epilepsy and Spasticity Programs
David Bauer, MD, established a multi-disciplinary program for the care of children with cerebral palsy who have debilitating spasticity and dystonia. Services offered include orthotics, medication adjustments, Botox injections, and assessment for Baclofen pump placement and selective dorsal rhizotomies. The latter 3 treatment options were not previously offered at DHMC. Surgical therapy for seizure disorders in children is also offered by Dr. Bauer.

Pediatric Genitourinary Robotic Surgery Program
Dr. Chavez offers the only pediatric urology robotic program in northern New England.

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 Dartmouth medical students as well as offering a Sub-internship for 4th year students. All three Divisions participate actively in residency training programs. Dr. David Bauer was an invited speaker at the New England Neurological
Society Annual. Bridget Logan, PhD, APRN, contributed lectures to the Franklin Pierce Physician Assistant Program and worked with the iSURF/INBRE programs teaching research to nursing students.

RESEARCH

Bridget Logan, PhD, APRN, is involved in research correlating psychological and adverse childhood experiences with treatment of voiding dysfunction. Her work has been accepted for presentation to the Society of Pediatric Urologists. Dr. Daniel Croitoru mentored Dr. Andrea Stroud in her research comparing epidural vs. PCA analgesia following pectus excavatum repair which was presented in September, 2013, at the Canadian Association of Pediatric Surgeons.

FACULTY HIGHLIGHTS

The section welcomes David Chavez, MD, pediatric urologist, who arrived 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.

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. Regretfully, Dr. Susan Durham will be leaving DHMC in November, 2013. We wish her well in her new position at FAHC in Burlington, VT. 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.

FACULTY

PEDIATRIC GENERAL AND THORACIC SURGERY

Daniel Croitoru, MD
Associate Professor of Surgery and Pediatrics

Scott Lannon, MSN
Instructor in Surgery and Pediatrics

Laurie Latchaw, MD
Associate Professor of Surgery and Pediatrics

PEDIATRIC NEUROSURGERY

David Bauer, MD
Assistant Professor of Surgery

Susan Durham, MD
Associate Professor of Surgery and Pediatrics

PEDIATRIC UROLOGY

Mary Gheen, PNP
Instructor in Surgery and Pediatrics

Daniel Herz, MD
Associate Professor of Surgery and Pediatrics

Bridget Logan, NP-C
Instructor in Surgery and Pediatrics

Leslie McQuiston, MD
Assistant Professor of Surgery and Pediatrics

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**Pediatric Surgery Gross Professional Revenue**

- FY08: $2M
- FY09: $4M
- FY10: $6M
- FY11: $8M
- FY12: $10M
- FY13: $12M

**Pediatric Surgery Cases**

- FY08: 200
- FY09: 400
- FY10: 600
- FY11: 800
- FY12: 1,000
- FY13: 1,200
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. We are constantly engaged in looking at ways to improve their work and provide better care for our patients. Leaders from the group have been invited to present their work for the Value Institute, various Grand Rounds and other educational forums. We are looking into the future to find more ways to improve and share this work throughout the institution and beyond.

PATIENT CARE
Over the past year, we have worked to design new interdisciplinary clinics which our patients will benefit greatly from and provide care to those less fortunate in various trips to third world countries. We continue to find ways to meet patient demand while balancing financial stewardship and looking at ways to cut expenses and work more efficiently. Now that we have settled in with eDH, we are working on ways to make it the most valuable for our patients, maximizing the use of the After Visit Summaries and the patient portal, myDH. We have found our patients very receptive to these new tools for communication and look for ways they can benefit all of us.

We have recently started an interdisciplinary clinic for our hand patients in which we have Occupational Therapists offering joint appointments. The interdisciplinary nature of these visits makes them convenient and well received by patients. We continue to collaborate regularly with various specialties such as General Surgery, Dermatology, Otolaryngology, Orthopedics, and others.

EDUCATION
We have two third-year residents this year, Sunny Chatterjee, MD and Tom Kosowski, MD. Jeffrey Wu, MD is our second-year resident, and we were joined this year by Tamara Dawli, as a first-year resident. Our residents continue to be an integral part of our program and our faculty enjoy engaging with them in regular lecture sessions and grand rounds, but mainly in day-to-day patient care.

RESEARCH
Carolyn Kerrigan, MD continues to collaborate 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.

Mitchell Stotland, MD has been exploring perceptual response to facial difference; the effect of isolated muscle paralysis on emotional processing, and is involved in a new project evaluating a novel approach to total ear reconstruction.

Joseph Rosen, MD has a grant entitled, “Armed Forces Institute of Regenerative Medicine (AFIRM),” is the Craniomaxillofacial 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. He 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).

Dale Vidal, MD is the coPI on a grant submitted to the Arthur Vining Davis Foundation to allow for the Patient Support Corps, a program that partners students with patients facing difficult medical conditions. She also supports several junior faculty members as mentor on sponsored research developmental awards.

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). Since the start of eDH, she has become more involved in advancements of the EMR,
recently leading and collaborating with clinicians who seek to create patient-care surveys to optimize patient and provider time during their visit.

Dr. Stotland is Chair of the CHaD Development Committee. As part of his work with CHaD, he leads the Craniofacial Anomalies Clinic ("Face of a Child Program"), which is the only comprehensive, inter-disciplinary craniofacial team in Northern New England. With an active patient census of approximately 800 children, 36 half-day clinics per year, and 8 participating specialties (including 4 surgical sections), this is a vibrant and productive program. In addition to the wonderful clinical services that the "Face of a Child" program offers, the past 2 years have seen an astounding burst of patient- and family-centered outreach activities including "family fun days" and Craniofacial families organically coming together to lead the way in fundraising at the CHaD Hero Half Marathon and the Battle of the Badges events. This group raised $30,000 for the Hero Half Marathon in 2012 and $3,000 for the Battle of the Badges in 2013.

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.

In July, Drs. Nigriny and Ridgeway joined Dr. Rosen's international surgical team trip to Vietnam, which is a trip that Dr. Rosen hosts twice per year. Many of the faculty have been involved in Care Path development. Drs. Ridgeway, Vidal, Freed, Nigriny, and Kerrigan have collaborated to redesign their Care Path on Breast Reconstruction, focusing on standardizing practices within the clinic setting.

**FACULTY**

**PLASTIC SURGERY**

**Alison Evans, APRN**
Instructor in Surgery

**Gary Freed, MD**
Assistant Professor of Surgery

**Carolyn Kerrigan, MDCM, MSc**
Professor of Surgery and The Dartmouth Institute

**John Nigriny, MD**
Assistant Professor of Surgery

**Emily Ridgway, MD**
Assistant Professor of Surgery

**Joseph Rosen, MD**
Professor of Surgery and Radiology

**Mitchell Stotland, MD, CM**
Associate Professor of Surgery and Pediatrics

**Dale Vidal, MD**
Professor of Surgery, Community & Family Medicine, and The Dartmouth Institute

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**Plastic Surgery Gross Professional Revenue**

- $20M
- $15M
- $10M
- $5M

**Plastic Surgery Cases**

- FY08: 300
- FY09: 600
- FY10: 900
- FY11: 1,200
- FY12: 1,500
- FY13: 1,800
INTRODUCTION
The mission of the Section of Solid Organ Transplantation and Hepatobiliary Surgery is to improve the lives of patients with advanced organ failure and complex liver disease through innovative, integrated medical and psychosocial care, education, research, and engagement with public policy development. Over the past 21 years, following the first kidney transplant at DHMC, the Section has experienced tremendous growth in both its volume and in the clinical programs. 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 program is actively involved in direct patient outreach through dialysis unit visits, local transplant education, and cooperative relationships with referring providers across New Hampshire, Vermont, and northern New York.

The D-H Transplantation Program continues to grow with an emphasis on excellent outcomes and improved patient quality of life. Through active participation in national living donor exchange programs, 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. Led by Dr. Christopher Simpkins, these programs expand opportunities for donation and contribute to significant reductions in waiting times and wait list mortality. 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. Unique in the region, pancreas transplant recipients are managed without corticosteroids improving quality of life and reducing complications. Immunosuppression is limited to two medications (tacrolimus and mycophenolate mofetil) and is well tolerated by our patients. We have performed over 75 pancreas transplants in the past 6 years and are pleased that our first pancreas recipient is doing well.

Autoislet Transplantation
In cooperation with the section of General Surgery and Gastroenterology, we have initiated a program of total pancreatectomy and autoislet transplant for patients with disabling chronic pancreatitis (TPIAT). Patients are offered a laparoscopically assisted total pancreatectomy. Next, in cooperation with Massachusetts General Hospital (MGH), we isolate their islets from the pancreas, reinfuse them into the liver, and substantially reduce the incidence of post-pancreatectomy diabetes. To date, we have completed a total of 12 procedures. We are pleased that all patients have experienced significant reductions in pain and have minimal insulin requirements. Through the combined efforts of Drs. Gardner, Axelrod, and Smith, DHMC has emerged as the leading center in New England for TPIAT.

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 MGH where Dr. Axelrod also practices. This integrated program allows for seamless continuity between the northern evaluation team and the liver transplant programs. Led by the

David A. Axelrod, MD
Section Chief
Assistant Professor of Surgery, Community & Family Medicine, and The Dartmouth Institute

Koren L. Fay
Transplant Administrator
members of the Sections of Solid Organ Transplantation and Gastroenterology/Hepatology, 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 recently served as the Chairman of the National Pancreas Transplant Committee of the United Network for Organ Sharing (UNOS). He also created and directs the American Society of Transplant Surgeons Leadership Development Programs. Richard Freeman, MD, Chair of the Department of Surgery and member of the Transplantation Section, is the past-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.

FACULTY

TRANSPLANTATION SURGERY
David Axelrod, MD
Associate Professor of Surgery, Community & Family Medicine, and The Dartmouth Institute

Michael Chobanian, MD
Associate Professor of Surgery and Pediatrics

Richard Freeman, Jr, MD
Professor of Surgery

Sarah Parmelee, FNP
Instructor in Surgery

Christopher Simpkins, MD
Assistant Professor of Surgery
INTRODUCTION
The Section of Urology continues to expand its role as a regional tertiary service in oncology, lower and upper urinary tract reconstruction, incontinence, and complex stone disease through the development of relationships with our referring medical and urological community. The minimally invasive approach to the treatment of prostate cancer, 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 genitourinary 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 referring physicians. Our high risk bladder cancer pathway continues to evolve; ensuring consultation and treatment to a population of patients whose prognosis is dependent on time-sensitive 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 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. 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 expanding its community outreach program to the established program at Alice Peck Day Hospital. We have initiated joint recruitment programs with Springfield, Valley Regional, and Mt. Ascutney Hospitals and are exploring collaborative opportunities with New London Hospital.

EDUCATION
The transition to a five-year residency program has been fully implemented. The revamped block emphasizes the clinical strengths of the Dartmouth program - surgical mentoring based on a core urological syllabus - without sacrificing the importance of investigative scholarly activity. Elective flexibility allows residents to gain experience in renal transplantation, urogynecology, and clinical 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.

Change made to the third-year surgical core curriculum, allowing medical students exposure to subspecialty surgery, has resulted in a number of successful urology matches by Geisel students. The last year has seen a threefold increase in the number of medical students applying for fourth year clerkships at D-H.

FACULTY
Our newest faculty, Elias Hyams, MD and David Chavez, MD have rapidly developed robust surgical practices in their respective areas of expertise, namely minimally invasive and pediatric urology. Torrence Wilson, MD, formerly on staff at the Mayo Clinic, joins the Section as staff urologist at the VAMC. Section members remain active in regional and national organized urology. Ann Gormley, MD, Chair of the Urinary Incontinence Network, an investigative arm of the NIH and member of the Residency Review Committee of the ACGME, recently ascended to the presidency of the New England Section of the 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 and the New Hampshire representative to the New England Section of the AUA, was recently invited to serve on the AUA Stone Disease Guidelines Panel. All faculties serve as reviewers for the major urologic journals.

RESEARCH
Collaborating with Ryan Halter, PhD at the Thayer School of Engineering on an NIH funded grant investigating the use of electrical impedance technology in the accurate diagnosis and staging of prostate cancer, Eli Hyams and John Seigne are engaged in applied research activity. Vernon Pais and his resident collaborators continue to expand our understanding of stone epidemiology and stone disease in pregnancy as well as the proper use of ultrasonography in ureteral stone treatment. Working with investigators at the VAMC, faculty and residents have initiated novel evaluative studies in urethral stricture disease and renal cell carcinoma using the Vinci database. The Section of Urology had eight presentations at this year’s New England Urologic Annual Meeting, six presentations at the National AUA Meeting, and eight manuscripts accepted in peer-reviewed periodicals. Our residents have won the prestigious Willscher Award for outstanding research at the last two New England Urologic annual meetings.

LOOKING AHEAD
The challenges presented by a maturing urological workforce and the delivery of specialty care in a rural environment accentuate the need to develop collaborative and innovative programs with our critical access partners.

FACULTY

UROLOGY

David Barrett, MD
Clinical Professor and Instructor in Surgery

William Bihre, MD
Associate Professor of Surgery

E. Ann Gormley, MD
Professor of Surgery

Kelley Hamill Lemay, APRN
Instructor in Surgery

John Heaney, MB, BCh
Professor of Surgery

Elias Hyams, MD
Assistant Professor of Surgery

Vernon Pais, MD
Associate Professor of Surgery

John Seigne, MB, BCh
Associate Professor of Surgery

Rodney Taylor, MD
Assistant Professor of Surgery

Urology Gross Professional Revenue

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<th>Year</th>
<th>Revenue</th>
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<tr>
<td>FY08</td>
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Urology Cases

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<td>FY13</td>
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The Vascular Regenerative Medicine Program includes clinical protocols and trials to utilize autologous stem cell and gene therapy to treat patients with critical limb ischemia. To date we have participated in six clinical trials using either autologous stem cells or gene therapy to treat patients with limb threatening ischemia who have no options for lower extremity revascularization. Richard Powell, MD has served as the national or international principle investigator for these trials.

The Branched/Fenestrated Endovascular Aneurysm Program is led by Mark Fillinger, MD. This program has assumed a nationally recognized leadership role in training vascular surgeons in branched/fenestrated endovascular aneurysm repair. This technique allows for a minimally invasive approach to repair thoracic-abdominal aneurysms that would otherwise require extensive open surgery with a much higher associated morbidity and mortality. This center is one of only a handful in the country capable of repairing complex thoracic-abdominal aneurysm through a minimal invasive endovascular approach.

In order to better provide vascular care throughout our region, we have developed a regional vascular surgery program that includes vascular surgeon Larry Young, MD at D-H Nashua Clinic and William Tanski, MD at D-H-Concord Clinic as well as outreach programs in Cheshire Medical Center in Keene (Eva Rzucidlo, MD), Brattleboro Memorial Hospital in Brattleboro, VT (Daniel Walsh, MD), and the White River Junction Veterans Administration Hospital (David Stone, MD, Philip Goodney, MD, Brian Nolan, MD). These programs allow patients to be cared for locally while having any needed procedures performed in an appropriate hospital commensurate with complexity of the care they require. In the future, we hope to implement telemedicine programs to provide rapid access for our patients and referring physicians in more rural environments.

QUALITY IMPROVEMENT/VALUE BASED CARE
As technology in vascular surgery evolves, expense has assumed an increasing concern in caring for patients with complex vascular disease. The Section of Vascular Surgery has adopted process improvement methodologies to improve efficiency and eliminate waste while maintaining quality in the care we deliver. Many members of the Section, including residents and fellows, have obtained formal training in process improvement methodology through the DHMC Value Institute. Members of the Section have participated in numerous value improvement projects that include:

1. Endovascular Aneurysm repair process improvement project which was led by Dr. Stone and Alexander J. Horvath. This project improved patient flow through the clinic, streamlined instrument use and addressed escalating costs of implantable endografts, and has resulted in an annualized savings of > $400,000.
2. REVAMP Trial which was led by PGY-4 Emily Spangler, MD and Dr. Goodney which focused on decreasing readmissions in vascular patients. Dr. Spangler’s study resulted in impressive improvements in patient engagement in caring for their wounds after surgery — a major cause of readmission — and she was awarded the $25,000 Care Path Award from the Department of Surgery to further her efforts.
3. Varicose Vein project led by Dr. Rzucidlo which focuses on improving education, streamlining the ambulatory care, and expediting access to surgical intervention in patients with varicose veins.
4. Ambulatory Clinic redesign led by Dr. Powell which focuses on minimizing patient wait times while maximizing capacity of the vascular lab and ambulatory clinic.

INTRODUCTION
The members of the Section of Vascular Surgery continue to work together to achieve the mission of the Section which is to deliver patient-centered value based vascular care through innovation, research, and education. The remarkable achievements of the Section have been delivered in a time of tremendous change and uncertainty in the health care system. Despite these challenges we have been successful in maintaining a busy clinical volume, reducing our cost for delivering care, remaining at the forefront of vascular research, and continuing to provide outstanding training for future vascular surgeons.

CLINICAL
Our clinical volume has remained stable. Over the last year we saw 5,492 patients in the ambulatory clinic, performed 514 procedures in the interventional suite, and 970 procedures in the operating room. We continue to develop highly specialized programs in vascular care. These include a regenerative medicine program for critical limb ischemia and branched fenestrated endovascular aneurysm repair program.
The Section continues to participate in quality improvement projects as part of the Vascular Study Group of New England, a consortium of 30 New England hospitals that track key outcomes and processes of vascular health care, and develop regional QI projects. As part of this effort, the Section is able to benchmark its outcomes against others. Successful QI projects have included the increased usage of statin and antiplatelet medication peri-operatively, increased use of patching during carotid endarterectomy to reduce restenosis, reduction of reoperation for bleeding after carotid endarterectomy, and better selection of patients for surgery by more accurate preoperative risk assessment. This regional quality effort, which originated at DHMC, has morphed into the Vascular Surgery Quality Initiative (VQI), a national collaboration of now 280 hospitals in 45 states that have organized 15 regional quality improvement groups, functioning like the VSGNE for regional quality improvement, and using a shared national data registry housed in the SVS Patient Safety Organization.

EDUCATION

The Vascular Surgery Fellowship and Residency Programs are led by Program Director, Dr. Fillinger and Assistant Program Director Dr. Rzucidlo. This year marks the graduation of our first vascular resident Randall DeMartino, MD who has taken a position at the Mayo Clinic in Rochester MN. Benjamin Brooks, MD, a graduate from general surgery residency at Johns Hopkins Hospital, has assumed a staff position at the University of Utah in Salt Lake City, UT. Replacing Randy as chief resident in vascular surgery is Thomas Simone, MD who graduated from Jefferson Medical School. Our chief fellow in Vascular Surgery is Kristina Giles, MD who completed her general surgery residency at New England Deaconess Medical Center.

New additions to the Section include Jesse Columbo, MD our PGY-1 resident who graduated from University of Massachusetts Medical School and Claire Griffin, MD our first year fellow who completed her general surgery training at University of Florida.

RESEARCH

All members of the Section are involved in research. The Basic Science Program is led by Dr. Rzucidlo. We are currently graduating our fourth PhD candidate from the lab. Our lab is investigating the role of several proteins in the vascular remodeling process. We use in vitro and in vivo models to determine the molecular mechanisms which control vascular smooth muscle cell phenotypic change and how these changes affect the other layers of the artery in the remodeling process. From our work in the lab investigating the role of adiponectin (cardioprotective hormone made by adipocytes and vascular smooth muscle cells), we are now undertaking a human trial to determine the role of adiponectin in predicting outcomes in patients with peripheral vascular disease.

The Section has a remarkable track record in outcomes research lead by Drs. Goodney and Nolan. Dr. Goodney, along with co-investigators Drs. Cronenwett, Nolan, and others, were awarded a $300,000 R21 grant from AHRQ (R21HS021581-01A1) to develop and implement a health information technology tool to help surgeons and patients choose whether or not to proceed with asymptomatic carotid surgery.

The Section is heavily involved in clinical trials. This work is supported by three full-time clinical research nurses and an administrative secretary. The Section currently participates in 42 clinical trials that include aneurysm device trials, carotid stent trials, proteomic/genomic trials, as well as gene therapy and stem cell trials. The Section also participates in several NIH sponsored clinical trials including CREST, CREST-2 and BEST. Several members in the Section serve as national or international principal investigators for these trials. Dr. Powell is the National Principal Investigator for REVIVE and RESTORE – CLI Trials examining autologous stem cell treatment for critical limb ischemia. Dr. Powell is also the National PI for AnGES 0206 clinical trial evaluating the use of HGF gene therapy in patients with critical limb ischemia. Dr. Powell is the National PI of the recently completed SuperNOVA trial evaluating the outcomes of the Innova stent in the
superficial femoral above knee popliteal artery in patients with symptomatic peripheral vascular disease. Dr. Powell is also a member of the executive committee of the NHLBI funded BEST trial that compares lower extremity bypass to best endovascular therapy in patients with CLI. This trial has been funded for $23 million dollars over the next five years. Dr. Fillinger is the National PI for the Pythagoras Trial evaluating a novel endovascular graft.

AWARDS

Dr. Mark Fillinger
President-elect New England Society for Vascular Surgery

Dr. Richard Powell
Secretary the New England Society of Vascular Surgery

Dr. David Stone
E.J. Wylie Traveling Fellowship Award from the Society of Vascular Surgery to investigate the cost of endovascular aneurysm repair abroad in capitated systems of healthcare

Award of operational excellence from the Value Institute recognizing EVAR care path quality improvement/cost reduction work

Dr. Daniel B. Walsh
Distinguished Reviewer, Journal of Vascular Surgery

President, Vermont Medical Society

Secretary/Treasurer of the Eastern Surgical Society

Dr. Philip Goodney
Director for the Center for the Evaluation of Surgical Care at Dartmouth Hitchcock

Interim Co-Director of the VA Outcomes Group

Chair of the Research Advisory Committee for the Society for Vascular Surgery’s national Vascular Quality Initiative

Research Advisory Committee for the Vascular Study Group of New England

Dr. Jack Cronenwett
SVS as Co-Editor of the 8th edition of Rutherford’s Vascular Surgery

Dr. Eva M. Rzucidlo
Program Chair for the New England Society of Vascular Surgery

Video Committee Chair for the Society for Vascular Surgery

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
Associate Professor of Surgery and The Dartmouth Institute

Brian Nolan, MD
Associate 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

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
MISSION
The Surgical Research Laboratory (SRL) is a 10,000 sq. ft. research laboratory and experimental animal OR facility designed to perform a wide array in vitro and in vivo translational research studies (including sophisticated surgery and imaging techniques) for improved understanding of disease processes including identification and facilitation of new medical and surgical devices, techniques and therapeutics.

FACULTY AND ADMINISTRATION
Immediate supervision and oversight of the SRL rests with Department of Surgery (DOS) Chair, Richard Freeman, MD, FACS. The facility is directed by P. Jack Hoopes, DVM, PhD (Professor of Surgery, Radiation Oncology and Biomedical Engineering, Director, Center for Comparative Medicine and Research. The Dartmouth College Provost Office, the Geisel School of Medicine, the Dartmouth Hitchcock Medical Center, the Dartmouth College Center for Comparative Medicine and Research, the Norris Cotton Cancer Center, and the Thayer School of Engineering are key research partners, supporters and administrative collaborators of the SRL. The full-time SRL support staff includes three veterinarians (Hoopes, Moodie, Maurer), one veterinary technician and senior OR manager (Kane), two PhD research associates (Petryk, Hodge) two senior bench laboratory managers (Strawbridge, Wagner) and administrative grant/financial managers (Carr, Bursey). Alicea A. Bursey is a new onsite SRL administrator who works with Audrey Carr to oversee budgets, grants and organizational financial matters.

Seven DOS professors have dedicated laboratory space in the SRL. More than 25 DOS/DHMC/Thayer School surgeons and faculty performed research in the SRL in 2012-13. Twelve graduate students and post-doctoral fellows have a research home in the SRL and more than 50 Dartmouth and non-Dartmouth undergraduates engaged in SRL research projects in 2012-13.

FACILITY
Basic Research
The basic science component of the SRL (six bench laboratories) includes a complete array of molecular biology instrumentation and techniques including 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.

Surgical Research
A six room state-of-the-art experimental animal operating facility, which includes a lead lined radiation suite (dedicated cine-fluoroscope/angiography unit and clinical ultrasound), performs an extensive array of animal-based experimentation (all commonly used large research models) including pigs, rabbits, sheep, and spontaneous canine tumors (pet dogs treated with curative intent and long term follow-up). SRL surgical and imaging techniques include state-of-the-art animal anesthesia delivery and monitoring. The facility contains seven permanent and two mobile operating microscopes, suitable for conventional and microsurgery applications.

Animal Imaging Resource
The SRL staff [Hoopes, Moodie, Strawbridge, Kane and Hartov (Thayer image reconstruction engineer)] in collaboration with the Center for Comparative Medicine and Research and the Norris Cotton Cancer Center, oversee the Dartmouth animal imaging shared resource (Director Hoopes). This rodent and large animal imaging facility includes rodent specific MRI, CT, PET, ultrasound, fluoroscopy/angiography and bioluminescence/fluorescence imaging instrumentation and clinical/large animal MRI, CT, and PET ultrasound and fluoroscopy/angiography. The SRL staff also has expertise in the technical aspect and use of endoscopy, laparoscopy, and radiation therapy (linear accelerator) / 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.

Center for Surgical Innovation (CSI)
The NIH/Dartmouth-Hitchcock supported CSI, funded in 2010, is now scheduled for completion November, 2013. This facility, one of fifteen in the USA, is a two-room OR facility for clinical patients, and selected research animal subjects, includes built-in intraoperative MRI, CT, and bi-planar fluoroscopic/angiography technology. The DHMC 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 (10)
M.J. Mulligan-Kehoe, PhD, D. Roberts, MD, K. Martin, PhD (adjunct), M. Savellano, PhD, K. Samkoe, PhD, K. Moodie, MS, DVM, B. Pogue, PhD, E. Chen, MD, PhD, E. Rzucidlo, MD, and P.J. 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 (17)
S. Lollis, MD, T. Trus, MD, C. Erkmen, MD, M. Stotland, MD, R. Powell, MD, M. Zegans, MD, C. Chapman, MD, D. Miller, MD R. Gupta, MD, J. Rosen, MD, R. Freeman, MD, J. Paydarfar, MD, D. Morrison, MD, B. Gosselin, MD, J. Saunders, MD, and B. Eisenburg, MD, J. DeSimone, MD.

Active, Non-DOS D-H/Geisel Faculty (16)
Dept. of Medicine (A. Kaplan, R. Rothstein, L. Jarvis, D. Gladstone, L. Lewis, B. Williams, N. Paradis, T. Sroka, ), Dept. of Radiology (J. Weaver, B. Gimi, N. Khan, P. Kuppassamy, H. Swartz. K. Paulsen), Dept. of Orthopedics (S. Mirza), and Dept. Microbiology and Immunology (S. Fiering, M.J. Turk, PhD).

Active, Thayer School of Engineering Faculty (16)

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, Foundation Award, Industry: Micromod/Aspen)
- Natural Orifice Transluminal Endoscopic Surgery/NOTES) (CIMIT/NIH Award)
- Assessment of novel surgical mesh material (Industry: B&G Medical, Inc.)
- 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 (Salient/Medtronic, Inc.)
- 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 R01 and Foundation Awards)
- Development and assessment of absorbable surgical staples (Industry: OPUS-KSD, Inc.)
- Novel treatment of spinal cord injury (Industry: Thompson MIS, Inc.)
- Use of novel preservation methods to improve transplant organ health (Industry: Somahlution, Inc.)

Maxillofacial Surgery Gross Professional Revenue

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<th>Year</th>
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<tr>
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Maxillofacial Surgery Cases

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• Novel techniques for the treatment of glaucoma (Industry: Euclid Systems Corporation)

• Optimizing cardiopulmonary care during cardiac arrest. (Industry: Zoll Medical Corporation)

• Identification of immune effects associated with protein glycosylation (Industry: Merck/Glycofi)

• Novel cardiovascular stent imaging (Concord Biomedical Sciences and Emerging Technologies)

• Novel endoscopic administration of small bowel wall bulking agent for weight control (Industry: Fractyl, Inc.)

• Ocular implant Lantanaprost for Glaucoma Rx (Industry: Euclid Ocular Systems)

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)

2012-13 PUBLICATIONS
Fulltime resident SRL faculty (Hoopes, Pogue, Mulligan-Kehoe, Rzucidlo, Roberts, Samkoe, and Chen) combined for 91 peer-review publications and more than 55 full-length published proceeding papers in 2012-13.

FACULTY

SURGICAL RESEARCH LABORATORY

Ryan Halter, PhD
Adjunct Assistant Professor of Surgery

P. Jack Hoopes, DVM, PhD
Professor of Surgery and Medicine

Keith Paulsen, PhD
Professor of Engineering and Surgery

Brian Pogue, PhD
Adjunct Associate Professor of Surgery

Mark Savellano, PhD
Research Assistant Professor of Surgery

Kimberley Samkoe, PhD
Research Assistant Professor of Surgery

2012-13 GRANT AND CONTRACT FUNDING
Research (2012-2013) 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.
INTRODUCTION
Oral and Maxillofacial Surgery provides a diverse spectrum of care ranging from primary to tertiary levels. Complex cases involving pathological and structural deformities of the maxillofacial region are 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 potential consequence of bisphosphonate use are also included in the mix of patients with significant co-morbidities. Imbalances in the relationship of the upper and lower jaws are often modified with orthognathic surgery whereby surgery and orthodontics are used in combination to improve facial aesthetics while improving function.

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. His most recent presentations were to the Granite State Dental Society on Hospital Based Oral and Maxillofacial Surgery, the Thayer School of Engineering on Biomaterials used in maxillofacial reconstruction and the Dept. of Oral and Maxillofacial Surgery at Vanderbilt University Medical Center on Updates in Oral Cancer. 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.

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. He has established contacts at the University of Rome La Sapienza (Polyclinic) where he presents and attends cases in their maxillofacial unit on a yearly basis. Although there is no residency program in Oral and Maxillofacial Surgery at D-H, Dr. Addante maintains close affiliations with the Sections of Otolaryngology and Plastic Surgery and is an active contributor to the training programs in each of these specialties.
Maxillofacial Surgery Gross Professional Revenue

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Maxillofacial Surgery Cases

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<tr>
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<th>Cases</th>
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<td>FY08</td>
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2013 has been a banner year for the Surgery Clerkship. Improvements in our clerkship structure and teaching have led to recognition by the students and the Dean’s office. This has been possible through the dedication to teaching demonstrated by residents and faculty across the entire Department of Surgery. This year, Dr. Andrew Crockett joined the Clerkship as Co-Director and Rotation Director for Trauma and Acute Care Surgery. His enthusiasm for teaching and expertise in the care of the acutely ill patient has been invaluable. In the past year, Dr. Adrales and Dr. Crockett have been joined by other surgical faculty in engaging with medical students at all levels of training through participation in the pilot longitudinal curriculum, the Scientific Basis of Medicine second-year course, the Surgery Interest Group, and the Advanced Medical Sciences fourth-year course. These important efforts serve to enrich the student experience during the third-year clerkship and sub-internships by increasing the familiarity of the students with surgical faculty and with the care of the acutely ill patient.

With the conclusion of the LCME review and successful re-accreditation of The Geisel School of Medicine at Dartmouth, we were able to focus fully on curricular improvements to enrich the educational experience for our third-year Surgery students. Based on regular feedback from the students and with the direction of the Clerkship Advisory Board, rapid improvements were made over the course of the year to improve the curriculum and to ensure that our actions and teaching were aligned with Geisel policies. The expansion to other surgical subspecialties, ENT, Orthopedics, Urology, Community Surgery, Pediatric Surgery, Neurosurgery, and Plastic Surgery in addition to our core general surgical services provided an opportunity to explore the breadth of the discipline of surgery and was well-received by the students. While our Clerkship curriculum is centered on basic surgical principles, we have highlighted the multidisciplinary nature of our clinical practices by including pathology case conferences and by adding palliative care teaching with the able direction of Dr. Timothy Siegel. This culminates in a new team-based learning session in which the students explore a clinical scenario from presentation and diagnostic workup to informed consent discussion of recommended treatment and family discussion of the management of the critically ill patient. This highly interactive session incorporates discussion of the value of healthcare, communication skills, the principles of informed consent, and palliative care. The Clerkship concludes with a skills session utilizing our Patient Safety Training Center and simulated patient scenarios of “breaking bad news.”

The 2013 Arthur Naitove Surgical Scholar award is presented by the Department of Surgery and is based on an Honors evaluation on the wards of 95% or greater NBME exam, and evidence of participation in efforts to “better the greater good.” The recipient is Julia Glaser, who is taking her training at the Hospital at the University of Pennsylvania, with plans of pursuing a general surgical career. The Class of 2013 graduated with 38% of the students entering an acute care field; Anesthesia (9%), Emergency Medicine (12%) and Surgery (17%).

In 2014, 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 a team-environment, 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.
In July 2013, two new residents, Lindsey Collins, MD (University of Arkansas for Medical Sciences College of Medicine) and Joan Paul, MD (Albany Medical College) joined our program. They were selected after a very competitive match, as the Program received over 300 applications for our two spots.

Kathryn Zug, MD has been Program Director since November 2010. M. Shane Chapman, MD has been Section Chief of Dermatology since 2011. Both are graduates of our program.

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)
- Laser and Cosmetic Dermatology Clinic
  (Dr. Chapman attending)
- Melanoma Clinic
  (Dr. Chapman attending)
- Mohs and General Dermatologic Surgery Clinic
  (Faramarz Samie, MD, Director and attending)
- Pediatric Dermatology Clinic
  (Nicole Pace, MD attending)
- Vulvar Dermatology Clinic
  (interdisciplinary with GYN)
  (Lynette Margesson, MD and Debra Birenbaum, MD, OB/GYN attending)
- Laser and Cosmetic Dermatology Clinic
  (Dr. Chapman attending)
- Melanoma Clinic
  (Dr. Chapman attending)
- Mohs and General Dermatologic Surgery Clinic
  (Faramarz Samie, MD, Director and attending)
- Pediatric Dermatology Clinic
  (Nicole Pace, MD attending)
- Vulvar Dermatology Clinic
  (interdisciplinary with GYN)
  (Lynette Margesson, MD and Debra 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
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.

2012–2013 RESIDENT AWARDS AND OTHER ACCOMPLISHMENTS

Mari Paz Castanedo Tardan, MD
Mari received the American Contact Dermatitis Society 2013 Mentoring Award. She will study contact dermatitis and analytic methods of allergen identification with Magnus Bruze, in Malmö, Sweden.

Joyce Imahiyerobo-Ip, MD
Joyce received a Women’s Dermatologic Society Mentorship Grant for an elective focusing on skin of color with Dr. Dina Strachan, Aglow Dermatology New York, NY, April, 2013.

Parisa Ravanfar, MD

Jeffrey Tiger, MD
Jeffrey was nominated for Volunteerism and Members Making a Difference Award for his volunteer work at the Chinle Native American Health Services in May, 2013. Sponsored by the AAD Native American Health Services Rotation.

Jill Wallace, MD
Jill volunteered under the auspices of Free the Children, in Baraka Clinic in Masai Mara, Kenya. (Bogani site) June, 2013.

2012–2013 RESIDENTS’ WORK ACCEPTED FOR PUBLICATION


2012-2013 RESIDENTS’ PRESENTATIONS

Knackstedt, T., Poster presentation at the 2nd World Congress of Cutaneous Lymphomas in Berlin, Germany, “CD 30 Positive CTCL and Response to Brentuximab Vedotin”. 2013

Knackstedt, T., Poster Presentation at 2nd World Congress of Cutaneous Lymphomas in Berlin, Germany “Diagnostic Challenges: differentiating Allergic Contact Dermatitis and Early Cutaneous T-Cell Lymphoma. (Zug and Lansigan) 2013

RESIDENTS’ ABSTRACTS AND PRESENTATIONS IN 2012–2013

Mari Paz Castanedo Tardan, MD
Kassie Haitz, MD
Thomas Knackstedt, MD
Joyce I. Imahiyerobo-Ip, MD
Aelayna Meyer, MD
Jeffrey Tiger, MD
Jill Wallace, MD
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 the Dartmouth-Hitchcock Medical Center (DHMC) 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. All incoming categorical and preliminary interns are issues iPads to allow seamless access to EPIC, the platform for our fully integrated electronic medical record.

The Program draws on the strengths of a committed departmental faculty and a growing array of resources. Dartmouth-Hitchcock’s new Patient Safety Training Center contains our center for laparoscopic simulations as well as training in basic surgical skills and advanced training in clinical scenarios. The Program includes a weekly “academic half-day.” This half day of education includes didactic and interactive case-based learning in clinical and basic surgical sciences. The didactic curriculum is based on The Handbook of Surgical Critical Care for PGY 1-2 residents and the SCORE Curriculum for the PGY 3-5 residents. The American College of Surgeons SCORE Curriculum is available as a resource as well for all residents. 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. 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 and for research purposes. 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 which is encouraged.

The Program consists of rotations at the Dartmouth-Hitchcock Medical Center (DHMC), 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 as well as to expose our residents to community practice.
The teaching conference schedule within the Program remains robust. Available conferences 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 hosts many visiting professors who presented Grand Rounds and interact 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 one or two years between the third- and fourth-years of training. Many of our residents have elected to pursue a master’s degree through The Dartmouth Institute, a nationally recognized program providing leaders in health care with comprehensive training in outcome research. This has been highly successful with residents in the Program producing numerous scientific presentations at national and regional meetings and multiple peer-reviewed publications. 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 after the third year of surgical training.

Surgical training is changing. At our center, approximately 80% of our trainees match to highly competitive fellowships and 20% go directly into practice. We have used the Flexibility in Training option through the American Board of Surgery to allow some of our trainees enhanced preparation for fellowship programs. In this program, residents can spend additional time training in one area of interest to enhance their preparation for fellowship training.

The General Surgery Program at DHMC is a rural academic medical center committed to providing superior training to our residents in a professional environment. Our environment is outstanding for individuals who are committed to their training and enjoy the multitude of outdoor activities this region offers.

FACULTY

CONCORD GENERAL SURGERY RESIDENCY PROGRAM DIRECTOR
Joseph P. Meyer, MD
Adjunct Associate Professor of Surgery
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 neurosciences 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, Topic Review, Neuro-Oncology Tumor Board, 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 Neurosurgery Neuroanatomy Review. Each resident, during their training, attends the Woods Hole RUNN course. Residents actively present and publish their research and clinical investigative work. During 2012-2013, the Program was responsible for 70 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 Nifziger 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 the Center for Surgical Innovation, comprised of two operating rooms with intraoperative 3T MRI, CT, robotic radiography, surgical robotics, and angiographic capability. The Dartmouth Institute for Health Policy and Clinical Practice, the Norris Cotton Cancer Center, and the Biomedical Engineering Program at the 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 disorders that affect the ears, the upper respiratory and upper alimentary systems, 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 therapy; and the chemical senses, allergy, endocrinology, and neurology as they relate to the head and neck area.

The program also includes the clinical aspects of diagnosis, therapy (medical and/or surgical), and 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.

Following completion of the program, residents will 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 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. The program was awarded a five-year cycle effective 5/23/2013 based on an ACGME site visit in September, 2012. Dr. Kerrigan, who served as Program Director since 1997, has stepped down from the position effective June 1, 2013. 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 settings 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, has just completed a fellowship in Burn and Critical Care at The University of Southern California and accepted an academic position at the University of Tennessee Health Sciences Center.
The Dartmouth–Hitchcock Urology Residency 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. Our residents enter urology with one year of general surgery training. The Dartmouth–Hitchcock Urology Residency Program is dedicated to the overall mission of the Dartmouth–Hitchcock Medical Center (DHMC) and strives to improve, through research and education, our understanding of the causes, courses, management, and prevention of urologic diseases.

Seven full-time faculty members provide a complete range of subspecialty urologic training. Clinical urology training at Dartmouth 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 Training Program also involves the Veterans Affairs Medical Center (VA) in White River Junction, VT and Concord Urology in Concord, NH. While at the VA, the resident is responsible for the total patient care in the in-patient ward service. The resident operates on virtually all urologic cases with appropriate faculty supervision. The Concord rotation was designed to give our residents exposure to a system that is more of a private practice model. While rotating at Concord, the resident, under supervision, is potentially responsible for total patient care of all urological in-patients. The resident operates three- or four-days per week and, therefore, completes the rotation having improved his or her surgical logs and clinical experience.

The Urology 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. The goal is that all residents will publish and present throughout their residency. Our residents routinely present at regional and national meetings.

Last September we had an excellent showing by our residents at the New England American Urologic Association which we listed in a prior report.

In February 2013 Drs. Barboglio and Ingimarsson presented posters at the Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction in Las Vegas.

- Barboglio P, Triaca V. Is there a relationship between UDI−6 score after surgery for urinary incontinence and urologist perceived improvement?
- Ingimarsson J, Yap R. Holmium laser ablation of the prostate and effects of age on symptom scores, quality of life and complications.

In May we had three residents make five presentations at the American Urologic Associations annual meeting in San Diego. The usual acceptance rate for abstracts, both poster and podium presentation is approximately 30% with our program’s acceptance rate being well above this.


• **Herrick BW**, Yap RL. Laser Prostatectomy in the Severely Ill - Outcomes and Feasibility of a Rapid Ambulatory Discharge Pathway.


• **Moses R**, Laviolette M, Hyams E. Lack of PSA screening is independently associated with adverse health behaviors.

Dr. Deters presented at the Northeast Genitourinary Symposium in April 2013.

• **Deters L**, Recurrent Retroperitoneal Liposarcoma

All of our residents submitted to the Surgical Trainees Advancing Research Symposium at Dartmouth in May 2013. Two of our residents were chosen to present and Dr. Deters was awarded 2nd prize for his presentation.


Once again we will have a very large contingent of residents and faculty at the Annual meeting of the New England Section. The meeting will be held in Hartford, Sept 26-29th.

The following residents will be first authors on 8 presentations.

- Johann Ingimarsson
- Elizabeth Johnson
- Eric Pattison
- Rachel Moses
- Paholo Barboglio

Dr. Rachel Moses successfully completed a manuscript of her research on the epidemiology of changing composition of stones over time which qualified her to compete in the residents’ prize essay contest. We were very pleased to learn recently that Dr. Moses will be awarded first prize. This is the 2nd year in a row that the first prize has gone to a Dartmouth resident as Dr. Ben Herrick placed first in this competition last year.

Drs. Vernon Pais will moderate a stone session and I will give an update on the Operative Bladder Guidelines. Many of the Concord Faculty will be lecturing during the Allied Provider program.

In June we bid farewell to our two Chief residents, Drs. Levi Deters and Cullen Jumper. Dr. Levi has joined a private practice group in Spokane, Washington, and Dr. Cullen has joined a hospital- based practice in Exeter, New Hampshire. Both Levi and Cullen successfully passed Part I of their American Board of Urology exam in July.

In June we also welcomed our new residents. Drs. Kevin Koo, a graduate of Yale School of Medicine and Zita Ficko, a Geisel School of Medicine graduate have started their internships. Drs. Rachel Moses and Joseph Yared joined us in July as first year urology residents. Joseph joined us directly out of his internship whereas Rachel completed her internship in 2012. Rachel spent the past academic year doing outcomes research with the Spine Center. In her spare time she also completed a number of urology research projects.

Our residents are also getting ready to submit abstracts to a variety of subspecialty programs that meet throughout the winter and to the 2014 American Urologic Association Annual Meeting in May.

Bonnie Haubrich, our residency coordinator, and I are reviewing approximately 240 applications for our program for 2014. We will be interviewing at total of 36 candidates Nov 8 and 9 and Nov 19th.

Lastly our residents have had a very productive year in terms of publications. The residents had the following papers published during the 2012-2013 academic year:


• **Barboglio PG**, Gormley EA. Retropubic versus transobturator slings — are the outcomes changing with time? *Curr Urol Rep.* 2013


• **Herrick BW**, Yap RL. It is safe to teach residents laser prostatectomy in the private practice setting. *Urology*. 2013 Mar; 81(3):629-32.


Johnson EB, Gormley EA. The Evaluation of Women with Stress Urinary Incontinence — What is Appropriate?” *AUA Update Series*, Feb 2013


**FACULTY**

**DHMC RESIDENCY PROGRAM**

William Bihrlle, MD
Associate Professor of Surgery
Chair Section of Urology

John Seigne, MD
Associate Professor of Surgery

Vernon Pais, MD
Assistant Professor of Surgery

Elias Hyams, MD
Assistant Professor of Surgery

David Barrett, MD
Clinical Professor of and Instructor in Surgery

David Chavez, MD
Assistant Professor of Surgery and Pediatrics

**CONCORD RESIDENCY PROGRAM**

Ronald L. Yap, MD
Clinical Assistant Professor of Surgery
Concord Program Director

David F. Green, MD
Clinical Associate Professor of Surgery

Scott J. Fabozzi, MD
Clinical Assistant Professor of Surgery

William F. Santis, MD
Clinical Assistant Professor of Surgery

Paul M. Snyder, MD
Clinical Assistant Professor of Surgery

Veronica Triaca, MD
Adjunct Assistant Professor of Surgery

Tom Jackson, MD

Scott Mitchell, MD

Brian Marks, MD
VASCULAR SURGERY RESIDENCY TRAINING PROGRAM

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 has its first site visit in 2009 and achieved full five-year reaccreditation by the ACGME. Our most recent resident joining the Program is Jesse A. Columbo, MD, PGY1, who comes to Dartmouth-Hitchcock from University of Massachusetts Medical School. Randall De Martino, MD, the first resident to begin the Program, graduated on June 25, 2013 and accepted an academic position at The Mayo Clinic in Rochester, MN. Emily L. Spangler, MD, MS is in her research year with a focus on outcomes research using her Masters of Science degree.

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 forty 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. Simulator training sessions are part of regularly scheduled Monday conferences as well to ensure dedicated time and good faculty availability. 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 very successful academically. 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.

RESIDENCY
Established
2007
Prerequisite Training
4 years medical school
Program Description
5-year program, includes 26 months of vascular surgery, 10 months of interventional/endovascular surgery, and 24 months of core general surgery experience. Optional non-accredited research education year (including option for formal coursework at The Dartmouth Institute leading to master’s degree in public health with focus on outcomes research).
Residents per year
1

FELLOWSHIP
Established
1988
Prerequisite Training
4 years medical school & completion of an accredited General Surgery Residency
Program Description
2-year program, includes 16 months of vascular surgery and 8 months of interventional/endovascular surgery.
Fellows per year
1
PROVING THE NEED FOR SURGICAL CARE IN DEVELOPING COUNTRIES

Each year, the Surgical Outcomes Club — a national group of top health science researchers that are committed to improving the practice of surgery — typically convenes just before the American College of Surgeons. It was while attending this meeting last fall in Washington, DC, that Stefan Holubar, MD, heard a name that gave him pause.

“There was a doctor, Stephen Bickler, from the University of California at San Diego, who was presenting on international health initiatives for surgery,” recalls Dr. Holubar. “and out of the blue, he mentions the work of Peter Bendix, MD one of our senior residents at Dartmouth-Hitchcock (D-H). I was aware that Dr. Bendix was doing pretty interesting research, but to be on the radar at a national level already — that’s impressive.”

PROJECT IN MOZAMBIQUE

Dr. Bendix received funding from the National Institutes of Health’s Fogarty International Center Clinical Research Fellowship, to take part in a two-year research project studying surgical care within rural health systems in Mozambique, Africa.

“It was a highly collaborative endeavor, led by the Mozambique Institute for Health Education and Research,” says Dr. Bendix. “Drs. Emilia Noormohamed and Steve Bickler were the principle investigators that I worked under.”

His primary research focus involved trying to estimate the burden of surgical disease in Mozambique’s rural settings. “The idea was to understand how much surgical care is needed for a population, to quantify that and place it in relation to other conditions, like HIV/AIDS and malaria, that currently receive a lot of attention in developing countries,” he explains.

IN THE FIELD

With a research team of 10 field workers and three support staff, Dr. Bendix traveled long distances to rural districts to collect over 6,000 patient interviews. “We went door-to-door, asking a sort of ‘head-to-toe’ questionnaire, trying to determine if people needed surgical care or if they’d had surgery in the past,” he says. “We also took pictures to verify our findings, if they let us.”

While Dr. Bendix found the work rewarding, the experience was not without its challenges. “I had to buy a used 1986 Land Rover and maintain it on my own, so I learned a lot about car repair in Africa,” he says, laughing. “We relied on smart phones to collect data, so I had to engineer these ‘lock boxes’ that also served as charging stations and internet hubs, so we could upload our data each night. Also relating well to our very poor and relatively uneducated field workers, who had to be trained on smart phones, was essential — they helped us translate the questionnaire into 5 different local languages.”

But luck also played a huge role. “A week after we finished collecting data at one of the field sites, there was a major flood that displaced basically our entire survey population,” Dr. Bendix said.

LOOKING AHEAD

With data on the 6,000 patients complete, the research team is preparing to publish its findings on this, as well as related studies on current surgical care rates and research done to date on surgical care in low and middle income countries.

“It looks like about 25 percent of all the patients that we surveyed currently need or has needed surgical care,” says Dr. Bendix. “That’s a high number, and it reflects the prevalence of traumatic injury and medical complications in developing countries. Many people work outside doing physical labor, and they don’t have the injury-prevention and preventative care measures in place that we have here.”

Dr. Bendix hopes to demonstrate that there is an epidemiologically proven need for surgical care in these settings. “It’s the first step in making a policy argument down the road to what needs to be done,” Dr. Bendix says. “My goal is to continue this type of research in the future and to do it through work as an acute care surgeon, both in the U.S. and for populations in places like Mozambique.”

Thinking back to the Surgical Outcomes Club meeting, Dr. Holubar says, “We’re very lucky to have someone like Dr. Bendix, not just because he’s a good surgeon and doctor but also because he’s helping to maintain the international reputation in health sciences outcome research that Dartmouth already has.”
COMMUNITY SURGERY PROGRAM

The Division of Community Surgery was established in August, 2011, after several years of planning and coordinating by Richard Barth, MD, Section Chief of General Surgery. Timothy Siegel, MD, was the first general surgeon to be hired in the model, which was based on a successful program in central New York State. University-trained general surgeons, based at a tertiary care medical center, would travel to smaller hospitals within the same region. These surgeons would provide routine care at the community hospitals as a full member of the active staff at these institutions, including operative procedures, endoscopic procedures, inpatient and outpatient consultations, and clinic visits. Patients with complex medical conditions or patients who required more complicated procedures would have their care provided at Dartmouth Hitchcock (D-H), often by the same surgeon they had seen in their community hospital. These surgeons would also spend a portion of their time at D-H, seeing patients in the clinic, in the Emergency Department, and in consultation, thus acting as an active member of the Department of Surgery with its attendant requirements for teaching surgical residents and medical students. The goal was to allow a seamless transition of care for patients who needed the expertise or environment of one type of institution versus the other, and to allow patients to stay at their community hospital if at all possible. In this way, the relationship between the community hospitals and their medical staff with D-H would be strengthened and could facilitate new opportunities for both. The educational benefits for the surgical residents and medical students were numerous, and include seeing how the practice of surgery in a community setting differs in subtle but meaningful ways from the practice of surgery in an academic, tertiary care setting.

The initial response to the Program at Alice Peck Day Memorial Hospital, where Dr. Siegel spends 80% of his time, was so positive that expansion was inevitable. In early 2013, Mt. Ascutney Hospital and New London Hospital adopted the model, and Brent White, MD and Sean Bears, MD were hired, respectively. The feedback continues to be favorable, and both Alice Peck Day Memorial Hospital and New London Hospital are expanding the program with new general surgeons being recruited for summer, 2014. In addition, Valley Regional Hospital in Claremont, NH joined the model in 2014, with recruitment efforts underway there as well. Other surgical specialties, including Urology, ENT, and orthopaedics, are utilizing similar models to provide care to the region in a patient-centered, cost-effective manner.

Timothy Siegel, MD
Assistant Professor of Surgery at DHMC and Alice Peck Day Memorial Hospital
With the support of Richard Freeman, MD, Chair, Department of Surgery as well as the Department itself, Philip Goodney, MD was named the first Director of the Center for the Evaluation for Surgical Care (CESC) in 2013. The inaugural year for the CESC was a busy one, with efforts focused on three initiatives aimed at growing and expanding surgical health services research at Dartmouth-Hitchcock Medical Center.

**BI-WEEKLY HEALTH SERVICES RESEARCH (HSR) MEETING**

A central part of the mission of the CESC is the academic development of surgical trainees who are interested in becoming leaders in surgical outcomes research. A cornerstone of this effort occurs every first and third Wednesday, in the Department of Surgery conference room. Drs. Goodney, Freeman, and others convene a “work-in-progress” meeting from 5-6 pm. Surgical trainees, faculty, and researchers are welcome to bring their ongoing research project for presentation, discussion, and interaction. Topics have spanned the breadth of surgical research, from basic science to health policy, using qualitative and quantitative approaches. A key element of this meeting is a short presentation — typically 15 minutes — given by the principal investigator. This leaves plenty of time for the team to offer their opinions and critiques about how to improve the abstract, paper, research presentation, or grant proposal. We always have fun (as seen in the photograph of several current, past, and future CESC and VA Outcomes Group research fellows) — and every investigator agreed that their project is clearer, stronger, and more impactful as a result of sharing their work at the Surgery HSR meeting.

**SURGICAL TRAINEES ADVANCING RESEARCH (STARS) SYMPOSIUM**

On Friday, May 17th, 2013, we convened the first annual STARS Symposium in the Department of Surgery at Dartmouth Hitchcock Medical Center. Eight abstracts, submitted by surgical trainees at Dartmouth, were selected in a competitive process for presentation at the symposium, which was developed and co-chaired by Drs. Philip Goodney and Stefan Holubar. Each of these abstracts represented a paper that had been accepted for presentation at a regional or national meeting, but had not yet been presented. This forum gave the surgical trainees a chance to hone their skills in front of a large audience — complete with “celebrity” judges (thank you Dr. Richard Barth!) Tension was in the air, as there was a
lot at stake — cash prizes were offered by Dr. Freeman and the Department of Surgery for the best presentations!

All of the talks were outstanding — as were the insights (and comedic impressions) from the judges. While it was difficult to decide on the winners, eventually three presentations stood out: Wayne Moschetti, MD, first place ($500) for comparing surgical approaches in total knee replacement; Levi Deters, MD, second place ($250) his study of ultrasound guidance in removing ureteral stones; and Jessica Wallaert, MD, third place ($100) for evaluating glucose control in diabetic patients undergoing vascular surgery.

News about the STARS Symposium was featured in D-H Today, where Dr. Holubar shared his thoughts about the inaugural symposium: “We came up with the idea to have this symposium to highlight the hard work the surgical residents have been doing — they are so pressed for time, but still find the energy to do this research at night, on weekends and in their spare time,” says Dr. Holubar. “There is such a strong tradition of clinical research here at D-H and TDI. The STARS program highlights the success of those already doing such work, and can inspire the younger trainees to continue this tradition.”

This year will be certain to be as informative and exciting, as we look forward to the Second Annual STARS symposium in the spring of 2014. We’ll look forward to seeing you there!

CHANGING HOW WE CHOOSE — A DARTMOUTH ATLAS OF SURGERY

One of the newest and most exciting developments in the CESC is a major project, wherein we hope to study and improve the delivery of surgical care nationally, and potentially even internationally. In a partnership with the Co-Principal Investigator of the Dartmouth Atlas, Dr. Goodman, Dr. Goodney and the CESC is leading a team of experts in surgical health services research in generating a new Dartmouth Atlas of Surgery. This team will describe how variation in surgical care affects several common and costly conditions. Moreover, they will also share their experiences, and highlight how surgical outcomes research has begun to limit variation improve the delivery of care, and where these efforts need to focus in the future. Finally, this project will develop key mechanisms and pathways which allow surgical investigators access to key information about how surgical care is provided across the country.

Even though this project is in its early stages, it has been widely supported. Dr. Freeman and the Department of Surgery provided the initial funding for this effort, and Dr. Goodman obtained significant support from the Robert Wood Johnson Foundation to enhance these efforts. Dr. Goodney presented information on this project at the 4th Annual Wennberg International Collaborative (WIC) Conference in Hanover, New Hampshire in October, 2013, and will give an update on the groups’ progress at the 5th WIC Conference in London, England in 2014.

RESEARCH FELLOWSHIP: A KEY INGREDIENT

A unique partnership with the White River Junction VA Hospital’s VA Outcomes Group/VA Quality Scholars program has allowed surgical trainees a unique opportunity in surgical health services research. Dr. Goodney, and colleagues Brenda Sirovich, Louise Davies, and Greg Ogrinc lead an intensive, two-year research fellowship — which includes Masters’ training at The Dartmouth Institute — for surgical trainees interested in a career in surgical outcomes research. This opportunity has been an important aspect of “building a team” of highly skilled, insightful investigators with the skill set — in surgery and in research — to ask the right questions, and get the best answers. Jessica Wallaert, MD, MS (2013) and Andrea Stroud, MD, MS (2014) are two recent examples of Dartmouth general surgery trainees who have also been successful VA Outcomes fellows, and Dr. Karina Newhall has been accepted into the program for this fall.

SUMMARY

Overall, 2013 has been an exciting start for the CESC, and opportunities abound for our new developments to build on our early achievements. Future efforts — such as the addition of more research staff and expanding research and fellowship opportunities — will be our main goals for 2014. We look forward to the development of the CESC, and anticipate building our program into a national leader among national surgical outcomes research efforts.
The Arthur Naitove Distinguished Teaching Award

William C. Nugent, 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 2013 recipient of the Arthur Naitove Distinguished Teaching Award is William C. Nugent, MD.

The Harmes Surgical Scholar Award

Kimberley S. Samkoe, PhD

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 2013 was awarded to Kimberley S. Samkoe, PhD.

The Surgical Chair’s Award

Mark C. Smith, 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 2013 Surgical Chair’s Award recipient is Mark C. Smith, MD.
The Richard Dow Award
Brian Nolan, MD

The Robert Crichlow Award
Scott Lollis, MD

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 Department of Surgery Care Path Award
Vascular Surgery “Revamp”

The team accepting the Vascular Surgery Revamp Care Path Award. Left to right: Teri Walsh, RN; Carey Stillman, NP; Joy Nicolay, RN; Emily Spangler, MD.
Axelrod, David
- Linkage of Medicare Claims and OPTN Registry Data to Advance Outcomes Research in Organ Transplantation

Barth, Richard
- D0928: A Study to Evaluate the Use of Supine MRI Images In Breast Conserving Surgery
- D0929: A Prospective Study of Partial Breast Adjuvant Radiation Therapy After Resection of Borderline and Malignant Phyllodes Tumors
- D12016: A Study of the Prognostic Importance of Local T-cell Immune Reactivity in Colorectal Cancer Metastases
- D12052: A Randomized Phase II Study of the Effects of a Low Calorie Diet on Patients Undergoing Liver Resection
- DMS 0404: Alternative Breast Imaging Modalities: Correlation with Local Tissue Property Measurements and Histopathological Indices in Benign and Malignant Lesions
- DMS 9801: Prospective Study of Adjuvant Radiation Therapy After Resection of Borderline and Malignant Phyllodes Tumors (Training Grant AI07363)
- Multicenter Selective Lymphadenectomy Trial II (MSLT-II): A Phase III Multicenter Randomized Trial of Sentinel Lymphadenectomy and Complete Lymph Node Dissection Versus Sentinel Lymphadenectomy Alone in Cutaneous Melanoma Patients with Molecular or Histopathological Evidence of Metastases in the Sentinel Node
- Z0010: A Prognostic Study of Sentinel Node and Bone Marrow Micrometastases in Women with Clinical T1 or T2 NO MO Breast Cancer (Rapid Review Renewal – June, 2001) (Training Grant AI07363)
- Z0011: A Randomized Trial of Axillary Node Dissection in Women with Clinical T1-2 NO MO Breast Cancer Who Have A Positive Sentinel Node (Training Grant AI07363)

Bekelis, Kimon
- Cerebral Aneurysm Inflammation: Prospective Correlation of The Preoperative Use of 18F-FDG PET/CT and Ultrasmall Superparamagnetic Iron Oxide Particles (Uspios) Assisted MRI with Postoperative Histologic Results in Human Subjects
- Motor and Somatosensory Evoked Potential Monitoring During Aneurysm Surgery: Effect on Outcome and Surgical Strategy
- MRI/MRA Fusion Technique for Intra-Operative Navigation During Microsurgical Resection of Cerebral Arteriovenous Malformations

Bihrlle, William
- Can We Predict Readmission within 30 Days of Discharge Following Renal Cancer Surgery?

Chapman, M. Shane
- A 10-Year, Post-Marketing, Observational, Registry to Assess Long-Term Safety of HUMIRA (Adalimumab) in Adult Patients with Chronic Plaque Psoriasis (Ps)
- A Multicenter, Open Registry of Patients with Psoriasis Who are Candidates for Systemic Therapy Including Biologics
- A Phase 3, Multi-Site, Open-Label Study of The Long-Term Safety And Tolerability of 2 Oral Doses of CP-690,550 in Subjects with Moderate-to-Severe Chronic Plaque Psoriasis
- A Phase 3, Multi-Site, Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study of the Efficacy and Safety of 2 Oral Doses of CP-690,550 in Subjects with Moderate-to-Severe Chronic Plaque Psoriasis
- A Phase 3B, Multicenter, Randomized, Placebo-Controlled, Double Blind, Double-Dummy, Study of the Efficacy and Safety of Apremilast (CC-10004), Etanercept, and Placebo, in Subjects with Moderate-to-Severe Plaque Psoriasis
- A Phase 3b, Randomized, Double-Blind, Active Controlled, Multicenter Study to Evaluate a Subject-tailored Maintenance Dosing Approach in Subjects with Moderate-to-Severe Plaque Psoriasis – PSTE LAR
- A Randomized, Vehicle-Controlled, Double-Blind, Parallel Group, Multi-Center, Phase IIb Dose Finding Study of M518101 in Plaque Psoriasis Patients
- Efficacy and Safety of Alitretinoin in the Treatment of Severe Chronic Hand Eczema Refractory to Topical Therapy
- Observational Post Marketing Safety Surveillance Registry of Enbrel (Etanercept) for Treatment of Psoriasis
- PREDICT MK-3222-010 (#206682) Psoriasis Study
- Quantifying Skin Response in Photodynamic Therapy

Chen, Eunice
- The Role of Hypoxia and Hypoxia-Inducible Pathways in the Pathogenesis of Head and Neck Diseases
- Tissue Hypoxia and Post-Radiation Complications in Patients with Breast and Head and Neck Cancers

Cronenwett, Jack
- Structure Process and Outcome in AAA repair
- Northern New England Vascular Surgery Quality Improvement Initiative

Davies, Louise
- Revising and Expanding the Publication Guidelines for Quality Improvement
- Thyroid Nodule Registry: Algorithm Development

Durham, Susan
- Natural History Of Asymptomatic Chiari 1 Malformation in the Pediatric Population
Eisenberg, Burton
- D0906: An in Vivo Proof of Principle Trial to Determine Whether the Nutritional Supplement Conjugated Linoleic Acid (CLA, Clarinol®) Can Modulate the Lipogenic Pathway in Breast Cancer Tissue
- ECOG 1697: A Phase III Randomized Study of Four Weeks High Dose IFN-α2b in Stage T2bNo, T3a-bNo, T4a-bNo, and T1-4 ,N1a, 2a,3 (microscopic) Melanoma
- F0924: A Phase II, Non-Randomized, Open-Label Multicenter Study of 5 year Adjuvant Imatinib Mesylate (Gleevec®) in Patients at Significant Risk for Recurrence Following Complete Resection of Primary Gastrointestinal Stromal Tumor (GIST) [Protocol CST1571BUS282]
- Z 9001 A Phase III Randomized Double-Blind Study of Adjuvant ST1571 (Gleevec®) vs. Placebo in Patients Following the Resection of Primary Gastrointestinal Stromal Tumor (GIST)

Erkmen, Cherie P.
- An Analysis of the Management and Microbiology of Thoracic Empyemas
- D1046: A Proof of Principle Study of Aminolevulinic Acid (ALA) — Induced Fluorescence Detection in Resectable Non-Small Cell Lung Cancer
- Retrospective Analysis of Esophagectomies at DHMC
- Z4051: A Phase II Study of Neoadjuvant Therapy with Cisplatin, Docetaxel, Panitumumab Plus Radiation Therapy Followed by Surgery in Patients with Locally Advanced Adenocarcinoma of the Distal Esophagus

Fillinger, Mark
- Evaluation of the GORE Conformable TAG® Thoracic Endoprosthesis for Treatment of Acute Complicated Type B Aortic Dissection
- 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 II, single-Arm, Prospective Study of the Safety and Efficacy of the UniFit Aorto-uni-iliac Endoluminal Stent Graft for the Repair of Abdominal Aortic aneurysms in Patients Who are Not Candidates for Repair with Commercially Available Bifurcated Endovascular Protheses – LeMaitre Study
- An Evaluation of the GORE Conformable TAG® Thoracic Endoprosthesis for the Primary Treatment of Aneurysm of the Descending Thoracic Aorta
- ANCHOR: Aneurysm Treatment Using the HeliFX Aortic Securement System Global Registry
- Clinical Outcomes of the Snorkel Technique to Treat Juxtarenal Aortic Aneurysms
- Dartmouth Hitchcock Medical Center Experience with Management of Thoracic Aortic Pathology
- Endologix Bifurcated Powerlink Stent System Clinical Study Size 34 Infrarenal Bifurcated Stent Graft
- Endurant Stent Graft System US Clinical Study-A Prospective, Single-Arm, Non-Randomized, Multi-Center Clinical Study
- Evaluation of the GORE Conformable TAG® Thoracic Endoprosthesis for Treatment of Traumatic Transection of the Descending Thoracic Aorta
- .GREAT. Global Registry for Endovascular Aortic Treatment Outcomes Evaluation
- INSPIRATION: A Multicenter, Open Label, Prospective, Non-Randomized, Study of the INCRAFT® Stent Graft System in Subjects with Abdominal Aortic Aneurysms
- Multicenter Evaluation of Aortic Aneurysm Wall Stress and Associated Risk Factors for Rupture
- Post Approval Study Evaluating the Long Term Safety and Effectiveness of the Endurant Stent Graft System — ENGAGE PAS
- PRESERVE – Zenith® Iliac Branch System Clinical Study to Evaluate the Safety and Effectiveness of the Zenith® Branch Endovascular Graft-Iliac Bifurcation with the Zenith® Connection Endovascular Covered Stent
- Prospective Aneurysm Trial: High Angle Arborix™ Bifurcated Stent Graft-Pythagoras Study
- Prospective, Multicenter, Single Arm Safety and Effectiveness Trial of the Endologix Fenestrated Stent Graft System for the Endovascular Repair of Juxtarenal and Pararenal Aneurysms — Ventana IDE Pivotal Trial
- The PEVAR Trial: Protocol CP-0001: Prospective, Multicenter, Randomized Controlled Trial of Endovascular Aneurysm Repair Using a Bilateral Percutaneous Approach (PEVAR) vs Standard Approach (SEVAR) Using the IntuiTrak Endovascular AAA Delivery System and the Prostar XL or Perclose ProGlide Suture-Mediated Closure System
- The Pivotal Study of the Aptus Endovascular AAA Repair System STAPLE 2 Trial
- The Role of Wall Stress Distribution in Abdominal Aortic Aneurysm Expansion and Rupture
- Use of the Zenith® Dissection Endovascular System in the Treatment of Patients with Acute, Complicated Type B Aortic Dissection
- Zenith® Low Profile TAA Endovascular Graft Clinical Study
- Zenith TX2® Thoracic TAA Endovascular Graft Clinical Investigation
- Zenith TX2® Thoracic Aortic Aneurysm (TAA) Endovascular Graft Post-Market Approval Study
- Zenith® Fenestrated AAA Endovascular Graft Clinical Study
- .GREAT. Global Registry for Endovascular Aortic Treatment Outcomes Evaluation
- 34 mm Infrarenal Bifurcated Stent Graft Study
- Clinical Investigation Plan For The Zenith TX2® Low Profile TAA Endovascular Graft
- Evaluation of the GORE Conformable TAG® Thoracic Endoprosthesis for Treatment of Acute Complicated Type B Aortic Dissection
- Evaluation of the GORE Conformable TAG® Thoracic Endoprosthesis for Treatment of Traumatic Transection of the Descending Thoracic Aorta
- Prospective, Multicenter, Randomized Controlled Trial of Endovascular Aneurysm Repair Using a Bilateral Percutaneous Approach (PEVAR) vs. Standard Approach (SEVAR) Using the IntuiTrak Endovascular AAA Delivery System
Protocol P11-4601: A Multicenter, Open label, Prospective, Non Randomized Study of The INCRAFT® Stent Graft System in Subjects With Abdominal Aortic Aneurysms

Proximal Abdominal Aortic Aneurysm Anatomic Characterization Study

PYTHAGORAS: Prospective Aneurysm Trial: High Angle Aorfix™ Bifurcated Stent Graft Study

Zenith® Dissection Endovascular System in the Treatment of Patients with Acute, Complicated Type B Aortic Dissection

Zenith TX2® TAA Endovascular Graft Post Market Approval Study

Freeman, Richard B.

Angioplasty and Preservation of Kidneys in SOM102

Surgical Outcomes Assessment Program Database Version 2

Goodney, Philip

Outcomes of Endoleak Following EVAR for Ruptured AAA

Towards Understanding the Cost-Effectiveness of Carotid Stenting and Carotid Endarterectomy

Gormley, E. Ann

Same Day Surgery Program for Pubovaginal Fascial Sling in Women with Stress Urinary Incontinence

UIITN

Halubar, Stefan

N1048: A Phase II/III trial of Neoadjuvant FOLFOX, with Selective Use of Combined Modality Chemoradiation vs. Preoperative Combined Modality Chemoradiation for Locally Advanced Rectal Cancer Patients Undergoing Low Anterior Resection with Total Mesorectal Excision

Hoopes, P. Jack

Dartmouth Center for Cancer Nanotechnology Excellence

Electrosurgical Instruments

Ethicon Training Course

Kerrigan, Carolyn

An Evaluation of Dupuytren's Contracture Treatment Outcomes

Kispert, Paul

Survival After Head Trauma in Geriatric Population

Laycock, William

Parasoesophageal Hernia Repairs in the Octogenarians

Safety of Laparoscopic Para-Esophageal Hernia Repair in Octogenarians

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